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-60F-3G4G**
  Integrated 3G4G modem for ruggedized and mission-critical applications

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

**FortiGate Rugged 30D**

**Interfaces**

1. 1x USB Port
2. 4x GE RJ45 Ports
3. 2x GE SFP Slots

**FortiGate Rugged 35D**

**Interfaces**

1. 3x GE RJ45 Ports
2. 2x DB9 Serial Ports/Console

**FortiGate Rugged 60D**

**Interfaces**

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

**FortiGate Rugged 60F/-3G4G**

**Interfaces**

1. 2x GE RJ45/SFP Shared Media Pairs
2. 1x Bypass GE RJ45 Port Pair (WAN1 & Port4, default setting)*
3. 4x GE RJ45 Ports
4. Integrated 3G4G Modem

*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
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 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
<table>
<thead>
<tr>
<th>Interfaces and Modules</th>
<th>FGR-30D</th>
<th>FGR-35D</th>
<th>FGR-60D</th>
<th>FGR-60F / -3G4G</th>
<th>FGR-90D</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE RJ45 Interfaces</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Bypass GE RJ45 Port Pair*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GE SFP Slots</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GE RJ45/SFP Shared Media Pairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB9 Serial Interface</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>USB (Client / Server)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RJ45 Console Port</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cellular Modem</td>
<td></td>
<td></td>
<td></td>
<td>3G / LTE</td>
<td></td>
</tr>
<tr>
<td>Transceivers Included</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Performance and Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPv4 Firewall Throughput (1518** / 512 / 64 byte UDP packets)</td>
<td>900 Mbps**</td>
<td>550 Mbps**</td>
<td>1.5 Gbps**</td>
<td>6/5/0.95 Gbps</td>
<td>2 Gbps**</td>
</tr>
<tr>
<td>Firewall Latency (64 byte, UDP)</td>
<td>70.00 μs</td>
<td>50.00 μs</td>
<td>4.00 μs</td>
<td>3.10 μs</td>
<td>51.00 μs</td>
</tr>
<tr>
<td>Firewall Throughput (Packets Per Second)</td>
<td>97 Kops</td>
<td>53.5 Kops</td>
<td>2.2 Mbps</td>
<td>8.9 Mbps</td>
<td>84 Kops</td>
</tr>
<tr>
<td>Concurrent Sessions (TCP)</td>
<td>750,000</td>
<td>750,000</td>
<td>500,000</td>
<td>600,000</td>
<td>2.5 Million</td>
</tr>
<tr>
<td>New Sessions/Second (TCP)</td>
<td>5,000</td>
<td>5,000</td>
<td>4,000</td>
<td>19,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Firewall Policies</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>IPSec VPN Throughput (512 byte)</td>
<td>45 Mbps</td>
<td>45 Mbps</td>
<td>1 Gbps</td>
<td>3.5 Gbps</td>
<td>84 Mbps</td>
</tr>
<tr>
<td>Gateway-to-Gateway IPSec VPN Tunnels</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Client-to-Gateway IPSec VPN Tunnels</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>115 Mbps</td>
</tr>
<tr>
<td>SSL-IPSec Throughput</td>
<td>20 Mbps</td>
<td>20 Mbps</td>
<td>30 Mbps</td>
<td>400 Mbps</td>
<td>115 Mbps</td>
</tr>
<tr>
<td>Concurrent SSL-IPSec Users (Recommended Maximum)</td>
<td>50</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>SSL Inspection Throughput (IPS, avg. HTTPS)</td>
<td>75 Mbps</td>
<td>75 Mbps</td>
<td>20 Mbps</td>
<td>460 Mbps</td>
<td>85 Mbps</td>
</tr>
<tr>
<td>SSL Inspection CPS (IPS, avg. HTTPS)</td>
<td>40,000</td>
<td>40,000</td>
<td>15,000</td>
<td>70,000</td>
<td>72,000</td>
</tr>
<tr>
<td>Application Control Throughput (HTTP 64K)</td>
<td>210 Mbps</td>
<td>230 Mbps</td>
<td>95 Mbps</td>
<td>440 Mbps</td>
<td>62 Mbps</td>
</tr>
<tr>
<td>Virtual Domains (Default / Maximum)</td>
<td>7 / 5</td>
<td>7 / 5</td>
<td>10 / 10</td>
<td>10 / 10</td>
<td>10 / 10</td>
</tr>
<tr>
<td>Maximum Number of FortiAPs (Total / Tunnel)</td>
<td>10 / 5</td>
<td>10 / 5</td>
<td>10 / 5</td>
<td>10 / 5</td>
<td>10 / 5</td>
</tr>
<tr>
<td>Maximum Number of FortiTokens</td>
<td>20</td>
<td>20</td>
<td>100</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>Maximum Number of FortiSwitches</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>8</td>
</tr>
</tbody>
</table>

