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BLACK BOX
NETWORK SERVICES

September 2009

LVN5200A
LVN5250A
LVN5400A
LVN5600A
LVN5800A

Veri-NAC User's Manual

Veri-NAC—the fastest to deploy, easiest to use Network Access Control (NAC) appliance for Intrusion Prevention, Vulnerability Management, and Regulatory Compliance.

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This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Instrucciones de Seguridad
(Normas Oficiales Mexicanas Electrical Safety Statement)

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
    - A: El cable de poder o el contacto ha sido dañado; u
    - B: Objectos han caído o líquido ha sido derramado dentro del aparato; o
    - C: El aparato ha sido expuesto a la lluvia; o
    - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
    - E: El aparato ha sido tirado o su cubierta ha sido dañada.

Quick Start Guide

Q1. Setting Up the Veri-NAC Appliance

The Veri-NAC appliance can help provide better network access control and help prevent intrusions on your network.

There are five Veri-NAC models: LVN5200A, LVN5250A, LVN5400A, LVN5600A, and LVN5800A rackmountable 1U appliances.

Q1.1 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500.

LVN5200A, LVN5250A:

- Veri-NAC appliance
- (2) EVNSL81-0010 cables
- Printed Quick Start Guide (QSG), a Default Password Sheet, and a read.me document
- This QSG, full manual, read.me file, FAQ, and license agreement on CD-ROM

LVN5400A, LVN5600A, LVN5800A:

- Veri-NAC appliance
- EVNSL81-0010 cables: ([4] for LVN5400A, [6] for LVN5600A, [8] for LVN5800A)
- Printed QSG, a Default Password Sheet, and a read.me document
- Printed full manual
- This QSG, full manual, read.me file, FAQ, and license agreement on CD-ROM

Q1.2 LVN5200A/LVN5250A and LVN5400A/LVN5600A/LVN5800A Applicances

To set up the Veri-NAC appliance on your network, connect it to the first switch or hub inside your firewall. Then follow these steps:

Step One: Connect to Your Network

1. A power cable is included with each Veri-NAC. Connect the power cable to the power jack on the rear side, on the far left end of the appliance and to a 3-prong grounded 120-VAC, 60-Hz outlet.

NOTE: We strongly recommend that you plug your Veri-NAC appliance into a surge protector to ensure that your appliance is protected from voltage spikes.

2. Connect your local area network to the Ethernet 0 port (labeled Eth0) on the rear of the Veri-NAC appliance (see Figure Q1-2 or Q1-4).

Figure Q1-1 shows the LVN5200A/LVN5250A front panel. Table Q1-1 describes its components.

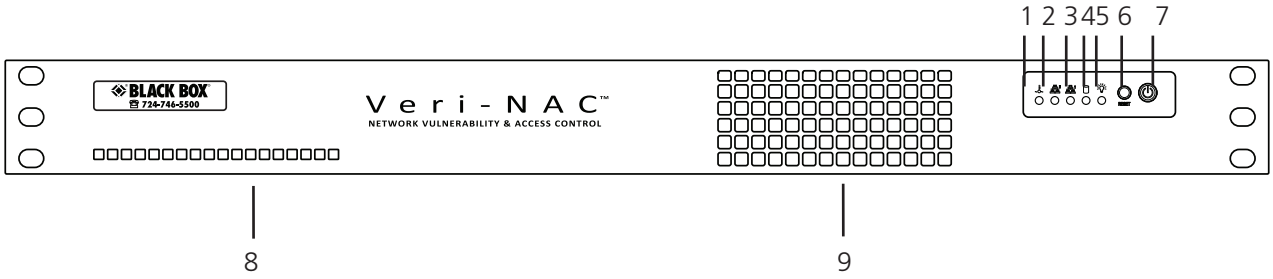


Figure Q1-1. LVN5200A/LVN5250A front panel.

Table Q1-1. LVN5200A/LVN5250A front panel components.

Number	Component	Description
1	System overheat LED	Lights when the system overheats
2, 3	Network activity LEDs	Light during activity on the network
4	Hard drive activity LED	Lights during activity on the hard drive
5	Power LED	Lights when the unit is powered on
6	System reset button	Press this button to reset the system
7	Power ON/OFF button	Press this button to turn power ON/OFF
8, 9	Vent holes for airflow	Allows for system cooling

Figure Q1-2 shows the LVN5200A/LVN5250A back panel. Table Q1-2 describes its components.

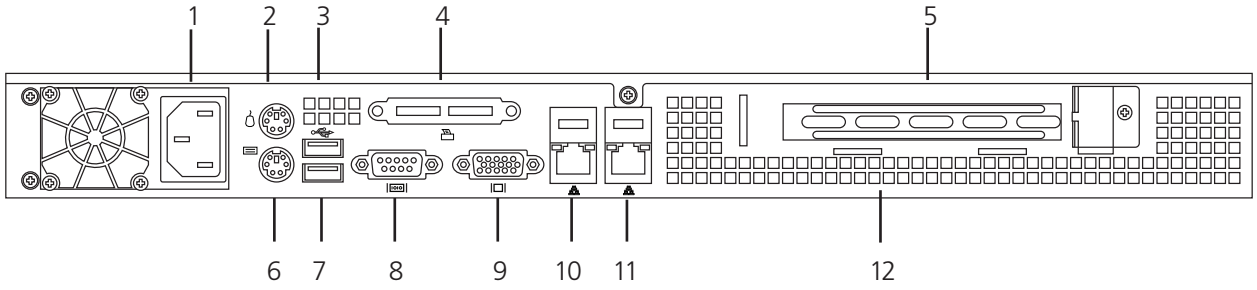


Figure Q1-2. LVN5200A/LVN5250A back panel.

Table Q1-2. LVN5200A/LVN5250A back panel components.

Number	Component	Description
1	IEC 320 power connector	Connects to power
2	PS/2 mouse connector	Links to PS/2 mouse
3, 12	Air holes	Allow cooling
4	Not used	—
5	Expansion slot cover	Covers expansion slots
6	PS/2 keyboard connector	Links to PS/2 keyboard
7	(2) USB Type A ports	Link to USB peripherals
8	DB9 serial	Links to serial connector
9	HD15 VGA	Links to monitor
10	Eth 0	Connects to LAN 1
11	Eth 1	Connects to LAN 2

Figure Q1-3 shows the LVN5400A/LVN5600A/LVN5800A models' front panel. Table Q1-3 lists its components.

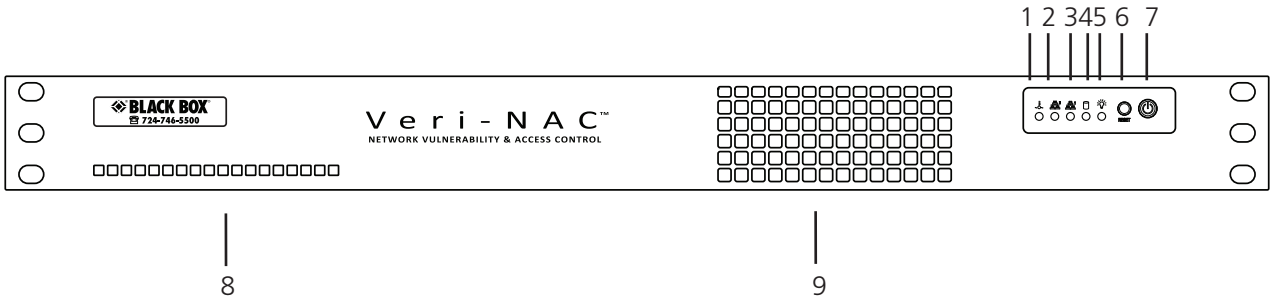


Figure Q1-3. LVN5400A/LVN5600A/LVN5800A front panel.

Table Q1-3. LVN5400A/LVN5600A/LVN5800A components.

Number	Component	Description
1	System overheat LED	Lights when the system overheats
2, 3	Network activity LEDs	Light during activity on the network
4	Hard drive activity LED	Lights during activity on the hard drive
5	Power LED	Lights when the unit is powered on
6	System reset button	Press this button to reset the system
7	Power ON/OFF button	Press this button to turn power ON/OFF
8, 9	Vent holes for airflow	Allow for system cooling

Figures Q1-4 through Q1-6 show the LVN5400A/LVN5600A/LVN5800A models' back panels. Table Q1-4 lists their components.

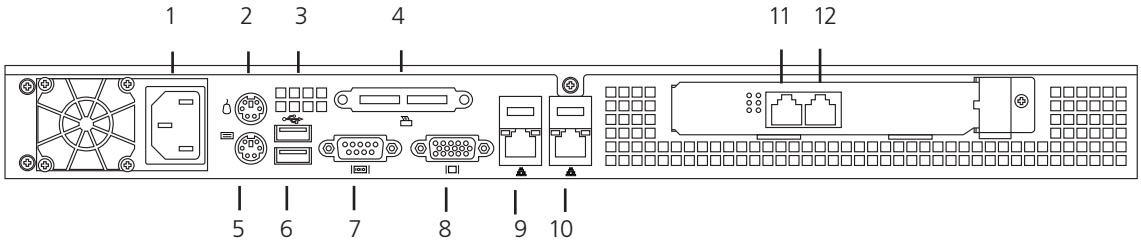


Figure Q1-4. LVN5400A back panel.

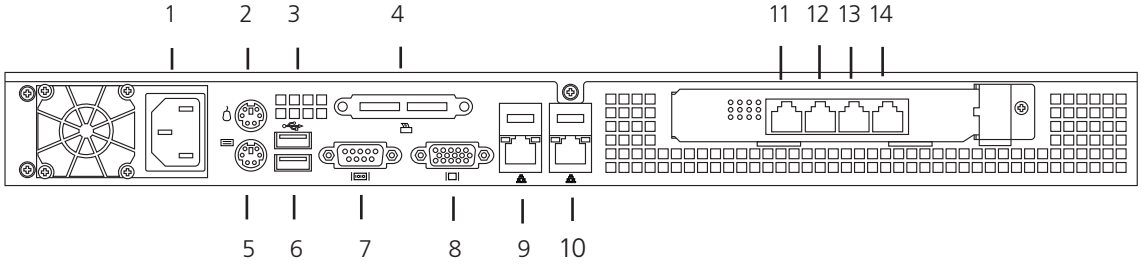


Figure Q1-5. LVN5600A back panel.

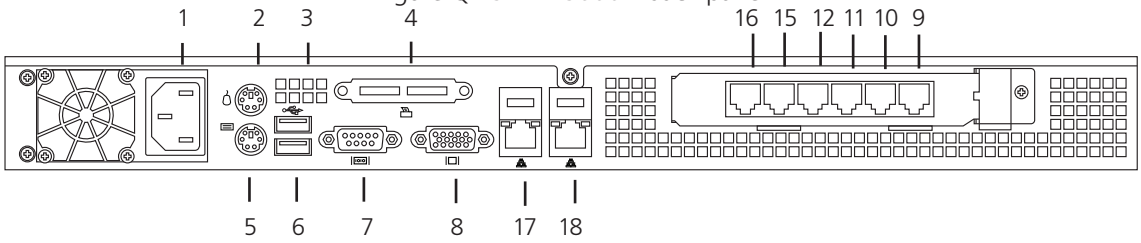


Figure Q1-6. LVN5800A back panel.

Table Q1-4. LVN5400A/LVN5600A/LVN5800A components.

Number	Component	Description
1	IEC 320 power connector	Connects to power
2	PS/2 mouse connector	Links to PS/2 mouse
3	Air holes	Allow cooling
4	Not used	—
5	PS/2 keyboard connector	Links to PS/2 keyboard
6	(2) USB Type A ports	Link to USB peripherals
7	DB9 serial	Links to serial connector
8	HD15 VGA	Links to monitor
9	Eth 0 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 0
10	Eth 1 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 1
11	Eth 2 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 2
12	Eth 3 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 3
13	Eth 4 (LVN5600A)	Connects to LAN 4

Table Q1-4 (continued). LVN5400A/LVN5600A/LVN5800A components.

Number	Component	Description
14	Eth 5 (LVN5600A)	Connects to LAN 5
15	Eth 4 (LVN5800A)	Connects to LAN 4
16	Eth 5 (LVN5800A)	Connects to LAN 5
17	Eth 6 (LVN5800A)	Connects to LAN 6
18	Eth 7 (LVN5800A)	Connects to LAN 7

NOTE: The network cable must be CAT5 cable or higher with RJ-45 connectors.

Step Two: Connect the Monitor and Keyboard

1. Connect the monitor cable to the 15-pin (VGA color) Monitor port on the rear of the appliance.
2. Connect a keyboard to the Keyboard outlet on the rear of the appliance.
3. Press the Power button on the far right front panel of the appliance. The Power LED indicates that power is on, and the network LED flashes indicating network traffic is occurring. On the rear panel, adjacent to the Ethernet port, another LED begins flashing to indicate that network traffic is occurring. After a scan completes, a bootup screen appears.

Step Three (A): If Your Environment Is DHCP

In a DHCP environment, the IP address, subnet mask, and default gateway settings have been assigned automatically and should appear on the next menu. Do not make any selections or change any settings. Do not save any settings if you have not changed anything.

1. IMPORTANT: Write down the appliance IP address for later use. _____
2. Disconnect the monitor, keyboard, and computer from the appliance. No further direct connection to the appliance is required.

Step Three (B): If Your Environment Is Non-DHCP

In a Non-DHCP environment, you must assign the IP address/other settings:

1. Type the number of a parameter at <Make a selection>, then press <Enter>. As prompted, type a new value and press <Enter>. To enter Network Configuration, press <1>.
2. IMPORTANT: Write down the appliance IP address. _____
3. To set the IP address, press <2> and press <Enter>. At the Enter new IP address prompt, type the IP address (i.e., 192.168.254.156) and press <Enter>. The list of settings is displayed with the IP address you entered.
4. Enter values for the Subnet mask <3>, Default gateway <4>, and Host name <6> that apply to your network.
5. To add a DNS server, press <5> and <Enter>. After you have added your DNS servers, press <3> to save your server values, then press <Q> and <Enter> to return to the Main Menu.
6. Disconnect the monitor and keyboard from Veri-NAC. No further direct connection to the appliance is required.

Step Four: Open Ports for Automatic Download

To enable downloads to take place, have your System Administrator or Network Engineer open port 443 on your firewall server.

Next, access Veri-NAC through a Web browser window on any system on the same subnet or Local Area Network (LAN).

Step Five: Use a Browser to Configure Veri-NAC

1. To log on, open a secure browser window (with the protocol https instead of just http) using the IP address of Veri-NAC as the URL. For example, if Veri-NAC has IP address 192.168.254.156, the URL to open in your browser would be:

   https://192.168.254.156 (using the default SSL port) OR

   https://192.168.254.156:<custom SSL port number>

2. The Veri-NAC login window appears.
3. Enter the user name and password provided on the Password Sheet delivered with your appliance.
4. Click on the Login button. The License Agreement appears first. Accept this license using the button at the bottom of the screen. (This request to accept will appear at every log in until you accept it.)
5. Next, the Help/Product Overview page of Veri-NAC opens in the browser with brief descriptions and links to all the other product pages.

CAUTION: To be sure that Veri-NAC produces accurate results, you must be sure you have downloaded the latest Common Vulnerabilities and Exposure (CVE) vulnerability signatures; later, when Veri-NAC updates itself regularly, it will download new signatures daily, but if you do not add all known vulnerabilities when it starts, it will not realize that it doesn't have them. To be sure you have the latest CVEs initially, you must carry out the next step—Downloading CVE Tests.

Step Six: Downloading CVE Tests (all models except LVN5200A)

If you have the LVN5250A/LVN5400A/LVN5600A/LVN5800A unit, you should be able to run the built-in Common Vulnerabilities and Exposures (CVEs) auditing engine. Before you do anything else with Veri-NAC, you must download the latest CVE Tests into the Veri-NAC database:

CAUTION: If you skip this step, Veri-NAC will not do its job effectively.

1. Go to the left frame menu bar and select Updates→Vulnerability Signatures.
2. Click the Update Now button.
3. As long as the appliance is on a network connected to the Internet, you just need to click Download Updates and, after they download, click Install Now.
4. If your appliance is NOT on a network connected to the Internet, you must update from a machine that is. Go to that machine and log into Veri-NAC, then click Download Updates. Then browse to the file using the Browse button and click Upload Now to install the update on Veri-NAC.
5. After you have updated the vulnerability signatures, you may now return to the Vulnerability Signature Updates page and select Daily so that the updates automatically occur daily. Be sure to click Save to save the setting.

Step Seven: Discovering All Your Network Assets

Before you can turn on alerts and the blocking engine, create a list of all your trusted network assets. To do this:

1. Go to the left frame menu bar and select Network Access Control→Asset Discovery.
2. If you use NetBIOS on any of your equipment, click the Use NetBIOS Scans for host names.
3. Click the Refresh IPs button and wait approximately 5-15 minutes while the appliance discovers all the trusted network assets on the current subnet.

Your Veri-NAC is now up and running. Start reading through the User Guide. In particular, learn about the Network Access Control→Dynamic Detection System as well as the Inventory Alerts. Remember, one of the most powerful features of your Veri-NAC appliance is your PeerBlock engine, so you'll also need to look at the Manage IPs list to determine how to add and remove assets to and from your trust list.

Q2. Configuring the Browser

Veri-NAC has been verified with the following Web browsers: Microsoft® Internet Explorer® Versions 5.0, 6.0, 7.0, and 8.0; Mozilla® Firefox® Versions 2.x and 3.x; and Opera® Version 9.63.

Q2.1 Internet Explorer—Cache Issues

Occasionally, if you perform a task with Veri-NAC, Internet Explorer 6.0 does not immediately update the display. If, for example, you decide to add a custom comment to a report and then recreate the report, when you next open that report or view the Text of Vulnerabilities, your new comment may not display. Instead, you may see the older, cached version of the report. To be sure you see the newest version of the report every time, change your browser settings as follows (see Figure Q2-1):

- Go to the Internet Explorer menu bar and select Tools→Internet Options.
- In the Internet Options window, click on the General tab, and then click the Settings button.
- Under Check for newer versions of stored pages, select "Every visit to the page."

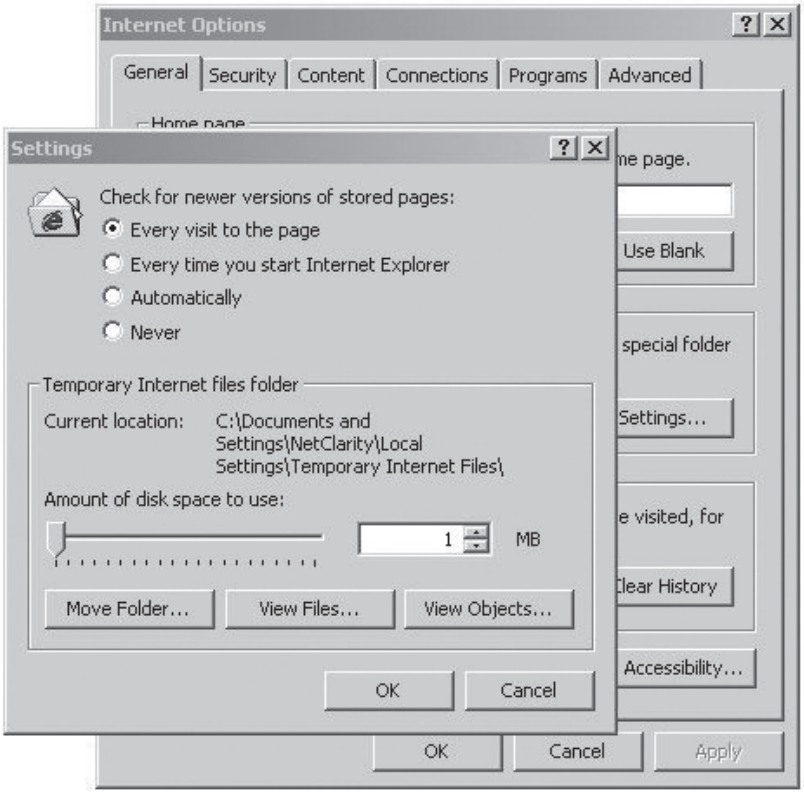


Figure Q2-1. Settings screen.

This setting clears the cache and ensures all edits to reports display upon subsequent visits.

Q2.2 Internet Explorer—Security Issues

In Internet Explorer, you may frequently receive prompts like this (see Figure Q2-2):

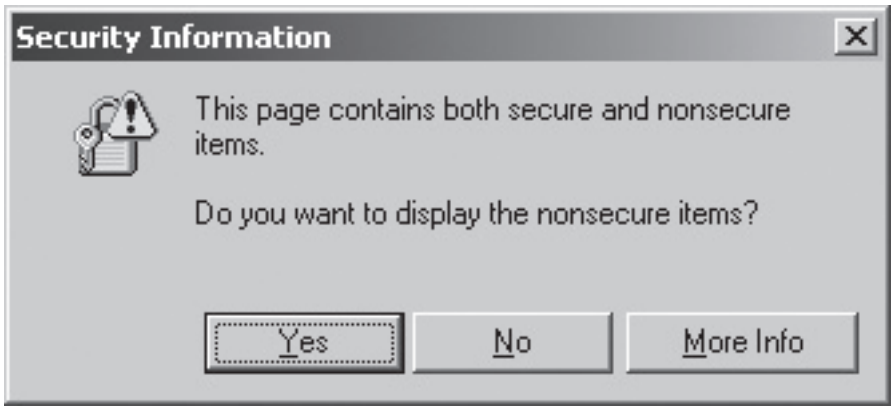


Figure Q2-2. Security information prompt.

To turn off this prompt:

- Select Tools→Internet Options.
- Click on the Security tab.
- Click on the Custom Level button.
- Scroll down to the Miscellaneous category and find Display mixed content.
- To change the prompt setting, select Enable for this setting, then click "OK" to save it (see Figure Q2-3).

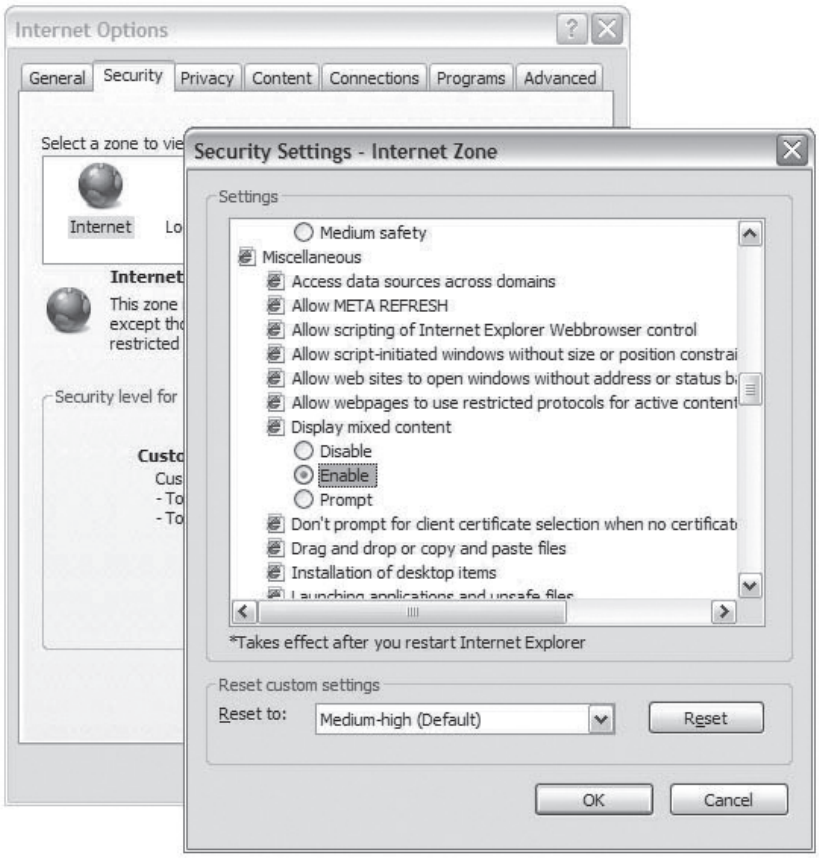


Figure Q2-3. Security settings.

Q2.3 Mozilla Firefox—Security Issues

To get rid of certificate errors in Firefox:

1. On the screen that comes up when you get a certificate error, click on "Or you can add an exception" (see Figure Q2-4).
2. Click on "Add Exception."
3. The appliance's IP should be automatically filled in the Server Location field.
4. Click "Get Certificate," then click on "Confirm Security Exception."

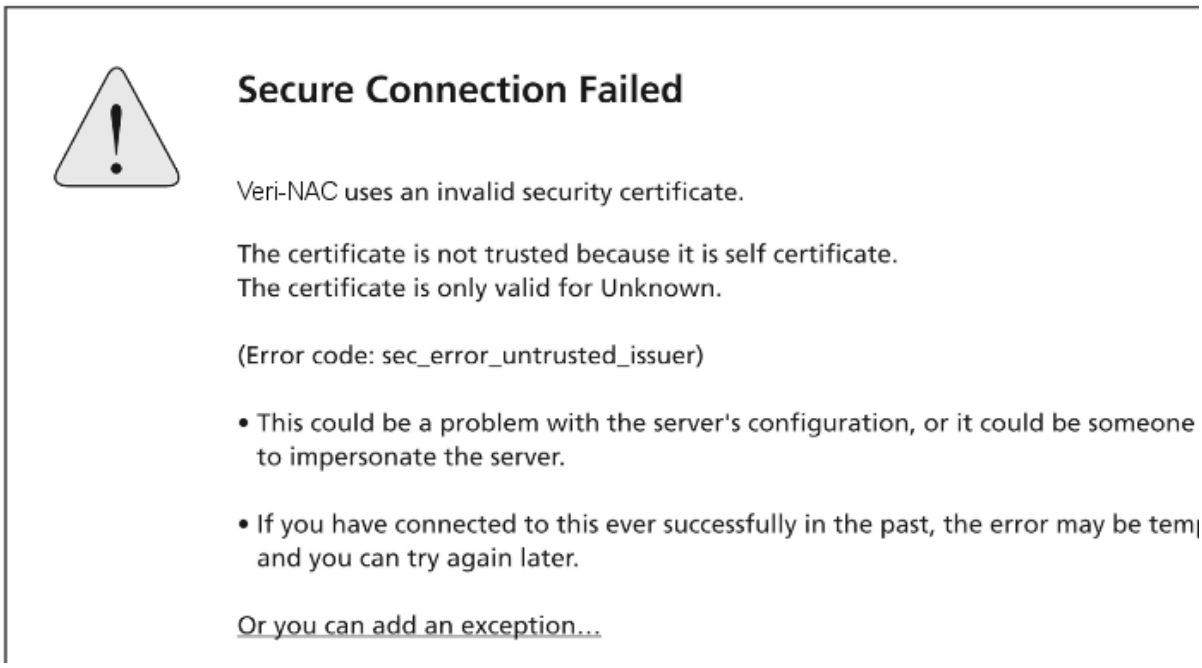


FIgure Q2-4. Secure connection failed screen.

You may also run into a specific Firefox security error that reads Error code: sec_error_reused_issuer_and_serial. To remedy this problem:

1. Go to Tools→Options→Advanced→Encryption and click on "View Certificates" (see FIgure Q2-5).

2. In the Servers and Authorities tab, remove the appliance certificate by highlighting the appliance's IP and clicking Delete.

3. Try refreshing the page and add the appliance to the exception list.

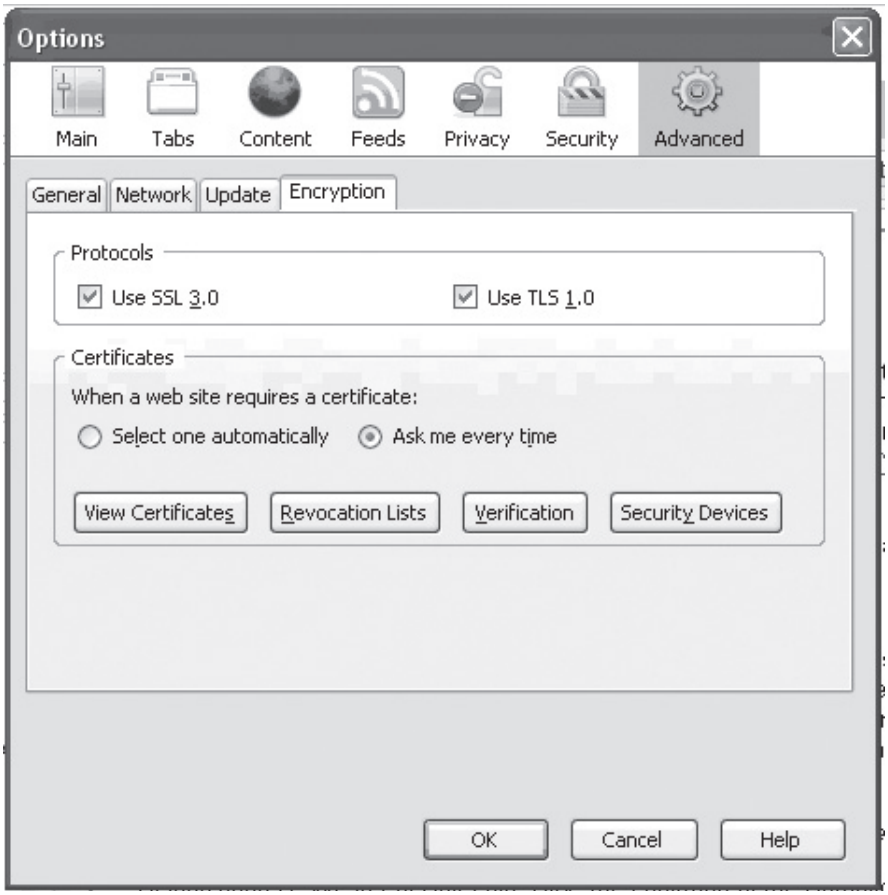


Figure Q2-5. Options screen.

1. Specifications

Built-In Devices: LED panel

Compliance: CE, UL, TUV, cUL, EN 60950, IEC 60950, CCC, FCC

Color: Black

Fans: Internal: LVN5200A, LVN5250A: (2) 8500 RPM;
LVN5400A, LVN5600A, LVN5800A: (1) 5000 RPM

Form Factor: LVN5200A, LVN5250A: Rackmountable, 1U, 11.3" deep chassis support for maximum 9.6" x 9.6" (24 x 24 cm) motherboard size;
LVN5400A, LVN5600A, LVN5800A: Rackmountable, 1U, 14" mini chassis support for maximum 12" x 9.6" (24 x 24 cm) motherboard size

Cooling Components: Fan: (2) x 8500 RPM cooling fan;
Air shroud: (1)

Mainboard Size (Maximum): Micro ATX

Mainboards Supported: Micro ATX

Expansion Slots: (1) full-height, half-length PCI expansion slot (optional, riser card required);
Drive bays: (1) internal, 3.5" (8.9 cm);
Internal bay: (4) 2.5" (6.4 cm) internal drive support

Processor Support: LVN5200A, LVN5250A: Intel Core® Duo, Xeon® 3000 series (up to 65 W), Intel Celeron® 400 series, Intel Atom™ 200/300 series;
LVN5400A, LVN5600A, LVN5800A: Single Intel/AMD

User Controls: (1) Power ON/OFF button, (1) System Reset button

Connectors: LVN5200A, LVN5250A: (1) IEC power, (1) PS/2 mouse, (1) PS/2 keyboard, (1) expansion slot cover, (2) USB Type A, (1) DB9 serial, (1) HD15 VGA, (2) LAN for Eth0 and Eth1;
LVN5400A: (1) IEC power, (1) PS/2 mouse, (1) PS/2 keyboard, (1) expansion slot cover, (2) USB Type A, (1) DB9 serial, (1) HD15 VGA, (4) LAN for Eth0, Eth1, Eth2, Eth3;
LVN5600A: (1) IEC power, (1) PS/2 mouse, (1) PS/2 keyboard, (1) expansion slot cover, (2) USB Type A, (1) DB9 serial, (1) HD15 VGA, (6) LAN for Eth0, Eth1, Eth2, Eth3. Eth4, Eth5;
LVN5800A: (1) IEC power, (1) PS/2 mouse, (1) PS/2 keyboard, (1) expansion slot cover, (2) USB Type A, (1) DB9 serial, (1) HD15 VGA, (8) LAN for Eth0, Eth1, Eth2, Eth3. Eth4, Eth5, Eth 6, Eth7

Indicators: (4) LEDs: (1) Power, (1) Hard drive activity, (2) Network activity, (1) System overheat

Power: 100–240 VAC, 50/60 Hz, 200 watts, 4.2 amps, low-noise, high-frequency power supply with Power Factor Correction (PFC)

Temperature Tolerance: Operating: 50 to 95° F (10 to 35° C);
Storage: -40 to +158° F (-40 to +70° C)

Humidity Tolerance: Operating: 8 to 90%, non-condensing;
Storage: 5 to 95%, non-condensing

Size: LVN5200A, LVN5250A: 1.7"H x 17.2"W x 11.3"D (4.3 x 43.7 x 28.7 cm);
LVN5400A, LVN5600A, LVN5800A: 1.7"H x 16.8"W x 14"D (4.3 x 42.6 x 35.6 cm)

Weight: LVN5200A, LVN5250A: 11 lb. (5 kg);
LVN5400A, LVN5600A, LVN5800A: 12.8 lb. (5.8 kg)

2. Overview

2.1 Introduction

Veri-NAC is a patented Network Access Control (NAC) and Vulnerability Management system for Intrusion Prevention and Regulatory Compliance. It is a high-performance IT security and compliance solution for your organization. Simply add the appliance to your internal network, configure it in only a few minutes, and then go about your business while it carries out new and powerful
security functions on your network.

Veri-NAC also audits your network (LVN5250A, LVN5400A, LVN5600A, and LVN5800A Units only) for potential risks, testing for vulnerabilities that can allow an unauthorized user to:

- Execute commands as another user
- Access unauthorized data
- Pose as another entity
- Conduct a denial of service attack
- Gather information
- Block legitimate users from access
- Conceal activity

NOTE: LVN5200A appliances do not offer CVE® certified auditing. They feature NAC functionality only. LVN5250A and LVN5400A, LVN5600A, and LVN5800A units offer CVE® certified auditing as well as NAC functionality.

- Provides remediation Workflow Management with automatic due date assignments and escalation of jobs past due.
- Discovers newly connected equipment using our Dynamic Detection System (with built in NAC agent-less NAC blocking engine)—laptop computers and wired or wireless devices of all kinds—and immediately audits (if selected) that equipment for vulnerabilities. Detects MAC address spoofing. Immediately blocks all un-trusted assets. Helps detect rogue wireless routers.
- Upon finding vulnerabilities, Veri-NAC Firewall Integration directs the Firewall to block traffic to/from vulnerable IP addresses and/or specific vulnerable ports. Its SmartSwitch Integration directs intelligent switches to block traffic to vulnerable IP addresses. Both boosters work without software on users' computers—making Veri-NAC the first Clientless Quarantine system.
- Upon finding vulnerabilities, Veri-NAC automatically alerts the IT manager to blocked IP addresses or ports.
- Enables hierarchical management for multiple levels of appliances at various locations using the Command Center. The Command Center can be used to remotely manage multiple LVN5200A, LVN5250A, or LVN5400A, LVN5600A, and LVN5800A appliances. The Command Center links directly to the National Vulnerability Database to integrate publicly available U.S. government vulnerability resources as well as references.
- Uses Asset Tracker to track equipment assets on your network by:
    - Providing Inventory Alerts when equipment is removed from the network.
    - Storing data to help track all computers, software, and peripherals on the network as well as all users who have access.
    - Providing the Reports engine with information about your equipment.

- Provides comprehensive Vulnerability Assessment Reports with quick-click remediation, if this feature is available with your Veri-NAC appliance.
- Provides United States Regulatory Compliance reporting for 21 CFR FDA Part 11, ESIGN, GLBA, HIPAA, Sarbones-Oxley (SOX), and others. Also supports international regulations for Brazil, Canada, Colombia, Japan, Poland, Thailand, and the United Kingdom.
- Provides Credit Card Merchant Security Program compliance reporting.
- Provides tools to help build your organization's Corporate Security Policy.
- Automatically downloads new vulnerability tests and service packs to Veri-NAC itself.

2.2 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500.

LVN5200A, LVN5250A:

- Veri-NAC appliance
- (2) EVNSL81-0010 cables
- Printed Quick Start Guide (QSG), a Default Password Sheet, and a read.me document
- This QSG, full manual, read.me file, FAQ, and license agreement on CD-ROM

LVN5400A, LVN5600A, LVN5800A:

- Veri-NAC appliance
- EVNSL81-0010 cables: ([4] for LVN5400A, [6] for LVN5600A, [8] for LVN5800A)
- Printed QSG, a Default Password Sheet, and a read.me document
- Printed full manual
- This QSG, full manual, read.me file, FAQ, and license agreement on CD-ROM

2.3 Hardware Description

Figure 2-1 shows the LVN5200A/LVN5250A front panel. Table 2-1 describes its components.

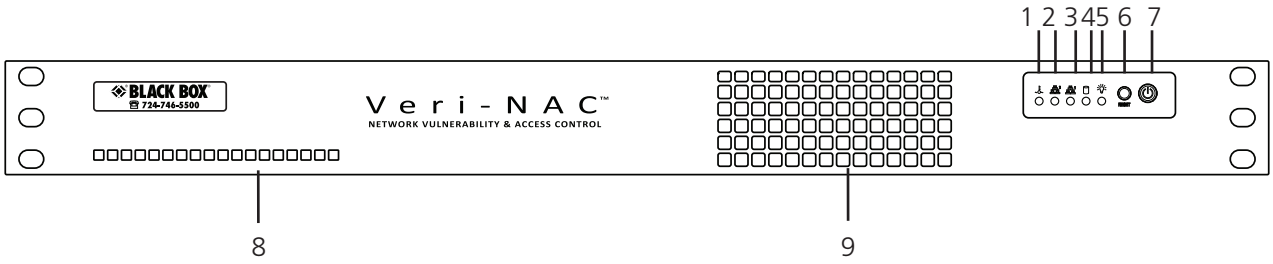


Figure 2-1. LVN5200A/LVN5250A front panel.

Table 2-1. LVN5200A/LVN5250A front panel components.

Number	Component	Description
1	System overheat LED	Lights when the system overheats
2, 3	Network activity LEDs	Light during activity on the network
4	Hard drive activity LED	Lights during activity on the hard drive
5	Power LED	Lights when the unit is powered on
6	System reset button	Press this button to reset the system
7	Power ON/OFF button	Press this button to turn power ON/OFF
8, 9	Vent holes for airflow	Allow for system cooling

Figure 2-2 shows the LVN5200A/LVN5250A back panel. Table 2-2 describes its components.

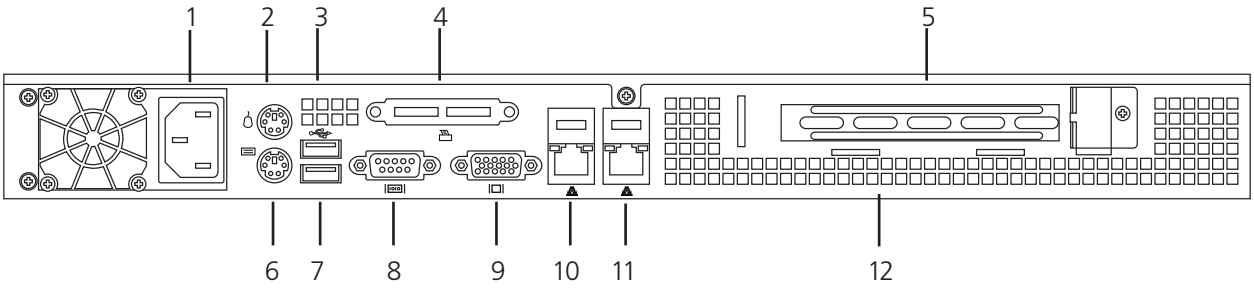


Figure 2-2. LVN5200A/LVN5250A back panel.

Table 2-2. LVN5200A/LVN5250A back panel components.

Number	Component	Description
1	IEC 320 power connector	Connects to power
2	PS/2 mouse connector	Links to PS/2 mouse
3, 12	Air holes	Allow cooling
4	Not used	—
5	Expansion slot cover	Covers expansion slots
6	PS/2 keyboard connector	Links to PS/2 keyboard
7	(2) USB Type A ports	Link to USB peripherals
8	DB9 serial	Links to serial connector
9	HD15 VGA	Links to monitor
10	Eth 0	Connects to LAN 1
11	Eth 1	Connects to LAN 2

Figure 2-3 shows the LVN5400A/LVN5600A/LVN5800A models' front panel. Table 2-3 lists its components.

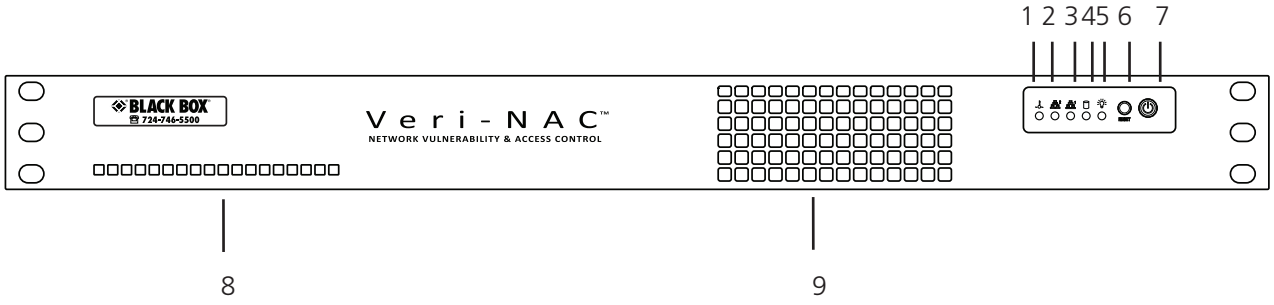


Figure 2-3. LVN5400A/LVN5600A/LVN5800A front panel.

Table 2-3. LVN5400A/LVN5600A/LVN5800A components.

Number	Component	Description
1	System overheat LED	Lights when the system overheats
2, 3	Network activity LEDs	Light during activity on the network
4	Hard drive activity LED	Lights during activity on the hard drive
5	Power LED	Lights when the unit is powered on
6	System reset button	Press this button to reset the system
7	Power ON/OFF button	Press this button to turn power ON/OFF
8, 9	Vent holes for airflow	Allow for system cooling

Figures 2-4 through 2-6 show the LVN5400A/LVN5600A/LVN5800A models' back panels. Table 2-4 lists their components.

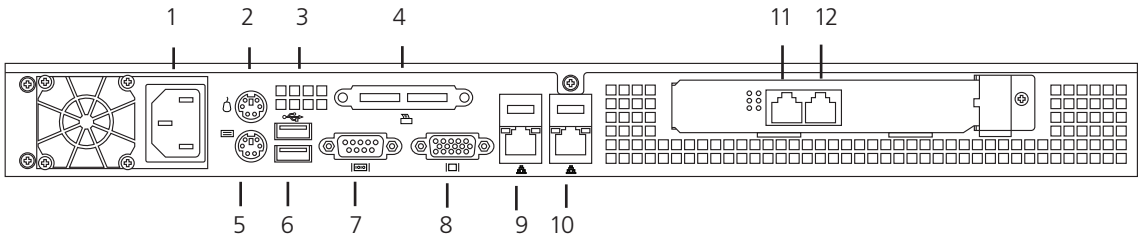


Figure 2-4. LVN5400A back panel.

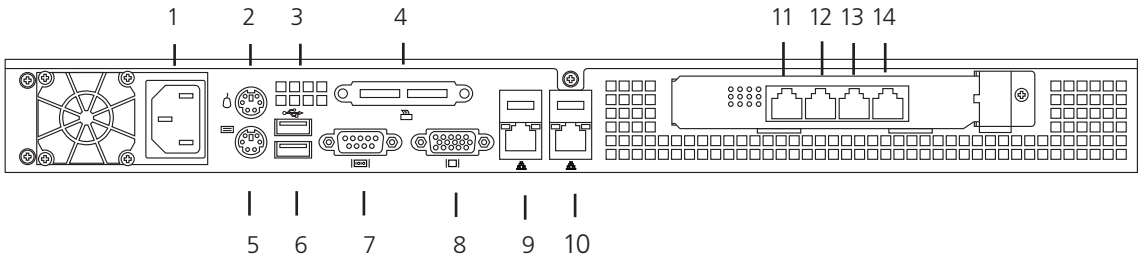


Figure 2-5. LVN5600A back panel.

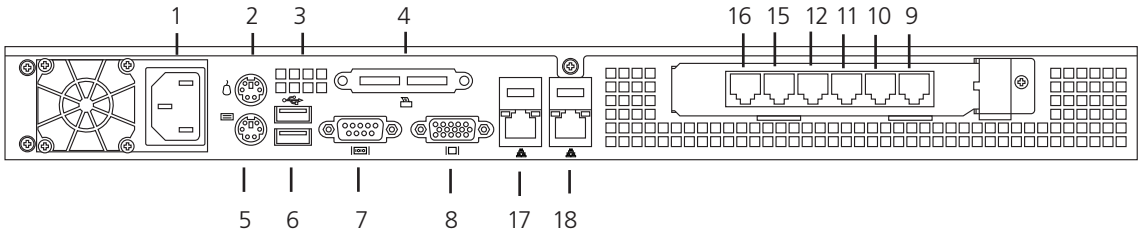


Figure 2-6. LVN5800A back panel.

Table 2-4. LVN5400A/LVN5600A/LVN5800A components.

Number	Component	Description
1	IEC 320 power connector	Connects to power
2	PS/2 mouse connector	Links to PS/2 mouse
3	Air holes	Allow cooling
4	Not used	—
5	PS/2 keyboard connector	Links to PS/2 keyboard
6	(2) USB Type A ports	Link to USB peripherals
7	DB9 serial	Links to serial connector
8	HD15 VGA	Links to monitor
9	Eth 0 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 0
10	Eth 1 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 1
11	Eth 2 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 2
12	Eth 3 (LVN5400A, LVN5600A, LVN5800A)	Connects to LAN 3
13	Eth 4 (LVN5600A)	Connects to LAN 4
14	Eth 5 (LVN5600A)	Connects to LAN 5
15	Eth 4 (LVN5800A)	Connects to LAN 4
16	Eth 5 (LVN5800A)	Connects to LAN 5
17	Eth 6 (LVN5800A)	Connects to LAN 6
18	Eth 7 (LVN5800A)	Connects to LAN 7

NOTE: The network cable must be CAT5 cable or higher with RJ-45 connectors.

2.4 CVE Auditing

CVE is the Standard by which all information security professionals are judged and is the litmus test for regulatory compliance including HIPAA, GLBA, 21 CFR Part 11 FDA, ESIGN, and Sarbanes-Oxley (SOX) 404 as it relates to information assets.

CVE auditing is a CPU-intensive process that can take only minutes—or it can take hours, depending upon the size and speed of your network and the number of vulnerabilities you have. Veri-NAC looks at tens of thousands of ports on each IP Address in your network for thousands of possible CVEs.

The Common Vulnerabilities and Exposures (CVE) list functions similarly to a dictionary, providing common names for publicly known information security vulnerabilities and exposures. Using a common name makes it easier to share data across separate databases and tools that, until now, were not easily integrated. CVE is the key to information sharing. If a report from one of your security tools incorporates CVE names, you may then quickly and accurately access fix information in one or more separate, CVE-compatible databases to remediate the problem.

The CVE — An Industry Standard funded by the Department of Homeland Security — is operated by MITRE.

A CVE is:

- One name for one vulnerability or exposure
- One standardized description for each vulnerability or exposure
- A dictionary rather than a database
- The way disparate databases and tools can understand each other
- A means to interoperability and better security coverage
- A basis for evaluation among tools and databases
- Accessible for review or download from the Internet
- Industry endorsed via the CVE Editorial Board

Some CVEs are currently Candidates (CANs) — keep an eye on both CVEs and CANidate CVEs. MITRE is in the process of updating all CANs into CVEs. CANs are being phased out.

2.4.1 Example of a CANdidate CVE

CAN-2006-1148 (Under Review)

A buffer overflow problem is described in GLSA-200603-17 (PeerCast: Buffer overflow). The problem is in the URL handling code. Buffers allocated on the stack can overflow inside of nextCGIarg()function. By sending a specially crafted request to the HTTP server, a remote attacker can cause a stack overflow, resulting in the execution of arbitrary code. There is no known workaround at this time.

Black Box believes CVE auditing should be fast; efficient; accurate; non-invasive to network bandwidth, users, and assets; and should never cause a Denial of Service—except from tools, such as those from Symantec, that treat an audit as an attack.

2.4.2 CVE Compatibility

Veri-NAC is a CVE-compatible product. Vulnerabilities found on Veri-NAC Reports can easily be searched for standard CVE names assigned by the MITRE Corporation. Details on each CVE Veri-NAC finds are explained in its reports; however, you can find more information on any CVE by searching the MITRE CVE web site (www.cve.mitre.org).

Veri-NAC uses the latest CVE database version. The Update Server is revised every day. When you download new tests, you are ensuring your reports will reference the latest known CVEs and CVE candidates available.

2.5 Self-Assessment for Credit Card Security Compliance

Veri-NAC reports compliance with the following credit card merchant certification programs: Visa® CISP, MasterCard® SCP, American Express® DDS, and Discover™ DISC.

2.6 User Management—Manager Access Limitations

User management lets you create three levels of users—managers, IT staff, and NAC users. The main account provided with Veri-NAC is a manager, and is the only manager who can change his/her own login ID. When you create a user, you indicate the user's manager, which enables Veri-NAC to send manager notifications when appropriate.

2.6.1 Managers, IT Staff, and NAC Users

Managers, IT staff, and NAC users have different roles in the remediation process. Both managers and IT staff can assign jobs, but IT staff can only assign jobs to themselves. Although both managers and IT staff can remediate vulnerabilities, only managers can confirm remediation. Managers receive notifications about jobs. NAC users have network access control functionality only and cannot view workflow. They are able to manage assets, set up DDS, and configure NAC blocking. NAC User accounts should be created for IT staff who will not be involved in the vulnerability remediation process but will aid in setup and maintenance of Veri-NAC as well as the systems to be audited.

If a manager is taking remediation action on a job, the manager's role becomes that of an IT staff user — unable to view his/her own jobs when they are in a To Be Confirmed state. Only the manager's manager or the main account can view To Be Confirmed jobs and either change their status to Closed or revert it to In Process.

For more information, see the Chapter 14, Vulnerability Remediation.

2.6.2 User Account Restrictions

Any user currently logged into Veri-NAC is able to edit his/her own account, subject to the following limitations. A user may not change their own:

- Access level
- Manager
- Login ID (unless you are main account)

2.7 CVE Audit Configuration Options/Features

NOTE: The LVN5200A does not offer auditing. It features network access control functionality only. LVN5250A, LVN5400A, LVN5600A, and LVN5800A units offer auditing as well as NAC functionality.

You can create any number of Veri-NAC audits. Veri-NAC audits check for thousands of Common Vulnerabilities and Exposures (CVEs), defined at the MITRE Corporation web site (www.cve.mitre.org). Some CVE tests have a greater effect on the performance of your network than others. Veri-NAC lets you control the timing and scope of various audits to optimize your system performance while guaranteeing your ability to keep your system protected.

2.8 Workflow Management System

NOTE: The Branch appliance does not provide Workflow/Vulnerability Remediation features. LVN5250A, LVN5400A, LVN5600A, and LVN5800A units offer these features.

The Workflow Management System creates a single job ticket for each vulnerability found on the network. Each report has a ticket. Veri-NAC breaks down into individual jobs. You can then assign due dates to each job.

Each ticket progresses as shown in Section 2.8.1:

2.8.1 Progression of Job Status

Both Managers and IT Staff can remediate vulnerabilities. If a job is not complete by the due date set, the job becomes escalated.

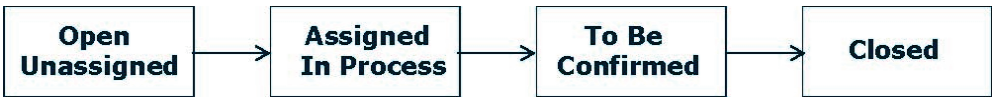


Figure 2-7. Job status flow.

2.8.2 Remediation of Vulnerabilities

The individual who completes the necessary work on a vulnerability modifies its status to To Be Confirmed. The person designated as his/her manager receives notification. When the manager receives that message, he/she clicks on it and is taken to the log where vulnerability comments are stored. When the manager agrees the vulnerability is corrected, the manager can Close it. If it appears more work is required to fix the vulnerability, the manager can change its status back to In Process.

In addition, each manager can reassign jobs, receive notifications about escalated jobs (past due), and search for jobs of anyone in the manager's group.

2.9 Flagging False Positives

Individuals working on vulnerabilities can also flag a vulnerability as a false positive. His/her manager must confirm the false vulnerability status before Veri-NAC will store it in the reporting database.

2.10 Length of Audit/Performance

The audit length varies depending on the number and type of applications running on each system. To improve performance, program a script to turn off any personal firewalls that are on the target system before the audit starts, and turn them back on when the audit is complete. Veri-NAC works with Endpoint Defender to provide this capability for Windows XP® workstations. Refer to the on-line Scheduling Audits Guide available in the Veri-NAC Help menu.

2.11 License—Warning about Exceeding

If you are close to exceeding your license limit for the number of IPs you can audit, you receive a warning when you reach the Review Settings page in the Audit Wizard.

2.12 Browser Support

Veri-NAC has been verified with the following Web browsers: Microsoft Internet Explorer Versions 5.0, 6.0, 7.0, and 8.0; Mozilla Firefox Versions 2.x and 3.x; and Opera Version 9.63.

2.12.1 Security Issues—Internet Explorer

In Internet Explorer®, you may frequently receive prompts like this:

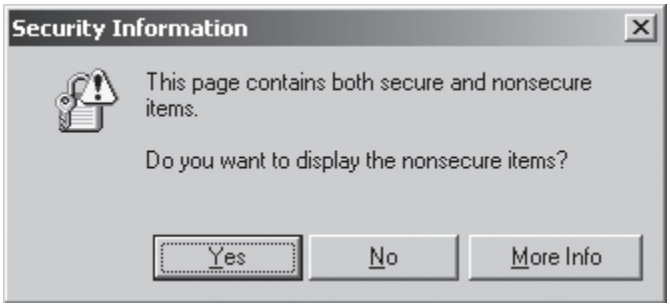


Figure 2-8. Security information prompt.

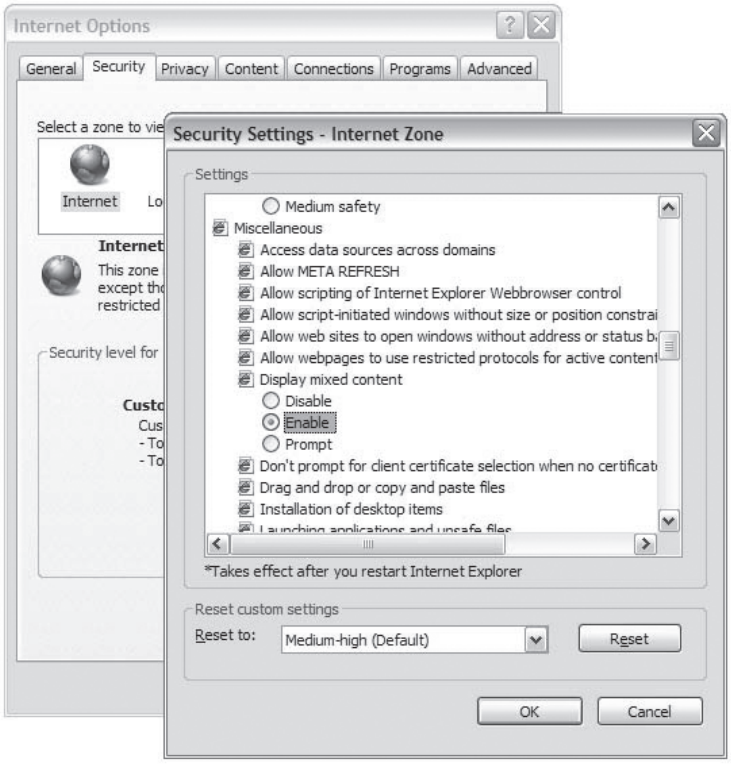


Figure 2-9. Internet Explorer screen.

To turn off this prompt:

- Select Tools→Internet Options.
- Click the Security tab.
- Click the Custom Level button.
- Scroll down to the Miscellaneous category and find Display mixed content.
- To change the prompt setting, select Enable for this setting, then click "OK" to save it.

2.12.2 Security Issues – Mozilla Firefox

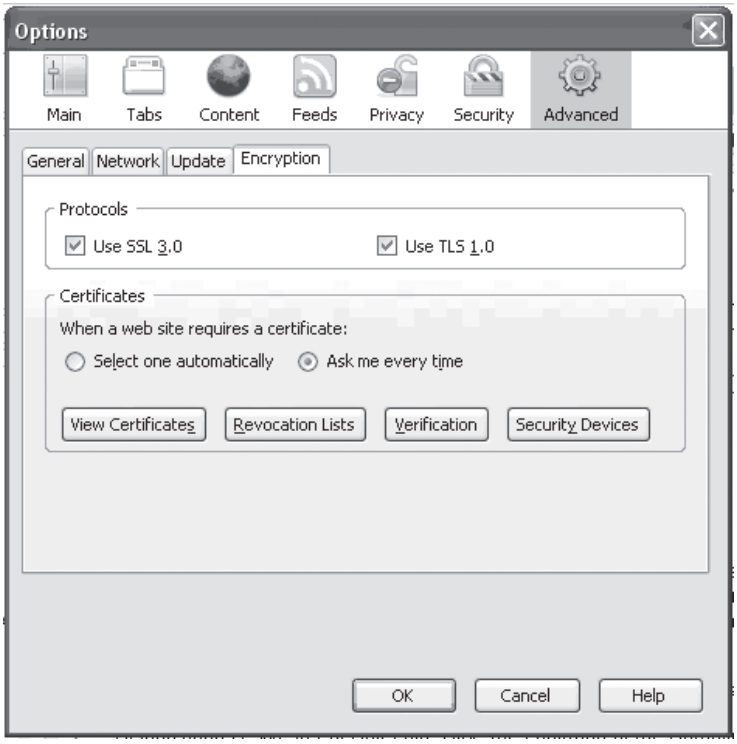


Figure 2-10. Options screen.

To get rid of certificate errors in Firefox:

1. On the screen that comes up when you get a certificate error, click on "Or you can add an exception."
2. Click on "Add Exception."
3. The appliance's IP should be automatically filled in the Server Location field.
4. Click "Get Certificate," then click on "Confirm Security Exception."

You may also run into a specific security error that reads Error code: sec_error_reused_issuer_and_serial. To remedy this problem:

1. Go to Tools→Options→Advanced→Encryption and click on "View Certificates." (See Figure 2-10.)
2. In the Servers and Authorities tab, remove the appliance certificate by highlighting the appliance's IP and clicking Delete.
3. Try refreshing the page and add the appliance to the exception list.

2.13 Network Requirements

We recommend you install Veri-NAC off the first switch inside the firewall.

2.14 Dynamic Detection Network Requirements

The Dynamic Detection feature is available for both DHCP and static (assigned) IP networks.

2.15 Who Should Use This Manual

This Veri-NAC User Guide is for the system administrator or manager responsible for maintaining the company's internal networks. The manual assumes you are familiar with your network and the operating systems in the environment.

2.16 Feature Availability

The features listed in this manual may or may not apply to your appliance, depending on the type of Veri-NAC you have purchased. Throughout the manual, we'll note which models have specific features. For more information, refer to Feature Availability Table in the Appendix.

2.17 Sending Feedback to Black Box

To provide feedback or ask questions, contact Black Box Technical Support at 724-746-5500 or www.blackbox.com.

3. System and Audit Setup Guide

3.1 Using the Veri-NAC IP Address

You must know Veri-NAC's IP address so you can log on through the browser-based interface.

When you install Veri-NAC in a DHCP environment, the DHCP server automatically assigns the Veri-NAC appliance a network address, called a Dynamic IP address. Retrieve this address following the instructions in the Veri-NAC Installation Guide. In non-DHCP environments, you must assign the static IP address.

3.2 Opening the Appropriate Port on Your Firewall

Before you configure Veri-NAC software, open Port 443 on your firewall server. This port must remain open while Veri-NAC is operating so you can receive service packs, updates to Veri-NAC code, and updates to vulnerability tests from Black Box.

NOTE: If you do not open the port on the firewall, you cannot receive automatic vulnerability signature updates or Black Box Veri-NAC service packs.

3.3 Logging In and Out

3.3.1 Logging into Veri-NAC

You access and control Veri-NAC through a Web browser that supports Secure Socket Links (SSL). You can also control some features of Veri-NAC by attaching a monitor directly to the appliance, allowing you to configure your appliance without using a Web interface. For information on how to do this, refer to Chapter 10.

NOTES: Veri-NAC has been tested with the following browsers: Microsoft Internet Explorer Versions 5.0, 6.0, 7.0, and 8.0; Mozilla Firefox Versions 2.x and 3.x; Opera Version 9.63

Your monitor should be set to a resolution of 800 x 600 or greater.

To log in and start operations, open a secure browser window (with the protocol https instead of http) using the IP address of Veri-NAC as the URL. The IP address is determined during installation. You may have changed the port number during installation.

For example, if the Veri-NAC appliance has IP address 192.168.254.159, open the following URL in your browser (as long as you are using the default port of 443):

https://192.168.254.159

If you changed the default port in the installation process, you must enter a colon followed by the port number. For instance, for port number 10000, enter the following URL:

https://192.168.254.159:10000

NOTE: You may see a Security Alert or other message from your system. Click Continue to proceed with the login.

The Login area appears:

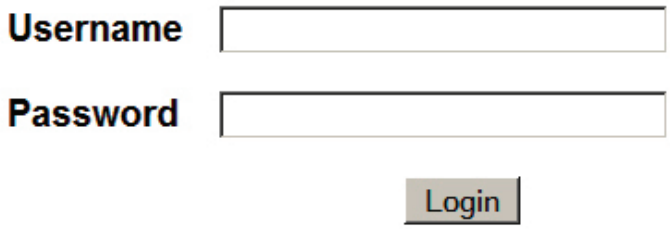


Figure 3-1. Login screen.

The default, case sensitive, User ID and password for logging into this secure Web interface is:

User ID: MainAccount **Password: changeme**

If you need to statically configure the appliance IP address, stop blocking and audit events, then login through your keyboard, video and, mouse (KVM) without using a User ID and with the same password "changeme"

You can link to each Veri-NAC page through the left vertical menu bar. This menu gives you access to all major Veri-NAC areas as shown here. The options listed in the menu will vary depending on the access level of the user currently logged in.

Figure 3-2. Left vertical menu bar.

3.3.2 Logging out of Veri-NAC

To log out of the Veri-NAC session, click the Logout icon at the bottom of the left menu bar. A statement confirming the logout displays. The Login fields appear.

