

FortiGate®-3950B/3951B

10-GbE Consolidated Security Appliances



FortiGate-3950B and FortiGate-3951B consolidated security appliances offer unmatched levels of performance, scalability, and security for large enterprise networks and service providers. Built from the ground up by Fortinet, FortiGate-3950B/3951B appliances combine three essential elements to achieve these benefits; custom hardware including FortiASIC™ processors, a modular architecture for future growth, and consolidated security from the FortiOS™ operating system.

High-Performance Hardware

The FortiGate-3950B/3951B series provides up to 120 Gbps of firewall performance through the use of modular expansion capabilities and innovative FortiASIC processors. In addition, the FortiGate-3950B/3951B series boasts the highest overall consolidated security performance in the FortiGate appliance line. Wire-speed firewall performance at 10-GbE and GbE link speeds ensure that security won't slow your network.

Modular Scalability

FortiGate-3950B and FortiGate-3951B appliances feature a modular, space-saving 3-RU form factor, with up to five Fortinet Mezzanine Card (FMC) expansion bays. The FMC expansion bays allow you to customize your appliance for your unique network environment. The FortiGate-3951B model has one FMC bay dedicated to local storage, supporting up to four Fortinet Storage Modules (FSM). One 64 GB solid-state disk (SSD) FSM is included with each FortiGate-3951B. The FSM enables additional FortiOS software features such as local event storage and WAN optimization.

Consolidated Security

Using the advanced FortiOS operating system, FortiGate-3950B/3951B consolidated security appliances effectively neutralize a wide range of threats facing networks today. Whether deployed as high-performance firewalls, or as comprehensive consolidated security solutions, FortiGate appliances protect critical assets with some of the most effective security available today.

FortiOS 4.0 Software Redefines Network Security

FortiOS 4.0 is a purpose-built operating system that leverages the power of specialized FortiASIC processors to offer increased levels of security and performance. Fortinet developed FortiOS 4.0 software solely for the FortiGate consolidated security platform. FortiOS software enables a comprehensive suite of security services – firewall, VPN, intrusion prevention, anti-malware, antispam, Web filtering, application control, data loss prevention, vulnerability management, and endpoint network access control.

The FortiASIC Advantage

FortiASIC processors power FortiGate platforms. With exclusive hardware, the purpose built, high-performance network, security, and content processors use intelligent and proprietary digital engines to accelerate resource-intensive security services.

Features

Benefits



FortiGate-3950B Consolidated Security Appliance



FortiGate-3951B Consolidated Security Appliance

Hardware Accelerated Performance

FortiASIC processors ensure that FortiGate consolidated security appliances will keep pace with traffic flows in your network

Additional Capacity on Demand

Fortinet expansion slots provide greater flexibility by supporting additional hardware-accelerated ports and localized storage of event data

Consolidated Security Architecture

FortiGate consolidated security appliances offer better protection and lower cost when compared with multi-point security products

Centralized Management

FortiManager and FortiAnalyzer centralized management and reporting appliances simplify deployment, monitoring and maintenance of your security infrastructure

Technical Specifications - Appliances	FortiGate-3950B	FortiGate-3951B
Total Network Interfaces (Base / Max)	8 / 108 ¹	8 / 88 ¹
Hardware Accelerated 10-GbE SFP+ Interfaces	2 / 12 ¹	2 / 10 ¹
Hardware Accelerated GbE SFP Interfaces	4 / 104 ¹	4 / 84 ¹
Accelerated 10/100/1000 Interfaces	100 ¹	80 ¹
Management 10/100/1000 Interfaces	2	
Transceivers Included	2x SR SFP+	
Fortinet Mezzanine Card (FMC) Expansion Slots	5	4
Fortinet Storage Module (FSM) Expansion Slots	-	4
Local Solid State Disk Storage Included	-	64GB SSD (1x FSM-064)
System Performance		
Firewall Throughput (1518 byte UDP packets)	20 - 120 Gbps ^{1,2}	20 - 100 Gbps ^{1,2}
Firewall Throughput (512 byte UDP packets)	20 - 120 Gbps ^{1,2}	20 - 100 Gbps ^{1,2}
Firewall Throughput (64 byte UDP packets)	20 - 120 Gbps ^{1,2}	20 - 100 Gbps ^{1,2}
Firewall Throughput (Packets Per Second)	180 Mpps	150 Mpps
IPSec VPN Throughput (AES-256 + SHA-1)	8 - 50.5 Gbps ^{1,2}	8 - 42 Gbps ^{1,2}
IPS Throughput	12.5 Gbps ³	10 Gbps ³
Antivirus Throughput	1.5 Gbps	
Gateway-to-Gateway IPSec VPN Tunnels (System/VDOM)	10,000 / 5,000	
Client-to-Gateway IPSec VPN Tunnels	64,000	
Concurrent Sessions	10 Million	
New Sessions / Second	175,000	
Concurrent SSL-VPN Users (Recommended Max)	25,000	
SSL VPN Throughput	590 Mbps	
Firewall Policies (System/VDOM)	100,000 / 50,000	
Virtual Domains (Max/Default)	250 / 10	
Wireless Access Points Controlled	1,024	
Unlimited User Licenses	Yes	
Redundant Power Supplies (Hot-swappable)	Yes	
Dimensions		
Height	5.25" (13.3 cm) - 3 RU	
Width	17.5" (44.4 cm)	
Length	27.65" (70.2 cm)	
Weight	60.0 lb (27 Kg)	
Rack Mountable	Yes	
Environment		
AC Power	100-240 VAC, 50-60 Hz, 7.0 - 12.0 Amp (Max)	
Power Consumption (Avg)	507 W	
Heat Dissipation	1,728 BTU/h	
Operating Temperature	32 - 104 deg F (0 - 40 deg C)	
Storage Temperature	-31 - 158 deg F (-35 - 70 deg C)	
Humidity	20 to 90% non-condensing	
Compliance		
	FCC Class A Part 15, UL/CUL, C Tick, VCCI	



