INSTALL GUIDE

FortiGate-50A/50B, FortiWiFi-50B and FortiGate-100 FortiOS 3.0 MR4

FORTINET™

www.fortinet.com

FortiGate-50A/50B, FortiWiFi-50B and FortiGate-100 Install Guide
FortiOS 3.0 MR4
22 May 2007
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Trademarks

Regulatory compliance

FCC Class A Part 15 CSA/CUS

⚠ **Caution:** Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

Contents

Introduction

Welcome and thank you for selecting Fortinet products for your real-time network protection.

FortiGate™ Unified Threat Management System improves network security, reduces network misuse and abuse, and helps you use communications resources more efficiently without compromising the performance of your network. FortiGate Unified Threat Management Systems are ICSA-certified for firewall, IPSec, and antivirus services.

The FortiGate Unified Threat Management System is a dedicated, easily managed security device that delivers a full suite of capabilities, which include:

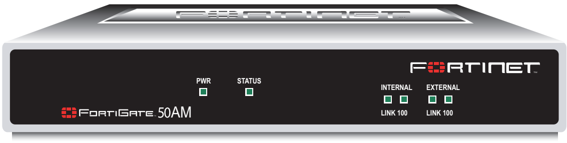
- application-level services such as virus protection and content filtering
- network-level services such as firewall, intrusion detection, VPN and traffic shaping

The FortiGate Unified Threat Management System uses Fortinet's Dynamic Threat Prevention System (DTPS™) technology, which leverages breakthroughs in chip design, networking, security and content analysis. The unique ASIC-based architecture analyzes content and behavior in real-time, enabling key applications to be deployed right at the network edge where they are most effective at protecting your networks.

About the FortiGate unit

The FortiGate-50A/50B, FortiWiFi-50B and FortiGate-100 appliances are designed for SOHO and SMB offices, to deliver the same enterprise-class network-based antivirus, content filtering, firewall, VPN, and network-based intrusion detection/prevention featured in all FortiGate units.

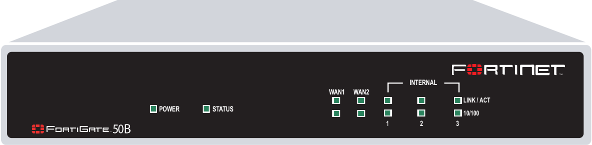
FortiGate-50A



The FortiGate-50A is designed for telecommuters and small remote offices with 10 or fewer employees. The FortiGate-50A unit includes an external modem port that can be used as a backup or stand alone connection to the Internet.

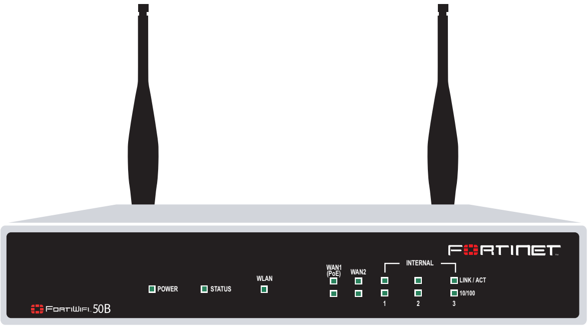
FortiGate-50B

The FortiGate-50B is designed for telecommuters and small remote offices with 10 to 50 employees. The FortiGate-50B unit includes two WAN ports for a redundant connection to the Internet. It also features a 3-port switch for connecting additional network connections and supports HA configurations with additional FortiGate-50B units.



FortiWiFi-50B

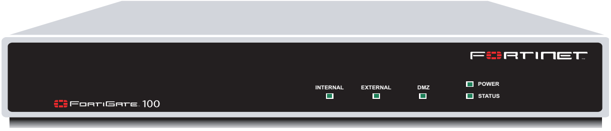
The FortiWiFi-50B is designed for telecommuters and small remote offices with 10 to 50 employees. The FortiWiFi-50B unit includes two WAN ports for a redundant connection to the Internet. It also features a 3-port switch for connecting additional network connections and supports HA configurations with additional FortiWiFi-50B units. The FortiWiFi-50B includes Power over Ethernet (PoE) capabilities as a Powered Device through the WAN1 port.



FortiGate-100

The FortiGate-100 unit is designed for SOHO, SMB and branch office applications.

The FortiGate-100 supports advanced features such as 802.1Q VLAN, virtual domains, high availability (HA), and the RIP and OSPF routing protocols.



Register your FortiGate unit

Register your FortiGate unit by visiting http://support.fortinet.com and selecting Product Registration.

To register, enter your contact information and the serial numbers of the FortiGate units that you or your organization have purchased. You can register multiple FortiGate units in a single session without re-entering your contact information.

By registering your FortiGate unit, you will receive updates to threat detection and prevention databases (Antivirus, Intrusion Detection, etc.) and will also ensure your access to technical support.

Fortinet Family Products

Fortinet offers a family of products that includes both software and hardware appliances for a complete network security solution including mail, logging, reporting, network management, and security along with FortiGate Unified Threat Management Systems. For more information on the Fortinet product family, go to www.fortinet.com/products.

FortiGuard Subscription Services

FortiGuard Subscription Services are security services created, updated and managed by a global team of Fortinet security professionals. They ensure the latest attacks are detected and blocked before harming your corporate resources or infecting your end-user computing devices. These services are created with the latest security technology and designed to operate with the lowest possible operational costs.

FortiGuard Subscription Services includes:

- FortiGuard Antivirus Service
- FortiGuard Intrusion Prevention subscription services (IPS)
- FortiGuard Web Filtering
- FortiGuard Antispam Service
- FortiGuard Premier Service

An online virus scanner and virus encyclopedia is also available for your reference.

FortiClient

FortiClient™ Host Security software provides a secure computing environment for both desktop and laptop users running the most popular Microsoft Windows operating systems. FortiClient offers many features including:

- creating VPN connections to remote networks
- configuring real-time protection against viruses
- guarding against modification of the Windows registry
- virus scanning

FortiClient also offers a silent installation feature, enabling an administrator to efficiently distribute FortiClient to several users' computers with preconfigured settings.

FortiMail

FortiMail™ Secure Messaging Platform provides powerful, flexible heuristic scanning and reporting capabilities to incoming and outgoing email traffic. The FortiMail unit has reliable, high performance features for detecting and blocking malicious attachments such as Distributed Checksum Clearinghouse (DCC) scanning and Bayesian scanning. Built on Fortinet's award winning FortiOS and FortiASIC technology, FortiMail antivirus technology extends full content inspection capabilities to detect the most advanced email threats.

FortiAnalyzer

FortiAnalyzer™ provides network administrators with the information they need to enable the best protection and security for their networks and monitor against attacks and vulnerabilities. The FortiAnalyzer unit features include:

- collecting logs from FortiGate, FortiManager, FortiMail devices and syslog devices
- generating reports on network use, vulnerabilities, and traffic patterns.
- storing quarantined files from a FortiGate unit and archived content from email and IM conversations.

The FortiAnalyzer unit can also be configured as a network analyzer to capture real-time traffic on areas of your network where firewalls are not employed. You can also use the unit as a storage device where users can access and share files, including the reports and logs that are saved on the FortiAnalyzer hard disk.