3.4 Setting Up Internet Explorer for Best Results

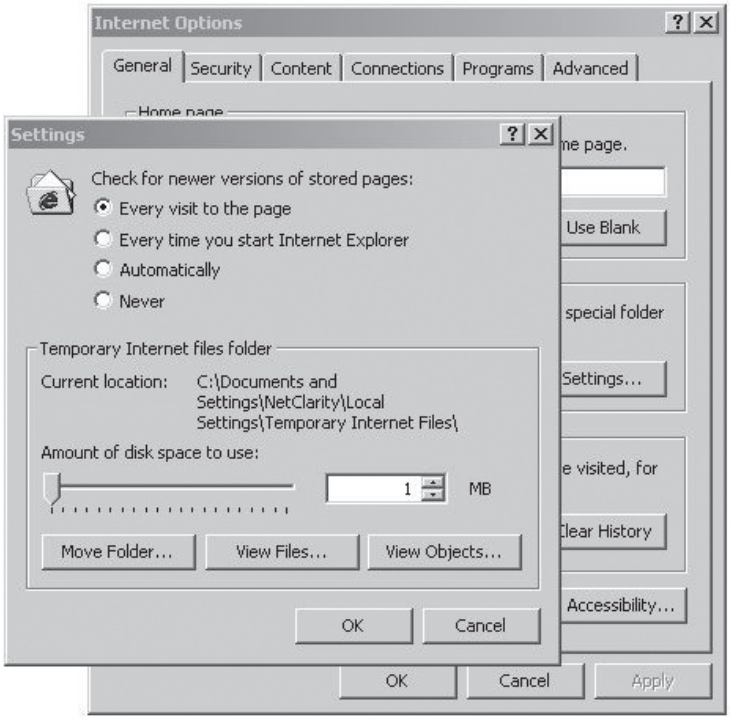


Figure 3-3. Internet Explorer screen.

Occasionally, if you take action in Veri-NAC, Internet Explorer 6.0 does not immediately update the display. If, for example, you decide to add a custom comment to a report and then recreate the report, when you next open that report or view the Text of Vulnerabilities, your new comment may not display. Instead, you may see the older, cached version of the report. To be sure you see the newest version of the report every time, change your browser settings as follows:

- Go to the Internet Explorer menu bar and select Tools→Internet Options.
- In the Internet Options window, click on the General tab, and then click the Settings button.
- Under Check for newer versions of stored pages, select Every visit to the page as shown in Figure 3-3.

This setting clears the cache and ensures all edits to reports display upon subsequent visits.

3.5 Using an Analog Connection

Connecting a monitor directly to the appliance creates an analog connection that does not require Internet access. This enables you to configure the appliance without using the Web interface. This can be useful if network access to the appliance has been blocked for some reason. To manually configure your appliance using an analog connection:

- Connect a monitor directly to the appliance.
- Reboot the appliance. The following screen is shown on the monitor (see Figure 3-4):

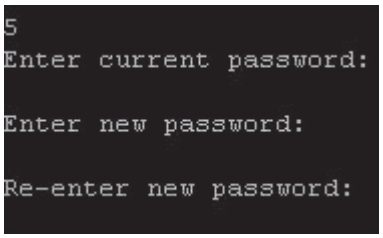


Figure 3-4. Enter password screen.

NOTE: The default console password is either changeme or your Main Account password. When changing this password, store the password in a secure location. Black Box may not be able to access the console if you lose your password.

- Select Network Configuration to perform network configuration actions on your appliance. You may only configure one network card while using an analog interface with your appliance. You may not configure multiple NICs without using the Web browser interface.
- Select Allowed Access Control to allow a particular IP address to access the network. Use this feature if all IPs become blocked. Allowed Access Control is the first level of network access control. It creates a of whitelist IPs that are allowed to access the network. You can set the next two levels— encrypted sessions and user management—using the Web interface.
- Select Disable NAC Blocking to disable NAC Blocking and stop blocking any assets currently being blocked. Use this feature if all assets become blocked and the appliance becomes inaccessible.
- Select Reset Network Interfaces to clear configurations for NICs. Configuration for all NICs except ETH0—the first network card used by your appliance—will be cleared. Use this feature if misconfigured NICs render the appliance inaccessible.
- Select Change Console Password to change the password required to view the console menu. You will be asked to provide the current password and confirm the new password. Please save your password for future use.

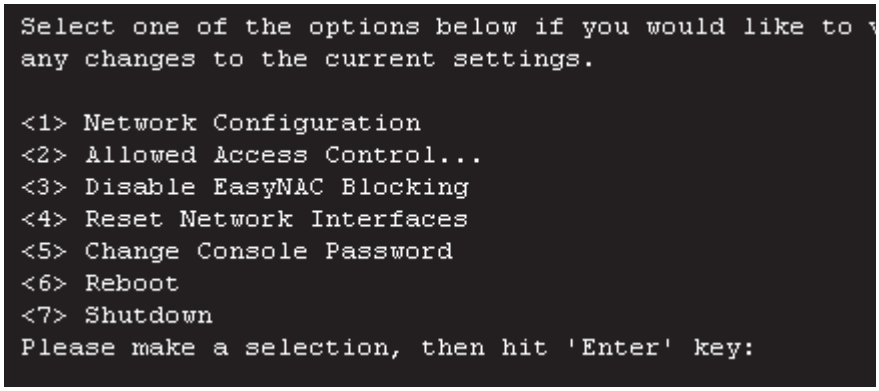


Figure 3-5. Change browser settings.

4. Setting Up Veri-NAC

4.1 Setting Company Information

Set up your company data after installing the appliance. Veri-NAC uses this information in your reports. For example, your company name appears on the first report page.

To enter company information:

• Select Setup→Company Information from the left menu. The Company Information box appears.

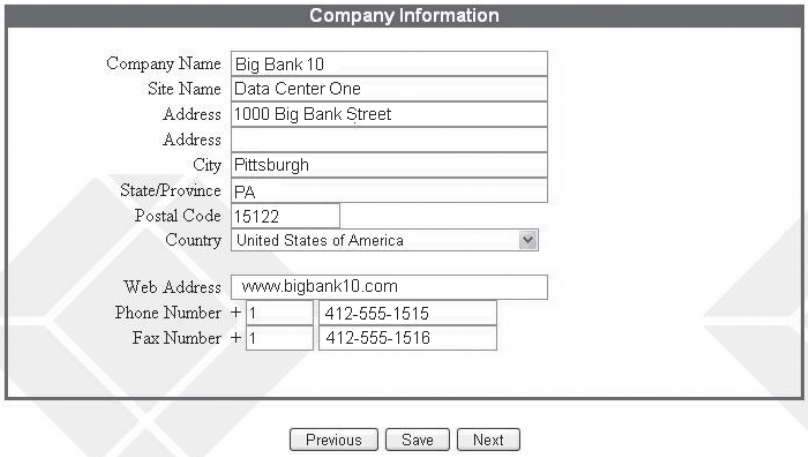


Figure 4-1. Company information screen.

• In the Company Name field, type the name of your company, division, or department, as you would like it to appear on reports generated by Veri-NAC. Only one company name can be specified for each Veri-NAC appliance.

• Enter additional company information in the remaining fields. You may include dashes or spaces in the Phone or Fax Number fields.

• Click either "Next" to proceed to Custom Reports or "Save" to retain all settings.

4.2 Customizing Reports

You can customize reports that Veri-NAC generates with your company name and logo. You may also use the default setup with the Black Box name and logo.

• Select Setup→Customize Reports from the left menu to go directly to Custom Reports.

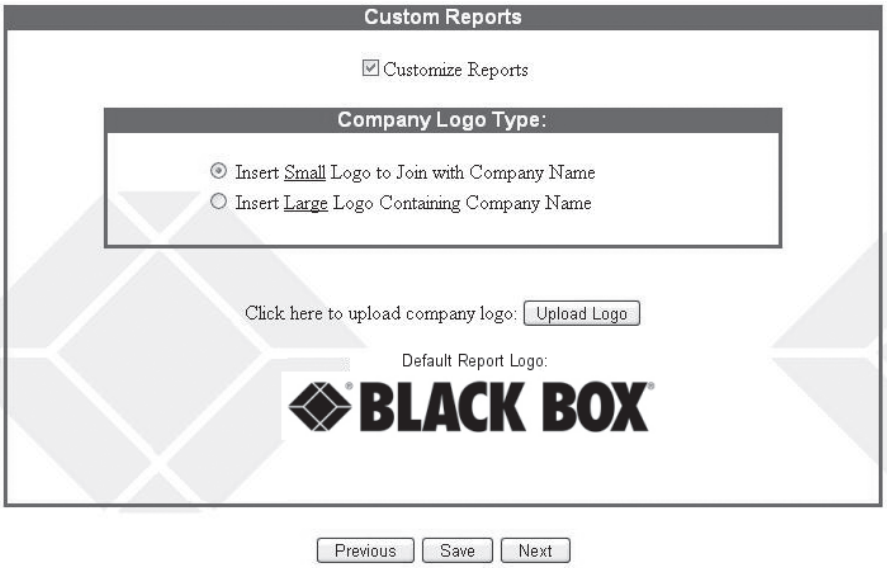


Figure 4-2. Customize reports screen.

- If you'd like the Black Box company name and logo to appear on your reports, do not check the Customize Reports box. Click either "Next" to proceed to the following item or "Save" to retain all settings.
- If you'd like to include your company name and logo on all reports, check the "Customize Reports" box at the top of the Custom Reports box.
- Select a logo option—either a large logo that contains your company name or a small logo without the name.
- Click "Upload Logo" to add your company graphic to the reports.

NOTE: The company logo must be in JPEG format. If it does not include company name, the logo should be no larger than 480x65 pixels. If it does include the company name, the logo should be no larger than 480x95 pixels. You are prompted if the .jpeg image cannot be loaded.

- Click either "Next" to proceed to Notification Information or "Save" to retain all settings.

4.3 Setting Report Notification Information

To specify who to contact each time an audit runs and reports are available for review, equipment is missing/non-responsive (potentially crashed), or new systems have been dynamically detected:

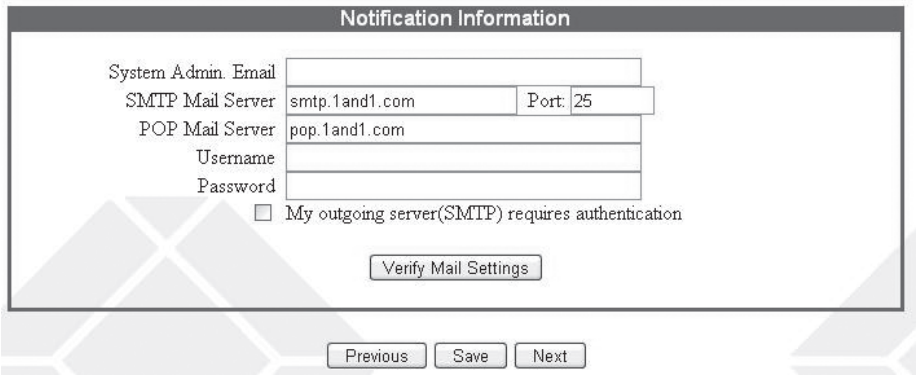


Figure 4-3. Notification screen.

- Select Setup→Notification from the left menu to go directly to Notification Information.

- In the System Admin. Email field, type the e-mail address(es) of people who should be notified. You may indicate up to 10 e-mail addresses, separated by commas, semicolons, or spaces. We recommend listing at least one e-mail address.

NOTE: E-mails and cell phone numbers you provide here apply to all types of alerts. Later you have the option of adding or removing e-mail addresses for Inventory Alerts (missing equipment) or DDS (dynamic detection) alerts, as well as setting contacts only for asset alerts.

- In the SMTP Mail Server field, type the name of the outgoing mail server for sending the e-mail notifications (for example, mailsrv.mycompany.com).
- Type the name of the POP mail server you wish to use for sending e-mail notifications in the POP Mail Server field.
- Enter the username and password to the POP mail server account for Veri-NAC in the Username and Password fields. If you have not set up a separate account for Veri-NAC, you can use another POP mail server account.
- Click the check box if your outgoing mail server requires authentication.
- Click either "Next" to proceed to Regulations and Security Programs, "Previous" to return to the earlier item, or "Save" to retain all settings.

4.4 Selecting Regulations and Security Programs for Compliance

Companies are becoming increasingly reliant on various regulations to ensure their businesses are run within legal parameters. Veri-NAC allows you to specify regulations and security programs important to your company.

- Select "Setup→Regulations" from the left menu to go directly to Regulations and Security Programs. The Regulations and Security Programs box appears.

Figure 4-4. Regulations and security programs screen.

There are three sections in the Regulations and Security Programs box: U.S. Regulations, International Regulations, and several credit card merchant Security Programs.

- Select the appropriate U.S. or International Regulations. U.S. Regulations are defined in Table 4-1. You may choose as many as required for your company.
- Select the credit card merchant program that you need to comply with under Security Programs.
- Click either "Next" to proceed to SNMP Trap Setup, "Previous" to return to the earlier item, or "Save" to retain all settings.

Table 4-1. U.S. regulations and applicable industries.

Regulation	Full Title	Industry
ESIGN	Electronic Signature	Any industry using electronic signatures, including banking and retail.
Bank Secrecy Act	Bank Secrecy Act	Banking and financial.
Sarbanes-Oxley	Sarbanes-Oxley Act	Public companies that provide or employ auditing services.
21 CFR Part 11 FDA	Food and Drug Administration Title 21 CDR, Part 11	Pharmaceutical companies.
DoD Compliance	Department of Defense Compliance	Compliance with all arms control agreements that require protection of sensitive data.
ISO-27001/17799	International Standards Organization	Any industry concerned with security and developing a sound security policy; they are standards, not regulations.
GLBA	Gramm-Leach Bliley Act	Banking and financial.
HIPAA	Health Insurance Portability and Accountability Act	Health care providers and insurers.

4.5 SNMP and Syslog Notes

The Veri-NAC SNMP Trap includes summary vulnerability information for each audit performed. This information consists of IP addresses and their number of vulnerabilities.

Black Box LVN5400A, LVN5600A, and LVN5800A OID is 1.3.6.1.4.1.26392, and Trap ID is 1.3.6.1.4.1.26392.1. Trap message is in the format of:

Host|serious, high, medium, low|

Veri-NAC Syslog message is detailed vulnerability information for each audit performed. Syslog message is in the format of:

host|service|testNumber|riskLevel|details|solution|CVE|BID

4.6 Setup SNMP Traps and Syslog

- Select "Setup→Syslog/SNMP Traps" from the left menu to go directly to the SNMP Trap Setup and Syslog Message Setup boxes.
- Select "SNMP Version." Enter the SNMP Trap Port, SNMP Community, and Manager IP Address that the Veri-NAC will send trap messages to. By default, Veri-NAC uses UDP port 162.

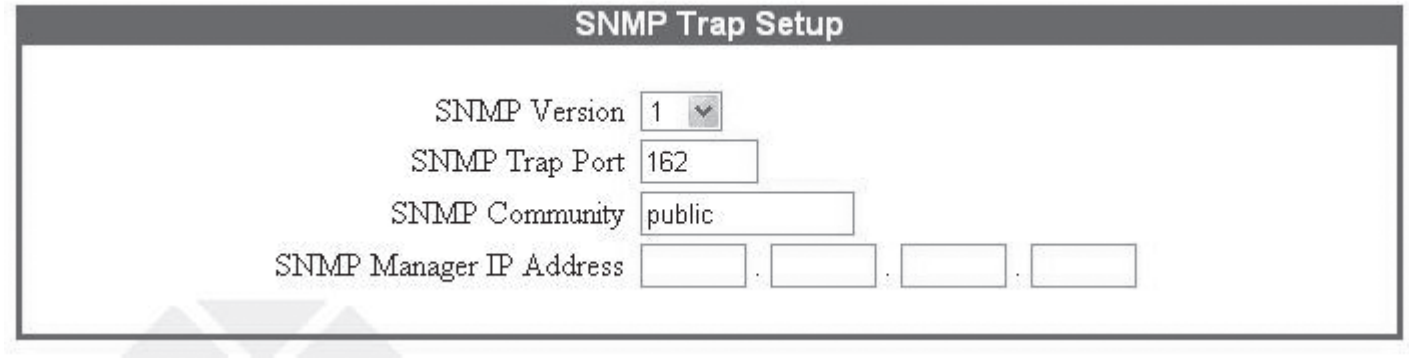


Figure 4-5. SNMP Trap Setup screen.

- Enter the Syslog Port Number and Syslog Server IP Address. By default, Veri-NAC uses UDP port 514.
- Click "Save."

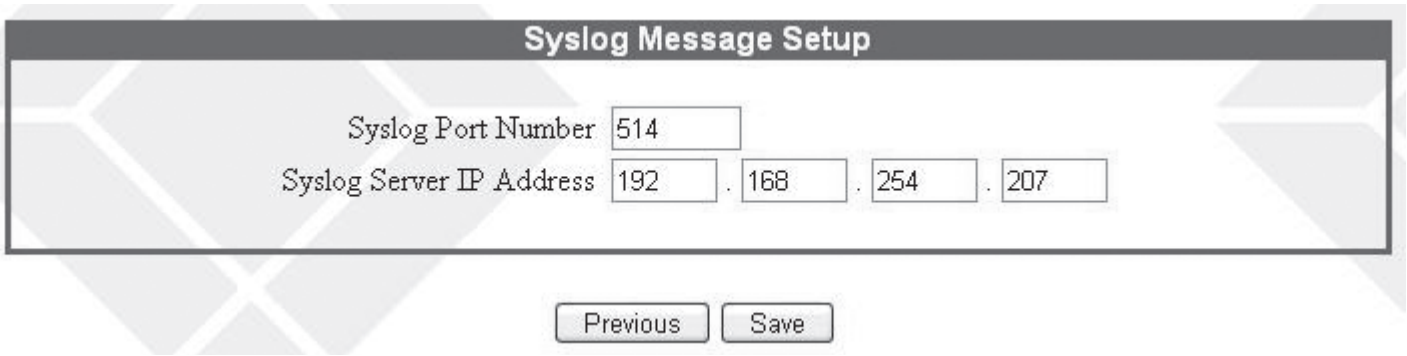


Figure 4-6. Syslog Message Setup screen.

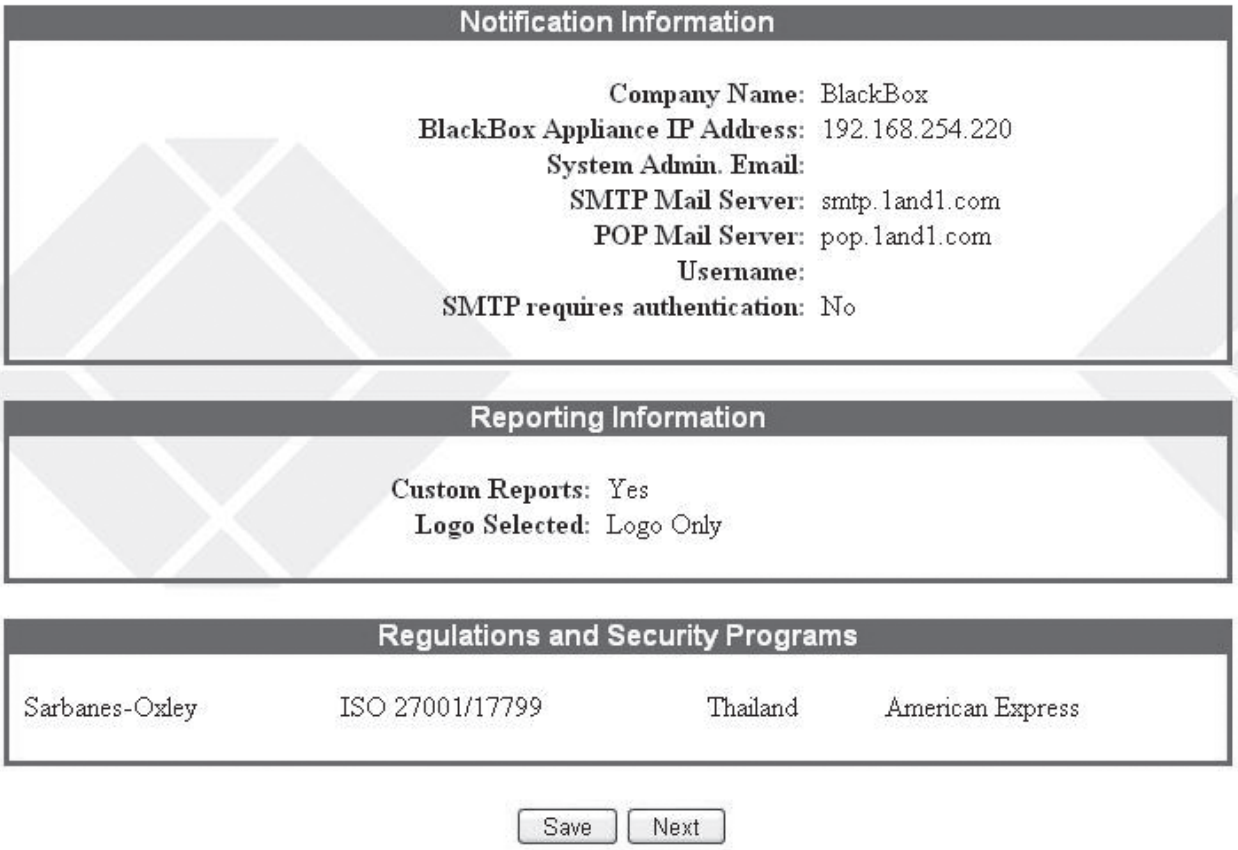


Figure 4-7. Notification/Reporting Information and Regulations and Security Programs screens.

4.7 Setting System Date/Time

Set the date and time the first time you log into Veri-NAC.

• Click "System→Date and Time" to set the date and time on your initial Veri-NAC use. The Change Date box appears.

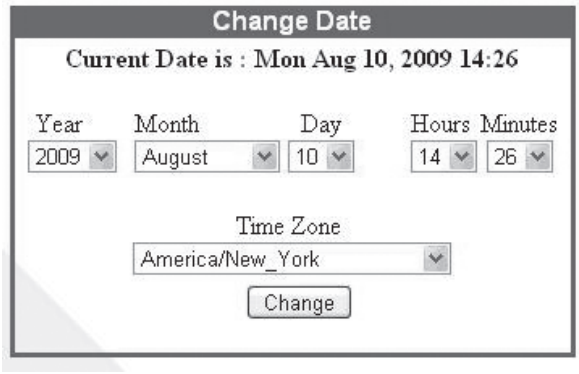


Figure 4-8. Change Date box.

• Click the arrows to set or update the system date and time information. Then click the "Change" button to put the new date and time into effect. Daylight savings time changes occur automatically.

• Click "Save."

4.8 Setting Up User Accounts

Create Veri-NAC user accounts on three levels—manager, IT staff, and NAC user—based on actions you wish the user to be allowed to take. The main account that comes with Veri-NAC is a manager. Only manager users can create other users. All manager accounts can create accounts for subordinate managers and IT staff, but the main account can create the entire structure of users if he/she desires. NAC users have Network Access Control functionality only—they can control setup and maintenance of the Veri-NAC and systems to be audited, but are not involved in vulnerability remediation.

4.8.1 Understanding Relationships between User Types

Any manager may reassign a job to another user (IT user or manager) who works for him/her. If a job is not assigned and becomes escalated, all managers receive an e-mail about the job escalation.

IT staff can view reports, but only manager users can create Executive/Manager reports or query the database through Reports→Query.

A summary of the actions each user type can take is listed in Table 4-2.

NOTE: The user's direct manager receives an e-mail after a job is assigned to the user or when a job assigned to the user is escalated (past its due date).

Table 4-2. User types.

*Manager	**IT Staff	NAC User
• All administrative tasks • Add more users • Access all levels of reporting • Set person-hour allocations • Reassign tasks • Access all information in workflow management system	• Access workflow to see open tickets/jobs • Select jobs (assign to oneself) • Access vulnerability reports • Enter workflow comments on assigned jobs	• Access Network Access Control menu only • Can perform NAC functions only—cannot access workflow

*Managers can perform all IT staff functions.

**IT staff can perform all NAC user functions.

NOTE: As main account, create all top-level managers first. You may also create IT staff accounts that work directly for you. Delegate creation of remaining accounts in Veri-NAC. Any manager creating accounts should enter subordinate managers first, then IT staff users.

4.8.2 Sample Users in Organizational Structure

The main account is created when you set up Veri-NAC. You cannot remove it, but you may change the login/password. The main account cannot create peer managers and remains the lone top-level user in the hierarchy. Main account is not required to create any other managers, and, if you have a simple structure, all other users may be IT staff users.

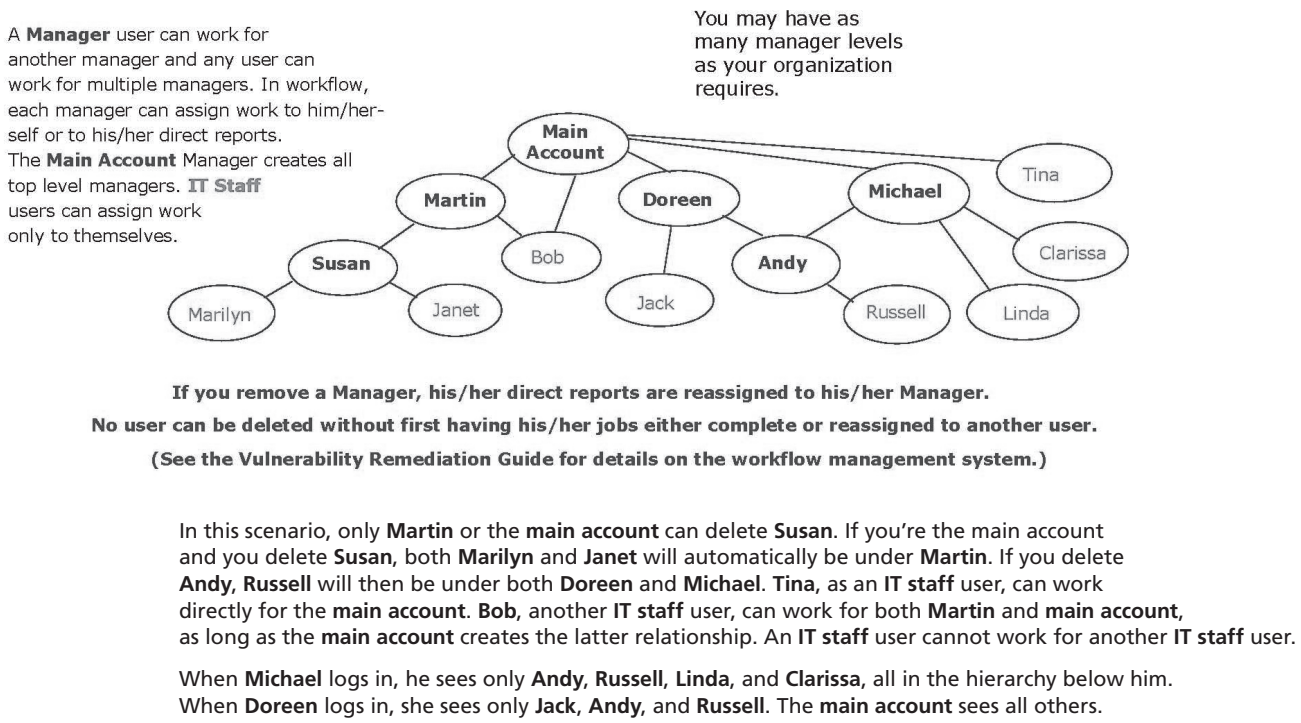


Figure 4-9. Organizational structure.

The main account is the only user who can change his/her own login ID. For all other users, the parent manager must make that change. The currently logged in user can change his/her account, with the following restrictions:

A user may not change his/her own:

- Access level (from Manager to IT staff or vice versa)
- Manager
- Login ID, unless you are main account

4.8.3 Creating or Editing User Accounts

To create or modify user accounts:

• Select "System→User Management" from the left menu. A list of existing users appears (initially, only main account is shown).

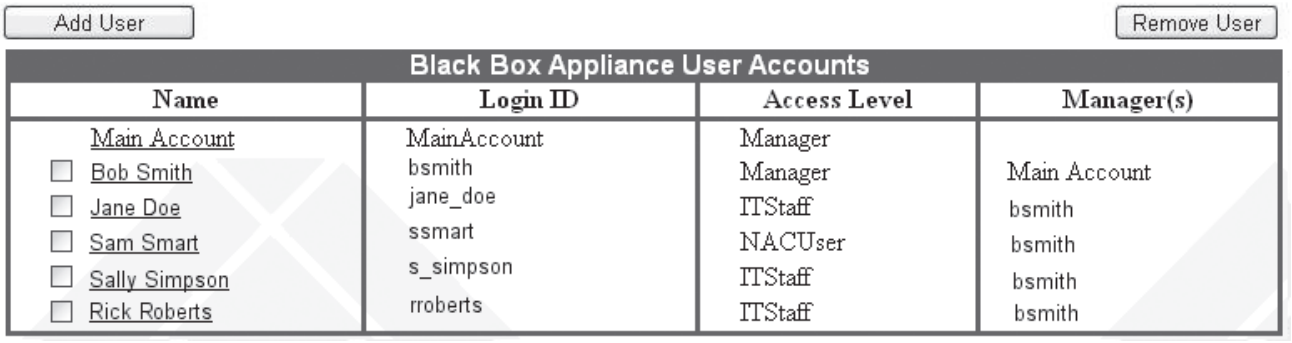


Figure 4-10. Veri-NAC user accounts.

4.8.4 Account User Name

To add a user:

• Click the "Add User" button to go to the User Account Wizard. The Veri-NAC Account User Name box appears. (We suggest you add managers first.)

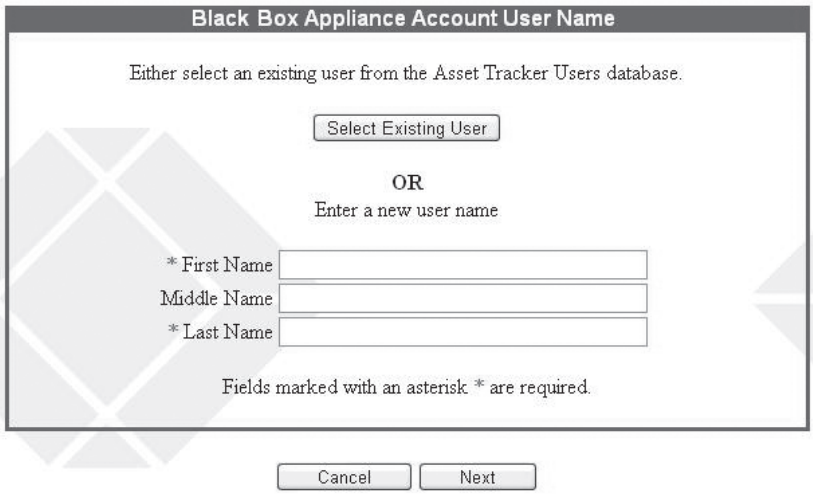


Figure 4-11. Account user name box.

• Click the "Select Existing User" button to select a person already in the Asset Tracker database.

• Or, you may create a new user account by filling in the requested name fields.

• Click "Next" to continue.

4.8.5 Veri-NAC Access Level

- Enter Managers first. Veri-NAC puts managers into a pull-down list you later use to assign managers to each user. If an IT Staff user is not assigned a manager, whoever creates the user account is automatically considered that user's manager.

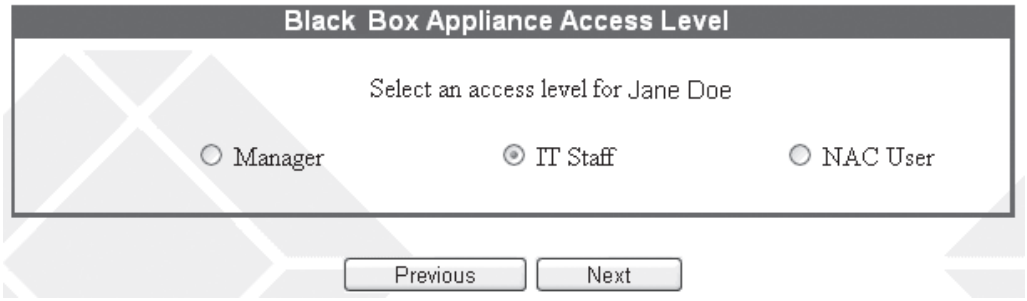


Figure 4-12. Access level screen.

- Click "Next" to continue.

4.8.6 User Details

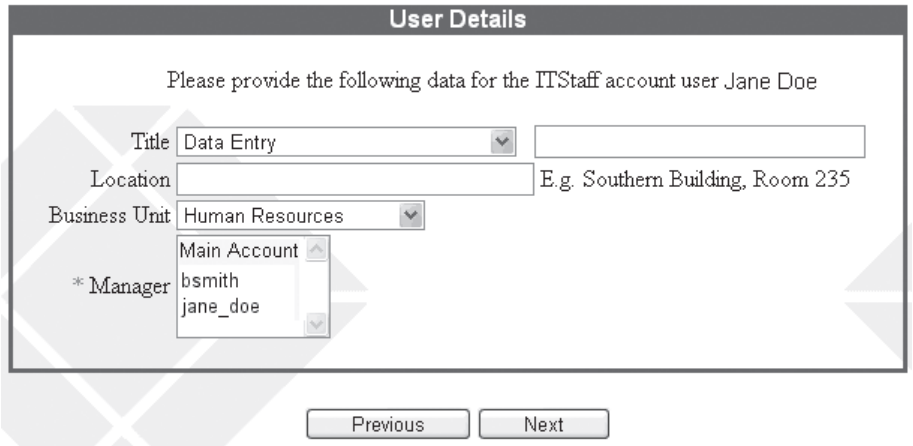


Figure 4-13. User details.

- Enter requested information for Title, Location, and Business Unit.
- Select a manager.

Only the manager field is required. If you do not select a manager for the new account, Veri-NAC assigns you—the creator of the account—as the manager. If you do not assign an IT staff user a manager, whoever creates the user account is automatically the manager.

- Click "Next" to continue.

4.8.7 Contact Information

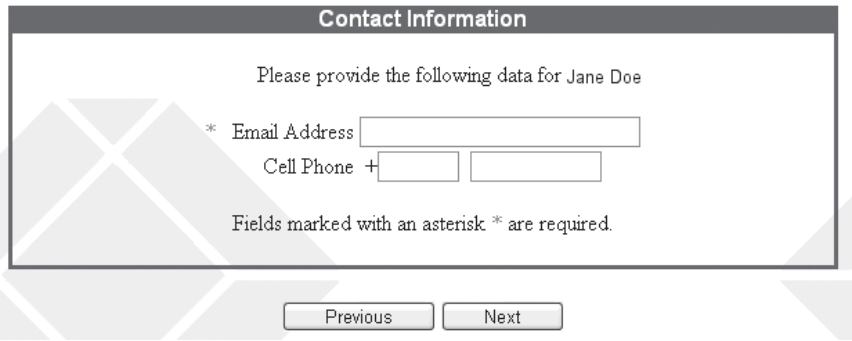


Figure 4-14. Contact Information screen.

• Enter the e-mail address and cell phone number for the new account.

NOTE: E-mail addresses must be unique in the User Management system.

• Click "Next" to continue.

4.8.8 Veri-NAC Account User Name

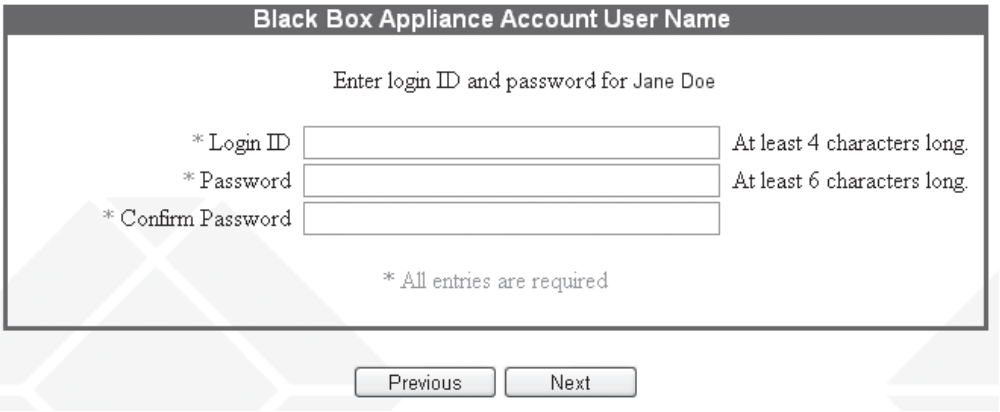


Figure 4-15. Account User Name screen.

• Enter the login ID and password for the user account.

• Click "Next" to continue.

4.8.9 Created Account

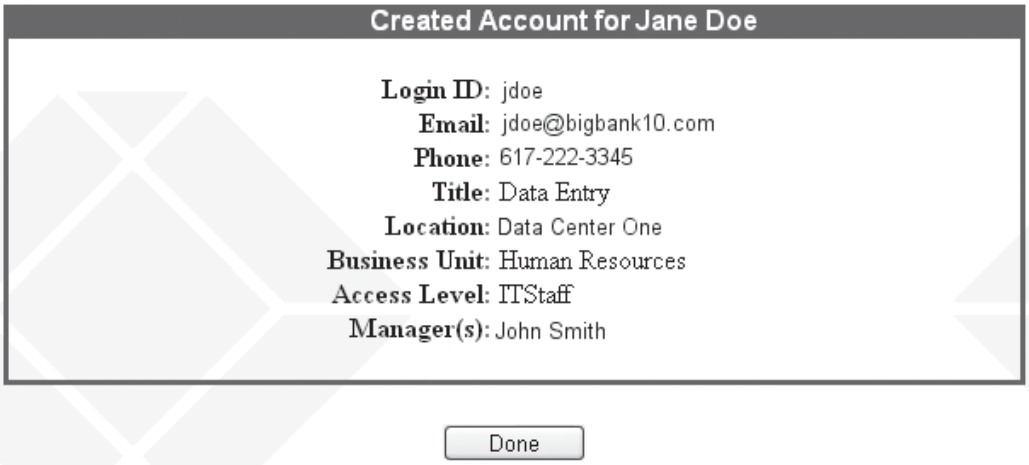


Figure 4-16. Created Account screen.

- Check the data you entered for accuracy.
- Click "Done" (below the box) to see the new account appear in the list.

4.8.10 Viewing List of User Accounts

You see your name at the top of the Audit User Accounts list with no check box next to it if you log in as a manager user. Everyone who works for you, at every level, appears in the list below you with a check box to the left of each name.

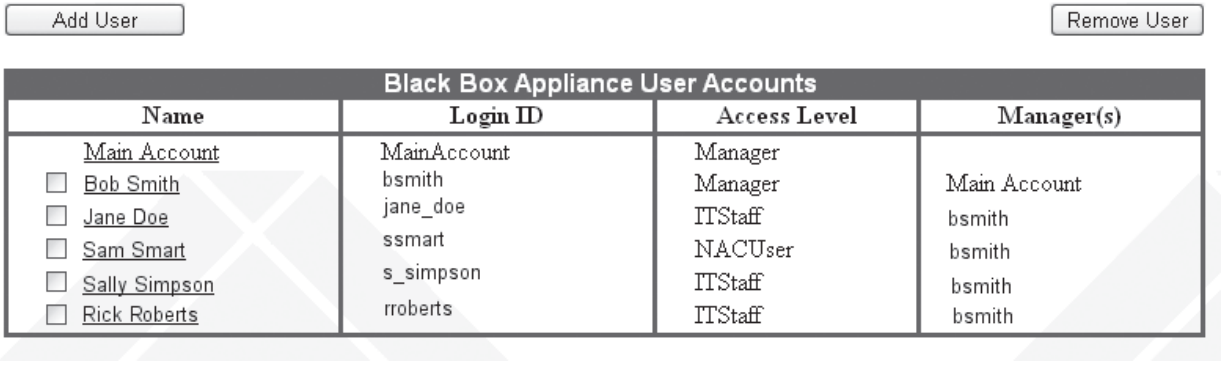


Figure 4-17. List of User Accounts.

- To remove a user, select the check box next to the name and click the Remove User button. You are prompted to confirm the deletion.
- Click "Continue" to confirm or "Cancel" to change your mind. You'll return to User Management: Audit User Accounts.

To edit a user:

- Click on the name and link to the User Account Wizard. (The name of the manager logged in does not have a check box in front of it because you can't delete your own account.)

4.8.11 Coordinating User Accounts with Asset Tracker User List

When you create a Veri-NAC account for a user who is already in the Asset Tracker User List, Veri-NAC recognizes the user name and coordinates the information.

If you delete a user from the Asset Tracker User List, Veri-NAC also removes the user account created under User Management.

However, if you delete a user account under User Management, the user remains in the Asset Tracker User List. Theoretically, the person could still be an employee but no longer have access to the Veri-NAC.

4.9 Setting Up 802.1q VLAN Tagging

Example 1: Two Network Interface Cards (NICs) enabled on the Veri-NAC.

Eth0 is a management interface; Eth1 is connected to the trunk (tagged) port of the switch.

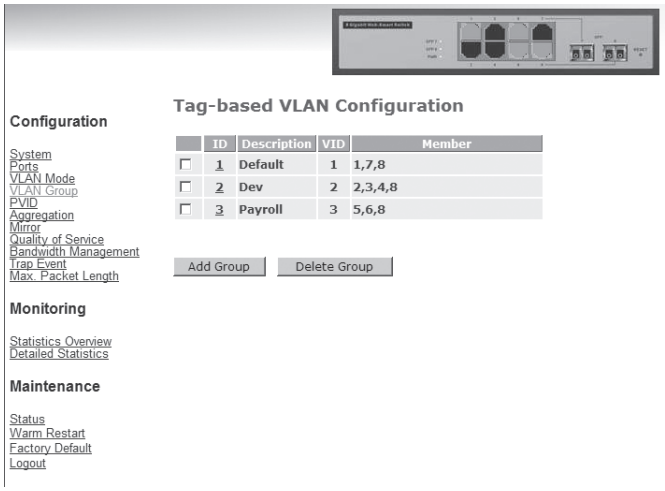


Figure 4-18. Black Box Smart Switch (LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) VLAN configuration.

Table 4-3. VLAN ID/Member Port/Subnet setting,

VLAN ID	Member Port	Subnet Setting
1 (Default)	1, 7, 8	192.168.254.0/24
2 (Dev)	2, 3, 4, 8	192.168.22.0/24
3 (Payroll)	5, 6, 8	192.168.33.0/24

NOTE: Port 8 is tagged.

Veri-NAC version 7.1 includes the following menu:

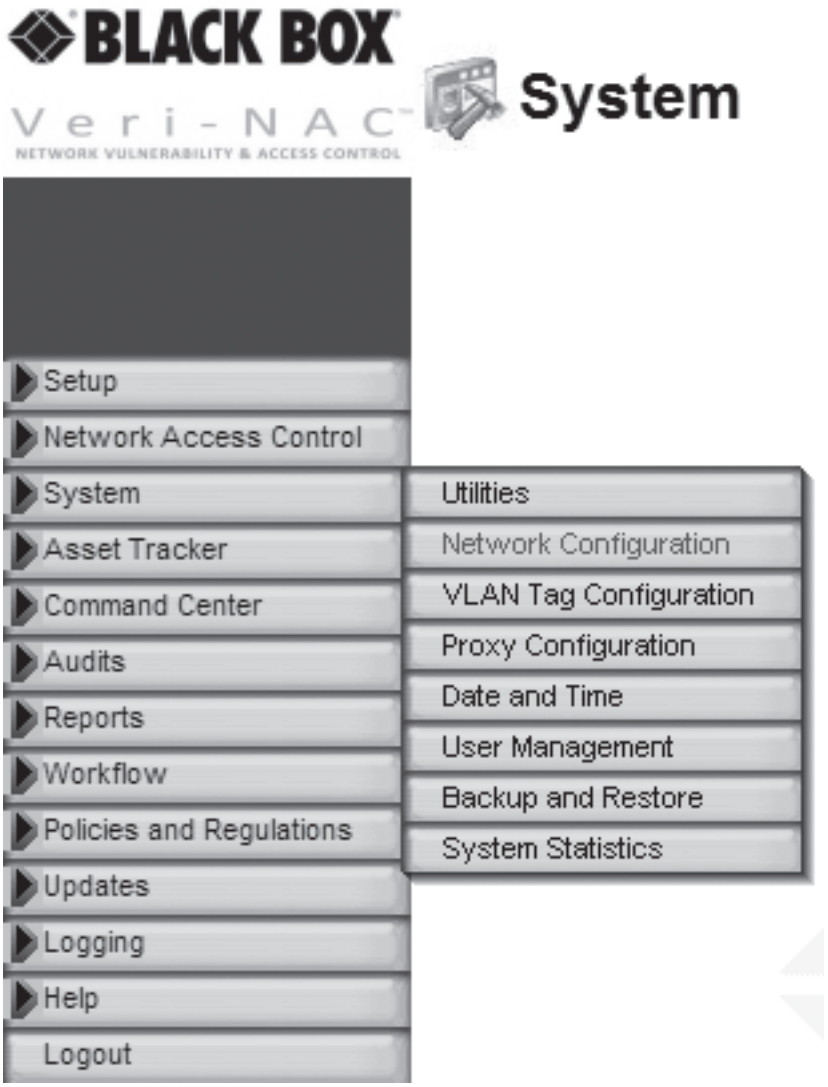


Figure 4-19. System menu.

4.9.1 VLAN Configuration Steps

1. Select "System→VLAN Tag Configuration."
2. Select the physical interface that connects to the tagged port of the switch (eth1).
3. Enter the VLAN Tag number, IP, and subnet mask for the tagged interface.
4. Check "Enable."
5. Click "Save" to activate the tagged interface.

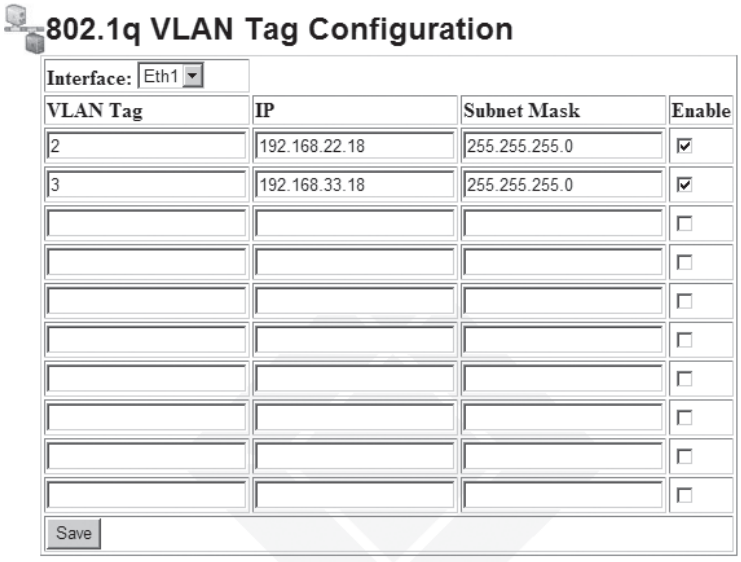


Figure 4-20. VLAN tag configuration.

4.9.2 Network Configuration

Follow these steps:

1. Go to System→Network Configuration
2. Select "NIC eth1."
3. Set up a static IP information on eth1 to any number (do not duplicate an existing interface/VLAN configuraton).
4. Click "Save."

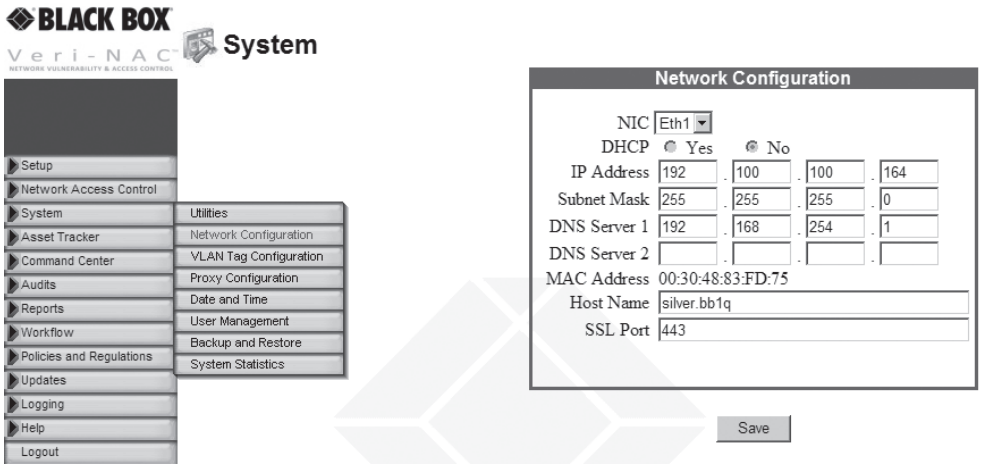


Figure 4-21. System menu, Network Configuration screen.

To find assets on the VLANs:

1. Go to Network Access Control→Asset Discovery.

2. Select the sub-interface for the VLANs for which you want to discover assets (eth1.1 or eth1.2).

3. Click "Refresh IPs."

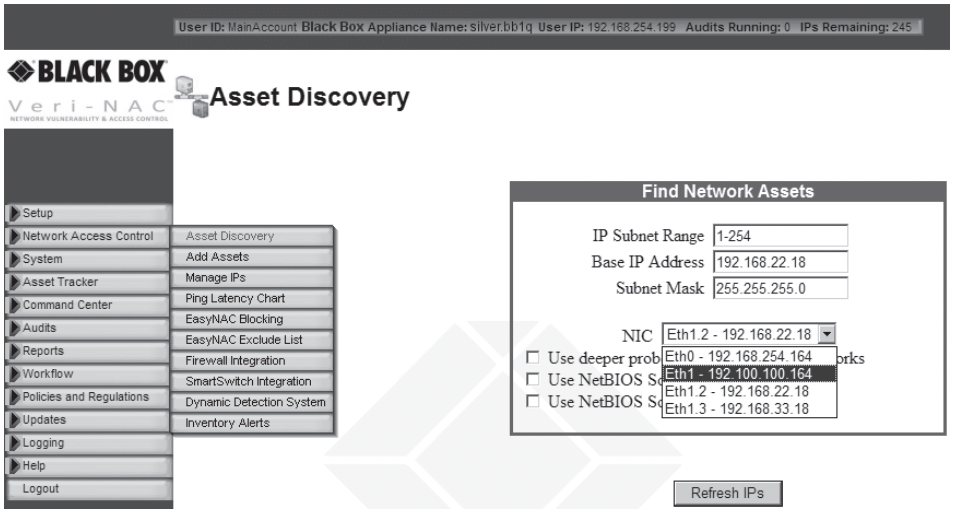


Figure 4-22. System menu, Asset Discovery screen.

After the Asset Discovery process is finished, you will be redirected to the Manage IPs page.

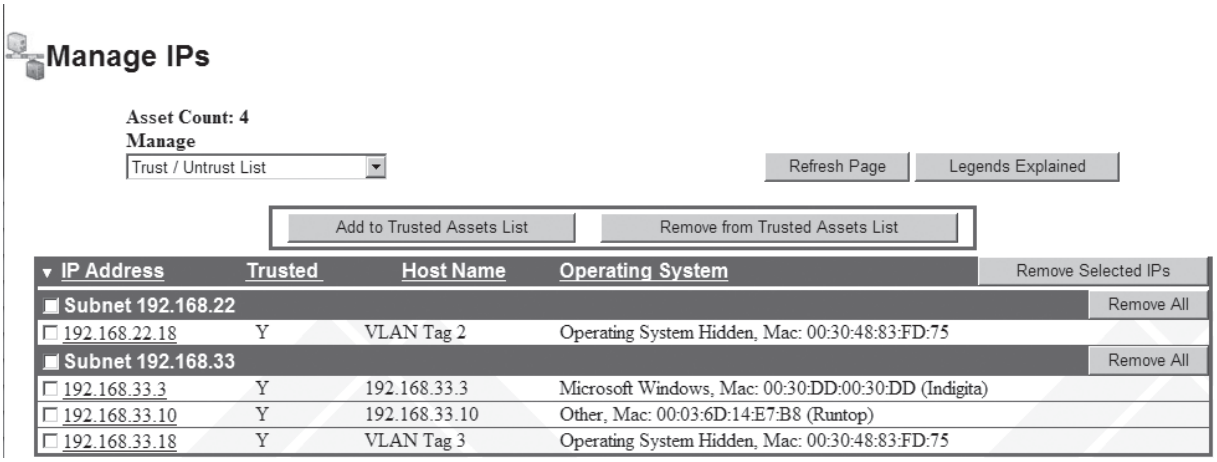


Figure 4-23. Manage IPs screen.

NOTE: If you have multiple VLANs, repeat this process again and just change the sub-interface.

5. Setting Up Network Access Control

5.1 Initiating Network Asset Discovery

Before Veri-NAC can check your assets, it must first find them on your network. All you have to do is press a button and Veri-NAC will discover assets on its own. To ensure Veri-NAC finds all assets, be sure all assets are powered on before you initiate the discovery process.

Different types of Black Box appliances can detect and protect varying amounts of network devices on varying numbers of subnets:

Table 5-1. Devices protected by Veri-NAC.

Appliance (Part Number)	Number of Devices Protected	Number of Accessible Subnets
LVN5200A	Up to 250	One subnets
LVN5250A	Up to 500	Two subnets
LVN5400A	Up to 6000 via LVN5200A/LVN5250As	Up to four local subnets
LVN5600A	Up to 51,500 via LVN5200A/ LVN5250As	Up to six local subnets
LVN5800A	Up to 100,000 via LVN5200A/LVN5250As	Up to eight local subnets

• Select Network Admission Control→Asset Discovery from the left menu. This takes you to the Find Network Assets box.

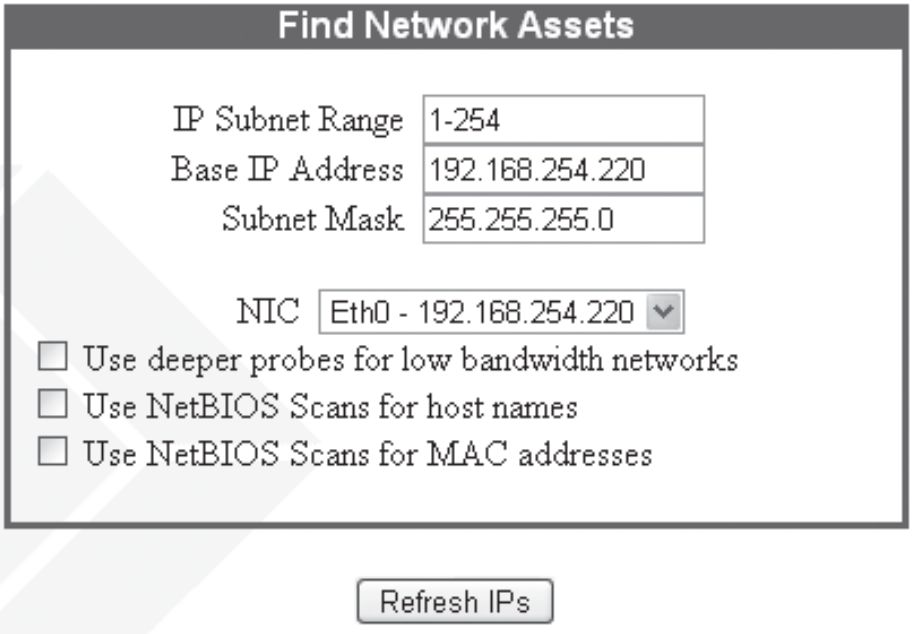


Figure 5-1. Find Network Assets screen.

• Enter the IP Subnet Range of IP addresses you want Veri-NAC to include (or the range of additional addresses if you already executed an initial discovery), the Base IP Address, and Subnet Mask.

Use the same subnet mask you used for your network definition.

To determine the subnet mask in Windows, start a command prompt window and enter the command ipconfig.

To determine the subnet mask in Linux, enter the command ifconfig at the command line prompt.

- Check the "Use deeper probes for low bandwidth networks" box to give Veri-NAC more time to scan your assets on low bandwidth networks.

NOTE: Deeper probes perform a more intensive search for information about your systems and take longer. If you Refresh IPs and don't get the information you thought you would find, check the "Use deeper probes for low bandwidth" networks box and Refresh IPs again. We suggest you run the Refresh IPs without deeper probes initially and then use deeper probes later if necessary.

- Click the "Refresh IPs" button below the Find Network Assets box.

Refresh IPs directs Veri-NAC to examine the network and discover IP addresses of machines on the network, including routers, firewalls, printers, and other devices as well as desktops, workstations, and servers. Later, you can include these systems in audits.

After the refresh runs for some time, a text box appears with addresses found to date. The list first shows IP addresses found quickly and fills in the Host Name and Operating System as found. You can scroll up and down the list using the scroll bar to the right.

The results show IP Address, Host Name, Operating System, and MAC Address.

- You can wait for the refresh to complete or you can stop it in process by clicking the "Stop Refresh" button (below the list) at any time. A text box listing the information gathered so far appears.

List Category	Description
Untrust	Asset that has not been given permission to be on the network.
Trust and Audit-exempt	Known, clean asset that does not need to be scanned regularly.
Trust and Firewall/SmartSwitch safe	Known, clean asset that does not need to be blocked/quarantined at the Firewall or SmartSwitch.
Trust	Known, clean asset considered part of the company's resources.

Figure 5-2. Refresh Network Assets results.

When you stop the refresh mid-stream, you have three options for saving the information to the database.

Table 5-2. Saving Veri-NAC information.

Option	Action
Don't Save	Takes you back to the Find Network Assets box.
Save Completed List	Saves only those assets for which all four fields have been filled in to date.
Save Entire List	Saves all data including assets with only partial information.

5.1.1 Enabling NetBIOS Scans

Enabling NetBIOS Scans for Windows host names or MAC addresses will enable Veri-NAC to use NetBIOS scans to scan assets for host names or MAC addresses when none are found via the usual reverse DNS scan.

- Select "Network Access Control→Asset Discovery."
- Click "Enable NetBIOS Scans For Windows Host Names" or "Enable NetBIOS Scans for MAC Addresses."
- Click "Save."

5.1.2 Reviewing the List of IP Addresses

After the Refresh IPs process completes, Veri-NAC takes you to the Manage IPs page. You can review your asset list from here.

5.1.3 How Veri-NAC Generates the List of IP Addresses

By default, if the discovery process finds any IPs that duplicate existing ones, the latest hostname and operating system overwrite the old ones.

NOTE: On some systems, the operating system that IP Refresh finds may not be the one you entered when you added the IP address manually.

NOTE: Any IP address behind a firewall could remain hidden from the IP Refresh operation and may not appear in the list. Add any unfound addresses manually if you want them audited, or disable the Firewall and run the Asset Discovery again.

5.1.4 Performing Asset Discovery Using Multiple NICs

To perform an Asset Discovery using multiple Network Interface Cards (NICs), please refer to Section 9.7.

5.2 Adding and Deleting Nodes from Subnet

When you add or delete nodes on your network, you can run the refresh utility to update the IP address database by clicking the "Refresh IPs" button on the Asset Discovery page. The refresh operation runs immediately.

You must click "Refresh IPs" every time you make a change to the number of IPs on your network. Note that if a node is powered off when Veri-NAC runs the refresh operation, Veri-NAC will not find that IP address.

5.2.1 Adding IP Addresses Manually

After you run an asset discovery process, you may want to manually add more IPs.

- You can manually add IP addresses by selecting "Network Admission Control→Add Assets." This takes you to the System Information box. The IP Address field is required.

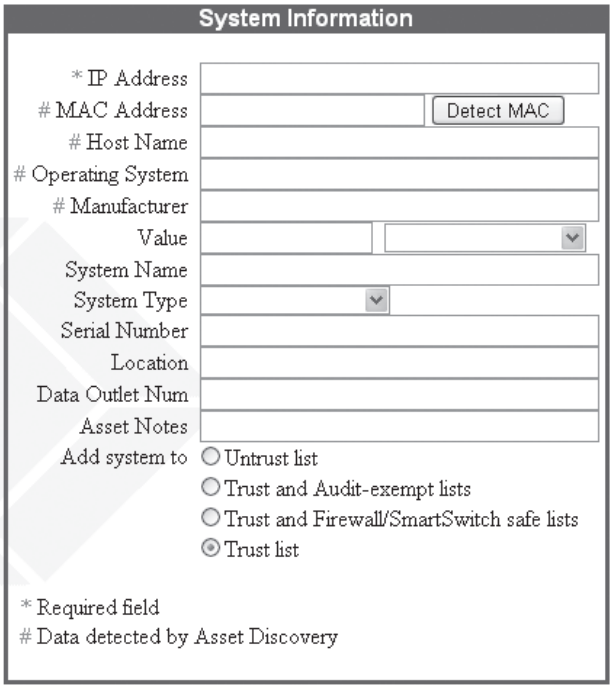


Figure 5-3. System Information box.

If you are unsure of the MAC address, click the "Detect MAC" button after you enter the IP address. The MAC address is filled in automatically if the asset is online. If you have to add an asset manually because the Asset Discovery process failed to find it, the Detect MAC button will probably not find it either.

Host Name, Operating System and Manufacturer may also be filled in automatically, depending on current information available for that IP Address.

NOTE: Required fields (marked with an asterisk) must contain information. After you add system data, check the System Information page again. The MAC Address, Host Name, Operating System, and Manufacturer may be filled in for you.

We strongly recommend you only change the MAC Address and Host Name fields if it is absolutely necessary.

NOTE: If Veri-NAC detects the MAC address, the asset is tracked with that address. If, at some point, the IP address of a known MAC address changes, it does not affect your license.

If Veri-NAC is unable to determine the MAC address during the discovery process, the asset is still added to the database. However, if the IP address of an asset with an unknown MAC address changes, it does affect your license.

- Fill in the remaining fields on the page. Table 5-3 gives an overview for each field.

5.2.2 System Information Fields

Table 5-3. System information fields options.

Field	Overview
IP Address (required)	A standard IP address in ###.###.###.### format.
MAC Address	Veri-NAC may fill this field in for you. If you are unsure of the address, click the "Detect MAC" button.
Host Name	If you do not include the information, this field may be supplied by Veri-NAC.
Operating System	The software system used on the asset. Veri-NAC may complete this field for you.
Manufacturer	Name of company that produced the product.
Value	Monetary value of the asset. Choose from more than 35 international currencies.
System Name	The name of the asset—not necessarily the host name. This name is for your own use. It allows you to identify the system. You can use alphanumeric characters, hyphens, and underscores.
System Type	System type—such as laptop, desktop, e-mail server, wireless. Choose from 14 options such as application server, file server, router, etc. from the pull-down menu.
Serial Number	Alphanumeric characters as well as hyphens are allowed.
Location	Description of the system location, such as building, wing, office area, lab, etc.
Data Outlet Number	The number of the line that plugs into the computer, such as A3.
Asset Notes	Anything you may wish to note about the asset that does not fall into the other fields provided.
Maintained by	Name of individual who maintains the system—such as the system administrator responsible for the asset's subnet or the manager of the user's group.

- The four radio buttons at the bottom of the box allow you to place the asset into one of four categories. You can manage your assets more efficiently if you use specific classifications. List categories are defined below. More information is available in Section 5.4, IP Categories.

5.2.3 List Categories

Table 5-4. List catgeory options.

List Category	Description
Untrust	Asset that has not been given permission to be on the network.
Trust and Audit-exempt	Known, clean asset that does not need to be scanned regularly.
Trust and Firewall/SmartSwitch safe	Known, clean asset that does not need to be blocked/quarantined at the Firewall or smart switch.
Trust	Known, clean asset considered part of the company's resources.

- When you finish, click "Add System" below the System Information box to enter the asset into the database.

5.3 Managing IP Addresses from Veri-NAC

5.3.1 Manage IP Overview

- Select "Network Access Control→Manage IPs."

The Manage IPs page appears. This page allows you to oversee and administer your IP addresses. For example, you can add or remove IPs from specific lists, delete an IP or the entire subnet, change an asset's trust level, etc.

