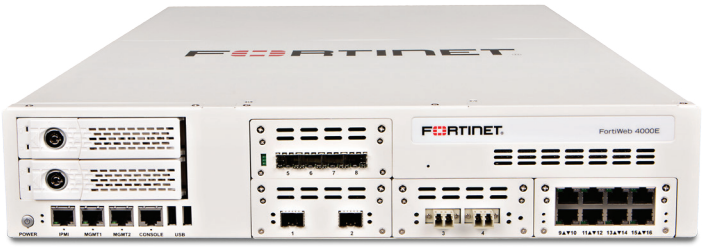
FORTINET

Web Application Firewall with Dual AI-based Machine Learning Engines

FortiWeb™

FortiWeb 100D, 400D, 600D, 1000D, 1000E, 2000E, 3000E, 3010E, 4000E, VM and Container

FortiWeb is a web application firewall (WAF) that protects hosted web applications from attacks that target known and unknown exploits. Using AI-enhanced multi-layer and correlated detection methods, FortiWeb defends applications from known vulnerabilities and from zero-day threats.



Acceleration and Performance

Multi-core processor technology combined with hardware-based SSL tools deliver blazing fast protected WAF throughput.

Application Protection

Protection from the OWASP Top Ten application attacks including Cross Site Scripting and SQL Injection.

AI-based Machine Learning Threat Detection

Dual-layer machine learning engines are employed to detect application request anomalies and determine if they are threats.

Highlights

- Correlated threat detection with AI-based behavioral scanning
- Up to 20 Gbps protected WAF throughput
- Enhanced protection with Fortinet Security Fabric integration
- Visual analytics tools for advanced threat insights
- Third-party integration and virtual patching

