

FortiGate® 5000 Series

Scalable Data Center and Carrier Grade Security Systems

Next Generation Firewall
Segmentation
IPS
Mobile Security

The FortiGate 5000 series delivers high-performance threat protection and SSL inspection for large enterprises and service providers, with the flexibility to be deployed at the enterprise/cloud edge, in the data center core or internal segments. The multiple high-speed interfaces, high port density, superior security efficacy, and high throughput of the 5000 series keep your network connected and secure.



Security

- Identifies thousands of applications inside network traffic for deep inspection and granular policy enforcement
- Protects against malware, exploits, and malicious websites in both encrypted and non-encrypted traffic
- Prevents and detects against known and unknown attacks using continuous threat intelligence from AI-powered FortiGuard Labs security services

Performance

- Delivers industry's best threat protection performance and ultra-low latency using purpose-built security processor (SPU) technology
- Provides industry-leading performance and protection for SSL encrypted traffic

Certification

- Independently tested and validated best security effectiveness and performance
- Received unparalleled third-party certifications from NSS Labs

Networking

- Delivers advanced networking capabilities that seamlessly integrate with advanced layer 7 security and virtual domains (VDMs) to offer extensive deployment flexibility, multi-tenancy, and effective utilization of resources
- Delivers high-density, flexible combination of various high-speed interfaces to enable best TCO for customers for data center and WAN deployments

Management

- Includes a management console that is effective, simple to use, and provides comprehensive network automation & visibility.
- Provides Zero Touch Integration with Security Fabric's Single Pane of Glass Management
- Predefined compliance checklist analyzes the deployment and highlights the best practices to improve overall security posture

Security Fabric

- Enables Fortinet and Fabric-ready partners' products to provide broader visibility, integrated end-to-end detection, threat intelligence sharing, and automated remediation

Model	FG-5001E*	Fully-Populated FG-5144C**
Firewall	80 Gbps	1.12 Tbps
Concurrent Sessions (TCP)	40 Million	560 Million
New Sessions/Second (TCP)	640,000	8,960,000
IPS	18 Gbps	252 Gbps
NGFW	15 Gbps	210 Gbps
Threat Protection	13.5 Gbps	189 Gbps
Network Interfaces	Multiple 40 GE QSFP+ and 10 GE SFP+ slots	Multiple 40 GE QSFP+ and 10 GE SFP+ slots

Refer to specification table for details. * Each Security Blade. ** With FG-5001E security blades

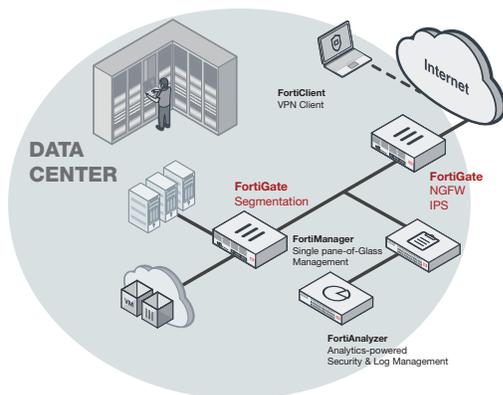
Deployment

Next Generation Firewall (NGFW)

- Reduce the complexity and maximize your ROI by integrating threat protection security capabilities into a single high-performance network security appliance, powered by Fortinet's Security Processing Unit (SPU)
- Full visibility into users, devices, applications across the entire attack surface and consistent security policy enforcement irrespective of asset location
- Protect against network exploitable vulnerabilities with Industry-validated IPS security effectiveness, low latency and optimized network performance
- Automatically block threats on decrypted traffic using the Industry's highest SSL inspection performance, including the latest TLS 1.3 standard with mandated ciphers
- Proactively block newly discovered sophisticated attacks in real-time with AI-powered FortiGuard Labs and advanced threat protection services included in the Fortinet Security Fabric

Segmentation

- Segmentation that adapts to any network topology, delivering end-to-end security from the branch level to data centers and extending to multiple clouds
- Reduce security risks by improving network visibility from the components of the Fortinet Security Fabric, which adapt access permissions to current levels of trust and enforce access control effectively and efficiently
- Delivers defense in depth security powered by high-performance L7 inspection and remediation by Fortinet's SPU, while delivering third party validated TCO of per protected Mbps
- Protects critical business applications and helps implement any compliance requirements without network redesigns