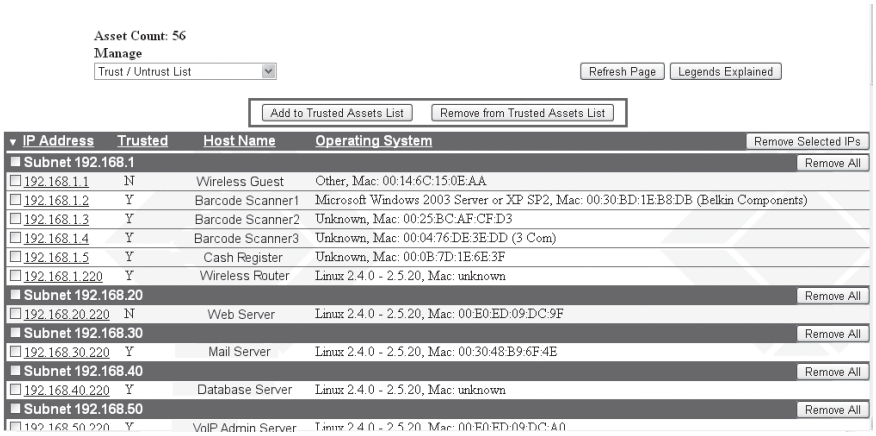


Figure 5-4. Manage IPs page.

You can view assets and make changes from the Manage IPs page. All IPs are classified based on the category you assigned to it when you added the asset to the database (Trust, Untrust, Trust and Audit-Exempt, Trust and Firewall/Smart Switch Safe). The five Manage IP lists and actions you may take for each are described in the two tables below.

5.3.2 Manage IP Lists

Table 5-5. Manage IP lists options.

List	Description	Systems Displayed	User Actions
Trust/Untrust	Shows all company resources considered "trustworthy," except mismatched assets with no assigned IP address.	All systems except MAC IP mismatch.	Move a system from Trusted to Untrusted, and vice versa.
Auditable/ Audit-Exempt	Subset of Trust list. These are assets you want Veri-NAC to scan during an audit.	All trusted systems except MAC IP mismatch.	Move a system from Auditable to Audit-exempt and vice versa.
MAC IP mismatch	Assets that have changed IP address since the last scan. (May be trusted or untrusted).	Any system where the MAC address is known but the IP address is not.	Run a full Asset Discovery or manually update the IP address to resolve the mismatch.
Firewall Smart Switch Safe	Assets deemed secure or assets for which it is essential to retain full access. Not blocked under any conditions.	Trusted systems that are not Audit-Exempt. MAC IP mismatch items are not included.	Add or remove trusted, auditable systems to the Safe List. Assets in the Safe List are not blocked at either the Firewall or Smart Switch.

More information about these lists is available in IP Categories, Section 5.4.

Each list shows assets in that category. If an IP address row is red, it is an Untrusted Asset. If it is green, it is a Wireless Access Point (WAP). Audit Exempt and Firewall/Smart Switch Safe assets as well as those allowing the Firewall to be disabled are marked with icons.

Table 5-6. Icon/condition.

Icon/Color	Condition
	Audit Exempt
	Firewall/SmartSwitch Safe
	Disable Firewall
Red Color	Un-trusted Asset
Green Color	Wireless Access Point (WAP)

All five Manage IP lists display the IP address, the host name, and the operating system for each asset in that list. The fourth column varies depending on the list. For example, the Auditable List contains a column to flag Audit Exempt items; the Trust List tells you if an asset is deemed Trusted, etc.

You may also take different actions depending on the list. For instance, the Endpoint Defender List allows you to Deactivate Client Firewalls during Audits (and vice versa), or you can add or remove assets from the Audit Exempt List on the Auditable List page.

Options for all five lists are shown below.

Trust/Untrust List

Figure 5-5. Trust/Untrust Assets buttons.

Auditable/Audit-Exempt List

Figure 5-6. Audit Excempt buttons.

MAC IP Mismatch List

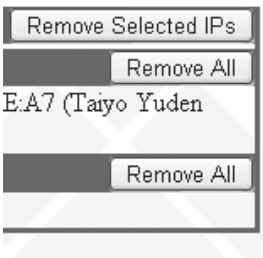


Figure 5-7. MAC IP Mismatch screen.

Firewall and Smart Switch Safe List

Figure 5-8. Safe List buttons.

5.4 IP Categories

All system information discovered on the network is stored in the Veri-NAC database. This data includes the MAC address and last known IP address for each individual asset, as well as the asset's host name and operating system (if known or provided).

You may enter asset information from several places in Veri-NAC, including the Network Admission Control→Add Assets page, the Network Admission Control→Manage IPs page, or the Asset Tracker→Systems page. Here, you can assign an asset to one of the following four IP categories/lists:

- Trusted/Untrusted Assets
- MAC IP Mismatch List
- Auditable/Audit-Exempt Systems
- Firewall and Smart Switch Safe List

5.4.1 Trusted/Untrusted Assets

All assets on a network can be broken down into two main categories: Trusted Assets and Untrusted Assets. Trusted Assets are considered part of the company's resources. Trusted assets meet requirements of the company policy allowing them to be on the network. Untrusted Assets are not considered part of the company's resources or have not been given permission to be connected to the network. (These systems are highlighted in red on the Network Admission Control→Manage IPs page.)

Figure 5-9. Trusted/Untrusted Assets.

5.4.2 MAC IP Mismatch List

At times, a system in the Veri-NAC database has a known MAC address but an unknown IP address. This occurs when a system initially has a MAC address (say MAC1) and IP address (say IP1). Later, Veri-NAC discovers a second system with MAC address of MAC2 and IP address of IP1. At this point, the IP address of MAC1 is unknown to Veri-NAC, so the MAC1 system is labeled with a MAC IP Mismatch. This may occur, for example, when a DHCP lease expired for the first system (MAC1). MAC IP Mismatched systems may be trusted or untrusted assets.

Figure 5-10. MAC IP Mismatch.

There are three ways a MAC IP mismatch may be rectified:

1. The new IP address is determined via the Asset Discovery feature.

2. A user can manually enter the new IP address by editing the system information through the Asset Tracker→Systems page.

3. The Dynamic Detection System discovers the new IP address.

5.4.3 Auditable/Audit-Exempt Systems

Trusted Assets may be designated as Auditable or Audit-Exempt systems. For obvious reasons, network administrators prefer that Audit-Exempt assets do not undergo an audit process. These assets might include network printers or the CEO's laptop computer. If a Trusted Asset is placed in the Audit-Exempt list, that asset does not appear in the Audit Wizard where you select the IP addresses for an audit. (These systems are highlighted with this icon on the Network Admission Control→Manage IPs page.)

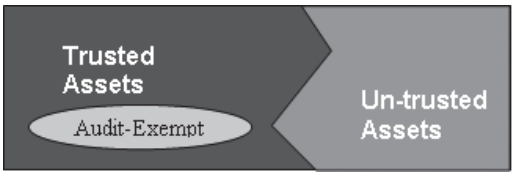


Figure 5-11. Audit-Exempt screen.

5.4.4 Firewall and Smart Switch Safe List

Trusted Assets that are not Audit-Exempt are considered "safe." These assets may be placed into a Firewall and Smart Switch Safe List. Assets in the Safe List will never be quarantined at a firewall or smart switch even if high vulnerabilities are found on those systems. One example of a "safe" system is a critical server where any downtime could cost the company money and productivity. (These systems are highlighted on the Network Admission Control→Manage IPs page.)

5.5 Deleting IP Addresses

You can delete an IP from any of the four lists.

- To delete all IPs from a subnet, click the check box next to the subnet you want to remove. When you do this, all IPs for that subnet are automatically selected. Click either "Remove Selected IPs" or "Remove All." Or, you can click "Remove All" to delete all IPs from the subnet selected.
- To delete individually selected IP addresses from the list of IPs, click the check boxes next to the IP addresses and then click the "Remove Selected IPs" button.

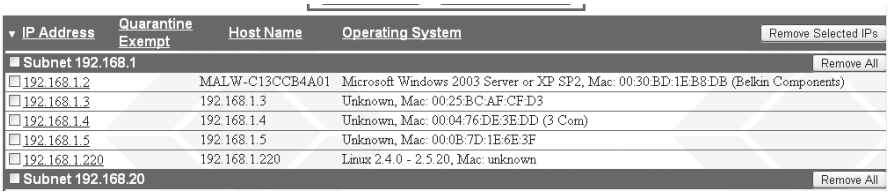


Figure 5-12. Deleting IP addresses screen.

A confirmation screen showing the IPs to remove will appear. You can either cancel or continue with the deletion.

5.6 Determining Ping Response of Nodes on Subnet

You can create a chart showing the ping results for all IP addresses displayed in your audit.

- Select Network Admission Control→Ping Latency Chart. The chart shows IP addresses and the number of milliseconds it took the node to respond to the ping.

The bars compare the length of time for each node's response.

Systems may not respond because they choose not to, are powered down or disconnected, or cannot respond in a timely manner.

To see if the patterns are persistent, click the Refresh button and update the data. Ping latency data is also available from the Audit Wizard page.

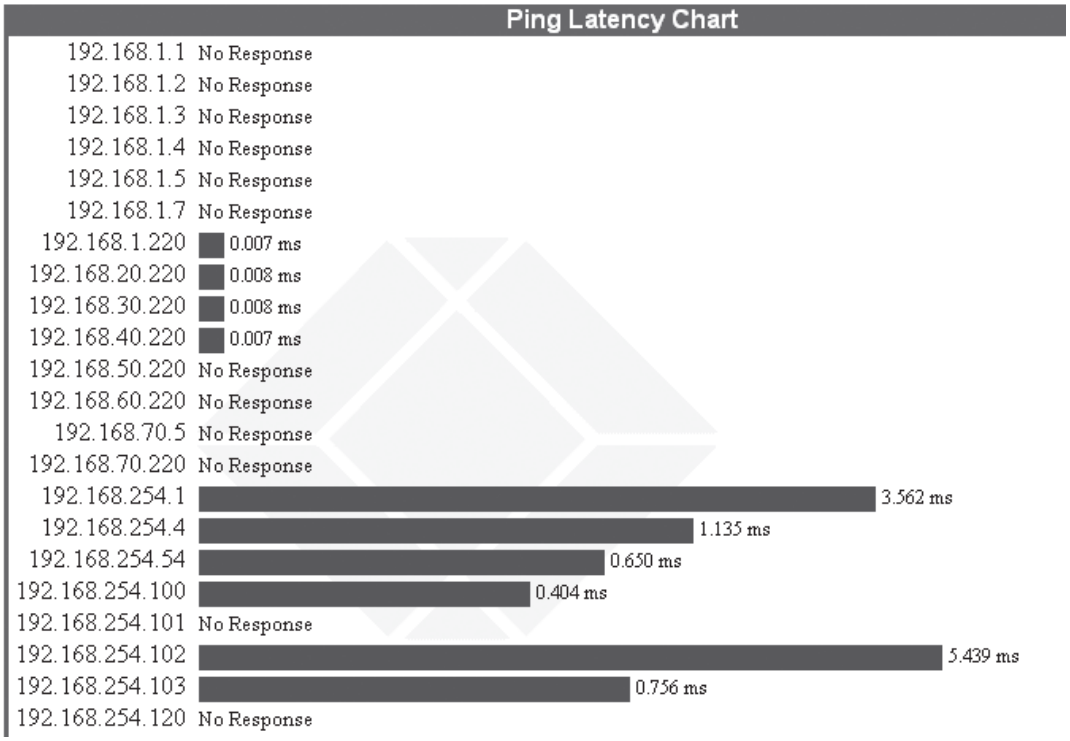


Figure 5-13. Ping Latency chart.

5.7 Interfacing to the Firewall

One of Veri-NAC's key features is its ability to block traffic to and from vulnerable nodes at your firewall and smart switch. Before you can use this feature, however, you must set up Veri-NAC to integrate with your Firewall. Veri-NAC can be integrated with several firewalls and Cisco smart switch:

- CyberGuard SnapGear 570 & 575
- CyberGuard Classic K51000
- Secure Computing Sidewinder
- Cisco PIX
- Juniper NetScreen 5GT
- Check Point
- Any Firewall that uses IP tables (refer to Firewall's documentation)

5.7.1 Setting Up the Firewall Interface

To set up the firewall interface for the Veri-NAC:

• Select "Network Admission Control→Firewall Integration" from the left menu.

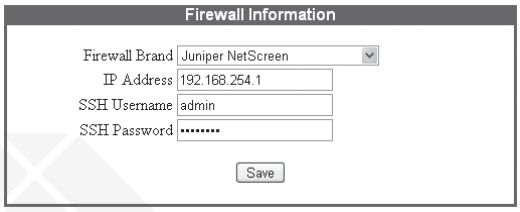


Figure 5-14. Firewall Interface screen.

NOTE: You must set up an SSH account on your firewall for the Veri-NAC to use. If you do not have one already set up, stop now and set up that account before proceeding.

NOTE: For Check Point firewalls only, you must start the SSHD daemon on the Check Point firewall. You must also enter a timeout in the Firewall Information page for Check Point firewalls. If you do not, the quarantine will remain in place indefinitely unless you remove it through a command line interface for the firewall. You cannot remove the quarantine rule through the GUI for that firewall.

You provide information about the interface to the firewall in the Firewall Information box.

• Firewall Brand—Select the appropriate Firewall brand.

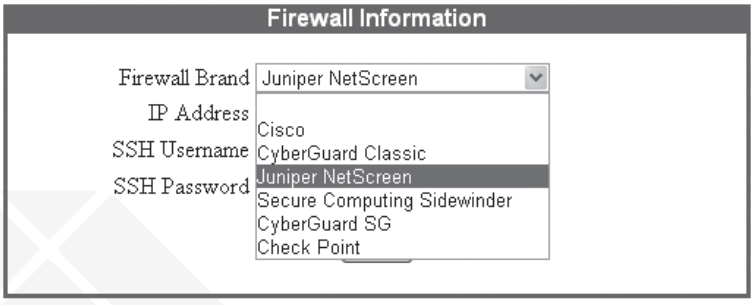


Figure 5-15. Select firewall brand.

Once you make your choice, the fields are updated based on that brand.

Every field that displays is required. The brands from which to choose are listed by company followed by model name.

To work with a firewall that uses IP tables but is not listed, select CyberGuard SG (formerly SnapGear).

Figure 5-16. Firewall information screen.

- IP Address—Enter the IP address of the Firewall.
- SSH Username—Enter the username required to access the firewall. Veri-NAC requires only one firewall username. It is the SSH account username.
- SSH Password—Enter the SSH account password. If you are also entering a root password in a separate field, then enter the user-level password (rather than the admin-level password) required to access the firewall.

To access the CyberGuard SG Firewall, the root password is required. For that model, the value of this field is preset to root.

- PDM Username and PDM Password (Cisco only)—The PIX Device Manager username and password.
- Timeout (Check Point only)—Enter the time (hours and minutes) to maintain the quarantine at the firewall. This should be based on the time you need to fix the vulnerability. After the timeout expires, you can control access to the port through the firewall interface.

Move down on the page and find the IP Address(es) to Never Block at Firewall box.

The list to the left contains all IP addresses the firewall could block traffic to/from. The right list contains the Safe List of IP addresses—those you do not want Veri-NAC to have the Firewall block traffic to/from.

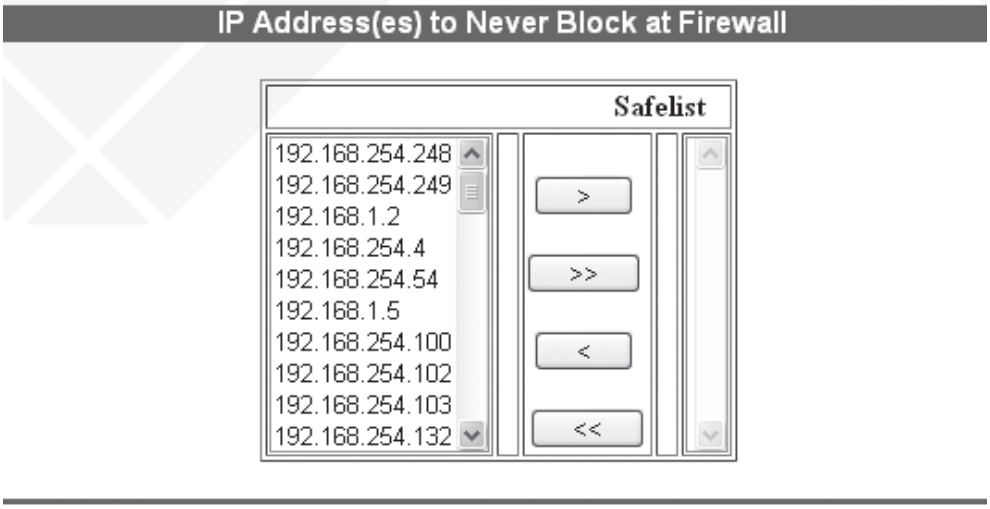


Figure 5-17. Blocking/not blocking traffic screen.

Click the arrows to move addresses from one list to the other. Moving an IP to or from the Safe List automatically retains the information, although clicking "Save" is required to retain the other firewall settings. If Veri-NAC cannot talk to the firewall after you click "Save," it displays a warning message.

5.7.2 Adding Rules to the Firewall

All firewalls that use IP tables, including CyberGuard SG (formerly SnapGear) firewalls, require you to set up some rules to allow Veri-NAC to interact with them.

Inside the profile interface for the firewall, as documented in the firewall manufacturer's user manual, go to the Rules section and enter the following:

```
iptables -N PWDenySource
iptables -N PWDenyDest
iptables -I INPUT 1 -j PWDenyDest
iptables -I INPUT 2 -j PWDenySource
iptables -I FORWARD 1 -j PWDenyDest
iptables -I FORWARD 2 -j PWDenySource
iptables -I OUTPUT 1 -j PWDenyDest
```

Then click the "Apply" button. Refer to the manufacturer's user or installation guide for more information.

5.8 Setting Up Smart Switch Integration

If you have one or more smart switches on your network, you can have Veri-NAC block traffic to and from a vulnerable system at one of these switches, rather than at the firewall.

To set up the switches on Veri-NAC:

Select "Network Admission Control→SmartSwitch Integration" from the left menu. The SmartSwitch Integration page appears. The first step is to add switches.

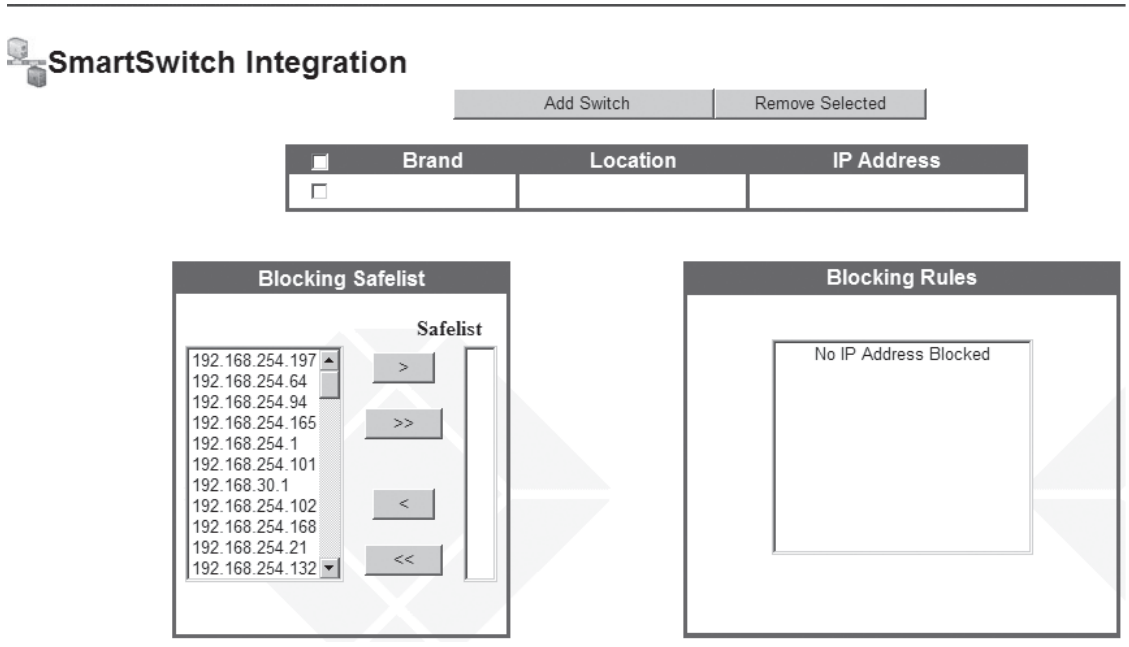


Figure 5-18. SmartSwitch Integration page.

- Click the "Add Switch" button at the top of the page to open the SmartSwitch Information window.
- Choose the smart switch brand—Black Box, Cisco, 3Com, or HP ProCurve.

The SmartSwitch Information window changes based on the brand you choose. All four brands ask for:

- IP address

- Location
- Smart switch password
- Uplink port number

Remaining fields vary based on brand. See your smart switch user's manual for more information.

NOTE: Be sure the Uplink Port Number is correct or the integration will fail.

- Fill in requested information for your switches. Be sure to enter data in required fields.

NOTE: You can configure the HP ProCurve Switch to work without a login ID or password, so password is not a required field for the HP ProCurve Switch.

- Click "Save" to keep the data or "Cancel" to delete your entries.

5.9 Configuring Cisco Switch-Based Authentication

- Select "Network Access Control→SmartSwitch Information" from the left menu to go directly to the SmartSwitch Information screen. Select an existing smart switch or add a new device.

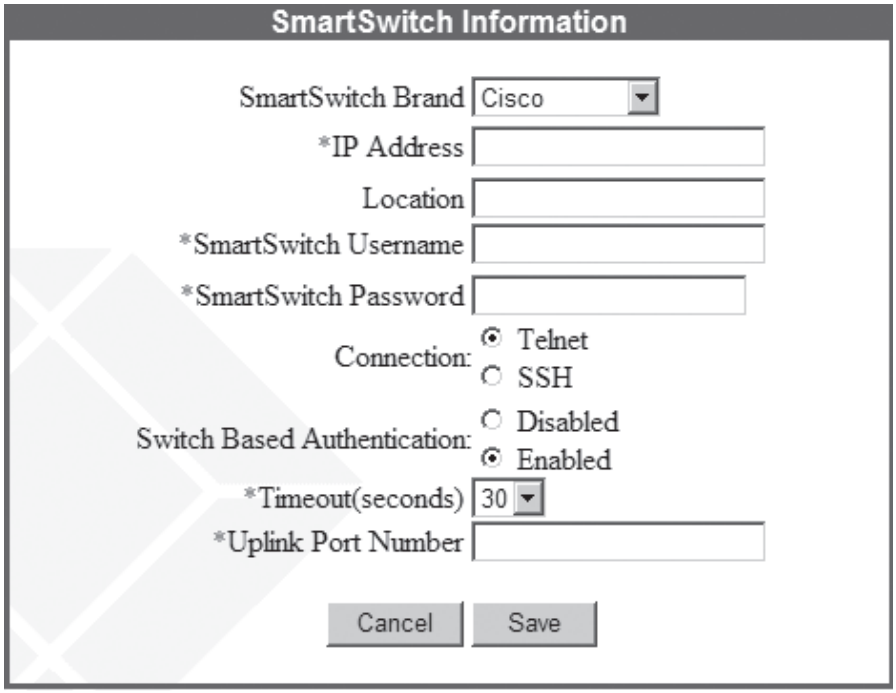


Figure 5-19. Cisco SmartSwitch Information screen.

- Select "Enabled" next to Switch Based Authentication.
- Enter the username into the SmartSwitch Username field.
- Enter the password into the SmartSwitch Password field.
- Select the Connection type.(SSH or Telnet)
- The Timeout (seconds) selection determines the time period, in seconds, after communication with the switch will "time out" if there is no response or an error in communication.
- Enter the switch uplink ports into the Uplink Port Number field.

NOTE: Uplink ports will never be blocked on the switch.

• Click "Save" to save your settings.

• Clicking "Save" or "Cancel" returns you to the SmartSwitch Integration page.

The top of the page displays the smart switch(es) entered into the system to date. Brand, location, and IP address are shown. Manage your switches here by adding or deleting items.

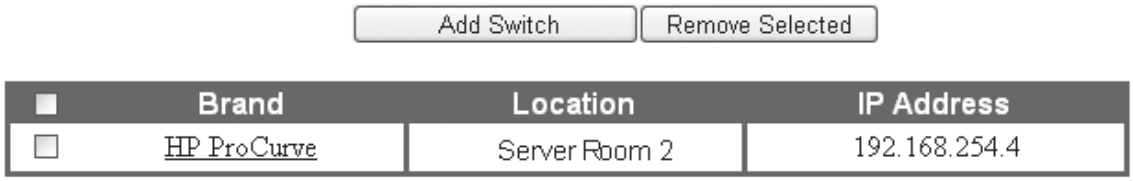


Figure 5-20. Add/Remove switch screen.

• Click the check box to the left of any switch, and then click the "Remove Selected" button to delete switches from the list.

The Blocking Safe List and Blocking Rules appear at the bottom of the SmartSwitch Integration page.

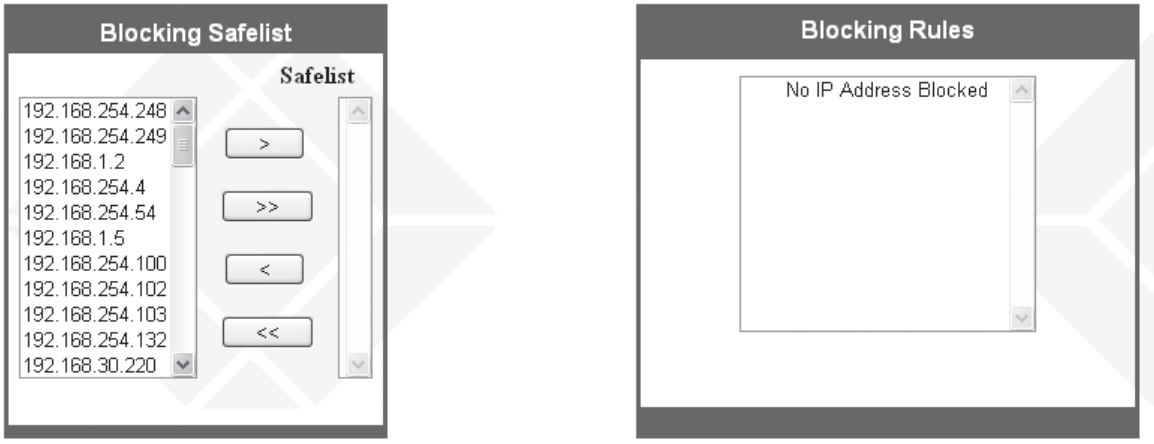


Figure 5-21. Blocking Safelist/Blocking Rules.

• View the IP addresses listed in the Blocking Safe List box.

You may decide to add certain assets to the Safe List. Move those you never want blocked at the switch to the Safe List in the right column. Note that the Safe List for the firewall and smart switch are one and the same.

NOTE: You can move assets to a Safe List in several places in Veri-NAC. In addition to the SmartSwitch Integration screen, you may also designate Safe List assets on the Network Admission Control→Firewall Integration page, as well as the Firewall and Smart Switch Safe List on the Network Admission Control→Manage IPs page.

If Dynamic Detection is enabled, systems will be detected even if they plug into the smart switch; they will be audited if you have enabled Audit on Detection.

• View the Blocking Rules box. Take appropriate action.

Use rules only after Veri-NAC interacts with the smart switch. (Blocking occurs after dynamic detection or a configured audit [through the Audit Wizard]). When an asset is blocked, a corresponding rule appears in the Blocking Rules box. Here you have two options:

1. You can clean up the asset and unblock it. A confirmation screen appears.
2. You may want to discard a rule. If someone unblocks an asset directly (at the smart switch), the rule is still on the list, but is no longer valid; click the "Discard Selected Rules" button to remove it.

5.10 Dynamic Detection and Vulnerability Quarantine

When a new device plugs into the network, Veri-NAC dynamically detects its presence and immediately audits the device for vulnerabilities, regardless of the type of device. Set the levels at which you want it to audit and the actions you want it to take upon detecting vulnerabilities.

If Veri-NAC finds vulnerabilities on the device, it can send a message to the firewall or smart switch to block traffic to and from the node. This Intelligent Quarantine™ feature helps keep rogue devices off the network and is effective with any device. No client software is required—Veri-NAC provides Clientless Quarantine™.

You ultimately control the system: Based on the type and level of vulnerabilities detected to be present, you can choose to have Veri-NAC immediately tell the firewall to block ports and/or the entire IP address of an asset. You can also choose to never block particular IP addresses.

When a device is blocked, Veri-NAC sends an alert to the IT manager (or whichever user was earlier designated to receive the alert). The IT manager receives a message indicating blocked ports or IP addresses. Knowing the network is safe, the IT manager can then ensure proper vulnerability remediation is complete before unblocking the ports and/or IP addresses at the firewall.

5.11 Setting Up Dynamic Detection and NAC Blocking

CAUTION: NAC is an easy to deploy and use Network Access Control. NAC blocking is also a very powerful network control. Please read the instructions carefully before turning this feature on.

Make sure that notifications are enabled and a valid e-mail address is entered so that a system administrator will be aware of any access blocking that occurs and can then take the appropriate action.

5.12 Dynamic Detection System

- When the dynamic detection system is enabled, DHCP event tracking is automatically enabled and will detect new devices obtaining DHCP leases. You can also choose to use NetBIOS scans to scan for assets.
- If you wish to also track static IP devices coming on line, static IP detection also needs to be activated, as shown below.

5.12.1 One-Click DDS Configuration

The Veri-NAC supports One-Click DDS Configuration:

- Select Network Access Control→Dynamic Detection System from the left menu to go directly to the Dynamic Detection System Configuration screen.
- Select one of the common predefined DDS configurations.

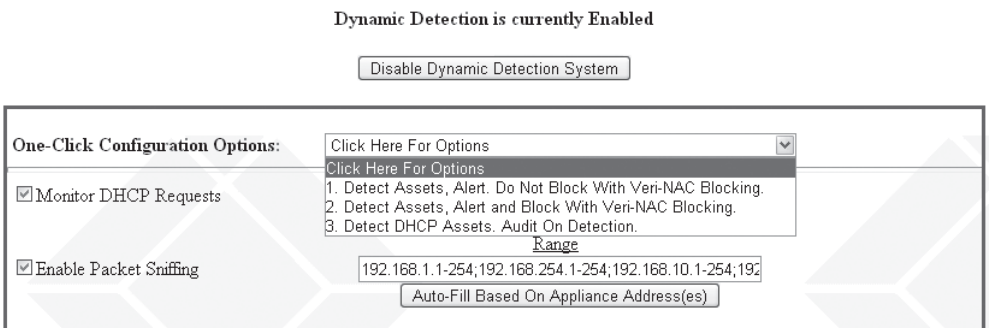


Figure 5-22. Disable Dynamic Detection.

- Review the settings.
- Click "Save" to save the settings.

5.12.2 Enabling/Disabling DHCP Monitoring

- Select "Network Access Control→Dynamic Detection System."
- Click "Monitor DHCP Requests" to enable DHCP traffic monitoring.

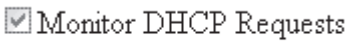


Figure 5-23. Monitor DHCP requests.

5.12.3 Enabling NetBIOS Scans

NetBIOS Scans use NetBIOS protocol to discover NetBIOS-enabled devices. Enabling this option will cause the appliance to use NetBIOS scans to scan assets for host names and MAC addresses during dynamic detection. Use NetBIOS scans if there is no DNS server available.

- Select "Network Access Control→Dynamic Detection System."
- Click "Enable NetBIOS Scans For Windows Host Names" or "Enable NetBIOS Scans For MAC Addresses."
- Click "Save" to save the settings.

5.13 Enabling Static IP Detection via Packet Inspection

- Select Network Access Control→Dynamic Detection System from the left menu to go directly to the Dynamic Detection System configuration screen.

Figure 5-24. One-click configuration options.

- Select the Enable Static IP Detection check box.
- Enter the range of IP addresses the DDS should monitor via packet inspection. IP addresses within the range extracted from inspected packets will be handled by the DDS using current configuration settings.
- Click "Save" to save your settings.

5.14 One-Click Packet Sniffing Range Configuration

- Select Network Access Control→Dynamic Detection System from the left menu to go directly to the Dynamic Detection System Configuration screen.
- Click Auto-Fill Based On Appliance Address(es) below the Packet Sniffing Range.

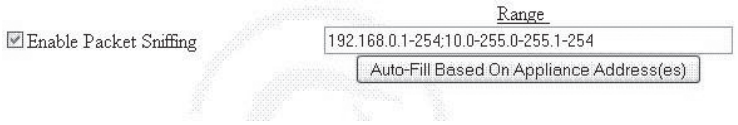


Figure 5-25. Enable Packet Sniffing screen.

- Review the settings.
- Click "Save" to save the settings.

NOTE: Ranges will be based on IP address(es) assigned to the appliance network interface cards.

5.15 Enabling NAC Blocking

NAC blocking works by blocking communication routes from untrusted or unknown blocked assets to protected assets on the network. All assets, blocked and protected, must reside on the same subnet as the Veri-NAC.

NOTE: A full asset discovery should be run prior to enabling NAC Blocking. Assets within the NAC Blocking Range will be blocked if they are unknown or untrusted.

NOTE: Packet Sniffing and NAC Block Ranges will be based on IP address(es) assigned to the appliance network interface cards. The appliance asset list will be used for the protect range. All IP addresses contained in the asset list, trusted and untrusted, will be protected from assets blocked with NAC blocking.

- Select "Network Access Control→Dynamic Detection System" from the left menu to go directly to the Dynamic Detection System configuration screen.

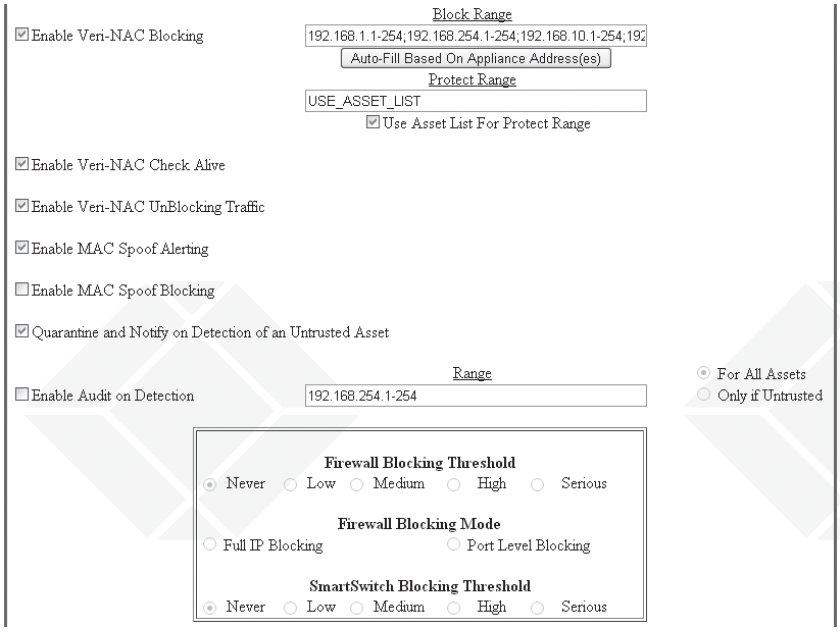


Figure 5-26. Blocking screen.

- Select the "Enable NAC Blocking" check box.
- In the Block Range field, enter the range of IP addresses that the DDS will attempt to block using NAC blocking if an asset is unknown or untrusted.
- In the Protect Range field, enter the range of IP addresses that the DDS will prevent a blocked asset from communicating with.
- Select the Enable NAC Check Alive check box to cause the DDS to periodically determine if the blocked asset exists on the network. If the blocked asset no longer exists, the blocking will be stopped.

  Recommended Setting: Enabled
- Select the Enable NAC UnBlocking Traffic check box to cause the DDS to send traffic that will attempt to immediately allow network access to an asset that is being unblocked.

  Recommended Setting: Enabled
- Click "Save" to save your settings.

5.15.1 One-Click NAC Block Range Configuration

It is simple to create a range of IP addresses within which you wish NAC to block:

- Select "Network Access Control→Dynamic Detection System" from the left menu to go directly to the Dynamic Detection System Configuration screen.

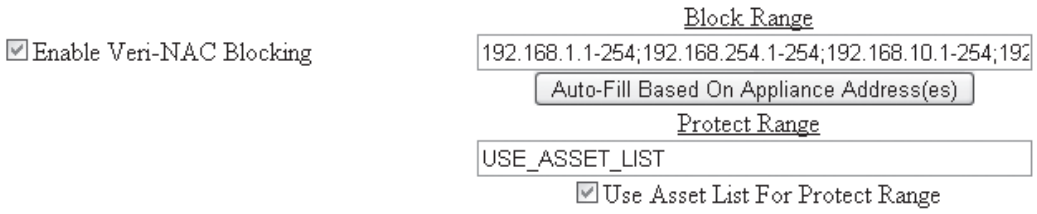


Figure 5-27. Block Range screen.

- Click "Auto-Fill Based On Appliance Address(es)" below the NAC Block Range.
- Review the settings.
- Click "Save" to save the settings.

NOTE: Ranges will be based on IP address(es) assigned to the appliance network interface cards.

5.15.2 Using an Asset List to Create an NAC Protect Range

You can also create a range of IP addresses that you always want NAC to protect:

- Select "Network Access Control→Dynamic Detection System" from the left menu to go directly to the Dynamic Detection System Configuration screen.
- Click Use "Asset List For Protect Range" below the NAC Protect Range.
- Click "Save" to save the settings.

NOTE: All IP addresses contained in the asset list, trusted and untrusted, will be protected from assets blocked with NAC blocking.

5.15.3 Excluding Assets from NAC Blocking

You can choose to have a predefined list of trusted assets that will never be blocked by NAC blocking.

- Select Network Access Control→NAC Exclude List to manage the NAC Blocking Exclude List. All assets included in the list will never be blocked by NAC Blocking.

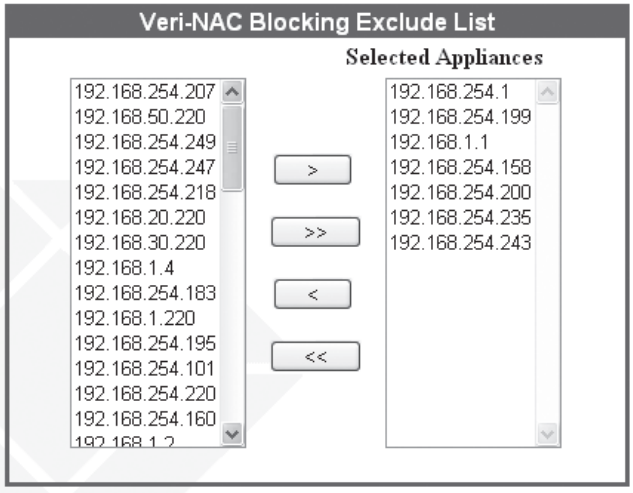


Figure 5-28. Blocking Exclude List.

- You may add and remove assets to and from the exclude list from this menu.
- Click Save to save the list.

5.16 Viewing Assets Blocked With NAC Blocking

At any time, you may view a list of all assets currently being blocked by NAC.

- Select Network Access Control→NAC Blocking from the left menu to go directly to the NAC Blocking screen, which displays assets currently blocked with NAC Blocking.

Figure 5-29. Assets blocked screen.

- Click Unblock to stop blocking the asset with NAC Blocking. Assets will also be marked as trusted when unblocked.

NOTE: Marking an asset as trusted simultaneously stops the asset from being blocked with NAC blocking.

5.17 Viewing NAC Blocking Logs

To view logs of which assets NAC has blocked in the past, and when:

• Select "Logging→Network" from the left menu to go directly to the logging screen.

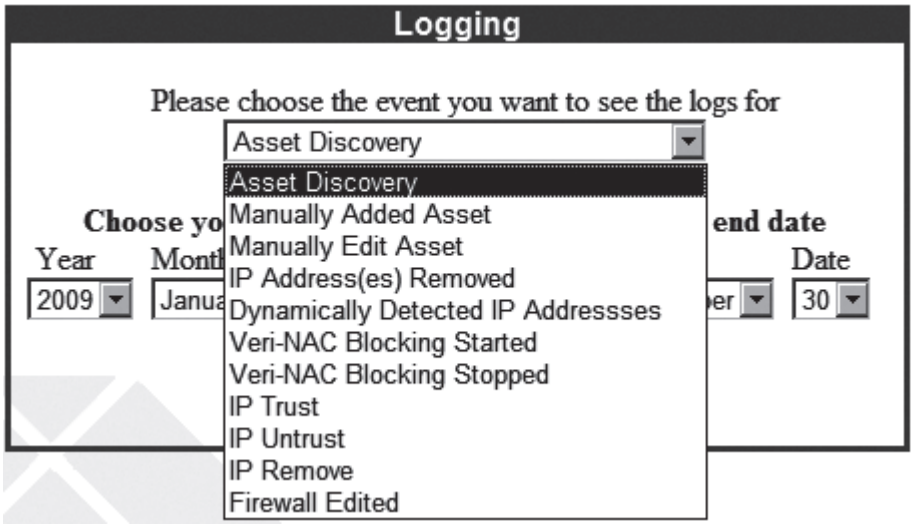


Figure 5-30. Logging screen.

• Select "NAC Blocking Started." Click "Show Logs" to view the log containing NAC Blocking started data.

• Select "NAC Blocking Stopped." Click "Show Logs" to view the log containing NAC Blocking stopped data.

5.18 Immediately Blocking an Untrusted Asset

To manually set an asset to be blocked every time it attempts to connect to the system:

• Select Network Access Control→Manage IPs from the left menu to go directly to the Manage IPs screen.

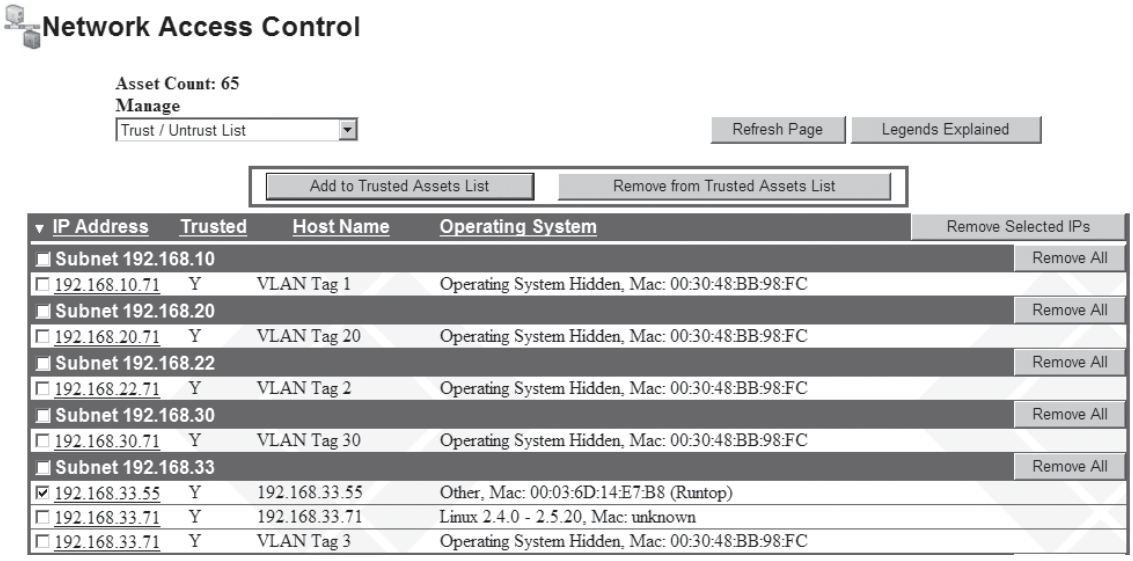


Figure 5-31. Block Untrusted Asset.

• Select the check box next to the asset to be untrusted.

Figure 5-32. Add or remove from trusted asset list.

- Click the "Remove from Trusted Assets List" button.

NOTE: The asset marked as untrusted must be on-line and within the NAC Blocking Range for blocking to be initiated.

5.19 Enabling NAC Unblocking Traffic

Unblocking traffic will be sent when a blocked asset is marked as trusted.

- Select "Network Access Control→Dynamic Detection System" from the left menu to go directly to the Dynamic Detection System configuration screen.
- Select the "Enable NAC Unblocking Traffic" check box.

5.20 Enabling MAC Spoof Alerting

If MAC Spoof Alerting is enabled, Veri-NAC will send an alert when multiple IP addresses are detected for a single MAC address.

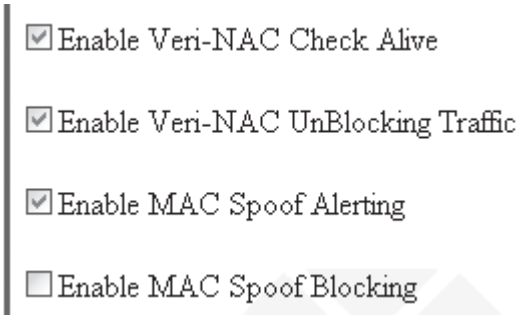


Figure 5-33. Enable MAC Spoof Alerting.

- Select "Network Access Control→Dynamic Detection System" from the left menu to go directly to the Dynamic Detection System configuration screen.
- Select the "Enable MAC Spoof Alerting" checkbox.

5.21 Enabling MAC Spoof Blocking

If MAC Spoof Blocking is enabled, Veri-NAC will initiate NAC blocking when multiple IP addresses are detected for a single MAC address. All assets assigned to the single MAC address will be blocked.

- Select "Network Access Control→Dynamic Detection System" from the left menu to go directly to the Dynamic Detection System configuration screen.
- Select the "Enable MAC Spoof Blocking" check box.

5.22 Viewing DDS Configuration Settings

To view your previously set DDS configuration settings at any time:

- Select Network Access Control from the left menu to go directly to the Dynamic Detection System configuration screen.

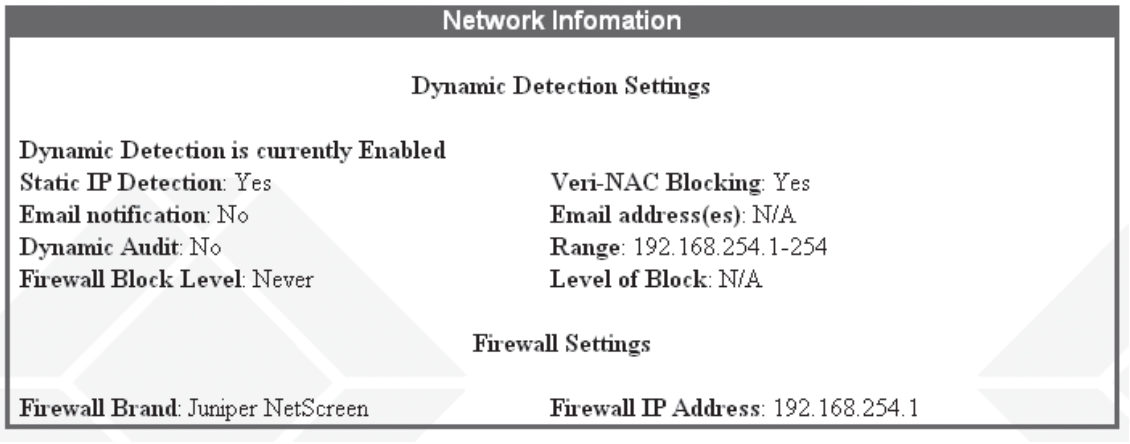


Figure 5-34. Network information screen.

5.23 Preparing Your Network for Dynamic Detection

Veri-NAC detects newly plugged in devices all the way up a defined hierarchy until it hits a DHCP server. The best network structure for using dynamic detection is one that places all DHCP servers at the highest hierarchical level on the network—all on the same level—rather than in subnets.

If you are using an LVN5400A, LVN5600A, and LVN5800A Veri-NAC and your network requires certain subnets to have their own DHCP servers, you can use a LVN5200A or LVN5250A Veri-NAC on each subnet.

Dynamic Detection discovers new devices (such as laptops or wireless routers) upon plug-in or connection to the network. When new assets are detected, Veri-NAC can:

- Quarantine and notify appropriate personnel upon detection of an untrusted asset.
- Send an e-mail notification when a new system is detected.
- Audit the new system immediately.
- Block traffic to/from the new system at the firewall or smart switch when vulnerabilities are detected. NOTE: For firewall and smart switch blocking to take effect, set up an interface to the firewall and smart switch.
- Block traffic at the port or IP address level.

To create a protocol for Veri-NAC to follow upon discovering new assets, complete the following fields in the Dynamic Detection System window under Network Access Control→Dynamic Detection System:

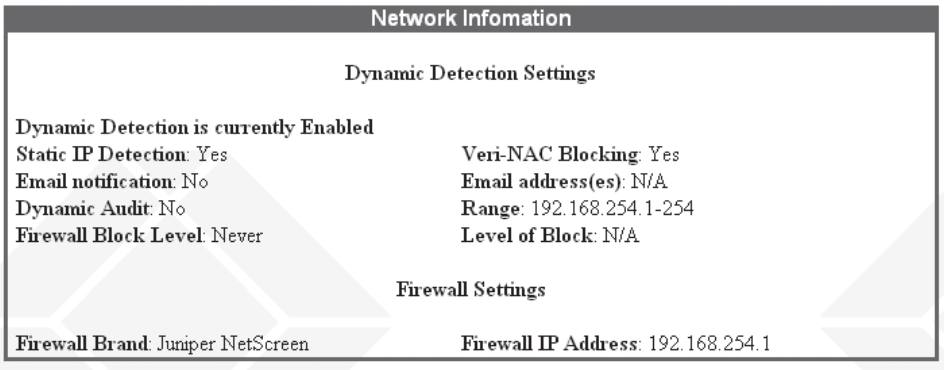


Figure 5-35. Dynamic Detection System window.

- All untrusted assets are secluded upon identification if you check the Quarantine and Notify on Detection of an Untrusted Asset checkbox. The quarantine takes place immediately and designated contacts are notified.
- Enable Audit Upon Detection—Decide if you want Veri-NAC to audit certain assets upon discovery. Check the appropriate boxes to enable the audit For All Assets or just Un-trusted assets.

Enter the network address range(s) to indicate the level at which to detect changes on the network. For instance, you may wish to enable detection for levels at which laptops normally plug in, but not levels at which you know you have only stationary desktops and servers. If that subnet goes down, you won't need (or want) dynamic detection alerts on every system when the subnet comes back up.

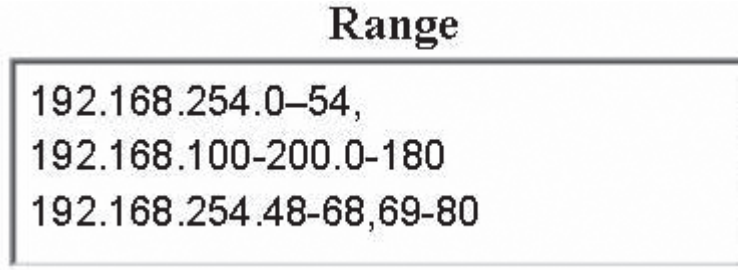


Figure 5-36. Range screen.

Enter distinct IP ranges separated by commas, as shown in Figure 5-36.

- Firewall Blocking Threshold—Select the level of vulnerability at which you wish to start blocking traffic to and from the IP address (effectively quarantining the system from the Internet). Choose from Never (to never block traffic), Low, Medium, High, or Serious vulnerability level thresholds.

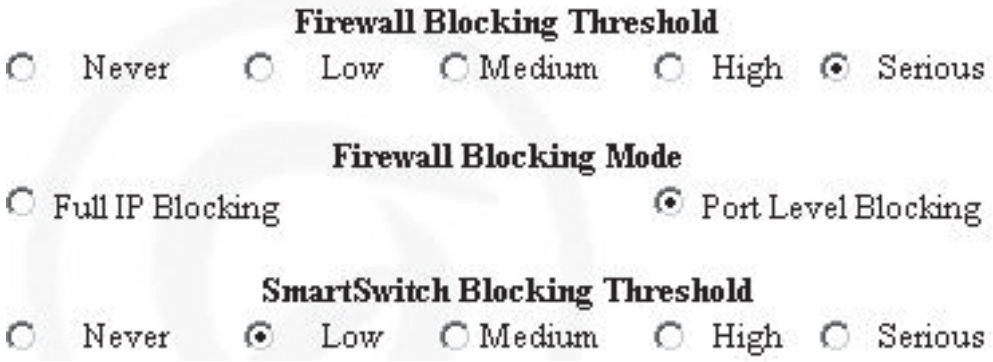


Figure 5-37. Blocking settings.

- Firewall Blocking Mode—Select Full IP Blocking to block all IPs at which Veri-NAC finds vulnerabilities at the previously set threshold level or Port Level Blocking to block traffic only to/from ports that are vulnerable.
- SmartSwitch Blocking Threshold—Select the level of vulnerability at which you wish to start blocking traffic to and from the IP address (effectively quarantining the system from the Internet). Choose from either Never (to never block traffic) or from Low, Medium, High, or Serious vulnerability level thresholds.
- Notify by Email—Click the check box to receive e-mail notifications. Modify the e-mail address(es) to change the person or people to notify. By default, the same people you designated under Notifications earlier will be notified.

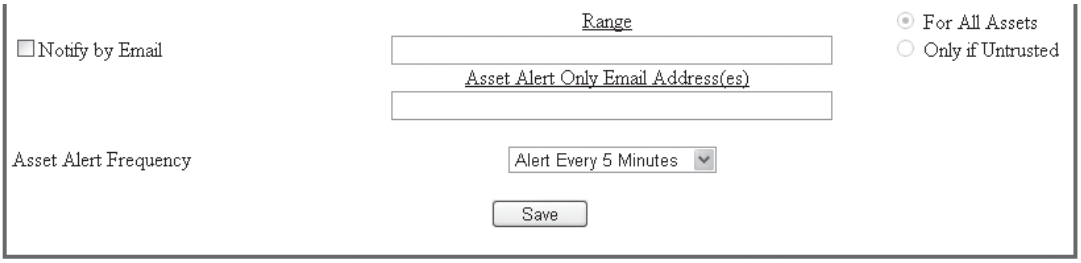


Figure 5-38. Notify by e-mail.

Decide if you want notifications sent For All Assets discovered or only when Untrusted assets are discovered, and click the appropriate button. You may also designate the range of IP addresses that require notification. Enter distinct IP ranges separated by commas here.

You may also select the frequency at which you wish to receive untrusted asset alerts.

You may also designate e-mail addresses for which you only want to receive asset alerts.

NOTE: Click Save to preserve the Dynamic Detection settings.

5.24 Setting Up Inventory Alerts

When a system is unresponsive for any reason—whether it shut down, was removed from the network, or has crashed—Veri-NAC highlights that system in the Systems (Asset) List on the Asset Tracker page and alerts the designated contact via e-mail.

The NetworkMonitor engine monitors assets when Inventory Alerts is enabled and determines when a system is non-responsive. During normal business hours, the NetworkMonitor engine performs a simple ping test on each asset at preset intervals (every 1, 5, 10, 20, 30, or 60 minutes). If an asset does not respond, NetworkMonitor pings it again in 5 minutes. If the asset does not respond to the second ping, an e-mail alert is sent to the designated contact and the asset is highlighted in red on the Asset Tracker→Systems page.

Set up Inventory Alerts for specific system groups. This allows you to more easily control the assets monitored and resources responsible.

To set up Inventory Alerts:

- Select "Network Admission Control→Inventory Alerts" from the left menu. The Inventory Alerts page appears.

Figure 5-39. Create new group screen.

• Click the "Create New Group" button to add the first group of assets for monitoring.

This takes you to the Inventory Alerts: Add Group page.

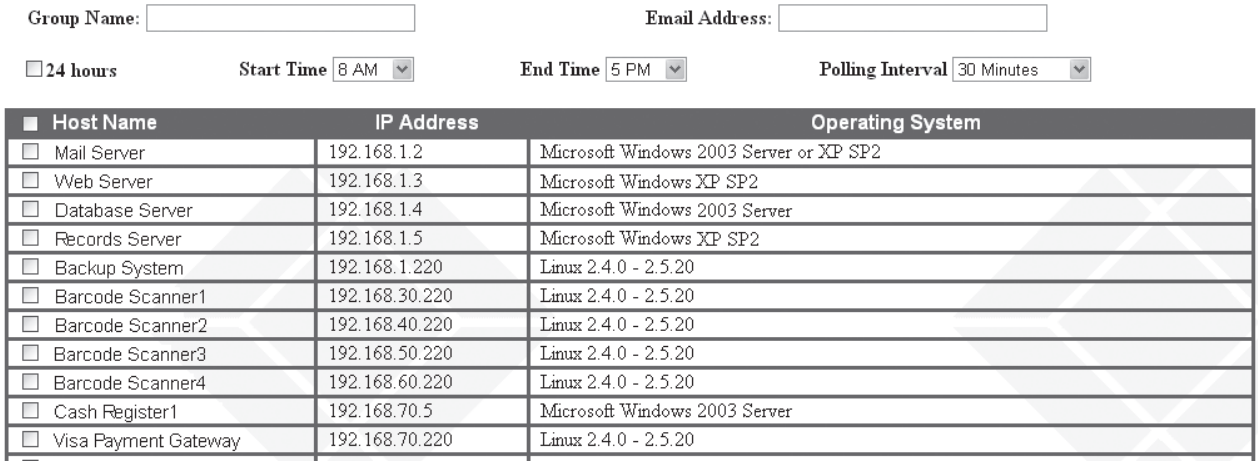


Figure 5-40. Add group page.

• Type the Group Name in the box. We suggest you categorize systems in a meaningful way so they are easier to manage (for example, Servers, Desktops, Sales Department, etc.).

• Enter the e-mail address(es) for the designated contact(s). You can enter multiple names separated by a space, colon, or semi-colon. Enter e-mail addresses separated by semi-colons. If no e-mail address is specified, you are prompted to provide one.

Figure 5-41. E-mail address section of Add Group page.

• Select times and Polling Interval.

24 hours— Choose this option if you want the alerts running all day.

Start Time and End Time—Select times here if you want the alerts running within a specific time interval.

Polling Interval—Select the interval most appropriate for your environment (every 1, 5, 10, 20, or 30 minutes; hourly, twice daily, or daily)

• Click the "Save" button to retain your choices or "Cancel" to return to the Inventory Alerts page.

Your new group(s) appears in the list. Groups are listed in alphabetical order.

View the Group Name and Status here. Buttons on the right side allow you to Enable the alert or Remove each group from the list, as required.

6. Setting Up Asset Tracker

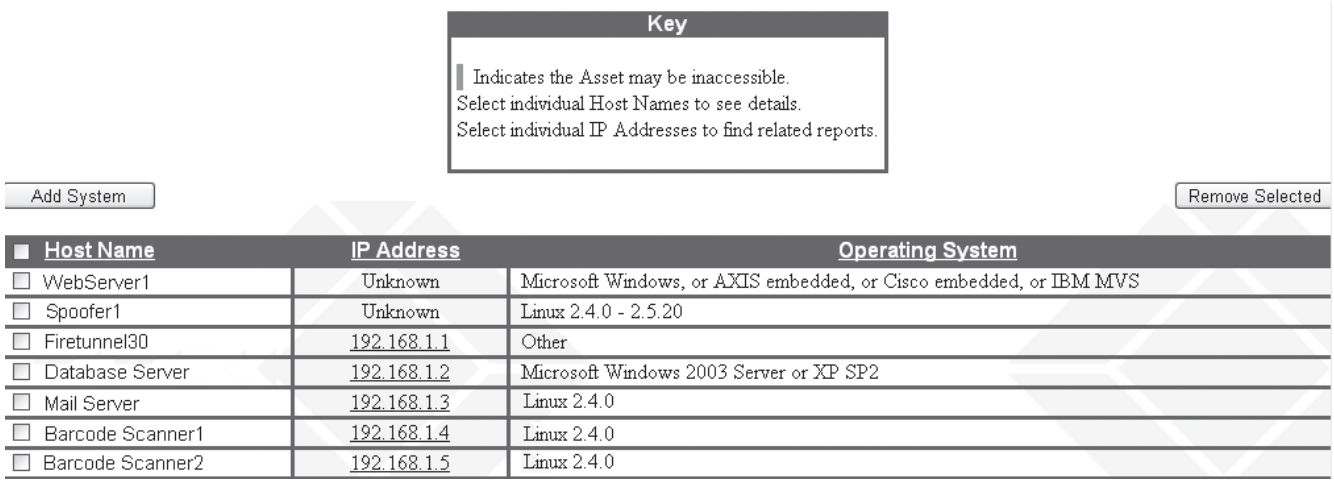
Complete an Asset Discovery process from Network Admission Control on the left menu before you use Asset Tracker. Once Veri-NAC scans the network and gathers all the asset information possible for every system on your network, it stores what it knows in a database. Veri-NAC functions are integrated with this database for asset tracking.

6.1 Viewing Systems List (Asset List) in Asset Tracker

To display a list of current assets:

• Select "Asset Tracker→Systems" in the left menu to open Asset Tracker.

The Asset Tracker: Systems page appears. This list, referred to as the Systems List or Assets List, shows all systems on the network. These assets were either entered manually or discovered by the Veri-NAC automatic discovery engine during the Asset Discovery process.



Host Name	IP Address	Operating System
WebServer1	Unknown	Microsoft Windows, or AXIS embedded, or Cisco embedded, or IBM MVS
Spoofer1	Unknown	Linux 2.4.0 - 2.5.20
Firetunnel30	192.168.1.1	Other
Database Server	192.168.1.2	Microsoft Windows 2003 Server or XP SP2
Mail Server	192.168.1.3	Linux 2.4.0
Barcode Scanner1	192.168.1.4	Linux 2.4.0
Barcode Scanner2	192.168.1.5	Linux 2.4.0

Figure 6-1. Asset List.

As the key indicates:

• A system highlighted in red is not accessible and may be in trouble.

• You can click on a system name in the Host Name column to view details about that asset.

• You can select a system's IP address (in IP Address column) to find all reports with information about that system.

6.2 Viewing/Modifying/Adding Systems In The Systems List (Asset List)

Your assets are listed on the Asset Tracker: Systems page.

Host Name	IP Address	Operating System
Firetunnel30	192.168.1.12	Microsoft Windows, or AXIS embedded, or Cisco embedded, or IBM MVS
Web Server	192.168.1.14	Linux 2.4.0 - 2.5.20
VoIP Gateway	192.168.1.1	Other
Database Server	192.168.1.2	Microsoft Windows 2003 Server or XP SP2

Figure 6-2. Changing asset list.

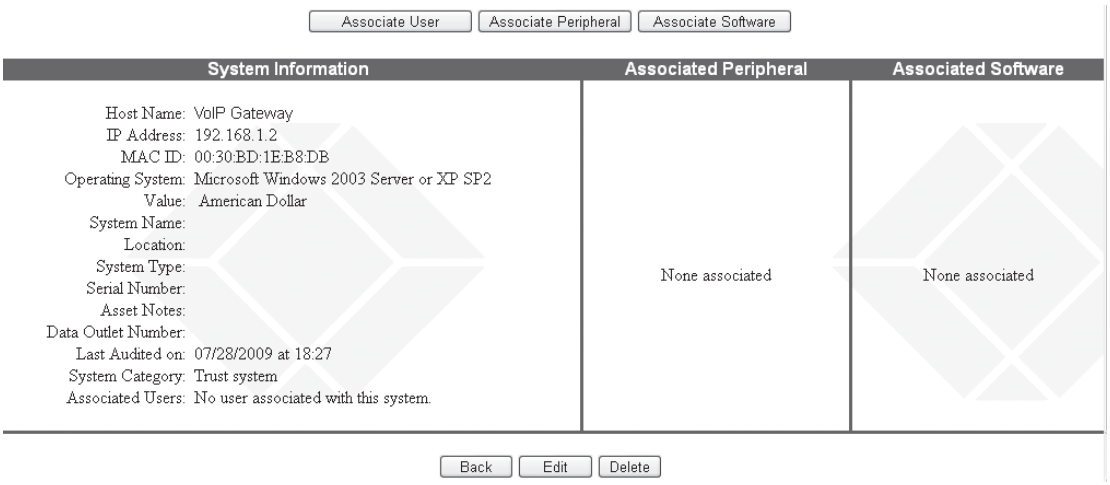


Figure 6-3. Associate peripheral or software with system information.

