DATA SHEET

FortiDDoS™

DDoS Attack Mitigation Appliances

FortiDDoS

FortiDDoS 200B, 400B, 600B, 800B, 900B, 1000B, 1000B-DC and 2000B

DDoS Attack Mitigation Appliances

The Ever-Changing DDoS Attack

Distributed Denial of Service (DDoS) attacks continue to remain the top threat to IT security and have evolved in almost every way to do what they do best: shut down your vital online services. Never has a problem been so dynamic and broad-based without being tied to one particular technology. There is almost an unlimited array of tools that Hacktivists and Cyberterrorists can use to prevent access to your network. Sophisticated DDoS attacks target Layer 7 application services where they are much smaller in size making it nearly impossible for traditional ISP-based mitigation methods to detect them.

To combat these attacks, you need a solution that is equally dynamic and broad-based. Fortinet's FortiDDoS Attack Mitigation appliances use behavior-based attack detection methods and 100% ASIC-based processors to deliver the most advanced and fastest DDoS attack mitigation on the market today.

A Different and Better Approach to DDoS Attack Mitigation

Only Fortinet uses a 100% ASIC approach to its DDoS products without the overhead and risks of a CPU or CPU/ASIC hybrid system. The FortiASIC-TP2 transaction processors provide both detection and mitigation of DDoS attacks. The FortiASIC-TP2 processor handles all Layer 3, 4 and 7 traffic types, speeding detection and mitigation performance resulting in the lowest latency in the industry.

FortiDDoS uses a 100% heuristic/behavior-based method to identify threats compared to competitors that rely primarily on signature-based matching. Instead of using pre-defined signatures to identify attack patterns, FortiDDoS builds a baseline of normal activity and then monitors traffic against it. Should an attack begin, FortiDDoS sees this as an anomaly and then immediately takes action to mitigate it. You're protected from known attacks and from the unknown "zero-day" attacks as FortiDDoS doesn't need to wait for a signature file to be updated.

Advanced DDoS Protection for Enterprise Data Centers

- 100% hardware-based Layer 3, 4 and 7 DDoS protection provides fast identification and mitigation of attacks.
- Behavior-based DDoS protection reacts to any threat without the need for signature files.
- Up to 48 Gbps total throughput with bidirectional attack mitigation.
- Massively parallel single-pass architecture monitors hundreds of thousands of parameters simultaneously for complete Layer 3, 4, and 7 DDoS attack protection in a single appliance.
- Industry leading ultra-low latency of less than 50 microseconds.
- Continuous threat evaluation minimizes risk of "false positive" detections.
- Advanced connectivity with up to 16x GE or 18x 10 GE. Built-in bypass on most models.
- Easy to deploy and manage with intuitive GUI and comprehensive reporting and analysis tools.

HIGHLIGHTS

FortiDDoS also handles attack mitigation differently than other solutions. In other DDoS attack mitigation appliances, once an attack starts, it's 100% blocked until the threat is over. If an event is mistakenly matched to a signature creating a "false positive", then all traffic comes to a halt, requiring intervention. FortiDDoS uses a more surgical approach by monitoring normal traffic and then using a reputation penalty scoring system, to rate IP addresses that are "good" and others that are causing the problem.

FortiDDoS blocks the offending IP addresses then repeatedly reevaluates the attack at user defined periods (every 15 seconds by default). If the offending IP addresses continue to be a persistent threat for each of these reevaluation periods, their reputation penalty score will increase and will eventually be blacklisted once they hit a user-defined threshold.

Easy to Set Up and Manage

FortiDDoS starts working "out-of-the-box" while its automated learning tools create a baseline of your application traffic patterns. Whether you use default or learned thresholds, FortiDDoS automatically defends you from DDoS attacks, saving your team hours configuring options, tuning profiles, analyzing reports or waiting for signature updates.

Included real-time reporting and dashboards give you the tools you need to review attacks and threats to your services. You can run reports as you need them or schedule them to be delivered to you on a regular basis. Dashboards allow you to view and understand attack trends in an easy-to-use single screen layout. Whether it's general status reporting or in-depth granular attack analysis, FortiDDoS provides detailed information on service level attacks and mitigation responses for specific events or over periods of time.

Flexible Defensive Mechanisms

FortiDDoS protects against every DDoS attack including Bulk Volumetric, Layer 7 Application, and SSL/HTTPS attacks.