FortiCare Worldwide 24/7 Support

support.fortinet.com

FortiGuard Security Services

www.fortiguard.com

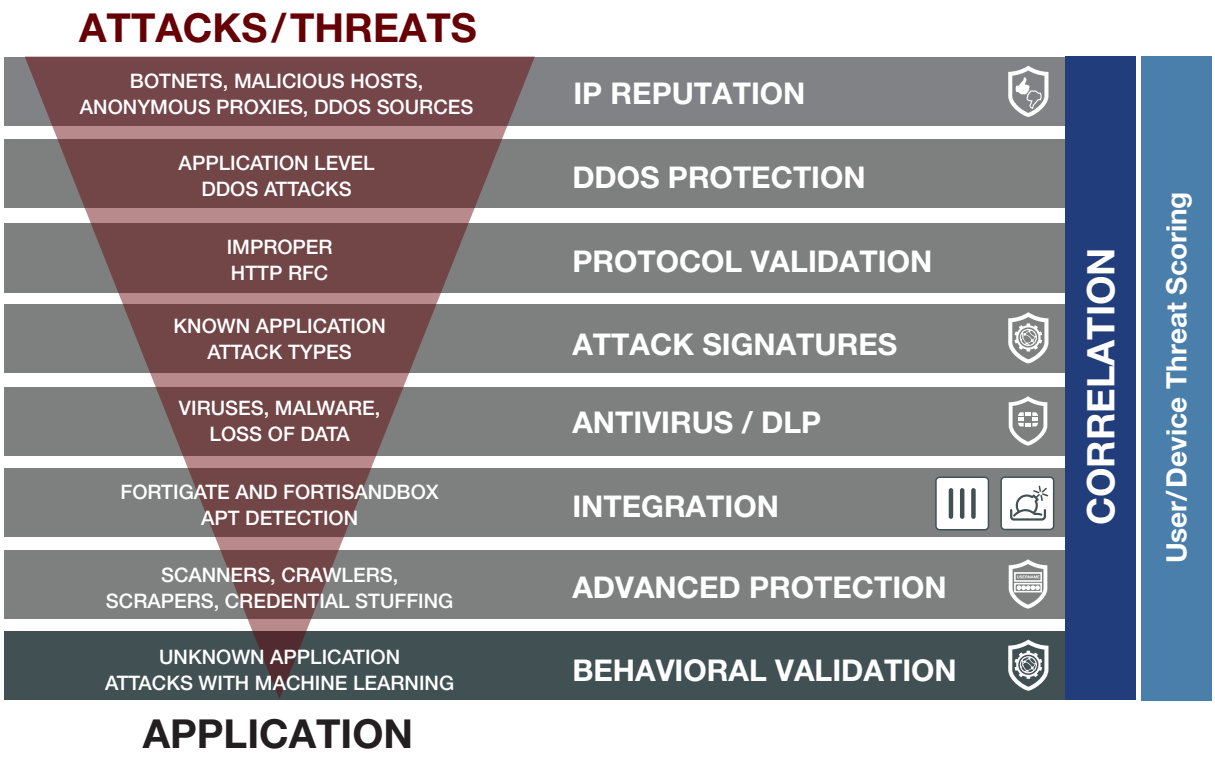
Third-Party Certification

ICSA labs CERTIFIED WEB APPLICATION FIREWALL

HIGHLIGHTS

Comprehensive Web Application Security with FortiWeb

Using an advanced multi-layered and correlated approach, FortiWeb provides complete security for your external and internal web-based applications from the OWASP Top 10 and many other threats. At the heart of FortiWeb is AI-based detection engine that uses machine learning to identify requests that stray from normal patterns and takes action to protect applications from known and unknown zero-day threats.



FortiWeb's layered and correlated approach to threat detection provides protection from known and unknown zero-day threats that target application vulnerabilities.

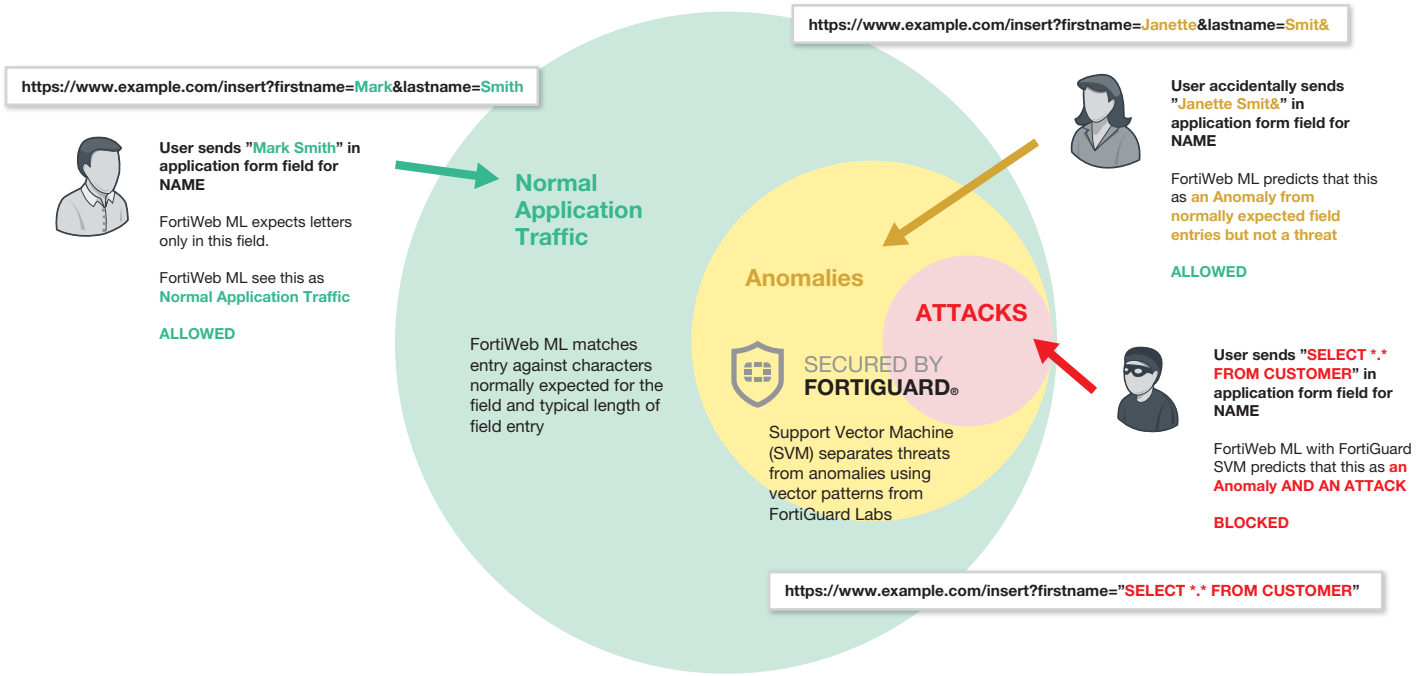
Dual-Layer Machine Learning Powered by FortiGuard Labs

Although Web Application Firewalls are the best defense against attacks that target web-based applications, WAFs can be tedious and time-consuming to fine tune to prevent unwanted false positive detections. FortiWeb solves this challenge using an AI-based machine learning approach that employs two separate detection engines.