To view an existing asset in the list, click on its Host Name in the far left column. The Asset Tracker: System Information Overview display opens. All known information about the system is displayed: its host name, IP address, MAC ID, etc.

Veri-NAC generates a link between the system information and reports generated by audits to assist the IT manager in asset tracking. The date and time (24-hour time is used) the system was last audited is indicated near the bottom of the left-most column. The asset in this example has yet to be audited.

Associated Users is the last item in the first column. No names are associated with the system shown. You may add users, peripherals, and software to the database and associate them with particular systems at any time. See the section called Adding User Information for more information on users.

6.2.1 Editing/Adding System Information

You can edit existing system information or add new systems from Asset Tracker.

To edit an existing system:

- Select Asset Tracker→Systems from the left menu.
- Click the Host Name you wish to modify. The Asset Tracker: System Information Overview page appears.
- Click the Edit button at the bottom of the page to reach the Asset Tracker: System Information page and make the necessary changes. Be sure to click "Update System" at the bottom of the page to save your revisions.

To add new systems:

- Select Asset Tracker→Systems from the left menu.
- Click the "Add System" button to the upper left of the Asset List. The Asset Tracker: System Information page appears.

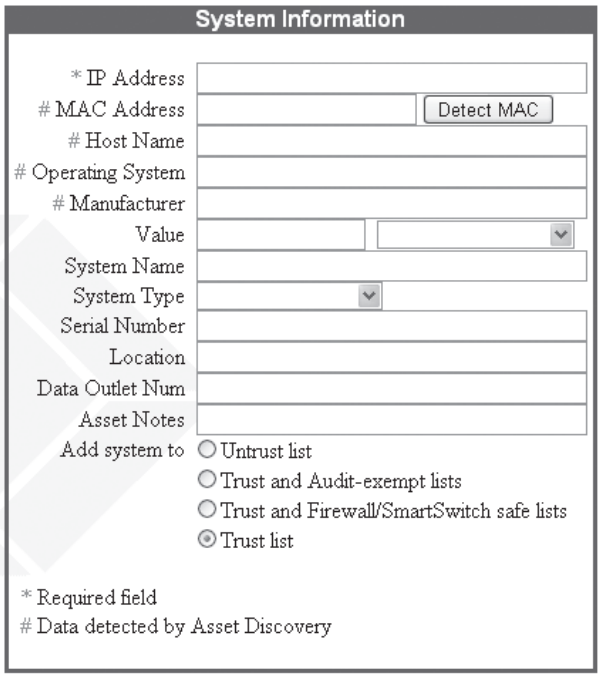


Figure 6-4. System Information screen.

(You can also get to the Asset Tracker: System Information page by selecting Network Admission Control→Add Assets.)

• Fill in the requested data. For more information about these fields, see Adding IP Addresses Manually, Section 5.2.1.

• Click "Add System" to save your entry.

NOTE: Required fields (marked with an asterisk) must contain information. After you add system data, check the System Information page again. The MAC Address, Host Name, Operating System, and Manufacturer may be filled in for you.

We strongly recommend you only change the MAC Address and Host Name fields if it is absolutely necessary.

After you modify the list in any way, you should see changes in the Systems List (Asset List).

NOTE: When generating report summaries on critical servers (in Executive and Management reports), Veri-NAC refers to systems with the word Server in the System Type field. If no systems are listed as Server, Veri-NAC reports instead on most vulnerable systems under the heading Most Vulnerable Critical Servers.

6.2.2 Viewing Asset Report List

Veri-NAC generates a variety of reports you can use to more effectively manage your assets.

• Select Asset Tracker→Systems from the left menu.

• Click on the IP Address of interest. The Available Reports list for that IP address appears.

See Overview of Report Types and Content for more information on reports.

6.2.3 Adding User Information

You can add users on your network independent of an individual asset. Later, you may associate users with particular systems (see Associating Users, Software, and Peripherals With Systems, Section 6.3). When you create user accounts under System→User Management, you may choose from users you have previously added here.

To add user information:

• Select "Asset Tracker→Users" from the left menu.

The Asset Tracker: Users page displays with current individuals entered in the system. Initially, this list is empty.

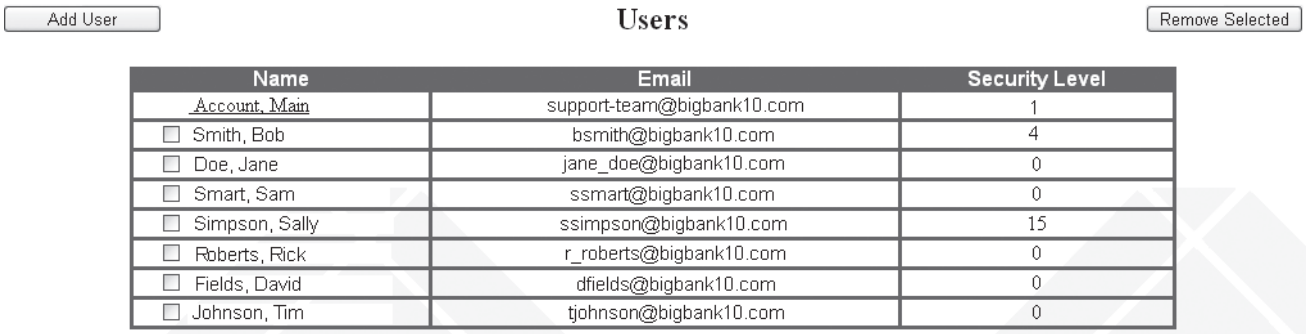


Figure 6-5. Asset Tracker: Users screen.

- Click the "Add User" button to the upper left.

The Add User dialog opens.

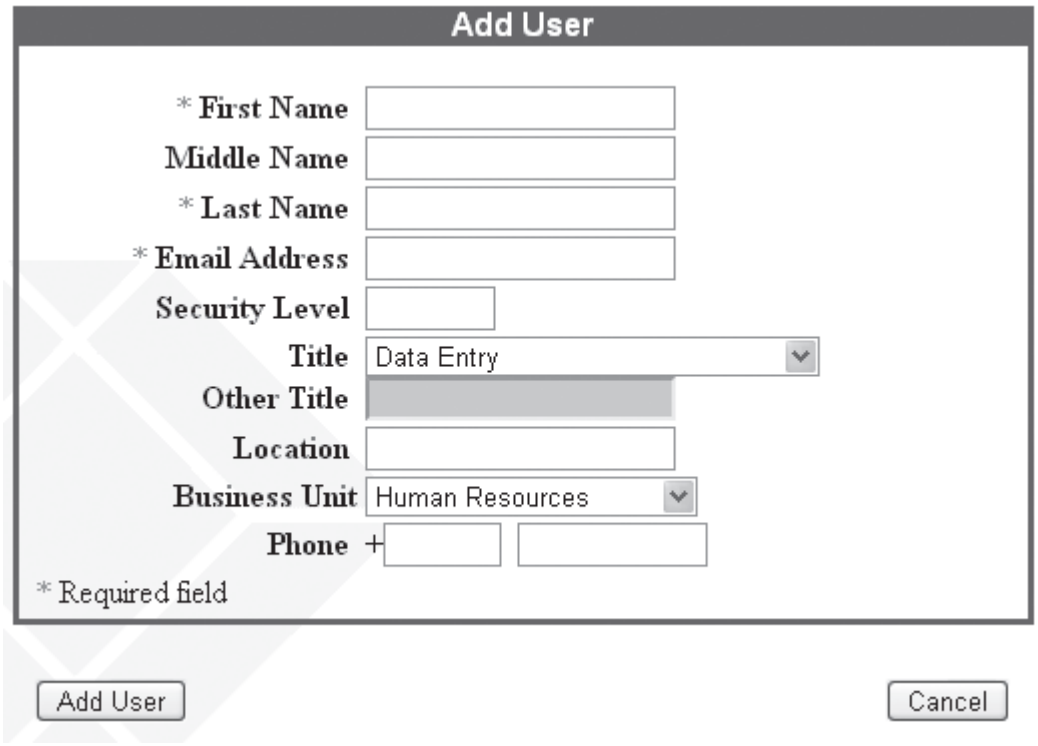


Figure 6-6. Add User dialog box.

- Enter the requested information. See the guidelines in Table 6-1.

Table 6-1. Add user guidelines.

Item	Guideline
First Name (Required)	Given name.
Middle Name	Not required. May be useful if you have more than one person with the same first and last name
Last Name (Required)	Family name.
Email Address (Required)	Must be a valid e-mail address.
Security Level	Security level of user, up to five digits. This element is a custom designation for your network.
Title	User's role.
Other Title	If you selected "Other" from the Title dropdown list, you may enter a title of your choice here.
Location	User's location—building, wing, office area, lab, etc.
Business Unit	User's department.
Phone	User's phone number.

When you complete all information about the new user, click "Add User" to save the data and return to the Asset Tracker: Users page. As you add users, they are listed in alphabetical order with their e-mail addresses and security levels.

6.2.4 Adding Software Information

You can add software on your network independent of an asset. Later, you may associate software with particular systems (see Associating Users, Software, and Peripherals With Systems, Section 6.3). To enter software:

• Select Asset Tracker→Software from the left menu.

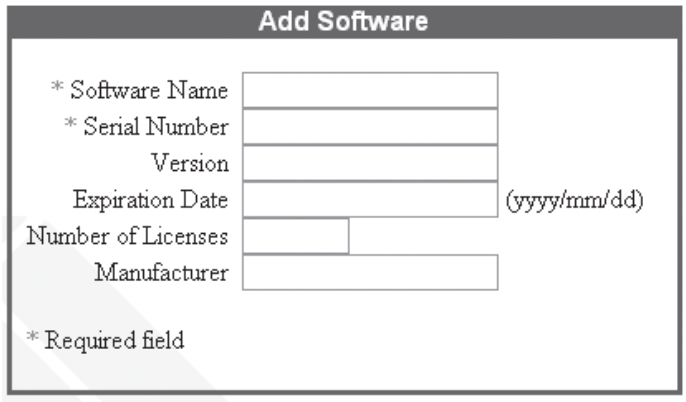


Figure 6-7. Add software screen.

The Asset Tracker: Software List displays. (Initially, this list is empty, as shown.)

- Click the "Add Software" button to the left. The Add Software dialog opens.
- Enter requested data in the form. See Guidelines in the table below.

Table 6-2. Add software guidelines.

Item	Guideline
Software Name (Required)	Do not include the manufacturer's name in the product name, e.g., enter Office, not Microsoft Office.
Manufacturer	Enter the name of the software manufacturer without Corporation, Incorporated, or Inc. The manufacturer's name is pre-appended to the product name.

- Click the "Add Software" button at the bottom of the page when you finish entering software data. This saves the information and returns you to the Asset Tracker: Software list.

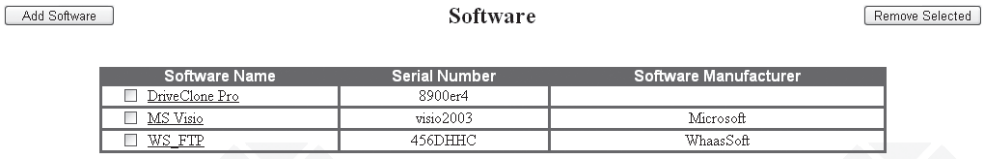


Figure 6-8. Asset Tracker: Software List screen.

You can remove a software package from the list by clicking the check box to the left of its name, then clicking the "Remove Selected" button.

6.2.5 Adding Peripheral Information

You can add peripherals on your network independently of an asset and later link the equipment to particular system assets. This list helps you keep track of monitors, printers, and a variety of other important equipment that may or may not need to be audited, but nevertheless has value to the company. Later, you may associate peripherals with particular systems (see Associating Users, Software, and Peripherals With Systems, Section 6.3).

To add information about peripherals on your network:

- Select "Asset Tracker→Peripherals" from the left menu.

The Peripherals list displays. Initially, this list is empty, as shown below.

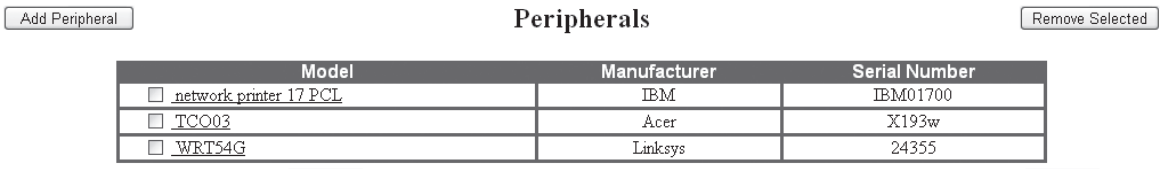


Figure 6-9. Asset Tracker: Peripherals List screen.

Click the "Add Peripheral" button to the upper left to open the Add Peripheral Device dialog.

• Fill in requested peripheral data. Fields with an asterisk are required; others are optional. See Guidelines in Table 6-3.

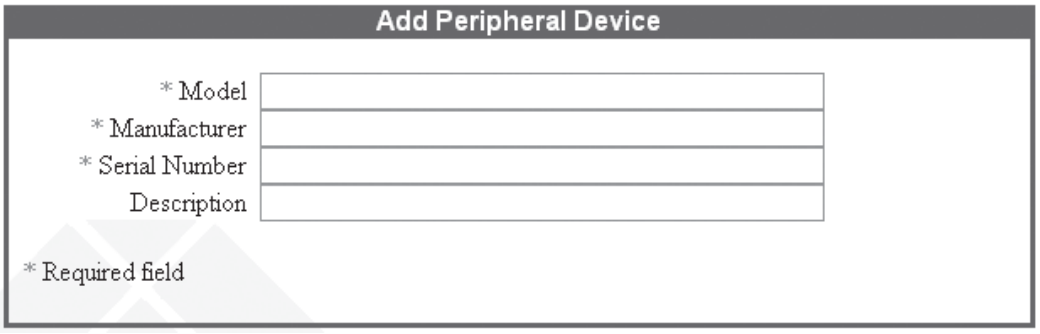


Figure 6-10. Add Peripheral Device screen.

Table 6-3. Peripherals list.

Item	Guideline
Model (Required)	Alphanumeric characters and hyphens allowed.
Manufacturer (Required)	Alphanumeric characters and hyphens allowed.
Serial Number (Required)	Alphanumeric characters and hyphens allowed.
Description	Enter up to 75 characters describing the peripheral. You may wish to include other relevant information, such as cartridge model numbers, year purchased, etc.

• Click the "Add Peripheral" button at the bottom of the page to save peripheral data. This returns you to the Peripherals List.

You may remove a peripheral from the list by clicking the check box to the left of its name, and then the Remove Selected button.

6.3 Associating Users, Software, and Peripherals With Systems

Once you add users, software, and peripherals to your database, you can associate them with specific systems. Start at the Systems List (Asset List) to make these associations.

• Select "Asset Tracker→Systems" from the left menu to go to the Asset Tracker: Systems page.

• Click the Host Name of the selected system. The Asset Tracker: System Information Overview page opens.

The Associate User, Associate Peripheral, and Associate Software buttons are at the top of the page. These functions allow you to make links with the selected Host Name.

Figure 6-11. Associate user, peripheral, and software buttons.

6.3.1 Associating Users with Systems

• Click the "Associate User" button on the Asset Tracker: System Information Overview page shown above. A list of Unassociated/Associated Users appears.

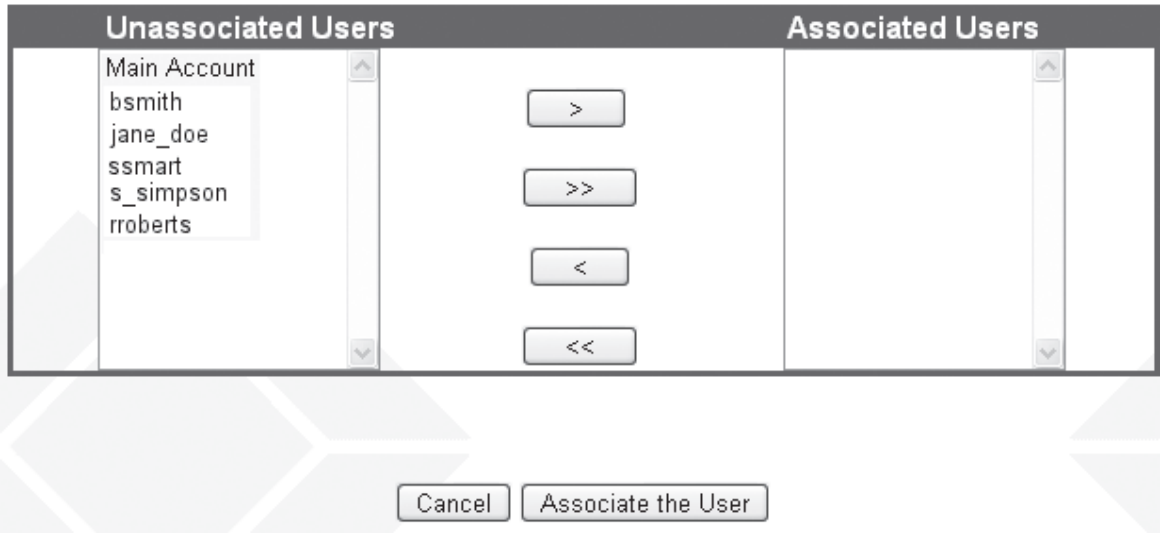


Figure 6-12. Unassociated/Associated users.

- Select users from the Unassociated Users list on the left and click the arrows in the middle to move them to the Associated Users list.
- Click the "Associate the User" button below the box to complete the changes.
- When the Asset Tracker: System Information Overview page redisplays, notice that the user(s) you selected now appear in the list of users associated with the system (bottom of first column).

You may associate as many users as required with any system.

6.3.2 Associating Software with Systems

- Click the "Associate Software" button on the Asset Tracker: System Information Overview page shown above. A list of Unassociated/Associated Software appears.

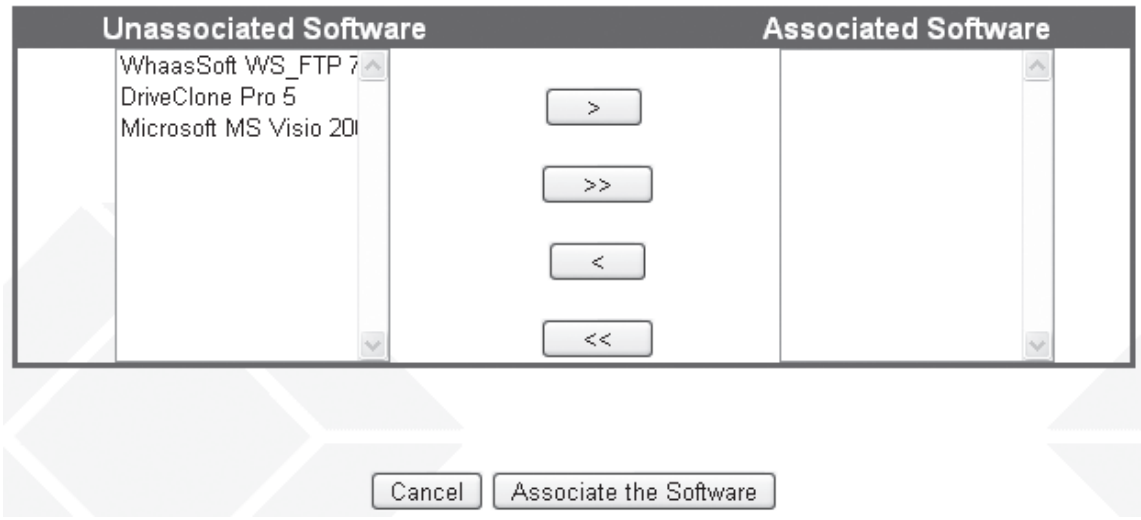


Figure 6-13. Unassociated/Associated Software screen.

- Select software from the Unassociated Software list on the left and click the arrows in the middle to move them to the Associated Software list.
- Click the "Associate the Software" button below the box to complete the changes.

When in the Asset Tracker: System Information Overview page redisplays, notice the software you selected now appears in the list of software associated with the system.

You may associate as much software as required with any system.

6.3.3 Associating Peripherals with Systems

- Click the "Associate Peripherals" button on the Asset Tracker: the System Information Overview page appears. A list of Unassociated/Associated Peripherals appears.
- Select peripherals from the Unassociated Peripherals list on the left and click the arrows in the middle to move them to the Associated Peripherals list.
- Click the "Associate the Peripheral" button below the box to complete the changes.
- When the Asset Tracker: System Information Overview page redisplays, notice that the peripheral(s) you selected now appear in the list of peripherals associated with the system.

You may associate as many peripherals as required with any system.

6.3.4 Removing Systems/IP Addresses from Veri-NAC

To remove IP addresses from all configured audits and the IP Address List:

- Select "Asset Tracker→Systems" from the left menu to open the Asset List.
- Click the check box next to IP addresses you wish to remove from the list.
- Click the "Remove Selected" button to the upper right of the list. Confirm when prompted.

7. Creating and Managing Audits

NOTE: Black Box LVN5200A units do not offer auditing. They feature Network Access Control functionality only. Black Box LVN5250A and LVN5400A, LVN5600A, and LVN5800A units offer auditing as well as NAC functionality.

The first step to managing audits is to define a series of audits and save them. Later, as required, you activate each audit.

To define an audit, specify the timing and IP scope, and when and how Veri-NAC should block traffic at the firewall or smart switch if vulnerabilities are found.

Define as many audits as you wish. Separate audits can target specific groups of machines. For example, one audit can address a server group, another a switch group, and a third a group of laptops. All these audits may run in parallel for efficiency – with some restrictions:

Table 7-1. Number of Audits.

Appliance	Number of Possible Simultaneous Audits
LVN5200A	None (auditing engine not included)
LVN5250A	10
LVN5400A	50
LVN5600A	100
LVN5800A	254

Once you define an audit, either run it immediately or schedule the audit and wait for Veri-NAC to run it as specified. You need only tweak your audit definitions occasionally.

This chapter describes how to define, execute, and manage audits.

7.1 Running a One-Click Audit

To audit a single IP address in a hurry:

- Select "Audits→One-Click Audit" from the left menu.

The One-Click Audit Wizard appears with the Audit Now box.

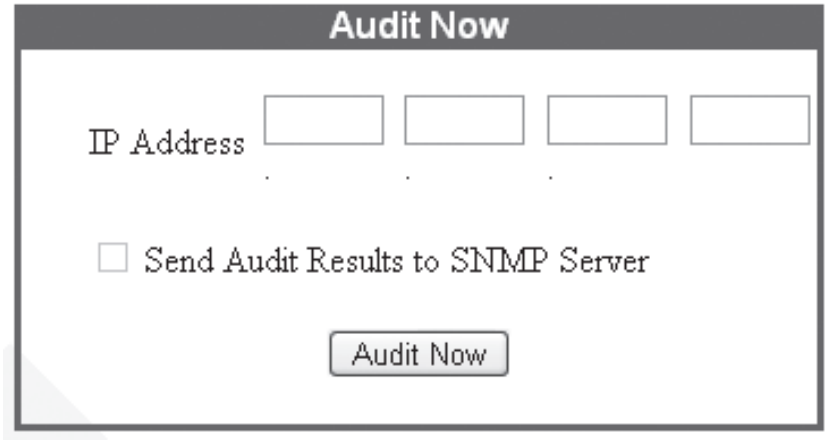


Figure 7-1. Audit Now box.

- Enter the desired IP address (#.#.#.# format) and click Audit Now.

If Veri-NAC has trouble finding a system with that IP address, it pops up another box asking you to confirm the IP address. If it is correct, click the "Continue" button to proceed.

As soon as the audit starts, the Reports page appears.

Report	▲ Audit Status	Audit Mode	Ticket #	Summary	Complete
VoIP Systems Audit	Audit In Progress	Full	NA	**0** vulnerabilities discovered	

Figure 7-2. Reports page.

- Look at the Reports column.
- Click on the Audit that's listed in the Reports column (for example, VoIP Systems Audit) to get more detail on the audit. See Figure 7-3.

Report	Audit Status	Audit Mode
critical servers	Audit In Progress	Full

Estimated Vulnerability Count									
3 IP Addresses	Status	Start	End	Duration	Serious	High	Medium	Low	Total
192.168.254.199	Complete	07:57:31 AM	07:58:02 AM	0 min 31 secs	0	0	0	0	0
192.168.254.207	In Progress	07:57:31 AM	N/A	0 min 53 secs	0	0	0	0	0
192.168.254.54	Complete	07:57:32 AM	07:58:02 AM	0 min 30 secs	0	0	0	0	0
Total					0	0	0	0	0

Figure 7-3. VoIP Systems Audit, critical reports detail.

The name of the Report entry starts with Quick_audit, the IP address, the date, and a suffix.

The audit is automatically a Full audit.

When the report is complete, you will see an "S" in the Summary column and a "C" in the Complete column. In the meantime, you will see the count of vulnerabilities found so far.

Select Reports→View Audit Results from the left menu if you want to leave this page and return to it in a few minutes.

For more information on reports, including how to add custom comments, identify and hide false positives, and restrict the content you view to selected levels of vulnerabilities, refer Chapter 12.

To see how vulnerabilities in reports are assigned to IT staff for remediation, refer to Chapter 15, Understanding Workflow and User Responsibilities.

7.2 Defining A New Audit

To create a new audit description (also called an audit definition):

- Click "Audits→Wizard" from the left menu.

The Audit Wizard appears. Audit Name and Notification Information are on the first page.

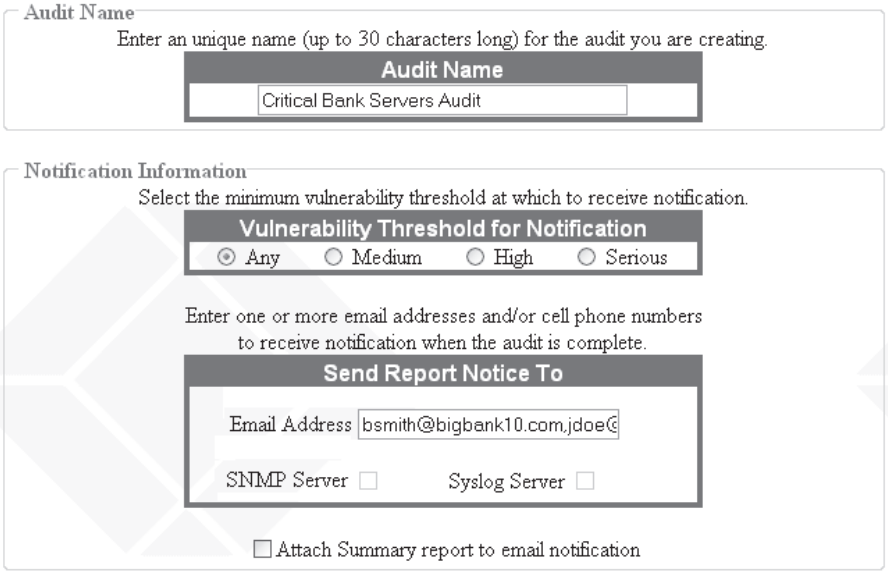


Figure 7-4. Audit Wizard screen.

7.2.1 Assigning an Audit Name

Enter the name of the new audit definition in the Audit Name field. The name must be one word and may consist of up to 30 letters, numbers, underscores, hyphens, and spaces, as well as the following three special characters: # & '

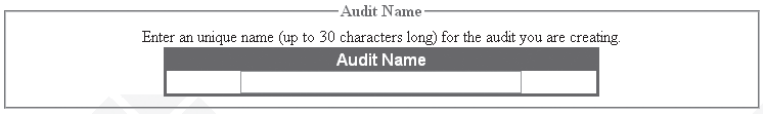


Figure 7-5. Audit Name screen.

We recommend using the name of the department to which the machines belong as the audit name. This naming convention assists various audit report users in understanding report contents without opening and studying the report. The name must be unique to the particular audit.

NOTE: It's a good idea to name audits based on the department performing the audits. Later, all reports from that source have the same name. When managers/executives create reports, they choose from a list of audits from which to cull information. If reports have the department name, they can readily select those of interest.

7.2.2 Setting Notification Information

Specify one or more e-mail addresses that you want to receive notification when this audit completes.

To enter more than one e-mail address, separate them with a comma ",". You may also send this notification to a cellular telephone if your provider supports email (for example 15255551212@verizon.com). If you check "attach Summary report to e-mail notification," you may incur additional data charges by your cellular telephone service provider. Also you will need to make sure your phone supports e-mail attachments and can display Adobe Acrobat PDF files.

7.2.3 Setting Vulnerability Threshold for Notification

- Click an option to indicate the level of vulnerability required for Veri-NAC to send a notification via e-mail or cell phone. See Guidelines in Table 7-2.

Figure 7-6. Vulnerability threshold screen.

Table 7-2. Notification guidelines.

Item	Guideline
Any	Any vulnerability, however minor.
Medium	At least one medium level vulnerability, as indicated in the table of Vulnerability Levels Definitions (see below).
High	At least one high level vulnerability.
Serious	Only when a serious level of vulnerability occurs.

Refer to Table 7-3 for vulnerability definitions. (You may want to initially focus on high and serious level vulnerability conditions, and then pursue low or medium level issues.)

NOTE: The Any Vulnerability Threshold for Notification selection includes the Notes and Low levels described in the following table.

NOTE: You may see Notes or Info Reporting Levels in your reports. These levels may describe open ports, operating systems running, services running, and versions. They may also provide security suggestions. They are at the same level as Notes described above.

7.2.4 Vunerability Level Definitions

Table 7-3. Vulnerability Level definitions.

Reporting Level	Vulnerabilities
Notes	Important notes—show you which ports are open. Get in the habit of reading Notes on a regular basis since they may indicate malware running on a port. Check open ports and confirm you want them open.
Low	Less important vulnerability—harder to exploit and usually causes little or no damage to your network assets. Always fix Serious and High vulnerabilities first and then review Medium and Low vulnerabilities. Decide if Low has potential consequence to your organization. If not, use the Comment field to indicate you don't consider this vulnerability an issue.
Medium	Slightly more important than a Low-level vulnerability but usually hard to exploit. Medium level vulnerabilities might allow an attacker to gain access to your network. Always fix Serious and High vulnerabilities first, and then review Medium and Low. Decide if Medium has potential consequence to your organization. If not, use the Comment field to indicate you don't consider this vulnerability an issue.
High	Very important vulnerability that may be easy to exploit and allow an attacker to cause serious damage to your network. Fix this vulnerability as soon as possible. If you cannot patch the problem, you may have to reconfigure the system, shut down a service or process and/or tune your firewall and other countermeasures to pick up and block an attack against this vulnerability.

Table 7-3 (continued). Vulnerability Level definitions.

Reporting Level	Vulnerabilities
Serious	Extremely important vulnerability that may be easy to exploit and allow an attacker to cause critical damage to your network. Fix this vulnerability as soon as possible. If you cannot patch the problem, you may have to reconfigure the system, shut down a service or process and/or tune your firewall and other countermeasures to pick up and block an attack against this vulnerability.

7.2.5 Modifying Who Receives Reports

- Fill in the notification fields with appropriate e-mail addresses and cell phones (optional):

E-mail—By default, all e-mail addresses from the Notification page appear here, separated by commas, semicolons, or spaces. You can remove any of them and continue to add other addresses within a 100-character limit.

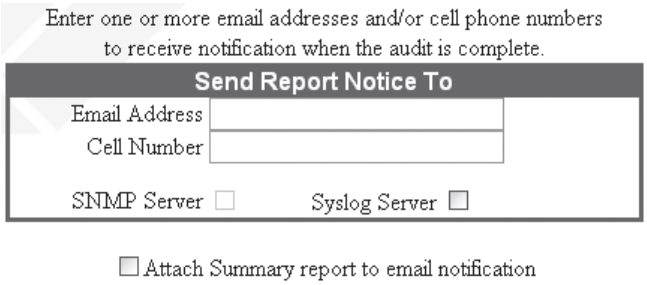


Figure 7-7. Who Receives Reports screen.

Check the "Attach Summary report to email notification box" if you want a Summary Report included with the notification.

Cell Number—Enter the designated phone number for all types of notifications with contiguous numbers—no dashes, spaces, or other characters. You may enter up to 10 cell phone numbers, separated by commas, semicolons, or spaces.

The numbers must be 10-digit North American phone numbers (with an area code for a North American location). The phone must be capable of receiving text messages and the service designated to receive them must be activated with the provider.

SNMP Server and Syslog Server – when checked, information about a completed audit will be sent to either the SNMP or Syslog server, provided you have configured these for use with Veri-NAC. Messages will contain the number and level of vulnerabilities found at each IP address.

- Click "Next" to proceed to the next page of the Audit Wizard. You will be prompted for any missing information before you can proceed.

7.2.6 Selecting Report Content

Set "Audit Mode and Firewall Information" on Page 2 of the Audit Wizard.

7.2.7 Audit Mode

- Select an Audit Mode to define the audit scope. You may choose between Full, Differential, Incremental, and Top 20 audits. See Guidelines in the table below.

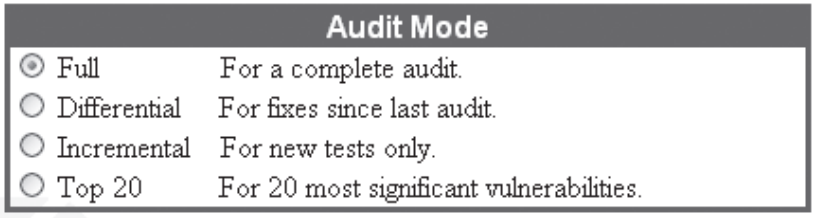


Figure 7-8. Audit Mode screen.

- Select an Audit Mode to define the audit scope. You may choose between Full, Differential, Incremental, and Top 20 audits. See Guidelines in the Table 7-4.

Table 7-4. Audit Mode descriiptions.

Setting	Description
Full	Reports will contain all results of all tests on all selected IP addresses.
Differential	Reports will compare results with previous reports from this audit definition. Reports will contain: • New vulnerabilities • Vulnerabilities fixed since the last report • Vulnerabilities still open from the last report for this audit
Incremental	Reports will contain only results of new vulnerability tests that were not included in the last report from this audit. Report will only show results for vulnerability signatures you downloaded since the last report.
Top 20	Reports will contain only the 20 latest and most significant vulnerabilities. This selection also contains a link to the SANS web site where the current top 20 vulnerabilities are explained. See www.sans.org for more information.

The first time you audit your network, you should run a Full audit. Later, you can edit the audit definition to make it Differential, but be sure to save it with the same audit name. Otherwise, if you create a new audit definition with a different name and make it Differential, it runs a Full audit the first time and subsequently runs a Differential audit. (See Modifying an Existing Audit's Definition, Section 7.7.)

NOTE: Since a Differential audit performs a full audit the first time, we suggest you run Differential audits from the start, rather than change them later.

If you want to run only new vulnerability tests on a machine or group of machines, use the Incremental option. Incremental never runs a Full audit. Veri-NAC keeps track of tests run on any given IP address, and runs only those not run before. Incremental audits, therefore, run quicker than other audits and save time.

7.2.8 Firewall Information

Vulnerability Threshold for Firewall Blocking

This setting lets you choose the minimum vulnerability required to initiate blocking to/from a vulnerable asset at the firewall.

You can choose from several options described in the table below:

Table 7-5. Firewall blocking.

Setting	Description
Never	Never block traffic at firewall, regardless of vulnerability level.
Low	Block traffic at firewall when at least one low-level vulnerability exists.
Medium	Block traffic at firewall when at least one medium-level vulnerability exists. If only low-level vulnerabilities exist, traffic will not be blocked.
High	Block traffic at firewall when at least one high-level vulnerability exists, If only medium or low level vulnerabilities exist, traffic will not be blocked.
Serious	Block traffic at firewall when at least one serious-level vulnerability exists, If only low, medium, or high level vulnerabilities exist, traffic will not be blocked.

When Veri-NAC blocks traffic at the firewall, it makes note of that action in the e-mail notification it sends.

Once traffic to and from the firewall to a particular IP address is blocked, Veri-NAC never unblocks that traffic without input from a user (except on the CyberGuard Classic firewall). A system administrator must unblock the firewall manually.

7.2.9 Firewall Blocking Mode

Select from two options described in FIgure 7-9 and Table 7-6.

Figure 7-9. Firewall Blocking mode screen.

Table 7-6. Firewall Blocking mode.

Setting	Description
Full IP Blocking	Block all traffic to and from IP address at firewall.
Port Level Block	Block only traffic through the vulnerable port.

7.2.10 Vulnerability Threshold for Smart Switch Blocking

Smart switch blocking is identical to firewall blocking, except there is no option for port-level blocking.

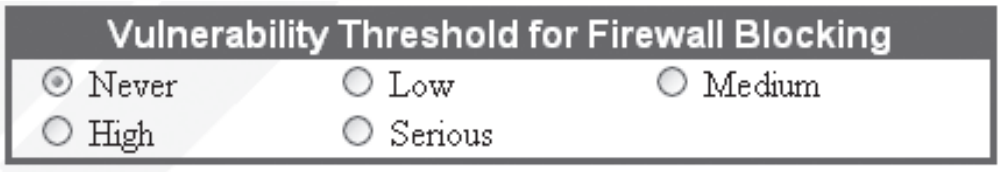


Figure 7-10. Vulnerability Threshold for Firewall Blocking screen.

7.3 Scheduling Audits

Before you take the next step in the Audit Wizard, you need to think about the logistics of scheduling your audits and all related issues in your particular work environment.

The following sections include Scheduling Audits and Setting Audit Frequency and Start Time. This information should help you decide appropriate settings for your company.

Take several factors into consideration when determining an audit schedule.

7.3.1 Scheduling Audits with Norton Applications

If you have Norton Anti-Virus running on a server you plan to audit, be aware that Norton interferes with many products. If Norton Anti-Virus is running when you perform an audit, Norton interprets Veri-NAC actions as a denial of service attack (DoS) and sends messages to the system administrator indicating a DoS attack is in progress. It then crashes the server.

To avoid this situation, take the following steps:

- To estimate how long your audit will take, run your first audit (or series of audits) at midnight and see what time the report notifications are sent to you. The length of time an audit takes tends to remain consistent. To judge how long an audit may run, see Estimating Audit Length.
- Schedule your audits when the system will not be busy with other activities, such as in the early morning hours.

- Shut down all Norton® applications a few minutes before running an audit. Run a script to automate that shutdown.
- Allow enough time for the audit to complete before restarting the Norton application.

7.3.2 Scheduling Backups and Audits

Do not overlap your backup schedule with the audit schedule. To avoid overlap, be aware of how long the audit may take. Refer to Estimating Audit Length. As a precaution, if you know how long your backup usually takes, schedule it to run first and schedule audits after you expect the backup to be complete.

7.3.3 Scheduling Audits with Windows XP SP2 Installed

If you are running Service Pack 2 on a Windows XP system, be aware that this service pack activates a personal firewall on the client that blocks probing of the machine by many products. Turning off the fsirewall activated by Windows XP does not affect other Firewalls on your network.

To give Veri-NAC a chance to retrieve information from the client and to ensure the SP2 Firewall is turned off, allow at least an hour between setting up a daily audit and running. Always allow this one-hour interval between making a change to this setting or setting up the daily audit to ensure the Windows client and the Veri-NAC server are coordinated.

7.3.4 Setting Audit Frequency and Start Time

The third page of the Audit Wizard allows you to set audit frequency and timing.

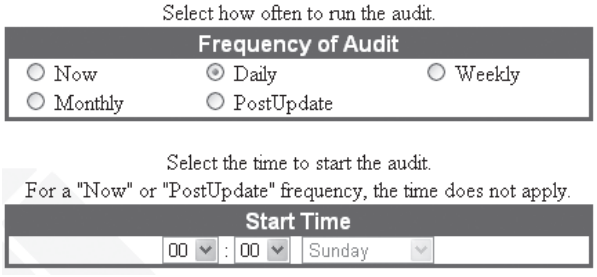


Figure 7-11. Set Audit Frequency and Start Time screens.

The Frequency of Audit and Start Time fields indicate when and how often this audit runs once it is started from the Audits: Manage page.

- Set Frequency of Audit to one of the settings shown. See setting descriptions in Table 7-7.

Figure 7-12. Frequency of Audit screen.

Table 7-7. Audit Frequency options.

Setting	Description
Now	Runs the audit as soon as it is activated. (Audit automatically returns to Inactive setting after completion).
Daily	Runs the audit at the same time each day. Use the pulldown menus in the Start Time fields to specify the time of day to begin the test. Any Day of Week you set is ignored. Once activated, the audit runs every day at the specified time.
Weekly	Runs the audit at the same time each week as soon as it is activated. Use the pulldowns to select the Start Time and Day of Week. Once activated, the audit runs every week at the specified time.
Monthly	Runs the audit every month on the Day of Week and at the Start Time you select as soon as it is activated. For example, if you select Monday, the test will run on the next Monday in the current month, then on the first Monday in succeeding months. Once activated, the audit runs every month at the specified time.
PostUpdate	Runs the audit immediately after a CVE update is downloaded. (Audit immediately returns to Inactive status after completion and remains Inactive until the next CVE update is downloaded.)

NOTE: An audit set to Now runs each time you start it, then reverts to the Inactive state.

• Set the audit Start Time, if appropriate. (For an audit set to Now or PostUpdate frequency, the time does not apply.)

Figure 7-13. Start Time screen.

Choose the Hour and Minute you want to schedule the audit to start, and then select the day of the week from the pull down menu.

7.4 Choosing IP Addresses From List

The fourth page of the Audit Wizard allows you to choose specific IP Addresses for auditing.

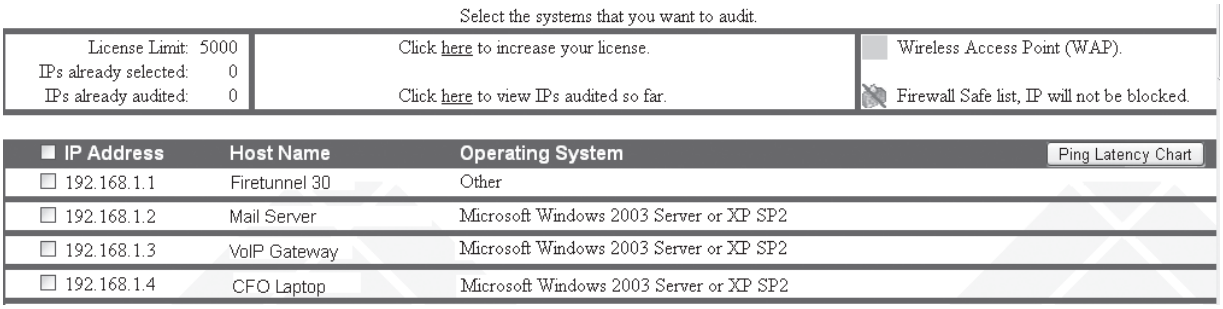


Figure 7-14. Selecting IP Addresses from List screen.

Information about your auditing capacity is shown at the top of the page, including:

• Number of IP addresses your license allows you to audit (variable depending on which appliance you own)

• Number of IP addresses currently selected (IP addresses are selected when the box to the left of the entry is checked)

• Number of IP addresses already audited

- Link to upgrade the number of IPs in your license
- Link to list of IPs audited so far and their status
- Green (or alternate color, based on browser settings) box that flags wireless access points
- Icon (case with a line through it) that indicates the IP address is in the Firewall Safe List and will never be blocked

The complete list of your IP Addresses appears below.

After Veri-NAC collects IP addresses on the network, it instantly recognizes:

- Wireless access points
- Assets on the Safe List
- Missing systems
- Blocked systems or systems with a blocked port

7.4.1 Selecting/Grouping IP Addresses to Audit

Each IP address is listed with a check box to its left. Use the check box to select individual IPs for audit. The listing also shows IP addresses of subnets; subnets do not have host name or operating system data.

☐ IP Address	Host Name	Operating System
☐ 192.168.1.1	WebServer1	Microsoft Windows
☐ 192.168.1.2	Spoofer1	Microsoft Windows 2003 Server or XP SP2
☐ 192.168.1.3	Firetunnel30	Linux 2.4.0 - 2.5.20
☐ 192.168.1.4	Database Server	Linux 2.4.0 - 2.5.20
☐ 192.168.1.5	Mail Server	Microsoft Windows

Figure 7-15. Selecting IP Addresses to Audit screen.

You must select at least one IP address to audit.

7.4.2 Using the "Select All" Audit Wizard Checkbox

- Select "Audits→Wizard" from the left menu to initiate the Audit Wizard.

Select the systems that you want to audit.

License Limit:	5000	Click here to increase your license.
IPs already selected:	0	
IPs already audited:	0	Click here to view IPs audited so far.

☑ IP Address	Host Name	Operating System
☑ 192.168.1.1	Firetunnel30	Other
☑ 192.168.1.2	Database Server	Microsoft Windows 2003 Server or XP SP2

Figure 7-16. Select All Audit Wizard screen.

When presented with the asset selection screen during the Audit Wizard, click the checkbox next to the IP Address header to toggle selection on all existing IP addresses.

Tips for Completion

Table 7-8. Tips for completion.

Objective	Action
Clear the list of individually selected IPs	Click twice on the check box for the subnet containing the individual addresses (once to toggle them all on and again to toggle them all off).
Select an entire subnet	Click the check box next to the subnet name. Beware, however, an entire subnet audit takes longer to complete than the audit of several individual IP addresses, making the reports very large. An optimal approach is to classify the IPs into logical groups such as "servers" and "laptops," and create a separate audit definition for each group.

- Click the "Review" button at the bottom of page four of the Audit Wizard to review your settings or click "Edit" to go back and make changes.

7.5 Saving the Audit

Review your settings on the Audit Settings page.

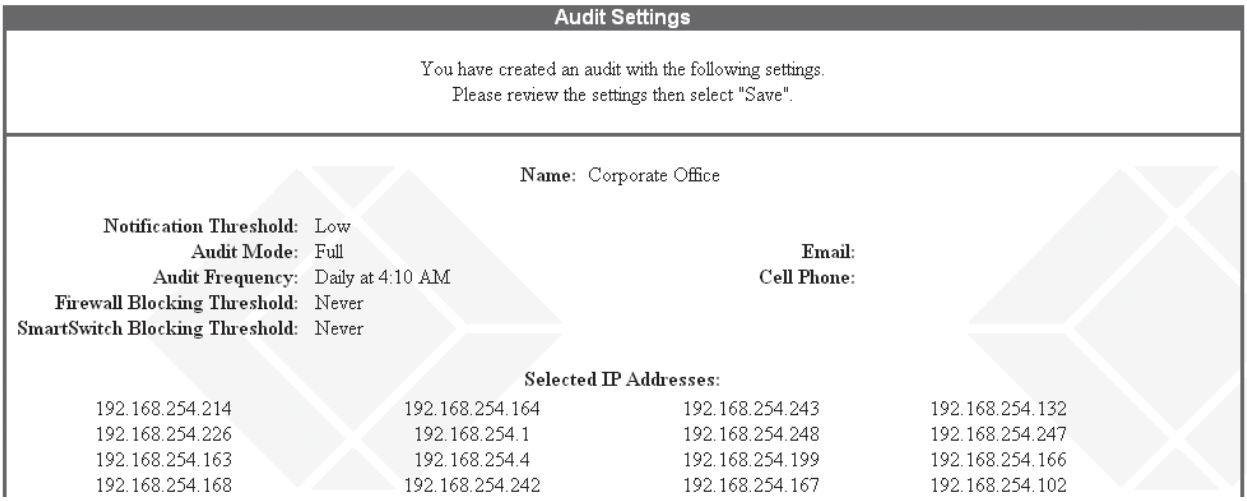


Figure 7-17. Audit Settings page.

NOTE: Before you proceed, ensure no red text appears in the Audit Settings display. If any IP addresses are shown in red, you either exceeded the number of IP addresses your license allows you to audit, or an existing audit may show an unknown IP Address (MAC-IP Mismatch). (See the sections on IP MAC Mismatches for more information. These mismatched assets are preceded by the word Previously.)

If you've exceeded your license, Veri-NAC indicates the number of IPs in excess of your license in a message at the top of the window. You must click Edit and deselect enough IPs to reduce the number below the limit, or you can increase your license limit.

Click "Review" before saving again. (Your license is not affected until you click "Save" in the "Audit Settings" window and audit those assets. Save is "grayed out" until you are within your license range.)

- Click "Save" to preserve the audit and exit from the Audit Wizard. This takes you to the Manage Audits page that displays all defined audits.

7.6 Activating/Managing Audits

You can manage all audits you create and save on the Manage Audits page. Here you may start, stop, or delete audits depending on your daily needs. After you save an audit, Veri-NAC automatically displays this page.

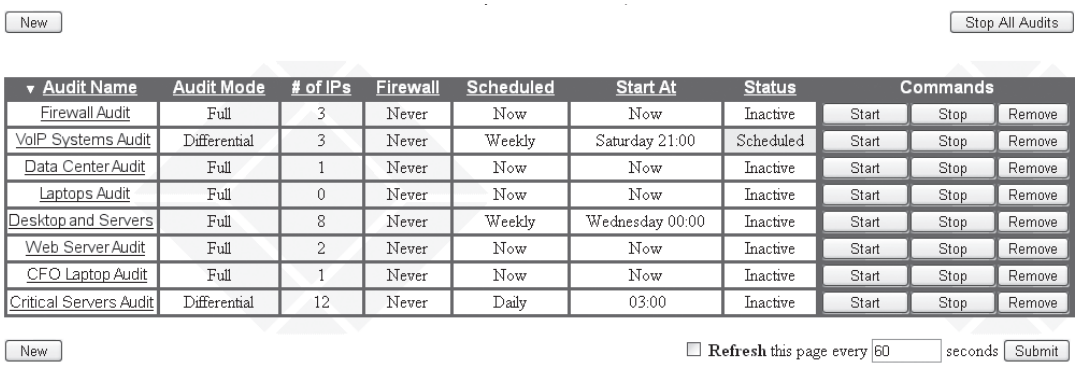


Figure 7-18. Manage Audits page.

The Manage Audits page displays all audits saved in the system as well as their audit/CVE test parameters. The Status column shows the current state (Auditing, Inactive, or Scheduled) of each audit.

7.6.1 Scheduling an Audit to Run

The Manage Audits page gives an overview of audit parameters you set earlier.

The first column shows Audit Name. Each audit has its own row with Start, Stop, and Remove (Command) buttons to the far right.

A Status column just to the left of the Command buttons indicates the audit's current condition. The initial status of any audit is Inactive. Inactive audits do not run. To run them, use the Command buttons to the right.

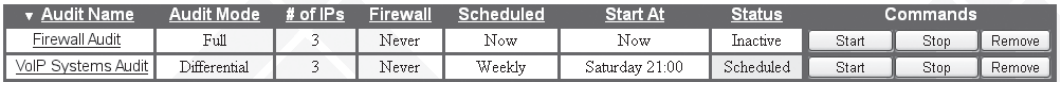


Figure 7-19. Audit page.

7.6.2 Starting an Audit

- Click the Start command button in the audit row.

  Audit Status becomes Scheduled. The audit starts running at the specified Audit Time and Start Time. If an audit is scheduled for Now, it starts auditing immediately after you click Start, and the Status changes to Auditing.

Figure 7-20. Start Audit page.

NOTE: If you start an audit scheduled for Now, you are directed to the Reports page. Audit information is shown next.

Audit Name	Audit Mode	# of IPs	Firewall	Scheduled	Start At	Status	Commands
critical servers	Full	3	Never	Now	Now	Auditing	Start Stop Remove

Figure 7-21. Audit information page.

Once it starts, an audit's Status changes to Auditing (see the Manage Audits page for more information). When an audit finishes, its Status automatically reverts to Scheduled, unless it is a Now audit. (Now audits revert to Inactive upon completion, but can be run again at any time by clicking Start.)

When an audit is complete and reports are available, contacts designated in the Audit Wizard are notified.

Any number of audits can be Scheduled or Auditing at a given time without interference.

To see the reports:

• Select "Reports→View" from the left menu bar.

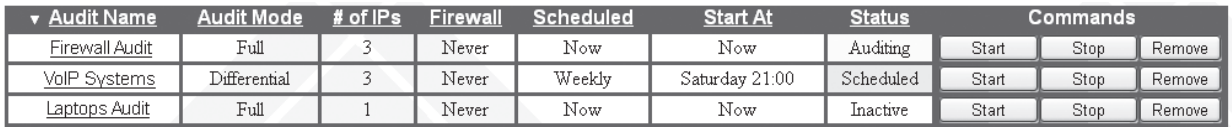
For details on how to work with reports, see Chapter 12.

7.6.3 Deactivating an Audit

When you no longer want a particular audit to run but wish to keep it in the system, you can make it Inactive.

• Select "Audits→Manage" from the left menu.

• Click the "Stop" button (far right in the row) for the audit. The Status column indicates it is Inactive.



Audit Name	Audit Mode	# of IPs	Firewall	Scheduled	Start At	Status	Commands
Firewall Audit	Full	3	Never	Now	Now	Auditing	Start Stop Remove
VoIP Systems	Differential	3	Never	Weekly	Saturday 21:00	Scheduled	Start Stop Remove
Laptops Audit	Full	1	Never	Now	Now	Inactive	Start Stop Remove

Figure 7-22. Deactivating an Audit screen.

The audit stays in the system, but does not run until you change its status to Scheduled again by clicking Start.

7.6.4 Removing an Audit

You can remove a specific audit when you no longer need it.

• Select "Audits→Manage" from the left menu.

The audit is deleted from the system and no longer appears on the Manage Audits page.

• Click the audit's "Remove" button, to the right of the Stop button.

7.7 Modifying an Existing Audit's Definition

You can also change parameters for an existing audit from the Manage Audits page.

• Select "Audits→Manage" from the left menu.

• Click the "Audit Name" in the first column.

The Audit Wizard opens and displays information for that audit.

• Make the desired changes as you proceed through the Audit Wizard pages.

• Click "Review" and check your settings before clicking "Save."

NOTE: To run an audit, you must activate it from the Manage Audits page.

7.8 Copying an Audit to Create a Variation

To create a new audit with some or all the parameters from an existing audit definition:

- Select "Audits→Manage" from the left menu page.
- Click the "Audit Name" of the existing audit.

The Audit Wizard opens and displays the information for that audit.

- Enter the name for the new audit in the Audit Name field. Be sure it is unique.
- Change the parameters as you click through the Audit Wizard pages.
- Click the "Save" button to save the variant audit.

7.9 Removing Systems/IP Addresses from an Audit

To remove system/IP addresses from a particular audit, deselect that IP address in the list, and then re-save the audit.

- Select "Audits→Manage" from the left menu.
- Select the Audit Name and click on the link. This takes you to the Audit Wizard for the selected audit.
- Page through the Audit Wizard using the Next button until you reach the list of IP Addresses.
- Click check boxes next to the IP addresses you want to remove to deselect them.
- Click the Review button to verify your changes.
- Click "Save" to retain the changes once you are satisfied with your edits.

7.10 Viewing Lists of CVE Tests by OS and Application

You can view information about tests Veri-NAC runs for each operating system or application at any time.

- Select "Audits→View Vulnerability Tests" from the left menu. The View Test List by OS & Applications box opens.

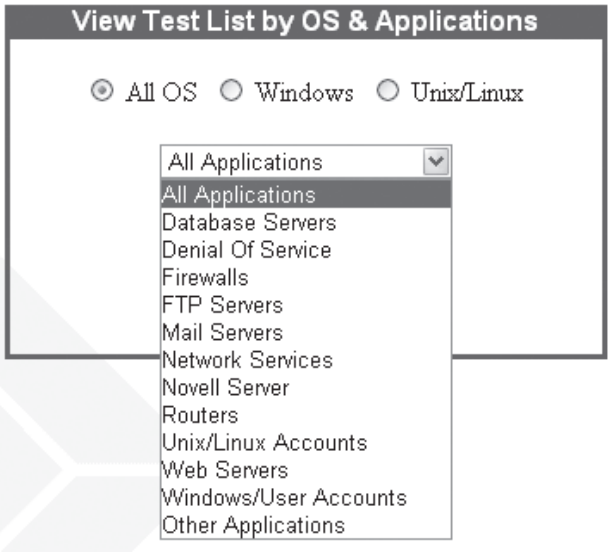


Figure 7-23. View test list screen.

- Select "All OS," "Windows," or "UNIX/Linux."
- Click the Display List button to see a list of the CVE tests available for All Applications for that OS.

You can also select a particular group of tests by clicking the arrow next to All Applications.

Then choose the tests you want to see, such as Web Servers or Denial of Service, from the pull-down menu. For example, if you choose Novell® Server from the pull-down list, you'll see a list of tests Veri-NAC will run on your Novell Server.

Click the Display List button to view the results.

A sample list for Mail Servers is shown (cut short) in Figure 7-24. The text indicates when the test checks for a particular CVE.

```
ArGoSoft Mail Server Directory Traversal Vulnerability
   - Gets the version of the remote ArGoSoft server

ArGoSoft Mail Server multiple flaws(2)
   - Gets the version of the remote ArGoSoft server

ArGoSoft Mail Server multiple flaws
   - Gets the version of the remote ArGoSoft server

Artmedic Kleinanzeigen File Inclusion Vulnerability
   - Checks for Artmedic Kleinanzeigen's PHP inclusion vulne:

Bagle.B detection
   - Checks for Bagle.B

Bandmin XSS
   - Checks for Bandmin
   - CVE: CAN-2003-0416

BasiliX Arbitrary Command Execution Vulnerability
```

Figure 7-24. Sample Mail List screen.

7.11 Managing Mismatched IPs

Sometimes the audits you create contain mismatched IPs—assets that changed their IP Address for various reasons since the last scan. One way to view and manage Mismatched IPs is from the Manage IPs page.

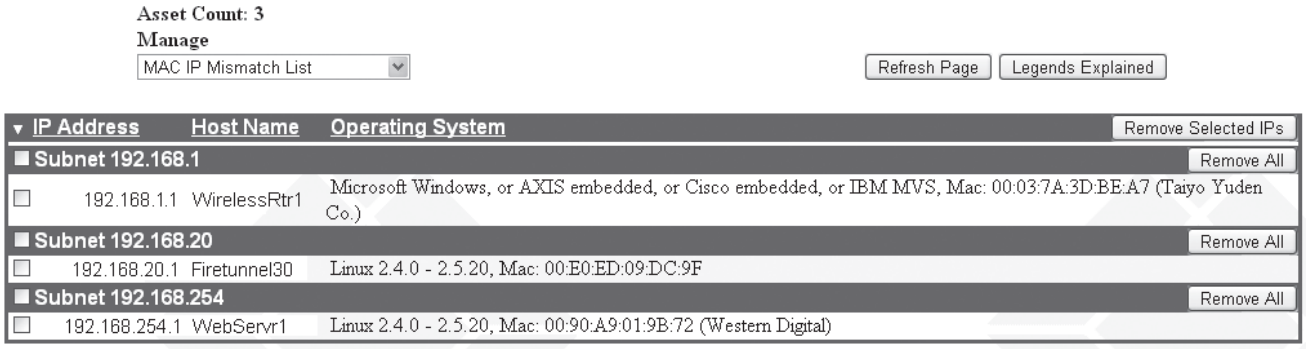


Figure 7-25. Manage IPs page.

- Select "Network Access→Admission Control→Manage IPs" from the left menu.
- Select "MAC IP Mismatch List" from the pull-down menu to view a screen similar to the one above.

If you click on the link for the first IP address above, you go to the Asset Tracker System Information Overview page.

The System Information portion of the Asset Tracker System Information Overview shows previously known information about this asset. The change in IP address is shown in red.

• Click the Edit button below this box to go the System Information page for this asset.

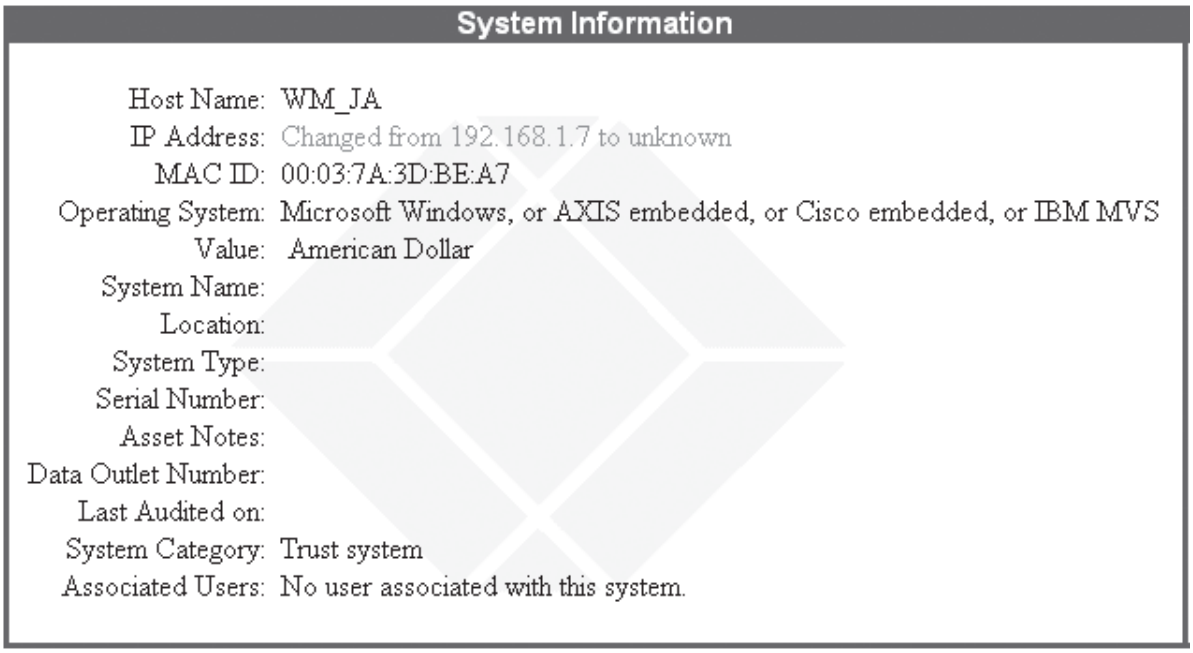


Figure 7-26. System Information page.

This IP Address is currently Unknown. If you know what it has changed to, you can manually enter the new IP Address here.

The other option for resolving this mismatch is to either remove the mismatched asset(s) from the audit or run an Asset Discovery.

7.12 Viewing the Veri-NAC Schedule

If you want a visual overview of all audits, you can display a schedule in a calendar view.

• Select "Audits→Schedule" from the left menu.

Initially, a weekly view of the schedule displays.

The illustration shows an example of a weekly schedule. Time is blocked out for each audit. More time is blocked out for audits Veri-NAC estimates will take longer to run.

Hold the mouse over any audit name in the calendar (as shown for Wednesday's audit in the illustration) to view a box showing estimated length of time required for the audit as well as a list of the IP addresses included in the audit.

Figure 7-27. Veri-NAC schedule.

7.13 Viewing the Monthly, Weekly, or Yearly Schedule

Additional schedule formats can be viewed from pull-down lists, located near the bottom of the page, labeled Month, Week, and Year.

Month—To see the schedule for a particular month, select that month from the pulldown at the lower left of the page and click "Go."

You see scheduled audits listed on the days they will occur along with scheduled times.

Week—To see the schedule for a particular week, select that week from the pulldown on the bottom center of the page and click "Go."

You can also click My Calendar (lower left corner) from any view to see the Weekly view.