From the oldest trick in the book to the latest in advanced service-level attacks, FortiDDoS has you covered.

Bulk Volumetric Attacks were the first DDoS attack types and continue to pose significant threats today. While ISPs may prevent simple attacks of this type, the attacks are increasingly used to mask more complex application-level attack methods. The easiest way to deal with these types of threats is to simply block all traffic until the attack stops. The FortiDDoS IP Reputation scoring system continues to let "good" traffic in while mitigating IP addresses that are causing the problem. This process not only provides the protection you need, but also minimizes the effects of a "false positive" match from halting good client traffic.

Layer 7 Targeted Attacks are the fastest growing source of DDoS attacks. They attempt to exploit vulnerabilities within a service to exhaust its resources rendering it unavailable. Usually these types of attacks are embedded in Bulk Volumetric Attacks, however they can occur separately. As these types of attacks require considerably less bandwidth to deny service, they are more difficult to detect and regularly pass from ISPs directly to your network. All Layer 7 targeted attacks, large or small, will trigger changes at the service level that will be identified by the FortiDDoS behavioral analysis engine and mitigated.

SSL-Based Attacks use SSL-based encryption methods to hide the content of the attack packets. Additionally, the encryption methods employed will often mean that there are far less resources available that need to be exhausted. Most signature-based solutions require decryption of the traffic to perform matching against known attack profiles. With a behavioral system such as FortiDDoS, these attacks are detected without decryption as they will cause a change in behavior. This change can then be compared with normal behavior and an understanding of the resources available. When the relevant resources become threatened, FortiDDoS responds to the attack with the correct mitigation.

Key Features & Benefits

100% Behavioral-based Detection	FortiDDoS doesn't rely on signature files that need to be updated with the latest threats so you're protected from both known and unknown "zero-day" attacks.
100% Hardware-based DDoS Protection	The FortiASIC-TP2 transaction processor provides bi-directional detection and mitigation of Layer 3, 4 and 7 DDoS attacks for industry-leading performance.
Continuous Attack Evaluation	Minimizes the risk of "false positive" detection by reevaluating the attack to ensure that "good" traffic isn't disrupted.
Congestion Resistant	With up to 48 Gbps of total bidirectional throughput, FortiDDoS won't easily be overwhelmed by high-volume DDoS attacks.
Automated Learning Process	With minimal configuration, FortiDDoS will automatically build normal traffic and resources behavior profiles saving you time and IT management resources.
Multiple Attack Protection	By understanding behaviors FortiDDoS can detect any DDoS attack from basic Bulk Volumetric to sophisticated Layer 7 SSL-based attacks without the need to decrypt traffic.
Comprehensive Reporting Capabilities	Included real-time and historic reports provide granular visibility for network and protocol layers.

FEATURES

Packet Inspection Technology

- Predictive Behavioral Analysis
- Heuristic Analysis
- Granular Deep Packet Insection
- Continuous Adaptive Rate Limiting
- Stateful Monitoring for specific attack vectors

Multi-Verification Process

- Dynamic Filtering
- Active Verification
- Anomaly Recognition
- Protocol Analysis
- Rate Limiting
- White List, Black List, Non-Tracked Subnets
- State Anomaly Recognition
- Stealth Attack Filtering
- Dark Address Scan Prevention
- Source Tracking
- Legitimate IP Address Matching (Anti-Spoofing)

Flood Prevention Mechanisms

- SYN Cookie, ACK Cookie, SYN Retransmission
- Connection Limiting
- Aggressive Ageing
- Legitimate IP Address Matching
- Source Rate Limiting
- Source Tracking
- Granular Rate Limiting

Layer 3 Flood Mitigation

- Protocol Floods
- Fragment Floods
- Source Floods
- Destination Floods
- Dark Address Scans
- Excessive TCP SYN, ACK, FIN, RST per Destination
- Geo-location Access Control Policy (ACP)

Layer 4 Flood Mitigation

- TCP Ports (all)
- UDP Ports (all)
- ICMP Type/Codes (all)
- Connection Flood
- SYN, ACK, RST, FIN Floods
- Excessive SYN's/second per Source or Destination
- Excessive Connection Establishments/Second
- Zombie Floods
- Excessive Connections per Source Flood
- Excessive Connections per Destination Flood
- TCP State Violation Floods