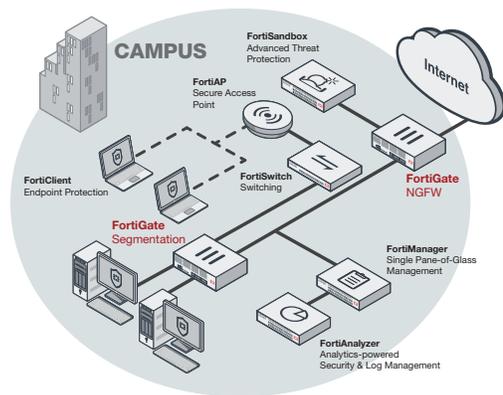
FortiGate 5000 Series deployment in data center (IPS/NGFW, Intent-based Segmentation)

IPS

- Purpose-built security processors delivering industry validated IPS performance with high throughput and low latency
- Deploy virtual patches at the network level to protect against network exploitable vulnerabilities and optimize network protection time
- Deep packet inspection at wire speeds offers unparalleled threat visibility into network traffic including traffic encrypted with the latest TLS 1.3
- Proactively block newly discovered sophisticated attacks in real-time with advanced threat protection provided by the intelligence services of the Fortinet Security Fabric

Mobile Security for 4G, 5G, and IOT

- SPU accelerated, high performance CGNAT and IPv4 and IPv6 traffic, for 4G SGi LAN and 5G N6 security
- RAN Access Security with highly scalable and best performing IPsec aggregation and control security gateway (SecGW)
- User plane security enabled by full Threat Protection and visibility into GTP-U inspection
- 4G and 5G security for user and data plane traffic SCTP, GTP-U/C and SIP that provides protection against attacks
- 4G and 5G cores IoT signaling storm protection
- High-speed interfaces to enable deployment flexibility

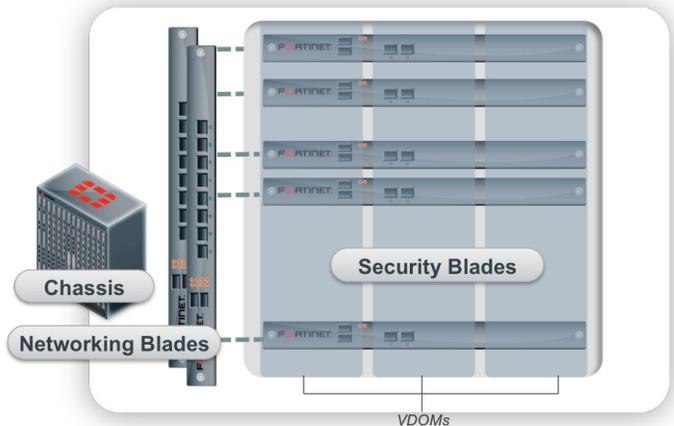


FortiGate 5000 Series deployment in large campus networks (NGFW, Intent-based Segmentation)

Architecture

Flexible and Scalable

- Chassis and blades systems that can be configured for various resiliency and network requirements
- Security blades can be added as demand grows
- Ease of maintenance and minimum disruption with hot swappable components



Chassis

The chassis enables the flexible system to scale effortlessly by allowing blades to be hot-swapped according to desired requirements. The system can also be configured for various resilience designs within the chassis as well as between chassis. The rack-mount ATCA chassis provides centralized and redundant power supplies to its blades and may be powered by either DC or AC with an additional power interface. It facilitates backplane communications between the blades which may be used for HA heartbeat and other control and data communications.

The FortiGate 5144C and FortiGate 5060 may house shelf managers that control chassis power allocation, monitor chassis operating parameters, monitor and control chassis cooling, and can signal alerts via the alarm module if the chassis encounters problems.

Security Blades

High performance, Security Processing Unit (SPU) powered security blades run on FortiOS or FortiCarrier which apply access policies and security profiles on the traffic they receive from the networking blades via backplane or front panel interfaces. These blades may operate in NAT/route and/or transparent mode. They also support VDOMs (virtual domains) within the cluster.