Year—To see the schedule for a particular year view, select that year from the pulldown in the lower right corner of the page and click "Go."

NOTE: If you have not clicked the Start button for the audit on the Manage Audits page, the audit will not show in the calendar because it is not yet scheduled.

7.14 Viewing the Daily Schedule

When viewing the yearly schedule, you can click on any specific day to see audits scheduled for that day in a daily calendar display.

Viewing the Daily Schedule Details

To see details of the schedule for a particular day, click on the actual audit in the Monthly, Weekly, or Daily view.

The audit schedule description appears, including:

- Audit name
- IP addresses to be audited
- Audit frequency
- Scheduled start time

• Expected audit duration

7.15 Searching the Calendar

You can search the calendar for a particular audit.

• Select "Search" below the Month field in the lower left corner.

Figure 7-28. Searching Calendar screen.

• Enter the search parameters in the Keywords field.

Figure 7-29. Enter Search Parameters.

Search for words that appear in the name of the audit.

• The search results indicate the number of matches found and the names of reports containing those search items.

7.16 Opening Audit/Scheduling FAQ in the Calendar View

Select "FAQ" below the Month field in the lower left corner of the Calendar to view answers to frequently asked questions about audits and reports.

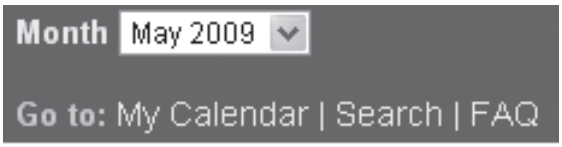


Figure 7-30. Selecting FAQ screen.

The FAQ page appears.

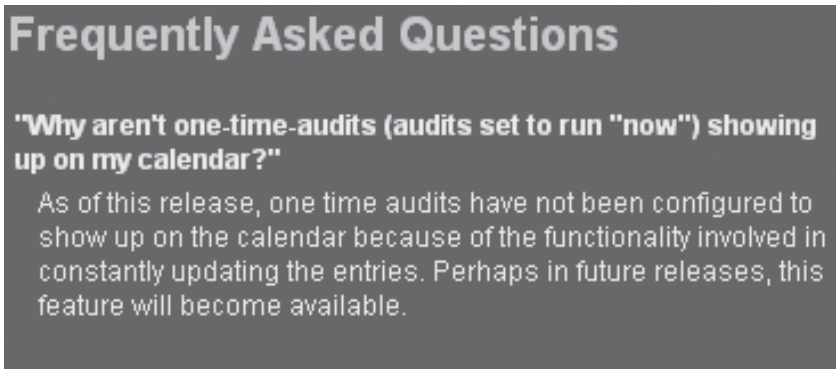


Figure 7-31. FAQ screen.

If you do not find the answer you need, contact Black Box Technical Support at 724-746-5500 or www.blackbox.com.

7.17 Managing In Process Audits

7.17.1 Reviewing Audits

There are several options for reviewing in-process audits. Let's say you create an audit called Sales Department. If you select "Audits→Manage" from the left menu, you will see it listed.

▼ Audit Name	Audit Mode	# of IPs	Firewall	Scheduled	Start At	Status	Commands		
Firewall Audit	Full	3	Never	Now	Now	Inactive	Start	Stop	Remove
VoIP Systems Audit	Differential	3	Never	Weekly	Saturday 21:00	Scheduled	Start	Stop	Remove
Data Center Audit	Full	1	Never	Now	Now	Inactive	Start	Stop	Remove
Laptops Audit	Full	0	Never	Now	Now	Inactive	Start	Stop	Remove
Desktop and Servers	Full	8	Never	Weekly	Wednesday 00:00	Inactive	Start	Stop	Remove
Web Server Audit	Full	2	Never	Now	Now	Inactive	Start	Stop	Remove

Figure 7-32. Reviewing audit.

- Click the Servers Start button to begin the audit. Once the audit begins, you are automatically taken to the Reports Page (Reports→View Audit Results) and shown an overview of the audit as it progresses. Here, the audit has started, but no vulnerabilities have been discovered yet.

Report	▲ Audit Status	Audit Mode	Ticket #	Summary	Complete
servers	Audit In Progress	Full	NA	15 vulnerabilities discovered	

Figure 7-33. Reports page.

- Click on "Servers" link to go to the audit details.

The next illustration shows the status of the Servers audit after a few minutes.

Vulnerability Details								
2 IP Addresses	Start	End	Duration	Serious	High	Medium	Low	Total
192.168.1.2	08:21:56 AM	08:22:25 AM	0 min 29 secs	1	3	8	12	24
192.168.70.5	08:21:56 AM	08:22:24 AM	0 min 28 secs	4	3	15	2	24
Total				5	6	23	14	48

Figure 7-34. Servers status page.

NOTE: 15 vulnerabilities have been discovered so far. Three are of high priority.

The data will change as the audit progresses. Now there are 48 total vulnerabilities.

The final audit screen is shown next. There are 51 total vulnerabilities present.

NOTE: Once the audit is complete, the status column disappears and a new column appears on the right hand side—Firewall/SmartSwitch Update.

After the Servers audit finished, the SmartSwitch blocked the IPs showing high vulnerabilities. (You specify the Firewall and SmartSwitch blocking requirements when you create the audit in the Audit Wizard.)

IP Address 192.168.1.2 in the illustration shows three high vulnerability items. This address was blocked at SmartSwitch 192.168.254.23 on Unit 1, Port 12.

NOTE: This IP Address was also blocked at the firewall.

You can also specify Firewall and SmartSwitch blocking requirements on the Network Admission Control→Dynamic Detection System page. Blocking rules for this action are displayed on the Network Admission Control→SmartSwitch Integration page.

7.17.2 Viewing Partial Reports

At times it may be helpful to view actual report data before an audit is fully completed—perhaps to check how things are going, or to view the status of a particular asset.

Let's say you create an audit called VoIP Systems Audit. If you select "Audits→Manage" from the left menu, you will see it listed.

▼ Audit Name	Audit Mode	# of IPs	Firewall	Scheduled	Start At	Status	Commands		
Firewall Audit	Full	3	Never	Now	Now	Inactive	Start	Stop	Remove
VoIP Systems Audit	Differential	3	Never	Weekly	Saturday 21:00	Scheduled	Start	Stop	Remove
Data Center Audit	Full	1	Never	Now	Now	Inactive	Start	Stop	Remove
Laptops Audit	Full	0	Never	Now	Now	Inactive	Start	Stop	Remove
Desktop and Servers	Full	8	Never	Weekly	Wednesday 00:00	Inactive	Start	Stop	Remove
Web Server Audit	Full	2	Never	Now	Now	Inactive	Start	Stop	Remove

Figure 7-35. Reports screen.

- Click the VoIP Systems Audit Start button to begin the audit. You are automatically taken to the Reports Page (Reports→View Audit Results), where you see an overview of the audit.

Report	▲ Audit Status	Audit Mode	Ticket #	Summary	Complete
☐ VoIP Systems Audit	Tuesday, Aug 11, 2009 8:26	Full	360	S	C

Figure 7-36. Partial Reports page.

Initially, there are 0 vulnerabilities discovered, but this number will change as the audit updates. Make sure you check the Refresh this page every seconds button at the bottom of the page to get updates. Adjust the refresh rate if necessary. We recommend setting the refresh rate to every 45 seconds.

As the audit progresses, the page will be updated, and you can proceed.

- Click the Generate Report link for this audit to get a partial report (the report is partial because the audit is still In Progress).

This takes you to the Generate Report page.

Here you have four options:

- Create a partial report and continue with the audit.
- Create a partial report and stop auditing.
- Stop the audit without creating a report.
- Continue auditing without creating a partial report.

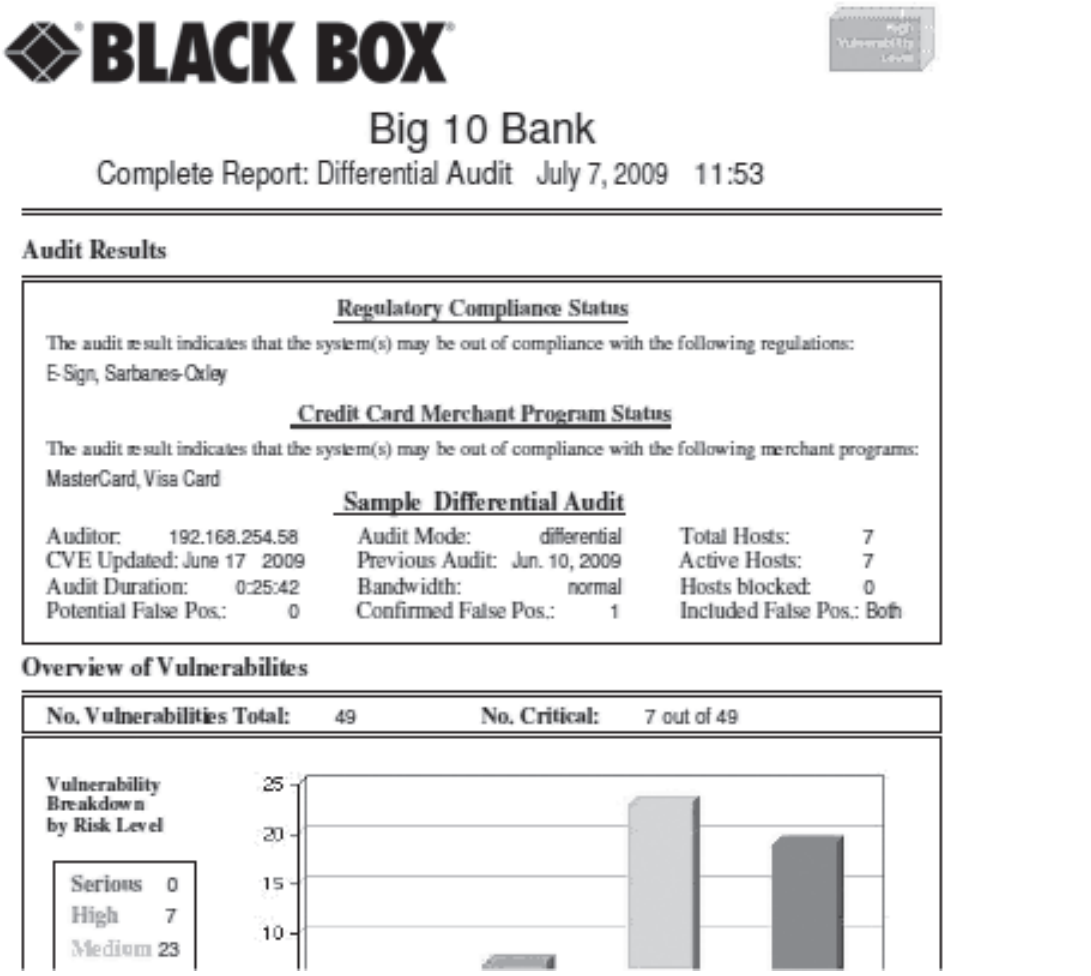
NOTE: A partial audit may affect your license agreement because you can only audit a specific number of MAC addresses with a limited license agreement. You are licensed to audit "N" specific addresses, not "N" addresses total.

- Decide which Partial Report option works best for you and select the appropriate button.

Your choice takes you back to the Reports Page. In this example, we chose Create a partial report and continue with the audit.

- Click on the  button to get your partial report. The report opens in a PDF file.

The Summary and Complete Reports are both available after the audit completes.



BLACK BOX

Big 10 Bank

Complete Report: Differential Audit July 7, 2009 11:53

Audit Results

Regulatory Compliance Status

The audit result indicates that the system(s) may be out of compliance with the following regulations:

E-Sign, Sarbanes-Oxley

Credit Card Merchant Program Status

The audit result indicates that the system(s) may be out of compliance with the following merchant programs:

MasterCard, Visa Card

Sample Differential Audit

Auditor:	192.168.254.58	Audit Mode:	differential	Total Hosts:	7
CVE Updated:	June 17 2009	Previous Audit:	Jun. 10, 2009	Active Hosts:	7
Audit Duration:	0:25:42	Bandwidth:	normal	Hosts blocked:	0
Potential False Pos.:	0	Confirmed False Pos.:	1	Included False Pos.:	Both

Overview of Vulnerabilites

No. Vulnerabilities Total: 49 **No. Critical:** 7 out of 49

Vulnerability Breakdown by Risk Level

Serious	0
High	7
Medium	23

25
20
15
10

Report	▲ Audit Status	Audit Mode	Ticket #	Summary	Complete
VoIP Systems Audit	Tuesday, Aug 11, 2009 8:26	Full	360	S	C

Figure 7-37. Complete report screens.

8. Setting Up Updates

8.1 Setting Up Automatic Vulnerability Updates

You can schedule updates at any time to ensure you are up to date on all the latest tests.

• Select "Updates→Vulnerability Signatures" from the left menu. The Automatic Vulnerability Signature Update box appears.

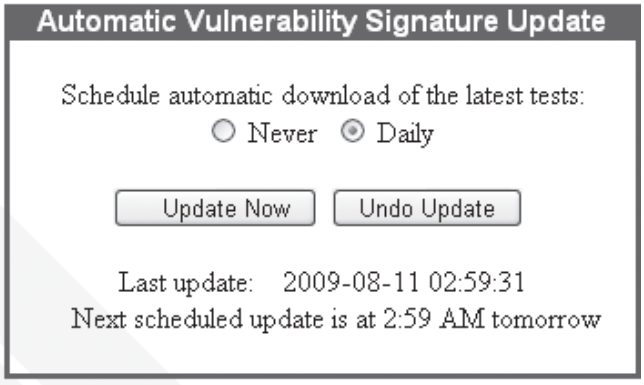


Figure 8-1. Automatic Vulnerability Signature Update screen.

Here you set the schedule for receiving updated vulnerability tests over the Internet from the Update Server. Downloads from Black Box are secure transmissions that access only the Veri-NAC appliance.

• Choose the automatic download schedule most appropriate for your environment. See Table 8-1.

Table 8-1. Automatic download schedule.

Option	Action
Never	No updates are scheduled
Daily	Update is performed once a day

NOTE: For automatic downloads to occur, you must open port 443 on your firewall.

NOTE: The normal setting is Daily. If you click "Never," no automatic downloads occur. You may still run updates when you wish by clicking the Update Now button – a single download will occur immediately, but no periodic updates will be scheduled.

• Choose "Update Now" or "Undo Update" to continue.

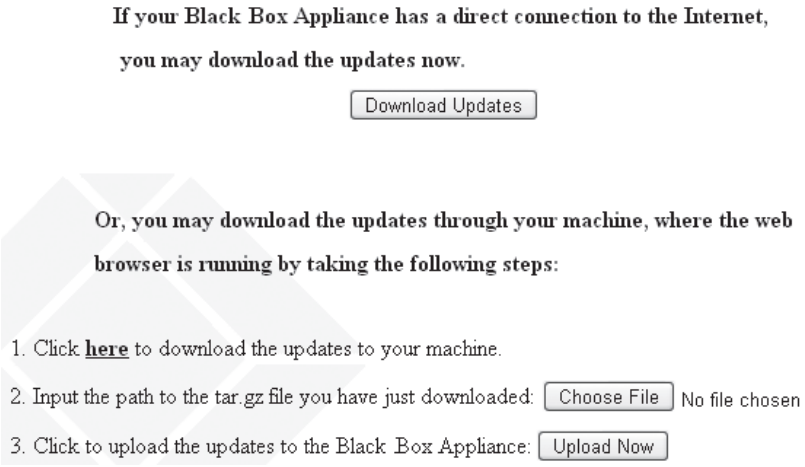


Figure 8-2. Download Updates screen.

Update Now—Click this button to immediately receive updated vulnerability tests from the Update Server.

You can also request a single download of vulnerabilities at any time. (This may be necessary later if you initially select the Never option in this setup.)

When you select "Update Now," you move to a new screen, where you can choose to Download Updates if your Veri-NAC appliance is connected directly to the Internet.

Or you may choose to download the updates to your own machine, and then upload them to the appliance.

NOTE: We recommend you select Update Now when you first set up Veri-NAC as well as whenever daily updates have not been performed for a length of time.

NOTE: Do not change the name of the update file. If the file needs to be accessed later, Veri-NAC will only be able to locate it if it retains the same name.

NOTE: Sometimes Windows renames the tar.gz update file to tar.tar or other variations thereof when it downloads the file. Make sure the file is named tar.gz after the download.

After you click Download Updates or Upload Now, you receive a list of new vulnerability tests (sample shown below). Peruse this list and then decide on your next step. Options are shown below.

Table 8-2. Vulnerability tests.

Option	Description
Ignore	This set of tests is not installed
Install Now	New vulnerability tests are installed
Undo Update	Returns you to the previous set of vulnerability tests. Example: Did you update vulnerability tests but are not sure that you should have? Click this button. The previous set of vulnerability tests is stored in a file, so it can be restored. You can Cancel if you click this button by mistake.

Opening Update Notifications from Email

The person who receives the e-mail notification on updates receives an attachment named updates.txt. Open this file in WordPad rather than NotePad.

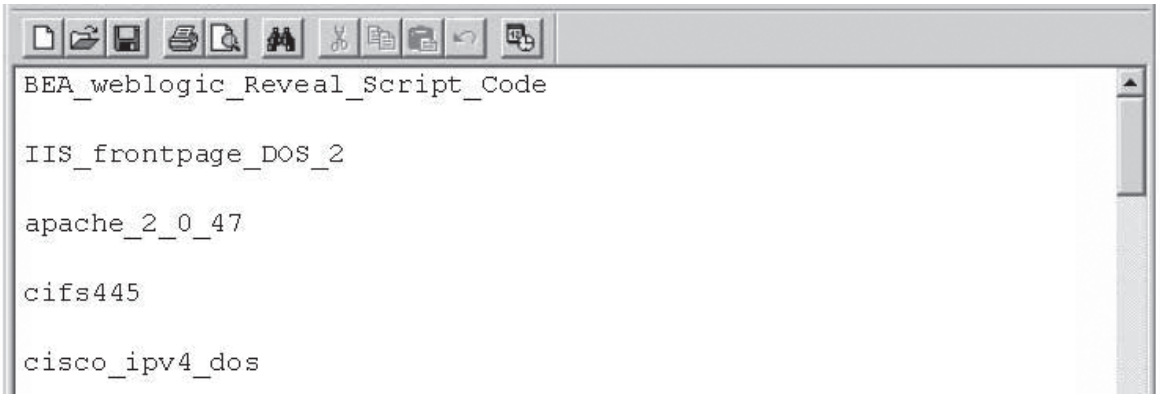


Figure 8-3. Updates email notification screen.

8.2 Retrieving Veri-NAC Service Packs/Version Updates

You may download service pack updates at any time.

- Select Updates→Service Packs from the left menu.

A screen similar to the one to the left appears. Click "Install Patches" now or "Install Later," based on the updates you see here.

Figure 8-4. New Patch Descriptions screen.

Configuring a Proxy for Service Pack and Vulnerability Updates

The Veri-NAC supports the use of a proxy server for both service pack updates and vulnerability signature updates.

- Select "System→Proxy Configuration" from the left menu to go to the Proxy Configuration screen.
- Select "Use Proxy" to direct the appliance to use a proxy server for outgoing connections.
- Enter the proxy server IP address in the IP Address field.
- Enter the proxy server port in the Port field.
- Select "Proxy Requires Login" if the proxy server requires a username and password to log in.
- Enter the proxy server username in the Username field.
- Enter the proxy server password in the Password field.
- Click "Save" to save the configuration.

8.3 Purchasing and Entering Veri-NAC Upgrades

You may wish to add to your current Veri-NAC license by purchasing one of the following three options:

- The ability to audit more IP addresses
- An upgrade from the Basic Policy Builder to the ISO 27001/17799 Policy Builder
- An unlimited IP option

To purchase any of these upgrades:

- Contact your Black Box Sales representative at 724-746-5500 to place your order. The representative will process your changes and the technical staff will issue you a license upgrade code.
- Select the upgrade type—Licensed IPs or ISO 27001/17799 Policy Upgrade.
- Select "Updates→Upgrades and License" from the left menu to enter the upgrade code into Veri-NAC. Enter the code in the box provided.
- Enter the New License Limit if you upgraded to a higher number of licenses.
- Click the Upgrade button. No reboot is necessary; improved capabilities are available immediately.

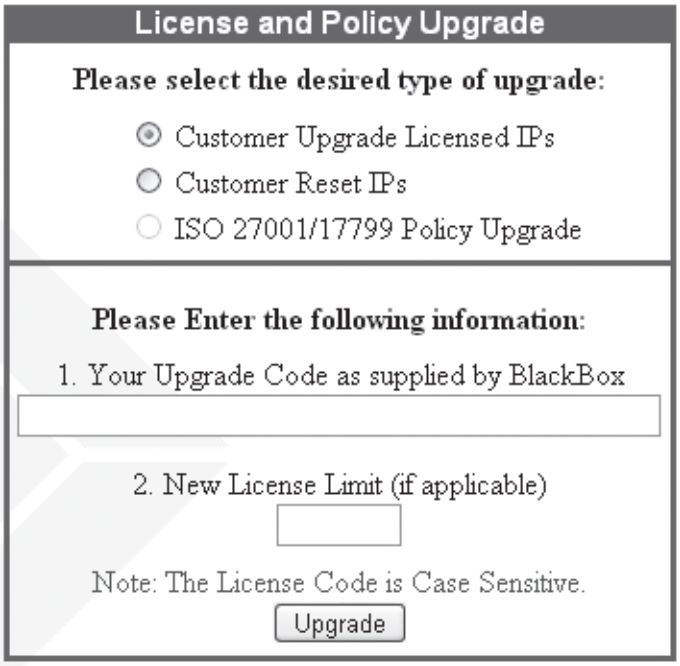


Figure 8-5. License and Policy Upgrade screen.

9. Using Veri-NAC System Functionality

To access system functions, select System→Utilities from the left menu.

9.1 Factory Reset

To return Veri-NAC to the settings with which it was shipped, select "System→Utlities" from the left menu, then click "Factory Settings."

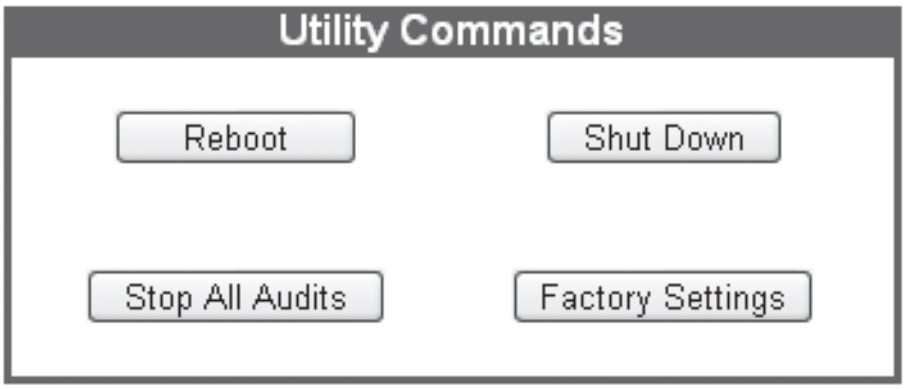


Figure 9-1. Utility Commands screen.

NOTE: Alerts should always be cleared from the command center following a factory reset on the client appliance.

9.2 Stopping Audits In Process

You may need to terminate audits currently running for any variety of reasons. To halt all audits:

- Select "System→Utilities" from the left menu. (You can also halt an audit on the Manage Audits page by clicking the Stop button.)
- Click the "Stop All Audits" button.

You are asked to confirm or cancel the action.

Figure 9-2. Stop audits prompt.

Any audits currently in process do not complete. You receive a warning saying in-process audits will stop and must be restarted later.

Any reports already generated remain on the system. You may still view them by selecting "Reports→View Audit Results."

A halted audit does not run again until its next scheduled time. Halting all audits does not change their Scheduled or Inactive status.

To restart an audit sooner than the next scheduled time:

- Select "Audits→Manage" from the left menu.
- Select the audit to open it in the Audit Wizard. Click through Audit Wizard pages until you reach the screen with audit frequency settings. Set the Frequency of Audit to Now.

• Click "Next" until you complete the Audit Wizard steps, and "Save" the audit. When the Manage Audits page opens, click the Start button to begin the audit.

9.3 Rebooting Veri-NAC

Restart Veri-NAC without losing any saved information if an exceptional condition occurs.

• Select "System→Utilities" from the left menu.

• Click the Reboot button.

Confirm or cancel the reboot. If you proceed, the browser window displays the message Reboot in Progress.

Rebooting does not change the Scheduled or Inactive status of an audit profile. Any audits in process when the reboot occurs are not completed. You will receive a warning informing you that they are currently in process, will stop, and must be restarted later.

NOTE: Wait at least five minutes for the reboot to complete. If you refresh the screen or attempt any operations before the reboot finishes, you may get a Window not Available error. After one or two minutes, click the Back button to return to the Help/Product Overview page.

9.4 Shutting Down Veri-NAC

To shut down the Veri-NAC appliance:

• Select "System→Utilities" from the left menu.

• Click the Shutdown button.

You are asked to confirm or cancel the shutdown. If you proceed, the Veri-NAC will power down. To restart Veri-NAC, you must manually press the Power button on the appliance.

Shutting down does not change the Scheduled or Inactive status of any audit. Any audits in process when the shutdown occurs will stop. You must restart them when Veri-NAC is powered up again.

9.5 Backup and Restore

You will want to back up and restore your Veri-NAC information regularly. Veri-NAC performs this function for you and sends it to the server of your choice on a periodic basis.

• Select "System→Backup and Restore" from the left menu.

Your settings, if any, are displayed on the Backup and Restore page.

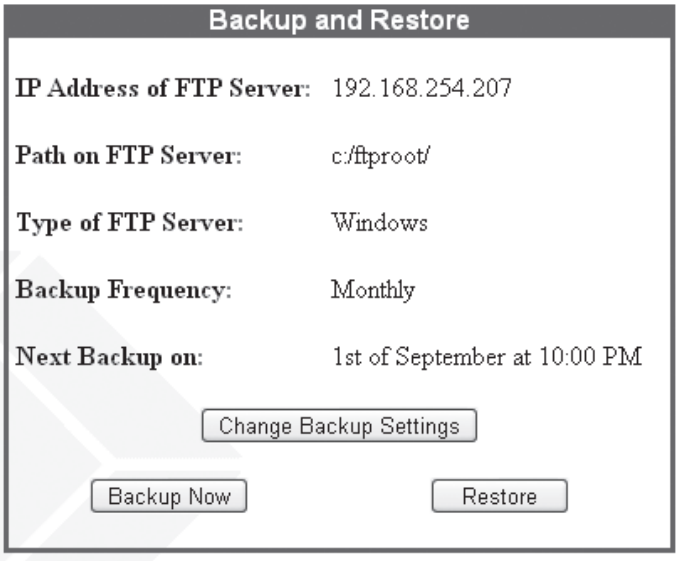


Figure 9-3. Backup and Restore page.

- Click the Change Backup Settings button to enter or revise your backup information. The Backup and Restore Settings page appears.

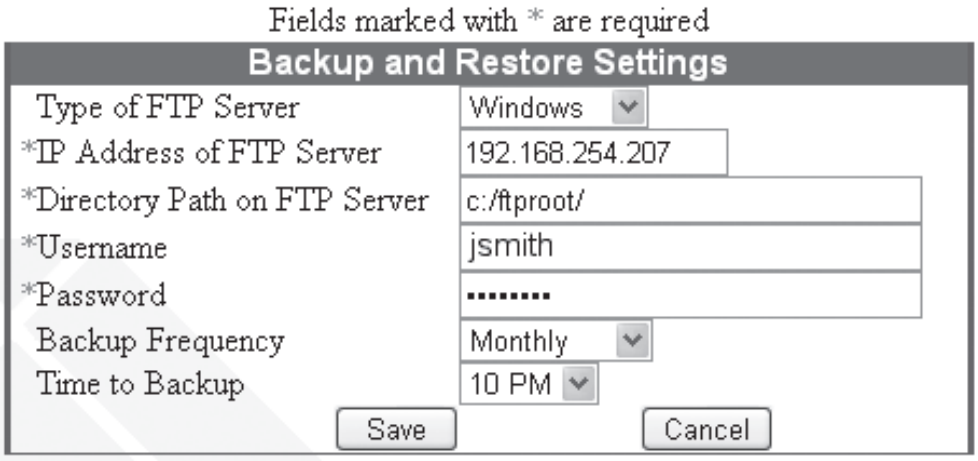


Figure 9-4. Backup and Restore Settings screen.

- Select the Type of FTP Server/Type of File Server from the pulldown. You have two choices: Windows or Linux/Unix servers. The information displayed varies depending on your server type.
- Fill in the requested technical information for your server.

Windows systems require a username and password for access.

Linux/Unix servers need a certificate to allow interaction with the Linux® server.

- Click the Linux link at the top of the page, if necessary. This takes you to the Linux Certificate Instruction page.

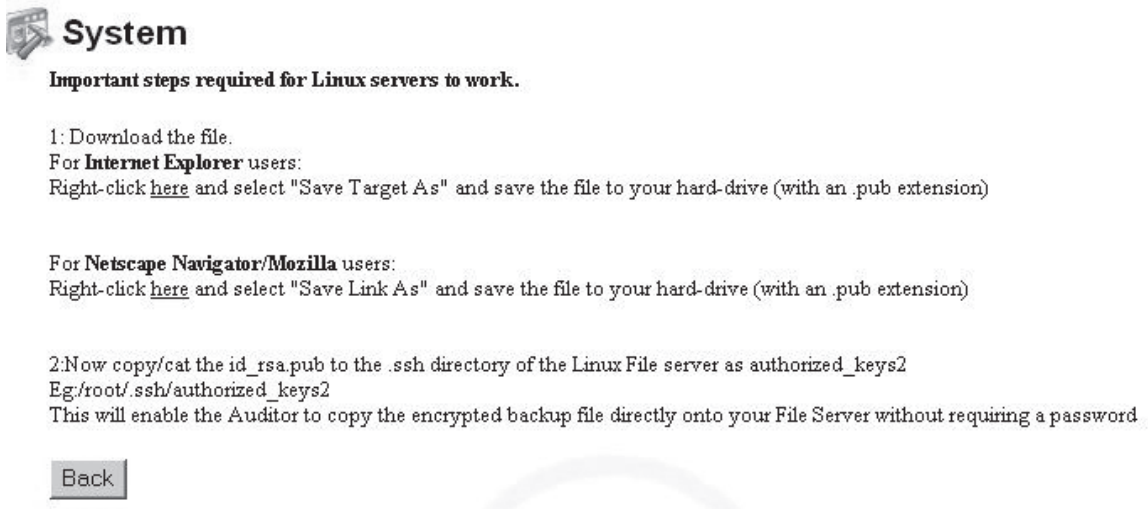


Figure 9-5. Linux certificate instruction page.

- Review the instructions and make the appropriate changes on your system.
- Click the Back button.
- Select a frequency and time for backup in the Backup and Restore Settings box. You can schedule the backup to run Never, Monthly, Quarterly, Half Yearly, or Yearly, at a specific time of day.
- Click "Save" to retain your settings or "Cancel" to delete the information. You return to the Backup and Restore page.

9.5.1 Backup Now

Veri-NAC creates a compressed backup file of Reports and Workflow, Audit Configurations, Asset Tracking Data, Veri-NAC Settings, and Veri-NAC Log(s) when you backup. The Backup Now feature provides on-demand backups.

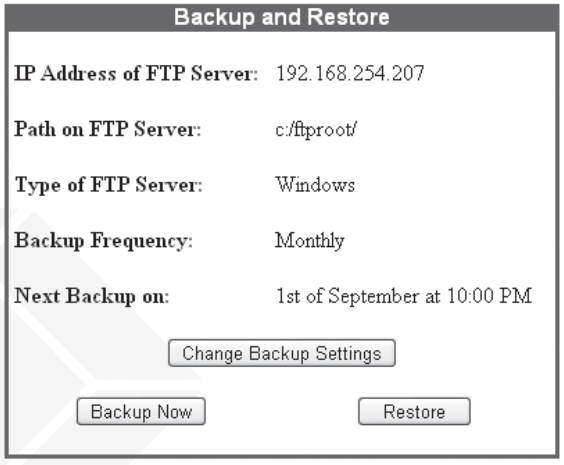


Figure 9-6. Backup and Restore screen.

Click "Backup Now" on the Backup and Restore page to start the backup process.

This takes you to the System Backup page (shown below).

You can proceed with the backup or cancel the operation at this point.

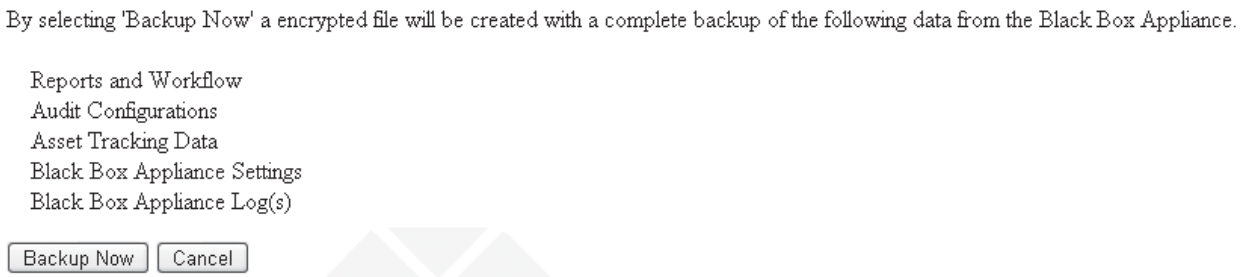


Figure 9-7. Backup Now or Cancel screen.

- Click Backup Now to continue to the next screen.
- Click the link in the message displayed to identify a destination for the backup file used for archival storage.

This file may be used to restore the Veri-NAC appliance (or a replacement appliance) to the state at which the backup file was created.

NOTE: You cannot open the backup file. You can only save it to your local machine.

NOTE: Do not change the name of the backup file. Otherwise, it will be unrecognizable to Veri-NAC if you need to access it later.

NOTE: When you back up this file, remember the Login ID/passwords you use. You will need them if you must back up again later.

- Click "Delete Backup on Black Box Appliance" and "Proceed" once the download completes.

NOTE: We suggest you delete the backup file from Veri-NAC to save valuable space.

9.5.2 Restore

Restore allows you to select a backup file and re-establish the Veri-NAC appliance settings to their state at the time the backup was created.

NOTE: The version and patch state of the Veri-NAC is not restored. Only the data and configuration information reverts to the former state.

- Select "System→Backup and Restore" from the left menu. This takes you to the Backup and Restore page.

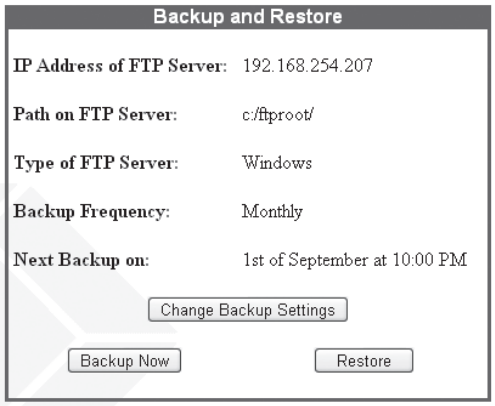


Figure 9-8. Backup and Restore screen.

- Click the Restore button. This takes you to the following screen.

Figure 9-9. System screen.

- Select the file from your system using the Browse button.
- Click Upload File Now. This takes you to the following screen:

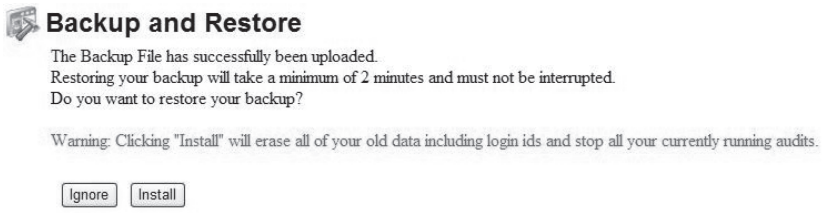


Figure 9-10. Backup Successful screen.

NOTE: When you upload the new file, remember this process will stop all currently running audits.

NOTE: Be sure you keep track of all your Login IDs and passwords—new and old. Once this file is restored, all other versions are gone.

NOTE: Don't forget: If you must restore this file from an older version, you will lose your most recent data. You might want to back up the current state before returning to the previous state.

9.6 Network Configuration

The network configuration information you enter controls how Veri-NAC accesses the network.

To set up your configuration:

- Select "System→Network Configuration" from the left menu. The Network Configuration screen appears. Here you enter data about your servers and network. You must designate whether your network server is a DHCP server (dynamic IP address-based).

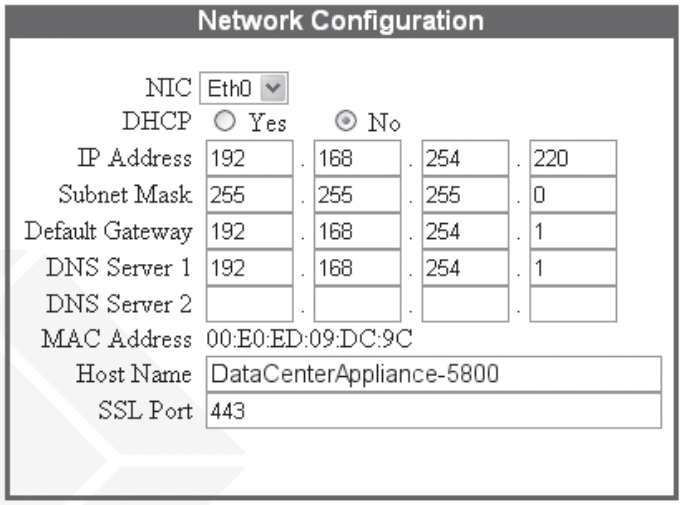


Figure 9-11. Network Configuration screen.

NOTE: For DHCP Environments, the IP Address, Subnet Mask, and Default Gateway, and DNS Server settings were assigned automatically during your installation. You cannot change these values here. Host Name and SSL Port may be edited.

NOTE: For non-DHCP Environments, you entered the IP Address, Subnet Mask, and Default Gateway, and DNS Server settings manually during your installation. You may change these settings here, if necessary. Host Name and SSL Port may also be edited.

NOTE: SSL Port is typically 443. This is the default for https. If you use a different value, your URL will be slightly different.

- Enter additional or new information if required and click Save to retain the settings.

9.7 Multiple Network Interface Card (NIC) Support

Veri-NAC supports multiple NICs for auditing and network access control. The NICs can be configured for completely separate VLANs or subnets, allowing Veri-NAC to monitor physically disconnected segments. For pricing and instructions on enabling multiple NICs, contact Black Box Technical Support at 724-746-5500 or www.blackbox.com.

Most Veri-NAC operations will choose the appropriate NIC for the operation in the background.

There are some areas where a NIC must be specified.

NOTE: Although the Veri-NAC supports multiple NICs, these NICs cannot be configured to reside on the same subnet or VLAN at this time.

9.7.1 Configuring NICs

• Select "System→Network Configuration" from the left menu to go directly to the Network Configuration screen.

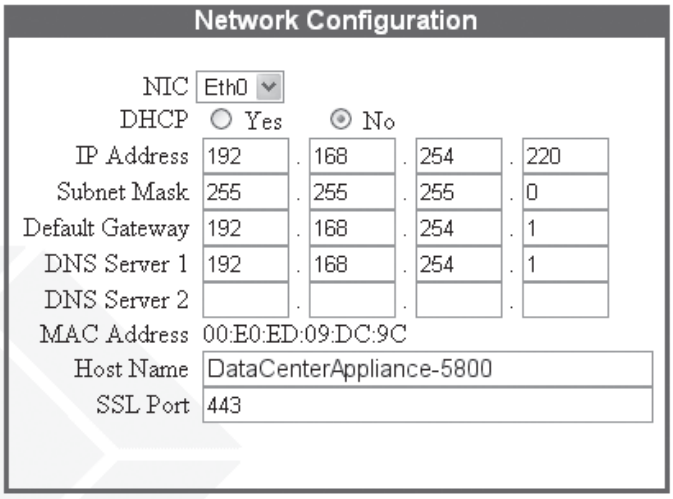


Figure 9-12. Network Configuration screen.

• Select the appropriate NIC by selecting the interface from the pull-down menu.

• Enter the configuration information for the NIC and press "Save." Ensure that the IP ranges you enter do not intersect.

NOTE: The IP ranges you enter for each individual NIC must not intersect.

9.7.2 Performing Asset Discovery with Multiple NICs

• Select Network Access Control→Asset Discovery from the left menu to go directly to the Asset Discovery screen.

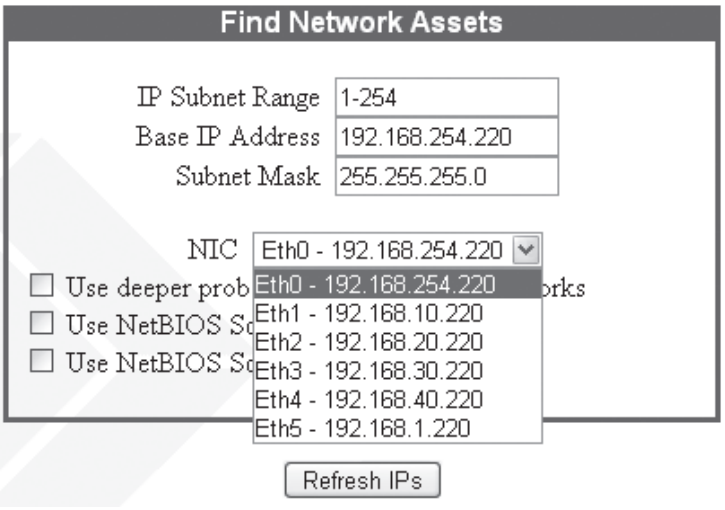


Figure 9-13. Find Network Assets screen.

• Select the appropriate NIC by selecting the interface from the pull-down menu.

• Click "Refresh IPs" to perform an asset discovery.

NOTE: Subnets monitored by multiple NICs must be discovered one at a time. ALL DDS functionality should be disabled prior to performing asset discovery.

9.8 System Statistics

Check the Veri-NAC System Statistics page if you'd like to know how much space is left on your system.

• Select "System→System Statistics" from the left menu.

Black Box Appliance Users List

User ID	User IP Address
MainAccount	192.168.254.164
MainAccount	192.168.254.164
MainAccount	192.168.254.182
MainAccount	192.168.254.182
MainAccount	192.168.254.164

Figure 9-14. Users List screen.

The System Statistics page displays a pie chart (see Figure 9-15) indicating the amount of hard disk space left on the system after Veri-NAC uses what it needs.

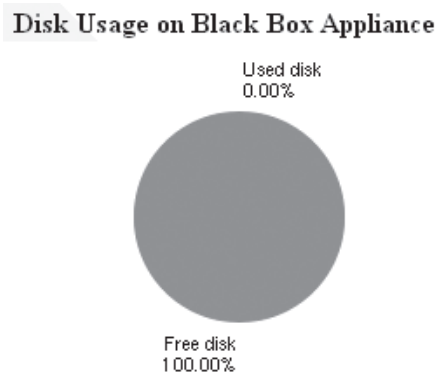


Figure 9-15. Disk Usage graph.

Users currently logged into the system are shown for each IP address.

All users have access to the statistics for their system(s), but only MainAccount can see all systems in use.

When the disk space usage is deemed critical (75%), Veri-NAC displays a scrolling warning at the bottom of the page.

10. Setting Up The Command Center

The Command Center offers the ability to command and control remote Veri-NAC appliances across your network:

- Remote Veri-NAC appliances can be added and groups of remote appliances can be created.
- In one action, policies and configurations can be saved to all remote appliances included in a group.
- Remote actions can be performed on remote appliances.
- Group and appliance status can be quickly viewed on a single screen, providing an easy-to-use management console.

The number of appliances the Command Center is able to manage varies depending on the type of LVN5400A, LVN5600A, and LVN5800A appliance you have purchased.

Table 10-1. Number of appliances managed.

Appliance	Number of Possible Managed Appliances
LVN5400A	Up to 10
LVN5600A	Up to 100
LVN5800A	Unlimited

NOTE: The Black Box Command Center can be used to remotely manage multiple LVN5200A, LVN5250A, or LVN5400A, LVN5600A, and LVN5800A appliances.

NOTE: Intermediate devices, such as firewalls, must be configured to allow traffic from the Command Center to each remote, managed appliance. Consult your firewall documentation for more information on port/traffic forwarding.

10.1 Command Center Appliance List

- Select Command Center→Managed Appliances from the left menu. The Managed Appliance page displays a list of Veri-NAC appliances (see figure below).

Black Box Appliance Host Name	Model	Location	URL
☐ DataCenter-5800	5800	Data Center One	192.168.254.161
☐ Pittsburgh-Branch-5250	5250	Local Branch Office	192.168.254.165

Figure 10-1. Veri-NAC appliance list.

10.1.1 Add Appliances Information

- Select Command Center→Managed Appliances→Add.
- This takes you to the Appliance Information box. Fields with a red asterisk are required: Appliance Name, URL, and Serial Number.
- Enter appliance information.

If you enter the username and password for the appliance, you will not be asked for that information when you log on to it while using the Veri-NAC interface.

The remaining optional fields are for information that may be useful to the network administration group, such as the location of the appliance or locations serviced by the appliance.

- Click “Add Appliance” to enter the information or “Cancel” to ignore entries.

10.1.2 Edit Appliances Information

- Click on a specific Veri-NAC appliance to see the current information on the Appliance Information page (see Figure 10-1). Modify as desired.

10.1.3 Removing Appliances

- To remove one or more appliances from the list, click the check box next to the appliance name(s). When you select all appliances you wish to remove, click the Remove Selected button in the upper right corner of the page.

10.1.4 Adding/Managing Appliance Groups

Some organizations may have hierarchies of Veri-NACs appliances. For example, a bank may have an LVN5400A, LVN5600A, and LVN5800A appliance in their main office and smaller LVN5200A/LVN5250A appliances in branch offices. Appliances in the branches may be centrally managed from the home office.

- Select "Command Center→Groups→Add" to add groups using the Add Group Wizard.

** The add and manage options use the same wizard for entering group information and policies, which can be saved to remote appliances.

- Select "Command Center→Groups→Manage" to select a group to manage using the Group Wizard.

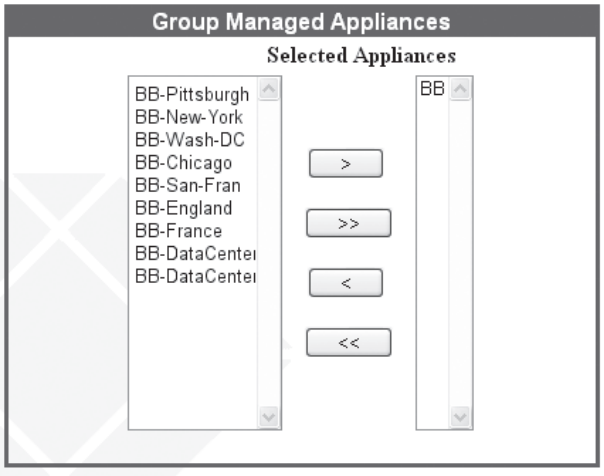


Figure 10-2. Group Managed Appliances screen.

- Select the group to be managed.
- Use the Group Wizard to enter group information, add managed appliances to the group, and select group policies, which can be saved to remote appliances. Click "Save" to save the group.

10.1.5 Remote Operations

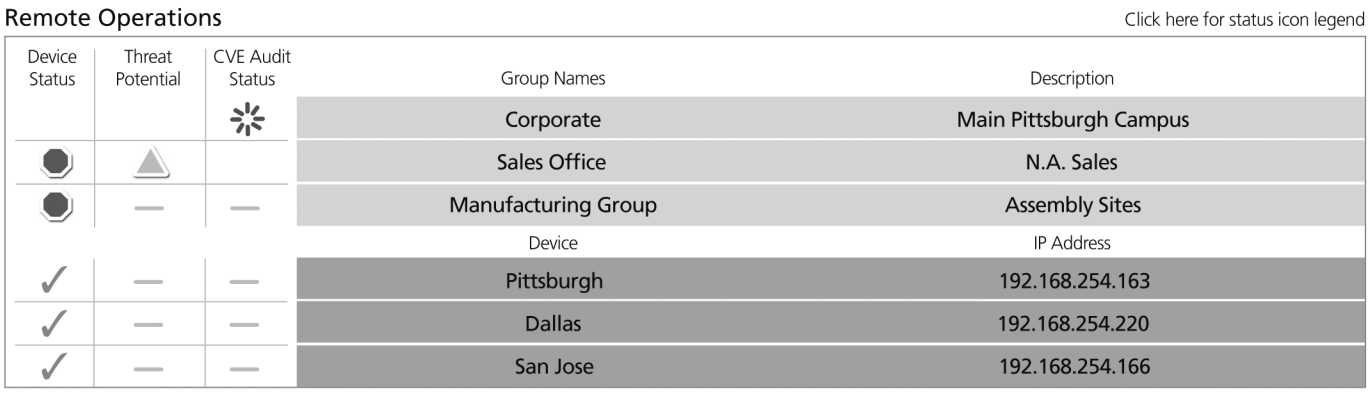


Figure 10-3. Remote Operations screen.

You can perform a variety of operations on your remote appliances:

- Select "Command Center→Managed Appliances→Remote Operations" from the left menu. A list of your previously defined groups will be displayed, accompanied by colored icons indicating the status of the appliances in that group. Click on a group menu bar to display appliances included in the group, or click the link provided to view the status icon legend.

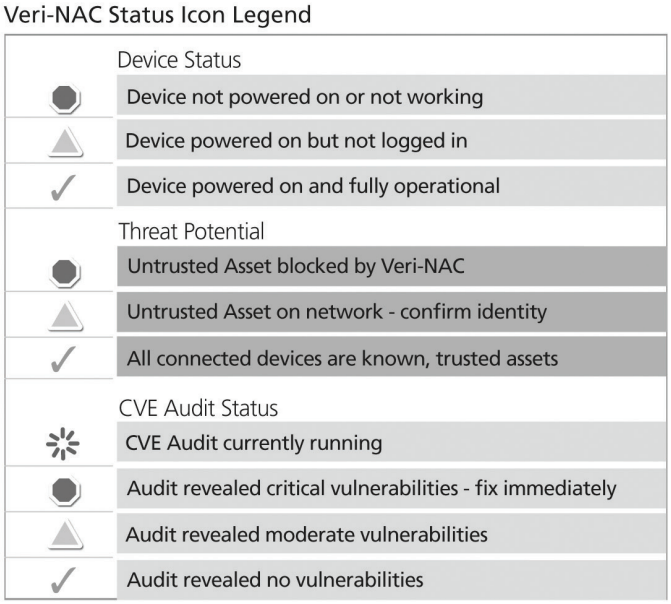


Figure 10-4. Status Icons Legend screen.

- Click on an appliance menu bar to display direct access to remote operations, appliance consoles, and system and network alerts.
- Click on a remote operation menu bar to quickly perform remote operations on a managed appliance.
- Click on "Appliance Console" to open an authenticated session with a managed appliance.

  Appliance Console opens in a new window.
- Click on an alert menu bar to display the 50 most recent alerts.

10.2 Configuring Microsoft Internet Explorer for Command Center

The Command Center uses authenticated connections to perform remote operations. Internet Explorer must be configured for each appliance to allow the Command Center to maintain authenticated connections.

Each managed appliance should be added as a managed Web site. A setting of always allow should be selected for each managed website. The following simple steps will ensure that the Command Center will work to its fullest potential using Internet Explorer.

• Select "Tools→Internet Options" from the Internet Explorer menu.

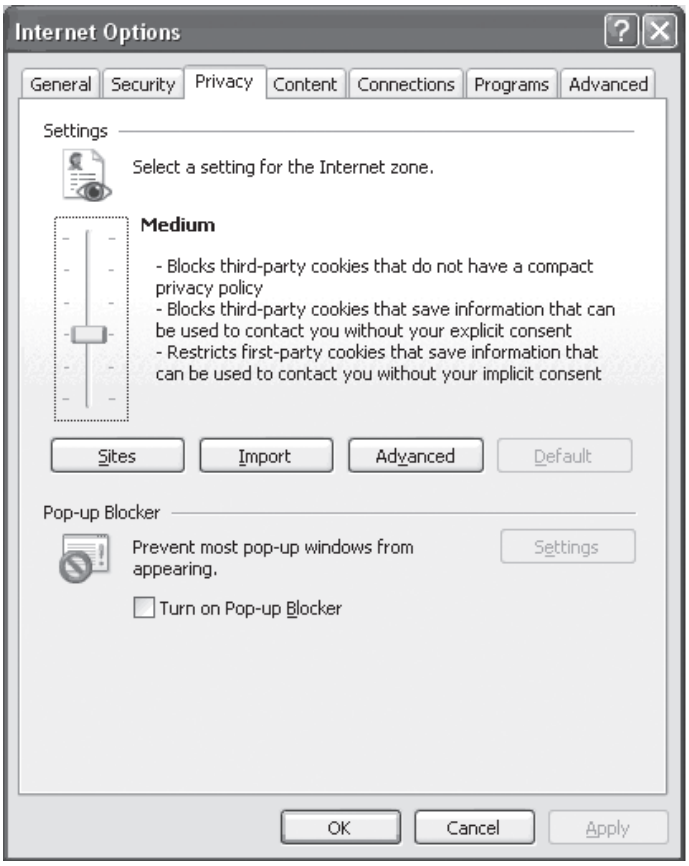


Figure 10-5. Internet Options screen, Privacy tab.

• Select the Privacy tab and click "Sites."

Figure 10-6. Per Site Privacy Actions screen.

- Add the IP address of a managed appliance.
- Click "Allow."
- Click "OK" to save the managed sites.

10.3 Command Center Syslog Messages

The Command Center parses remote client appliance logs and sends the events as syslog messages.

Remote client appliance logs will be queried on regular intervals and the following syslog messages will be sent to the preconfigured syslog server. The syslog server should be configured on the appliance on which the command center is running; see Configuring the Syslog Server, Section 10.4.

Table 10-2. Network Syslog Messages.

Message	Description
Asset Untrusted	IP Address of Client Appliance | Log ID | IP_Untrust | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
Asset Trusted	IP Address of Client Appliance | Log ID | IP_Trust | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
Asset Removed	IP Address of Client Appliance | Log ID | IP_Remove | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
Multiple Assets Removed	IP Address of Client Appliance | Log ID | Removed_IP_Addresses | Date/Time of Operation
NAC Blocking Started	IP Address of Client Appliance | Log ID | NAC_Blocking_Started | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
NAC Blocking Stopped	IP Address of Client Appliance | Log ID | NAC_Blocking_Stopped | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
Unknown Asset Detected	IP Address of Client Appliance | Log ID | Unknown_IP_Detected | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
Untrusted Asset Detected	IP Address of Client Appliance | Log ID | Untrusted_IP_Detected | Date/Time of Operation | Number of IPs Affected | IP Addresses Affected | MAC Address of Affected Asset
Asset Discovery	IP Address of Client Appliance | Log ID | Asset_Discovery | Date/Time of Operation

Table 10-3. System Syslog Messages.

Message	Description
Dynamic Detection System Started	IP Address of Client Appliance | Log ID | DDS_started | Date/Time of Operation
Command Center Unable to Communicate with Client Appliance	IP Address of Client Appliance | Appliance_Offline | Date/Time of Operation
Service Pack Update	IP Address of Client Appliance | Log ID | Service_Pack_Update | Service Pack Name | Date/Time of Operation
Activated Audit	IP Address of Client Appliance | Log ID | Activated_Audit | Audit Name | Date/Time of Operation
Edit Audit	IP Address of Client Appliance | Log ID | Edit_Audit | Audit Name | Date/Time of Operation
CVE Update	IP Address of Client Appliance | Log ID | CVE_Update | Date/Time of Operation
Deactivate Audit	IP Address of Client Appliance | Log ID | Deactivate_Audit | Audit Name | Date/Time of Operation

Table 10-3 (continued). System Syslog Messages.

Message	Description
Reboot	IP Address of Client Appliance | Log ID | Reboot | Date/Time of Operation
Dynamic Detection System Stopped	IP Address of Client Appliance | Log ID | DDS_Stopped | Date/Time of Operation
Shutdown	IP Address of Client Appliance | Log ID | Shutdown | Date/Time of Operation
Create Audit	IP Address of Client Appliance | Log ID | Create_Audit | Audit Name | Date/Time of Operation
Remove Audit	IP Address of Client Appliance | Log ID | Remove_Audit | Audit Name | Date/Time of Operation
Stop All Audits	IP Address of Client Appliance | Log ID | Stop_All_Audits | Date/Time of Operation
Factory Settings	IP Address of Client Appliance | Log ID | Factory_Settings | Date/Time of Operation

10.4 Configuring the Syslog Server

• Select Setup→Syslog / SNMP Traps from the menu.

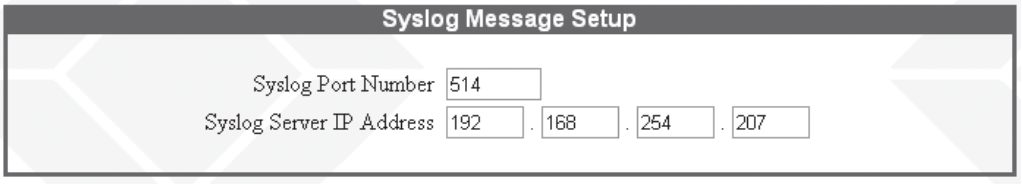


Figure 10-7. Syslog Message Setup screen.

- Enter your syslog server port into the Syslog Port Number field
- Enter your syslog server IP into the Syslog Server IP Address field
- Click Save.

10.5 Clearing Command Center Alerts

Clearing Command Center Alerts will remove all alerts for the selected appliance from the command center log database. The alerts will not be removed from the selected appliance's database. Command Center Alerts should always be cleared following a factory reset.

• Select Command Center→Managed Appliances→Manage from the menu.

• Select a managed appliance by clicking on the Black Box Appliance Host Name.

Figure 10-8. Clear Command Center Alerts screen.

• Click Clear Command Center Alerts.

• Click OK to confirm.

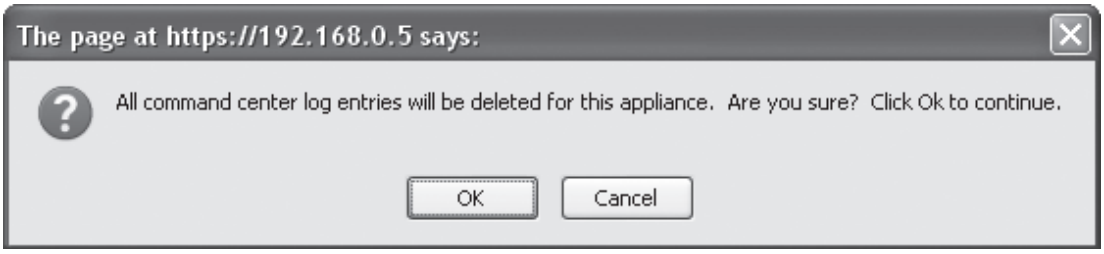


Figure 10-9. Delete command center log entries prompt.

NOTE: Alerts should always be cleared from the command center following a factory reset on the client appliance.

10.6 National Vulnerability Database

The Command Center also provides a direct link to the National Vulnerability Database maintained by the National Institute of Standards and Technology (NIST) and sponsored by the Department of Homeland Security.

Here you will find a vulnerability database that integrates publicly available U.S. Government vulnerability resources as well as references.

• Select "Audits→Nat. Vulnerability Database" from the left menu to go to this site.

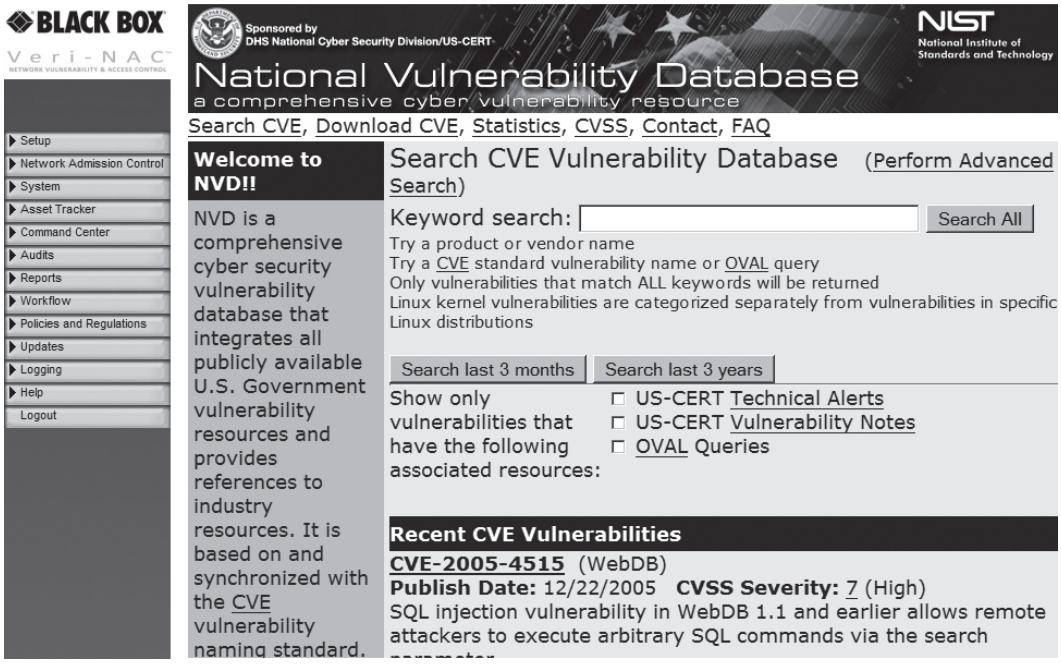


Figure 10-10. National Vulnerability Database screen.

- Enter the CVE number of the vulnerability you wish to look up.

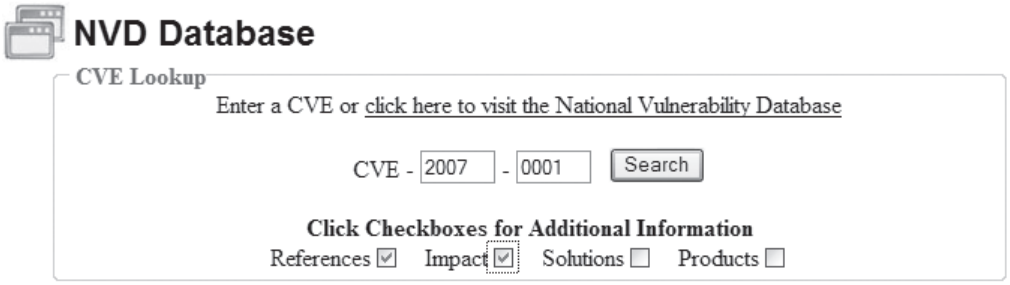


Figure 10-11. NVD Database screen.

- Select the data elements you wish to include in the lookup.
- Click the Search button to view results.

