

# **NETGEAR**°

## ProSafe Wireless - 802.11 b/g/n VPN Firewall FVS318N



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Zlib

zlib.h. Interface of the zlib general purpose compression library version 1.1.4, March 11th, 2002. Copyright (C) 1995–2002 Jean-loup Gailly and Mark Adler.

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Jean-loup Gailly: jloup@gzip.org; Mark Adler: madler@alumni.caltech.edu.

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files *ftp://ds.internic.net/rfc/rfc1950.txt* (zlib format), rfc1951.txt (deflate format), and rfc1952.txt (gzip format).

#### **Product and Publication Details**

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Introduction

The ProSafe Wireless - 802.11 b/g/n VPN Firewall FVS318N with eight 10/100/1000 Mbps Gigabit Ethernet LAN ports and one 10/100/1000 Mbps Gigabit Ethernet WAN port connects your local area network (LAN) to the Internet through an external access device such as a cable modem or DSL modem.

The FVS318N is a complete security solution that protects your network from attacks and intrusions. For example, the FVS318N provides support for Stateful Packet Inspection, Denial of Service (DoS) attack protection and multi-NAT support. The VPN firewall supports multiple Web content filtering options, plus browsing activity reporting and instant alerts—both via email. Network administrators can establish restricted access policies based on time-of-day, website addresses and address keywords.

The FVS318N is a plug-and-play device that can be installed and configured within minutes.

This chapter contains the following sections:

- Key Features" on this page
- "Package Contents" on page 1-10
- "VPN Firewall Front and Rear Panels" on page 1-10
- "Default IP Address, Login Name, and Password" on page 1-12
- "Qualified Web Browsers" on page 1-12

## **Key Features**

The FVS318N provides the following features:

- One 10/100/1000 Mbps Ethernet WAN port for connection to a WAN device, such as a cable modem or DSL modem.
- Built-in eight-port 10/100/1000 Mbps Gigabit Ethernet LAN switch for extremely fast data transfer between local network resources.
- Support for up to 253 internal LAN users.
- Advanced VPN support for IPsec.
- SNMP Manageable, optimized for the NETGEAR ProSafe Network Management Software (NMS100).
- Easy, Web-based setup for installation and management.

- Advanced SPI Firewall and Multi-NAT support.
- Extensive Protocol Support.
- Login capability.
- One console port for local management.
- Front panel LEDs for easy monitoring of status and activity.
- Flash memory for firmware upgrade.

## **Advanced VPN Support for IPsec**

The VPN firewall supports IPsec virtual private network (VPN) connections.

IPsec VPN delivers full network access between a central office and branch offices, or between a central office and telecommuters. Remote access by telecommuters requires the installation of VPN client software on the remote computer.

- IPsec VPN with broad protocol support for secure connection to other IPsec gateways and clients.
- Bundled with a single-user license of the NETGEAR ProSafe VPN Client software (VPN01L)
- Supports 5 concurrent IPsec VPN tunnels.

## A Powerful, True Firewall with Content Filtering

Unlike simple Internet sharing NAT routers, the FVS318N is a true firewall, using stateful packet inspection to defend against hacker attacks. Its firewall features include:

- DoS protection. Automatically detects and thwarts DoS attacks such as Ping of Death, SYN Flood, LAND Attack, and IP Spoofing.
- Secure Firewall. Blocks unwanted traffic from the Internet to your LAN.
- Block Sites. Blocks access from your LAN to Internet locations or services that you specify as off-limits.
- Logs security incidents. The FVS318N will log security events such as blocked incoming traffic, port scans, attacks, and administrator logins. You can configure the VPN firewall to
  - email the log to you at specified intervals. You can also configure the VPN firewall to send immediate alert messages to your email address or email pager whenever a significant event occurs.
- Keyword Filtering. With its URL keyword filtering feature, the FVS318N prevents
  objectionable content from reaching your PCs. The VPN firewall allows you to control
  access to Internet content by screening for keywords within Web addresses. You can
  configure the VPN firewall to log and report attempts to access objectionable Internet
  sites.

## **Security Features**

The FVS318N is equipped with several features designed to maintain security, as described in this section.