Networking Blades

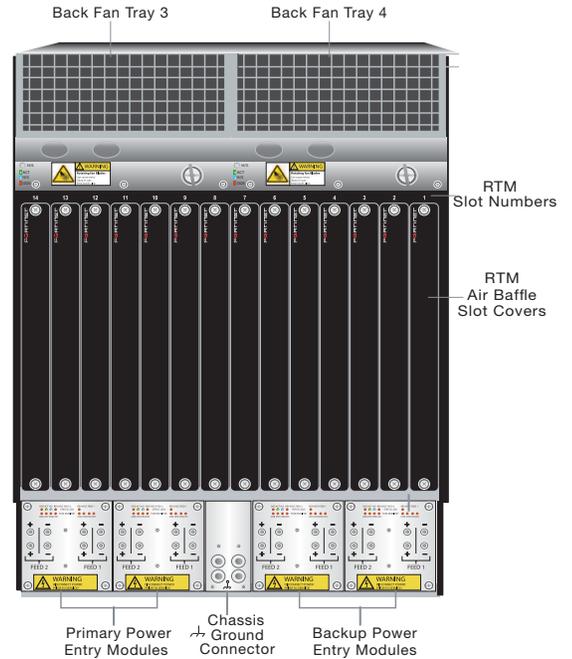
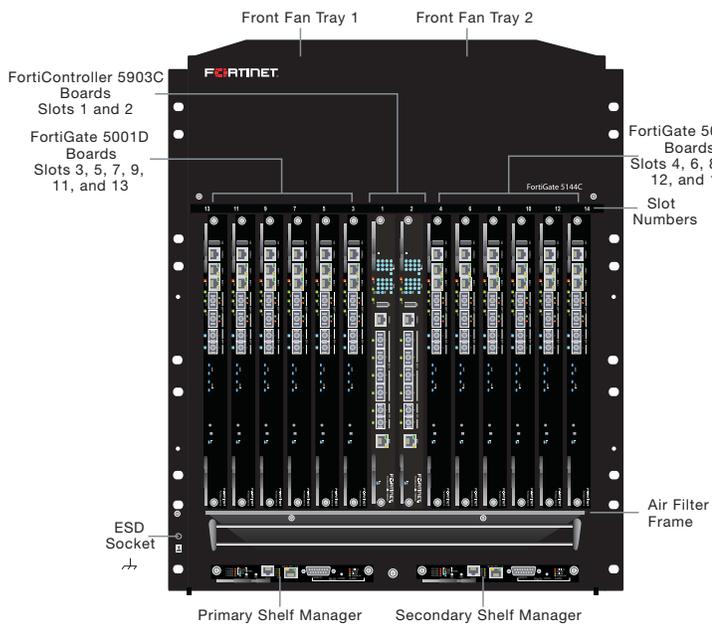
Up to two networking blades may be installed on a FortiGate 5144C and FortiGate 5060 in designated slots. These blades connect the system to the network while connected to the multiple security blades via the chassis backplane. The networking blade clusters the security blades with traffic distribution.

Networking blades can assign security blades into service groups which are isolated clusters coexisting in a single chassis. Two networking blades may either operate as active-passive HA or separately with its clusters.

Chassis

FortiGate 5144C

Next Generation 14U 19-inch rack mount ATCA chassis with 40 Gbps Backplane and capable of Dual-Dual-Star topology. It can install up to 14 FortiGate 5000 series blades.



	FG-5144C
Hardware Specifications	
Available Slots	14
High Availability Backplane Fabric	Built-in
40 Gbps Backplane Support	Yes
Shelf Manager (Default / Maximum)	1 / 2
Dual Networking Blade Support	Yes
Dimensions	
Height x Width x Length (inches)	24.44 x 19.06 x 21.63
Height x Width x Length (cm)	62.1 x 48.4 x 55.0
Weight	108 lbs (50 kg)
Form Factor (supports EIA/non-EIA standards)	14 RU
Maximum Capacity**	

	FG-5144C
Firewall Throughput	1.12 Tbps
Power and Environment	
Power Required	DC/AC ¹
Chassis Only Power Consumption (Maximum) ***	960 W
Heat Dissipation (Maximum) ***	3,276 BTU/h
Operating Temperature	32–104°F (0–40°C)
Storage Temperature	-13–158°F (-35–70°C)
Humidity	5–90% non-condensing
Compliance	
Certifications	FCC Part 15 Class A, RCM, VCCI, CE, BSMI, UL/cUL
NEBS Certified	Yes

