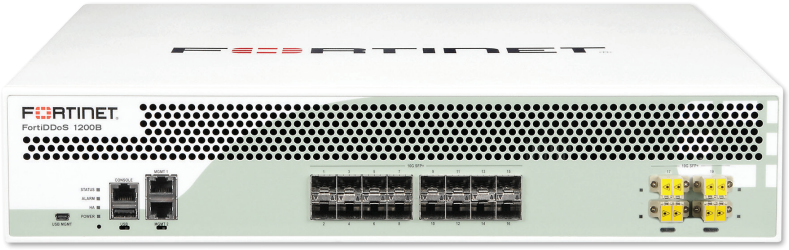
FortiDDoS™

FortiDDoS 200B, 400B, 600B, 800B, 900B, 1000B, 1000B-DC and 1200B



Distributed Denial of Service (DDoS) attacks continue to remain a 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 create not only Layer 4 volumetric assaults, but also target Layer 7 and DNS services where much smaller attack sizes can hide the attacks from cloud-based mitigation methods.

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% hardware-based detection and mitigation using security processing units (SPUs) 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% SPU approach to its DDoS products without the performance compromises of a CPU or CPU/ASIC hybrid system. The SPU-TP2 transaction processors inspect 100% of both inbound and outbound Layer 3, 4 and 7 traffic, resulting in the fastest detection and mitigation, and 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 requiring predefined signatures to identify attack patterns, FortiDDoS uses its massively-parallel computing architecture to build an adaptive baseline of normal activity from hundreds-of-thousands of parameters and then monitors traffic against that baseline. Should an attack begin, FortiDDoS sees this as abnormal and immediately takes action to mitigate it.

Highlights

- 100% hardware-based Layer 3, 4 and 7 DDoS attack identification and mitigation
- 100% Behavior-based DDoS detection
- Advanced DNS DDoS mitigation on most models
- Hybrid On-premise/Cloud mitigation available
- Continuous threat evaluation to minimize false positive detections
- Single-pass architecture simultaneously monitors hundreds of thousands of parameters

FortiCare Worldwide 24/7 Support

support.fortinet.com

HIGHLIGHTS

You're protected from known attacks and from the unknown "zero-day" attacks as FortiDDoS doesn't need to wait for updated signature files.

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

FortiDDoS blocks the offending Source IP addresses, then repeatedly reevaluates the attack at user defined intervals. If the offending Source IP addresses continue to be a persistent threat for each of these reevaluation periods, their reputation penalty score will increase and the blocking period extended until the attack subsides. Destination IPs are seldom rate-limited and valid Source IPs are always allowed.

Flexible Defense Mechanisms

FortiDDoS protects against every DDoS attack including Bulk Volumetric, Layer 7 Application, DNS, and SSL/HTTPS attacks. From the oldest trick in the book to the latest in advanced application layer 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 abnormal traffic until the attack stops. The FortiDDoS IP Reputation scoring system continues to let "good" traffic in while mitigating Source 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 a fast-growing source of DDoS attacks. They attempt to exploit vulnerabilities within a service or within a server to exhaust its resources rendering it unavailable. 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.

DNS-Based Attacks target root, TLD, Authoritative and Recursive DNS servers. Enterprises and Carriers that host DNS servers are at risk from DDoS attacks that specifically target these resources by exploiting weaknesses in the way DNS servers handle requests and traffic. FortiDDoS is the only DDoS mitigation platform that inspects 100% of all DNS traffic to protect against all types of DDoS attacks directed at DNS servers, including DNS reflection/Response floods, NXdomain, Query floods, Random Subdomain floods and DNS header anomalies. FortiDDoS supports the FortiGuard Domain Reputation Service to protect DNS servers from known malicious fully qualified domain names (FQDNs). Advanced DNS Protection is available on most FortiDDoS models. Please check the Product Specifications table for more information.

IoT-based botnets, like Mirai, are capable of multi-vector GRE, DNS random subdomain, DNS reflection, small-packet UDP and TCP state attacks, while spoofing the entire IPv4 address space. Small packet floods stress the real-time capabilities of many DDoS devices, preventing full inspection and without advanced DNS detection techniques, random subdomain attacks look like normal Query traffic while exhausting DNS server resources. FortiDDoS' hardware architecture and massive number of parameters monitored will continue to protect you as these attacks evolve.