- PCs Hidden by NAT. NAT opens a temporary path to the Internet for requests originating
  from the local network. Requests originating from outside the LAN are discarded,
  preventing users outside the LAN from finding and directly accessing the PCs on the
  LAN.
- Port Forwarding with NAT. Although NAT prevents Internet locations from directly
  accessing the PCs on the LAN, the VPN firewall allows you to direct incoming traffic to
  specific PCs based on the service port number of the incoming request. You can specify
  forwarding of single ports or ranges of ports.
- DMZ port. Incoming traffic from the Internet is normally discarded by the VPN firewall
  unless the traffic is a response to one of your local computers or a service for which you
  have configured an inbound rule. Instead of discarding this traffic, you can have it
  forwarded to one computer on your network.

## Autosensing Ethernet Connections with Auto Uplink

With its internal 8-port 10/100/1000 Mbps switch and 10/100/1000 WAN port, the FVS318N can connect to either a 10 Mbps standard Ethernet network, a 100 Mbps Fast Ethernet network, or a 1000 Mbps Gigabit Ethernet network. The LAN and WAN interfaces are autosensing and capable of full-duplex or half-duplex operation.

The VPN firewall incorporates Auto Uplink™ technology. Each Ethernet port will automatically sense whether the Ethernet cable plugged into the port should have a 'normal' connection such as to a PC or an "uplink" connection such as to a switch or hub. That port will then configure itself to the correct configuration. This feature also eliminates the need to worry about crossover cables, as Auto Uplink will accommodate either type of cable to make the right connection.

## **Extensive Protocol Support**

The FVS318N supports the Transmission Control Protocol/Internet Protocol (TCP/IP) and Routing Information Protocol (RIP). For further information about TCP/IP, see the "TCP/IP Networking Basics" document that you can access from the link in "Related Documents" in Appendix C.

- IP Address Sharing by NAT. The VPN firewall allows several networked PCs to share an Internet account using only a single IP address, which may be statically or dynamically assigned by your Internet service provider (ISP). This technique, known as NAT, allows the use of an inexpensive single-user ISP account.
- Automatic Configuration of Attached PCs by DHCP. The VPN firewall dynamically
  assigns network configuration information, including IP, gateway, and domain name
  server (DNS) addresses, to attached PCs on the LAN using the Dynamic Host

- Configuration Protocol (DHCP). This feature greatly simplifies configuration of PCs on your local network.
- DNS Proxy. When DHCP is enabled and no DNS addresses are specified, the VPN firewall provides its own address as a DNS server to the attached PCs. The VPN firewall obtains actual DNS addresses from the ISP during connection setup and forwards DNS requests from the LAN.
- PPP over Ethernet (PPPoE). PPPoE is a protocol for connecting remote hosts to the Internet over a DSL connection by simulating a dial-up connection. This feature eliminates the need to run a login program such as EnterNet or WinPOET on your PC.
- Quality of Service (QoS). QoS support for traffic prioritization.

## Easy Installation and Management

You can install, configure, and operate the FVS318N within minutes after connecting it to the network. The following features simplify installation and management tasks:

- Browser-Based Management. Browser-based configuration allows you to easily configure your VPN firewall from almost any type of personal computer, such as Windows, Macintosh, or Linux. A user-friendly Setup Wizard is provided and online help documentation is built into the browser-based Web Management Interface.
- Auto Detect. The VPN firewall automatically senses the type of Internet connection, asking you only for the information required for your type of ISP account.
- VPN Wizard. The VPN firewall includes the NETGEAR VPN Wizard to easily configure VPN tunnels according to the recommendations of the Virtual Private Network Consortium (VPNC) to ensure the VPN tunnels are interoperable with other VPNC-compliant VPN routers and clients.
- SNMP. The VPN firewall supports the Simple Network Management Protocol (SNMP) to let you monitor and manage log resources from an SNMP-compliant system manager.
   The SNMP system configuration lets you change the system variables for MIB2.
- Diagnostic Functions. The VPN firewall incorporates built-in diagnostic functions such as Ping, Trace Route, DNS lookup, and remote reboot.
- Remote Management. The VPN firewall allows you to login to the Web Management Interface from a remote location on the Internet. For security, you can limit remote management access to a specified remote IP address or range of addresses.
- Visual monitoring. The VPN firewall's front panel LEDs provide an easy way to monitor its status and activity.

## Maintenance and Support

NETGEAR offers the following features to help you maximize your use of the FVS318N:

- Flash memory for firmware upgrade
- Technical support seven days a week, 24 hours a day, according to the terms identified in the Warranty and Support information card provided with your product.