FortiGate-3950B (Front)



FortiGate-3951B (Front)



FortiGate-3950B/3951B (Rear)

FortiGate-3950B/3951B consolidated security appliances include:

- Multiple Deployment Modes (Transparent/Routing)
- Integrated Switch Fabric (ISF)
- Advanced Layer-2/3 Routing Capabilities
- High Availability (Active/Active, Active/Passive, Clustering)
- Virtual Domains (VDOMs)
- Data Center Traffic Optimization
- Traffic Shaping and Prioritization
- WAN Optimization
- Multiple Device Authentication Options

MANAGEMENT OPTIONS

- Local Web-Based Management Interface
- Command Line Management Interface (CLI)
- Local Event Logging (Memory/Disk if available)
- Centralized Management (FortiManager appliance required)
- Centralized Event Logging (FortiAnalyzer appliance required)

Technical Specifications - FMC Modules	FMC-XD2	FMC-XG2	FMC-C20	FMC-F20
Total Network Interfaces	2	2	20	20
Hardware Accelerated 10-GbE SFP+ Interfaces	2	2	-	-
Hardware Accelerated 1-GbE SFP Interfaces	-	-	-	20
Hardware Accelerated 10/100/1000 Interfaces	-	-	20	-
Transceivers Included	2x SR SFP+	2x SR SFP+	-	4x SX SFP
Firewall Throughput (1518 byte UDP packets)	20 Gbps	18 Gbps	20 Gbps	20 Gbps
Firewall Throughput (512 byte UDP packets)	20 Gbps	17 Gbps	20 Gbps	20 Gbps
Firewall Throughput (64 byte UDP packets)	20 Gbps	4.5 Gbps	20 Gbps	20 Gbps
IPSec VPN Throughput (AES-256 + SHA-1)	8 Gbps	6 Gbps	8.5 Gbps	8.5 Gbps
IPS Throughput	-	2.5 Gbps	-	-
Environment				
Power Consumption (AVG)	45 W	81.6 W	74.3 W	59.6 W
Heat Dissipation	154 BTU/h	278 BTU/h	304 BTU/h	244 BTU/h

All performance values are "up to" and vary depending on system configuration. Antivirus performance is benchmarked using HTTP traffic (32 Kbyte objects).

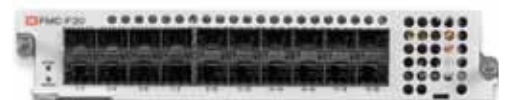
¹ Higher figure uses FMC modules to achieve the stated performance.

² Maximum Firewall and VPN system performance is based on fully populated system with FMC-XD2 modules.

³ Maximum IPS performance is based on fully populated system with FMC-XG2 modules.