¹ Optional FortiGate 5053B Power Supply Shelf used to provide AC power to the FortiGate

** Based on fully-populated FortiGate 5001D

*** Please refer to respective Chassis Guide for computation of total power requirement.

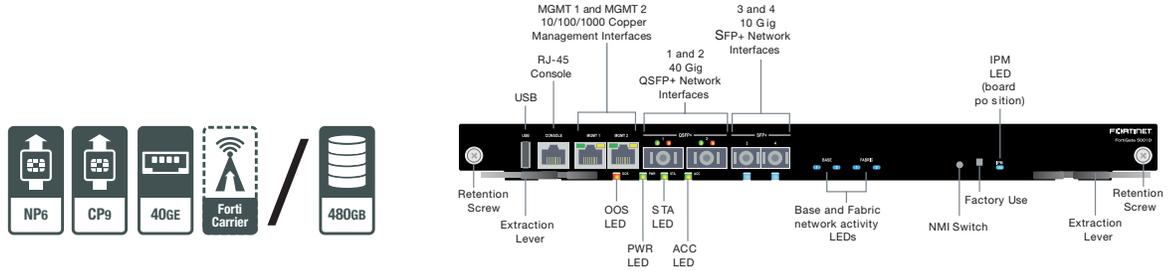
AdvancedTCA™-compliant Chassis

- Based on industry-conforming standards assuring carrier-grade performance, reliability, 99.999% availability and serviceability
- Redundant fans, power modules, self managers and alarm modules options
- Highly scalable with minimum service disruptions as hot-swapped blades may be added to increase capacity with ease
- Comprehensive management and monitoring facilities via shelf managers and alarm modules

Security Blades

FortiGate 5001E/5001E1

Latest purpose-built FortiGate security blade with carrier-class capacity and protection.



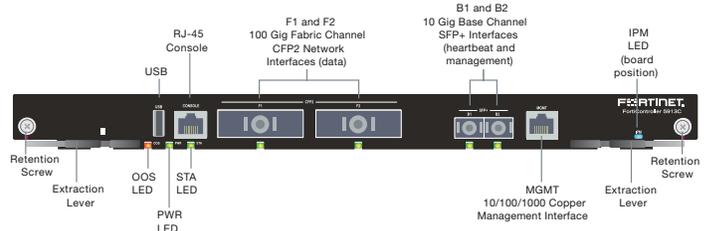
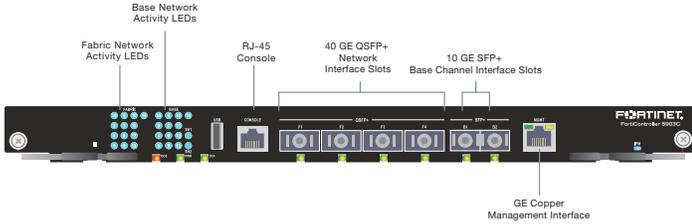
FG-5001E/5001E1	
Interfaces and Storage	
40 GE QSFP+ Ports	2
10 GE SFP+ Ports	2
GE RJ45 Ports	2
RJ45 Console Port	1
Included Transceivers	2x 10 GE SFP+ SR
Local Storage	1x 480 GB SSD (5001E1)
System Performance	
Firewall Throughput (1518 / 512 / 64 byte UDP packets)	80 / 80 / 50 Gbps
Firewall Latency (64 byte UDP packets)	3 µs
Firewall Throughput (Packets Per Second)	75 Mpps
Concurrent Sessions (TCP)	40 Million
New Sessions/Second (TCP)	640,000
Maximum Firewall Policies	200,000
IPsec VPN Throughput (512 byte packets)	45 Gbps
Gateway-to-Gateway IPsec VPN Tunnels	40,000
Client-to-Gateway IPsec VPN Tunnels	64,000
SSL-VPN Throughput	9 Gbps
Concurrent SSL-VPN Users (Recommended Maximum)	25,000
IPS Throughput (HTTP / Enterprise Mix) ¹	25 / 18 Gbps
SSL Inspection Throughput ²	15 Gbps
SSL Inspection CPS (IPS, avg. HTTPS) ³	8,805
SSL Inspection Concurrent Session (IPS, avg. HTTPS) ³	3.97 Million
Application Control Throughput ³	36 Gbps
NGFW Throughput ⁴	15 Gbps
Threat Protection Throughput ⁵	13.5 Gbps
CAPWAP Throughput	15 Gbps
Virtual Domains (Default / Maximum)	10 / 500
Maximum Number of FortiTokens	20,000
Maximum Number of Registered FortiClients	20,000
Maximum Number of FortiAPs (Total / Tunnel)	4,096 / 1,024
Power and Environment	
Power Consumption (Average / Maximum)	250 / 278 W
Heat Dissipation (Average)	948.6 BTU/h
Operating Temperature	23–131°F (-5–55°C)
Storage Temperature	-40–158°F (-40–70°C)
Humidity	10–90% non-condensing
Compliance	
Certifications	FCC Part 15 Class A, RCM, VCCI, CE, UL/cUL, CB, ICSA Labs: Firewall, IPsec, IPS, Antivirus, SSL-VPN
NEBS Certified	—