FortiReporter

FortiReporter™ Security Analyzer software generates easy-to-understand reports and can collect logs from any FortiGate unit, as well as over 30 network and security devices from third-party vendors. FortiReporter reveals network abuse, manages bandwidth requirements, monitors web usage, and ensures employees are using the office network appropriately. FortiReporter allows IT administrators to identify and respond to attacks, including identifying ways to proactively secure their networks before security threats arise.

FortiBridge

FortiBridge™ products are designed to provide enterprise organizations with continuous network traffic flow in the event of a power outage or a FortiGate system failure. The FortiBridge unit bypasses the FortiGate unit to ensure that the network can continue processing traffic. FortiBridge products are easy to use and deploy, and you can customize the actions a FortiBridge unit takes when a power failure or a FortiGate system failure occurs.

FortiManager

The FortiManager™ system is designed to meet the needs of large enterprises (including managed security service providers) responsible for establishing and maintaining security policies across many dispersed FortiGate installations. With this system, you can configure multiple FortiGate devices and monitor their status. You can also view real-time and historical logs for the FortiGate devices, including updating firmware images of managed FortiGate devices. The FortiManager System emphasizes ease of use, including easy integration with third party systems.

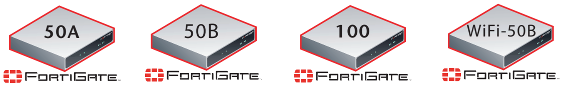
About this document

This document explains how to install and configure your FortiGate unit onto your network. This document also includes how to install and upgrade new firmware versions on your FortiGate unit.

This document contains the following chapters:

- Installing the FortiGate unit – Describes unpacking, setting up, and powering on a FortiGate unit.
- Factory defaults – Provides the factory default settings for the FortiGate unit
- Configuring the FortiGate unit – Provides an overview of the operating modes of the FortiGate unit and how to integrate the FortiGate unit into your network.
- Configuring the modem interface – Describes how to configure and use a modem with the FortiGate-50A and FortiGate-50AM units.
- Using a wireless network – Describes configuring a wireless network and postioning the FortiWiFi-50B unit for best reception.
- FortiGate Firmware – Describes how to install, update, restore and test the firmware for the FortiGate device.

Note: This guide covers information on four FortiGate units; the FortiGate-50A, FortiGate-50B, FortiWiFi-50B and FortiGate-100. While most of the content applies to all the units, where information is specific to a certain model, an icon like the ones below will appear next to the content.



Document conventions

The following document conventions are used in this guide:

- In the examples, private IP addresses are used for both private and public IP addresses.
- Notes and Cautions are used to provide important information:

Note: Highlights useful additional information.

Caution: Warns you about commands or procedures that could have unexpected or undesirable results including loss of data or damage to equipment.

Typographic conventions

FortiGate documentation uses the following typographical conventions:

Convention	Example
Keyboard input	In the Gateway Name field, type a name for the remote VPN peer or client (for example, `Central_Office_1`).

Code examples	`config sys global`
	`    set ips-open enable`
	`  end`

CLI command syntax	`config firewall policy`
	`  edit id_integer`
	`    set http_retry_count <retry_integer>`
	`    set natip <address_ipv4mask>`
	`  end`

Document names	*FortiGate Administration Guide*
Menu commands	Go to **VPN > IPSEC > Phase 1** and select Create New.
Program output	`Welcome!`
Variables	`<address_ipv4>`

Fortinet documentation

The most up-to-date publications and previous releases of Fortinet product documentation are available from the Fortinet Technical Documentation web site at http://docs.forticare.com.

The following FortiGate product documentation is available:

- *FortiGate QuickStart Guide*

  Provides basic information about connecting and installing a FortiGate unit.
- *FortiGate Install Guide*

  Describes how to install a FortiGate unit. Includes a hardware reference, default configuration information, installation procedures, connection procedures, and basic configuration procedures. Choose the guide for your product model number.
- *FortiGate Administration Guide*

  Provides basic information about how to configure a FortiGate unit, including how to define FortiGate protection profiles and firewall policies; how to apply intrusion prevention, antivirus protection, web content filtering, and spam filtering; and how to configure a VPN.
- *FortiGate online help*

  Provides a context-sensitive and searchable version of the *Administration Guide* in HTML format. You can access online help from the web-based manager as you work.
- *FortiGate CLI Reference*

  Describes how to use the FortiGate CLI and contains a reference to all FortiGate CLI commands.
- *FortiGate Log Message Reference*

  Available exclusively from the Fortinet Knowledge Center, the FortiGate Log Message Reference describes the structure of FortiGate log messages and provides information about the log messages that are generated by FortiGate units.

- *FortiGate High Availability User Guide*

  Contains in-depth information about the FortiGate high availability feature and the FortiGate clustering protocol.
- *FortiGate IPS User Guide*

  Describes how to configure the FortiGate Intrusion Prevention System settings and how the FortiGate IPS deals with some common attacks.
- *FortiGate IPSec VPN User Guide*

  Provides step-by-step instructions for configuring IPSec VPNs using the web-based manager.
- *FortiGate SSL VPN User Guide*

  Compares FortiGate IPSec VPN and FortiGate SSL VPN technology, and describes how to configure web-only mode and tunnel-mode SSL VPN access for remote users through the web-based manager.
- *FortiGate PPTP VPN User Guide*

  Explains how to configure a PPTP VPN using the web-based manager.
- *FortiGate Certificate Management User Guide*

  Contains procedures for managing digital certificates including generating certificate requests, installing signed certificates, importing CA root certificates and certificate revocation lists, and backing up and restoring installed certificates and private keys.
- *FortiGate VLANs and VDOMs User Guide*

  Describes how to configure VLANs and VDOMS in both NAT/Route and Transparent mode. Includes detailed examples.

Fortinet Tools and Documentation CD

All Fortinet documentation is available from the Fortinet Tools and Documentation CD shipped with your Fortinet product. The documents on this CD are current at shipping time. For up-to-date versions of Fortinet documentation see the Fortinet Technical Documentation web site at http://docs.forticare.com.

Fortinet Knowledge Center

Additional Fortinet technical documentation is available from the Fortinet Knowledge Center. The knowledge center contains troubleshooting and how-to articles, FAQs, technical notes, and more. Visit the Fortinet Knowledge Center at http://kc.forticare.com.

Comments on Fortinet technical documentation

Please send information about any errors or omissions in this document, or any Fortinet technical documentation, to techdoc@fortinet.com.

Customer service and technical support

Fortinet Technical Support provides services designed to make sure that your Fortinet systems install quickly, configure easily, and operate reliably in your network.

Please visit the Fortinet Technical Support web site at http://support.fortinet.com to learn about the technical support services that Fortinet provides.

Installing the FortiGate unit

This section provides information on installing and setting up the FortiGate unit on your network. This chapter includes the following sections:

- Package Contents
- Mounting
- Powering on the FortiGate unit
- Connecting to the FortiGate unit

Package Contents

Review the contents of your FortiGate package to ensure all components were included.