## **Package Contents**

- The product package should contain the following items:
- ProSafe Wireless 802.11 b/g/n VPN Firewall FVS318N
- AC power cable
- Rubber feet
- Category 5 (Cat5) Ethernet cable
- ProSafe Gigabit 8 Port VPN Firewall FVS318N Installation Guide
- Resource CD, including:
- Application Notes and other helpful information.
- ProSafe VPN Client software (one user license)
- Warranty and Support Information Card

If any of the parts are incorrect, missing, or damaged, contact your NETGEAR dealer. Keep the carton, including the original packing materials, in case you need to return the VPN firewall for repair.

## **VPN Firewall Front and Rear Panels**

The FVS318N front panel includes eight LAN ports, one WAN port, and four groups of status indicator light-emitting diodes (LEDs), including Power and Test, LAN, and WAN LEDs.

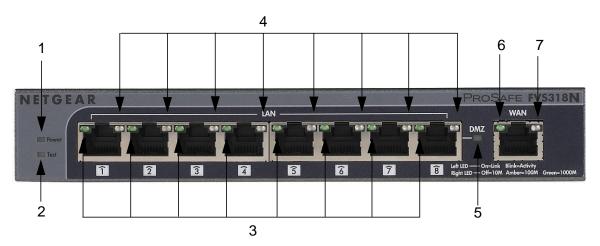


Figure 1-1

Table 1-1 describes each item on the front panel and its operation.

Table 1-1. LED Descriptions

| Object                                   | Activity                        | Description   |
|--|---------------------------------|---|
| 1. Power                                 | On (Green)<br>Off               | Power is supplied to the VPN firewall.  Power is not supplied to the VPN firewall.  |
| 2. Test                                  | On (Amber)<br>Off               | Test mode: The system is initializing or the initialization has failed. The system has booted successfully.                               |
| Eight LAN Ports                          |                                 |   |
| 3. Link and Activity (left side of port) | On (Green) Blinking (Green) Off | The port has detected a link with a connected Ethernet device.  Data is being transmitted or received by the port.  The port has no link. |
| 4. Speed (right side of port)            | On (Green)<br>On (Amber)<br>Off | The LAN port is operating at 1,000 Mbps. The LAN port is operating at 100 Mbps. The LAN port is operating at 10 Mbps.                     |
| 5. DMZ                                   | On (Green)<br>Off               | LAN port 8 is enabled as a DMZ port.  LAN port 8 is not enabled as a DMZ port.  |
| One WAN Port                             | -                               |   |
| 6. Active (left side of port)            | On (Green)<br>Off)              | The WAN port is connected. The Internet connection is down The WAN port is either not enabled or has no link.                             |
| 7. Speed (right side of port)            | On (Green)<br>On (Amber)<br>Off | The port is operating at 1,000 Mbps. The port is operating at 100 Mbps. The port is operating at 10 Mbps.                                 |

The rear panel of the FVS318N includes a cable lock receptacle, a Factory Defaults button, and a DC power connection.

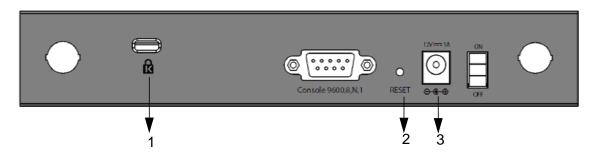


Figure 1-2

Viewed from left to right, the rear panel contains the following elements:

- 1. Cable security lock receptacle.
- 2. Factory Defaults button: Using a sharp object, press and hold this button for about ten seconds until the front panel TEST light flashes to reset the VPN firewall to factory default settings. All configuration settings will be lost and the default password will be restored.
- 3. DC power receptacle: 12V @ 1.0A.

## Default IP Address, Login Name, and Password

Check the label on the bottom of the FVS318N's enclosure if you forget the following factory default information:

IP Address: http://192.168.1.1

User name: adminPassword: password

When FVS318N is connected, log in by going to go to http://192.168.1.1. When the login

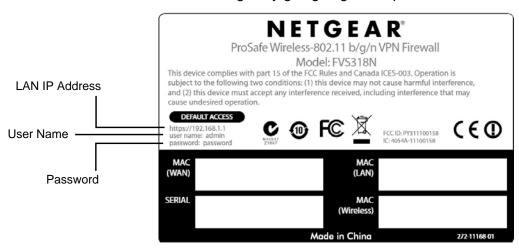


Figure 1-3

screen displays (see Figure 2-1 on page 2-2), enter admin for the user name and the password for password.

## **Qualified Web Browsers**

To configure the FVS318N, you must use a Web browser such as Internet Explorer 5.1 or higher, Apple Safari 1.2 or higher, or Mozilla Firefox I.x Web browser with JavaScript, and cookies enabled.

