

FortiCarrier®-3950B/3951B

10-GbE Consolidated Security Appliances for Service Providers

FortiCarrier-3950B and FortiCarrier-3951B consolidated security appliances offer unmatched levels of performance, scalability, and security to protect critical applications across service provider, mobile operator and large enterprise networks. Built from the ground up by Fortinet, FortiCarrier-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™ Carrier operating system.

High-Performance Hardware

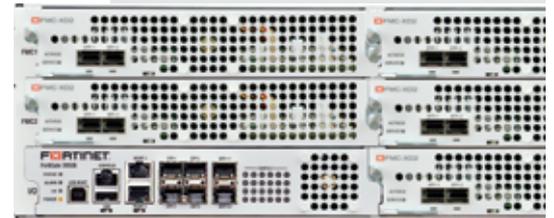
The FortiCarrier-3950B/3951B series provides up to 120 Gbps of firewall performance through the use of modular expansion capabilities and innovative FortiASIC processors. In addition, the FortiCarrier-3950B/3951B series boasts the highest overall consolidated security performance in the FortiCarrier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

Modular Scalability

FortiCarrier-3950B/3951B appliances feature a modular, space-saving 3-RU appliance 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 FortiCarrier-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 FortiCarrier-3951B. The FSM enables additional FortiOS software features such as local event storage and WAN optimization.

Consolidated Security

Using the advanced FortiOS Carrier operating system, FortiCarrier-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 Carrier 4.0 Software Redefines Network Security for Service Providers

FortiCarrier platforms leverage FortiOS™ Carrier software to protect the core IP network infrastructure and application service network infrastructure layers of the network. Features such as a GTP firewall, secure MMS with scanning of all interfaces, and an SIP/IMS signaling firewall assure service providers of the security, privacy, and quality of service that are critical to profitability, competitive advantage, and service delivery success.

The FortiASIC Advantage

FortiASIC processors power FortiCarrier 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



FortiCarrier-3950B Consolidated Security Appliance



FortiCarrier-3951B Consolidated Security Appliance

Hardware Accelerated Performance

FortiASIC processors ensure that FortiCarrier 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

FortiCarrier 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 the deployment, monitoring and maintenance of your security infrastructure

Technical Specifications - Appliances	FortiCarrier-3950B	FortiCarrier-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	



FortiCarrier-3950B Appliance (Front)



FortiCarrier-3951B Appliance (Front)



FortiCarrier-3950B/3951B Appliance (Rear)

FortiCarrier-3950B/3951B consolidated security appliances also 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).

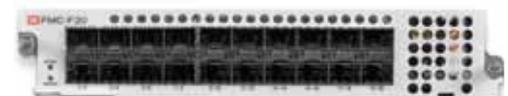
¹ Higher figure uses FMC modules to achieve the stated performance.

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

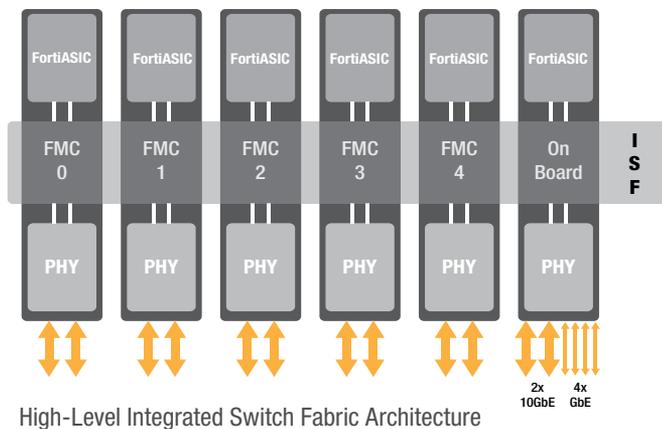


FMC-XD2 Accelerated Interface Module
(Firewall Acceleration)



FMC-XG2 Security Processing Module
(IPS Acceleration)

FortiCarrier-3950 Series Architecture



Integrated Switch Fabric Architecture

FortiCarrier-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 FortiCarrier-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 FortiCarrier-3950 series. Each FMC module integrates FortiASIC processors and network interfaces on a single module, providing a cost effective way to increase performance and port density. System performance is no longer limited to the base system, with additional performance available on demand.

FortiASIC Processors

FortiASIC processors are the foundation for Fortinet’s unique hardware platforms. They are a family of purpose built, high-performance network, security, and content processors that use intelligent and proprietary content scanning engines to accelerate resource-intensive security services. Coupled with the FortiOS Carrier security-hardened operating system, FortiASIC technology delivers extreme performance and security.

FortiOS Carrier 4.0—Software Features by Industry

MANAGED SECURITY FEATURES

DYNAMIC SECURITY PROFILES

Assignment of Service Policy by User (Up to 600,000 Users)
Service Policy Can Define the Settings for Any of the
Advanced Security Services Provided by FortiOS Carrier
Enables Parental Control and Opt-Out Services

VIRTUAL DOMAIN (VDOM)

Support for Hundreds of Enterprise Customers per Physical
Blade/Appliance, Scaling to Thousands of Enterprise
Customers per Chassis

CONSOLIDATED SECURITY

Firewall (ICSA Labs Certified)
IPSec VPN (ICSA Labs Certified)
SSL-VPN (ICSA Labs Certified)

CONSOLIDATED SECURITY (CONTINUED)

Intrusion Prevention System (ICSA Labs Certified)
Gateway Antivirus (ICSA Labs Certified)
Web Filtering (Over 2 Billion URLs Categorized)
Antispam Filtering
Application Control (Thousands of Applications Categorized)
Data Loss Prevention (DLP)
L2 / L3 Routing with Rate Limiting
SSL-Based Traffic Inspection