Layer 7 Flood Mitigation

- Opcode Flood
- HTTP URL, GET, HEAD, OPTIONS, TRACE, POST, PUT, DELETE, CONNECT Floods
- User Agent Flood
- Referrer Flood
- Cookie Flood
- Host Flood
- Associated URL Access
- Mandatory HTTP Header Parameters
- Sequential HTTP Access
- SIP Invites per Source
- SIP Registers per Source
- SIP Concurrent Invites per Source

IP Reputation Analysis

- Dynamic IP Reputation Analysis
- Automatic IP Reputation Database Updates

Management

- SSL Management GUI
- CLI
- RESTful API

Behavioral Monitoring Metrics

- Packets/Source/Second
- SYN Packet/Second
- Connection Establishments/Second
- SYN Packets/Source/Second
- Connections/Second
- Concurrent Connections/Source
- Concurrent Connections/Destination
- Packets/Port/Second
- Fragmented Packets/Second
- Protocol Packets/Second
- Same URL/Second
- Same User-Agent/Host/Referrer/Cookie/Second
- Same User-Agent, Host, Cookie, Referrer/Second
- Anti-Spoofing Checks
- Associated URLs Heuristics

Reporting Statistics

- Top Attacks
- Top Attackers
- Top Attacked Subnets
- Top Attacked Protocols
- Top Attacked TCP Ports
- Top Attacked UDP Ports
- Top Attacked ICMP Type/Codes
- Top Attacked URLs
- Top Attacked HTTP Hosts
- Top Attacked HTTP Referrers
- Top Attacked HTTP Cookies
- Top Attacked HTTP User-Agents