FMC-C20 Module



FMC-F20 Module

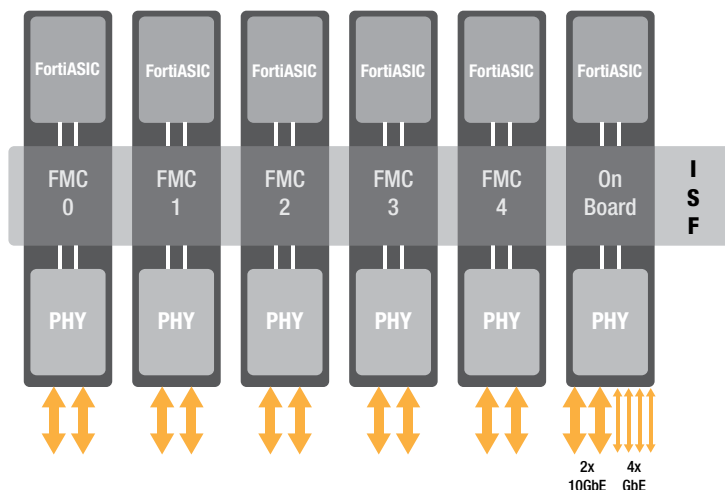


FMC-XD2 Accelerated Interface Module
(Firewall Acceleration)



FMC-XG2 Security Processing Module
(IPS Acceleration)

FortiGate-3950 Series Architecture



Fortinet High-Level Integrated Switch Fabric Architecture

FortiOS 4.0 - Redefining Network Security

FortiOS 4.0 is the system software that powers FortiGate consolidated security platforms. Developed solely for security, performance, and reliability, this purpose-built operating system leverages the power of FortiASIC processors. FortiOS 4.0 software includes a wide range of services that improve security while reducing operating and capital costs. FortiOS 4.0 combines an enterprise-class firewall, VPN (IPSec and SSL), intrusion prevention system (IPS), antivirus, Web filtering, antispam, data loss prevention (DLP), layer 2/3 routing services, WAN optimization, application control, SSL-encrypted traffic inspection, wireless controller, endpoint network access control (NAC), enhanced VoIP Security, and Vulnerability Management capabilities.

Integrated Switch Fabric

FortiGate-3950B/3951B high-performance consolidated security appliances bring together an Integrated Switch Fabric (ISF) and modular expansion capabilities. This combination provides a uniquely scalable forwarding and security processing architecture, all leveraging Fortinet-designed ASIC technologies. At the heart of the FortiGate-3950B/3951B series is a 240 Gbps switch fabric. The ISF enables full mesh connectivity between all FMC slots with each FMC slot providing 40 Gbps of connectivity bandwidth to the ISF. Bandwidth is divided between the physical port and the FortiASIC layer, meaning that any port will be able to utilize any FortiASIC processing resource found in any FMC slot without suffering a performance penalty.

Fortinet Mezzanine Card Expansion

The Fortinet Mezzanine Card (FMC) form factor is the basis for the Fortinet specialized modules designed to integrate with the FortiGate-3950B/3951B series. Each Fortinet FMC module integrates FortiASIC processors with additional network interfaces to deliver improved performance and port density while reducing system cost. Performance and scalability can be expanded at any time by simply plugging in additional FMC modules.

FortiASIC Processors

FortiASIC processors form the foundation for Fortinet's unique hardware platforms. FortiASICs are a family of purpose-built, high-performance Network, Content and Security processors that leverage intelligent and proprietary content scanning engines to accelerate resource-intensive security services. Coupled with the FortiOS security-hardened operating system, FortiASIC technology delivers superior performance and security.

FortiOS Security Services

FIREWALL

- ICSA Labs Certified (Enterprise Firewall)
- NAT, PAT, Transparent (Bridge)
- Routing Mode (RIP, OSPF, BGP, Multicast)
- Policy-Based NAT
- Virtual Domains (NAT/Transparent mode)
- VLAN Tagging (802.1Q)
- Group-Based Authentication & Scheduling
- SIP/H.323 /SCCP NAT Traversal
- WINS Support
- Explicit Proxy Support (Citrix/TS etc.)
- VoIP Security (SIP Firewall/RTP Pinholing)
- Granular Per-Policy Protection Profiles
- Identity/Application-Based Policy
- Vulnerability Management
- IPv6 Support (NAT/Transparent mode)

APPLICATION CONTROL

- Identify and Control Over 1400 Applications
- Control Popular IM/P2P Applications Regardless of Port/Protocol:

AOL-IM	Yahoo	MSN	KaZaa
ICQ	Gnutella	BitTorrent	MySpace
WinNY	Skype	eDonkey	Facebook

ANTIVIRUS / ANTISPYWARE

- ICSA Labs Certified (Gateway Antivirus)
- Includes Antispyware and Worm Prevention:
 - HTTP/HTTPS
 - SMTP/SMTSPS
 - POP3/POP3S
 - IMAP/IMAPS
 - FTP
 - IM Protocols
- Flow-Based Antivirus Scanning Mode
- Automatic "Push" Content Updates
- File Quarantine Support
- Databases: Standard, Extended, Extreme, Flow
- IPv6 Support