**High Availability Configurations**

**System Performance — Enterprise Traffic Mix**

<table>
<thead>
<tr>
<th>IPFS Throughput</th>
<th>900 Mbps</th>
<th>210 Mbps</th>
<th>35 Mbps</th>
<th>450 Mbps</th>
<th>350 Mbps</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGFW Throughput</td>
<td>45 Mbps</td>
<td>65 Mbps</td>
<td>40 Mbps</td>
<td>450 Mbps</td>
<td>370 Mbps</td>
</tr>
<tr>
<td>Threat Protection Throughput</td>
<td>16 Mbps</td>
<td>16 Mbps</td>
<td>23 Mbps</td>
<td>500 Mbps</td>
<td>280 Mbps</td>
</tr>
</tbody>
</table>

*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.
### Specifications

<table>
<thead>
<tr>
<th>Dimensions and Power</th>
<th>FGR-30D</th>
<th>FGR-35D</th>
<th>FGR-60D</th>
<th>FGR-60F/304G</th>
<th>FGR-90D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Height x Width x Length (inches)</strong></td>
<td>5.49 x 4.13 x 2.36</td>
<td>3.07 x 10.04 x 10.04</td>
<td>1.73 x 8.50 x 6.10</td>
<td>1.68 x 8.50 x 6.50</td>
<td>2.11 x 7.32 x 6.30</td>
</tr>
<tr>
<td><strong>Height x Width x Length (mm)</strong></td>
<td>139 x 106 x 60</td>
<td>76 x 265.63 x 255.09</td>
<td>44 x 216 x 155</td>
<td>44 x 216 x 155</td>
<td>53.5 x 180 x 150</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>4.48 lbs (2.08 kg)</td>
<td>3.98 lbs (1.80 kg)</td>
<td>3.5 lbs (1.58 kg)</td>
<td>3.5 lbs (1.58 kg)</td>
<td>2.4 lbs (1.09 kg)</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>Desktop</td>
<td>Outdoor mountable</td>
<td>Desktop</td>
<td>Desktop</td>
<td>Desktop</td>
</tr>
<tr>
<td><strong>IP Rating</strong></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Dual input, total 6 pin terminal block (12-48V DC) DC cables are not included. 6</td>
<td>Terminal block (12-48V DC) DC cables are not included. 7</td>
<td>-48V DC power supply and external 12V DC power adapter connection. AC adapter not included. DC Power connector supplied only. 8</td>
<td>Terminal block, supports negative (+12V to +125V DC) and positive ground (-12V to -25V DC) sources. DC cables are not included. 2 See the QuickStart Guide for details.</td>
<td>Dual input, total 6 pin terminal block (12-48V DC) AC adapter included. 9</td>
</tr>
<tr>
<td><strong>Power Consumption (Average / Maximum)</strong></td>
<td>15.95 W / 15.92W</td>
<td>10.2 W / 10.5 W</td>
<td>1.6 W / 14 W</td>
<td>15 W / 21 W</td>
<td>17 W / 24 W</td>
</tr>
<tr>
<td><strong>Maximum Current</strong></td>
<td>1.9A</td>
<td>0.83A</td>
<td>0.35A</td>
<td>3.10 μs</td>
<td>3.10 μs</td>
</tr>
<tr>
<td><strong>Heat Dissipation</strong></td>
<td>54.29 BTU/h</td>
<td>35.81 BTU/h</td>
<td>21 BTU/h</td>
<td>40 BTU/h</td>
<td>72 BTU/h</td>
</tr>
</tbody>
</table>