FortiGate-50A

The FortiGate-50A package contains the following items:

- FortiGate-50A Unified Threat Management System
- one orange crossover Ethernet cable (Fortinet part number CC300248)
- one gray straight-through Ethernet cable (Fortinet part number CC300249)
- one RJ-45 to DB-9 serial cable (Fortinet part number CC300247)
- one AC adapter and power cable
- FortiGate-50A QuickStart Guide
- Fortinet Tools and Documentation CD

Figure 1: FortiGate-50A package contents

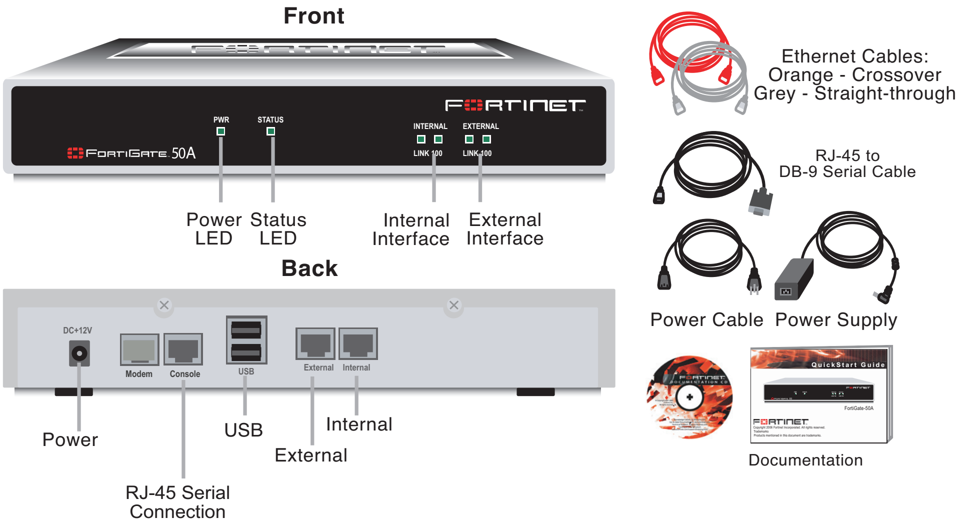


Table 1: Technical Specifications

Dimensions	8.63 x 6.13 x 1.38 in. (21.9 x 15.6 x 3.5 cm)
Weight	1.5 lb. (0.68 kg)
Power Requirements	DC input voltage: 12V DC input current: 3A
Environmental Specifications	Operating temperature: 32 to 104 F (0 to 40 C) Storage temperature: -13 to 158 F (-25 to 70 C) Humidity: 5 to 95% non-condensing

FortiGate-50B

The FortiGate-50B package contains the following items:

- FortiGate-50B Unified Threat Management System
- one gray straight-through Ethernet cable (Fortinet part number CC300249)
- one RJ-45 to DB-9 serial cable (Fortinet part number CC300247)
- one AC adapter and power cable
- FortiGate-50B QuickStart Guide
- Fortinet Tools and Documentation CD

Figure 2: FortiGate-50B package contents

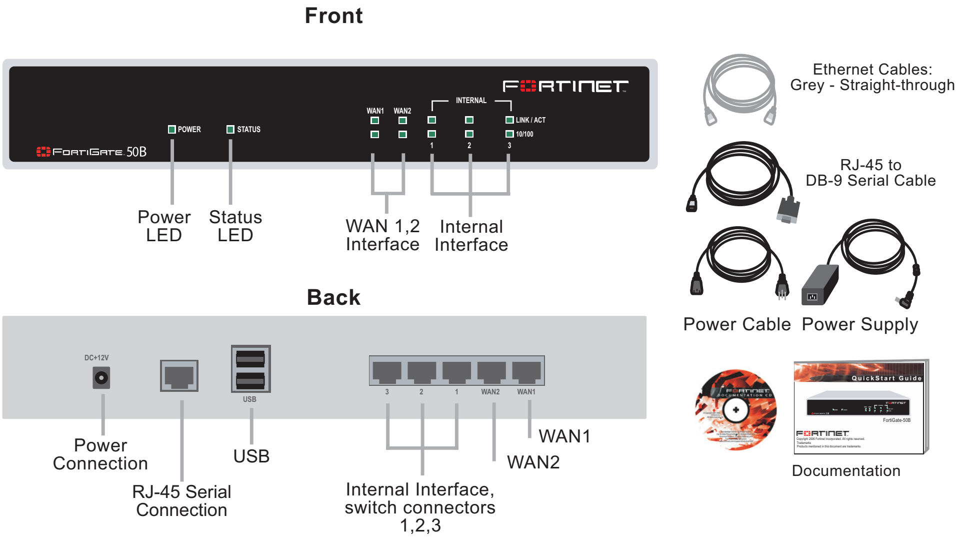


Table 2: Technical Specifications

Dimensions	8.5 x 1.4 x 5.8in. (21.6 x 14.8 x 3.6 cm)
Weight	1.6 lb. (0.73 kg)
Power Requirements	DC input voltage: 12V DC input current: 3A
Environmental Specifications	Operating temperature: 32 to 104 F (0 to 40 C) Storage temperature: -13 to 158 F (-25 to 70 C) Humidity: 5 to 95% non-condensing

FortiWiFi-50B

The FortiWiFi-50B package contains the following items:

- FortiWiFi-50B Unified Threat Management System
- one gray straight-through Ethernet cable (Fortinet part number CC300249)
- one RJ-45 to DB-9 serial cable (Fortinet part number CC300247)
- one AC adapter and power cable
- two mounting brackets
- FortiWiFi-50B QuickStart Guide
- Fortinet Tools and Documentation CD

Figure 3: FortiWiFi-50B package contents

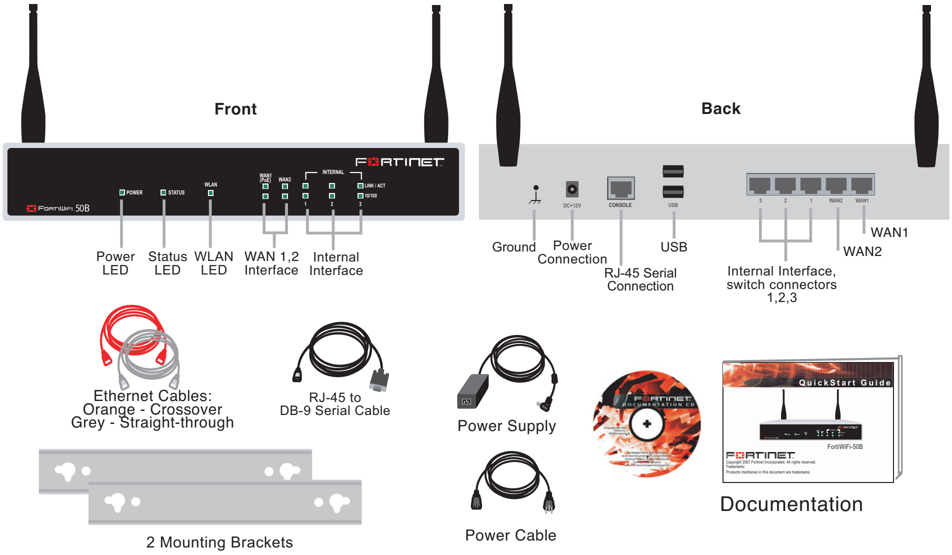


Table 3: Technical Specifications

Dimensions	8.5 x 1.4 x 5.8in. (21.6 x 14.8 x 3.6 cm)
Weight	1.6 lb. (0.73 kg)
Power Requirements	DC input voltage: 12V DC input current: 3A
Environmental Specifications	Operating temperature: 32 to 104 F (0 to 40 C) Storage temperature: -13 to 158 F (-25 to 70 C) Humidity: 5 to 95% non-condensing