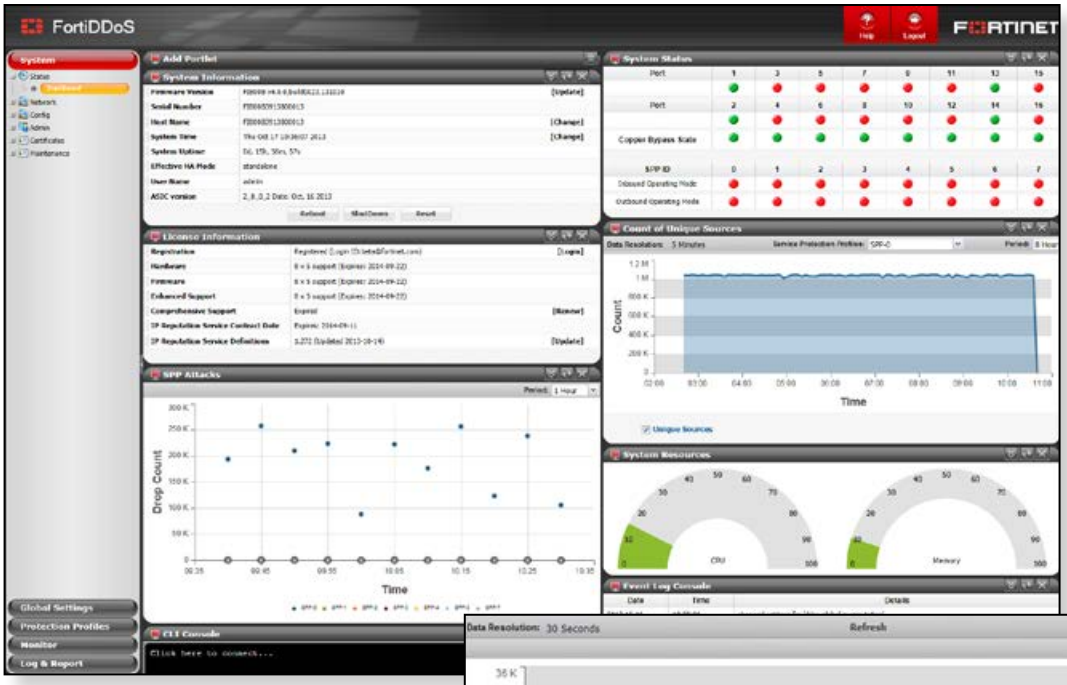
Centralized Event Reporting

- SNMP
- Email/Pager
- RESTful API
- Support for MRTG, Cacti

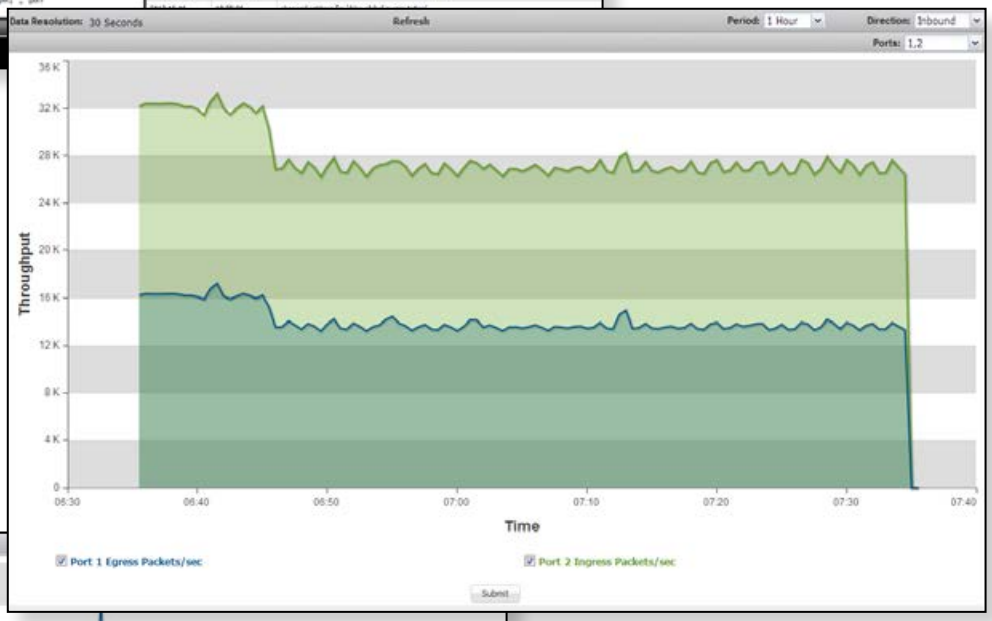
Audit and Access Trails

- Login Audit Trail
- Configuration Audit Trail

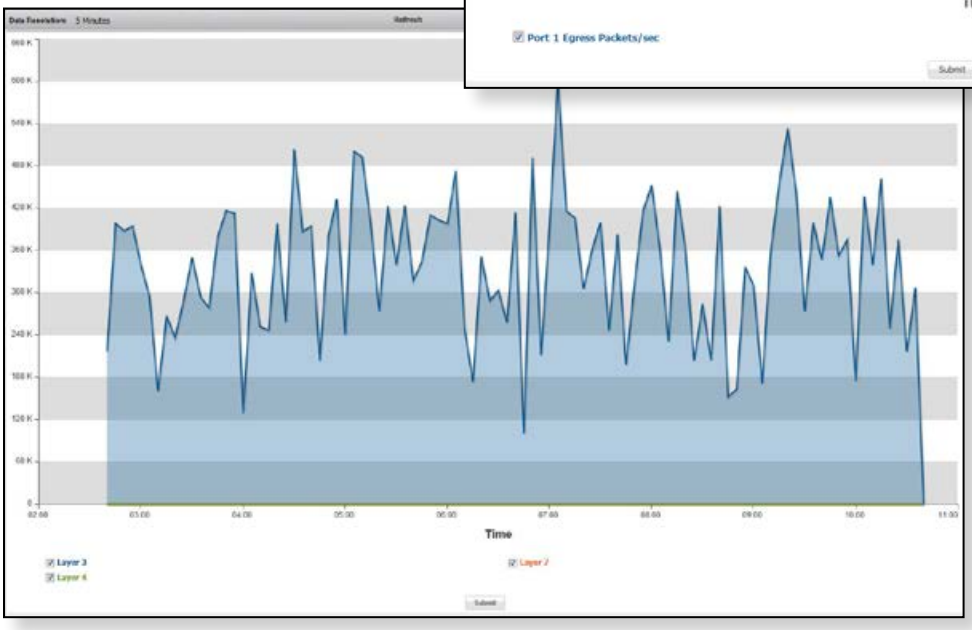
FEATURES



Dashboard view of status and events



Port statistics: Packet monitoring



Aggregate drop

SPECIFICATIONS

	FORTIDDOS 200B	FORTIDDOS 400B	FORTIDDOS 600B	FORTIDDOS 800B
Hardware Specifications				
LAN Interfaces Copper GE with built-in bypass	4	8	8	8
WAN Interfaces Copper GE with built-in bypass	4	8	8	8
LAN Interfaces SFP GE	4	8	8	8
WAN interfaces SFP GE	4	8	8	8
LAN Interfaces SFP+ 10 GE / SFP GE	—	—	—	—
WAN Interfaces SFP+ 10 GE / SFP GE	—	—	—	—
LAN Interfaces LC (850 nm, 10 GE) with built-in bypass	—	—	—	—
WAN Interfaces LC (850 nm, 10 GE) with built-in bypass	—	—	—	—
Storage	1x 480 GB SSD	1x 480 GB SSD	1x 480 GB SSD	1x 480 GB SSD
Form Factor	1U Appliance	1U Appliance	1U Appliance	1U Appliance
Power Supply	Single (Optional External Dual Hot-Swappable)	Single (Optional External Dual Hot-Swappable)	Single (Optional External Dual Hot-Swappable)	Single (Optional External Dual Hot-Swappable)
System Performance				
Total Bidirectional Throughput (Gbps)	4	8	16	16
Total Bidirectional Packet Throughput (Mpps)	3.5	7	14	14