Hybrid On-premise/Cloud DDoS Mitigation

While FortiDDoS can mitigate any DDoS attack to the limit of the incoming bandwidth, large attacks can overwhelm incoming link(s). FortiDDoS partners with Verisign OpenHybrid™ DDoS Protection Service to provide hybrid CPE/cloud DDoS mitigation when attacks threaten to congest upstream resources. FortiDDoS on-premise appliances in enterprise data centers can also collaborate directly with high capacity FortiDDoS models in the service provider network using our cloud-signaling technology.

Key Features and 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 SPU-TP2 transaction processor provides 100% packet inspection with 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.
Advanced DNS Protection	FortiDDoS provides 100% inspection of all DNS traffic for protection from a broad range of DNS-based volumetric, application and anomaly attacks.
Automated Learning Process	With minimal configuration, FortiDDoS will automatically build normal traffic and resources behavior profiles saving you time and IT management resources.
Hybrid On-premise/Cloud Support	Open API allows integration with third-party cloud DDoS mitigation providers for flexible deployment options and protection from large-scale DDoS attacks.

FORTIDDOS FEATURES

Packet Inspection Technology
- Predictive Behavioral Analysis
- Heuristic Analysis
- Granular Deep Packet Inspection
- Continuous Adaptive Rate Limiting
- State Monitoring for specific attack vectors
- 100% Packet Inspection

Behavior Threshold Management
- System Recommendation based on past traffic statistics
- Adaptive threshold estimation

Multi-Verification Process
- Dynamic Filtering
- Active Verification
- Anomaly Recognition
- Protocol Analysis
- White List, Black List, Non-Tracked Subnets
- State Anomaly Recognition
- Stealth Attack Filtering
- Local address anti-spoofing (BCP-38)
- Source Tracking
- Legitimate IP Address Matching (Anti-Spoofing)
- Elevated treatment for Proxy-IPs — detected based on headers and number of concurrent connections

Layer 3 Flood Mitigation
- Protocol Floods (all)
- Fragment Floods
- Source Floods
- Destination Floods
- Local Address Anti-Spoofing (Enhanced BCP38) Geo-location Access Control Lists
- IP Reputation ACL
- Comprehensive 2^32 Capacity Source Address ACLs

Layer 4 Flood Mitigation
- TCP Ports (all)
- UDP Ports (all)
- ICMP Type/Codes (all)
- SYN, Connection Floods
- Excessive SYN/Connections second per Source
- Zombie Floods
- Slow Connections
- TCP State Violation Floods

Layer 7 Flood Mitigation
- HTTP URL
- HTTP METHOD:GET, HEAD, OPTIONS, TRACE, POST, PUT, DELETE, CONNECT Floods
- User Agent Flood
- Referrer Flood
- Cookie Flood
- Host Flood
- Mandatory HTTP Header Parameters
- Sequential HTTP Access

Flood Prevention Mechanisms
- SYN Cookie, ACK Cookie, SYN Retransmission, DNS retransmission, DNS TC=1
- Legitimate IP Address Matching
- Source Tracking
- Source Rate Limiting
- Granular Rate Limiting
- Connection Limiting
- Aggressive Ageing

DNS Attack Mitigation
- DNS Header anomaly prevention
- DNS Query-Response matching
- DNS Query/MX/ALL/ZT/fragment/per-Source floods
- DNS Query Source validation
- DNS Unexpected Query
- Unsolicited DNS Response flood
- DNS Response cache under flood
- DNS Query TTL checks
- DNS-specific ACLs
- Domain Reputation ACL