FortiGate-100

The FortiGate-100 package contains the following items:

- FortiGate-100 Unified Threat Management System
- one orange crossover Ethernet cable (Fortinet part number CC300248)
- one gray straight-through Ethernet cable (Fortinet part number CC300249)
- one null-modem cable
- one AC adapter and power cable
- FortiGate-100 QuickStart Guide
- Fortinet Tools and Documentation CD

Figure 4: FortiGate-100 package contents

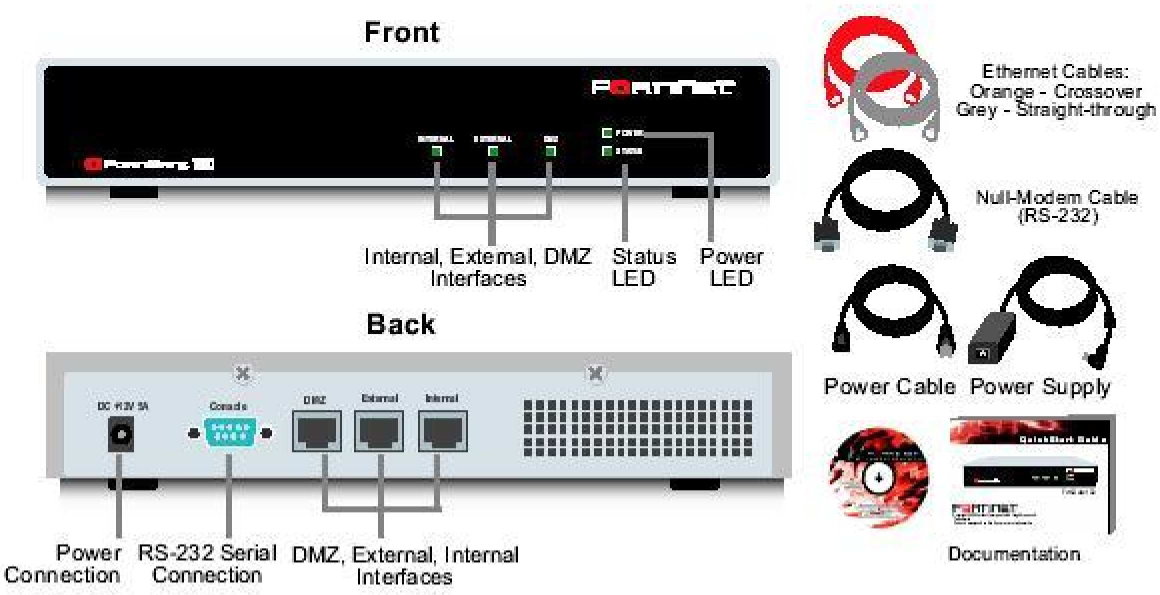

Front
Internal, External, DMZ Interfaces
Status LED
Power LED
Back
Power Connection
RS-232 Serial Connection
DMZ, External, Internal Interfaces
Ethernet Cables: Orange - Crossover Grey - Straight-through
Null-Modem Cable (RS-232)
Power Cable
Power Supply
Documentation

Table 4: Technical Specifications

Dimensions	10.25 x 6.13 x 1.75 in. (26 x 15.6 x 345 cm)
Weight	1.75 lb. (0.8 kg)
Power Requirements	DC input voltage: 12V DC input current: 5A
Environmental Specifications	Operating temperature: 32 to 104 F (0 to 40 C) Storage temperature: -13 to 158 F (-25 to 70 C) Humidity: 5 to 95% non-condensing

Warning: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

The equipment compliance with FCC radiation exposure limit set forth for uncontrolled Environment.

Changes or modifications to this unit not expressly approved by the party responsible for compliance will void the user's authority to operate the equipment. Any change to the equipment will void FCC grant.

Mounting

Install the FortiGate unit on any stable, flat surface. Make sure the unit has at least 1.5 in. (3.75 cm) of clearance on each side to allow for adequate air flow and cooling.

Powering on the FortiGate unit

The FortiGate unit does not have an on/off switch.

To power on the FortiGate unit

1 Connect the AC adapter to the power connection at the back of the FortiGate unit.

2 Connect the AC adapter to the power cable.

3 Connect the power cable to a power outlet.

The FortiGate unit starts and the Power and Status LEDs light up. The Status LED flashes while the FortiGate unit starts up.

Table 5: FortiGate-50A and FortiGate-100 LED indicators

LED	State	Description
Power	Green	The FortiGate unit is powered on.
	Off	The FortiGate unit is powered off.
Status	Flashing	The FortiGate unit is starting up.
	Off	The FortiGate unit is running normally.
Internal **External** **DMZ (FortiGate-100)**	Green	The correct cable is in use, and the connected equipment has power.
	Flashing green	Network activity at this interface.
	Off	No link established.
Internal External DMZ (FortiGate-100 interfaces (back)	Green	The correct cable is in use, and the connected equipment has power.
	Flashing amber	Network activity at this interface.
	Off	No link established.

Table 6: FortiGate-50B and FortiWiFi-50B LED indicators

LED	State	Description
Power	Green	The FortiGate unit is powered on.
	Off	The FortiGate unit is powered off.
Status	Flashing	The FortiGate unit is starting up.
	Off	The FortiGate unit is running normally.
WLAN (WiFi-50B)	Green	Wireless port is up.
	Off	Wireless port is down.
Link/Activity	Green	The correct cable is in use, and the connected equipment has power.
	Flashing green	Network activity at this interface.
	Off	No link established.
10/100	Green	The interface is connected at 100 Mbps.

Power over Ethernet

Power over Ethernet (PoE) is a method of powering Ethernet capable devices using CAT5 Ethernet cable to carry both data and power to a device, eliminating the need for a standard power source.

The FortiWiFi-50B includes the availability for PoE through the WAN1 port. The FortiWiFi-50B supports the IEEE 802.3af standard as a Powered Device (PD) using CAT5 Ethernet cable.

This enables you to place the FortiWiFi-50B in locations where connecting to a standard power source is inconvenient or impractical.

⚠ **Caution:** Attach a grounding cable to the Ground input in the FortiWiFi-50B and connect to a grounding source to avoid potential damage to the device in the event of a power surge.

Powering off the FortiGate unit

Always shut down the FortiGate operating system properly before turning off the power switch to avoid potential hardware problems.

To power off the FortiGate unit

1. From the web-based manager, go to **System > Status**.
2. In the Unit Operation display, select Shutdown, or from the CLI, enter:

```
execute shutdown
```

3. Disconnect the power supply.

Connecting to the FortiGate unit

There are two methods of connecting and configuring the basic FortiGate settings:

- the web-based manager

- the command line interface (CLI)

Web-based manager

You can configure and manage the FortiGate unit using HTTP or a secure HTTPS connection from any computer running Microsoft Internet Explorer or recent browser. The web-based manager supports multiple languages.

Use the web-based manager to configure most FortiGate settings, and monitor the status of the FortiGate unit.