SYN Flood Mitigation (SYN In + Cookie Out) Mpps	3.5	7	14	14
Simultaneous Connections/Flows Tracked (M)	1	1	2	2
Simultaneous Sources Tracked (M)	1	1	2	2
New Connections/Flows Tracked (k/s)	100	100	200	200
Latency (µs) Max/Typical	<50/<10	<50/<10	<50/<10	<50/<10
DDoS Attack Mitigation Response Time (s)	<2	<2	<2	<2
Environment				
Input Voltage AC	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz
Input Voltage DC	—	—	—	—
Power Consumption (Average)	156 W	156 W	174 W	174 W
Power Consumption (Maximum	260 W	260 W	285 W	285 W
Maximum Current AC	110V/5.29A, 120V/2.2A	110V/5.29A, 120V/2.2A	110V/5.29A, 220V/2.2A	110V/5.29A, 120V/2.2A
Maximum Current DC	—	—	—	—
Heat Dissipation	887 BTU/h	887 BTU/h	972 BTU/h	972 BTU/h
Operating Temperature	32–104°F (0–40°C)	32–104°F (0–40°C)	32–104°F (0–40°C)	32–104°F (0–40°C)
Storage Temperature	-13–158°F (-25–70°C)	-13–158°F (-25–70°C)	-13–158°F (-25–70°C)	-13–158°F (-25–70°C)
Humidity	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing
Compliance				
Safety Certifications	FCC Class A Part 15, UL/CB/cUL, C-Tick, VCCI, CE			
Dimensions				
Height x Width x Length (inches)	1.77 x 17 x 16.32	1.77 x 17 x 16.32	1.77 x 17 x 16.32	1.77 x 17 x 16.32
Height x Width x Length (mm)	45 x 432 x 414.5	45 x 432 x 414.5	45 x 432 x 414.5	45 x 432 x 414.5
Weight	17.2 lbs (7.8 kg)	17.2 lbs (7.8 kg)	17.2 lbs (7.8 kg)	17.2 lbs (7.8 kg)

