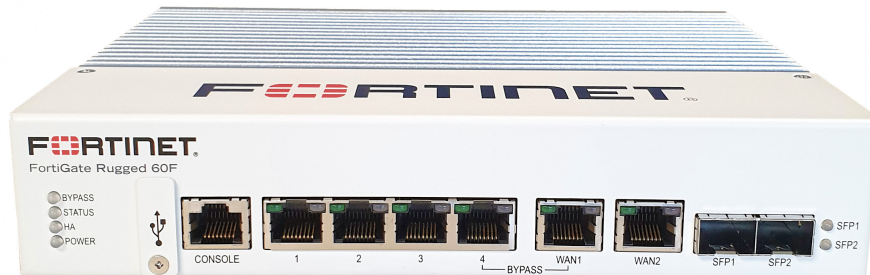# FortiGate® Rugged Series

Mission Critical Security Solutions for Harsh Environments

While traditional security solutions are designed and intended for the world of offices and corporations, the FortiGate Rugged Series offers **industrially-hardened**, **all-in-one security appliance** that delivers **specialized threat protection** for **securing critical industrial** and **control networks** against malicious attacks.

Ruggedized Design

Fanless and use of robust components ensure reliable operation in harsh industrial environments.

Consolidated Security Architecture

FortiGate running FortiOS consolidated security offers better protection and lower cost of ownership than multiple point products. Coupled with FortiGuard Industrial Security Service, it ensures that critical networks receive real-time protection.

Ease of Management

Robust management systems that allow rapid provision and deployment, monitoring of device and threat status while providing actionable reports.

Product Offerings

FGR-30D — Ruggedized compact security appliance with DIN mounting kit

FGR-35D — Security appliance with IP67 rating for outdoor environment

FGR-60D — SPU SoC Powered, high performance security and VPN gateway

FGR-60F — New SPU SoC4 powered for rugged and harsh environments

FGR-90D — Robust ruggedized security appliance with a wide operating temperature
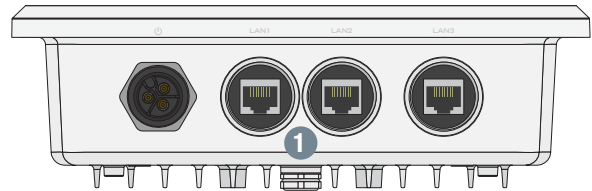
Hardware

FortiGate Rugged 30D
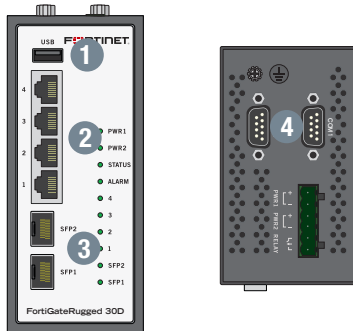
Interfaces

(1) 1x USB Port
(3) 2x GE SFP Slots
(2) 4x GE RJ45 Ports
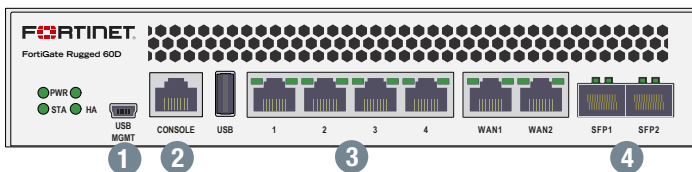(4) 2x DB9 Serial Ports/Console
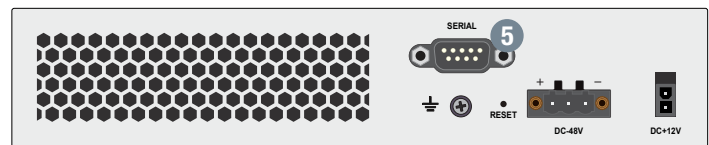
FortiGate Rugged 35D

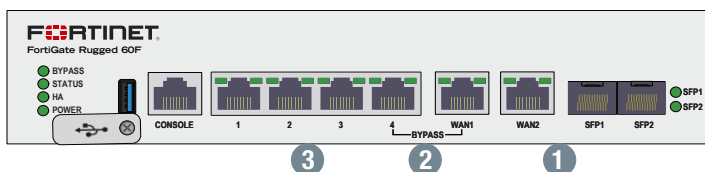### Interfaces

(1) 3x GE RJ45 Ports

FortiGate Rugged 60D

Interfaces

(1) 1x Micro USB Management Port for FortiExplorer
(2) 1x Console Port (RJ45)
(3) 4x GE RJ45 Ports

(4) 2x Shared Media (GE RJ45 Ports / GE SFP Slots) Pairs
(5) 1x DB9 Serial Interface