WEB FILTERING

- 76 Unique Categories
- FortiGuard Web Filtering Service Categorizes over 2 Billion Web pages
- HTTP/HTTPS Filtering
- Web Filtering Time-Based Quota
- URL/Keyword/Phrase Block
- URL Exempt List
- Content Profiles
- Blocks Java Applet, Cookies, Active X
- MIME Content Header Filtering
- IPv6 Support

INTRUSION PREVENTION SYSTEM (IPS)

- ICSA Labs Certified (NIPS)
- Protection From Over 3000 Threats
- Protocol Anomaly Support
- Custom Signature Support
- Automatic Attack Database Update
- IPv6 Support

DATA LOSS PREVENTION (DLP)

- Identification and Control Over Sensitive Data in Motion
- Built-in Pattern Database
- RegEx-based Matching Engine for Customized Patterns
- Configurable Actions (block/log)
- Supports IM, HTTP/HTTPS, and More
- Many Popular File Types Supported
- International Character Sets Supported

ANTISPAM

- Support for SMTP/SMTSPS, POP3/POP3S, IMAP/IMAPS
- Real-Time Blacklist/Open Relay Database Server
- MIME Header Check
- Keyword/Phrase Filtering
- IP Address Blacklist/Exempt List
- Automatic Real-Time Updates From FortiGuard Network

FortiOS Security Services (cont.)

VIRTUAL PRIVATE NETWORK (VPN)

ICSA Labs Certified (IPSec)
PPTP, IPSec, and SSL Dedicated Tunnels
SSL-VPN Concentrator (incl. iPhone client support)
DES, 3DES, and AES Encryption Support
SHA-1/MD5 Authentication
PPTP, L2TP, VPN Client Pass Through
Hub and Spoke VPN Support
IKE Certificate Authentication (v1 & v2)
IPSec NAT Traversal
Automatic IPSec Configuration
Dead Peer Detection
RSA SecurID Support
SSL Single Sign-On Bookmarks
SSL Two-Factor Authentication
LDAP Group Authentication (SSL)

NETWORKING/ROUTING

Multiple WAN Link Support
PPPoE Support
DHCP Client/Server
Policy-Based Routing
Dynamic Routing for IPv4 and IPv6 (RIP, OSPF, BGP, & Multicast for IPv4)
Multi-Zone Support
Route Between Zones
Route Between Virtual LANs (VDMOS)
Multi-Link Aggregation (802.3ad)
IPv6 Support (Firewall, DNS, Transparent Mode, SIP, Dynamic Routing, Admin Access, Management)
VRRP and Link Failure Control
sFlow Client

ENDPOINT COMPLIANCE AND CONTROL

Monitor & Control Hosts Running FortiClient End-point Security

HIGH AVAILABILITY (HA)

Active-Active, Active-Passive
Stateful Failover (FW and VPN)
Device Failure Detection and Notification
Link Status Monitor
Link failover
Server Load Balancing

WAN OPTIMIZATION

Bi-directional / Gateway to Client/Gateway
Integrated Caching and Protocol Optimization
Accelerates CIFS/FTP/MAPI/HTTP/HTTPS/Generic TCP

VIRTUAL DOMAINS (VDMOS)

Separate Firewall/Routing Domains
Separate Administrative Domains
Separate VLAN Interfaces
10 VDOM License Std. (more can be added)

WIRELESS CONTROLLER

Unified WiFi and Access Point Management
Automatic Provisioning of APs
On-wire Detection and Blocking of Rogue APs
Virtual APs with Different SSIDs
Multiple Authentication Methods

USER AUTHENTICATION OPTIONS

Local Database
Windows Active Directory (AD) Integration
External RADIUS/LDAP Integration
Xauth over RADIUS for IPSEC VPN
RSA SecurID Support
LDAP Group Support

MANAGEMENT/ADMINISTRATION

Console Interface (RS-232)
WebUI (HTTP/HTTPS)
Telnet / Secure Command Shell (SSH)
Command Line Interface
Role-Based Administration
Multi-language Support: English, Japanese, Korean, Spanish, Chinese (Simplified & Traditional), French
Multiple Administrators and User Levels
Upgrades and Changes via TFTP and WebUI
System Software Rollback
Configurable Password Policy
Optional FortiManager Central Management