FortiDDoS 200B

FortiDDoS 400B

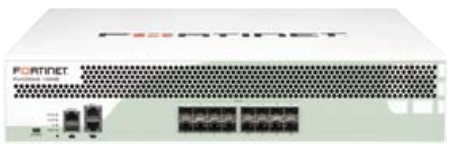
FortiDDoS 600B

FortiDDoS 800B

SPECIFICATIONS

	FORTIDDOS 900B	FORTIDDOS 1000B / FORTIDDOS 1000B-DC	FORTIDDOS 2000B
Hardware Specifications			
LAN Interfaces Copper GE with built-in bypass	—	—	—
WAN Interfaces Copper GE with built-in bypass	—	—	—
LAN Interfaces SFP GE	—	—	—
WAN interfaces SFP GE	—	—	—
LAN Interfaces SFP+ 10 GE / SFP GE	8	8	7
WAN Interfaces SFP+ 10 GE / SFP GE	8	8	7
LAN Interfaces LC (850 nm, 10 GE) with built-in bypass	—	—	2
WAN Interfaces LC (850 nm, 10 GE) with built-in bypass	—	—	2
Storage	1x 480 GB SSD	1x 480 GB SSD	1x 480 GB SSD
Form Factor	2U Appliance	2U Appliance	2U Appliance
Power Supply	Dual Hot-Swappable	Dual Hot-Swappable	Dual Hot-Swappable
System Performance			
Total Bidirectional Throughput (Gbps)	24	24	48
Total Bidirectional Packet Throughput (Mpps)	21	21	42
SYN Flood Mitigation (SYN In + Cookie Out) Mpps	21	21	42
Simultaneous Connections/Flows Tracked (M)	3	3	6
Simultaneous Sources Tracked (M)	3	3	6
New Connections/Flows Tracked (k/s)	300	300	600
Latency (µs) Max/Typical	<50/<10	<50/<10	<50/<10
DDoS Attack Mitigation Response Time (s)	<2	<2	<2
Environment			
Input Voltage AC	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz
Input Voltage DC	40.5V–57V VDC	40.5–57V DC	—
Power Consumption (Average)	253 W	253 W	311 W
Power Consumption (Maximum	422 W	422 W	575 W
Maximum Current AC	110V/10.0A, 220V/5.0A	110V/10.0A, 120V/5.0A	110V/10.0A, 120V/5.0A
Maximum Current DC	24A	24A	—
Heat Dissipation	1,440 BTU/h	1,440 BTU/h	1,962 BTU/h
Operating Temperature	32–104°F (0–40°C)	32–104°F (0–40°C)	32–104°F (0–40°C)
Storage Temperature	-13–158°F (-25–70°C)	-13–158°F (-25–70°C)	-13–158°F (-25–70°C)
Humidity	5–95% non-condensing	5–95% non-condensing	5–95% non-condensing
Compliance			
Safety Certifications	FCC Class A Part 15, UL/CB/cUL, C-Tick, VCCI, CE		
Dimensions			
Height x Width x Length (inches)	3.5 x 17.24 x 22.05	3.5 x 17.24 x 22.05	3.5 x 17.24 x 22.05
Height x Width x Length (mm)	88 x 438 x 560	88 x 438 x 560	88 x 438 x 560
Weight	36.0 lbs (16.2 kg)	36.0 lbs (16.2 kg)	36.0 lbs (16.2 kg)