# Appendix A Default Settings and Technical Specifications

You can use the reset button located on the front of your device to reset all settings to their factory defaults. This is called a hard reset.

- To perform a hard reset, push and hold the reset button for approximately 5 seconds (until the TEST LED blinks rapidly). Your device will return to the factory configuration settings shown in Table A-1 below.
- Pressing the reset button for a shorter period of time will simply cause your device to reboot.

Table A-1. VPN firewall Default Configuration Settings

| Feature                         | Default Behavior    |  |  |  |
|---------------------------------|---------------------|--|--|--|
| Router Login                    |                     |  |  |  |
| User Login URL                  | http://192.168.1.1  |  |  |  |
| User Name (case sensitive)      | admin               |  |  |  |
| Login Password (case sensitive) | password            |  |  |  |
| Internet Connection             |                     |  |  |  |
| WAN MAC Address                 | Use Default address |  |  |  |
| WAN MTU Size                    | 1500                |  |  |  |
| Port Speed                      | AutoSense           |  |  |  |
| Local Network (LAN)             |                     |  |  |  |
| LAN IP                          | 192.168.1.1         |  |  |  |
| Subnet Mask                     | 255.255.255.0       |  |  |  |
| RIP Direction                   | None                |  |  |  |
| RIP Version                     | Disabled            |  |  |  |
| RIP Authentication              | Disabled            |  |  |  |
| DHCP Server                     | Enabled             |  |  |  |
| DHCP Starting IP Address        | 192.168.1.2         |  |  |  |
| DHCP Ending IP Address          | 192.168.1.100       |  |  |  |
| DMZ                             | Disabled            |  |  |  |

Table A-1. VPN firewall Default Configuration Settings (continued)

| Feature  | Default Behavior                                    |
|--|---|
| Management   |   |
| Time Zone  | GMT   |
| Time Zone Adjusted for Daylight Saving Time          | Disabled  |
| SNMP   | Disabled  |
| Remote Management                                    | Disabled  |
| Firewall   |   |
| Inbound (communications coming in from the Internet) | Disabled (except traffic on port 80, the HTTP port) |
| Outbound (communications going out to the Internet)  | Enabled (all)                                       |
| Source MAC filtering                                 | Disabled  |
| Stealth Mode   | Enabled   |

Technical specifications for the ProSafe Gigabit 8 Port VPN Firewall FVS318N are listed in the following table.

Table A-2. VPN firewall Technical Specifications

| Feature                                      |                             | Specifications  |  |  |
|--|-----------------------------|---|--|--|
| Network Protocol and Standards Compatibility |                             |   |  |  |
|  | Data and Routing Protocols: | TCP/IP, RIP-1, RIP-2, DHCP<br>PPP over Ethernet (PPPoE) |  |  |
| Power Adapter                                |                             |   |  |  |
|  | North America:              | 120V, 60 Hz, input                                      |  |  |
|  | United Kingdom, Australia:  | 240V, 50 Hz, input                                      |  |  |
|  | Europe:                     | 230V, 50 Hz, input                                      |  |  |
|  | Japan:                      | 100V, 50/60 Hz, input                                   |  |  |
|  | All regions (output)        | 12 V DC @ 1.0 A output, 12 W maximum                    |  |  |
| Physical Specifications                      |                             |   |  |  |
|  | Dimensions:                 | 32 x 189 x 123 mm (1.6 x 10 x 7 in)                     |  |  |
|  | Weight:                     | 590 g (1.3 lb)  |  |  |

Table A-2. VPN firewall Technical Specifications (continued)

| Feature                      | Specifications                               |  |  |  |
|------------------------------|--|--|--|--|
| Environmental Specifications |  |  |  |  |
| Operating temperature:       | 0° to 40° C (32° to 104° F)                  |  |  |  |
| Operating humidity:          | 90% maximum relative humidity, noncondensing |  |  |  |
| Electromagnetic Emissions    |  |  |  |  |
| Meets requirements of:       | FCC Part 15 Class B                          |  |  |  |
|                              | VCCI Class B                                 |  |  |  |
|                              | EN 55 022 (CISPR 22), Class B                |  |  |  |
| Interface Specifications     |  |  |  |  |
| LAN:                         | Eight 10/100/1000BASE-Tx (Gb), RJ-45 ports   |  |  |  |
| WAN:                         | One 10/100/1000BASE-Tx (Gb), RJ-45 port      |  |  |  |