The first automatically and dynamically monitors all application elements for activity that strays from predicted entries. If this first engine flags what it determines is an anomaly, it is then sent to the second machine learning layer to assess if it is a threat or simply a benign variance such as a typo or new character that hasn't been seen previously. If it is an attack, then FortiWeb can take actions such as logging, alerting and/or blocking the request. The second machine learning layer uses threat models that are included as part of the FortiWeb solution and are updated with the FortiGuard WAF Security Service to provide protection from new threats that require model retraining and testing.

HIGHLIGHTS

FortiWeb's machine learning accurately detects anomalies and more importantly identifies which are threats. Unlike prevailing auto-learning detection models used by other WAF vendors that treat every anomaly as a threat, FortiWeb's precision nearly eliminates false positive detections and catches attack types that others can't.

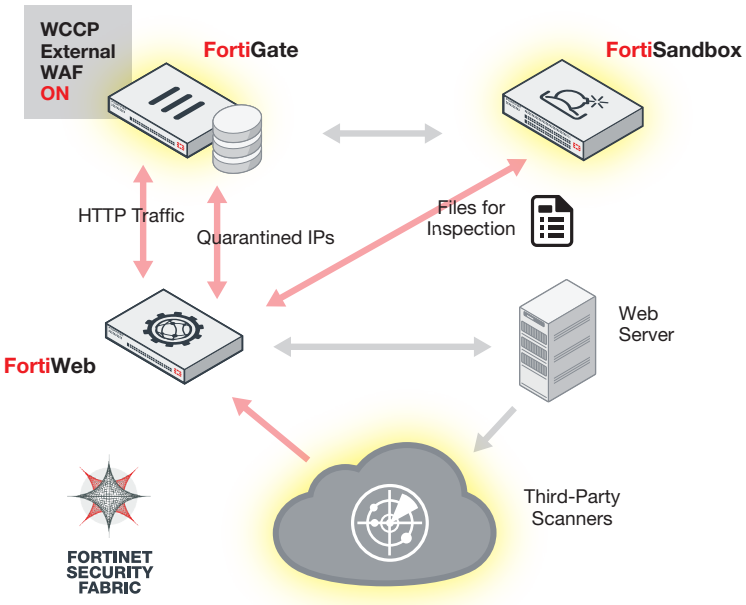


FortiWeb's AI-based machine learning evaluates application requests to determine if they are normal, benign anomalies, or anomalies that are threats.

Deep Integration into the Fortinet Security Fabric and Third-Party Scanners

As the threat landscape evolves, many new threats require a multi-pronged approach for protecting web-based applications. Advanced Persistent Threats that target users can take many different forms than traditional single-vector attack types and can evade protections offered only by a single device. FortiWeb's integration with FortiGate and FortiSandbox extend basic WAF protections through synchronization and sharing of threat information to both deeply scan suspicious files and share infected internal sources.

FortiWeb also provides integration with leading third-party vulnerability scanners including Acunetix, HP WebInspect, IBM AppScan, Qualys, IBM QRadar, and WhiteHat to provide dynamic virtual patches to security issues in application environments. Vulnerabilities found by the scanner are quickly and automatically turned into security rules by FortiWeb to protect the application until developers can address them in the application code.



Integration with other Fortinet Security Fabric elements, including FortiGate and FortiSandbox, delivers APT protection and extends vulnerability scanning with leading third-party providers.

HIGHLIGHTS

Solving the Challenge of False Threat Detections

False positive threat detections can be very disruptive and force many administrators to loosen security rules on their web application firewalls to the point where many often become a monitoring tool rather than a trusted threat avoidance platform. The installation of a WAF may take only minutes, however fine-tuning can take days, or even weeks. Even after setup, a WAF can require regular checkups and tweaks as applications and the environment change.

FortiWeb's AI-based machine learning addresses false positive and negative threat detections without the need to tediously manage whitelists and fine-tune threat detection policies. With near 100% accuracy, the dual layer machine learning engines detect anomalies and then determine if they are threats unlike other methods that block all anomalies regardless of their intent. When combined with other tools, including user tracking, device fingerprinting, and threat weighting, FortiWeb virtually eliminates all false detection scenarios.