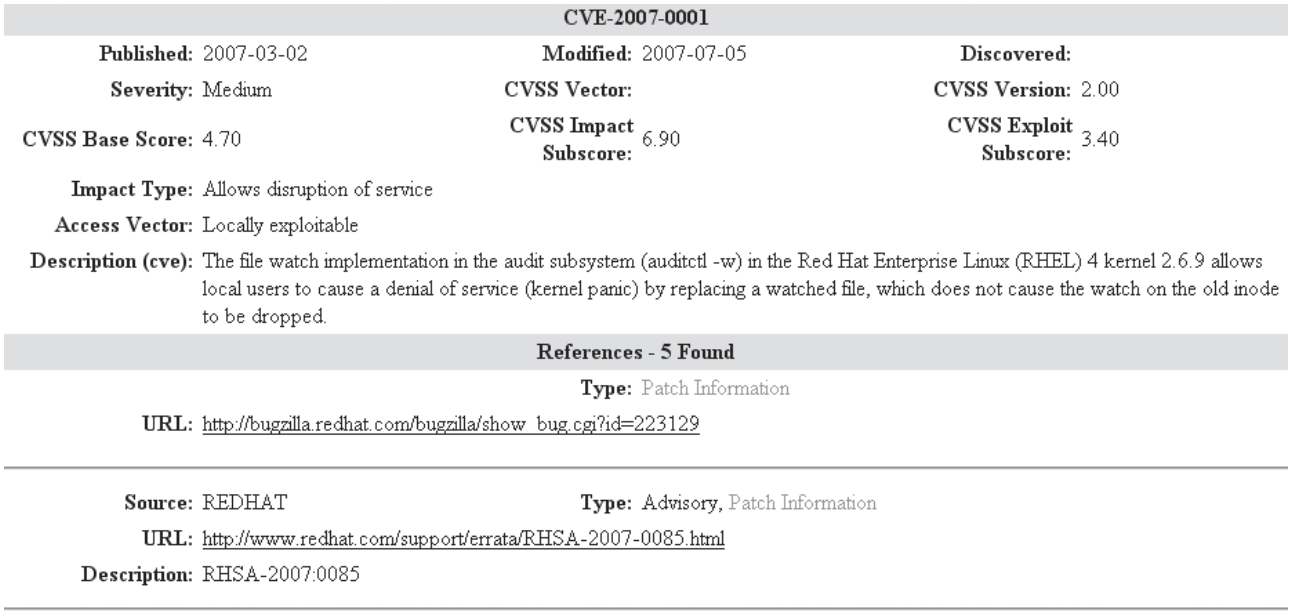


Figure 10-12. CVE data.

- Click the browser's back button to return to Veri-NAC when you complete your research.

11. Corporate Security Policy Development Guide

11.1 Developing Corporate Policies

This chapter presents step-by-step use of Veri-NAC Policies and Regulations options. You can develop security-related policies with this feature to keep ahead of regulations that concern you.

NOTE: ISO 27001 and ISO 17799 are international standards used as the basis for developing other regulations. Some laws, such as GLBA, HIPPA, and COPPA, are specific to the United States. If you are in compliance with ISO 27001/17799, you are in compliance with all security regulations covered by Veri-NAC.

NOTE: Within Veri-NAC documents and this manual you see references to BS 7799 and ISO 17799 and ISO 27001.

BS 7799 stands for British Standard 7799. This is an internationally recognized standard that describes protection of information assets. It was first published in two parts. Most likely, you'll see them referred to by their ISO names, but you may also see references to BS 7799 Parts 1 and 2 in the literature. (The ISO standards evolved from the BS 7799 standards.)

ISO 17799 (BS 7799 Part 1) is a "code of practice" for information security management. It describes best practices and contains a list of controls or safeguards a company can follow to secure information and assets.

ISO 27001 (BS 7799 Part 2) provides a standard specification for implementing an Information Security Management System (ISMS). Here, you select security practices that meet the unique needs/risks of your environment. It is a development methodology for creating an ISMS. ISO 27001 is the standard against which certifications are made.

ISO 17799 and ISO 27001 are actually two different documents designed to support each other. They are also aligned with other standards such as ISO 9000.

For easier reference within the Veri-NAC environment, we refer to the two standards as one (ISO 27001/17799).

If you want to build an ISO 27001/17799 compliant policy, work with the ISO 27001/17799 Policy Builder. Use the Basic Policy Builder if you prefer to work with a simpler tool and/or are not concerned with ISO 27001/17799 compliance.

NOTE: The Black Box Micro appliance does not feature the advanced ISO 27001/17799 Policy Builder. However, it does provide the Basic Policy Builder.

11.2 Understanding Regulations

• Select "Policies and Regulations→Regulatory Documents."

This takes you to a page with a list of PDF-format documents (see Figure 11-1).

Each PDF document contains text of an individual compliance bill. The file names match bills you probably recognize, such as the Bank Secrecy Act (BSA), 21 CFR Part 11 FDA (CFR21FDA11), Electronic Signature (ESIGN), Gramm-Leach Bliley Act (GLBA), and so on.

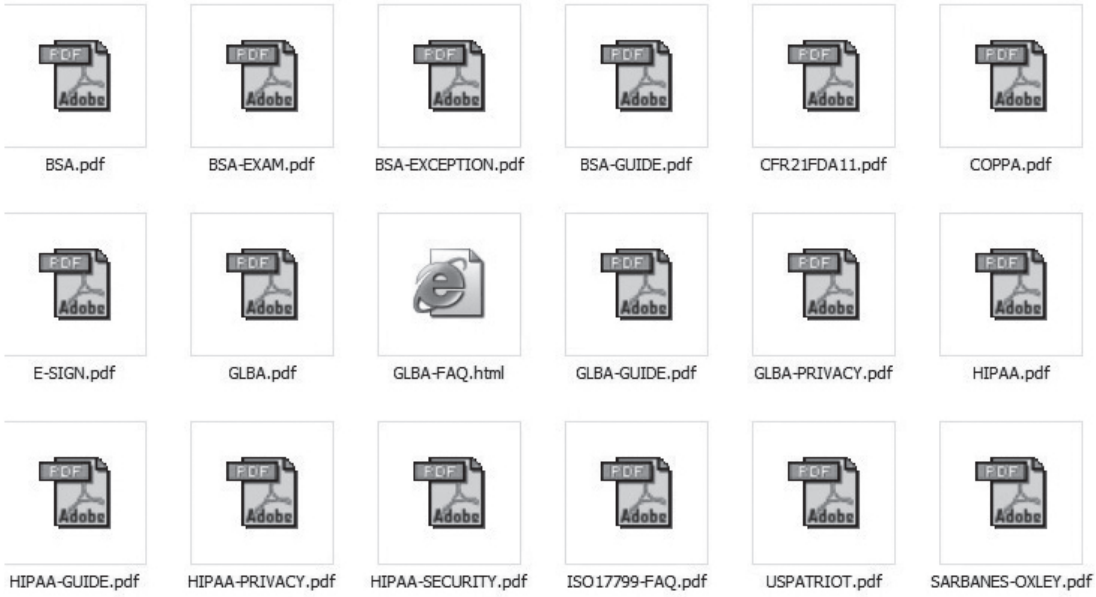


Figure 11-1. Regulatory Documents screens.

NOTE: To use these documents, you need Acrobat Reader Version 5.0 or newer. You also need a browser to read HTML pages.

11.3 Using The Basic Policy Builder

The Basic Policy Builder contains 26 customizable IT "Best Practice Security Policies."

Each policy includes an introduction; a sample overview; information about scope and purpose; the policy; compliance tips; key questions; key statements; document control; and a listing of current policy status.

We recommend you start by printing the sample policies and using them as a worksheet. Note changes you require to meet company needs, modify the Veri-NAC samples, and fill in the blanks to obtain a customized, professionally generated set of IT security policies based on industry "Best Practices."

Once you complete your policies, use the printed versions as is or copy and paste into a word-processing program.

To start the Basic Policy Builder:

• Select "Policies and Regulations→Basic Policy Builder" from the left menu.

The Basic Policy Builder Overview page appears.

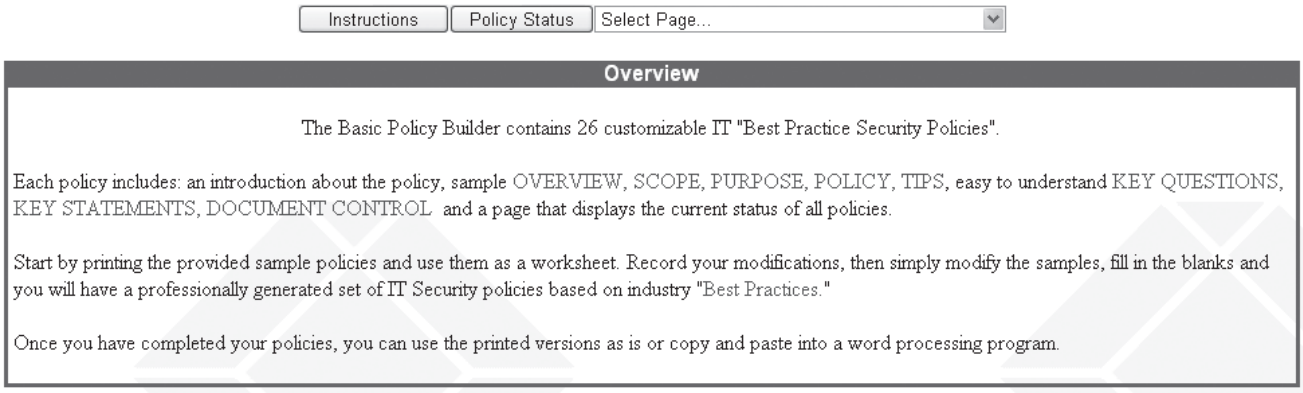


Figure 11-2. Basic Policy Builder Overview page.

• Click the Instructions button to see tips for editing your customized policies.

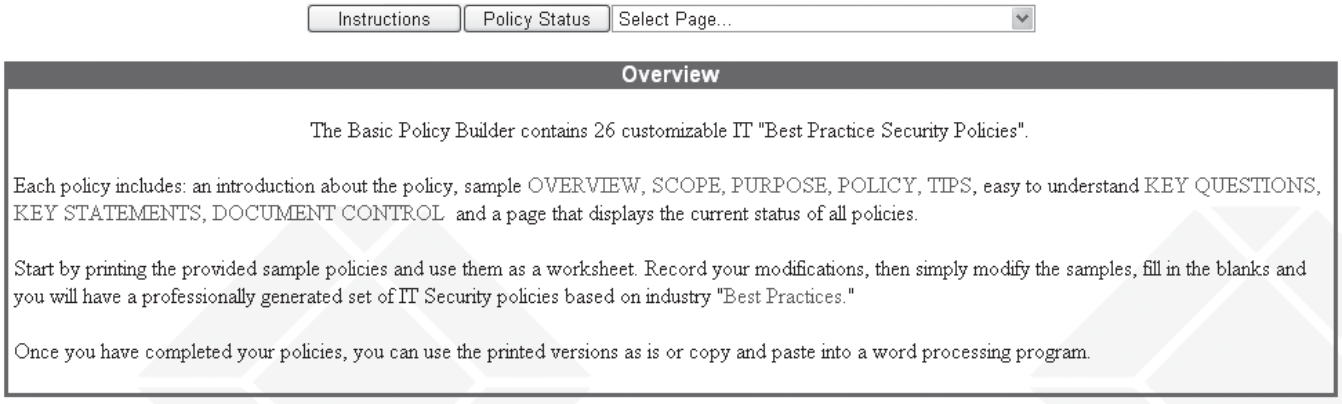


Figure 11-3. Best Practice Security Policies screen.

The Overview button on this screen returns you to the Basic Policy Builder Overview page.

• Click the Policy Status button on either the Basic Policy Builder Overview page or the Basic Policy Builder Instruction page to see the current status of each policy. The first 13 policies appear in an initial display. Click Next or Previous to toggle between the first and last 13 policies.

Policy ID	Policy Name	Policy Status	Policy Owner	Date Released
1	3rd Party Access	Not Started		0000-00-00
2	Access Control	Not started		0000-00-00
3	Acceptable Use	Not started		0000-00-00
4	Activity Monitoring	Not started		0000-00-00
5	Asset Management	Not Started		0000-00-00
6	Corporate IT Security	Not Started		0000-00-00
7	Data Backup	Not started		0000-00-00
8	E-mail Security	Not started		0000-00-00
9	Encryption	Not started		0000-00-00
10	File Management and Retention	Not started		0000-00-00
11	Firewall	Not started		0000-00-00
12	Incident Response	Not started		0000-00-00
13	Information Security Data Levels	Not started		0000-00-00

Figure 11-4. Best Practices Security Policies List.

Initially, the Policy Status column reads Not started and the Policy Owner field is empty.

• Click the Select Page… pulldown on either the Basic Policy Builder Overview page or the Basic Policy Builder Instruction page. Here, you can select any of the 26 policies in the list as well as the overview, instructions, or policy status for each policy listing.

11.3.1 Modifying Policy Text

• To modify a policy, click the Select Page… pulldown menu on either the Basic Policy Builder Overview page or the Basic Policy Builder Instruction page.

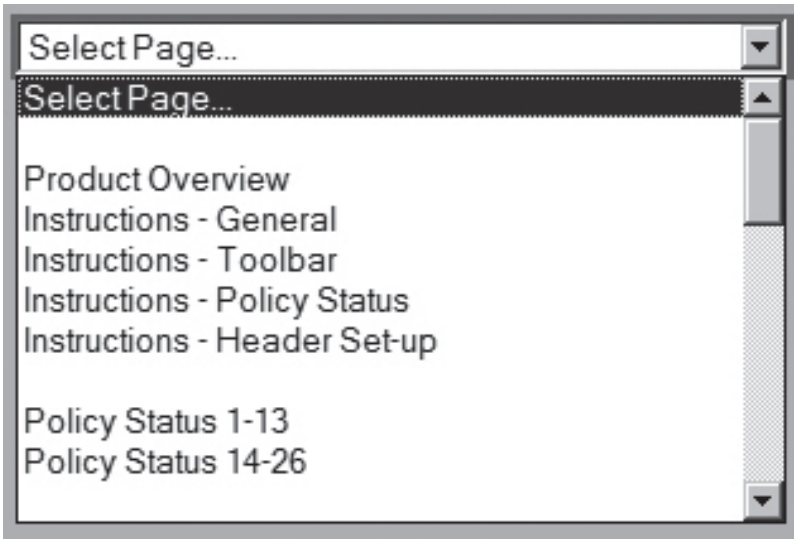


Figure 11-5. Select Page screen.

- Select a policy from the drop down list, such as 7—Data Backup Policy.
- The Introduction to Policy section appears with a gray background.

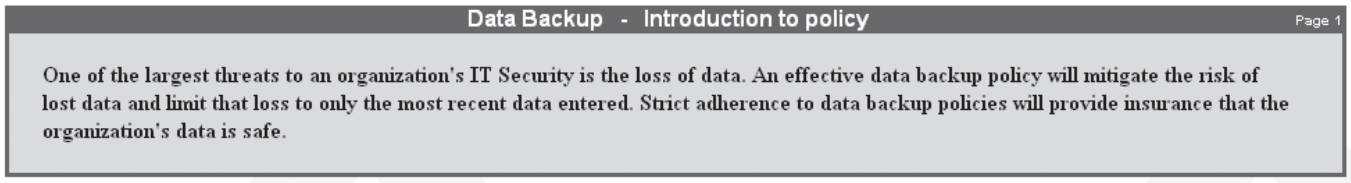


Figure Data 11-6. Backup—Introduction to policy screen.

The gray background indicates text that does not actually appear in the policy but is there to instruct or explain. Only text that appears on a white background remains in the policy.

- Click "Next" to move to the following screen and edit the text of the Overview, Purpose, and Scope sections of the policy. There are separate white text blocks for each item.

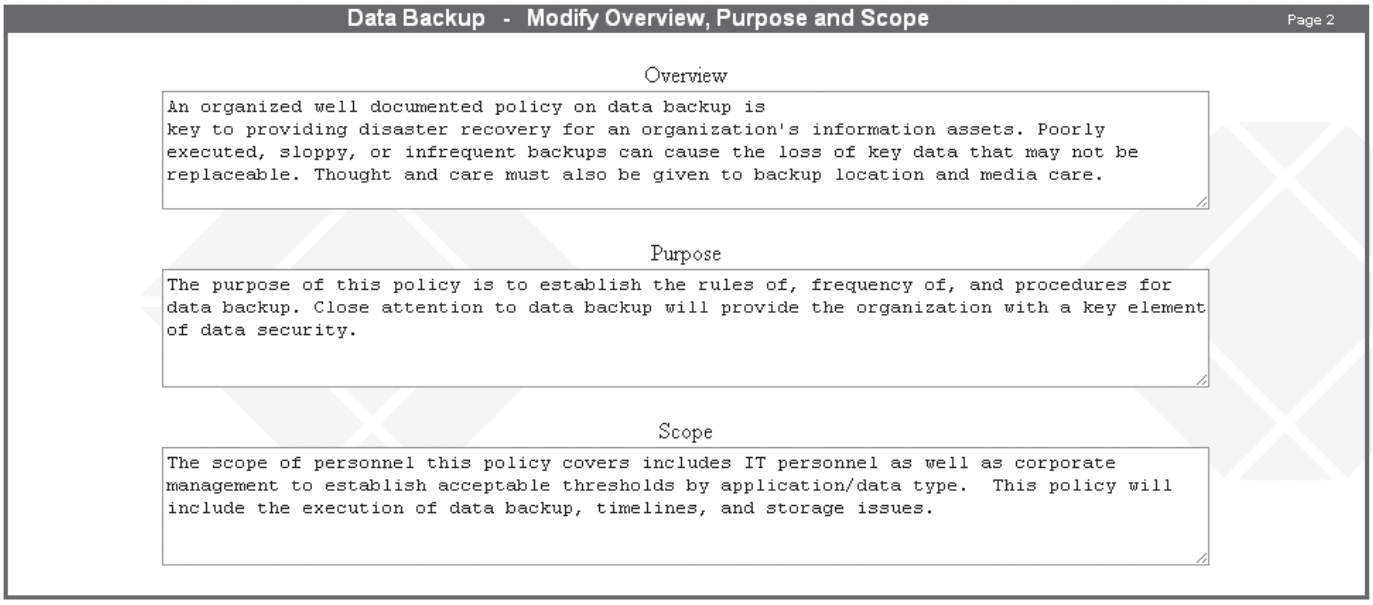


Figure 11-7. Data Backup screen.

- Edit the text of each section and click Save (for each section).
- Click Next to move to the following section of the policy and proceed until all edits are complete. At any time, you may click Previous to return to the prior screen.
- Click View Policy to see a formatted display of the policy and your updates. (Updates only appear if you click the Save button.)

11.3.2 Revising Policy Document Status and Releasing Policy

Change policy status and related information on the last page of the Policy Builder.

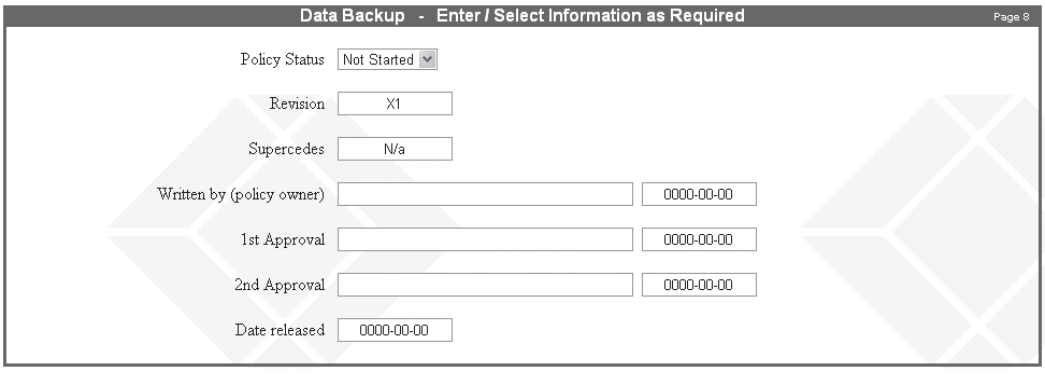


Figure 11-8. Enter/Select Information screen.

- Complete fields as requested. See the Guidelines in Table 11-1.

Table 11-1. Guidelines

Item	Guideline
Policy Status	Will read Not started, In Process, Complete, or Released
Revision	Assign an appropriate revision number
Supercedes	Enter the previous revision number
Written by (Policy Owner)	Enter name of individual responsible for policy
1st Approval	Enter name of first person giving approval and the date
2nd Approval	Enter name of second person giving approval and the date
Date Released	Enter date when material is ready for release

- Click Save (above the box) to retain the edited data and the entire policy.
- Click View Policy to review the entire text of the policy.

11.4 Using The ISO 27001/17799 Policy Builder

The ISO 27001/17799 Policy Builder is an Excel file you use for guidance in building a policy document for your organization. The policy document can be completed in any word processor.

NOTE: LVN5400A, LVN5600A, and LVN5800A appliances feature the ISO 27001/17799 Policy Builder.

- Select Policies and Regulations→ISO 27001/17799 Builder from the left menu.

The IT-Policy-Builder.xls file opens. (Make sure you have Microsoft Office Excel on your system.)

If you are on a Windows system, Excel may ask if you want to open or save the file. Click Open to proceed.

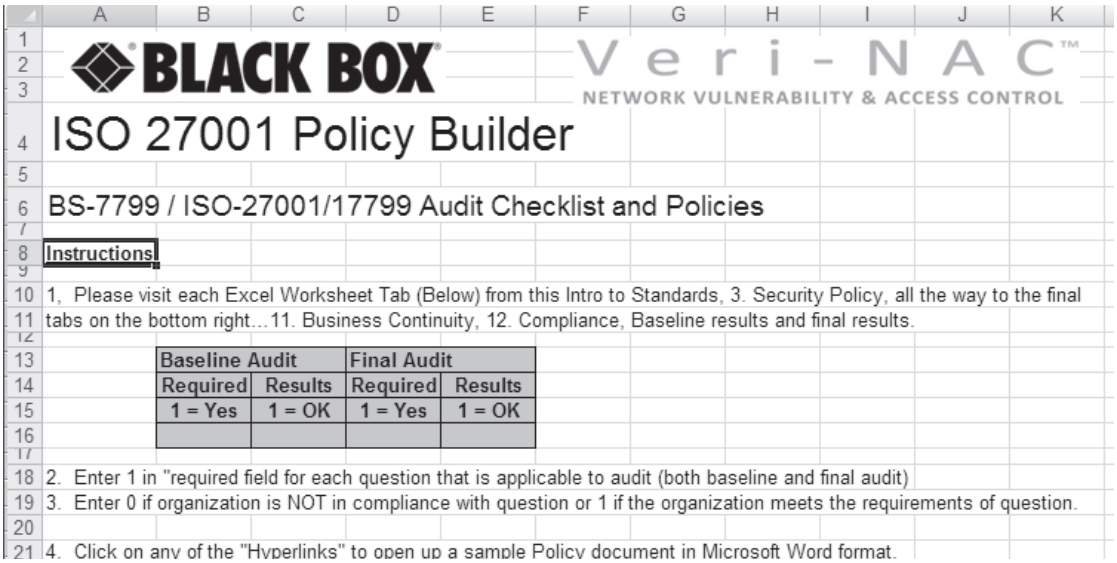


Figure 11-9. IP Security Audit screen.

• Notice the tabs for Intro and Standards along the bottom of the screen, and the additional, numbered tabs corresponding to the section numbers shown in the table.

Figure 11-10. Tabs.

The tabs are labeled:

Table 11-2. Tab labels.

Intro	8. Comm & Ops Management
Standards	9. Access Control
3. Security Policy	10. System Dev & Maint
4. Organizational Security	11. Business Continuity
5. Asset Classification Control	12. Compliance
6. Personnel Security	Baseline Results
7. Phy & Env Security	Final Results

The Intro tab is first and gives some instructions.

Click the Standards tab to see text explaining each section of the standard.

Section 3 is the Security Policy and 3.1 is the Information Security Policy. Scroll down to find Section 4, Organization Security, and 4.1, Information Security Infrastructure.

To see the existing compliance document for a specific section, click the section number, which appears in your browser's hyperlink color. A document opens, giving you a summary of requirements under each numbered section as well as some sample text you can insert into your own compliance document. At any time, you can open a word processing program and copy any text you need to form the foundation for your company's compliance policy document.

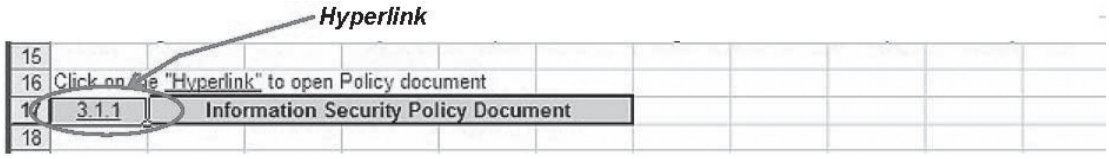


Figure 11-11. Hyperlink.

11.4.1 Indicating Your Existing Security Status

For best results, don't attempt to exit the .xls document until you are ready to save your work.

Answer all the questions in a single session. Do not click on any hyperlinks inside the .xls file until you complete all compliance questions under all tabs.

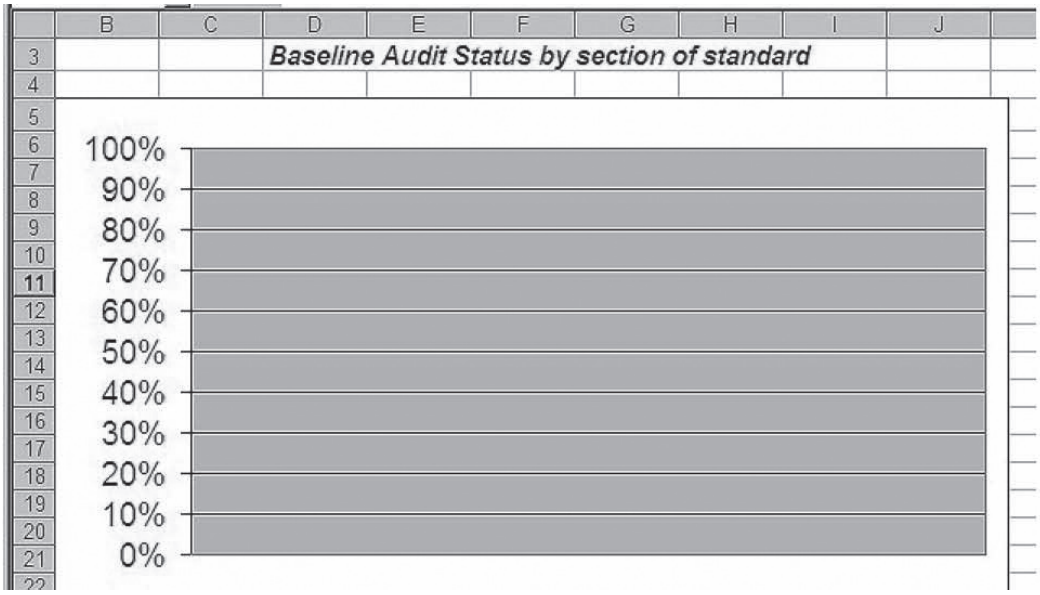


Figure 11-12. Baselne Audit Status screen.

• For a preview, click on the Final results tab.

Final results is a chart showing percentage of compliance you have achieved based on the parts of the standard you have fulfilled. Right now, that percentage will be 0, so nothing appears in the chart above.

Below the chart is a small table that shows Sections 3 through 12, the sections of the ISO 27001/17799 specification.

Section	3	4	5	6	7
% OK	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Section	8	9	10	11	12
% OK	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Figure 11-13. Final chart.

• Click the Security Policy tab (3).

Questions for this section of the audit process appear in Sections 3.1, 3.1.1, and 3.1.2 of the chart. Provide either a number zero (0) for No or one (1) for Yes / OK under the columns to the right for the Baseline Audit and the Final Audit (see Figure 11-14).

A	B	C	D	E	F
	Audit questions for 3. Security Policy	Baseline Audit		Final Audit	
		Required	Results	Required	Results
		1 = Yes	1 = OK	1 = Yes	1 = OK
3	**Security Policy**				
3.1	**Information Security Policy**				
3.1.1	**Information Security Policy Document**				
	Is there a management published security document that:				
1	- defines information security?				
2	- provides overall objectives?				
3	- defines the management importance placed upon it?				
4	- contains a statement of management intent towards information security?				

Figure 11-14. Questions.

If you have not yet done a final audit, only enter Yes responses (1s) under the Baseline column, and leave the final column blank.

Look to the bottom of each column to see the percentage complete for this portion of the security policy document.

- Repeat these steps for each of the remaining numbered tabs.
- After you answer the questions on a few tabs, click the Baseline Results tab or the Final Results tab to see how you are progressing in completing your compliance requirements.

11.4.2 Generating Draft Text for Your Security Policy

When you finish answering the questions under each tab (as described in the previous section), you are ready to retrieve compliance information and text from the hyperlinked .doc files provided.

- Return to the first numbered tab, 3. Security Policy, and click on it.

  To the far left, near the top of the spreadsheet, you will see an underlined number – 3.1.1. Click on this hyperlink section number to open the associated Word document with compliance text and sample policy text.

Start the word processor outside the browser and create a document for your own policy.

- Copy text as needed into that document and be sure to save it.
- Click the browser's Back button to return to the spreadsheet file.
- Select the next tab and proceed in the same way you did with the previous document.

At some point in this process, you will see a prompt asking you to save the .xls file.

- Click Yes to save the document to your local disk, since you cannot save it to Veri-NAC. All your data is stored in your copy only.

NOTE: No data you enter in the original .xls file is ever stored on Veri-NAC. You must store it on your local disk.

- Return to the original .xls file in your browser and click on the hyperlink in the next numbered section to open the associated .doc file. Copy the text from that file into your own draft compliance policy.

You can do all subsequent work on the .xls file in your local copy, but to use the hyperlinks to the compliance text for each section from your local copy, you must copy all the .doc files from Veri-NAC to your local disk.

To avoid copying files to your local directory, always return to the original .xls file on Veri-NAC to access links. You can later edit and complete your compliance policy at your own pace.

NOTE: Be sure to use the Back button on your browser to exit the Excel file. If you select File→Exit, you exit Veri-NAC instead.

12. Reports Guide

12.1 Overiew of Report Types and Content

The LVN5200A, LVN5250A, LVN5400A, LVN5600A, and LVN5800A units produce a wide range of reports for CVE discovery and remediation. You can run and view these reports while auditing and blocking are in progress.

LVN5200A units do not provide CVE auditing functionality. If you are interested in this functionality, contact Black Box at www.blackbox.com or 724-746-5500 for information about our LVN5250A, LVN5400A, LVN5600A, and LVN5800A units.

12.2 Understanding Veri-NAC Report Types

When an audit is complete, it generates two vulnerability report types for administrators: Summary and Complete reports. Full and Differential reports contain complete data about all current vulnerabilities; Incremental reports contain only new vulnerabilities.

Veri-NAC also places data from those vulnerability assessments and other security information stored on the appliance into a database the reporting engine then uses to create higher-level Management and Executive reports on demand. You can also query this database to generate a custom report. There are four types of reports, all saved in PDF format:

- Complete Vulnerability Reports (intended for Network Administrators & IT Staff)
- Summary Vulnerability Reports (intended for Network Administrators)
- Executive Reports (intended for Executives)
- Management Reports (intended for Managers)

The System Administrator and other designated individuals receive e-mail notification when new Summary and Complete vulnerability reports are ready. Manager users can generate Executive/Management and Query reports any time, on demand.

Veri-NAC Complete Vulnerability reports provide:

- Comprehensive Vulnerability Assessment with quick-click remediation links
- Links to Common Vulnerabilities and Exposures (CVE) information, where it applies
- Regulatory Compliance reporting for HIPAA, GLBA, 21 CFR Part 11 FDA, SOX, and others
- Credit Card Merchant Security Program compliance reporting

12.2.1 CVE Information in Reports

Veri-NAC is a CVE-compatible product. This means you can search for standard names of Common Vulnerabilities and Exposures (CVEs) assigned by MITRE Corporation. Details on each CVE Veri-NAC finds are explained in its reports; however, you can find more information on any CVE by searching the MITRE CVE web site (www.cve.mitre.org).

Veri-NAC searches for the latest known CVEs. Because the Update Server is refreshed every day, you know you have the most up-to-date CVEs and CVE candidates available when you download new tests.

When Veri-NAC finds a CVE, it indicates the name (CVE followed by several digits) on the report. Veri-NAC reports also include CVE candidates, which are issues MITRE is confirming before making them official CVEs.

12.2.2 Credit Card Merchant Security Program Information in Reports

Veri-NAC reports compliance with the following credit card merchant certification programs: Visa CISP, MasterCard SCP, American Express DDS, Discover DISC.

12.3 Viewing Vulnerability Reports

Selecting Content Presented in Reports

• Select Reports→View Audit Results to open the Reports page.

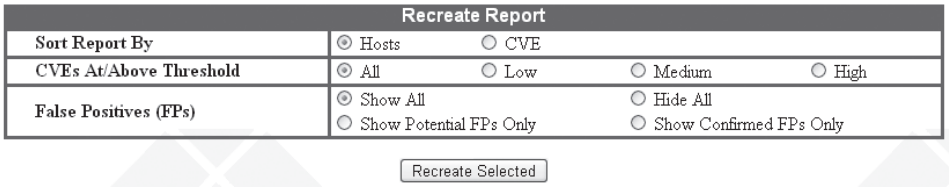


Figure 12-1. Recreate Report screen.

The Recreate Report box is at the top of the Reports page. Here you choose parameters for creating your final report. Select how to sort the report, the level of CVE to detail in the report, and whether or not to include vulnerabilities Veri-NAC believes may be false positives (Potential) and/or those you have previously confirmed as false positives in the workflow process.

To see only the most serious vulnerabilities, select High. Detailed information for the levels is shown in the table below.

Table 12-1. Vulnerability levels.

Setting	Description
Low	Includes all levels of system vulnerabilities, including low, medium, and high level.
Medium	Includes only vulnerabilities at the medium and high level. You may want to select this option after you remediate high-level vulnerabilities.
High	Focuses on the most serious vulnerabilities present on the system and reports only those. You should start by determining the most serious vulnerabilities and clean them up before addressing others.

Below the Recreate Report section is a list of all reports generated by all audits. They are identified by audit report name, the date/time the audit finished, audit mode (Full, Differential, Incremental, or Top 20), and ticket number.

To view the Complete report from a given audit, click the  symbol in its row. To view the Summary report, click the S icon.

The Complete report details vulnerabilities and identifies risks by level of severity: Low, Medium, High, and Serious vulnerability types.

By default, the report is sorted by vulnerability IDs (ranked with Serious first). Reports contain technical information relating to each detected risk, with live links to fixes, patches, and updates that provide resolutions to these vulnerabilities.

Table 12-2. Vulnerability types.

Risk Level	Vulnerability Type
Notes	Important notes—show you which ports are open. Get in the habit of reading Notes on a regular basis since they may indicate malware running on a port. Check open ports and confirm you want them open.
Low	Less important vulnerability—harder to exploit and usually causes little or no damage to your network assets. Always fix Serious and High vulnerabilities first and then review Medium and Low vulnerabilities. Decide if Low has potential consequence to your organization. If not, use the Comment field to indicate you don't consider this vulnerability an issue.
Medium	Slightly more important than a Low-level vulnerability but usually hard to exploit. Medium level vulnerabilities might allow an attacker to gain access to your network. Always fix Serious and High vulnerabilities first, and then review Medium and Low. Decide if Medium has potential consequence to your organization. If not, use the Comment field to indicate you don't consider this vulnerability to an issue.
High	Very important vulnerability that may be easy to exploit and allow an attacker to cause serious damage to your network. Fix this vulnerability as soon as possible. If you cannot patch the problem, you may have to reconfigure the system, shut down a service or process and/or tune your firewall and other countermeasures to pickup and block an attack against this vulnerability.
Serious	Extremely important vulnerability that may be easy to exploit and allow an attacker to cause critical damage to your network. Fix this vulnerability as soon as possible. If you cannot patch the problem, you may have to reconfigure the system, shut down a service or process and/or tune your firewall and other countermeasures to pickup and block an attack against this vulnerability.

NOTE: You may see Notes or Info Reporting Levels in your reports. These levels may describe open ports, operating systems running, services running, and versions as well as provide security suggestions.

12.4 Interpreting and Understanding Reports

All reports contain two types of information—graphical and descriptive. The graphical data gives an overview of the risk situation, whereas the descriptive information provides details about each vulnerability. Within each report type, the various audit scopes produce slightly different results. The four scopes are Full, Differential, Incremental, and Top 20.

Table 12-3. Reports descriptions.

Type	Description
Full	Report will contain all vulnerabilities. This data is included in Executive and Manager reports as well as Complete and Summary reports intended for Managers.
Incremental	Report will contain only new vulnerabilities. This data is available only to Managers.
Differential	Report will contain differential analysis of vulnerabilities since last audit, including charts and graphs on Fixed Vulnerabilities vs. Open Vulnerabilities in Summary, Executive, and Manager reports as well as details in Complete vulnerability reports.
Top 20	Report will contain only the most significant top 20 vulnerability tests. This report data is available only in Complete and Summary reports.

12.4.1 Interpreting Complete Vulnerability Reports

The Audit Results section of the Summary reports sums up Regulatory Compliance Status and Credit Card Merchant Program Status. Each title links to the details about compliance issues.

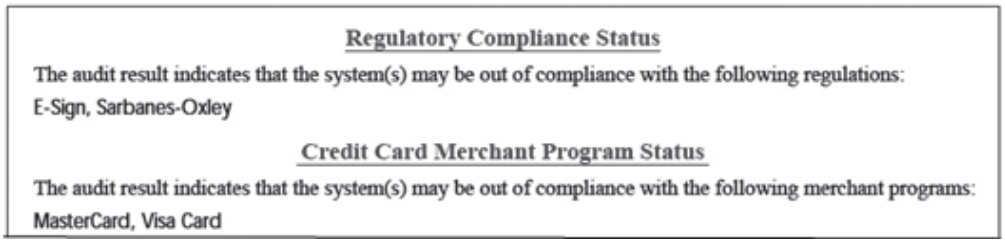


Figure 12-2. Regulatory Compliance Status and Credit Card Merchant Program Status screen.

Below the Compliance information is information about the audit itself, such as the Veri-NAC IP address, the last date/time updates to CVEs were downloaded, the length of the audit (audit duration), and other basic facts. In addition, you see how many hosts were active and how many were blocked at the Firewall or SmartSwitch.

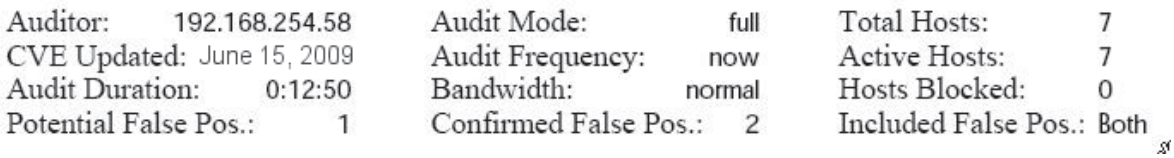


Figure 12-3. Audit information.

Complete vulnerability reports contain a vertical bar chart like the one shown in Figure 12-4 that indicates the prevalence of each type of risk on the network.

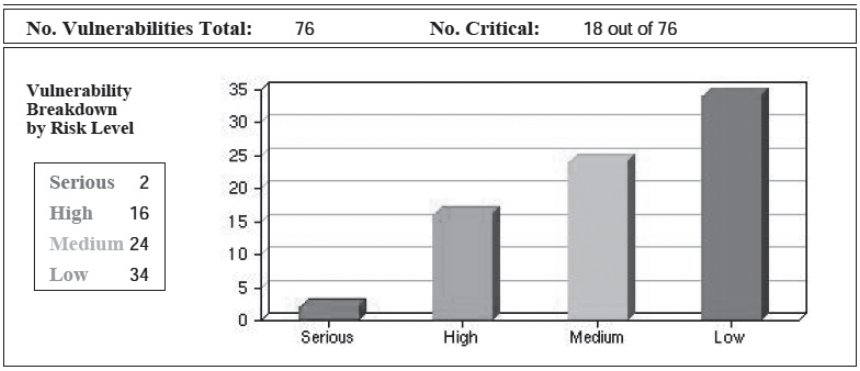


Figure 12-4. Risk type prevalence.

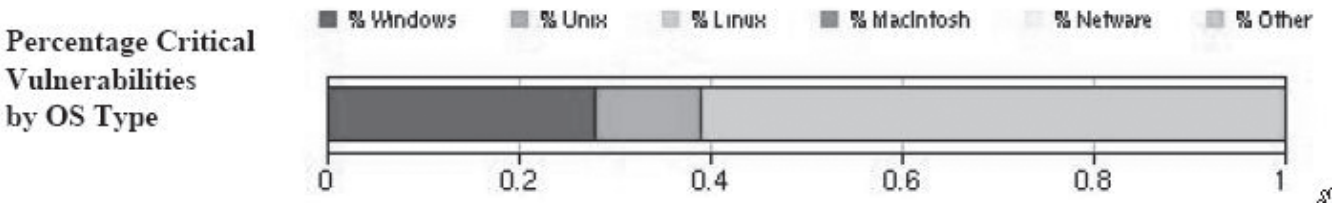


Figure 12-5. Critical vulnerabilities percentage.

Complete reports also show the percentage of vulnerabilities per operating system type in a single graph. In Figure 12-5 you see almost 30% of the vulnerable systems are Windows and over 60% are Linux.

A horizontal bar chart in Complete reports shows more details on each IP address—indicating exactly the number of vulnerabilities at each risk level on particular hosts. (See Figure 12-6.)

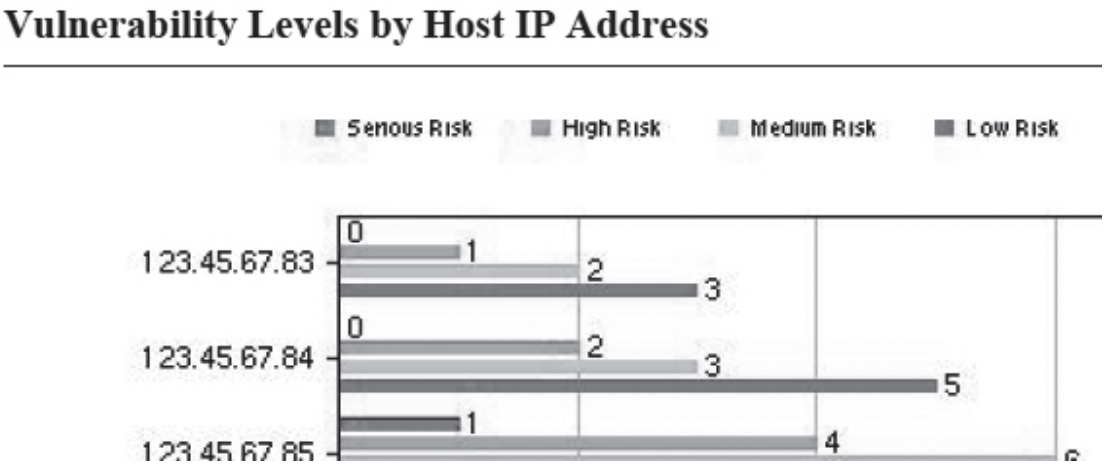


Figure 12-6. Vulnerability Levels by Host IP Address.

In Complete Differential reports (created from a Differential audit only), a special bar chart titled Differential Vulnerability Analysis shows the vulnerability totals broken down by type for the Current vs. Previous Audits, so you can see the progress being made in the remediation of these vulnerabilities. (See Figure 12-7.)

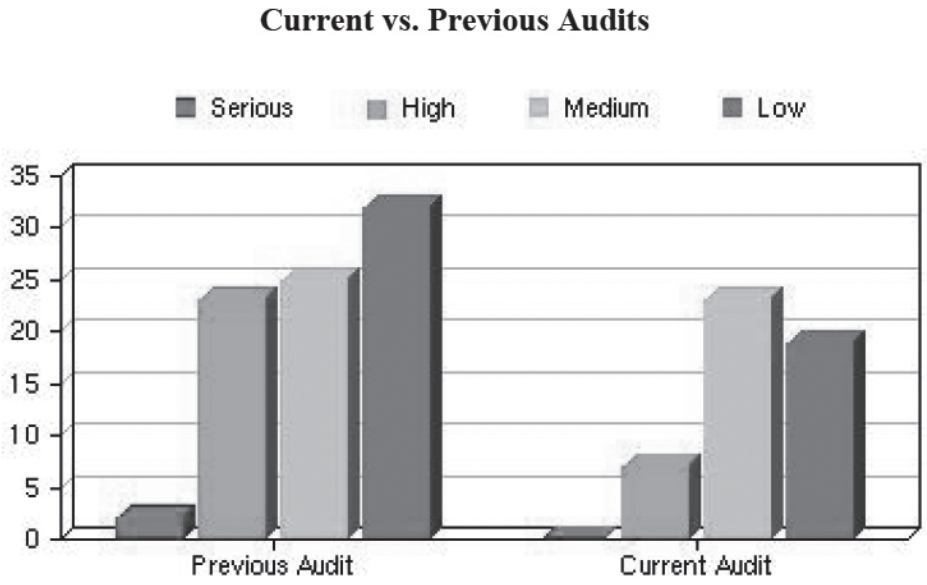


Figure 12-7. Differential Vulnerability Analysis chart.

12.4.2 Interpreting Vulnerability Descriptions

Complete reports (typically read by system administrators and other IT personnel) contain entries sorted based on selections you made earlier under Recreate Report. You can search for particular CVEs in the PDF report using the Acrobat® search feature and standard CVE names.

A typical serious risk is fully explained in the example shown. In addition, the report provides details on how to respond to the risk and/or a link to more data about that vulnerability and how to correct it.

Serious https (443/tcp):http Test Number: 10122 Status: fixed	The imagemap.exe cgi is installed. This CGI may be vulnerable to a buffer overflow that will allow a remote user to execute arbitrary commands with the privileges of your httpd server (either nobody or root). *** Black Box reports this vulnerability using only *** information that was gathered. Use caution *** when testing without safe checks enabled. Solution : remove it from /cgi-bin. CVE : CVE-1999-0951
Vulnerable Host(s): 123.45.67.85	

Figure 12-8. Interpreting Vulnerability descriptions.

You may also encounter CVE candidates (with the CAN prefix).

Serious https (443/tcp):http Test Number: 10363 Status: fixed	It is possible to get the source code of the remote ASP scripts by appending %2e at the end of the request (like GET /default.asp%2e) ASP source codes usually contain sensitive informations such as logins and passwords. Solution : install all the latest Microsoft Security Patches CVE : CAN-1999-0253

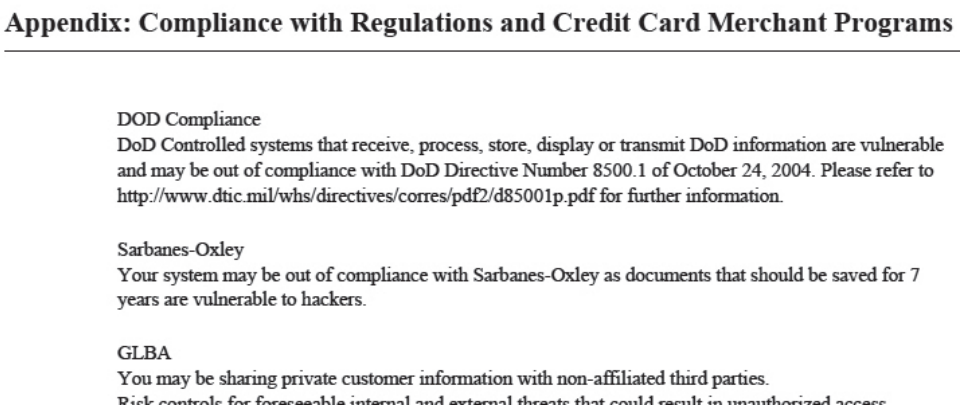
Figure 12-9. CVE candidates.

Tabular data in Complete reports indicates the number of vulnerabilities on each machine and a list of the most critically vulnerable hosts, the number of vulnerabilities they have, and their operating systems. At the end of the report, an Appendix provides more data on compliance with regulations and credit card merchant programs.

12.4.3 Interpreting Summary Reports

The Audit Results section of Summary reports sums up Regulatory Compliance Status and Credit Card Merchant Program Status (see Figure 12-10).

Each of the titles shown links to details about compliance issues, similar to Figure 12-11.



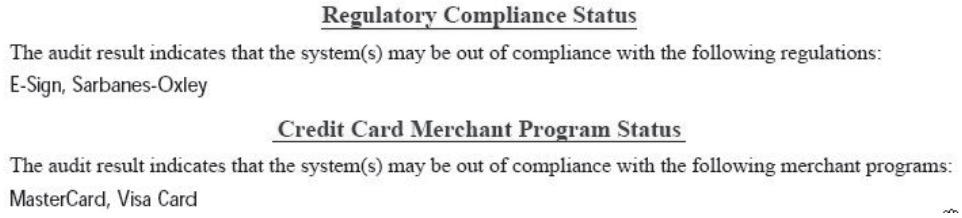
Appendix: Compliance with Regulations and Credit Card Merchant Programs

DOD Compliance
DoD Controlled systems that receive, process, store, display or transmit DoD information are vulnerable and may be out of compliance with DoD Directive Number 8500.1 of October 24, 2004. Please refer to http://www.dtic.mil/whs/directives/corres/pdf2/d85001p.pdf for further information.

Sarbanes-Oxley
Your system may be out of compliance with Sarbanes-Oxley as documents that should be saved for 7 years are vulnerable to hackers.

GLBA
You may be sharing private customer information with non-affiliated third parties.
Risk controls for foreseeable internal and external threats that could result in unauthorized access

Figure 12-10. Compliance issues sample screen.



Regulatory Compliance Status

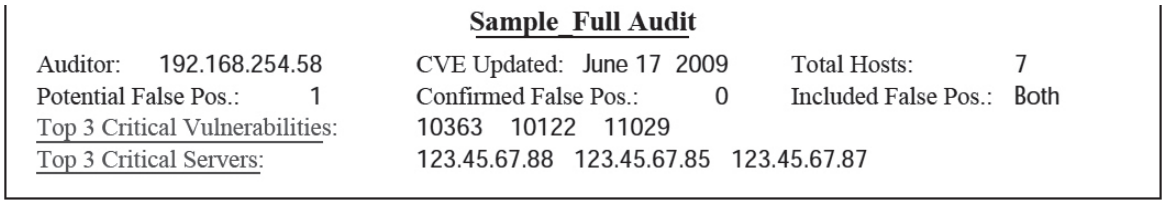
The audit result indicates that the system(s) may be out of compliance with the following regulations:
E-Sign, Sarbanes-Oxley

Credit Card Merchant Program Status

The audit result indicates that the system(s) may be out of compliance with the following merchant programs:
MasterCard, Visa Card

Figure 12-11. Compliance Status screen.

In addition, this report section presents the three most prevalent critical vulnerabilities on the network and the three most critically vulnerable servers on the network. There are links to more details about top vulnerabilities and to a table about the top three critically vulnerable systems. (See Figure 12-12.)



Sample_Full Audit

Auditor:	192.168.254.58	CVE Updated:	June 17 2009	Total Hosts:	7
Potential False Pos.:	1	Confirmed False Pos.:	0	Included False Pos.:	Both
Top 3 Critical Vulnerabilities:		10363 10122 11029			
Top 3 Critical Servers:		123.45.67.88 123.45.67.85 123.45.67.87			

Figure 12-12. Sample Full Audit screen.

NOTE: To allow Summary reports to identify a system as a server, be sure to select a System Type that includes the word Server when completing the System Information in the Asset Tracker. You can select, for instance, Mail Server or Web Server, as long as the name includes the word Server. If the reporting engine cannot find any systems labeled Server, it will report on the three most vulnerable systems rather than the three most vulnerable servers.

Summary reports display a pie chart that shows the percentage of vulnerabilities at each risk level and includes actual totals in the legend to the left of the screen as in Figure 12-13.

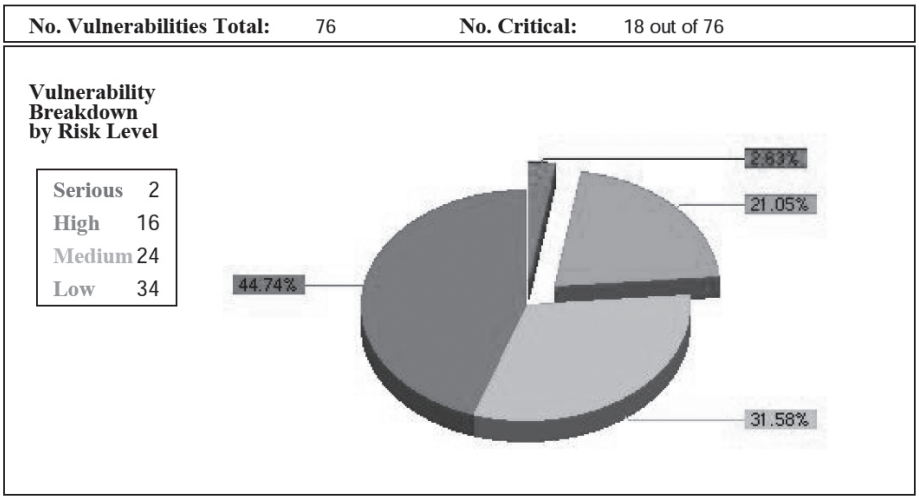


Figure 12-13. Percentage vulnerabilities pie chart.

The most serious vulnerabilities always appear in red, high in orange, medium in yellow, and low in green. The color-coded legend names each level of risk in its color.

Details on the top three critical vulnerabilities are similar to those provided in the Complete report. (See Figure 12-14.)

Top 3 Critical Vulnerabilities

TestID: 10363
Service (port): https (443/tcp):http (80/tcp)
Risk Level: Serious
Description: It is possible to get the source code of the remote
ASP scripts by appending %2e at the end of the request (like GET /default.asp%2e)
ASP source codes usually contain sensitive informations such as logins and passwords.
Solution : install all the latest Microsoft Security Patches
CVE : CAN-1999-0253

Figure 12-14. Top 3 Critical Vulnerabilities Report.

The table for the top three critical servers summarizes the number of serious and high vulnerabilities on those servers and indicates the server type.

Top 3 Critical Servers

Host Address	No. High Risks	Server Type	OS Type Info
123.45.67.88	5	Unknown	Unknown
123.45.67.85	5	Unknown	Unknown
123.45.67.87	4	Unknown	Unknown

Figure 12-15. Serious and high vulnerabilities.

12.5 Remediation of Vulnerabilities in Reports

To remediate a vulnerability, open Veri-NAC in a browser from the system to be fixed and review the information. Click on the live links in the Description section of the Complete report for details.

12.6 Adding Custom Comments to Report Content

You can add your own comments to any vulnerability in the report. Those comments remain linked to that vulnerability even after the audit executes at its next scheduled time and Veri-NAC generates a new version of the report.

To enter comments to a vulnerability report:

- Select "Reports→View Audit Results" from the left menu. This takes you to the Reports page.
- Click the link for your chosen report. This takes you to the Report Details page.

Vulnerability Details are listed at the top of the page as in Figure 12-16.

Vulnerability Details

3 IP Addresses	Start	End	Duration	Serious	High	Medium	Low	Total
192.168.254.54	08:12:46 AM	08:13:16 AM	0 min 30 secs	0	0	0	0	0
192.168.254.199	08:12:45 AM	08:13:15 AM	0 min 30 secs	0	0	0	0	0
192.168.254.207	08:12:45 AM	08:16:35 AM	3 mins 50 secs	0	0	1	10	11
Total				0	0	1	10	11

Figure 12-16. Vulnerability details.

The description lists the IP addresses of all the machines audited for this report and indicates the number of vulnerabilities at each level. This information appears even while the audit is in process.

NOTE: Details of the report content, shown in the subsequent steps, are available only if the audit is completed.

- Move down the screen to see the Text of Vulnerabilities box (see Figure 12-17). You can scroll through the report and copy text to another file.

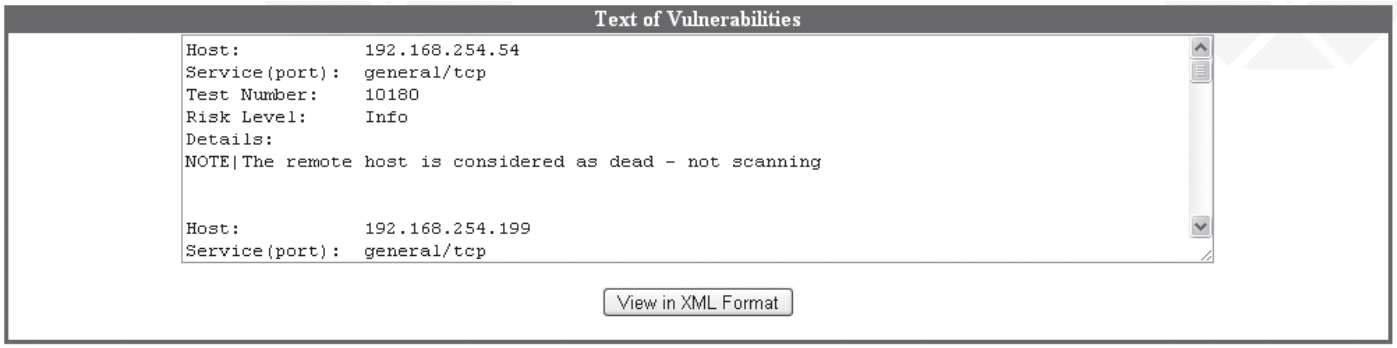


Figure 12-17. Text of Vulnerabilities screen.

A numbered list of the comments you entered will appear below the report text. Initially, the list is empty.

See instructions on the next page to add comments.

12.6.1 Adding New Comments

Use the Edit or Add Comments box below the list to add a comment to Existing Comments.

• Enter the Title and Test Numbers, and then insert your new comment in the Comment field. See Guidelines below.

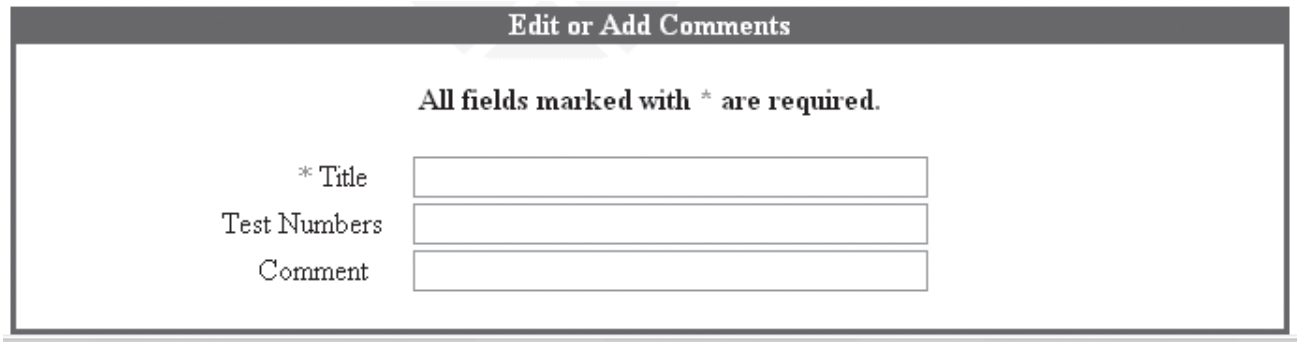


Figure 12-18. Edit or Add Comments screen.

Table 12-4. Comments guidelines.

Field	Guideline
Title	Only required field. You can enter up to 50 characters. Only the text you enter in the Comment field appears in the report. Information in the Title field does not.
Test Numbers	Enter at least one test number (the five-digit vulnerability test number, not the CVE number) so Veri-NAC knows when to add the comment to a report. You can enter up to 42 test numbers in the field, separated by commas. No space is needed after the comma.
Comment	The comment field may contain up to 300 characters.

NOTE: The required Title field can be anything you want as a reminder. It allows you to keep better track of your comments.

• Click "Save" to retain the comment.

Veri-NAC assigns a number to the comment and it appears in the list.

12.6.2 Editing/Removing Existing Comments

To edit a comment from the Existing Comments list, scroll to the right of list.

• Enter the number of the comment you want to edit, and then click the Edit button.

The information stored in that comment appears in the Edit or Add Comments box below the list. (You can also delete a comment by entering its number and clicking "Remove.") (See Figure 12-19.)

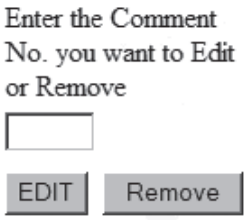


Figure 12-19. Edit/Remove Existing comments.

• Edit the text of the comment in the Comment field and click "Save."

The new text appears in the Existing Comments list.

12.6.3 Viewing Comments in Reports

To see Comments in your reports:

• Click the Back to Reports button (near the top of the page) to return to the main Reports page.

• In the list of reports, click the check box for each report name you want to review.

• Click "Recreate Selected" button at the top center of the page. The modified reports are highlighted in yellow (or an alternative color depending on your browser settings).

Report	▲ Audit Status	Audit Mode	Ticket #	Summary	Complete
☐ Firewall Audit	Tuesday, Aug 11, 2009 8:26	Full	360	S	C
☐ VoIP Systems Audit	Tuesday, Aug 11, 2009 8:21	Full	359	S	C
☐ Desktop and Servers Audit	Tuesday, Aug 11, 2009 8:12	Full	358	S	C
☐ Laptops Audit	Tuesday, Aug 11, 2009 7:57	Full	357	S	C

Figure 12-20. Viewing comments.

• Click the Report link to go to the Report Details page.

• Search the Text of Vulnerabilities box for the test number with which the comment is associated. Scroll to the end of the section for that test number. The comment appears under User Comments at the end of the vulnerability test information.

Open the report by clicking on the C icon. When the vulnerability appears in the report, the comment follows the end of the description.

12.7 Finding Automatic Reports for Dynamically Detected Devices

• Select "Reports→View Audit Results" from the left menu to go to the Reports page.

When you need a report on a dynamically detected device, look in the Report column of the Reports page for a profile name in the following format:

Auto_<ip_address>

☐ Auto_192_168_254_100	Wednesday, Jul 22, 2009 14:38	Full	349	S	C

Figure 12-21. Find report profile name.

• Click on the Report link. This takes you to the Report Details page where you can review available data, shown below, as well as Text of Vulnerabilities and Comments fields.

12.8 Removing a Report

Use the Reports page to remove a set of reports for a particular audit name.

Click the check box to the left of the audit name.

Click the Remove Selected button to the upper or lower right of the reports list (see Figure 12-22).

Figure 12-22. Remove Selected report button.

A window appears to confirm the removal. Click Continue to return to the Reports page.

The entire row is deleted from the Reports page.

NOTE: IT staff users are not able to remove reports.

12.9 Saving a Report to Disk

To save a report to disk, go to its Reports page.

Select "Reports→View Audit Results for Summary and Complete Reports."

Select "Reports→Generate Exec. Reports for Executive Reports."

Select "Reports→Generate Mgmt. Reports for Management Reports."

NOTE: We recommend you always store reports only on Veri-NAC to ensure they remain confidential. If you must save a report locally, do so only on a secure server.

• Right click on the C, S, M, or E report icon, as required.

• Select "Save Target As" and save to a place in a secure area on a protected machine.

• Select the destination and file name.

• Click "Save" to retain the report.

12.10 Creating Custom Reports Using Queries

12.10.1 Querying Reports Database

- Select "Reports→Query Vulnerabilities" from the left menu. This takes you to the Report Query page (see Figure 12-23).