Refer to FortiOS 4.0 Software Brochure for Complete Details
on the Wide-Range of Consolidated Security Features
Offered

CENTRALIZED LOGGING AND ALERTING

Provided by FortiAnalyzer Appliances
All Log and Alert Functions Configurable per Customer
Consolidates Security and System Event Logs
Event Correlation, Graphical Reports, Network Data
Statistics

CENTRALIZED MANAGEMENT

Provided by FortiManager Appliances
Deployment Configuration / Provisioning
Real-Time Monitoring
Device & Security Policy Maintenance
Localized Security Content Update Server & Rating
Database for Managed Devices

VOICE SECURITY FEATURES

SIP SIGNALING FIREWALL

Stateful and SIP Protocol-Aware Firewall
Hardware Accelerated RTP Processing for Reduced Packet
Loss, Packet Latency, and Jitter.
SIP Transparent (Inspect Only) & NAT (Rewrite SIP Header)
Operating Modes
Supports SIP Servers in Proxy or Redirect Operating Mode
Configurable RTP Pinholing Support
Supports Complex Source & Destination SIP NAT
Environments (SIP & RTP Protocols)
NAT IP Preservation Retains Originating IP Address for
Administrative Purposes (e.g. Billing)
SIP Tracking over Session Lifespan
SIP Session Failover for Active-Passive High Availability
SIP Session Load Balancing (via Virtual IP Load Balancing)

SIP SIGNALING FIREWALL (CONTINUED)

Geographical Redundancy Support
SIP Rate Limiting to Prevent SIP Server Flooding / Overload
IP Topology Hiding of SIP & RTP Server (via NAT and NAPT)
Configurable SIP Command Control Blocks Unauthorized SIP
Methods
Configurable SIP Blocking for Messages that Exceed Defined
Maximum Header Length
SIP Registrar Exclusively Option to Avoid Spoofing of Clients
SIP Communication Logging to FortiAnalyzer Appliances
SIP Statistics (Active Sessions, Total Calls, Calls Failed/
Dropped, Call Succeeded)

ADDITIONAL VOICE SECURITY TECHNOLOGIES

Intrusion Prevention System with VoIP Protocol Anomaly
& VoIP Protocol Aware Signature-Based Inspection
Capabilities
Denial of Service (DoS) Sensor Protects Trusted Zones from
Flooding Attacks
Integrated IPSec for Secured Tunnels Between Trusted
Zones
Virtual Domain (VDOM) Support for Additional Isolation of
Infrastructure within the Same Physical Environment

FortiOS Carrier 4.0—Software Features by Industry (Cont.)

MOBILE SECURITY FEATURES

DYNAMIC SECURITY PROFILES

Assignment of Service Policy by MSISDN (Mobile Station) Service Policy Can Define the Settings for Any of the Advanced Security Services Provided by FortiOS Carrier Enables Parental Control and Opt-Out Services

MMS GENERAL

Support for Multiple MMS Policy Profiles for Consolidated or MVNO Deployments
 Customizable Notification Messages (Per MVNO)
 MSISDN Header Parsing (Including Cookie Extraction & Hex-Based Conversions for MM1/MM7 Message Types)
 MMS File Intercept to FortiAnalyzer Appliances for Forensic Analysis
 MMS Content Archive (Full MMS Message Archiving to FortiAnalyzer Appliances with HTTP/SMTP Transport Headers)
 Per MSISDN & Per Mobile Station Type Reporting of Malicious Activity via FortiAnalyzer Appliances

MMS ANTIVIRUS

Monitor Only & Active Blocking Modes (Per Interface Type)
 Simultaneous Malware Scanning of MM1/MM3/MM4/MM7 Message Types
 Remove Malicious Content Only Option (Allows Message Transaction to Complete)
 File Type Analysis with Configurable Block or Intercept Actions (File Extension Independent)
 Configurable Retrieve Message Scanning (MM1) to Avoid Redundant Inspection
 Per Sender Scanning with Configurable Block/Archive/Intercept Actions
 MM1/MM7 Client & Server Comforting

MMS ANTISPAM / ANTIFRAUD

MM1/MM4 Flood Detection with Three Configurable Thresholds with Discrete Actions
 MM1/MM4 Duplicate Message Detection with Configurable Thresholds and Actions
 Configurable Alert Notification to Administrator of Spam or Fraud Activity
 MM1/MM7 Banned Word Scoring with Configurable Block/Pass Actions

GTP FIREWALL

Based on 3GPP 29.060 version 6.9.0
 Integrated Intrusion Prevention Inspection for GTP Payloads For Gn/Gp Interfaces
 GTP Packet Sanity Check, Length Filtering & Type Screening
 GSN Tunnel Limiting & Rate Limiting
 GTP Stateful Inspection
 Hanging GTP Tunnel Cleanup
 GTP Tunnel Fail-Over for High Availability
 GTP IMSI Prefix (up to 1000) & APN (up to 2000) Filtering
 GTP Sequence Number Validation
 IP Fragmentation of GTP Messages
 GGSN & SGSN Redirection
 Detecting GTP-in-GTP Packets
 GTP Traffic Counting & Logging
 Anti-Overbilling Together with Gi Firewall
 Encapsulated Traffic Filtering with Anti-Spoofing Capabilities
 GTP Protocol Anomaly Detection and Exploit Prevention
 Handover Control to Prevent Session Hijacking For Gi Interface
 Anti-Overbilling Together with Gn/Gp Firewall

Ordering Information	SKU
Product Description	SKU
FortiCarrier-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, Carrier Edition	FCR-3950B
FortiCarrier-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, Carrier Edition	FCR-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.



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