Note: All performance values are "up to" and vary depending on system configuration. IPsec VPN performance is based on 512 byte UDP packets using AES-256+SHA1. 1. IPS performance is measured using 1 Mbyte HTTP and Enterprise Traffic Mix. 2. SSL Inspection is measured with IPS enabled and HTTP traffic, using TLS v1.2 with AES256-SHA. 3. Application Control performance is measured with 64 Kbytes HTTP traffic. 4. NGFW performance is measured with IPS and Application Control enabled, based on Enterprise Traffic Mix. 5. Threat Protection performance is measured with IPS and Application Control and Malware protection enabled, based on Enterprise Traffic Mix. 6. CAPWAP performance is based on 1444 byte UDP packets.

Networking Blades

FortiController 5903C/5913C

High Performance networking blade that provides 10/40-gigabit fabric and 1-gigabit base backplane channel layer-2 switching in a dual star architecture.



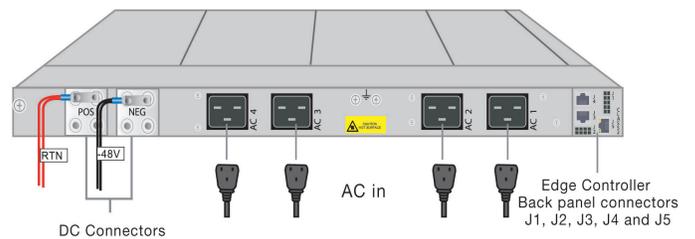
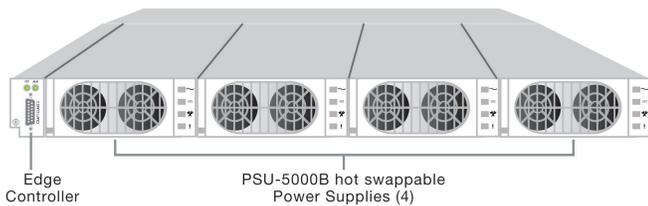
	FCTL-5903C	FCTL-5913C
Interfaces		
Fabric Channel Interfaces	4x 40 GE QSFP+	2x 100 GE CFP2
Base Channel Interfaces	2x 10 GE SFP+	2x 10 GE SFP+
Management Interfaces	1x GE RJ45	1x GE RJ45
Included Transceivers	2x 10 GE SFP+ SR	2x 10 GE SFP+ SR
40 GE Backplane Fabric Support	Yes	Yes
10 GE Backplane Fabric Support	Yes	Yes
GE Backplane Fabric Support	-	-
System Performance		
Maximum Traffic Throughput	120 Gbps	200 Gbps
Maximum Concurrent Sessions	135 Million	135 Million
New Sessions/Second (TCP)	3.2 Million	3.6 Million

	FCTL-5903C	FCTL-5913C
Power and Environment		
Power Consumption (Average / Maximum)	250 / 400 W	280 / 400 W
Heat Dissipation	1360 BTU/h	955 BTU/h
Operating Temperature	32–104°F (0–40°C)	32–104°F (0–40°C)
Storage Temperature	-13–158°F (-35–70°C)	-13–158°F (-35–70°C)
Humidity	20–90% non-condensing	5–90% non-condensing
Compliance		
Certifications	FCC Part 15 Class A, C-Tick, VCCI, CE, UL/cUL, CB	
NEBS Certified	Yes	Yes

AC Power Supplies

FortiGate 5053B and Power Supply Unit 5000B

The FortiGate 5053B is a 1U 19-inch rack mount power supply shelf with PSU-5000B hot swappable power supplies to convert AC power to DC power and to supply power to a FortiGate 5000 series chassis.