### Operating Environment and Certifications

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modem Model</strong></td>
<td>VCCI Class B, CE, UL/ cUL, CB</td>
<td>VCCI Class A, CE, UL/ cUL, CB</td>
<td>VCCI Class A, CE, UL/ cUL, CB</td>
<td>VCCI Class A, CE, UL/ cUL, CB</td>
<td>VCCI Class A, CE, UL/ cUL, CB</td>
</tr>
<tr>
<td><strong>Industry Certifications</strong></td>
<td>61850-3 and IEEE 1613 Emission Compliant</td>
<td>—</td>
<td>IEC 61850-3 and IEEE 1613 Emission Compliant</td>
<td>IEC 61850-3 and IEEE 1613 Certified</td>
<td>IEC 61850-3 and IEEE 1613 Emission Compliant</td>
</tr>
</tbody>
</table>

### Regional Compatibility

| **Maximum Tx Power** | 20 dBm |
| **Regions** | All Regions |
| **Modem Model** | Sierra Wireless EM7565 (2 SIM Slots, Active/Passive) |

### LTE

| **UMTS/HSPA+** | FDD | — | — | — | — |
| **Bands** | B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B39, B40, B41, B42, B43, B44, B48, B88 |
| **CDMA** | 1xRTT/1xEV-DO Rev A | — | — | — | — |
| **GSM/UMTS/GPRS/EDGE** | | — | — | — | — |

### Diversity

| **MIMO** | Yes |
| **GNSS Bias** | Yes |

---

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.
Supported Protocols

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

- AODP
- BAOD
- CC-Link
- CP
- CVP (BA/CEA-952)
- DCCP
- DCOM
- DP
- ECHONET Lite
- ELCON
- EtherCAT

- EtherCAT Automation Protocol (EAP)
- Ethernet Global Data (EGD)
- EtherIP
- FL-net
- HART
- IEC 60870-5-104
- IEC 60870-6 (TASE.2/HCCP)
- 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
- MTC/Connect
- Niagara Fox
- OPC Classic (DA, HDA, AE)

- OPC-UA
- OpenADR
- PROFINET
- RTSP
- SafetyNet p
- Siemens S7, S7plus, LOGO
- STANAG 4406
- STANAG 5066
- TR861
- Vedeer-Root

Order Information

<table>
<thead>
<tr>
<th>Product</th>
<th>SKU</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FortiGate Rugged 30D</td>
<td>FGR-30D</td>
<td>Ruggedized, 4x GE RJ45 ports, 2x GE SFP slots, 2x DB9 Serial. Maximum managed FortiAPs (Total / Tunnel): 2 / 2.</td>
</tr>
<tr>
<td>FortiGate Rugged 35D</td>
<td>FGR-35D</td>
<td>Ruggedized, 4x GE RJ45 ports, 2x GE SFP slots, 2x SFP slots. Maximum managed FortiAPs (Total / Tunnel): 10 / 5.</td>
</tr>
<tr>
<td>FortiGate Rugged 60F</td>
<td>FGR-60F</td>
<td>Ruggedized, 4x GE RJ45 Switch ports, 2x SFP slots. Maximum managed FortiAPs (Total / Tunnel): 32 / 16.</td>
</tr>
<tr>
<td>FortiGate Rugged 60F-3G4G</td>
<td>FGR-60F-3G4G</td>
<td>Ruggedized, 4x GE RJ45 Switch ports, 2x SFP slots. Maximum managed FortiAPs (Total / Tunnel): 10 / 5.</td>
</tr>
<tr>
<td>FortiGate Rugged 90D</td>
<td>FGR-90D</td>
<td>Ruggedized, 4x GE RJ45 ports, 2x GE SFP slots, 2x DB9 Serial. Maximum managed FortiAPs (Total / Tunnel): 32 / 16.</td>
</tr>
</tbody>
</table>

Optional Accessories

- 1 GE SFP LX transceivers, SMF, –40–85°C operation
- 1 GE SFP LX transceiver module, –40–85°C over SMF, for all systems with SFP and SFP/SFP+ slots.
- 1 GE SFP LX transceiver module, –40–85°C over SMF, for all systems with SFP and SFP/SFP+ slots.
- 1 GE SFP transceivers, 90km range, –40–85°C operation, 90km range for all systems with SFP slots.
- 1 GE SFP transceivers, 90km range.
- 1 GE SFP transceivers, 90km range.
- 1 GE SFP transceivers, 90km range.