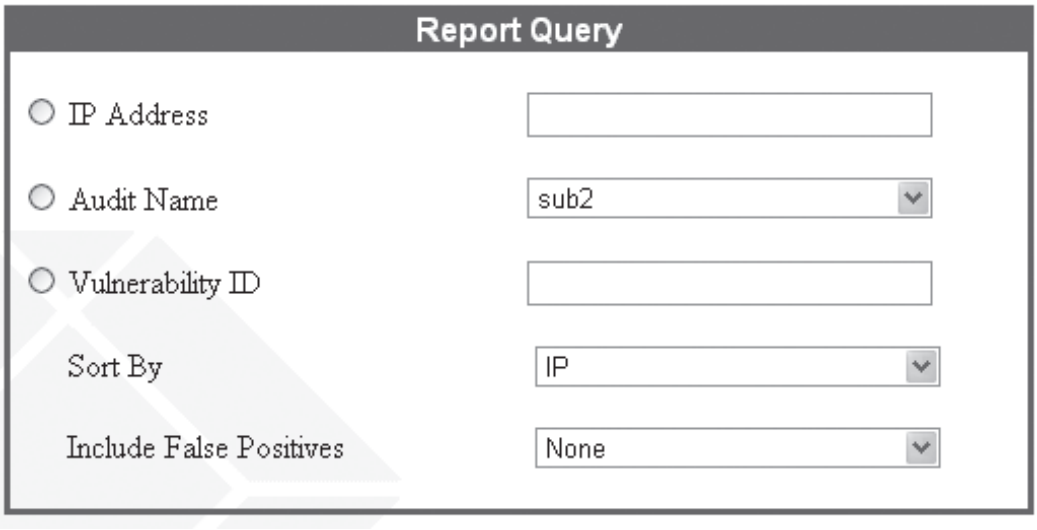


Figure 12-23. Report Query screen.

- Choose a search topic:
  - IP Address
  - Audit Name
  - Vulnerability ID
- Choose either "IP" or "Vulnerability ID" in the Sort by field.
- Select "None," "Potential," "Confirmed," or "Both" in the Include False Positives field.
- Click the Next button to continue.
- Select the Date Range.

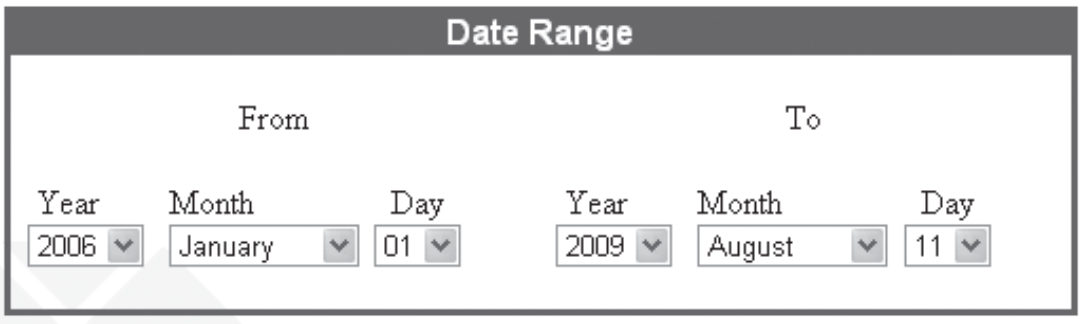


Figure 12-24. Date Range.

- The From date defaults to the earliest date for which data is available. The To date defaults to today's date.
- Click "Next" to continue.

• Select the risk level(s) from the choices shown. (See Figure 12-25.)

Figure 12-25. Risk level.

• Click "Next" to see the query results. Some sample results from the Report Query page are shown in Figure 12-26:

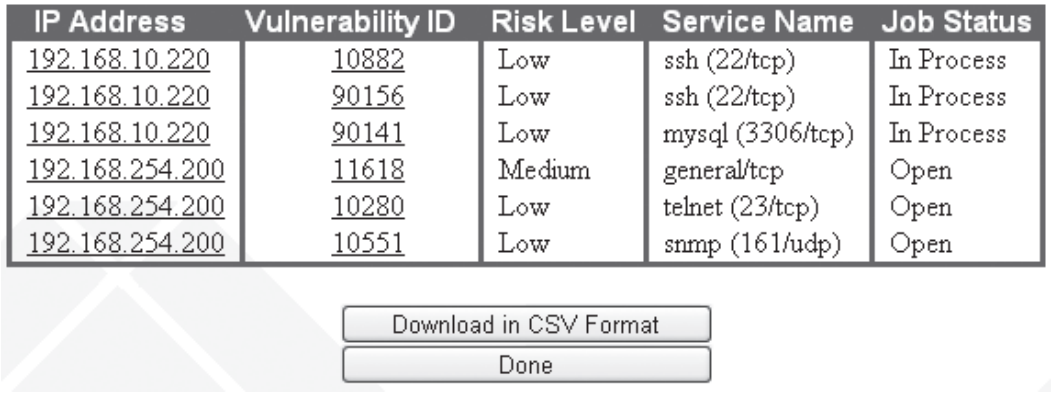


Figure 12-26. Sample Report Query results.

The Report Query page shows vulnerability ID, risk level, service name, and job status for each IP address listed.

Click an individual IP address in the first column to link to data from the asset database.

You can also click on a particular vulnerability ID to open information about that ID.

Sometimes you may need to use this data for various company and regulatory reports. You can download in CSV format all data for each report you generate. This will allow you to use it in Excel or other reporting systems. If you save the data to a CSV file, you are prompted for a location on your hard drive or network.

12.10.2 Printing Query Results

To print the query results like a report, be sure you have the page set up to print in landscape mode from the browser print settings. Then print the report using browser print functions.

12.11 Requirements for Executive/Management Reports

The Veri-NAC automatically creates vulnerability reports when an audit completes. Veri-NAC also places data from vulnerability assessments and other security information from the appliance into a database, which the reporting engine uses to create high-level Management and Executive reports on demand.

Only manager level users can generate these two report types.

Some trend charts in Management and Executive reports require minimum amounts of data to be useful. We recommend you allow at least a month of data to accumulate before expecting meaningful trend results.

Understading Risk Levels in Reports

All vulnerabilities have a risk level of Serious, High, Medium, or Low. Detailed definitions for the levels are shown in the table on the next page.

Veri-NAC generates vulnerability reports and stores this data in its database each time it audits the network.

Table 12-5. Risk Level/Vulnerability Type descriptions.

Risk Level	Vulnerability Type
Notes	Important notes—show you which ports are open. Get in the habit of reading Notes on a regular basis since they may indicate malware running on a port. Check open ports and confirm that you want them to open.
Low	Less important vulnerability—harder to exploit and usually causes little or no damage to your network assets. Always fix Serious and High vulnerabilities first and then review Medium and Low vulnerabilities. Decide if Low has potential consequence to your organization. If not, use the Comment field to indicate you don't consider this vulnerability an issue.
Medium	Slightly more important than a Low-level vulnerability but usually hard to exploit. Medium level vulnerabilities might allow an attacker to gain access to your network. Always fix Serious and High vulnerabilities first, and then review Medium and Low. Decide if Medium has potential consequence to your organization. If not, use the Comment field to indicate you don't consider this vulnerability to be an issue.
High	Very important vulnerability that may be easy to exploit and allow an attacker to cause serious damage to your network. Fix this vulnerability as soon as possible. If you cannot patch the problem, you may have to reconfigure the system, shut down a service or process and/or tune your firewall and other countermeasures to pickup and block an attack against this vulnerability.
Serious	Extremely important vulnerability that may be easy to exploit and allow an attacker to cause critical damage to your network. Fix this vulnerability as soon as possible. If you cannot patch the problem, you may have to reconfigure the system, shut down a service or process and/or tune your firewall and other countermeasures to pick up and block an attack against this vulnerability.

NOTE: You may see Notes or Info Reporting Levels in your reports. These levels may describe open ports, operating systems running, services running, and versions, and may also provide security suggestions.

12.12 Generating Management Reports

NOTE: System Administrator: Be sure to supply managers, executives, and IT staff with the username and password you assign to them when you create their account.

You must be a manager level user to access Management or Executive reporting features.

To generate a report:

- Select "Reports→Generate Mgmt. Reports" from the left menu. The Create Management Report box appears. (See Figure 12-27.)

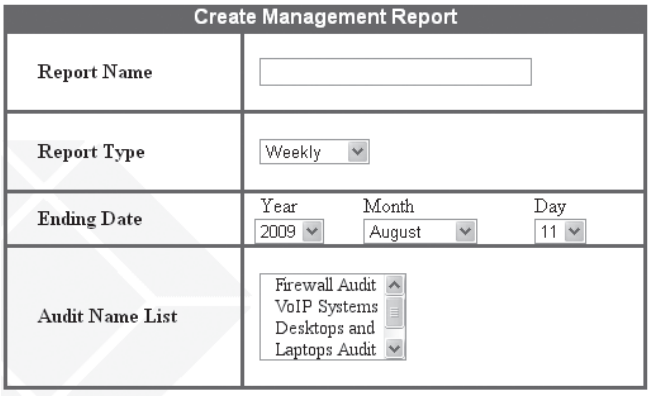


Figure 12-27. Create Management Report box.

- Enter the Report Name.
- Select the Report Type based on the period you want covered—Weekly, Bi-Weekly, Monthly, or Quarterly.
- Fill in Ending Date.
- Choose one or more audits to include in the report from the Audit Names List. To select more than one, hold down Ctrl while selecting.
- When the report is ready, it will appear in the list of reports along with all other reports you have created.

12.13 Understanding Content of Management Reports

The report type (e.g. Monthly Management Report) and date created are shown at the top of the Management Report below the report name. Report dates are in the Summary section below the heading.

Although regulatory and credit card compliance information reported is shown in all reports, other Summary information in the Management report differs from that in vulnerability reports, since it targets management concerns.

Summary

Regulatory Compliance Status

The audit result indicates that the system(s) may be out of compliance with the following regulations:

No regulation has been selected

Credit Card Merchant Program Status

The audit result indicates that the system(s) may be out of compliance with the following merchant programs:

No security policy has been selected

December 28 Management Report

Date Range:	12/21/09 - 12/28/09	Currently Open Vuls.:	58	Number of Resources:	0
Total Hosts:	3	Fixed Vulnerabilities:	0	Total Resource:	0.00 hrs
Audits Included:	1	Total Discovered Vuls.:	58	Total Escalations:	0
Audits Names:	AuditDec28th				

Figure 12-28. Management report.

This report summarizes the number of open, fixed, and new vulnerabilities. It also indicates how many resources/hours were used for remediation and how many jobs were escalated (for being past due). See Figure 12-28.

Figure 12-29 shows an overview of current vulnerabilities in bar chart form, indicating the number at each risk level.

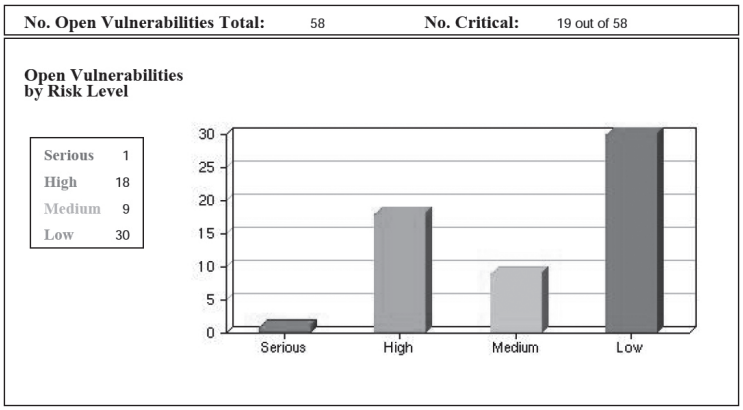


Figure 12-29. Current Vulnerabiltites Overview chart.

Vulnerability Totals/Levels

	Seri. Risk	High Risk	Med. Risk	Low Risk	Total
No. Discovered Vuls.	0	6	21	29	56
No. Fixed Vuls.	0	5	5	10	20

Figure 12-30. Vulnerability Totals/Levels chart.

Figures 12-30 and 12-31 show Vulnerability Status by Risk Level—indicating how many vulnerabilities at each risk level are new, fixed, and in the process of being fixed.

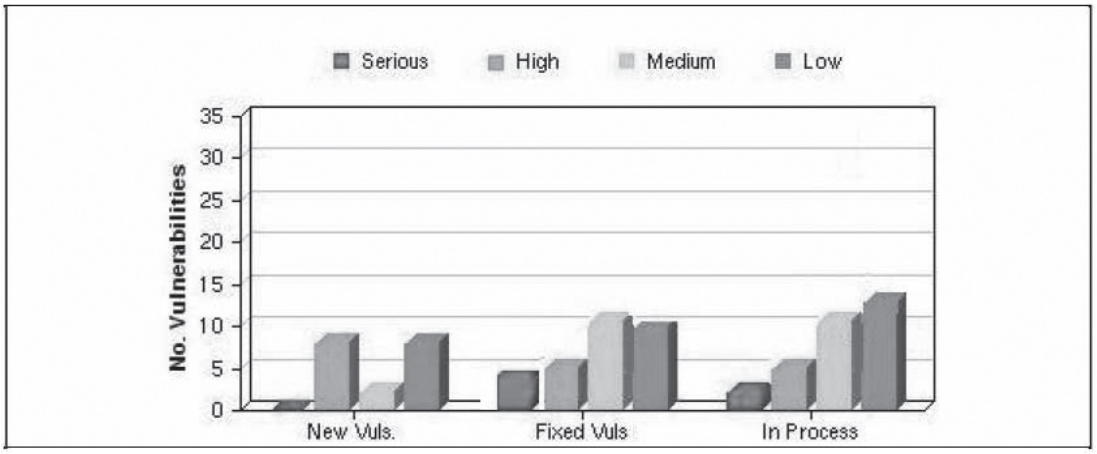


Figure 12-31. Vulnerability Status by Risk Level.

Trends in Vulnerability Status is the next section. This section presents trend graphs indicating how many vulnerabilities at each level have been open and how many new ones were introduced over the reporting period.

NOTE: The number of data points in the graph depends on the dates of the audits. If you include weekly audits, you only see weekly data points. If you include daily audits, you see more data points.

For quarterly, semi-annual, and annual reports, you may choose to use monthly vulnerability reports for an overview of the data or daily vulnerability reports to see the most detail.

Figures 12-32 and 12-33 indicate the number and severity of both open and new vulnerabilities over the reporting period.

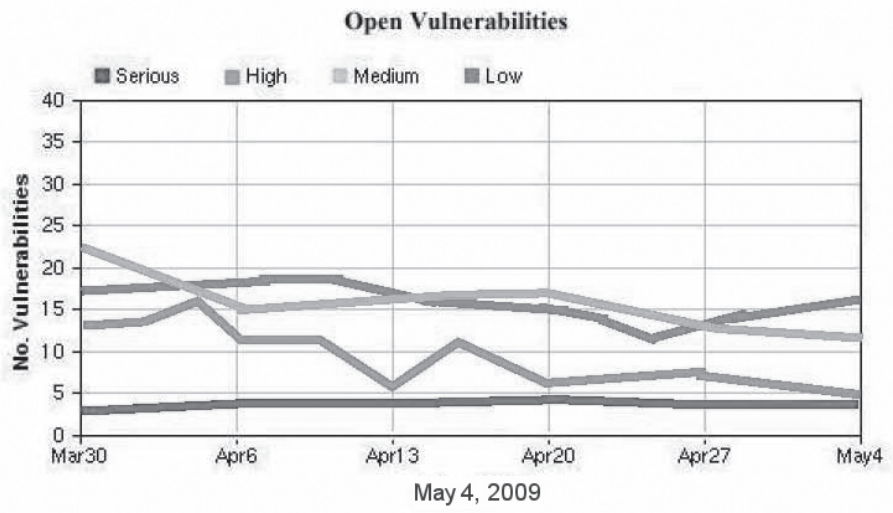


Figure 12-32. Open Vulnerabilities chart.

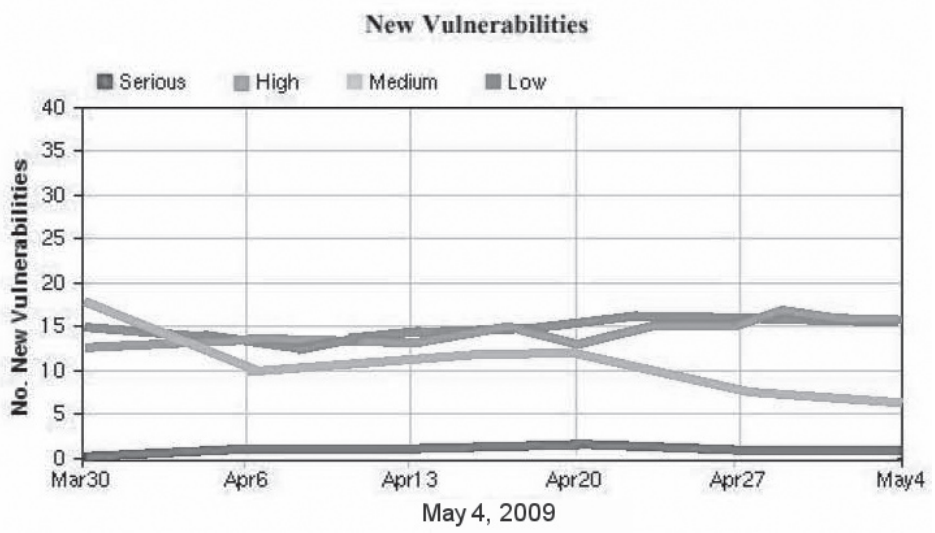


Figure 12-33. New Vulnerabilities chart.

The next section, Trends in Vulnerability Management Status, graphs the number of vulnerabilities fixed during the time period and the number of IT resource hours expended to fix them.

The graph shown in Figure 12-34 details Expended IT Resource Hours. It provides a quick view of data, also available in the Workflow Management System, showing the total work hours used for the vulnerabilities, broken down by level of severity. Totals are for the time period you chose for the report.

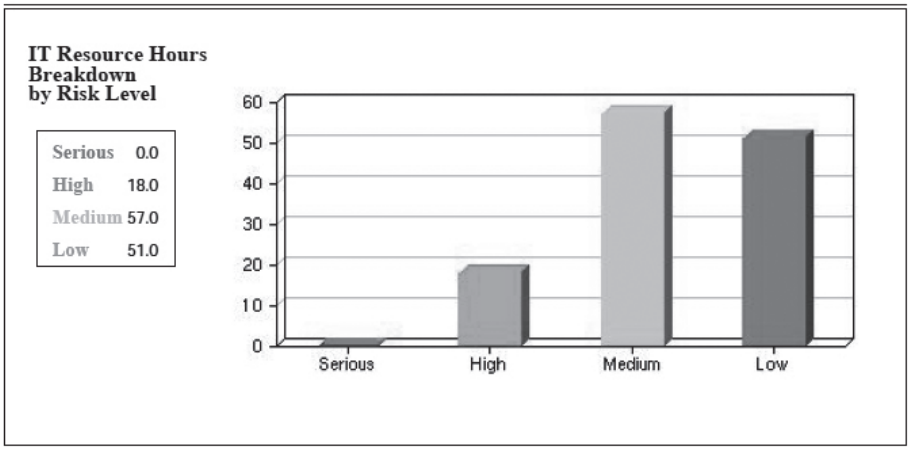
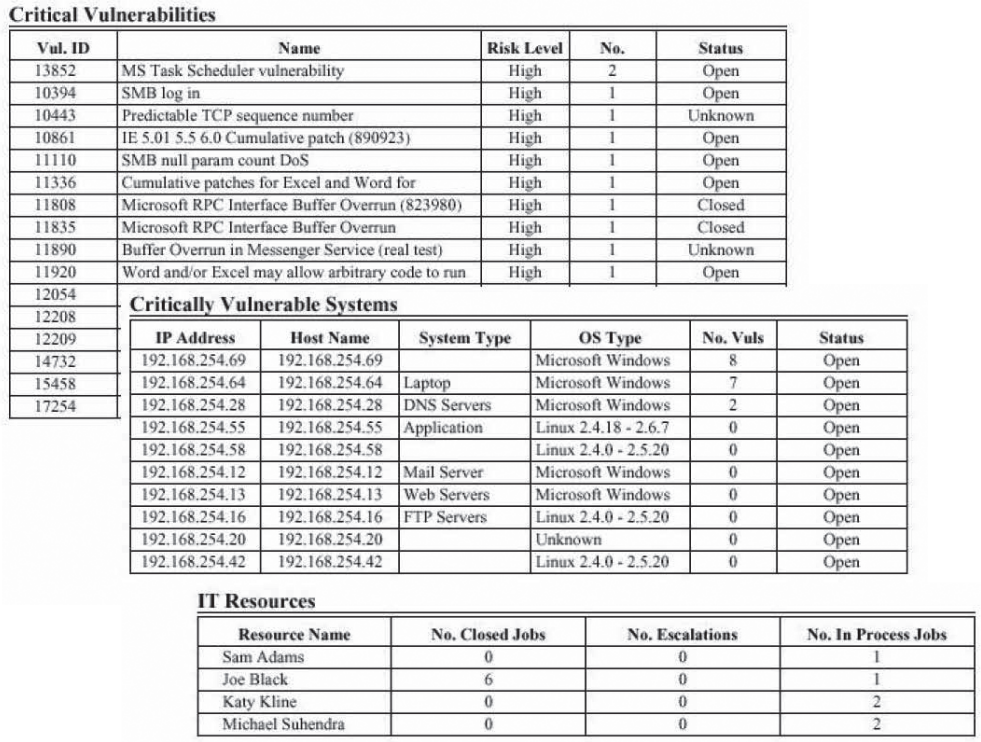


Figure 12-34. IT Resource hours breakdown by risk level.

Figure 12-35 show the final three graphs, which detail critical vulnerabilities as well as the IT resources currently working to resolve them.



Critical Vulnerabilities

Vul. ID	Name	Risk Level	No.	Status
13852	MS Task Scheduler vulnerability	High	2	Open
10394	SMB log in	High	1	Open
10443	Predictable TCP sequence number	High	1	Unknown
10861	IE 5.01 5.5 6.0 Cumulative patch (890923)	High	1	Open
11110	SMB null param count DoS	High	1	Open
11336	Cumulative patches for Excel and Word for	High	1	Open
11808	Microsoft RPC Interface Buffer Overrun (823980)	High	1	Closed
11835	Microsoft RPC Interface Buffer Overrun	High	1	Closed
11890	Buffer Overrun in Messenger Service (real test)	High	1	Unknown
11920	Word and/or Excel may allow arbitrary code to run	High	1	Open
12054				
12208				
12209				
14732				
15458				
17254				

Critically Vulnerable Systems

IP Address	Host Name	System Type	OS Type	No. Vuls	Status
192.168.254.69	192.168.254.69		Microsoft Windows	8	Open
192.168.254.64	192.168.254.64	Laptop	Microsoft Windows	7	Open
192.168.254.28	192.168.254.28	DNS Servers	Microsoft Windows	2	Open
192.168.254.55	192.168.254.55	Application	Linux 2.4.18 - 2.6.7	0	Open
192.168.254.58	192.168.254.58		Linux 2.4.0 - 2.5.20	0	Open
192.168.254.12	192.168.254.12	Mail Server	Microsoft Windows	0	Open
192.168.254.13	192.168.254.13	Web Servers	Microsoft Windows	0	Open
192.168.254.16	192.168.254.16	FTP Servers	Linux 2.4.0 - 2.5.20	0	Open
192.168.254.20	192.168.254.20		Unknown	0	Open
192.168.254.42	192.168.254.42		Linux 2.4.0 - 2.5.20	0	Open

IT Resources

Resource Name	No. Closed Jobs	No. Escalations	No. In Process Jobs
Sam Adams	0	0	1
Joe Black	6	0	1
Katy Kline	0	0	2
Michael Suhendra	0	0	2

Figure 12-35. Critical vulnerabilities/IT resources.

A table of Critical Vulnerabilities gives the manager a quick view of the most significant problems on the network, the number of systems affected, and the status of each.

Another table shows Critically Vulnerable Systems to give the manager a quick view of which systems are in the most trouble.

The last table summarizes the IT Resources working on these vulnerabilities.

Compliance details appear in the Appendix of the report.

12.14 Generating Executive Reports

Executive reports provide a broad overview of the company's network vulnerability status at an executive level. Manager level users may create executive reports themselves or allow executives to log on and create their own reports as needed.

Only a manager level user can generate executive reports. To generate a report:

- Select "Reports→Generate Exec. Reports" from the left menu.

The Create Executive Report box appears.

- Enter the Report Name in the name field.
- Select the Report Type - Monthly, Quarterly, Semi-Annual, or Annual.
- Fill in the Ending Date.
- Select the audit from the Audit Name List for which you need the report. To select more than one audit name, hold down Ctrl while selecting.
- Click the Create Report button below the Create Executive Report box.

When the report is available, it appears in the list of reports along with all other reports you have created (until you delete them).

• Click the C icon from the report's rightmost column to view the report.

Understanding Content of Executive Reports

The report type (e.g. Executive Monthly Report) and date created are shown at the top of the report below the name. Report dates are in the Summary section below the heading.

Regulatory and credit card compliance information appears next.

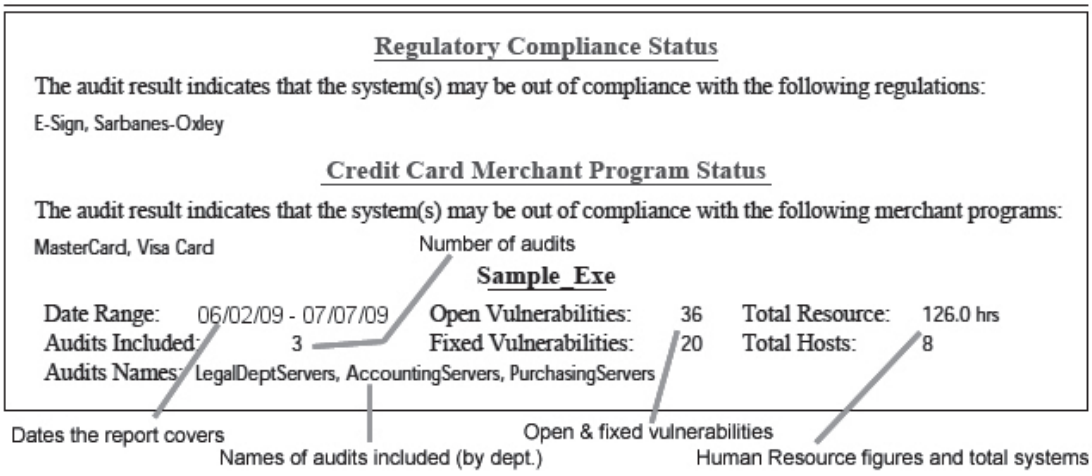


Figure 12-36. Regulatory and credit card compliance information.

Other summary information in the executive report is less concerned with details, but provides a view of the general health of the network.

This report type summarizes the number of open/fixed vulnerabilities and how many resource hours were expended on remediation.

The executive report indicates the threshold level for quarantining systems and the number of firewall/switch blocking events that occurred in the time period the report covers. This information provides the executive with a high level view of the impact of vulnerabilities on productivity.

The first page in the executive report, shown in Figure 12-37, displays a pie chart showing percentages of vulnerabilities at each level, a basic overview of the vulnerability status.

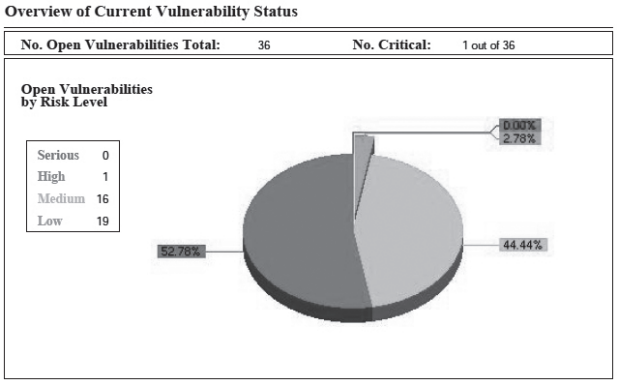


Figure 12-37. Percentage vulnerabilities pie chart.

Two line graphs show Trends in Vulnerability Status. These graphs are identical to those described in the Understanding Content of Management Reports section earlier in this chapter.

Executive reports have two additional tables with information focusing on the Top 10 Critical Vulnerabilities and the Top 10 Critically Vulnerable Systems, shown in Figure 12-38, found in the time period the report covers.

Top 10 Critical Vulnerabilities

Vul. ID	Name	Risk Level	No.	Status
13852	MS Task Scheduler vulnerability	High	2	Closed
10394	SMB log in	High	1	Open
10443	Predictable TCP sequence number	High	1	Closed
11110	SMB null param count DoS	High	1	Open
11837	OpenSSH < 3.7.1	High	1	In Process
11890	Buffer Overrun in Messenger Service (real test)	High	1	In Process

Top 10 Critically Vulnerable Systems

IP Address	Host Name	System Type	OS Type	No. Vuls	Status
192.168.254.64	Amaryllis	Application	Microsoft Windows	3	Open
192.168.254.28	Bouvardia	Application	Microsoft Windows	2	Open
192.168.254.20	Jupiter	File Server	Linux	1	In Process
192.168.254.69	Mercury	Database Server	Microsoft Windows	1	Open

Figure 12-38. Top 10 Critical Vulnerabilities charts.

If your network has ten or fewer critically vulnerable systems, you'll see all of them in this tabular section of the report. If the network has more than ten, this section indicates the top ten systems with vulnerabilities.

Compliance details appear in the Appendix of the report (see Figure 12-39).

Appendix: Compliance with Regulations and Credit Card Merchant Programs

E-Sign
You may be out of compliance with E-Sign, because documents being retained in electronic format are vulnerable to being rewritten or erased, having their date-time stamp altered, or becoming non auto-verifiable.

Sarbanes-Oxley
Your system may be out of compliance with Sarbanes-Oxley as documents that should be saved for 7 years are vulnerable to hackers.

MasterCard Merchant Compliance
Systems may be out of compliance with the vulnerability management requirements of

Figure 12-39. Appendix: Compliance with Regulations and Credit Card Merchant Programs screen.

13. Working with Logs

This chapter describes how to use Veri-NAC logs. You must be a manager user type to access logs.

NOTE: Different types of Black Box appliances have different log storage capacity:

Table 13-1. Log storage capacity.

Appliance	Amount of Storage	Estimated Storage Time
LVN5200A	160 GB	12 months
LVN5250A	250 GB	1–2 years
LVN5400A	320 GB	2–3 years
LVN5600A	500 GB	2–3 years
LVN5800A	1000 GB	3+ years

The Veri-NAC logs two types of events: network and system.

- Network Events—Occur on the network Veri-NAC is auditing/monitoring.
- System Events—Occur on the Veri-NAC unit itself.

You can export both logs to a CSV format file. Use this to meet forensic analysis and regulatory compliance requirements.

13.1 Viewing Network Events Log

Network Events Logs show significant Veri-NAC monitored changes on your network.

- Select "Logging→Network" from the left menu.

The Logging box appears. (See Figure 13-1.)

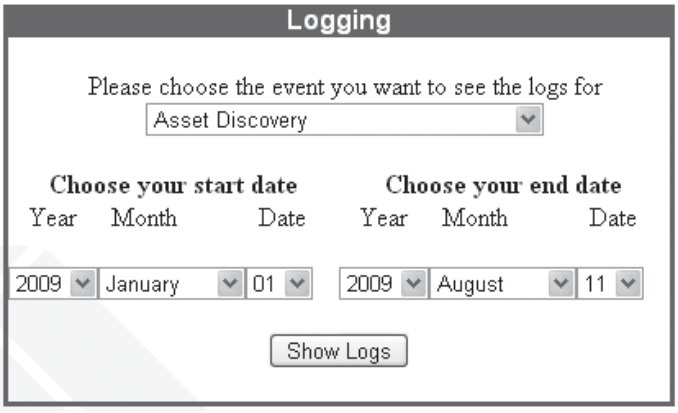


Figure 13-1. Logging box.

- Select an event type from the pulldown list.
- Choose from:
  - Asset Discovery
  - Manually Added IP Address
  - Manually Added Asset
  - IP Address(es) Removed
  - Dynamically Detected IP Addresses
  - Firewall Edited

- Enter the date range.
- Click "Show Logs," and the log displays (see Figure 13-2).

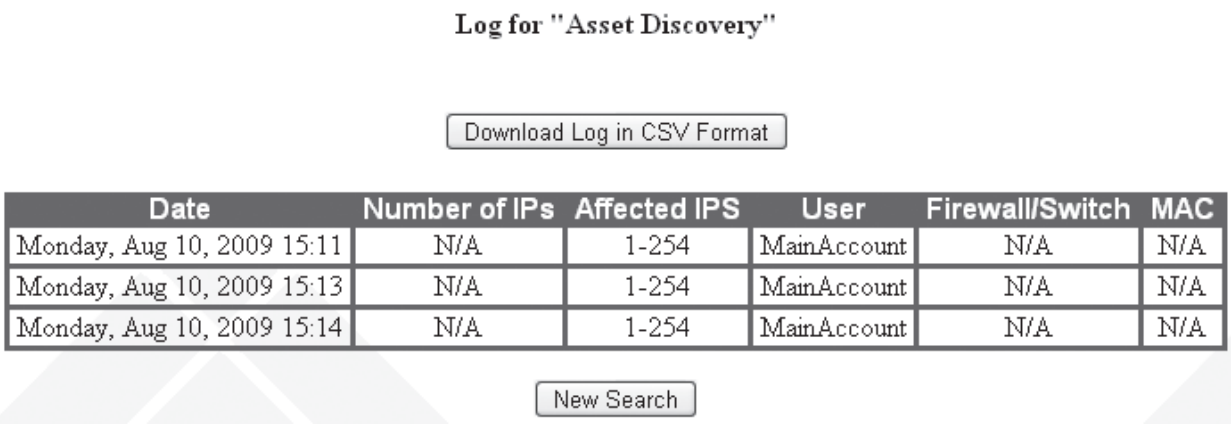


Figure 13-2. Asset Discovery log.

You can either perform a New Search to view logs for another parameter or you can Download Log to a CSV format file. If you save the data to a CSV file, the system prompts you for a location on your hard drive or network.

13.2 Viewing Veri-NAC System Events Log

You can also view a log of significant events that occurred on Veri-NAC itself.

- Select "Logging→System" from the left menu. The Logging dialog appears (see Figure 13-3).

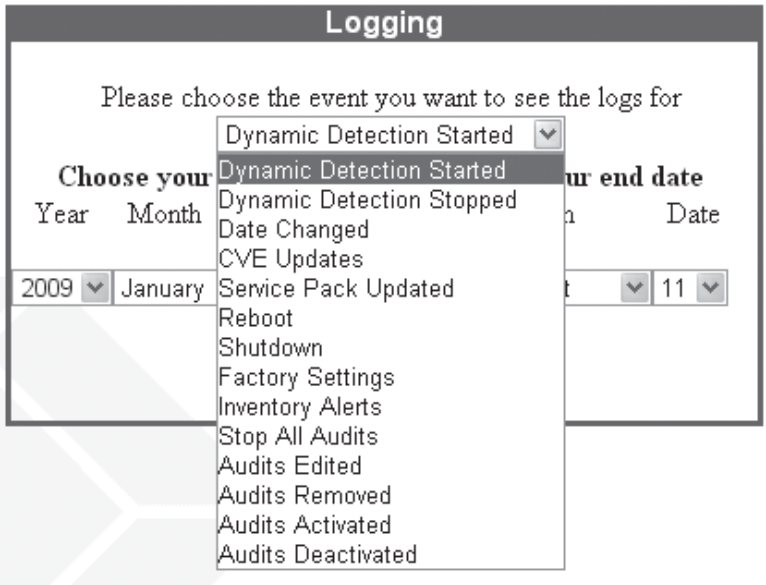


Figure 13-3. Logging dialog.

- Select an event type from the list shown in the pulldown.
- Enter the date range.
- Click "Show Logs," and the resulting log displays.

You can either perform a New Search to view logs for another parameter or you can Download Log to a CSV format file. If you save the data to a CSV file, you are prompted for a location on your hard drive or network.

13.3 Generating and Viewing Asset Reports

- Select "Reports→View Audit Results" from the left menu to go directly to the Audit Results screen.
- Select an audit result to generate an Asset Report for that audit. Assets will also be marked as trusted when unblocked.
- Click "Generate Asset Report."

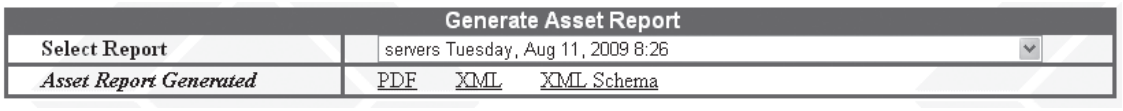


Figure 13-4. Generate Asset Report.

- Click on one of the generated links to view the report.

NOTE: Asset reports combine Black Box and National Vulnerability Database (NVD) data. Reports are available in PDF and XML formats. XML schema is also available.

13.4 Generating and Viewing NAC Reports

- Select "Reports→NAC Reports" from the left menu to go directly to the NAC Reports screen.
- Select a start date for the NAC report. Assets will also be marked as trusted when unblocked.
- Select an end date for the NAC report.
- Click "Generate NAC Report."
- Click on the generated link to view the report.

13.5 Generating and Viewing IP History Reports

- Select "Reports→NAC Reports" from the left menu to go directly to the NAC Reports screen.
- Enter an IP address. Assets will also be marked as trusted when unblocked.
- Select a start date for the IP History report. Assets will also be marked as trusted when unblocked.
- Select an end date for the IP History report.
- Click "Generate IP History Report."
- Click on the generated link to view the report.

14. Vulnerability Remediation Guide

This chapter describes how to use the Veri-NAC Workflow feature to manage vulnerability remediation across your organization.

NOTE: To use workflow features, you must create accounts for all users accessing Veri-NAC.

NOTE: When working on vulnerability remediation, work with vulnerability reports. For more information on reports, refer to the Reports Guide (Chapter 12).

The Veri-NAC Vulnerability Remediation Guide is for all IT staff responsible for maintaining the company's internal networks and performing remediation of vulnerabilities on those networks.

- Set the guidelines Veri-NAC will use to allocate person hours to remediate vulnerabilities at each level.
- Veri-NAC creates report tickets based on vulnerabilities it finds in reports.
- Each report ticket can contain multiple jobs. Fixing each individual vulnerability is one job ticket.
- Veri-NAC uses time guidelines you set (and assumes an 8:00 A.M. to 5:00 P.M. workday) to generate a due date for each job.
- Veri-NAC lets IT Staff choose their own jobs. When an IT Staff user chooses a vulnerability, the individual is assigned all instances of that vulnerability across the entire network.
- Veri-NAC automatically checks to see if jobs are past due twice a day (8:00 AM and 12:00 [noon]), then escalates any jobs it finds to be past due by sending an e-mail to the IT manager(s).
- Manager level users can reassign jobs to different IT staff members or adjust person hours for remediation.
- While a job is in the process of being assigned, the job is placed on hold, so no other manager can assign it.
- If you have a manager account, you can assign work to any user who works for you. You may have both IT staff users and other managers working for you. Any IT staff or manager may have multiple managers.

15. Understanding Workflow and User Responsibilities

15.1 Progression of Job Status

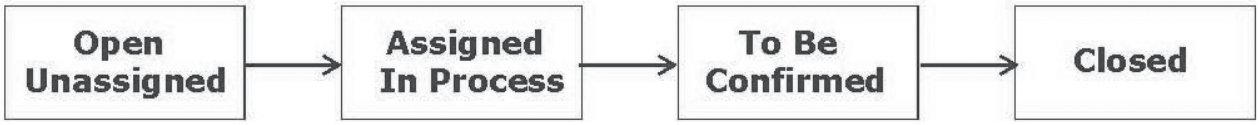


Figure 15-1. Job Status flow.

15.2 IT Staff: Steps For Remediation of Vulnerabilities

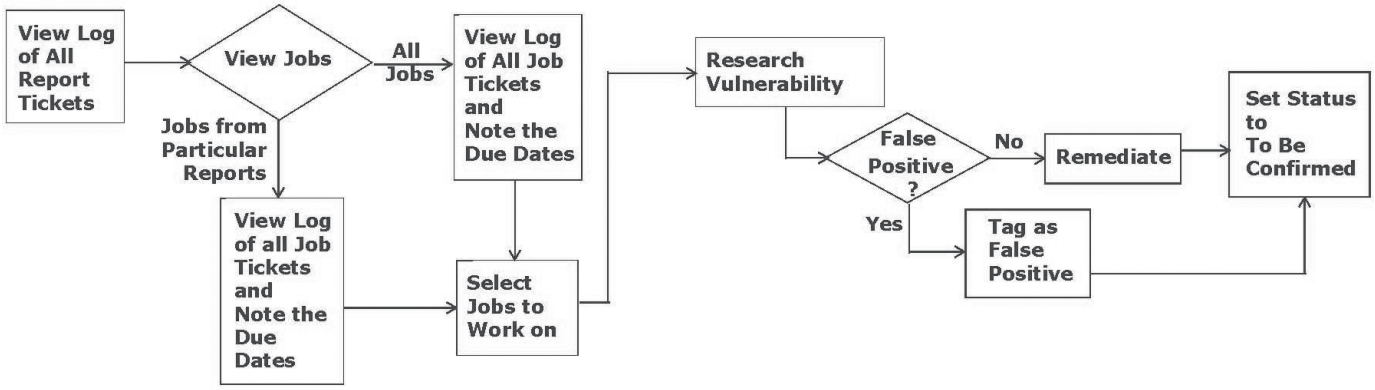


Figure 15-2. Steps for vulnerabilities remediation.

15.3 Managing Remediation—Responding to Events as Manager

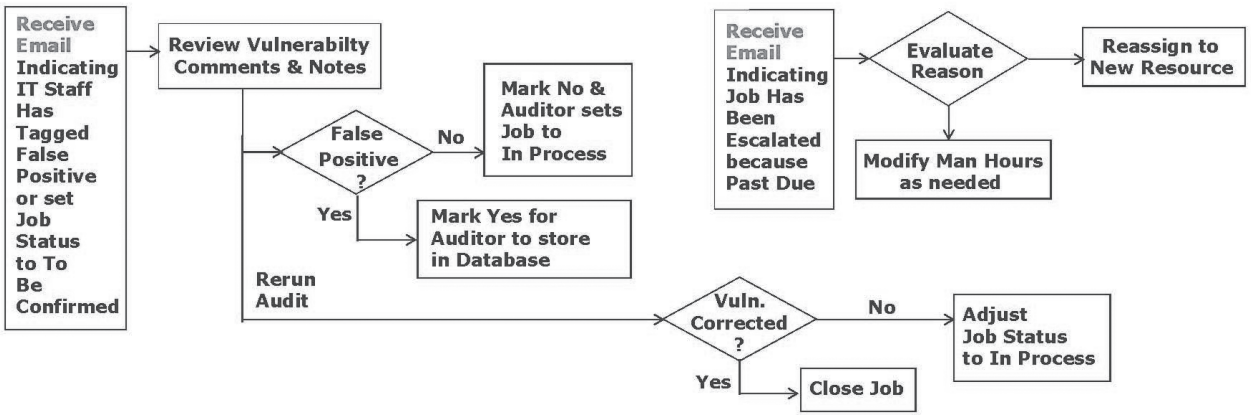


Figure 15-3. Manager's response to events.

15.4 Users in an Organizational Structure

Every user is designated either a manager, an IT staff, or a NAC user member when the initial user sets up all user accounts. The initial user, MainAccount, is always a manager. Responsibilities and privileges of each user type are distinct.

Managers can assign work to themselves or any one of their direct reports, regardless of other manager levels existing within the group. Managers, and only managers, can modify time allocated for remediation of vulnerabilities at different risk levels, assign tasks to other users, confirm false positives, and close jobs.

IT staff and NAC users are on the same level in the hierarchy, but have different responsibilities. IT Staff users can select jobs they want to work on, change a job status to To Be Confirmed, or tag a vulnerability as a potential false positive for a particular system. IT staff cannot close jobs or confirm false positive status of a vulnerability. NAC users can only access Network Access Control functionality and are not involved in vulnerability remediation.

Manager users can also access and create all types of reports. IT staff can only view reports.

Manager users can remove users from their own organizations. If a manager removes a sub-manager, those who report directly to that sub-Manager are automatically assigned as reporting to the higher-level Manager (see the example in Figure 15-4).

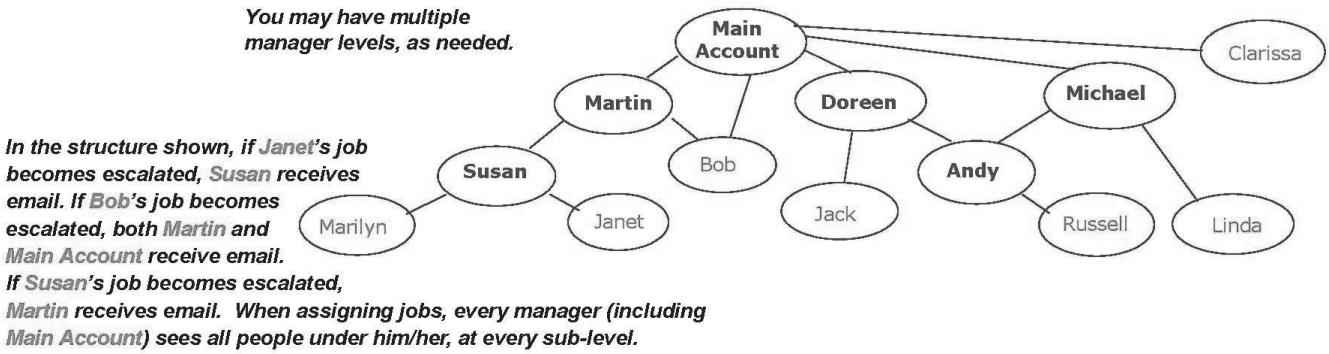


Figure 15-4. Sample Veri-NAC users structure in an organization.

Any user's direct manager receives all notifications of his/her jobs escalated, ready to confirm, or tagged potential false positives.

Note that a manager can work for a manager, and a manager can do anything an IT staff user can do.

If a manager is taking remediation action on a job, the manager's role changes to an IT staff user—unable to view his/her own jobs when they are in a To Be Confirmed state. Only the manager's manager can view the To Be Confirmed jobs and change their status to Closed or revert them to In Process. The exception is the main account can view his/her own jobs when they are in a To Be Confirmed state and change their status to Closed or revert them to In Process.

16. Using Workflow in Vulnerability Remediation

NOTE: Some steps described below are only for managers.

16.1 Navigation

Navigate Veri-NAC using the vertical menu bar on the left of the browser window.

For IT staff users, the left menu on the browser page contains four top-level selections:

- Reports
- Workflow
- Help
- Logout

Use these menus to help you remediate vulnerabilities.

Manager users see a more complete menu, as shown in the System and Audit Setup Guide.

When you are ready to log out, click the Logout selection at the bottom of the menu.

16.1.1 Setting/Viewing Time Allocated for Remediation

- Select "Workflow→Time Allocation Setup" from the left menu.

The Auto Time Allocation Setup box appears (see Figure 16-1).

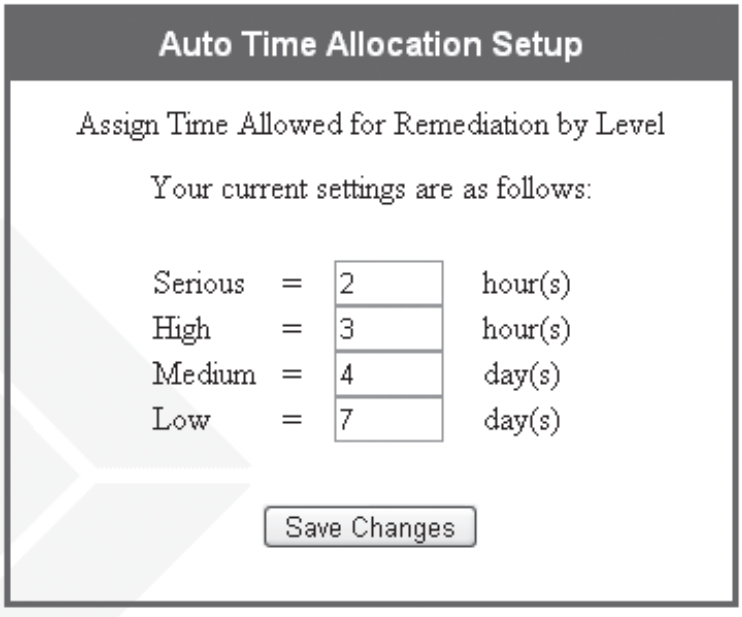


Figure 16-1. Auto Time Allocation Setup screen.

Veri-NAC assigns a due date for each vulnerability found based on the time allocated for each risk level.

The calculation uses the time indicated in the Auto Time Allocation Setup dialog. Manager users can change the number of person hours allowed for remediation.

If the work is not complete before the due date (Veri-NAC automatically checks for past-due jobs at 8:00 A.M. and 12:00 P.M. every day), Veri-NAC escalates the job by sending e-mail to the assigned user's manager.

If no user has been assigned the job, Veri-NAC sends the escalation message to all manager users.

We recommend you choose trial settings to start. If you find people need more time, tweak the settings. New settings affect open unassigned jobs only.

Although all users may view these settings, only a manager user may set the values in this dialog.

- Click the Save Changes button when complete.

16.1.2 How Veri-NAC Calculates Sets/Due Dates

Jobs are made up of all instances of a vulnerability on all machines from all Veri-NAC reports.

For Serious and High vulnerabilities, every instance of a vulnerability is allowed the number of hours you initially set, but Medium and Low vulnerabilities operate under a sliding time scale. For example, if you set Medium vulnerabilities to two days, the first instance of a Medium vulnerability is assigned those two days. Additional instances of the same vulnerability will be allowed a quarter of that time (in this instance, a half day each), since once the research on a vulnerability is done, subsequent fixes should not require as much time.

The time clock on a job starts ticking as soon as the job is assigned.

For scheduling purposes, Veri-NAC assumes workdays are Monday – Friday, 8:00 A.M. to 5:00 P.M., with one hour for lunch.

Manager users can adjust due dates and person hour allocations for individual jobs.

16.2 Viewing the Workflow Ticket Log

- Select Workflow→Workflow Log from the left menu to open the Workflow Ticket Log as shown in Figure 16-2.

Workflow Ticket Log

Report Tkt	Report Name	Highest Risk Level	Audit Time	Open CVEs		Fixed CVEs	Total CVEs
				Unassigned	Assigned		
358	Firewall Audit	Low	2009-08-11 08:16	1	0	0	1
355	VoIP Systems Audit	High	2009-08-07 12:07	25	0	0	25
354	Desktop and Servers Audit	High	2009-07-29 16:55	8	0	0	8
351	Data Center Audit	High	2009-07-28 18:31	7	8	1	16
350	Laptops Audit	High	2009-07-27 10:19	2	2	0	4
1	Web and Application Servers Audit	Low	2009-07-09 19:27	0	3	3	6

Show All Open Jobs

Figure 16-2. Workflow ticket log.

Each audit's report and number of vulnerabilities are grouped into one of three status categories:

- Open/Unassigned
- Open/Assigned
- Fixed
- To assign work (only as a manager), choose a report that has unassigned vulnerabilities and click on its number in the far left Report Tkt column. The complete list of open jobs associated with that ticket displays (see Figure 16-3).

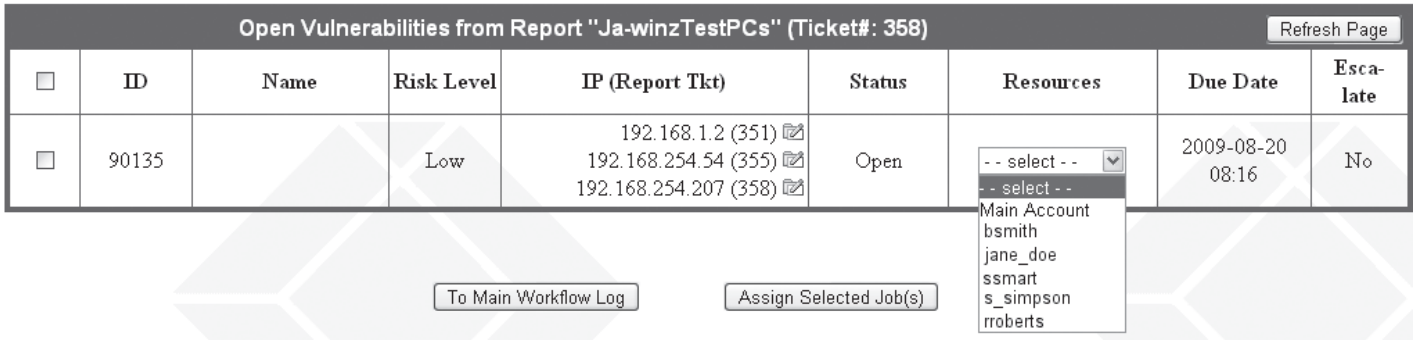


Figure 16-3. Open jobs associated with a particular ticket.

If a job is escalated before it is assigned, Veri-NAC recalculates the due date as if it were assigned using the date and time the job is assigned as the Start Time.

16.2.1 Selecting and Assigning Jobs

NOTE: When you select a job, you are choosing to fix a particular vulnerability across all systems on the network Veri-NAC audits.

Notice that each IP on which the vulnerability exists is shown in the IP (Report Tkt) column.

To select a job:

• Select "Workflow→Workflow Log" from the left menu.

The Workflow Ticket Log box appears (see Figure 16-4).

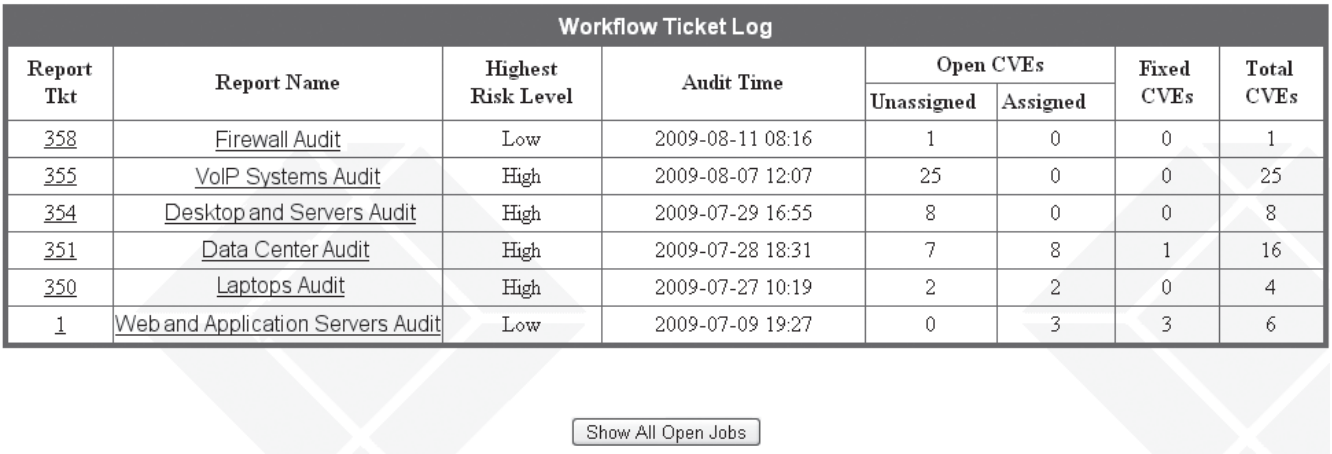


Figure 16-4. Workflow Ticket Log.

• Select a Report Tkt from the far left column.

The box with Open Vulnerabilities for that report and ticket number opens (see Figure 16-5).

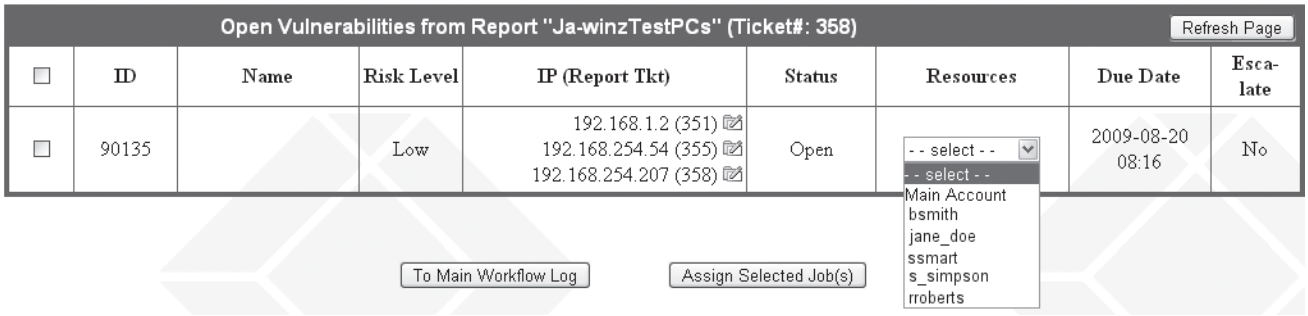


Figure 16-5. Open vulnerabilities for a particular ticket.

Here you may assign the job to a resource (or yourself) by selecting a name from the Resources pulldown menu. Don't forget to check the box on the left to select the item.

Once you select a job, you see a list of your jobs, including the new one(s) you just selected. Another example is shown below.

The new job(s) remain Open/Unassigned until you confirm the assignment (see Figure 16-6). You have three minutes to accept the assignment. The message displayed shows the minutes and seconds remaining.

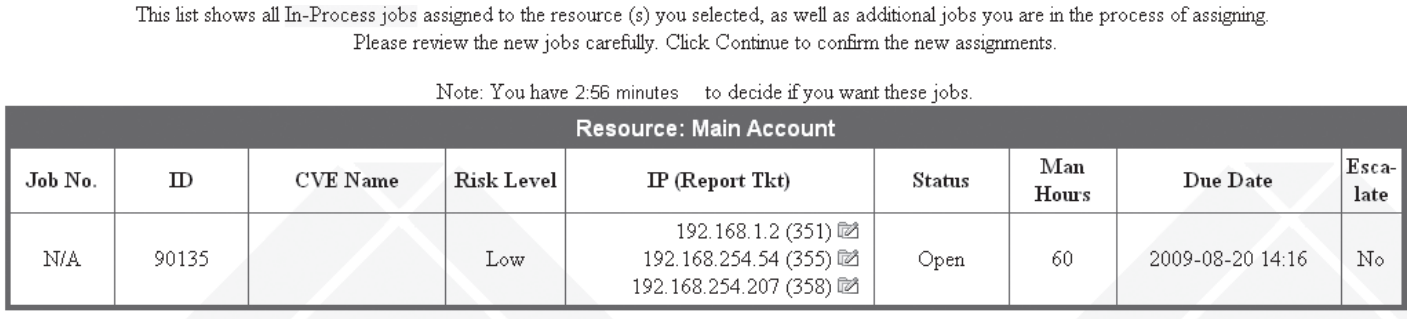


Figure 16-6. Open/unassigned jobs.

If you do not click the Continue button below the list to accept jobs within the time limit, the jobs revert to not on hold, and you receive a message indicating you exceeded the time limit.

If a job is past its due date and time and still not ready to confirm, the Escalate column is highlighted in red and displays Yes (see Figure 16-7). Veri-NAC automatically escalates open unassigned and assigned jobs past due, and sends an e-mail to the appropriate manager.

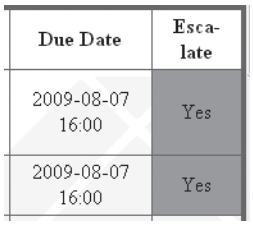


Figure 16-7. Escalate column.

To summarize:

- To select jobs to assign, click the check boxes on the left. Multiple IDs selected at the same time are assigned to a single person and are given a single job number.

- Select a person to resolve the issues by clicking the pulldown in the Resources column. Managers can select either themselves or IT staff employees who work for them.
- After selecting and assigning jobs, click the Assign Selected Job(s) button above the table.
- Click "Continue" to proceed. You receive a confirmation the job is assigned to you (or your IT staff member).

The status of the job now becomes In Process.

16.2.2 Recognizing a Job is On Hold

While you are assigning a job, it remains on hold until the assignment is complete so that no one else will attempt to assign the same job. If the job is on hold when you view it in the Open Jobs List, its check box is shaded in gray.

If you are unable to assign a vulnerability, someone else is already in the process of assigning it (the check box is gray).

16.3 Viewing Logs of Assigned Jobs

- Select "Workflow→My Tickets Log" from the left menu to see only jobs assigned to you (see Figure 16-8).

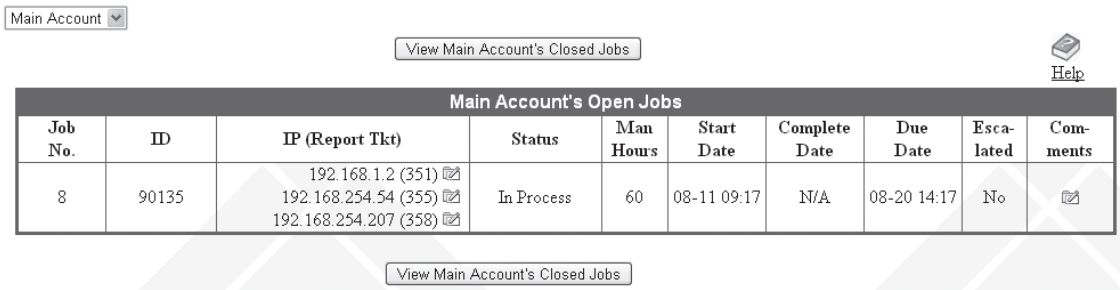


Figure 16-8. Viewing logs of assigned jobs.

Veri-NAC identifies you by your login, and delivers a complete list of open jobs with your name. As you work on jobs, you may make comments in the Workflow Comments dialog, where you can view the history of the job and modify its status (see Updating Job Status).

If you are a manager, you can view the job log of anyone who works for you.

16.4 Viewing Vulnerability Reports

Vulnerabilities must be remediated before their job statuses can be changed. First view the associated vulnerability report.

- Select "Reports→View Audit Results" from the menu.
- Look for the title of the report in the leftmost column of the Reports table and click on the corresponding "C" icon for the Complete vulnerability report.

For details on sorting reports and other features of reports, refer to the Reports Guide (Chapter 12).

16.5 Using Links in Reports

Each vulnerability has a number, which you will find in the detailed section of the report. Each vulnerability report includes information like that in the example shown in Figure 16-9.

A typical serious risk is fully explained. In addition, the report provides details on how to respond to the risk and/or a link to more data about that vulnerability and information about how to correct it.

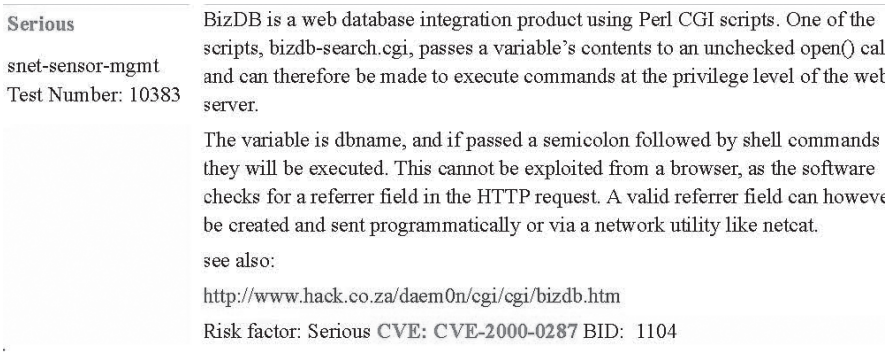


Figure 16-9. Serious risk explanation.

There are various steps you can take to research CVEs or CANs. Examples and suggestions follow:

Check the bottom of the vulnerability description in the report to see if there are any user comments (under the heading labeled User Comments). Someone else in your organization may have provided comments, which can be helpful to your research. You should also add your own entries as you learn about each vulnerability. This information is stored in the Veri-NAC database and becomes part of its knowledge base. Refer to the Reports Guide for more details on adding comments to reports.

Click on the link provided for more information and/or click on the CVE or CAN (candidate CVE) name to see more data at the MITRE-run CVE site. Look under References at the MITRE web site for further information. You may also wish to search Google® or other search engines for more details.

After research is completed, you should have the data necessary to remediate the vulnerability. Once complete, update the job status.