	NON-REDUNDANT				REDUNDANT		
	1	2	3	4	1+1	2+1	3+1
5053B with PSU-5000B (185–307V AC High Line Input)	2,725 W	5,450 W	8,175 W	10,900 W	2,725 W	5,450 W	8,175 W
5053B with PSU-5000B (100–184V AC Low Line Input, North America, Mexico, Japan, etc.)	1,200 W	2,400 W	3,600 W	4,800 W	1,200 W	2,400 W	3,600 W

Additional Available Components

Chassis

FG-5060	
Hardware Specifications	
Available Slots	6
High Availability Backplane Fabric	Built-in
40 Gbps Backplane Support	—
Shelf Manager (Default / Maximum)	1 / 2
Dual Networking Blade Support	Yes
Dimensions	
Height x Width x Length (inches)	8.86 x 17.64 x 18.82
Height x Width x Length (cm)	22 x 44.8 x 47.8
Weight	38 (17.3 kg)
Maximum Capacity**	
Firewall Throughput	480 Gbps

FG-5060	
Power and Environment	
Power Required	DC/AC ¹
Chassis-Only Power Consumption (Maximum) ***	350 W
Heat Dissipation (Maximum) ***	1194 BTU/h
Operating Temperature	41–104°F (5–40°C)
Storage Temperature	23–131°F (-5–55°C)
Humidity	5–85% non-condensing
Compliance	
Certifications	FCC Part 15 Class A, RCM, VCCI, CE, BSMI, UL/cUL
NEBS Certified	—

¹ Optional FortiGate 5053B Power Supply Shelf used to provide AC power to the FortiGate

** Based on fully populated FortiGate 5001D

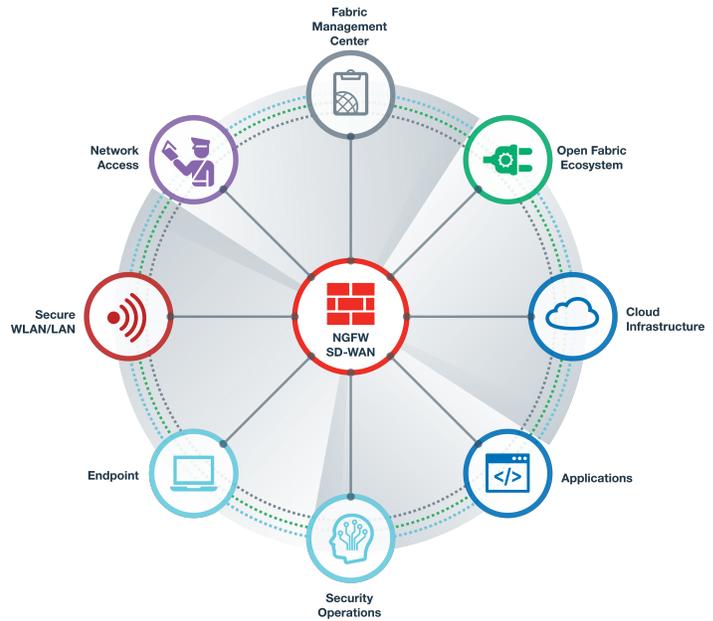
*** Please refer to respective Chassis Guide for computation of total power requirement.

Fortinet Security Fabric

Security Fabric

The Security Fabric is the cybersecurity platform that enables digital innovations. It delivers broad visibility of the entire attack surface to better manage risk. Its unified and integrated solution reduces the complexity of supporting multiple-point products, while automated workflows increase operational speeds and reduce response times across the Fortinet deployment ecosystem. The Fortinet Security Fabric covers the following key areas under a single management center:

- **Security-Driven Networking** that secures, accelerates, and unifies the network and user experience
- **Zero Trust Network Access** that identifies and secures users and devices in real-time, on and off of the network
- **Dynamic Cloud Security** that protects and controls cloud infrastructures and applications
- **AI-Driven Security Operations** that automatically prevents, detects, isolates, and responds to cyber threats



FortiOS

FortiGates are the foundation of the Fortinet Security Fabric—the core is FortiOS. All security and networking capabilities across the entire FortiGate platform are controlled with one intuitive operating system. FortiOS reduces complexity, costs, and response times by truly consolidating next-generation security products and services into one platform.