Command line interface

You can access the FortiGate command line interface (CLI) by connecting a management computer serial port to the FortiGate serial console connector. You can also use Telnet or a secure SSH connection to the CLI from any network that is connected to the FortiGate unit, including the Internet.

Connecting to the web-based manager

Use the following procedure to connect to the web-based manager for the first time. Configuration changes made with the web-based manager are effective immediately, without resetting the firewall or interrupting service.

To connect to the web-based manager, you require:

- a computer with an Ethernet connection
- Microsoft Internet Explorer version 6.0 or higher or any recent version of most popular web browser
- a crossover Ethernet cable or an Ethernet hub with two Ethernet cables

Note: Before starting Internet Explorer, (or any recent version of the most popular web browser), ping to your FortiGate unit to see if the connection between the computer and the FortiGate unit is working properly.

To connect to the web-based manager

1 Set the IP address of the computer with an Ethernet connection to the static IP address 192.168.1.2 with a netmask of 255.255.255.0.

You can also configure the management computer to obtain an IP address automatically using DHCP. The FortiGate DHCP server assigns the management computer an IP address in the range 192.168.1.1 to 192.168.1.254.

2 Using the crossover cable or the Ethernet hub and cables, connect the internal interface of the FortiGate unit to the computer Ethernet connection.

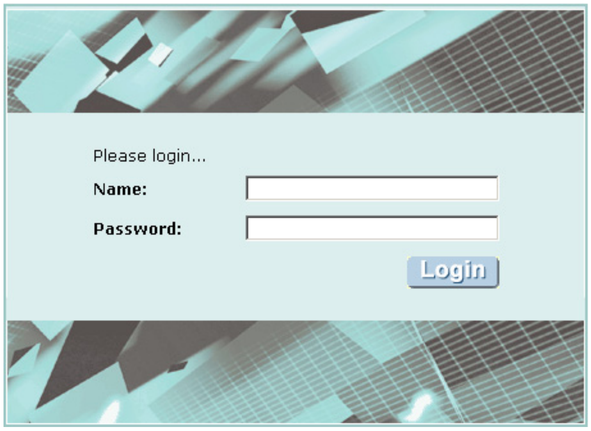
3 Start Internet Explorer and browse to the address https://192.168.1.99. (remember to include the “s” in https://).

To support a secure HTTPS authentication method, the FortiGate unit ships with a self-signed security certificate, which is offered to remote clients whenever they initiate a HTTPS connection to the FortiGate unit. When you connect, the FortiGate unit displays two security warnings in the browser.

The first warning prompts you to accept and optionally install the FortiGate unit's self-signed security certificate. If you do not accept the certificate, the FortiGate unit refuses the connection. If you accept the certificate, the FortiGate login page appears. The credentials entered are encrypted before they are sent to the FortiGate unit. If you choose to accept the certificate permanently, the warning is not displayed again.

Just before the FortiGate login page is displayed, a second warning informs you that the FortiGate certificate distinguished name differs from the original request. This warning occurs because the FortiGate unit redirects the connection. This is an informational message. Select OK to continue logging in.

Figure 5: FortiGate login



4 Type `admin` in the Name field and select Login.

After logging into the web-based manager, the web browser displays the system dashboard. The dashboard provides you with all system status information in one location. For details on the information displayed on the dashboard, see the *FortiGate Administration Guide*.

Command line interface

You can access the FortiGate command line interface (CLI) by connecting a management computer serial port to the FortiGate serial console connector. You can also use Telnet or a secure SSH connection to connect to the CLI from any network that is connected to the FortiGate unit, including the Internet.

The CLI supports the same configuration and monitoring functionality as the web-based manager. In addition, you can use the CLI for advanced configuration options that are not available from the web-based manager. This guide contains information about basic and advanced CLI commands. For a more complete description about connecting to and using the FortiGate CLI, see the *FortiGate CLI Reference*.

Connecting to the CLI

As an alternative to the web-based manager, you can install and configure the FortiGate unit using the CLI. Configuration changes made with the CLI are effective immediately, without resetting the firewall or interrupting service.

To connect to the FortiGate CLI you require:

- a computer with an available communications port
- the RJ-45 to DB-9 serial cable or null-modem cable included in your FortiGate package.
- terminal emulation software such as HyperTerminal for Microsoft Windows.

Note: The following procedure uses Microsoft Windows HyperTerminal software. You can apply these steps to any terminal emulation program.

To connect to the CLI

1 Connect the RJ-45 to DB-9 serial cable or null-modem cable to the communications port of your computer and to the FortiGate Console port.

2 Start HyperTerminal, enter a name for the connection and select OK.

3 Configure HyperTerminal to connect directly to the communications port on your computer and select OK.

4 Select the following port settings and select OK.

Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

5 Press Enter to connect to the FortiGate CLI.
The login prompt appears.

6 Type `admin` and press Enter twice.
The following prompt is displayed:

```
Welcome!
```

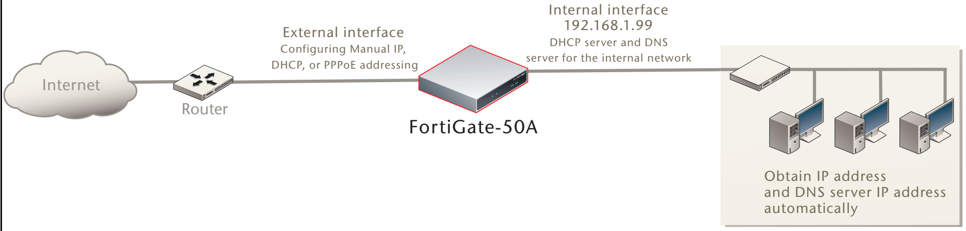
Type ? to list available commands. For information about how to use the CLI, see the *FortiGate CLI Reference*.

Quick installation using factory defaults

You can quickly set up your FortiGate unit for a home or small office using the web-based manager and the factory default FortiGate configuration. All you need to do is set your network computers to obtain an IP address automatically and to obtain DNS server IP addresses automatically (using DHCP), access the web-based manager, and configure the required settings for the FortiGate external interface. You can also configure FortiGate DNS servers and add a FortiGate default route if needed.

The FortiGate internal interface acts as a DHCP server for the internal network, automatically assigning IP addresses to computers (up to 100 computers) in the range of 192.168.1.110 –192.168.1.210.

Figure 6: Quick configuration using default settings



The FortiGate DHCP server also assigns the DNS server IP address 192.168.1.99 to each computer on the internal network. As a result, the FortiGate unit internal interface acts as a DNS server for the internal network. Using DNS forwarding, the FortiGate unit forwards DNS requests received from the internal network to the DNS server IP addresses added to the FortiGate unit configuration and returns lookup results to the internal network.

For more information about default DHCP server settings see “Factory default DHCP server configuration” on page 28.

The following procedure describes how to configure your internal network and the FortiGate unit to use the FortiGate default settings.

1 Connect the FortiGate unit between the internal network and the Internet and turn on the power.

2 Set the TCP/IP properties of the network computers to obtain an IP address automatically and a DNS server IP address automatically (using DHCP).