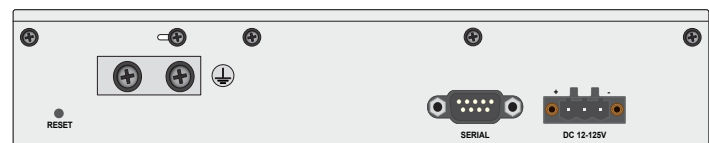## FortiGate Rugged 60F

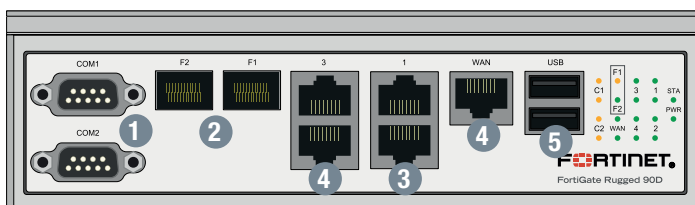### Interfaces

(1) 2x GE RJ45/SFP Shared Media Pairs
(2) 1x Bypass GE RJ45 Port Pair (WAN1 & Port4, default configuration)*
(3) 4x GE RJ45 Ports

NOTE: WAN1/WAN2 and SFP1/SFP2 are shared interfaces

FortiGate Rugged 90D

Interfaces

(1) 2x DB9 Serial Interface/Console
(2) 2x GE SFP Slots
(3) 1x GE RJ45 Bypass Pair
(4) 3x GE RJ45 Ports
(5) 2x USB interfaces

F⊑RTINET.

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 overs 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
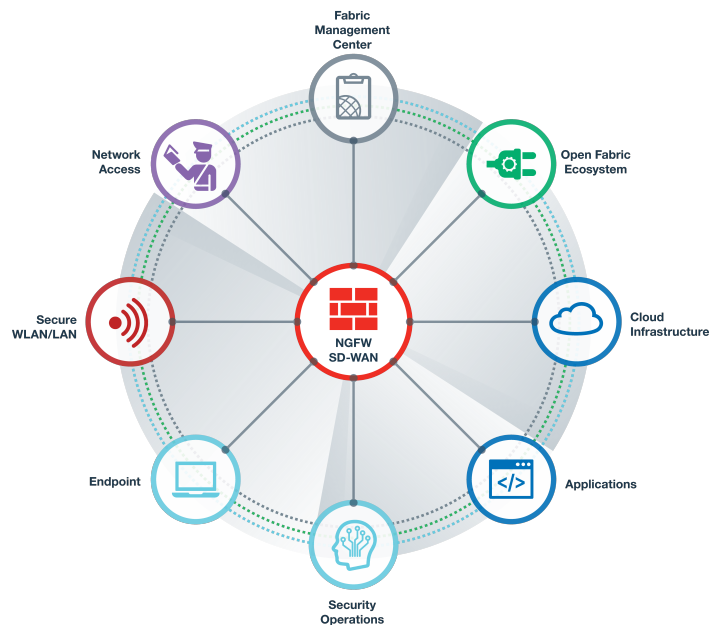
FortiOS

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™ Security 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.