- A truly consolidated platform with a single OS and pane-of-glass for across the entire digital attack surface.
- Industry-leading protection: NSS Labs Recommended, VB100, AV Comparatives, and ICSA validated security and performance.
- Leverage the latest technologies such as deception-based security.

- Control thousands of applications, block the latest exploits, and filter web traffic based on millions of real-time URL ratings in addition to true TLS 1.3 support.
- Automatically prevent, detect, and mitigate advanced attacks within minutes with an integrated AI-driven security and advanced threat protection.
- Improve and unify the user experience with innovative SD-WAN capabilities with the ability to detect, contain, and isolate threats with automated segmentation.
- Utilize SPU hardware acceleration to boost network security performance.

Services



FortiGuard Labs offer real-time intelligence on the threat landscape, delivering comprehensive security updates across the full range of Fortinet’s solutions. Comprised of security threat researchers, engineers, and forensic specialists, the team collaborates with the world’s leading threat monitoring organizations and other network and security vendors, as well as law enforcement agencies.



Our FortiCare customer support team provides global technical support for all Fortinet products. With support staff in the Americas, Europe, Middle East, and Asia, FortiCare offers services to meet the needs of enterprises of all sizes.

 For more information, please refer to forti.net/fortiguard and forti.net/forticare

Order Information

PRODUCT	SKU	DESCRIPTION
Chassis		
FortiGate 5144C Chassis	FG-5144C-DC	14U 14-slot chassis with 40G Dual Star fabric backplane, 4 PEMs, 4 fan units, 2 shelf FRU data modules, 1 shelf manager, front and RTM air baffles, and 4 pairs DC cables for connecting to FG-5053B power shelves
FortiGate 5144C-DC Chassis	FG-5144C-DC-NEBS	14U 14-slot chassis with 40G Dual Star fabric backplane, 4 PEMs, 4 fan units, 2 shelf FRU data modules, 1 shelf manager, front and RTM air baffles, and 4 pairs DC cables for connecting to FG-5053B power shelves, NEBS certified
FortiGate 5144C Shelf Manager	FG-5144C-SM	5144C shelf manager with ShMM-700R mezzanine card and radial IPMB bus
FortiGate 5144C Fan Tray	FG-5144C-FAN-F	FG-5144C fan tray front
FortiGate 5144C Fan Tray	FG-5144C-FAN-R	FG-5144C fan tray rear
FortiGate 5144C Shelf FRU Data Module	FG-5144C-SFRU	FG-5144C shelf FRU data module
FortiGate 5144C Power Entry Module	FG-5144C-PEM	FG-5144C PEM, power entry module
FortiGate 5144C Air Filter	FG-5144C-AF	FG-5144C air filter
FortiGate 5144C Blank Panel	FG-5144C-ABF	5000 front slot blank panel with air baffle (aluminum/plastic)
FortiGate 5144C Blank Panel	FG-5144C-ABR	5000 RTM slot blank panel with air baffle (aluminum/plastic)
FortiGate 5060 Chassis	FG-5060-DC	5U 6-slot chassis with Dual Star fabric backplane, 2 PEMs, 2 fan units, 2 shelf FRU data modules, 1 shelf manager, front and RTM air baffles, and 2 pairs DC cables for connecting to FG-5053B power shelves
FortiGate 5060 Fan Tray	FG-5060FA	Fan tray for FG-5060 chassis
FortiGate 5060 Shelf Manager	FG-5060SM	Shelf manager for FG-5060 chassis
FortiGate 5060 Shelf Alarm Panel	FG-5060SAP	Shelf alarm panel for FG-5060 chassis
FortiGate 5053B Power Converter Tray	FG-5053B	AC power converter shelf for high capacity 5000 chassis, supports up to 4 PSU-5000B power supply units, unpopulated
FortiGate 5000 Series Power Supply Unit	PSU-5000B	Power supply unit for FG-5000 series, AC power supply unit, 1,200 Watts maximum, requires FortiGate 5053B shelf
Security Blades		
FortiGate 5001E	FG-5001E	Security blade with 2x 40 GE QSFP+ ports, 2x 10 GE SFP+ ports, 2x GE RJ45 management ports, FortiASIC NP6 and CP9 hardware accelerated
FortiGate 5001E1	FG-5001E1	Security blade with 2x 40 GE QSFP+ ports, 2x 10 GE SFP+ ports, 2x GE RJ45 management ports, FortiASIC NP6 and CP9 hardware accelerated, 480 GB SSD onboard storage
Networking Blades		
FortiController 5903C	FCTRL-5903C	Networking blade with 4x 40 GE SFP+ fabric slots, 2x 10 GE SFP+ base slots, 1x GE RJ45 management port
FortiController 5913C	FCTRL-5913C	Networking blade with 2x 100 GE CFP2 fabric slots, 2x 10 GE SFP+ base slots, includes 2 SR SFP+
Optional Accessories		
1 GE SFP LX Transceiver Module	FN-TRAN-LX	1 GE SFP LX transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP RJ45 Transceiver Module	FN-TRAN-GC	1 GE SFP RJ45 transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP SX Transceiver Module	FN-TRAN-SX	1 GE SFP SX transceiver module for all systems with SFP and SFP/SFP+ slots.
10 GE SFP+ RJ45 Transceiver Module	FN-TRAN-SFP+GC	10 GE SFP+ RJ45 transceiver module for systems with SFP+ slots.
10 GE SFP+ Transceiver Module, Short Range	FN-TRAN-SFP+SR	10 GE SFP+ transceiver module, short range for all systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ Transceiver Module, Long Range	FN-TRAN-SFP+LR	10 GE SFP+ transceiver module, long range for all systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ Transceiver Module, Extended Range	FN-TRAN-SFP+ER	10 GE SFP+ transceiver module, extended range for all systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ Active Direct Attach Cable	SP-CABLE-ADASFP+	10 GE SFP+ active direct attach cable, 10m / 32.8 ft for all systems with SFP+ and SFP/SFP+ slots
40 GE QSFP+ Transceiver Module, Short Range	FN-TRAN-QSFP+SR	40 GE QSFP+ transceiver module, short range for all systems with QSFP+ slots.
40 GE QSFP+ Transceiver Module, Long Range	FN-TRAN-QSFP+LR	40 GE QSFP+ transceiver module, long range for all systems with QSFP+ slots.
100 GE CFP2 Transceivers, Long Range	FG-TRAN-CFP2-LR4	100 GE CFP2 transceivers, long range, over single mode fiber, for all systems with CFP2 slots
100 GE CFP2 Transceivers, Short Range	FG-TRAN-CFP2-SR10	100 GE CFP2 transceivers, 10 channel parallel fiber, short range for all systems with CFP2 slots