API Security

The use of APIs has become increasingly popular in recent years to help speed application delivery and to provide simplified application-to-application accessibility. As APIs are part of many applications, they have become a new vector for application layer attacks and exploits, similar to traditional web-based applications.

FortiWeb provides an easy-to-deploy solution to protect your API with attack signatures, parameter enforcement and many other tools. With FortiWeb you can easily publish your applications and their APIs knowing they are both protected.

Advanced Graphical Analysis and Reporting

FortiWeb includes a suite of graphical analysis tools called FortiView. Similar to other Fortinet products such as FortiGate, FortiWeb gives administrators the ability to visualize and drill-down into key elements of FortiWeb such as server/IP configurations, attack and traffic logs, attack maps, OWASP Top 10 attack categorization, and user activity. FortiView for FortiWeb lets administrators quickly identify suspicious activity in real time and address critical use cases such as origin of threats, common violations, and client/device risks.

Secured by FortiGuard

Fortinet's Award-winning FortiGuard Labs is the backbone for many of FortiWeb's layers in its approach to application security. Offered as 5 separate options, you can choose the FortiGuard services you need to protect your web applications. FortiWeb IP Reputation service protects you from known attack sources like botnets, spammers, anonymous proxies, and sources known to be infected with malicious software. FortiWeb Security Service is designed just for FortiWeb including items such as application layer signatures, machine learning threat models, malicious robots, suspicious URL patterns and web vulnerability scanner updates. Credential Stuffing Defense checks login attempts against FortiGuard's list of compromised credentials and can take actions ranging from alerts to blocking logins from suspected stolen user ids and passwords. The FortiSandbox Cloud subscription enables FortiWeb to integrate with Fortinet's cloud-sandbox service. Finally, FortiWeb offers FortiGuard's top-rated antivirus engine that scans all file uploads for threats that can infect your servers or other network elements.

VM and Public Cloud Options

FortiWeb provides maximum flexibility in supporting your virtual and hybrid environments. The virtual versions of FortiWeb support all the same features as our hardware-based devices and can be deployed in VMware, Microsoft Hyper-V, Citrix XenServer, Open Source Xen, VirtualBox, KVM and Docker platforms. FortiWeb is also available for Amazon Web Services, Microsoft Azure, Google Cloud and Oracle Cloud.

FortiView for FortiWeb

FEATURES

Deployment options

- Reverse Proxy
- Inline Transparent
- True Transparent Proxy
- Offline Sniffing
- WCCP

Web Security

- AI-based Machine Learning
- Automatic profiling (white list)
- Web server and application signatures (black list)
- IP Reputation
- IP Geolocation
- HTTP RFC compliance
- Native support for HTTP/2
- OpenAPI 3.0 verification
- WebSocket protection and signature enforcement
- Man in the Brower (MiTB) protection

Application Attack Protection

- OWASP Top 10
- Cross Site Scripting
- SQL Injection
- Cross Site Request Forgery
- Session Hijacking
- Built-in Vulnerability Scanner
- Third-party scanner integration (virtual patching)
- File upload scanning with AV and sandbox

Security Services

- Web services signatures
- XML and JSON protocol conformance
- Malware detection
- Virtual patching
- Protocol validation
- Brute force protection
- Cookie signing and encryption
- Threat scoring and weighting
- Syntax-based SQLi detection
- HTTP Header Security
- Custom error message and error code handling
- Operating system intrusion signatures
- Known threat and zero-day attack protection
- L4 Stateful Network Firewall
- DoS prevention
- Advanced correlation protection using multiple security elements
- Data leak prevention
- Web Defacement Protection

Application Delivery

- Layer 7 server load balancing
- URL Rewriting
- Content Routing
- HTTPS/SSL Offloading
- HTTP Compression
- Caching

Authentication

- Active and passive authentication
- Site Publishing and SSO
- RSA Access for 2-factor authentication
- LDAP, RADIUS, and SAML support
- SSL client certificate support
- CAPTCHA and Real Browser Enforcement (RBE)

Management and Reporting

- Web user interface
- Command line interface
- FortiView graphical analysis and reporting tools
- Central management for multiple FortiWeb devices
- Active/Active HA Clustering
- REST API
- Centralized logging and reporting
- User/device tracking
- Real-time dashboards
- Bot dashboard
- OWASP Top 10 attack categorization
- Geo IP Analytics
- SNMP, Syslog and Email Logging/Monitoring
- Administrative Domains with full RBAC