LOGGING/MONITORING/VULNERABILITY

Local Event Logging
Log to Remote Syslog/WELF Server
Graphical Real-Time and Historical Monitoring
SNMP Support
Email Notification of Viruses And Attacks
VPN Tunnel Monitor
Optional FortiAnalyzer Logging / Reporting
Optional FortiGuard Analysis and Management Service

TRAFFIC SHAPING

Policy-based Traffic Shaping
Application-based and Per-IP Traffic Shaping
Differentiated Services (DiffServ) Support
Guarantee/Max/Priority Bandwidth
Shaping via Accounting, Traffic Quotas

DATA CENTER OPTIMIZATION

Web Server Caching
TCP Multiplexing
HTTPS Offloading
WCCP Support

Ordering Information	SKU
Product Description	
FortiGate-3950B, 2 SFP+ 10-Gig ports (2 SFP+ SR-type transceivers included), 4 SFP 1-Gig FortiASIC accelerated ports, 2 10/100/1000 ports, 5 FMC slots, and dual AC power supplies	FG-3950B
FortiGate-3951B, 2 SFP+ 10-Gig ports (2 SFP+ SR-type transceivers included), 4 SFP 1-Gig FortiASIC accelerated ports, 2 10/100/1000 ports, 4 FMC slots, 4 FSM Slots, 1 FSM-064 with 64GB SSD storage and dual AC power supplies	FG-3951B
FMC-XD2 Firewall module, 2 10-Gig SFP+ ports, includes 2 SR SFP+ transceivers	FMC-XD2
FMC-XG2 IPS module, 2 10-Gig SFP+ ports, includes 2 SR SFP+ transceivers	FMC-XG2
FMC-C20 FW module, 20 10/100/1000 ports	FMC-C20
FMC-F20 FW module, 20 SFP 1-Gig ports, includes 4 SX SFP transceivers	FMC-F20
Optional Accessories	SKU
Fortinet Storage Module (FSM), 64 GB Solid State Drive for FortiGate with FSM slot (for FG-3951B only)	FSM-064
10-GbE transceiver, Short Range SFP+ module for all FortiGate models with SFP+ interfaces	FG-TRAN-SFP+SR
10-GbE transceiver, Long Range SFP+ module for all FortiGate models with SFP+ interfaces	FG-TRAN-SFP+LR

FortiGuard® Security Subscription Services deliver dynamic, automated updates for Fortinet products. The Fortinet Global Security Research Team creates these updates to ensure up-to-date protection against sophisticated threats. Subscriptions include antivirus, intrusion prevention, web filtering, antispam, vulnerability management, application control, and database security services.

FortiCare™ Support Services provide global support for all Fortinet products and services. FortiCare support enables your Fortinet products to perform optimally. Support plans start with 8x5 Enhanced Support with return and replace hardware support or 24x7 Comprehensive Support with advanced hardware replacement. Options include Premium Support, Premium RMA, and Professional Services. All hardware products include a 1-year limited hardware warranty and a 90-day limited software warranty.



GLOBAL HEADQUARTERS

Fortinet Incorporated
1090 Kifer Road, Sunnyvale, CA 94086 USA
Tel +1.408.235.7700
Fax +1.408.235.7737
www.fortinet.com/sales

EMEA SALES OFFICE – FRANCE

Fortinet Incorporated
120 rue Albert Caquot
06560, Sophia Antipolis, France
Tel +33.4.8987.0510
Fax +33.4.8987.0501

APAC SALES OFFICE – SINGAPORE

Fortinet Incorporated
300 Beach Road #20-01
The Concourse, Singapore 199555
Tel: +65-6513-3734
Fax: +65-6295-0015



Copyright © 2011 Fortinet, Inc. All rights reserved. Fortinet®, FortiGate®, and FortiGuard®, are registered trademarks of Fortinet, Inc., and other Fortinet names herein may also be trademarks of Fortinet. All other product or company names may be trademarks of their respective owners. Performance metrics contained herein were attained in internal lab tests under ideal conditions. Network variables, different network environments and other conditions may affect performance results, and Fortinet disclaims all warranties, whether express or implied, except to the extent Fortinet enters a binding contract with a purchaser that expressly warrants that the identified product will perform according to the performance metrics herein. For absolute clarity, any such warranty will be limited to performance in the same ideal conditions as in Fortinet's internal lab tests. Fortinet disclaims in full any guarantees. Fortinet reserves the right to change, modify, transfer, or otherwise revise this publication without notice, and the most current version of the publication shall be applicable. Certain Fortinet products are licensed under U.S. Patent No. 5,623,600.