3 From the management computer, browse to https://192.168.1.99.

4 Go to **System > Network > Interface** and select Edit for the External or WAN1 interface.

5 Select one of the following Addressing modes

- Manual: enter a static IP address and netmask, select OK, and go to step 6
- DHCP: to get an IP address from the Internet Service Provider (ISP) select DHCP and go to step 9
- PPPoE: to get an IP address from the ISP select PPPoE and go to step 9

6 Go to **System > Network > Options**.

7 Select one of the following DNS settings

- Obtain DNS server address automatically: select to get the DNS addresses from the ISP, select Apply
- Use the following DNS server addresses: select and enter the DNS server addresses given to you by the ISP, select Apply

8 Go to **Router > Static**, edit route #1 and change Gateway to the default gateway IP address from the ISP and select OK.

Network configuration is complete. Proceed to “Next steps” on page 46.

9 Select Retrieve default gateway from server and Override internal DNS options if your ISP supports them, select OK, and proceed to “Next steps” on page 46.

Go to step 6 if you are not selecting these options.

Factory defaults

The FortiGate unit ships with a factory default configuration. The default configuration enables you to connect to and use the FortiGate web-based manager to configure the FortiGate unit onto the network. To configure the FortiGate unit, you add an administrator password, change network interface IP addresses, add DNS server IP addresses, and, if required, configure basic routing.

If you plan to operate the FortiGate unit in Transparent mode, you can switch to Transparent mode from the factory default configuration and then configure the FortiGate unit onto the network.

Once you complete the network configuration, you can perform additional configuration tasks such as setting system time, configuring virus and attack definition updates, and registering the FortiGate unit.

The factory default firewall configuration includes a single network address translation (NAT) policy that allows users on your internal network to connect to the external network, and stops users on the external network from connecting to the internal network. You can add more firewall policies to provide more control of the network traffic passing through the FortiGate unit.

You can use the factory default protection profiles to apply different levels of antivirus protection, web content filtering, spam filtering, and IPS to the network traffic that is controlled by firewall policies.

This section includes the following topics:

Factory default DHCP server configuration

With the FortiGate-50 series, you can quickly configure the internal network and the FortiGate unit by using the factory default DHCP server settings. See "Quick installation using factory defaults" on page 24

Table 7: FortiGate DHCP Server default configuration

Name	internal_dhcp_server
Interface	Internal
Default Gateway	192.168.1.99
IP Range	192.168.1.110 – 192.168.1.210
Network Mask	255.255.255.0
Lease Time	7 days
DNS Server 1	192.168.1.99

Factory default NAT/Route mode network configuration

When the FortiGate unit is first powered on, it is running in NAT/Route mode and has the basic network configuration listed in Table 8 on page 28. This configuration enables you to connect to the FortiGate unit web-based manager and establish the configuration required to connect the FortiGate unit to the network. In Table 8 on page 28, HTTPS administrative access means you can connect to the web-based manager using HTTPS protocol through this interface. Ping administrative access means this interface responds to ping requests.

Table 8: Factory default NAT/Route mode network configuration

Administrator account	User name: Password:	admin (none)
Internal interface	IP: Netmask: Administrative Access:	192.168.1.99 255.255.255.0 HTTP, HTTPS, Ping
External interface (FortiGate-50A/100) **WAN1 (FortiGate-50B/ WiFi-50B)**	IP: Netmask: Administrative Access:	192.168.100.99 255.255.255.0 Ping
WAN2 (FortiGate-50B/ WiFi-50B)	IP: Netmask: Administrative Access:	192.168.101.99 255.255.255.0 Ping
DMZ interface (FortiGate-50A/100)	IP: Netmask: Administrative Access:	10.10.10.1 255.255.255.0 HTTPS, Ping
WLAN interface (FortiWiFi-50B)	IP: Netmask: Administrative Access:	10.10.80.1 255.255.255.0 Ping

Table 8: Factory default NAT/Route mode network configuration (Continued)

Network Settings	Default Gateway (for default route)	192.168.100.1
	Interface connected to external network (for default route)	external
	Default Route A default route consists of a default gateway and the name of the interface connected to the external network (usually the Internet). The default gateway directs all non-local traffic to this interface and to the external network.	
	Primary DNS Server	65.39.139.53
	Secondary DNS Server	65.39.139.63

Factory default Transparent mode network configuration

In Transparent mode, the FortiGate unit has the default network configuration listed in Table 9.

Table 9: Factory default Transparent mode network configuration

Administrator account	User name:	admin
	Password:	(none)
Management IP	IP:	0.0.0.0
	Netmask:	0.0.0.0
DNS	Primary DNS Server:	65.39.139.53
	Secondary DNS Server:	65.39.139.63
Administrative access	Internal	HTTPS, Ping
	External	Ping
	DMZ	HTTPS, Ping

Factory default firewall configuration

FortiGate firewall policies control how all traffic is processed by the FortiGate unit. Until firewall policies are added, no traffic can pass through the FortiGate unit. The factory default configuration contains one firewall policies to allows all traffic through the FortiGate unit. To allow specific traffic through the FortiGate unit, you can add firewall policies. See the *FortiGate Administration Guide* for information about adding firewall policies.

The following firewall configuration settings are included in the default firewall configuration to make it easier to add firewall policies.

Table 10: Factory default firewall configuration

Configuration setting	Name	Description
Firewall policy	Internal -> External	Source: All Destination: All
Firewall address	All	Firewall address matches the source or destination address of any packet.
Pre-defined service	More than 50 predefined services	Select from any of the 50 pre-defined services to control traffic through the FortiGate unit that uses that service.
Recurring schedule	Always	The recurring schedule is valid at any time.
Protection Profiles	Strict, Scan, Web, Unfiltered	Control how the FortiGate unit applies virus scanning, web content filtering, spam filtering, and IPS.

The factory default firewall configuration is the same in NAT/Route mode and Transparent mode.

Factory default protection profiles

Use protection profiles to apply different protection settings for traffic controlled by firewall policies. You can use protection profiles to:

- configure antivirus protection for HTTP, FTP, IMAP, POP3, and SMTP firewall policies
- configure Web filtering for HTTP firewall policies
- configure Web category filtering for HTTP firewall policies
- configure spam filtering for IMAP, POP3, and SMTP firewall policies
- enable the Intrusion Protection System (IPS) for all services
- enable content logging for HTTP, FTP, IMAP, POP3, and SMTP firewall policies

By using protection profiles, you can build protection configurations that can be applied to different types of firewall policies. This allows you to customize types and levels of protection for different firewall policies.

For example, while traffic between internal and external addresses might need strict protection, traffic between trusted internal addresses might need moderate protection. You can configure firewall policies for different traffic services to use the same or different protection profiles.

You can add Protection profiles to NAT/Route mode and Transparent mode firewall policies. The FortiGate unit includes four protection profiles.

Strict To apply maximum protection to HTTP, FTP, IMAP, POP3, and SMTP traffic. You may not use the strict protection profile under normal circumstances but it is available if you have problems with viruses and require maximum screening.

Scan To apply antivirus scanning and file quarantining to HTTP, FTP, IMAP, POP3, and SMTP content traffic.

Web To apply antivirus scanning and web content blocking to HTTP content traffic. You can add this protection profile to firewall policies that control HTTP traffic.

Unfiltered To apply no scanning, blocking or IPS. Use if you do not want to apply content protection to content traffic. You can add this protection profile to firewall policies for connections between highly trusted or highly secure networks where content does not need to be protected.