FortiCare™ Support Services

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

Specifications

	FGR-30D	FGR-35D	FGR-60D	FGR-60F	FGR-90D
Interfaces and Modules					
GE RJ45 Interfaces	4	3	4	4	3
Bypass GE RJ45 Port Pair	–	–	–	1*	1
GE SFP Slots	2	–	–	–	2
GE RJ45/SFP Shared Media Pairs	–	–	2	2	–
DB9 Serial Interface	2	–	1	1	2
USB (Client / Server)	1	–	1/1	1	1
RJ45 Console Port	–	–	1	1	–
Transeivers included	none	none	none	none	none
System Performance and Capacity					
IPv4 Firewall Throughput (1518** / 512 / 64 byte UDP packets)	900 Mbps**	550 Mbps**	1.5 Gbps**	6/6/5.95 Gbps	2 Gbps**
Firewall Latency (64 byte, UDP)	70.00 μs	90.00 μs	4.00 μs	3.10 μs	51.00 μs
Firewall Throughput (Packets Per Second)	87 Kpps	52.5 Kpps	2.2 Mpps	8.9 Mpps	84 Kpps
Concurrent Sessions (TCP)	750,000	750,000	500,000	600,000	2.5 Million
New Sessions/Second (TCP)	5,000	5,000	4,000	19,000	20,000
Firewall Policies	5,000	5,000	5,000	5,000	5,000
IPsec VPN Throughput (512 byte) [1]	45 Mbps	45 Mbps	1 Gbps	3.5 Gbps	84 Mbps
Gateway-to-Gateway IPsec VPN Tunnels	200	200	200	200	200
Client-to-Gateway IPsec VPN Tunnels	250	250	500	500	1,000
SSL-VPN Throughput	25 Mbps	25 Mbps	30 Mbps	400 Mbps	115 Mbps
Concurrent SSL-VPN Users (Recommended Maximum)	80	80	100	100	200
SSL Inspection Throughput (IPS, avg. HTTPS) [3]	50 Mbps	55 Mbps	15 Mbps	460 Mbps	85 Mbps
SSL Inspection CPS (IPS, avg. HTTPS) [3]	75	75	20	300	70
SSL Inspection Concurrent Session (IPS, avg. HTTPS) [3]	45,000	45,000	15,000	70,000	72,000
Application Control Throughput (HTTP 64K)	210 Mbps	230 Mbps	95 Mbps	1.3 Gbps	440 Mbps
Virtual Domains (Default / Maximum)	5 / 5	5 / 5	10 / 10	10 / 10	10 / 10
Maximum Number of FortiAPs (Total / Tunnel)	2 / 2	2 / 2	10 / 5	30 / 10	32 / 16
Maximum Number of FortiTokens	20	20	100	500	100
Maximum Number of FortiSwitches	8	8	8	16	8
High Availability Configurations	Active-Active, Active-Passive, Clustering				
System Performance — Enterprise Traffic Mix					
IPS Throughput [2]	180 Mbps	210 Mbps	95 Mbps	950 Mbps	350 Mbps
NGFW Throughput [2,4]	45 Mbps	65 Mbps	40 Mbps	550 Mbps	370 Mbps
Threat Protection Throughput [2,5]	16 Mbps	16 Mbps	23 Mbps	500 Mbps	280 Mbps
Dimensions and Power					
Height x Width x Length (inches)	5.49 x 4.13 x 2.36	3.07 x 10.04 x 10.04	1.73 x 8.50 x 6.10	1.68 x 8.50 x 6.50	2.11 x 7.32 x 6.30
Height x Width x Length (mm)	139.5 x 105 x 60	78 x 255.09 x 255.09	44 x 216 x 155	42.7 x 216 x 165	53.5 x 186 x 160
Weight	1.46 lbs (0.668 kg)	3.986 lbs (1.808 kg)	3.5 lbs (1.6 kg)	3.85 lbs (1.75 kg)	2.4 lbs (1.08 kg)
Form Factor	Desktop	Outdoor mountable	Desktop	Desktop/DIN/Wall Mount	Desktop
IP Rating	IP20	IP67	IP20	IP20	IP40

*default bypass pair configuration is WAN1 & Port4
**measured using 1518 byte UDP packets

Note: All performance values are "up to" and vary depending on system configuration.
1. IPsec VPN performance test uses AES256-SHA256.
2. IPS (Enterprise Mix), Application Control, NGFW and Threat Protection are measured with Logging enabled.
3. SSL Inspection performance values use an average of HTTPS sessions of different cipher suites.
4. NGFW performance is measured with Firewall, IPS and Application Control enabled.
5. Threat Protection performance is measured with Firewall, IPS, Application Control and Malware Protection enabled.

F⦂RTINET

Specifications

	FGR-30D	FGR-35D	FGR-60D	FGR-60F	FGR-90D
Power Supply	Dual input, total 6 pin terminal block (12–48V DC) DC cables are not included. [6]	Terminal block (12–48V DC) DC cables are not included. [7]	-48V DC power supply and external 12V DC power adapter connection. AC adapter not included. DC Power connector supplied only. [8]	Terminal block (12-125V DC) cables are not included. [7]	Dual input, total 6 pin terminal block (12–48V DC) AC adapter included. [9]
Power Consumption (Average / Maximum)	15.55 W / 15.92W	10.2 W / 10.5 W	11.6 W / 14 W	15 W / 21 W	40 W / 49 W
Maximum Current	1.19A	0.83A	-48V DC / 0.5A	12V DC / 2A	12–48V DC/ 4.08–1.02A
Heat Dissipation	54.29 BTU/h	35.81 BTU/h	40 BTU/h	72 BTU/u	167 BTU/h
Operating Environment and Certifications					
Operating Temperature	-40–158°F (-40–70°C)	-40–140°F (-40–60°C)	-4–140°F (-20–60°C)	-40–167°F (-40–75°C)	-40–158°F (-40–70°C) [10]
Storage Temperature	-58–185°F (-50–85°C)	-58–185°F (-50–85°C)	-40–185°F (-40–85°C)	-40–167°F (-40–75°C)	-40–185°F (-40–85°C)
Humidity	5–95% non-condensing	5–95% non-condensing	20–90% non-condensing	20–90% non-condensing	0–95% non-condensing
Operating Altitude	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)	Up to 7,400 ft (2,250 m)
Compliance	FCC Part 15 Class A, RCM VCCI Class B, CE, UL/ cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/ cUL, CB	FCC Part 15 Class A, RCM, CE, UL/cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/ cUL, CB	FCC Part 15 Class A, RCM, VCCI Class A, CE, UL/ cUL, CB
Industry Certifications					
	61850-3 and IEEE 1613 Emission Compliant	IEC 61850-3 and IEEE 1613 Emission Compliant	—	IEC 61850-3 and IEEE 1613 certified	IEC 61850-3 and IEEE 1613 Emission Compliant