Other

- IPv6 Ready
- HTTP/2 to HTTP 1.1 translation
- HSM Integration
- Seamless PKI integration
- Attachment scanning for ActiveSync/MAPI applications, OWA, and FTP
- High Availability with Config-sync for syncing across multiple active appliances
- Auto setup and default configuration settings for simplified deployment
- Setup Wizards for common applications and databases
- Preconfigured for common Microsoft applications; Exchange, SharePoint, OWA
- OpenStack support for FortiWeb VMs
- Predefined security policies for Drupal and Wordpress applications
- WebSockets support

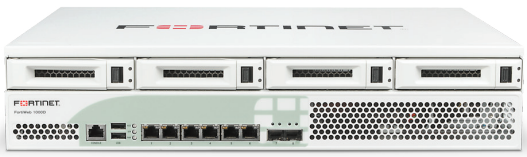
SPECIFICATIONS

	FORTIWEB 100D	FORTIWEB 400D	FORTIWEB 600D	FORTIWEB 1000D	FORTIWEB 1000E
Hardware					
10/100/1000 Interfaces (RJ-45 ports)	4	4 GE RJ45, 4 SFP GE	4 GE RJ45 (2 bypass), 4 SFP GE	6 (4 bypass), 2x SFP GE (non-bypass)	6 (4 bypass), 4x SFP GE (non-bypass)
10G BASE-SR SFP+ Ports	0	0	0	0	2
SSL/TLS Processing	Software	Software	Software	Hardware	Hardware
USB Interfaces	2	2	2	2	2
Storage	16 GB	240 GB SSD	240 GB SSD	2x 2 TB	2x 1 TB
Form Factor	Desktop	1U	1U	2U	2U
Power Supply	Single	Single	Dual	Dual Hot Swappable	Dual Hot Swappable
System Performance					
Throughput	25 Mbps	100 Mbps	250 Mbps	1 Gbps	1.3 Gbps
Latency	Sub-ms	Sub-ms	Sub-ms	Sub-ms	Sub-ms
High Availability	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering
Application Licenses	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Administrative Domains	0	32	32	64	64
All performance values are "up to" and vary depending on the system configuration.					
Dimensions					
Height x Width x Length (inches)	1.61 x 8.27 x 5.24	1.73 x 17.24 x 16.38	1.73 x 17.24 x 16.38	3.50 x 17.24 x 14.49	3.46 x 16.93 x 19.73
Height x Width x Length (mm)	41 x 210 x 133	44 x 438 x 416	44 x 438 x 416	88 x 438 x 368	88 x 430 x 501.20
Weight	2.3 lbs (1.1 kg)	22 lbs (9.97 kg)	22 lbs (9.97 kg)	27.6 lbs (12.5 kg)	28 lbs (12.8 kg)
Rack Mountable	Optional	Yes	Yes	Yes, with flanges	Yes, with flanges
Environment					
Power Required	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz
Maximum Current	110V/1.2A, 220V/1.2A	100V/5A, 240V/3A	100V/5A, 240V/3A	100V/5A, 240V/3A	100V/5A, 240V/3A
Power Consumption (Average)	18 W	109 W	109 W	115 W	140 W
Heat Dissipation	74 BTU/h	446.3 BTU/h	446.3 BTU/h	471 BTU/h	471 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)	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)	-4–158°F (-20–70°C)
Humidity	10–90% non-condensing	10–90% non-condensing	10–90% non-condensing	5–95% non-condensing	5–90% non-condensing
Compliance					
Safety Certifications	FCC Class A Part 15, C-Tick, VCCI, CE, UL/cUL, CB	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL

FortiWeb 100D

FortiWeb 400D

FortiWeb 600D

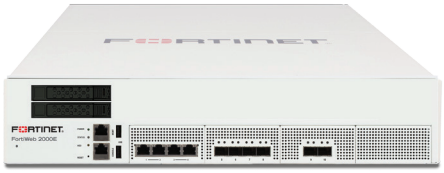


FortiWeb 1000D

FortiWeb 1000E

SPECIFICATIONS

	FORTIWEB 2000E	FORTIWEB 3000E	FORTIWEB 3010E	FORTIWEB 4000E
Hardware				
10/100/1000 Interfaces (RJ45 ports)	4 bypass, 4 SFP GE (non-bypass)	8 bypass, 4 SFP GE (non-bypass)	8 bypass, 4 SFP GE (non-bypass)	8 bypass, 4 SFP GE (non-bypass)
10G BASE-SR SFP+ Ports	2	4	4 (2 bypass)	4 (2 bypass)
SSL/TLS Processing	Hardware	Hardware	Hardware	Hardware
USB Interfaces	2	2	2	2
Storage	2x 1 TB	2x 2 TB	2x 2 TB	2x 2 TB
Form Factor	2U	2U	2U	2U
Power Supply	Dual Hot Swappable	Dual Hot Swappable	Dual Hot Swappable	Dual Hot Swappable
System Performance				
Throughput	2.5 Gbps	5 Gbps	5 Gbps	20 Gbps
Latency	Sub-ms	Sub-ms	Sub-ms	Sub-ms
High Availability	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering	Active/Passive, Active/Active Clustering
Application Licenses	Unlimited	Unlimited	Unlimited	Unlimited
Administrative Domains	64	64	64	64
All performance values are "up to" and vary depending on the system configuration.				
Dimensions				
Height x Width x Length (inches)	3.5 x 17.2 x 20.8	3.5 x 17.5 x 22.6	3.5 x 17.5 x 22.6	3.5 x 17.5 x 22.6
Height x Width x Length (mm)	88 x 438 x 530	88 x 444 x 574	88 x 444 x 574	88 x 444 x 574
Weight	33 lbs (15 kg)	56.2 lbs (22.5 kg)	56.2 lbs (22.5 kg)	56.2 lbs (22.5 kg)
Rack Mountable	Yes	Yes	Yes	Yes
Environment				
Power Required	100–240V AC, 60–50 Hz	100–240V AC, 60–50 Hz	100–240V AC, 60–50 Hz	100–240V AC, 60–50 Hz
Maximum Current	120V/6A, 240V/3A	120V/2.6A, 240V/1.3A	120V/2.6A, 240V/1.3A	120V/3A, 240V/1.5A
Power Consumption (Average)	200 W	200 W	200 W	248.5 W
Heat Dissipation	1433 BTU/h	1045.5 BTU/h	1045.5 BTU/h	1219.8 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, C-Tick, VCCI, CE, UL/CB/cUL	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL,	FCC Class A Part 15, C-Tick, VCCI, CE, UL/CB/cUL,



FortiWeb 2000E

FortiWeb 3000E

FortiWeb 3010E

FortiWeb 4000E

SPECIFICATIONS

VIRTUAL MACHINES	FORTIWEB-VM (1 VCPU)	FORTIWEB-VM (2 VCPU)	FORTIWEB-VM (4 VCPU)	FORTIWEB-VM (8 VCPU)
System Performance				
HTTP Throughput	25 Mbps	100 Mbps	500 Mbps	2 Gbps
Application Licenses	Unlimited	Unlimited	Unlimited	Unlimited
Administrative Domains	4 to 64 based on the amount of memory allocated			
Virtual Machine				
Hypervisor Support	VMware, Microsoft Hyper-V, Citrix XenServer, Open Source Xen, VirtualBox, KVM, Amazon Web Services (AWS), Microsoft Azure, Google Cloud, and Oracle Cloud. Please see FortiWeb VM Installation Guide for versions supported.			
vCPU Support (Minimum / Maximum)	1	2	2 / 4	2 / 8
Network Interface Support (Minimum / Maximum)	1 / 10	1 / 10	1 / 10	1 / 10
Storage Support (Minimum / Maximum)	40 GB / 2 TB	40 GB / 2 TB	40 GB / 2 TB	40 GB / 2 TB
Memory Support (Minimum / Maximum)	1,024 MB / Unlimited for 64-bit	1,024 MB / Unlimited for 64-bit	1,024 MB / Unlimited for 64-bit	1,024 MB / Unlimited for 64-bit
Recommended Memory	4 GB	4 GB	4 GB	4 GB
High Availability Support	Yes	Yes	Yes	Yes

Actual performance values may vary depending on the network traffic and system configuration. Performance metrics were observed using a Dell PowerEdge R710 server (2x Intel Xeon E5504 2.0 GHz 4 MB Cache) running VMware ESXi 5.5 with 4 GB of vRAM assigned to the 4 vCPU and 8 vCPU FortiWeb Virtual Appliance and 4 GB of vRAM assigned to the 2 vCPU FortiWeb Virtual Appliance.