Restoring the default settings

You can revert to the factory default settings if you change a network setting and are unable to recover from it.

⚠ **Caution:** This procedure deletes all changes you have made to the FortiGate configuration and reverses the system to its original configuration, including resetting interface addresses.

Restoring the default settings using the web-based manager

To reset the default settings

1. Go to **System > Status**.
2. In Unit Operation Display, select Reset.

Restoring the default settings using the CLI

To reset the default settings enter the following command:

```
execute factoryreset
```

Configuring the FortiGate unit

This section provides an overview of the operating modes of the FortiGate unit. Before beginning to configure the FortiGate unit, you need to plan how to integrate the unit into your network. Your configuration plan depends on the operating mode you select: NAT/Route mode or Transparent mode.

This section includes the following topics:

Planning the FortiGate configuration

Before you configure the FortiGate unit, you need to plan how to integrate the unit into the network. Among other things, you must decide whether you want the unit to be visible to the network, which firewall functions you want it to provide, and how you want it to control the traffic flowing between its interfaces.

Your configuration plan depends on the operating mode you select. You can also configure the FortiGate unit and the network it protects using the default settings.

NAT/Route mode

In NAT/Route mode, the FortiGate unit is visible to the network. Like a router, all its interfaces are on different subnets. The following interfaces are available in NAT/Route mode:

Table 11: NAT/Route mode network segments

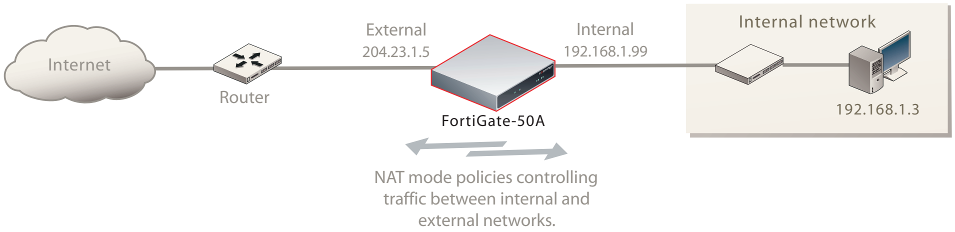
FortiGate Unit	Internal Interface	External Interface	Other
FortiGate-50A	Internal	External	Modem
FortiGate-50B	Internal	WAN1	WAN2
FortiWiFi-50B	Internal	WAN1	WAN2
FortiGate-100A	Internal	External	DMZ

Modem is the interface for connecting an external modem to the FortiGate-50A. See “Configuring the modem for the FortiGate-50A” on page 53.

You can add firewall policies to control whether communications through the FortiGate unit operating in NAT or Route mode. Firewall policies control the flow of traffic based on the source address, destination address, and service of each packet. In NAT mode, the FortiGate unit performs network address translation before it sends the packet to the destination network. In Route mode, there is no address translation.

You typically use NAT/Route mode when the FortiGate unit is operating as a gateway between private and public networks. In this configuration, you create NAT mode firewall policies to control traffic flowing between the internal, private network and the external, public network (usually the Internet).

Figure 7: Example NAT/Route mode network configuration for a FortiGate-50A.



NAT/Route mode with multiple external network connections

In NAT/Route mode, you can configure the FortiGate unit with multiple redundant connections to the external network (usually the Internet).

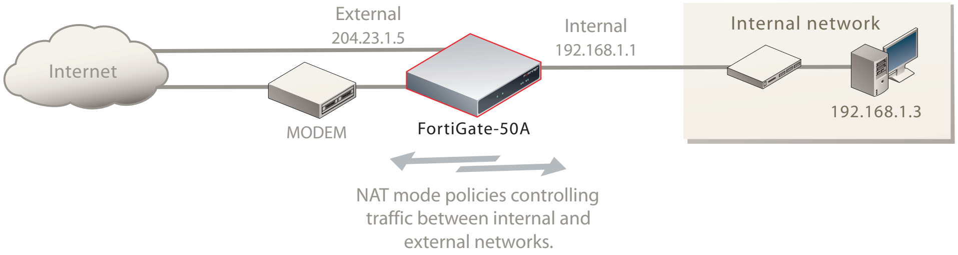
For example, you could create the following configuration:

- External or WAN1 is the default interface to the external network (usually the Internet)
- Modem is the redundant interface to the external network for the FortiGate-50A
- WAN2 is the redundant interface to the external network on the FortiGate-50B and FortiWiFi-50B.
- DMZ is the redundant interface to the external network on the FortiGate-100
- Internal is the interface to the internal network

You must configure routing to support redundant Internet connections. Routing can automatically redirect connections from an interface if its connection to the external network fails.

Otherwise, security policy configuration is similar to a NAT/Route mode configuration with a single Internet connection. You would create NAT mode firewall policies to control traffic flowing between the internal, private network and the external, public network (usually the Internet).

Figure 8: NAT/Route multiple internet connection configuration for a FortiGate-50A

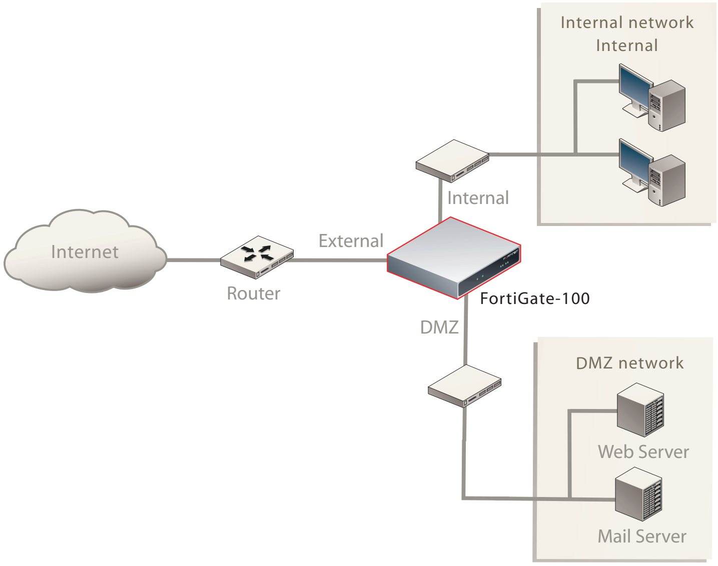


Transparent mode

In Transparent mode, the FortiGate unit is invisible to the network. Similar to a network bridge, all FortiGate interfaces must be on the same subnet. You only have to configure a management IP address so that you can make configuration changes. The management IP address is also used for antivirus and attack definition updates.

You typically use the FortiGate unit in Transparent mode on a private network behind an existing firewall or behind a router. The FortiGate unit performs firewall functions, IPSec VPN, virus scanning, IPS web content filtering, and Spam filtering.

Figure 9: Example Transparent mode network configuration for a FortiGate-100



Preventing the public interface from responding to ping requests

The factory default configuration of your FortiGate unit allows the default public interface to respond to ping requests. The default public interface is also called the default external interface, and is the interface of the FortiGate unit that is usually connected to the Internet.

For the most secure operation, you should change the configuration of the external interface so that it does not respond to ping requests. Not responding to ping requests makes it more difficult for a potential attacker to detect your FortiGate unit from the Internet.

