

FortiGate®-3950B

10-GbE Consolidated Security Appliance



The FortiGate-3950B consolidated security appliance offers unmatched levels of performance, scalability, and security for large enterprise networks and managed service providers. Purpose-built by Fortinet, the FortiGate-3950B features custom FortiASIC™ processors, layered multi-threat protections from the FortiOS™ operating system, and a flexible, modular architecture for future growth.

High-Performance Hardware

The FortiGate-3950B provides up to 120 Gbps of firewall throughput, delivering 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 impact your network.

Modular Scalability

The FortiGate-3950B features a modular, space-saving 3-RU form factor, with five Fortinet Mezzanine Card (FMC) expansion bays. The FMC expansion bays allow you to customize your appliance for your unique network environment. 64 GB of solid-state disk (SSD) enables FortiOS software features such as local event storage, WAN optimization, and web caching.

Consolidated Security


Using the advanced FortiOS operating system, FortiGate-3950B consolidated security appliances effectively neutralizes 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
 <p>FortiGate-3950B</p>	<p>Hardware Accelerated Performance</p>	<p>FortiASIC processors ensure that FortiGate consolidated security appliances will keep pace with traffic flows in your network.</p>
	<p>Additional Capacity on Demand</p>	<p>Fortinet expansion slots provide greater flexibility by supporting additional hardware-accelerated ports and localized storage of event data.</p>
	<p>Unified Security Architecture</p>	<p>FortiGate consolidated security appliances offer better protection and lower cost when compared with multi-point security products.</p>
	<p>Centralized Management</p>	<p>FortiManager and FortiAnalyzer centralized management and reporting appliances simplify deployment, monitoring and maintenance of your security infrastructure.</p>

Technical Specifications - Appliances	FortiGate-3950B
Total Network Interfaces (Base / Max)	8 / 108 ¹
Hardware Accelerated 10-GbE SFP+ Interfaces	2 / 12 ¹
Hardware Accelerated GbE SFP Interfaces	4 / 104 ¹
Accelerated 10/100/1000 Interfaces	100 ¹
Management 10/100/1000 Interfaces	2
Transceivers Included	2x SR SFP+
Fortinet Mezzanine Card (FMC) Expansion Slots	5
Fortinet Storage Module (FSM) Expansion Slots	-
Local Solid State Disk Storage Included	-
System Performance	
Firewall Throughput (1518 byte UDP packets)	20 - 120 Gbps ^{1,2}
Firewall Throughput (512 byte UDP packets)	20 - 120 Gbps ^{1,2}
Firewall Throughput (64 byte UDP packets)	20 - 120 Gbps ^{1,2}
Firewall Throughput (Packets Per Second)	180 Mpps
IPSec VPN Throughput (AES-256 + SHA-1)	8 - 50.5 Gbps ^{1,2}
IPS Throughput (with 5x FMC-XG2 modules installed)	16 Gbps
Antivirus Throughput (Proxy-based)	1.5 Gbps
Antivirus Throughput (Flow-based)	2.2 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 (Default/Max)	10 / 500
Wireless Access Points Controlled	1,024
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/Max)	410 W / 492 W
Heat Dissipation	1,728 BTU
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-3950B (Rear)

The FortiGate-3950B consolidated security appliance includes:

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



FMC-C20 Module



FMC-F20 Module



FMC-XD2 Accelerated Interface Module (Firewall Acceleration)



FMC-XG2 Security Processing Module (IPS Acceleration)

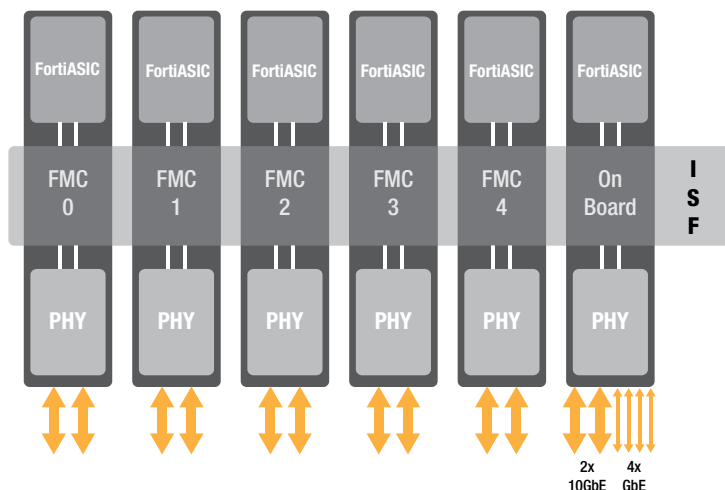
Technical Specifications - FMC Modules	FMC-XD2	FMC-XG2	FMC-C20	FMC-F20
Total Network Interfaces	2	2	20	20
Hardware Accelerated 10-GbE SFP+ Interfaces	2	2	-	-
Hardware Accelerated 1-GbE SFP Interfaces	-	-	-	20
Hardware Accelerated 10/100/1000 Interfaces	-	-	20	-
Transceivers Included	2x SR SFP+	2x SR 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

Note: All performance values are "up to" and vary depending on system configuration. Antivirus performance is benchmarked using traffic containing 32 Kbyte HTTP objects. IPS performance measured using 44 Kbyte HTTP files (similar to NSS Labs test methodology).

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.

FortiGate-3950B Architecture



Fortinet High-Level Integrated Switch Fabric Architecture

FortiOS 4.0 Security-Hardened Operating System

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 to deliver a wide range of services. FortiOS 4.0 combines an enterprise-class firewall, IPsec and SSL VPN, IPS, application control, antivirus, web filtering, antispam, DLP, layer 2/3 routing services, WAN optimization, SSL traffic inspection, endpoint NAC, and an integrated wireless controller.

Integrated Switch Fabric

The FortiGate-3950B high-performance consolidated security appliance brings 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 is a 240 Gbps ISF, enabling full mesh connectivity between all Fortinet Mezzanine Card (FMC) slots. Each FMC slot provides 40 Gbps of connectivity bandwidth to the ISF. Bandwidth is divided between the physical port and the FortiASIC layer such 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 Slots

The FMC form factor is the basis for the Fortinet Mezzanine Card modules. Each Fortinet FMC module integrates FortiASIC processors with additional network interfaces to deliver improved performance and port density. Performance and scalability can be expanded at any time by adding 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. When coupled with the FortiOS security-hardened operating system, FortiASIC technology delivers superior performance and security for your network.

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 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/SMTSP
 - 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/SMTSP, 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

Note: The list above is comprehensive and may contain FortiOS features which are not available on all FortiGate appliances. Consult FortiGate system documentation to determine feature availability.

Ordering Info	SKU
Product Description	SKU
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
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
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 and compliance 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.



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