Management
- SSL Management GUI
- CLI
- RESTful API

FORTIDDOS FEATURES

Reporting Statistics

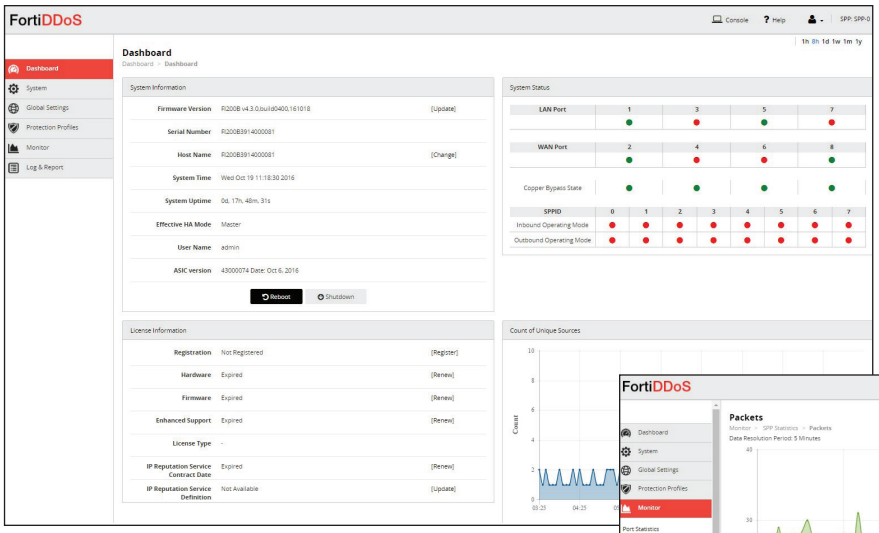
- Filterable Attack Log
- Over 80 built-in reporting graphs for each protected subnet and for each traffic direction
- Summary Graphs and Logs for:
  - Top Attacks
  - Top Attackers
  - Top ACL Drops
  - Top Attacked Subnets and IP Addresses
  - Top Attacked Protocols
  - Top Attacked TCP and UDP Ports
  - Top Attacked ICMP Types/Codes
  - Top Attacked URLs
  - Top Attacked HTTP Hosts, Referers, Cookies, User-Agents
  - Top Attacked DNS Servers
  - Top Attacked DNS Anomalies

Centralized Event Reporting

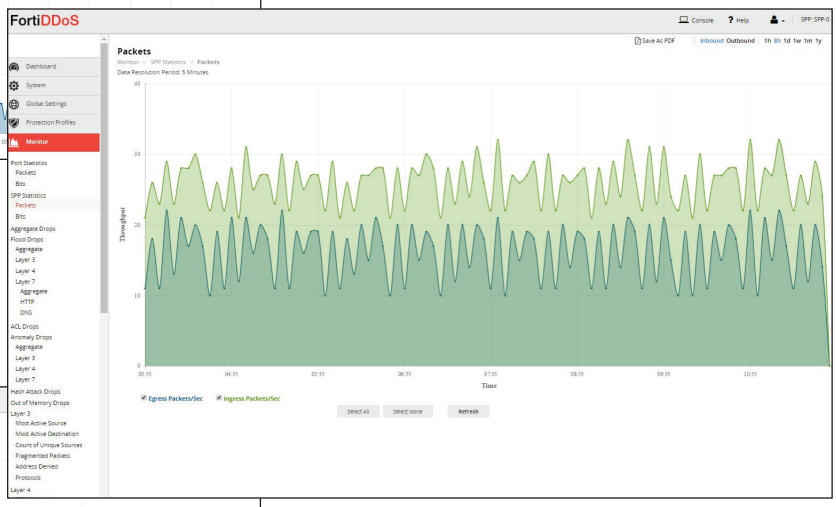
- SNMP
- Email/Pager
- RESTful API
- Support for FortiAnalyzer, MRTG, Cacti