In some cases, you may determine a vulnerability is a false positive. Should you come to this conclusion, tag the vulnerability as such so it can be reviewed, confirmed, and removed from the report. Tagging a false positive is covered in Tagging a Vulnerability as False Positive.

16.6 Updating Job Status

The status of each job progresses from Open (unassigned) to In Process (assigned) to To Be Confirmed (when marked as such by the worker assigned to it) to Closed (after manager verification of completion).

An overview of steps is shown below.

- Select "Workflow→My Tickets Log" to view your open jobs (see Figure 16-6).

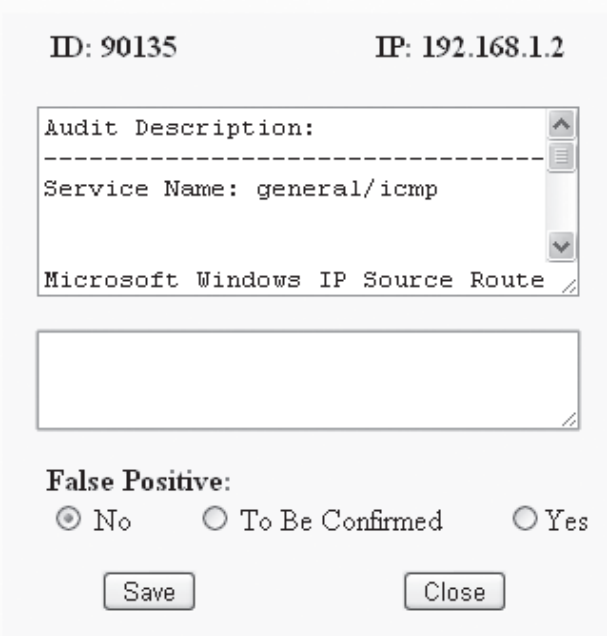


Figure 16-10. View your open jobs.

Once assigned, a job's status remains In Process until you set it to To Be Confirmed. Veri-NAC immediately notifies your manager of the new To Be Confirmed status.

Your manager can then verify the vulnerability is fixed and change its status to Closed (or back to In Process if there is still an issue).

16.6.1 Updating Multiple IDs in a Single Job Ticket

If there is more than one job in a single ticket, they are listed in order by priority.

You see the Comments icon for only the first job in the ticket. Set it to To Be Confirmed (if you are IT staff).

Managers may see the ticket during the reassignment process and set the job to Closed.

No icon appears for subsequent jobs until the first one is Closed or To Be Confirmed.

16.6.2 Tagging a Vulnerabiliity as a False Positive

• Select "Workflow→My Tickets Logs" from the left menu.

The vulnerability exists on a series of IP addresses, listed under the IP (Report Tkt) column.

If you believe a vulnerability to be a false positive, click the icon to the right of the IP address. This opens the Workflow False Positive dialog.

16.7 Dealing with Escalated Jobs (Managers Only)

You can reassign jobs only if you are a manager (for example, if someone goes on vacation, you may want to reassign that person's jobs). Often, you may need to reassign jobs after they are escalated. If you assigned a job to any user in your group (IT staff or another manager), and the job becomes escalated, you (as the Manager) receive an e-mail notification stating the job is escalated. Click the link in the e-mail to go to a screen where you may take action on that job.

If an open, unassigned job becomes escalated, all manager users receive e-mail notification and any manager can reassign it. Before you reassign any jobs, be sure to take a look at the entire list of escalated jobs.

Viewing Escalated Jobs

• Select "Workflow→Show Escalated" from the left menu to view escalated jobs.

You may choose to View Escalated Assigned Jobs (see FIgure 16-11) or View Escalated Open Jobs (see Figure 16-12). Depending on your choice, you go to one of the following screens:

All Escalated Open Jobs — Refresh Page

	ID	Name	Risk Level	IP (Report Tkt)	Status	Resources	Due Date	Esca-late
☐	10264	Default community names of the SNMP Agent	High	192.168.254.4 (354)	Open	- - select - -	2009-07-30 10:55	Yes
☐	10688	SNMP VACM	High	192.168.254.4 (354)	Open	- - select - -	2009-07-30 10:55	Yes

Figure 16-11. All escalated open jobs.

From the unassigned jobs list, you may assign jobs to yourself. A manager may assign jobs to anyone in his/her group.

All Escalated Assigned Jobs

	Job Tkt	ID	Risk Level	IP (Report Tkt)	Status	Man Hours	Due Date	Resources	Esca-lated	Com-ments
☐	1	90002	High	192.168.20.4 (1)	Closed	20	2009-07-16 09:36	John Smith	No	
		90031	High	192.168.10.220 (1)	Closed	8	2009-07-15 14:36	Jane Doe	No	
		10147	Medium	192.168.10.220 (1)	Closed	16	2009-07-17 14:36	Sally Simpson	Yes	
		10882	Low	192.168.10.220 (1)	In Process	50	2009-07-27 16:36	John Smith	Yes	

Figure 16-12. All escalated assigned jobs.

16.8 Reassigning Jobs (Managers Only)

To reassign jobs (escalated or not):

- Select "Workflow→Reassign Tickets" from the left menu. The Workflow Job Reassignment box appears (see Figure 16-13).
- Select either the Job Number or a combination of Resource Name(s), Job Status and one of the Escalated, Not Escalated, or Both radio buttons.

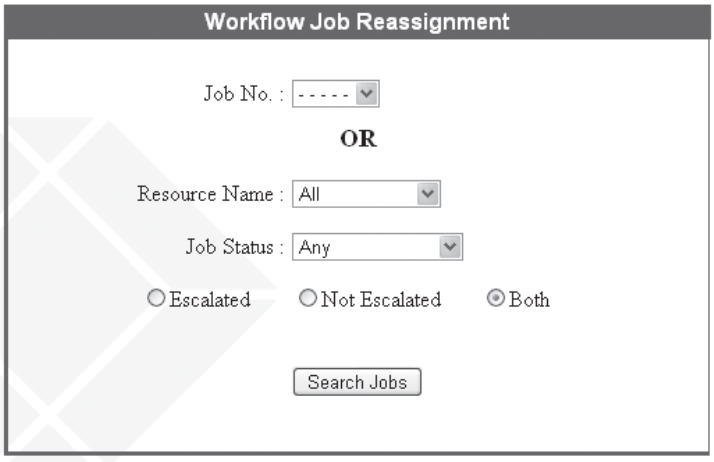
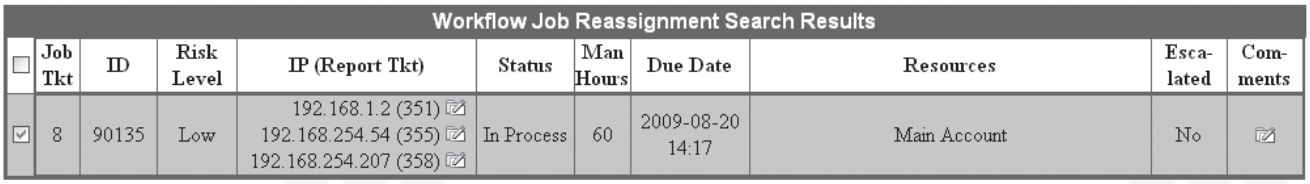


Figure 16-13. Reassigning jobs.

- Click the Search Jobs button to begin the search.
- After a list of jobs appears, select the job(s) you want to reassign using the check box(es) in the far left column (Figure 16-14).

If you see multiple jobs in a single ticket, the Comments icon will appear for only the first job in the ticket. No comments can be entered for subsequent jobs until the first one is set to either Closed or In Process.

You must set the first job in the ticket to either Closed or In Process before you can make Comments on the next job in the same ticket. The Reassignment log is the only place you can take this action.

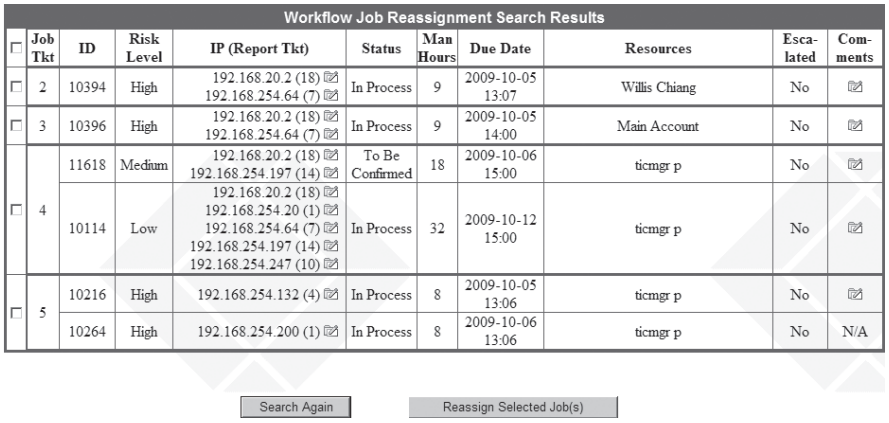


Workflow Job Reassignment Search Results

	Job Tkt	ID	Risk Level	IP (Report Tkt)	Status	Man Hours	Due Date	Resources	Esca-lated	Com-ments
☑	8	90135	Low	192.168.1.2 (351) 192.168.254.54 (355) 192.168.254.207 (358)	In Process	60	2009-08-20 14:17	Main Account	No	

Figure 16-14. Reassignment log.

- Click the Reassign Selected Jobs button. A list of jobs appears with a list of resources working for you (see Figure 16-15).
- Choose the resource(s) from the list.
- If necessary, adjust the number of Man-Hours to do the work.

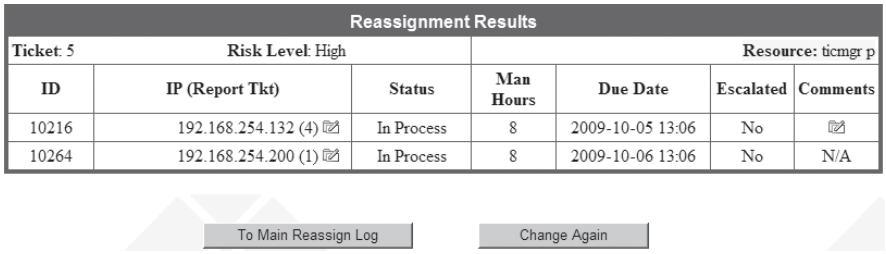


Workflow Job Reassignment Search Results

	Job Tkt	ID	Risk Level	IP (Report Tkt)	Status	Man Hours	Due Date	Resources	Esca-lated	Com-ments
☐	2	10394	High	192.168.20.2 (18) 192.168.254.64 (7)	In Process	9	2009-10-05 13:07	Willis Chiang	No	
☐	3	10396	High	192.168.20.2 (18) 192.168.254.64 (7)	In Process	9	2009-10-05 14:00	Main Account	No	
☐	4	11618	Medium	192.168.20.2 (18) 192.168.254.197 (14)	To Be Confirmed	18	2009-10-06 15:00	ticmgr p	No	
		10114	Low	192.168.20.2 (18) 192.168.254.20 (1) 192.168.254.64 (7) 192.168.254.197 (14) 192.168.254.247 (10)	In Process	32	2009-10-12 15:00	ticmgr p	No	
☐	5	10216	High	192.168.254.132 (4)	In Process	8	2009-10-05 13:06	ticmgr p	No	
		10264	High	192.168.254.200 (1)	In Process	8	2009-10-06 13:06	ticmgr p	No	N/A

Search Again Reassign Selected Job(s)

Figure 16-15. Job reassignment details.



Reassignment Results

Ticket: 5 **Risk Level**: High **Resource:** ticmgr p

ID	IP (Report Tkt)	Status	Man Hours	Due Date	Escalated	Comments
10216	192.168.254.132 (4)	In Process	8	2009-10-05 13:06	No	
10264	192.168.254.200 (1)	In Process	8	2009-10-06 13:06	No	N/A

To Main Reassign Log Change Again

Figure 16-16. Reassignment results.

- Click the Continue button.

The Reassignment Results appear showing Ticket number, Risk Level, and the assigned Resource just below the table heading (see Figure 16-16).

If you selected more than one resource, you'll see a separate list for each resource.

If you want to change the results, click "Change Again" to return to the previous screen.

16.9 Viewing Job Logs of Specific Resources (Managers Only)

View job logs for a specific resource from:

- My Tickets Log
- Reassign Tickets

Manager users can view the job log of any resource in their group.

- Select "Workflow→Reassign Tickets" from the left menu.

The Workflow Ticket Reassignment dialog appears.

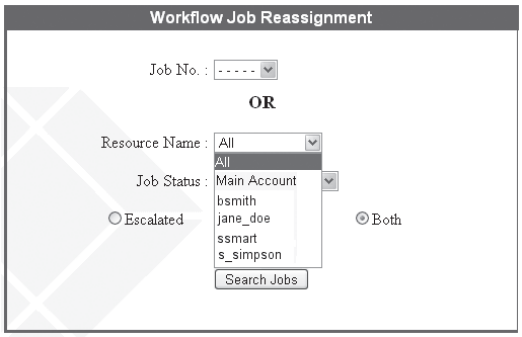


Figure 16-17. Workflow job reassignment dialog.

- Select the resource's name from the Resource Name list.
- Choose "Any," "In Process," or "To Be Confirmed" from the Job Status list, depending on how comprehensive you want the log to be.
- Choose "Escalated," "Not Escalated," or "Both" depending on how comprehensive the log needs to be.
- Click "Search Jobs."

A list of the resource's jobs appears. From this list, you can reassign a job (see Reassigning Jobs) or adjust the number of hours allowed for remediation.

16.10 Confirming False Positives (Managers Only)

If you are a manager user and a member of your IT staff notes a vulnerability as a false positive, you will receive an e-mail notification.

You must then either confirm or deny the false positive status. To review a false positive:

- Click the link in the e-mail message.

The False Positive dialog pops up.

- Read the explanation the IT staff user provided. If you agree the vulnerability is a false positive, click "Yes;" if not, click "No." You may also enter comments in the lower text box.
- Click "Save" to retain the changes and "Close" to close the dialog.

Once confirmed as a false positive, the vulnerability no longer appears in executive and management level reports for that system. Administrators and IT staff have the option of showing or hiding false positives in vulnerability reports by using Recreate Reports options (covered in Chapter 12, Reports Guide).

16.11 Closing a Job (Managers Only)

Managers receive e-mail notification when IT staff members mark a job's status as To Be Confirmed. To respond:

- Click the link in the e-mail message. The Workflow Job Reassignment Details dialog pops up.
- Click the icon in the comments field to read Workflow Comments and to change the job status. (See Figure 16-18.)
- Select either the In Process or Closed radio button in the Comments dialog box, depending on the results of a re-audit. The To Be Confirmed radio button is not available.

Figure 16-18. Closing a job.

Appendix A. Quick Steps

A.1 Setup Quick Steps

Step	Description	Action
1	Company Info	• Select Setup→Company Information • Enter company data • Click "Next" to go to Step 2
2	Customize Reports	• If No customization desired…. • Click "Next" and go to Step 3 • If Yes … - Check "Customize Reports" box - Select logo option - Upload logo • Click "Next" to go to Step 3
3	Contact for Report Notification	• Enter e-mail address - SMTP Mail Server - POP Mail Server - Username - Password • Check box if outgoing server requires authentication • Click "Next" to go to Step 4
4	Regulations and Security Programs	• Choose U.S. +/or International Regulations • Select Security Programs • Click "Next" to go to Step 5
5	SNMP Traps and Syslog Messages	If No SNMP Traps/Syslog Messages enabled…. • Click "Save" and go to Step 6 If Yes…. • Check "Enable SNMP Traps" • Enter SNMP Server IP Address • Click "Save" to go to Step 6
6	Basic Setup is Complete	• You've now completed setting up the basic information Now you should procede to Step 7 so you can review your basic information
7	Review Setup	• Check information entered • Click "Save" to retain settings • Proceed to Step 8
8	Set Date and Time	Set the first time you log in. • Select System→Date and Time • Choose Date, Time, and Time Zone • Click "Change Date" to confirm • You will be logged out • Proceed to Step 9
9	User Accounts	• Select System→User Management Enter managers first, then repeat for IT users - Click "Add User" button - Enter User Information, Click "Next" to proceed - Enter Access Level (manager, IT user, or NAC user), Click "Next" to proceed - Enter User Details, Click "Next" to proceed - Specify Contact Info, Click "Next" to proceed - Enter user Login ID and Password, Click "Next" to proceed - Review information - Click "Done"

A.2 Network Admission Control Quick Steps

Item	Description	Action
1	Initiate Asset Discovery	• Select "Network Admission Control→Asset Discovery" • Enter subnet information if not automatically found • Click "Refresh IPs"
2	Add IPs Manually	• Select "Network Admission Control→Add Assets" • Enter system data • Assign List Category • Click "Add System"
3	Manage IPs	• Select "Network Admission Control→Manage IPs" • Select list category of interest (Trust/Untrust, Audit/Audit-exempt, Endpoint Defender, MAC IP Mismatch, Firewall SmartSwitch Mismatch) • Add/Remove IPs as required • Update each category list as required
4	Delete IPs	• Select "Network Admission Control→Manage IPs" • Select "List Category" • Click check box for each IP to be removed (or subnet) • Click "Remove All" or "Remove Selected IPs"
5	Determine Ping Response	• Select "Network Admission Control→Ping Latency Chart" • Click "Refresh" to repeat test and view trends in data
6	Interface to Firewall	• Select "Network Admission Control→Firewall Integration" • Select Firewall brand • Enter Firewall information, click "Save" • Select "IPs to never block at firewall" • View rules and unblock firewall rules

A.2 Network Admission Control Quick Steps (Continued)

Item	Description	Action
7	SmartSwitch Integration	• Select "Network Admission Control→SmartSwitch Integration" • Click "Add Switch" • Select switch brand • Enter switch information • Click "Save" • Move assets to Blocking Safe List • View rules and unblock SmartSwitch rules
8	Enable Dynamic Detection	• Select "Network Admission Control→Dynamic Detection System" • Select quarantine and audit options • Complete firewall and smart switch information • Complete e-mail notification information • Click "Save" • Click "Enable Dynamic Detection System"
9	Inventory Alerts	• Select "Network Admission Control→Inventory Alerts" • Click "Create New Group" • Enter group name • Enter contact e-mail • Set time frame • Set polling interval • Click "Save"

A.3 Asset Tracker Quick Steps

Item	Description	Action
1	View Asset List	Select "Asset Tracker→Systems"
2	View/Modify/Add Systems to Asset List	View - Click on Host Name - Review Overview page Modify - Click on Host Name - Click "Edit" - Make changes - Click "Update System" Add - Click "Add System" - Enter System Info - Click "Add System"
3	View Asset Reports	• Select "Asset Tracker→Systems" • Click IP Address of interest • Choose Report to view

A.3 Asset Tracker Quick Steps (Continued)

Item	Description	Action
4	Add Users	• Select "Asset Tracker→Users" • Click "Add User" button • Enter User information • Click "Add User" button to save
5	Add Software	• Select "Asset Tracker→Software" • Click "Add Software" button • Enter Software information • Click "Add Software" button to save
6	Add Peripherals	• Select "Asset Tracker→Peripherals" • Click "Add Peripheral" button • Enter Peripheral information • Click "Add Peripheral" button to save
7	Associate User with Asset	• Select "Asset Tracker→Systems" • Click "Host Name" • Click "Associate User" button • Select user and move to Associated User List • Click "Associate the User" button to save
8	Associate Software with Asset	• Select "Asset Tracker→Systems" • Click "Host Name" • Click "Associate Software" button • Select software and move to Associated Software List • Click "Associate the Software" button to save
9	Associate Peripheral with Asset	• Select "Asset Tracker→Systems" • Click "Host Name" • Click "Associate Peripheral" button • Select peripheral and move to Associated Peripherals List • Click "Associate the Peripheral" button to save

A.4 Creating and Managing Audits Quick Steps

Item	Description	Action
1	One-Click Audit	• Select "Audits→One-Click Audit" • Enter IP Address • Click "Audit Now"
2	Define New Audit	• Select "Audits→Wizard" • Assign audit name • Set notification information • Designate contact • Set audit mode • Designate firewall and smart switch information • Set audit frequency and start time • Choose IP addresses to audit • Review selections and edit, if necessary • Click "Save"
3	Manage Audits	• Select "Audits→Manage" • Click "Start" to begin audit, click "Stop" to deactivate audit • Click "Remove" to delete audit
4	Copy Audit to Create Variation	• Select "Audits→Manage" • Click Audit Name to be copied • Enter new Audit Name • Click through rest of Audit Wizard and edit information, as needed • Click "Save"
5	Remove IP Addresses from Audit	• Select "Audits→Manage" • Click Audit Name to be copied • Click through Audit Wizard to IP Address page • Deselect IP Addresses • Review selections • Click "Save"
6	View CVE Tests by OS and Application	• Select "Audits→View Vulnerability Tests" • Select desired OS • Select desired applications • Click "Display List"
7	Manage Mismatched IPs	• Select "Network Admission Control→Manage IPs" • Select "MAC IP Mismatch List" • Click on IP link to resolve • Manually enter IP Address, or remove mismatched asset, or resolve mismatch by running an Asset Discovery
8	Manage Schedules	• Select "Audits→Schedule" • Choose schedule view – Day, Week, Month, Year
9	Manage In Process Audits	• Select "Audits→Manage" • Click "Audit Start" button • Click "Audit Name" link to review audit details

A.4 Creating and Managing Audits Quick Steps (Continued)

Item	Description	Action
10	View Partial Reports	• Select "Audits→Manage" • Click "Audit Start" button • Click "Generate Report" link • Choose Partial Report option and click "Proceed" • Click "C" button to get partial report

A.5 Vulnerability Remediation Quick Steps

Item	Description	Action
1	Set Times for Remediation (Managers) Only	• Select "Workflow→Time Allocation Setup" • Enter time for each Remediation Level • Click "Save Changes"
2	View Workflow Ticket Log (Manager and/or IT staff)	• Select "Workflow→Workflow Log" • Click "Show All Open Jobs" (open jobs associated with all tickets) To assign work: • Select report with unassigned vulnerabilities • Click its report ticket • Click checkbox of job to be assigned and select resource • Click "Assign Selected Job(s)" • Click "Continue"
3	View Logs of Assigned Jobs (Managers and/or IT staff)	• Select "Workflow→My Tickets Log" • Review your jobs currently open • Click View <Your name>'s Closed Jobs to see history
4	View Vulnerability Reports (Managers and/or IT staff)	• Select "Reports→View Audit Results" • Click "C" for report desired
5	Update Job Status (Managers and/or IT staff)	• Select "Workflow→My Tickets Log" • Select icon under Comments • Enter Comments • Modify Status (only managers can change to Closed) • Click "Save" • Click "Close"
6	Tag Vulnerability as False Positive (Managers and/or IT staff)	• Select "Workflow→My Tickets Log" • Click icon to right of IP Address • Enter comments • Set to "To Be Confirmed" • Click "Save" • Click "Close"
7	Escalated Jobs (Managers Only)	• Select "Workflow→Show Escalated" • Select "View Escalated Assigned Jobs" or "View Escalated Open Jobs" • Assign jobs as needed to yourself or another resource

A.5 Vulnerability Remediation Quick Steps (Continued)

Item	Description	Action
8	Reassign Jobs (Managers Only)	• Select "Workflow→Reassign Tickets" • Select "Job No." or "Resource Names", "Job Status" and "Escalation status" • Click "Search Job"s • Select job to reassign • Select new resource • Click "Reassign Selected Job Resource" • Click "Continue" • Change info, if necessary • Click "Continue"
9	Confirm False Positive (Managers only)	• Click link in email message received • Review information and make decision • Click "Yes" or "No" • Enter comments, if necessary • Click "Save" • Click "Close"
10	Close Job (Managers only)	• Click link in email message received • Click icon to read comments and change job status • Select "In Process" or "Closed" • Click "Save" • Click "Close"

Appendix B. Creating a Serial Connection to HyperTerminal on a Windows PC

1. Start up a Windows laptop.
2. Plug in power cord to Veri-NAC.
3. Connect serial cable from Veri-NAC to laptop.
4. Connect Ethernet cable to both Veri-NAC and laptop.
5. Open a HyperTerminal window on the laptop.

   Start Menu→Programs →Accessories→Communication→HyperTerminal
   - a. "New Connection" window
     - i. Name =<your choice>
     - ii. Icon = <your choice>
   - b. "Connect To" window – "Connection using" = COM1
   - c. "COM1 Properties"
     - i. Bits per second = 9600
     - ii. Data bits = 8
     - iii. Parity = None
     - iv. Stop bits = 1
     - v. Flow Control = Hardware
   - d. "HyperTerminal" Window
     - i. Select from "File→Properties"
     - ii. Select from the "Settings" tab
     - iii. Backspace key sends = Del
6. Push start button on top of Veri-NAC. After a minute or so, the network configuration information displays on the laptop HyperTerminal window.
7. If you would like to make any changes to the network settings from this HyperTerminal screen, make them now. Otherwise, close the HyperTerminal window and proceed to Step 8.
8. Open a Web browser and enter:

   https://<ipaddress>

   where <ipaddress> is the IP address displayed on the HyperTerminal network screen.

   If you changed the default port in the installation process, you must enter a colon followed by the port number. For instance, for port number 10000, enter the following URL: https://192.168.254.159:10000

Appendix C. Feature Availability Table

	LVN5200A	LVN5250A	LVN5400A	LVN5600A	LVN5800A
Number of Network Devices Protected	**250**	**500**	**6,000**	**50,000**	**100,000**
Agentless Network Access Control	Yes	Yes	Yes	Yes	Yes
Auto Device Discovery	Yes	Yes	Yes	Yes	Yes
Device Inventory Alerting	Yes	Yes	Yes	Yes	Yes
MAC Address Spoof Detection & Blocking	Yes	Yes	Yes	Yes	Yes
Basic Policy Tool	Yes	Yes	Yes	Yes	Yes
Number of remote LVN5200A or LVN5250As able to control/ manage	None	None	Up to 10	Up to 100	Unlimited
May connect to mulitple subnets?	Yes - 2	Yes - 2	Yes - up to 4	Yes - up to 6	Yes - up to 8
Built-in storage for Logging and Reporting	160 GB	250 GB	320 GB	500 GB	1000 GB
Integrated Command Center Remote Mgmt Software	No	No	Yes	Yes	Yes
Can be managed via Command Center	Yes	Yes	Yes	Yes	Yes
Vulnerability Management w/Audit reporting, Workflow and Compliance	No	Yes	Yes	Yes	Yes
Possible number of simultaneous device audits	N/A	10	50	100	254
Multiple User Logins for Mgmt	No	Yes	Yes	Yes	Yes
Advanced ISO- 27001 Policy Auditor Builder Tool	No	No	Yes	Yes	Yes

Appendix D. Frequently Asked Questions

D.1. Deployment Guide

QUESTION: What are the roles of NAC users?

ANSWER: NAC users can only access Network Access Control functionality and are not involved in vulnerability remediation. This means that they can access Setup, Network Access Control, System, and Asset Tracker in the sidebar.

QUESTION: What are the roles of IT staff users?

ANSWER: IT staff users work with managers on vulnerability remediation. They can select jobs they want to work on (or have jobs assigned to them), change a job status to "To be Confirmed," or tag a vulnerability as a potential false positive. They can also access all network access control functionality available to NAC Users.

QUESTION: What are the roles of managers?

ANSWER: Managers control all users assigned to them in the hierarchy. They can assign work to themselves or anyone in their group, regardless of other manager levels existing within the group (there can easily be multiple levels of Managers). Managers can modify time allocated for remediation of vulnerabilities at different risk levels, assign tasks to other users, confirm false positives, and close jobs. Managers can access and create all types of reports and add or remove any sub-manager, IT staff user, or NAC user beneath them in the hierarchy.

NOTE: MainAccount is always the highest-level manager, and there can be only one.

QUESTION: In my large network, I intend to have Veri-NAC appliances for each segment. Is there way to centrally control all these Veri-NAC appliances? Do they share a common trusted MAC list? Can they share the same policy set?

ANSWER: Managers control all users assigned to them in the hierarchy. They can assign work to themselves or anyone in their group, regardless of other manager levels existing within the group (there can easily be multiple levels of Managers). Managers can modify time allocated for remediation of vulnerabilities at different risk levels, assign tasks to other users, confirm false positives, and close jobs. Managers can access and create all types of reports and add or remove any sub-manager, IT staff user, or NAC user beneath them in the hierarchy.

QUESTION: We have multiple subnets in our networks (local and remote). How should we deploy Veri-NAC?

ANSWER: You should deploy one Veri-NAC LVN5400A, LVN5600A, or LVN5800A unit in your data center or main rack at the IT headquarters subnet. Veri-NAC LVN5200A or LVN5250A units, which are centrally manageable using the built-in Command Center running in your LVN5400A, LVN5600A, or LVN5800A unit, can be deployed at each additional subnet. We understand that each network is unique. We offer free support to help you best plan out your deployment around your own network topology. Contact Black Box Technical Support at 724-746-5500 for more information.

QUESTION: I purchased a Veri-NAC Enterprise with multiple physical Ethernet ports; can I use each of these Network Interface Cards (NICs) on the same subnet?

ANSWER: Yes, as long as the IP ranges don't intersect.

QUESTION: **Should each VLAN have its own device?**

ANSWER: It depends on your network configuration: if the Veri-NAC can see MAC addresses, it can block. If not, place a LVN5200A or LVN5250A unit on that particular subnet and control that unit from the LVN5400A, LVN5600A, or LVN5800A unit with Command Center.

QUESTION: **I got an alert e-mail from Veri-NAC stating that it detected a new untrusted asset, but blocking didn't happen. I can ping from that untrusted device to other PCs in the intranet. The Dynamic Detection System is enabled and the PeerBlock Blocking option is selected.**

ANSWER: The Protect Range entered on the DDS page may be the issue. Let's say you're on the class C subnet 192.168.0.1/24 and the Protect Range is set to 192.168.0.40-60. This will prevent a blocked asset from being able to communicate with IP addresses within 192.168.0.40-60. Assets outside of this range, for example 192.168.0.1, will still be reachable by the blocked asset(s). In this example, set the protect range to 192.168.0.1-254 to solve this problem.

QUESTION: **Does the PeerBlock clientless method block the communication between untrusted IPs and selected IPs inside the network and if so, is it a good idea to put all my LANs into both Block and Protect Range?**

ANSWER: The Block Range is the range that is always blocked upon plugging in. The Protect Range causes all the IPs in its range to be invisible to the attacker. If you set the entire subnet(s) where you actually have assets, this will work perfectly. The only exception would be to set the protect range to some unbelievably large and unrealistic network scheme like a full class A network, when you might only have 100 or 1000 computers. By setting the protect range way too high, you would make far too much traffic during a block event.

D.2. General Use

QUESTION: **How do I change the date on which Auto-Update will run?**

ANSWER: Auto-Update is automatically updated daily, but you can run a manual update by clicking "Update Now." The appliance runs a Web-based secure subscription service in the background.

QUESTION: **What methods of SNMP traps are supported?**

ANSWER: SNMP traps, versions 1 and 2c are supported.

QUESTION: **When does Veri-NAC check for new devices that connect to the network?**

ANSWER: On the left menu of the Veri-NAC Web interface, go to Network Access Control→PeerBlock Blocking or Network Access Control→Manage IPs. The assets with IP addresses highlighted in red are currently being blocked.

QUESTION: **How do I remove a client that is listed under "MAC IP Mismatch"?**

ANSWER: Go to Network Access Control Manage IPs and, from the drop-down Manage… menu at the top left of the screen, select MAC IP Mismatch List. This will show all clients in the MAC IP Mismatch list. Select the one you want to delete.

QUESTION: **Is there a way to clean out the database in Veri-NAC? I plan to travel using a unit to audit different sites, and I'd like to have old information wiped out, to prevent a difficult-to-manage information load.**

ANSWER: We do not allow users to clear out the IP database for forensic/historical reasons. However, you may choose to do a factory reset, which will restore your unit to factory settings: Go to System→Utilities→Factory Settings. This will clean out everything, except the database of IPs that have been audited.

QUESTION: Why do I get a security certificate error in Internet Explorer®/Firefox®?

ANSWER: We assign the Veri-NAC certificate ourselves. Internet Explorer (IE) version 7 considers all self-assigned certificates untrusted, so you will see a certificate error message when opening Veri-NAC's login page in IE 7. You can accept and install the certificate to get rid of this error message by following these steps:

1. Ignore the warning and proceed by clicking on "Continue to this website (not recommended)."
2. Your address bar will be highlighted in red next to a Certificate Error icon.
3. Click on the Certificate Error icon to open the information window. Click on "View Certificate." Then click on "Install Certificate." You'll see yet another warning. Click on "Yes," and then you're done.

To get rid of certificate errors in Firefox:

1. On the screen that comes up when you get a certificate error, click on "Or you can add an exception.".
2. Click on "Add Exception."
3. The appliance's IP should be automatically filled in the "Server Location" field.
4. Click Get Certificate→Confirm Security Exception and you're done.

QUESTION: I keep getting this certificate error in Firefox: "(Error code: sec_error_reused_issuer_and_serial)." What can I do about it?

ANSWER: 1. Go to Tools→Option→Advanced Encryption and click on View Certificates.
2. In the Servers and Authorities tab, remove the appliance certificate by highlighting the appliance's IP and clicking "Delete."
3. Try refreshing the page and add the appliance to the exception list.

QUESTION: My updates are failing. What can I do?

ANSWER: Make sure the System Date and Time is set correctly.

QUESTION: What is the control status of PeerBlock after a power reset?

ANSWER: When Veri-NAC is power cycled, it will resume packet scanning and asset blocking upon restart if these features were enabled when the unit was powered down.

QUESTION: I am concerned about how a large number of Veri-NAC appliances can be managed centrally. For example, I have 5000+ computers in 50 segments, which means I need to have 50 devices. For Veri-NAC authentication, it seems that we have to maintain one pair of IDs/passwords for each administrator in each Veri-NAC appliance, so a total of 50 passwords need to be assigned to each staff. Manageability becomes an issue. Am I able to customize the passwords for every unit?

ANSWER: All 50 units can have the same password. Every unit has a default admin-level username called MainAccount, which is capable of making password changes. Using MainAccount, you can also add more users with admin privileges if you want.

QUESTION: Can I authenticate my PCs or desktops based on their MAC address, so that PCs or desktops whose MAC addresses are not in the database will not be granted network access?

ANSWER: Yes, Veri-NAC allows you do this. This mode of authentication requires that any new PCs or desktops connected to the network be authenticated based on this MAC address database. If the MAC address is not in the database, the new PC is not given network access.

QUESTION: When the Veri-NAC box is introduced into the network, will all assets detected be put on the untrusted list by default, during Asset Discovery?

ANSWER: No—they are all automatically trusted, unless you start the Dynamic Detection and blocking system with NO assets in the trusted asset list. We recommend turning off Dynamic Detection System first (default setting) and doing an asset discovery Network Access Control→Asset Discovery then reviewing this trust list at Network Access Control→ Manage IPs.

QUESTION: Can I set a policy to define that any "untrusted" asset can only see a few IP addresses, such as an Internet proxy IP address? In other words, I want asset exclusion to be based on IP addresses, not MAC addresses.

ANSWER: Yes, you can—easily. When an untrusted asset is being blocked, it can't see IPs that are in the defined protect range. However, it can see IPs that are not in the protect range.

For example: Let's say you want to block a contractor's laptop for access to critical servers, but this person can have access to the Internet, printers, and anything else. Assume the internal network is class C range from 192.168.1.1-254. The gateway IP address for access to the Internet is 192.168.1.1, the Veri-NAC IP is 192.168.1.9. The critical servers cluster resides from 192.168.100-110. Here is how you would set up this policy on the Veri-NAC: From Network Access Control Dynamic Detection System: Click the checkbox for "Enable PeerBlock blocking" Enter "192.168.1.1-254" in the Block Range, "192.168.100-110" in the Protect Range. Now, click "Save" at the bottom of the page.

Result: When an outside contractor plugs in her laptop, she wouldn't be able to see any of the critical servers. However, she can have access to the Internet and other non-critical servers without knowing that critical servers exist. When you are in admin view on the Veri-NAC Web interface, you will see that her laptop is being blocked (red highlight on the Manage IPs page).

QUESTION: What is the IP/MAC Mismatch list for?

ANSWER: Let's look at a sample scenario:
A network asset, PC1 has the IP address 192.168.1.183. and PC2 has the IP address 192.168.1.207. Both PCs are on the trusted list. PC1 goes offline. PC2 either statically reassigns its own IP to 192.168.1.183 or PC2 requests a new IP, and the DHCP server leases 192.168.1.183 to PC2. Veri-NAC will move PC1 to the mismatch list and give the reason "IP address unknown." The PC2 info will overwrite the PC1 data on the Manage IPs page. PC2 can access the network normally. Later, when both PCs revert to their original IP addresses, PC1 will be removed from the IP Mismatch list. You can also choose to remove IPs in the Mismatch list manually.

D.3. Advanced Use

QUESTION: In our network environment, ICMP traffic is blocked; does this affect the Asset Discovery function? Is Veri-NAC still able to discover the server(s)? Does the Veri-NAC appliance use only the ping packet to discover assets?

ANSWER: Veri-NAC's Dynamic Detection feature detects DHCP lease requests. If packet sniffing is enabled, the appliance will inspect network packets to detect new assets, including static IP devices.

QUESTION: What protocol does Veri-NAC use to dynamically detect assets?

ANSWER: Veri-NAC uses ping combined with other technologies to discover assets. Even when ICMP traffic is blocked, Veri-NAC will be able to discover assets.

QUESTION: If the log space on the hard disk is full, what does Veri-NAC do? Will it overwrite the old logs?

ANSWER: System Statistics shows disk usage. It will give warnings when the disk is at least 75% full. However, we recommend frequent backups, because Veri-NAC will overwrite old logs if necessary.

QUESTION: What is the amount of bandwidth difference between the low bandwidth probe and normal bandwidth probe?

ANSWER: The appliance contains a "smarter scanning engine" that manages bandwidth usage automatically. If an audit has six or fewer IP addresses being audited at the same time, it will run in low bandwidth mode, using approximately 20 kbps. If an audit has more than six IP addresses being audited at once (this could include dozens, hundreds, or even thousands), it will throttle up to high bandwidth mode, but never go over 140 kbps network usage (on average).

QUESTION: Does Veri-NAC authenticate MAC addresses and block MAC spoofing?

ANSWER: Veri-NAC does provide MAC spoofing detection and blocking. If two or more devices are on-line at the same time, you will receive an e-mail, and you can have them blocked on detection.

QUESTION: What technique is used to block unknown computers and other devices? Does it affect performance in a "busy" end user network?

ANSWER: The appliance uses a patented methodology to block untrusted devices from getting on the network. Generally speaking, it is confusing the untrusted asset by feeding it wrong information and creating a low-bandwidth denial of service using PeerBlock, or through rule changes on smart switches (Black Box part number LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) and firewalls. PeerBlock uses 7 kbps of bandwidth to block, network activity whatsoever. "Normal conditions" means only a few untrusted assets at a time, not an abnormal situation, such as 100 untrusted assets simultaneously attempting to access a small network. The stream of only 7 kbps to block unwanted users is very little bandwidth usage. That's the most bandwidth usage per IP blocking event the appliance will use. Network traffic generated while Veri-NAC is auditing or vulnerabilities ranges from 40 to 120 kbps, therefore, is almost invisible to users even while it discovers their common vulnerabilities and exposures. However, there are some dos and don'ts we recommend to make traffic smooth and invisible. These are covered in the README FIRST! document you received with Veri-NAC and include not auditing a critical overloaded server during busy work hours and dealing with alerts from intrusion detection systems (IDS).

QUESTION: Is MAC addressing the criteria for blocking unknown devices and if so, what if I move the Ethernet NIC to another computer?

ANSWER: Yes, that is the criteria. So if you move the NIC to another computer, you will be triggering the MAC spoof detection mechanism. Run Asset Discovery to update the Veri-NAC database.

QUESTION: Does the Veri-NAC appliance have a guest policy in which guest computers can only access the Internet, not the internal network?

ANSWER: Yes. Veri-NAC has a Protect Range feature—anything in the range is going to be invisible to the untrusted asset. Any exclusion in the range will be visible. For example: if you exclude a router that leads to the Internet, the untrusted asset will think there is only one asset on the network and communicate with it. That router will provide access to the Internet while other peer devices are "invisible" to the guest.

QUESTION: How does Veri-NAC deal with internal threat propagation? How does the appliance identify and quarantine the endpoint?

ANSWER: Veri-NAC has the capability to preemptively block the vulnerable asset or port at the smart switch (for example, Black Box part number LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2 and firewalls). It handles malware more proactively through starvation—eliminate the vulnerability, and you become more immune to exploits. Finally, if a system is propogating malware, in real-time, remove it from the trust list and make sure the PeerBlock engine is enabled. This should kill the malware propogation and data leakage risk from the infected endpoint.

QUESTION: Is it possible to provide a Web page forwarding the unhealthy endpoints to remediation facilities?

ANSWER: There's really no good automated way to fully remediate an unhealthy system, yet. We recommend that you fix the vulnerabilities by patch or system reconfiguration instead of sending users to Web pages.

QUESTION: Can I administer and consolidate an asset list across multiple appliances?

ANSWER: Currently Veri-NAC appliances do not share their asset lists between each appliance, however, you can access and control these asset lists from a single appliance running the Command Center.

QUESTION: Cisco also has MAC authentication control at the smart switch port layer. How does Veri-NAC compare with Cisco's solution?

ANSWER: In testing, we have found that a $20 hub can render Cisco's solution ineffective. If you place a small, low-cost hub on the subnet, the untrusted MAC address device is still able to attack and eavesdrop on its peers across the hub. Also, Cisco's 802.1x methodology is costly, requires complete infrastructure upgrades, and is frequently hacked. Veri-NAC also offers the ability to communicate with Cisco smart switches, even the older Catalyst, using a simple block methodology.

QUESTION: How does the Veri-NAC appliance detect when a PC or laptop is connecting to the network?

ANSWER: It uses static IP Detection (at the ARP event level) and DHCP Detection (at the IP Broadcast event level).

QUESTION: How does Veri-NAC block PCs or laptops that are not authenticated?

ANSWER: The Veri-NAC appliance uses three layers of blocking, depending on which you choose to use—firewall rules change, smart switch port bloc,k and, our favorite, PeerBlock blocking which uses a lightweight ARP-level packet-blocking engine running a low bandwidth 7 kbps per untrusted asset during a block event.

QUESTION: Can Veri-NAC appliance integrate with the CA-Unicenter®, HP® OpenView®, or IBM® Tivoli®?

ANSWER: Yes. These information management systems accept both Syslog and SNMP traps, so you can consolidate alerts from one or more Veri-NAC appliances into one console.

D.4. Smart Switches and Firewall

QUESTION: What kind of smart switches does Veri-NAC send quarantine information to, as an optional blocking method?

ANSWER: Under smart switch quarantine, there are dropdown selections for the smart switches the appliance can communicate with, which is not required for PeerBlock quarantine, they are 3Com®, HP®, Extreme Networks, Cisco™, and Black Box (Black Box® part numbers LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) smart switches.

QUESTION: When Dynamic Detection is enabled, newly connected devices are blocked as they connect. Why is this happening?

ANSWER: Depending upon how you configured the appliance, as each new, untrusted device connects, a rule blocking that device is created automatically.The Veri-NAC will block using three optional methodologies:

a. Block at the firewall (if supported)
b. Block at the smart switch (if supported). Methods include blocking physical switch ports and 802.1Q VLAN tagging with black holing.
c. PeerBlock, by targeting a Denial of Service (DoS) at the invader on the network (this is the best, easiest way to block, using very little traffic, about one 7-kbps stream per invader).

QUESTION: How long does a Dynamic Detection-created rule on the smart switch or firewall remain active?

ANSWER: The rule remains as long as there is an untrusted device or port-level vulnerability. However, the admin receives an alert when the rule is created and can manually make changes to the rule if so desired.

QUESTION: When I unplug the Veri-NAC from the network, the smart switch or firewall seems to continue applying standing rules created during Dynamic Detection. How can I stop this?

ANSWER: You need to delete the rules manually from the smart switch (for example, Black Box part number LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) or firewall. Please see the user's manual for your smart switch or firewall for more details.

QUESTION: Can I integrate more than one smart switch within the same network LAN?

ANSWER: Yes.

QUESTION: When integrating our Veri-NAC with a compatible smart switch or firewall, are we only required to configure Veri-NAC, or do we have to make a manual configuration on the smart switch or firewall as well?

ANSWER: In most cases, as long as your Veri-NAC appliance has an admin access to and can successfully communicate with the smart switch (for example, Black Box part number LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) or firewall, there is no need for manual configuration on the smart switch or firewall. However, each firewall has different rules. The Veri-NAC user guide explains how to set up your firewall to be compatible with Veri-NAC. Using the Juniper Networks® NetScreen® firewall, for example, you first log into the firewall and make/delete a rule. The Juniper firewall won't allow remote rule creation without first doing this once. Other firewalls do not require this step. However, if you tell a firewall by default to only allow, say, IP address 192.168.254.2 to log in, and your Veri-NAC is at .3, then it will block your Veri-NAC from remotely (SSH/TELNET/API) connecting in, even if you have the user ID and password. Make sure Veri-NAC is on the "allow" list of firewall admin users.

QUESTION: To use the Internet for automatic updates, I need to go through an authenticated proxy server. What is the IP address or Web site that Veri-NAC uses to update its signatures and patches, so that I can configure my firewall accordingly?

ANSWER: The appliance connects to https://ssl.perfora.net/updateauditor.com for its updates. The outgoing ports used by the appliance vary; however, the starting port number the appliance will use is 36280. The incoming port used by the server is 443. The protocol is https. The proxy setting can be created or modified by going to System Proxy Configuration.

QUESTION: What protocol is used between Veri-NAC and a smart switch (for example, Black Box part number LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) or firewall?

ANSWER: SSH or TELNET.

QUESTION: Does Veri-NAC work on all smart switches? Are any configuration changes required on the smart switches?

ANSWER: If the only feature in use is PeerBlock blocking, Veri-NAC is compatible with all smart switches. If the smart switch blocking feature is in use as well, then access to the smart switch via Telnet/SSH will be required. Our currently supported smart switches are Black Box part numbers LGB1002A-R2, LGB1003A-R2, and LGB1005A-R2; Cisco; 3Com; Extreme Networks; and HP.

QUESTION: Can Veri-NAC integrate with the Check Point firewall?

ANSWER: Yes, it works with the Check Point® firewall.

QUESTION: Does Veri-NAC work with the Alcatel SmartSwitch or the Cisco ASA Firewall?

ANSWER: It does not currently integrate directly with these models. Use the PeerBlock blocking feature, which will work independently of any smart switches or firewalls regardless of type.

D.5. Audits

QUESTION: When I try to edit previously scheduled audits, I can only delete them. They are not underlined and are not available for edit. Is this a bug or a feature?

ANSWER: This is a feature, not a bug. You have to stop a scheduled audit before you can edit it if it is "running," that is, scheduled. Press the Stop button. Even though it's not running now, you will be able to edit it.

QUESTION: What is the impact of Veri-NAC on the performance of a network during the auditing process? Will it slow down the network or network-based applications and servers we are running?

ANSWER: The appliance has minimal to no impact on network performance or bandwidth, with a few exceptions: Although Veri-NAC performs non-invasive network asset probing and Common Vulnerabilities and Exposures inspection, make sure you don't audit a critical server during a critical time the very first time you use the appliance. First, auditing your DNS server during working hours is not recommended. Auditing an Intrusion Detection System (IDS) is also not recommended, as the IDS might think that the Veri-NAC appliance is a "hacker" and send out network alerts that are false positives. In addition, Symantec Antivirus software for Microsoft Exchange acts like an IDS on your mail server, so you have to be very careful if and when you audit this system. The same holds true for your firewall, VPN, and other information security countermeasures, which send alerts when they are probed for information. You may be able to add Veri-NAC to a trust list so it is not perceived as an "insider" threat on your networks when auditing these security systems. Second, make sure that, when you log into the appliance for the very first time, you click Updates→Vulnerabilities→Signatures→Update Now to make sure your appliance has the latest CVE tests. Third, make sure that you have the newest service pack installed on Veri-NAC system by following Updates→Service Packs→Install Patches. Finally, the bandwidth usage is as follows on a Class C network (or larger): No more than 100 kbps/no less than 40 kbps during a full audit. No more than 7 kbps per PeerBlock block session against a single untrusted asset (if PeerBlock is blocking, the asset will be inaccessible).

QUESTION: Some Intrusion Detection Systems (IDS) and Host-Based Intrusion Detection Systems (HIPS) detect when they are being audited and think it is a hacker or a port scanner. How does the Veri-NAC bypass this detection?

ANSWER: Some HIPS and IDS are able to detect the Veri-NAC activity as a port scan. Veri-NAC is doing a port scan along with more detailed analysis of CVEs. Whenever possible, configure HIPS and IDS to allow the Veri-NAC traffic as an exception, without escalation and alerting.

QUESTION: How does Veri-NAC handle licenses for a virutal environment? For example, if I have 10 different servers' operating systems (OSs) or applications running within a virtual server, such as VMware, all on one piece of physical computer hardware, what license would be required to audit all the applications or operating systems?

ANSWER: Unfortunately, the current release of Veri-NAC does not consider a virtual OS with the same MAC address a different "virtual" computer and would treat it as a MAC/IP mismatch for NAC purposes, and CVE auditing results would vary.

QUESTION: How do I quickly stop all currently running/scheduled audits?

ANSWER: Navigate to System Utilities and select "Stop All Audits."

QUESTION: Under Audits→View Vulnerability Tests, only Windows® and Linux® operating systems are shown. What about other devices and operating systems, such as printers, VoIP phones, etc?

ANSWER: These groupings allow you view tests relevant to these operating systems. To view all tests, select "All OS."

D.6. Workflow/Ticket Management

QUESTION: Can the workflow engine be automated so vulnerabilities are automatically fixed?

ANSWER: Fixing CVEs is not as simple as running patch updates in most cases. Some remediation of vulnerabilities can be done with patches, many require fixing configuration issues, and some require upgrades. In addition, it is essential that CVEs are remediated correctly, as incorrect patches and configuration changes can cause more problems and troubleshooting issues. It is best to do system hardening manually.

QUESTION: An audit discovered one particular vulnerability ID that is located across 100 PCs on my network. As far as I can see, I can only assign the task of fixing these 100 PCs to one person, which may take a long time. Would it be possible to assign groups of those 100 PCs to different IT staff users? For example, one staff member gets a task of 50 PCs, and another staff member takes care of the other 50?

ANSWER: Yes. Assign this job to an IT staff user first, and then reassign it to multiple persons using the Workflow/Reassign Tickets menu.

QUESTION: There are some jobs that I cannot close. They show up as "N/A" in my menu.

ANSWER: This is because a staff member is working on a job ticket containing more than one vulnerability. A manager can assign more than one vulnerability ID (VID) to an IT staff using one Job Ticket Number. For example, the manager can assign ub-task VID 22222 (risk level: serious) and VID 10397 (risk level: low) as Job Ticket #1. An IT staff member will then work on these sub-tasks serially in order of their risk level. In this case, he must work on VID 22222 first, then VID 10397. While he's working on VID 22222, the Start Date, Complete Date, and Comments columns for VID 10397 will display as "N/A."

QUESTION: I assigned one VID to one IT staff member. Why do some of the Report Tickets that have same Vulnerability ID have the value of 2 and 3? Shouldn't the number be "1," because it is only 1 ID assigned?

ANSWER: Workflow counts the number of vulnerabilities and number of tasks differently. Using your example, if you click the link of the Report Ticket for this newly assigned VID, under column IP (Report Ticket), you will see there are two vulnerabilities for Report Ticket #38 and #33, and three for Ticket #21. That's because this VID is found at two IPs for Report Ticket #38 and #33, and three IPs for Ticket #21.

QUESTION: There is a disparity between the numbers reported under the "Unassigned" header in "Workflow Ticket Log" and the actual number of unassigned tasks. For example, the number of unassigned tasks reported may be 6, but when I click the link to view details, I may find only 5 unassigned tasks. Is there a problem?

ANSWER: If the same vulnerability (VID) is found at two different IPs, the Veri-NAC reports them as two vulnerabilities, while Workflow counts them as one task (because they have the same VID). Workflow counts number of vulnerabilities and number of tasks differently. When you click to view details, you see 5 unassigned tasks, but if you look at the IP (Report Ticket) column, you will find 6 vulnerabilities for this Report Ticket.

QUESTION: How do I keep track of vulnerabilities that have been fixed?

ANSWER: Go to Workflow→My Ticket Log→View MainAccount's Closed Jobs. You can then see the detailed information of the closed jobs for MainAccount.

QUESTION: While running the Veri-NAC system, I found managing and tracking vulnerabilities to be somewhat difficult. As the sole user of the device, it is difficult for me to add comments to a report and then move it to different stages "to be determined" and "closed". Although I am the sole user of the device, I can't simply do these things myself, having instead to log on as the system administrator if I wish to move an issue on to the next stage. Also, is there a way for me to reopen and modify a job which has already been closed?

ANSWER: Workflow is designed in such a way that only an administrator, not an IT staff member, can close a job. Unfortunately, after a job is closed, no changes can be added, but you can view the history of any closed job at My Tickets Log. You can make yourself an administrator of the appliance by logging in as MainAccount.

QUESTION: When does the Veri-NAC check if jobs are past due?

ANSWER: Twice a day (8:00 A.M. and 12:00 P.M.). If it finds jobs past due, it then sends an e-mail to the IT manager(s) for escalation.

QUESTION: Why can't I close the ticket of the job I just completed?

ANSWER: Only your manager or MainAccount can close your job ticket. Even Manager-level users cannot close tickets for jobs they are assigned to.

QUESTION: One of my staff members went on vacation, and she still has open job tickets assigned to her in Workflow. Can I reassign her tickets to other staff members?

ANSWER: Yes. Go to Workflow→Reassign tickets and follow the steps. You may want to consult the Veri-NAC user's manual. Please look in Section 16.8, Reassigning Jobs.

QUESTION: Can I assign multiple resources for an individual job?

ANSWER: Yes. Go to Workflow→Reassign tickets. Select the job number you'd like to reassign. On the next page, select any amount of resources you'd like (use the CTRL key when selecting), adjust the assigned man hours as needed, then click "Continue."

D.7. Policies, Regulations, and Reports

QUESTION: Why am I unable to upgrade the ISO 27001/17799 Policy? The selection button is grayed out.

ANSWER: If you already have the policy tool installed, then no upgrade is available. Go to the Policies and Regulations→ ISO 27001/17799. If this opens a spreadsheet, you are fine. If not, call Black Box Technical Support at 724-746-5500.

QUESTION: What is the purpose of the "Open Vulnerabilities" and "New Vulnerabilities" graphs in the "Trend in Vulnerability Status" section of a Management or Executive report?

ANSWER: An Open vulnerability is a vulnerability that is listed in Workflow tickets and has not been resolved.
A New vulnerability is a new CVE in the Workflow database.
An example in Executive/Management Report:
Currently open vuls*: 36
Fixed vuls: 20
Total Discovered vul =currently open vuls + Fixed vuls = 56
New vuls: 8* vul = vulnerability

QUESTION: I fixed all vulnerabilities present in my job tickets and then generated a report. Despite all vulnerabilities being fixed, the "Fixed Vulnerabilities Graph" does not match the "Total Discovered Vulnerabilities." The graphs seem to indicate that there are still open vulnerabilities. If I look at the report, it says that the jobs are closed and all vulnerabilities are fixed.

ANSWER: Even though the job status for this vulnerability is set as "fixed," the Veri-NAC doesn't consider it to be. You should to run an audit again to ensure that this vulnerability is really fixed.

QUESTION: Once I complete a policy in Basic Policy Builder, is there a way to print out the policy that I created so I can keep a hard copy?

ANSWER: Yes. Go to File Print or press CTRL-P on your keyboard. To ensure your policy is what gets printed, make sure this window is the highlighted browser window—click inside the final policy window with the mouse to be sure, then press CTRL-P.

QUESTION: Basic Policy Builder lists 26 default policies; is there a way to create a new policy other than those 26 items (creating policy 27, 28, and so on)?

ANSWER: Unfortunately, in the present version you cannot create a new policy. However, feel free to open up Microsoft Word, copy your final policies into a Word document, and then begin editing your new policies 27, 28, and so on.

QUESTION: How does Veri-NAC know if my network is in compliance with ISO 27001 for reporting purposes?

ANSWER: Veri-NAC tests for Common Vulnerabilities and Exposures (CVEs) which could cause a breach of Confidentiality, Availability, and/or Integrity (CIA), which would create the risk of being out of ISO compliance. Knowing that your network is free of CVEs eliminates this particular compliance risk. Also, the ISO 27001/17799 policy builder tool included with our larger enterprise appliances helps companies to audit, test, and build ISO-compliant policies

that are corporate wide and out of the core scope of the appliance but fully ISO 27001 compliant.

QUESTION: Is Veri-NAC compatible with the Committee on Payment and Settlement Systems?

ANSWER: Veri-NAC is compatible with the Committee on Payment and Settlement Systems (CPSS), but it does not guarantee that transactions are secure. By detecting and removing CVEs that could breach CIA, as well as using our best-practices ISO 27001 and basic policy tools, you can show steps of due care and due diligence for CPSS.

QUESTION: Does my company's logo only show on first page of a report?

ANSWER: Yes, the logo appears only on the report's first page, while your company name and address is on the bottom of every page.

QUESTION: When I view an audit report, it reads "The remote host is not available, so it cannot be audited." I have checked to make sure the machine is turned on. Why can't I audit that machine?

ANSWER: Make sure any local host-based software firewalls running on that machine are turned off before running an audit.

D.8. Backup and Restore

QUESTION: Does Veri-NAC appliance have a backup and restore facility?

ANSWER: Veri-NAC does have backup/restore capability. Please see documentation on System Backup and Restore.

QUESTION: Can I change the name of the file that is created during a backup?

ANSWER: No, do not do this. The file will then be unrecognizable to Veri-NAC should it need to run a restore.

QUESTION: Do I need to delete the backup file from Veri-NAC?

ANSWER: It is not required, but we recommend doing so to save hard drive space.

QUESTION: After I perform a restore on Veri-NAC, will my updated patches be restored back to the earlier version?

ANSWER: No. Only the data and configuration information reverts to the former state. Please make sure you keep track of all login IDs and passwords—new and old. You might need this to log back in.

QUESTION: What is included in a Backup/Restore?

ANSWER: The Veri-NAC appliance will back up the following:
Reports and Workflow
Audit Configurations
Asset Tracking Data
Veri-NAC appliance Settings
Veri-NAC appliance Log(s)

QUESTION: I use a Linux®/Unix® File Server. When I back up the system in the "Backup and Restore" section, is my Linux username and password required since to write files to the OS, I need to use my username and password to grant permission?

ANSWER: See Backup and Restore in the Veri-NAC User Guide:
From System Backup and Restore, click Change Backup Settings.
Click "Important steps required" for Linux servers to work.
Follow the provided instructions. If you have questions, call Black Box Technical Support at 724-746-5500.

D.9. Command Center

QUESTION: What is the Command Center?

ANSWER: The LVN5400A, LVN5600A, or LVN5800A Command Center offers the ability to command and control remote Veri-NAC appliances across our network. Remote appliances can be added, and groups of remote appliances can be created. In one action, policies and configurations can be saved to all remote appliances included in a group. Remote actions can be performed on remote appliances. Group and appliance status can be quickly viewed on a single screen, providing an easy-to-use management console.

QUESTION: I am planning a project for a large network; I need to understand more about manageability so I can be confident when it goes into operational mode. Can you please share with me the operation/deployment model Veri-NAC has used for large-size customers?

ANSWER: Management can be either local (console) or remote (https). The units can be grouped and managed remotely from the LVN5400A, LVN5600A, or LVN5800A unit using the Command Center on networks of any size. It really depends upon how many VLANs, subnets, and physical locations there are. With this information, you should be able to deploy one or more Veri-NAC appliances to protect your entire network.

QUESTION: Can the Veri-NAC LVN5400A, LVN5600A, or LVN5800A unit with Command Center have the same trusted list database as another sub-unit?

ANSWER: Yes, it can.

QUESTION: What is the default port Veri-NAC LVN5400A, LVN5600A, or LVN5800A uses to communicate with managed LVN5200A or LVN5250A units and can I change it?

ANSWER: Port 443 (SSL) is the default.
You can change the port to any number you like as long as both the LVN5400A, LVN56500A, or LVN5800A and all managed appliances use the same port. Don't forget to open the port on your firewall to allow traffic from the Veri-NAC LVN5400A, LVN56500A, or LVN5800A Command Center to each remote Veri-NAC LVN5200A or LVN5250A unit.

QUESTION: I added a Veri-NAC LVN5200A or LVN5250A unit to my Command Center group. When I look at my managed appliances, I see a red icon next to the LVN5200A or LVN5250A unit. When I click on it, it displays the message "Appliance Unavailable." What's wrong?

ANSWER: This means the Command Center cannot communicate with that Veri-NAC unit. Please check the following:

- Is the Veri-NAC LVN5200A or LVN5250A unit turned on?
- Is the Ethernet cable plugged in properly?
- Can the Command Center receive information from the IP address of the remote unit? Make sure the LVN5200A or LVN5250A unit's IP isn't accidentally in the Block Range.
- Can the LVN5200A or LVN5250A unit be accessed locally from the browser (https)?
- Is the default port the same for both the LVN5200A and LVN5250A; and LVN5400A, LVN5600A, and LVN5600A units?
- Did you configure the firewall or other intermediate devices to forward the SSL port traffic properly?

QUESTION: Why would I use 802.1q VLAN tagging?

ANSWER: This feature is very useful if you want to efficiently use less Veri-NAC hardware to protect a larger or more complicated network that uses VLANs. When you want to have one Ethernet port of your Veri-NAC appliance see and help manage network access and vulnerabilities in up to ten (10) VLANs per physical Ethernet connector, you simply tag all these VLANs and plug Eth0 of your Veri-NAC appliance into the physical port on your smart switch where you have the tagged VLANs mapped.

QUESTION: I enabled 802.1q VLAN tagging in my smart switch and now my network seems to have gone down. What happened?

ANSWER: Use 802.1q VLAN tagging only if you fully understand how to properly configure this feature both in your smart switch (for example, Black Box part numbers LGB1002A-R2, LGB1003A-R2, or LGB1005A-R2) and your Veri-NAC appliance. This feature is optional and not required to use your Veri-NAC appliance.

802.1q VLAN is a very powerful feature of your smart switch. If you misconfigure the physical tagged ports of your smart switch, the switch itself might send tagged traffic over your network causing devices to appear to lose connectivity or be offline, when they are not actually offline.

Make sure the physical smart switch port that you have bound to the tagged VLANs is plugged into one of the enabled Ethernet ports of your Veri-NAC appliance.

QUESTION: Why can't I open the ISO 27001 policy tool on my Veri-NAC (LVN5400A, LVN5600A, or LVN5800A)?

ANSWER: If you open this tool using Internet Explorer®, it will open an Excel file remotely from the Veri-NAC appliance. You might have to click on an Internet Explorer popup dialog box to agree to download this content. When you do so, it should open fine. Then, if you attempt to click a hyperlink in one of the Excel® tabs from within your Internet Explorer browser, you will go through the same process to open one of the many sample policies in the Word document format. If you are using Firefox®, by default it will attempt to download the Excel spreadsheet locally. By doing so, the embedded Word document hyperlinks will not work because they are looking for files on a relative path. You will need to run this tool using Internet Explorer as your default browser.

Appendix E. License Agreement

Veri-NAC Appliances Version 7.1

Models: 5200, 5250, 5400, 5600, 5800
Part Numbers: LVN5200A, LVN5250A, LVN5400A, LVN5600A, LVN5800A

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