CONTAINER APPLIANCES	FORTIWEB-VMC01	FORTIWEB-VMC02	FORTIWEB-VMC04	FORTIWEB-VMC08
System Performance				
HTTP Throughput (Maximum)	25 Mbps	100 Mbps	500 Mbps	2 Gbps
Application Licenses	Unlimited	Unlimited	Unlimited	Unlimited
Administrative Domains	4 to 64 based on the amount of memory allocated			
Virtual Appliance				
Container Manager Support	Docker			
Network Interface Support (Minimum / Maximum)	1 / 10	1 / 10	1 / 10	1 / 10
Storage Support (Minimum / Maximum)	30 GB / 500 GB	30 GB / 500 GB	30 GB / 500 GB	30 GB / 500 GB
Memory Support (Minimum)	4 GB	4 GB	4 GB	4 GB
Recommended Memory	4 GB	4 GB	4 GB	4 GB
High Availability Support	No	No	No	No

Throughputs and other metrics are maximum values permitted for each version. Actual performance values may vary depending on the network traffic and system configuration.

ORDER INFORMATION

Product	SKU	Description
FortiWeb 100D	FWB-100D	Web Application Firewall — 4x GE RJ45 ports, 16 GB storage.
FortiWeb 400D	FWB-400D	Web Application Firewall — 4x GE RJ45 ports, 4x GE SFP ports, 240 GB SSD storage.
FortiWeb 600D	FWB-600D	Web Application Firewall — 4x GE RJ45 ports (2x bypass), 4x GE SFP ports, 240 GB SSD storage.
FortiWeb 1000D	FWB-1000D	Web Application Firewall — 2x GE SFP slots, 6x GE RJ45 ports (includes 4x bypass ports), dual AC power supplies, 2 TB storage.
FortiWeb 1000E	FWB-1000E	Web Application Firewall — 2x 10 GE SFP+ ports, 2x GE RJ45 ports, 4x GE RJ45 bypass ports, 4x GE SFP ports, dual AC power supplies, 2 TB storage.
FortiWeb 2000E	FWB-2000E	Web Application Firewall — 2x 10 GE SFP+ ports, 4x GE RJ45 bypass ports, 4x GE SFP ports, dual AC power supplies, 2 TB storage.
FortiWeb 3000E	FWB-3000E	Web Application Firewall — 4x 10 GE SFP+ ports, 8x GE RJ45 bypass ports, 4x GE SFP ports, dual AC power supplies, 2x 2 TB storage.
FortiWeb 3010E	FWB-3010E	Web Application Firewall — 8x GE RJ45 bypass ports, 4x GE SFP ports, 2x 10G SFP+ bypass ports, 2x 10G SFP+ ports, dual AC power supplies, 2x 2 TB HDD storage.
FortiWeb 4000E	FWB-4000E	Web Application Firewall — 8x GE RJ45 bypass ports, 4x GE SFP ports, 2x 10G SFP+ bypass ports, 2x 10G SFP+ ports, dual AC power supplies, 2x 2 TB HDD storage.
FortiWeb-VM01	FWB-VM01	FortiWeb-VM, up to 1 vCPU supported. 64-bit OS.
FortiWeb-VM02	FWB-VM02	FortiWeb-VM, up to 2 vCPUs supported. 64-bit OS.
FortiWeb-VM04	FWB-VM04	FortiWeb-VM, up to 4 vCPUs supported. 64-bit OS.
FortiWeb-VM08	FWB-VM08	FortiWeb-VM, up to 8 vCPUs supported. 64-bit OS.
FortiWeb-VMC01	FWB-VMC01	FWB-VMC01 for container-based environments. Up to 25 Mbps throughput.
FortiWeb-VMC02	FWB-VMC02	FWB-VMC02 for container-based environments. Up to 100 Mbps throughput.
FortiWeb-VMC04	FWB-VMC04	FWB-VMC04 for container-based environments. Up to 500 Mbps throughput.
FortiWeb-VMC08	FWB-VMC08	FWB-VMC08 for container-based environments. Up to 2 Gbps throughput.

ORDER INFORMATION

Product	SKU	Description
Central Manager 10	FWB-CM-BASE	FortiWeb Central Manager license key, manage up to 10 FortiWeb devices, VMware vSphere.
Central Manager Unlimited	FWB-CM-UL	FortiWeb Central Manager license key, manage unlimited number of FortiWeb devices, VMware vSphere.

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