FortiDDoS 900B



FortiDDoS 1000B

FortiDDoS 2000B

ORDER INFORMATION

Product	SKU	Description
FortiDDoS 200B	FDD-200B	DDoS Protection Appliance — 4 pairs x Shared Media DDoS Defense Ports (including 4 pairs x GE RJ45 with bypass protection, 4 pairs x GE SFP slots), 2x GE RJ45 Management Ports, AC Power Supply with Redundant Power Option. Includes 480 GB SSD storage. Up to 4 Gbps total bidirectional throughput.
FortiDDoS 400B	FDD-400B	DDoS Protection Appliance — 8 pairs x Shared Media DDoS Defense Ports (including 8 pairs x GE RJ45 with bypass protection, 8 pairs x GE SFP slots), 2x GE RJ45 Management Ports, AC Power Supply with Redundant Power Option. Includes 480 GB SSD storage. Up to 8 Gbps total bidirectional throughput.
FortiDDoS 600B	FDD-600B	DDoS Protection Appliance — 8 pairs x Shared Media DDoS Defense Ports (including 8 pairs x GE RJ45 with bypass protection, 8 pairs x GE SFP slots), 2x GE RJ45 Management Ports, AC Power Supply with Redundant Power Option. Includes 480 GB SSD storage. Up to 16 Gbps total bidirectional throughput.
FortiDDoS 800B	FDD-800B	DDoS Protection Appliance — 8 pairs x Shared Media DDoS Defense Ports (including 8 pairs x GE RJ45 with bypass protection, 8 pairs x GE SFP slots), 2x GE RJ45 Management Ports, AC Power Supply with Redundant Power Option. Includes 480 GB SSD storage. Up to 16 Gbps total bidirectional throughput.
FortiDDoS 900B	FDD-900B	DDoS Protection Appliance — 8 pairs x 10 GE SFP+ DDoS Defense Ports (can also support GE SFPs), 2x GE RJ45 Management Ports, Dual AC Power Supplies. Includes 480 GB SSD storage and 2x 10 GE SR SFP+. Up to 24 Gbps total bidirectional throughput.
FortiDDoS 1000B	FDD-1000B	DDoS Protection Appliance — 8 pairs x 10 GE SFP+ DDoS Defense Ports (can also support GE SFPs), 2x GE RJ45 Management Ports, Dual AC Power Supplies. Includes 480 GB SSD storage and 2x 10 GE SR SFP+. Up to 24 Gbps total bidirectional throughput.
FortiDDoS 1000B-DC	FDD-1000B-DC	DDoS Protection Appliance — 8 pairs x 10 GE SFP+ DDoS Defense Ports (can also support GE SFPs), 2x GE RJ45 Management Ports, Dual DC Power Supplies. Includes 480 GB SSD storage and 2x 10 GE SR SFP+. Up to 24 Gbps total bidirectional throughput.
FortiDDoS 2000B	FDD-2000B	DDoS Protection Appliance — 8 pairs x 10GE SFP+ DDoS Defense Ports (can also support GE SFPs), 2 pairs x 10 GE LC Ports with optical bypass, 2x GE RJ45 Management Ports, Dual AC Power Supplies. Includes 480 GB SSD storage and 2x 10 GE SR SFP+. Up to 48 Gbps total bidirectional throughput.
FortiDDoS Compatible Transceivers		
1 GE SFP LX transceiver module	FG-TRAN-LX	1 GE SFP LX transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP RJ45 transceiver module	FG-TRAN-GC	1 GE SFP RJ45 transceiver module for all systems with SFP and SFP/SFP+ slots.
1 GE SFP SX transceiver module	FG-TRAN-SX	1 GE SFP SX transceiver module for all systems with SFP and SFP/SFP+ slots.
10 GE SFP+ transceiver module, short range	FG-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	FG-TRAN-SFP+LR	10 GE SFP+ transceiver module, long range for all systems with SFP+ and SFP/SFP+ slots.
10 GE SFP+ active direct attach cable, 10m / 32.8 ft	SP-CABLE-ADASFP+	10 GE SFP+ active direct attach cable, 10 m / 32.8 ft for all systems with SFP+ and SFP/SFP+ slots.
Compatible Fiber Bypass Units		
FortiBridge 2001F	FBG-2001F	1 G fiber failure bypass unit for one network segment. Includes 2x 1 G SR SFPs.
FortiBridge 2002F	FBG-2002F	1 G fiber failure bypass unit for two network segments. Includes 4x 1 G SR SFPs.
FortiBridge 2002X	FBG-2002X	10 G fiber failure bypass unit for two network segments. Includes 4x 10 G SR SFP+s.
FortiBridge 3002S	FBG-3002S	FortiBridge 3002S (Short Range), power failure bypass functionality for two network segments. 4x 10 G SFP+, 4x LC, 1x console port, dual power supply.
FortiBridge 3002L	FBG-3002L	FortiBridge 3002L (Long Range), power failure bypass functionality for two network segments. 4x 10 G SFP+, 4x LC, 1x console port, dual power supply.
FortiBridge 3004S	FBG-3004S	FortiBridge 3004S (Short Range), power failure bypass functionality for four network segments. 8x 10 G SFP+, 8x LC, 1x console port, dual power supply.
FortiBridge 3004L	FBG-3004L	FortiBridge 3004SL (Short Range + Long Range), power failure bypass functionality for two network segments for short range and two network segments for long range. 4x 10 G SFP+ (short range), 4x 10 G SFP+ (long range), 4x LC (short range), 4x LC (long range), 1x console port, dual power supply.
Optional Accessory		
External redundant AC power supply	FRPS-100	External redundant AC power supply for up to 4 units: FG-300C, FG-310B, FS-348B and FS-448B. Up to 2 units: FG-200B, FG-200D, FG-240D and FG-300D, FG-500D, FDD-200B, FDD-400B, FDD-600B and FDD-800B. Not supported for: FG-200D-POE/240D-POE

GLOBAL HEADQUARTERS
Fortinet Inc.
899 Kifer Road
Sunnyvale, CA 94086
United States
Tel: +1.408.235.7700
www.fortinet.com/sales

EMEA SALES OFFICE
120 rue Albert Caquot
06560, Sophia Antipolis,
France
Tel: +33.4.8987.0510

APAC SALES OFFICE
300 Beach Road 20-01
The Concourse
Singapore 199555
Tel: +65.6513.3730

LATIN AMERICA SALES OFFICE
Prol. Paseo de la Reforma 115 Int. 702
Col. Lomas de Santa Fe,
C.P. 01219
Del. Alvaro Obregón
México D.F.
Tel: 011-52-(55) 5524-8480