Audit and Access Trails

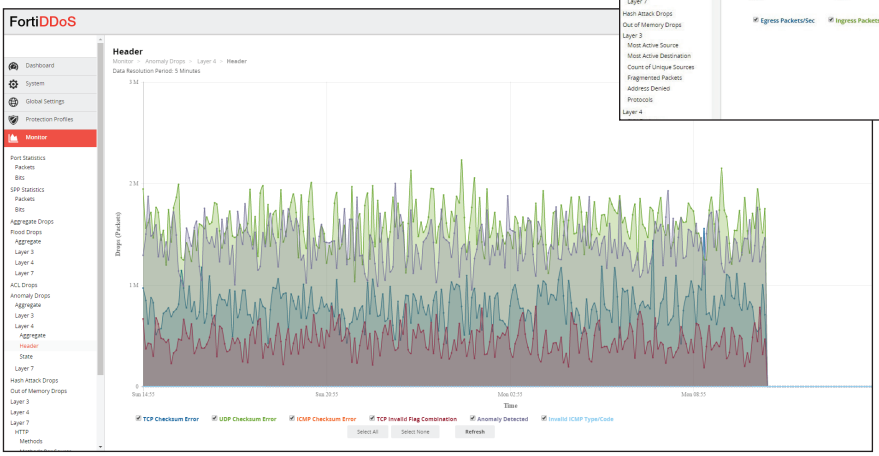
- Login Audit Trail
- Configuration Audit Trail



Dashboard view of status and events



SPP statistics: Packet monitoring



Layer 4 Header Anomoly Drops

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				
Throughput (Enterprise Mix — Gbps)	3	6	12	12
Packet Throughput (Mpps)	4	8	16	16
Latency (µs) Maximum/Typical	<50/<10	<50/<10	<50/<10	<50/<10
DDoS Attack Mitigation Response Time (s)	<2	<2	<2	<2
Advanced DNS Mitigation (Firmware v4.2.0)	Yes	Yes	No	Yes
DNS Queries per second (M)	1	2	NA	4
Open Hybrid Cloud Mitigation Support	Yes	Yes	Yes	Yes
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 (BTU/hr) / (kjoules/hr)	887 / 936	887 / 936	972 /1026	972 /1026
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 1200B
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	8
WAN Interfaces SFP+ 10 GE / SFP GE	8	8	8
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			
Throughput (Enterprise Mix — Gbps)	18	18	36
Packet Throughput (Mpps)	24	24	48
Latency (µs) Max/Typical	<50/<10	<50/<10	<50/<10
DDoS Attack Mitigation Response Time (s)	<2	<2	<2
Advanced DNS Mitigation (Firmware v4.2.0)	No	Yes	Yes
DNS Queries per second (M)	NA	6	12
Open Hybrid Cloud Mitigation Support	Yes	Yes	Yes
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	—	40.5–57V 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	—
Heat Dissipation (BTU/hr) / (kjoules/hr)	1440 / 1420	1440 / 1420	1962 / 2070
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 1200B

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. 3 Gbps throughput. Supports Advanced DNS Mitigation.
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. 6 Gbps throughput. Supports Advanced DNS Mitigation.
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. 12 Gbps throughput. Does NOT support Advanced DNS Mitigation.
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. 12 Gbps throughput. Supports Advanced DNS Mitigation.
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+. 18 Gbps throughput. Does NOT support Advanced DNS Mitigation.
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+. 18 Gbps throughput. Supports Advanced DNS Mitigation.
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+. 18 Gbps throughput. Supports Advanced DNS Mitigation.
FortiDDoS 1200B	FDD-1200B	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+. 36 Gbps throughput. Supports Advanced DNS Mitigation.
FortiDDoS Compatible Transceivers		
FortiDDoS Transceivers	FG-TRAN-LX	1 GE SFP LX transceiver module for all systems with SFP and SFP/SFP+ slots.
	FG-TRAN-GC	1 GE SFP RJ45 transceiver module for all systems with SFP and SFP/SFP+ slots.
	FG-TRAN-SX	1 GE SFP SX transceiver module for all systems with SFP and SFP/SFP+ slots.
	FG-TRAN-SFP+SR	10 GE SFP+ transceiver module, short range for all systems with SFP+ and SFP/SFP+ slots.
	FG-TRAN-SFP+LR	10 GE SFP+ transceiver module, long range for all systems with SFP+ and SFP/SFP+ slots.
	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
905 rue Albert Einstein
06560 Valbonne
France
Tel: +33.4.8987.0500

APAC SALES OFFICE
300 Beach Road 20-01
The Concourse
Singapore 199555
Tel: +65.6395.2788

LATIN AMERICA SALES OFFICE
Sawgrass Lakes Center
13450 W. Sunrise Blvd., Suite 430
Sunrise, FL 33323
United States
Tel: +1.954.368.9990