More Features with FortiCarrier Software License

- SIP/IMS signaling firewall protects internal infrastructure and service against malicious messages and overload while providing NAT services and redundancy, providing VoIP edge scalability and a platform for managed security services
- MMS security — content scanning and protection (keyword blocking, antivirus, file-type blocking, antispam detection) with per-user services provide enhanced end-user security for increased uptime and higher customer satisfaction
- GTP firewall delivers protocol anomaly detection and prevention with multiple filter options for end-to-end security

Bundles



FortiGuard Bundle

FortiGuard Labs delivers a number of security intelligence services to augment the FortiGate firewall platform. You can easily optimize the protection capabilities of your FortiGate with one of these FortiGuard Bundles.

Bundles	360 Protection	Enterprise Protection	Unified Threat Protection	Threat Protection
FortiCare	ASE ¹	24x7	24x7	24x7
FortiGuard App Control Service	•	•	•	•
FortiGuard IPS Service	•	•	•	•
FortiGuard Advanced Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service	•	•	•	•
FortiGuard Web Filtering Service	•	•	•	
FortiGuard Antispam Service	•	•	•	
FortiGuard Security Rating Service	•	•		
FortiGuard Industrial Service	•	•		
FortiGuard IoT Detection Service ²	•	•		
FortiConverter Service	•	•		
IPAM Cloud ²	•			
SD-WAN Orchestrator Entitlement ²	•			
SD-WAN Cloud Assisted Monitoring	•			
SD-WAN Overlay Controller VPN Service	•			
FortiAnalyzer Cloud	•			
FortiManager Cloud	•			

1. 24x7 plus Advanced Services Ticket Handling 2. Available when running FortiOS 6.4