A FortiGate unit responds to ping requests if ping administrative access is enabled for that interface. You can use the following procedures to disable ping access for the external interface of a FortiGate unit. You can use the same procedure for any FortiGate interface. You can also use the same procedure in NAT/Route or Transparent mode.

To disable ping administrative access from the web-based manager

1. Log into the FortiGate web-based manager.
2. Go to **System > Network > Interface**.
3. Choose the external interface and select Edit.
4. Clear the Ping Administrative Access check box.
5. Select OK.

To disable ping administrative access from the FortiGate CLI

1. Log into the FortiGate CLI.
2. Disable administrative access to the external interface. Enter:

```
config system interface
    edit external
      unset allowaccess
  end
```

NAT/Route mode installation

This section describes how to install the FortiGate unit in NAT/Route mode. This section includes the following topics:

- Preparing to configure the FortiGate unit in NAT/Route mode
- DHCP or PPPoE configuration
- Using the web-based manager
- Using the command line interface
- Connecting the FortiGate unit to the network(s)
- Configuring the networks

Preparing to configure the FortiGate unit in NAT/Route mode

Use Table 12 on page 36 to gather the information you need to customize NAT/Route mode settings.

You can configure the FortiGate unit in two ways:

- The web-based manager GUI is a complete interface for configuring most settings. See “Using the web-based manager” on page 37.
- The command line interface (CLI) is a complete text-based interface for configuring all settings. See “Using the command line interface” on page 39.

The method you choose depends on the complexity of the configuration, access and equipment, and the type of interface you are most comfortable using.

Table 12: NAT/Route mode settings

Administrator Password:		
Internal	IP:	______ . ______ . ______ . ______
	Netmask:	______ . ______ . ______ . ______
External/WAN1	IP:	______ . ______ . ______ . ______
	Netmask:	______ . ______ . ______ . ______
DMZ/WAN2	IP:	______ . ______ . ______ . ______
	Netmask:	______ . ______ . ______ . ______
Network settings	Default Gateway:	______ . ______ . ______ . ______
	(Interface connected to external network)	
	A default route consists of a default gateway and the name of the interface connected to the external network (usually the Internet). The default gateway directs all non-local traffic to this interface and to the external network.	
	Primary DNS Server:	______ . ______ . ______ . ______
	Secondary DNS Server:	______ . ______ . ______ . ______

DHCP or PPPoE configuration

You can configure any FortiGate interface to acquire its IP address from a DHCP or PPPoE server. Your Internet Service Provider (ISP) may provide IP addresses using one of these protocols.

To use the FortiGate DHCP server, you need to configure an IP address range and default route for the server. No configuration information is required for interfaces that are configured to use DHCP.

PPPoE requires you to supply a user name and password. In addition, PPPoE unnumbered configurations require you to supply an IP address. Use Table 13 to record the information you require for your PPPoE configuration.

Table 13: PPPoE setting

User name:	
Password:	

Note: The FortiGate-50A includes default DHCP settings.

Using the web-based manager

You can use the web-based manager for the initial configuration of the FortiGate unit and all FortiGate unit settings. For information about connecting to the web-based manager, see "Connecting to the web-based manager" on page 21.

Configuring basic settings

After connecting to the web-based manager, use the following procedures to complete the basic configuration of the FortiGate unit.

To add/change the administrator password

1 Go to **System > Admin > Administrators**.

2 Select the Change Password icon for the admin administrator.

3 Enter the new password and enter it again to confirm.

4 Select OK.

To configure interfaces

1 Go to **System > Network > Interface**.

2 Select the edit icon for an interface.

3 Set the addressing mode for the interface.
Choose from manual, DHCP, or PPPoE.

4 Complete the addressing configuration.

- For manual addressing, enter the IP address and netmask for the interface.
- For DHCP addressing, select DHCP and any required settings.
- For PPPoE addressing, select PPPoE, and enter the username and password and any other required settings.

For information about how to configure these and other interface settings, see the FortiGate online help or the *FortiGate Administration Guide*.

5 Select OK.

6 Repeat this procedure for each interface.

Note: If you change the IP address of the interface you are connecting to, you must connect through a web browser again using the new address. Browse to https:// followed by the new IP address of the interface. If the new IP address of the interface is on a different subnet, you may have to change the IP address of your computer to the same subnet.

To configure DNS server settings

1 Go to **System > Network > Options**.

2 Enter the IP address of the primary DNS server.

3 Enter the IP address of the secondary DNS server.

4 Select Apply.

Adding a default route

Add a default route to configure where the FortiGate unit sends traffic destined for an external network (usually the Internet). Adding the default route also defines which interface is connected to an external network. The default route is not required if the interface connected to the external network is configured using DHCP or PPPoE.

To add a default route

1 Go to **Router > Static**.

2 If the Static Route table contains a default route (IP and Mask set to 0.0.0.0), select the Delete icon to delete this route.

3 Select Create New.

4 Set Destination IP to 0.0.0.0.

5 Set Mask to 0.0.0.0.

6 Set Gateway to the default gateway IP address.

7 Set Device to the interface connected to the external network.

8 Select OK.

Verifying the web-based manager configuration

To verify access settings, go to the interface you want to verify and select the edit icon. The Administrative Access field should have check marks beside the settings you chose in the preceeding steps.

Verify the connection

To verify your connection, try the following:

- browse to www.fortinet.com
- retrieve or send email from your email account

If you cannot browse to the web site or retrieve/send email from your account, review the previous steps to ensure all information was entered correctly and try again.

Using the command line interface

You can also configure the FortiGate unit using the command line interface (CLI). For information about connecting to the CLI, see "Connecting to the CLI" on page 23.

Configuring the FortiGate unit to operate in NAT/Route mode

Use the information you gathered in Table 12 on page 36 to complete the following procedures.

To add/change the administrator password

1 Log in to the CLI.

2 Change the admin administrator password. Enter:

```
config system admin
    edit admin
        set password <psswrd>
  end
```

To configure interfaces

1 Log in to the CLI.

2 Set the IP address and netmask of the internal interface to the internal IP address and netmask you recorded in Table 12 on page 36. Enter:

```
config system interface
    edit <interface>
        set mode static
        set ip <address_ip> <netmask>
  end
```

Example

```
config system interface
    edit internal
        set mode static
        set ip 192.168.120.99 255.255.255.0
  end
```

3 Set the IP address and netmask of the external interface to the external IP address and netmask you recorded in Table 12 on page 36.

```
config system interface
    edit <interface>
        set mode static
        set ip <address_ip> <netmask>
  end
```

Example

```
config system interface
    edit external
        set mode static
        set ip 10.10.1.5 255.255.255.0
  end
```

To set the external interface to use DHCP, enter:

```
config system interface
    edit <interface>
        set mode dhcp
  end
```

To set the external interface to use PPPoE, enter:

```
config system interface
    edit <interface>
        set mode pppoe
        set connection enable
        set username <name_str>
        set password <psswrd>
  end
```

4 Use the same syntax to set the IP address of each FortiGate interface as required.

5 Confirm that the addresses are correct. Enter:

```
get system interface
```

The CLI lists the IP address, netmask, and other settings for each of the FortiGate interfaces.

To configure DNS server settings

Set the primary and secondary DNS server IP addresses. Enter