6. AC adapter not supported.
7. AC adapter not supported. Requires fabricated DC cables (refer to QuickStart Guide).
8. Requires third-party AC adapter or DC cables. If wide temperature range is not required, SP-FG60C-PDC (0–40°C) may be acquired separately.
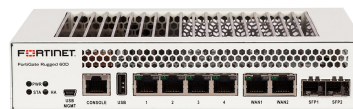9. Additional AC adapter for dual redundant input is currently not available for order.
10. Excludes supplied power adapter which operates at smaller temperature range.

FortiGate Rugged 60D

FortiGate Rugged 30D

FortiGate Rugged 35D

FortiGate Rugged 60F

FortiGate Rugged 90D

Supported Protocols

IPS and Application Control Support for Operational Technology/Industrial Control System

- ADDP
- BACnet
- CC-Link
- CIP
- CN/IP (EIA/CEA-852)
- CoAP
- DICOM
- DNP3
- ECHONET Lite
- ELCOM 90
- Ether-S-Bus

- EtherCAT Automation Protocol (EAP)
- Ethernet Global Data (EGD)
- EtherNet/IP
- FL-net
- HART-IP
- HL7
- IEC 60870-5-104
- IEC 60870-6 (TASE.2/ICCP)
- IEC 61850 MMS
- IEC 61850 R-GOOSE
- IEC 61850 R-SV

- IEC 62056 (DLMS/COSEM)
- IEEE 1278.2 Distributed Interactive Simulation
- IEEE C37.118 Synchrophasor
- KNXnet/IP (EIBnet/IP)
- LonTalk/EIA-709.1
- Modbus TCP
- MOXA
- MQTT
- MTConnect
- Niagara Fox
- OPC Classic (DA, HDA, AE)

- OPC UA
- OpenADR
- PROFINET
- RTPS
- SafetyNet p
- Siemens S7, S7Plus, LOGO
- STANAG 4406
- STANAG 5066
- TriStation
- Vedeer-Root

Order Information

Product	SKU	Description
FortiGate Rugged 30D	FGR-30D	Ruggedized, 4x GE RJ45 ports, 2x GE SFP slots, 2x DB9 Serial. Maximum managed FortiAPs (Total / Tunnel) 2 / 2.
FortiGate Rugged 35D	FGR-35D	Ruggedized, IP67 rating for outdoor environment, 3x GE RJ45 Switch ports. Maximum managed FortiAPs (Total / Tunnel) 2 / 2.
FortiGate Rugged 60D	FGR-60D	Ruggedized, 4x GE RJ45 Switch ports, 2x Shared Media pairs (Including 2x GE RJ45 ports, 2x SFP slots). DB9 Serial. Maximum managed FortiAPs (Total / Tunnel) 10 / 5.
FortiGate Rugged 60F	FGR-60F	Ruggedized, 4 x GE RJ45 Switch ports, 2 x Shared Media pairs (Including 2 x GE RJ45 ports, 2 x SFP slots). 1x RJ45 by-pass can be set up between WAN1 and PORT4. DB9 Serial.
FortiGate Rugged 90D	FGR-90D	Ruggedized, 3x GE RJ45 ports, 1x GE RJ45 bypass pair, 2x SFP slots. 2x DB9 Serial/console. Dual power input. Maximum managed FortiAPs (Total / Tunnel) 32 / 16.
Optional Accessories		
1 GE SFP LX transceivers, SMF, -40–85°C operation	FR-TRAN-LX	1 GE SFP LX transceiver module, -40–85°C, over SMF, for all systems with SFP and SFP/SFP+ slots.
1 GE SFP SX transceivers, MMF, -40–85°C operation	FR-TRAN-SX	1 GE SFP SX transceiver module, -40–85°C, over MMF, for all systems with SFP and SFP/SFP+ slots.
1 GE SFP transceivers, 90km range, -40–85°C operation	FR-TRAN-ZX	1 GE SFP transceivers, -40–85°C operation, 90km range for all systems with SFP slots.

F▪RTINET®

www.fortinet.com