# FortiGate® 500E Series

FortiGate 500E and 501E

**Next Generation Firewall
Secure SD-WAN**
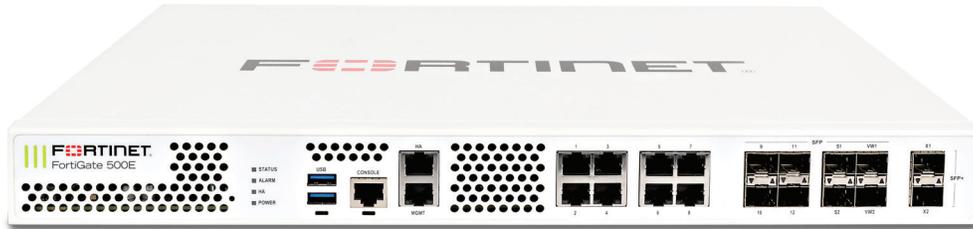
The FortiGate 500E series delivers next generation firewall capabilities for mid-sized to large enterprises, with the flexibility to be deployed at the campus or enterprise branch. Protect against cyber threats with security processor powered high performance, security efficacy and deep visibility.

## Security
- Identifies thousands of applications inside network traffic for deep inspection and granular policy enforcement
- Protects against malware, exploits, and malicious websites in both encrypted and non-encrypted traffic
- Prevent and detect against known and unknown attacks using continuous threat intelligence from AI powered FortiGuard Labs security services

## Performance
- Delivers industry's best threat protection performance and ultra-low latency using purpose built-security processor (SPU) technology
- Provides industry-leading performance and protection for SSL encrypted traffic

## Certification
- Independently tested and validated best security effectiveness and performance
- Received unparalleled third-party certifications from NSS Labs, ICSA, Virus Bulletin and AV Comparatives

## Networking
- Best of Breed SD-WAN capabilities to enable application steering using WAN path control for high quality of experience
- Delivers advanced networking capabilities, high-performance, and scalable IPsec VPN capabilities to consolidate networking and security

## Management
- Includes management console that's effective, simple to use, and provides comprehensive network automation & visibility.
- Provides Zero Touch Integration with Security Fabric's Single Pane of Glass Management
- Predefined compliance checklist analyzes the deployment and highlights best practices to improve overall security posture

## Security Fabric
- Enables Fortinet and Fabric-ready partners' products to provide broader visibility, integrated end-to-end detection, threat intelligence sharing and automated remediation
- Automatically builds Network Topology visualizations which discover IoT devices and provide complete visibility into Fortinet and Fabric-ready partner products

| Firewall | IPS | NGFW | Threat Protection | Interfaces |
|---|---|---|---|---|
| **36 Gbps** | **7.9 Gbps** | **5 Gbps** | **4.7 Gbps** | Multiple GE RJ45, GE SFP and 10 GE SFP+ Slots |

Refer to specification table for details

# Deployment

## Next Generation Firewall (NGFW)

- Reduce complexity by combining threat protection security capabilities into single high-performance network security appliance
- Identify and stop threats with powerful intrusion prevention beyond port and protocol that examines the actual applications in your network traffic
- Delivers industry's highest SSL inspection performance using industry-mandated ciphers while maximizing ROI
- Proactively blocks newly discovered sophisticated attacks in real-time with advanced threat protection

## Secure SD-WAN

- Secure direct Internet access for Cloud applications for improved latency and reduce WAN cost spending
- High-performance and cost-effective threat protection capabilities
- WAN Path Controller and Link Health Monitoring for better application performance
- Security Processor powered industry's best IPsec VPN and SSL Inspection performance
- Simplified Management and Zero-Touch deployment
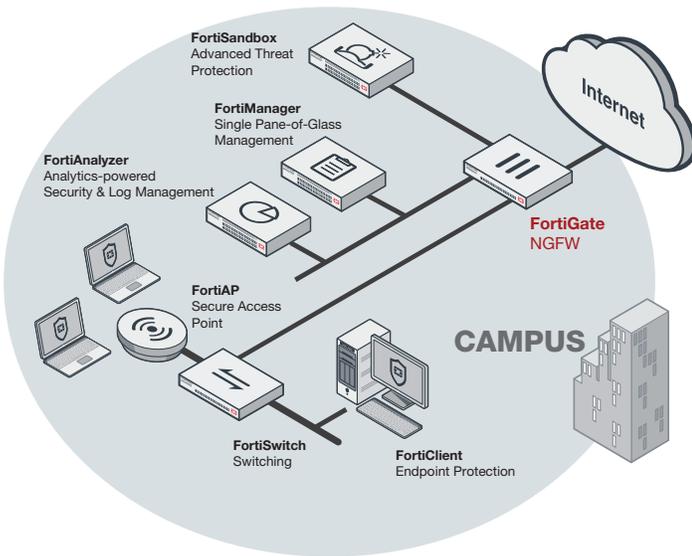
FortiGate 500E/501E deployment in Campus
(NGFW)
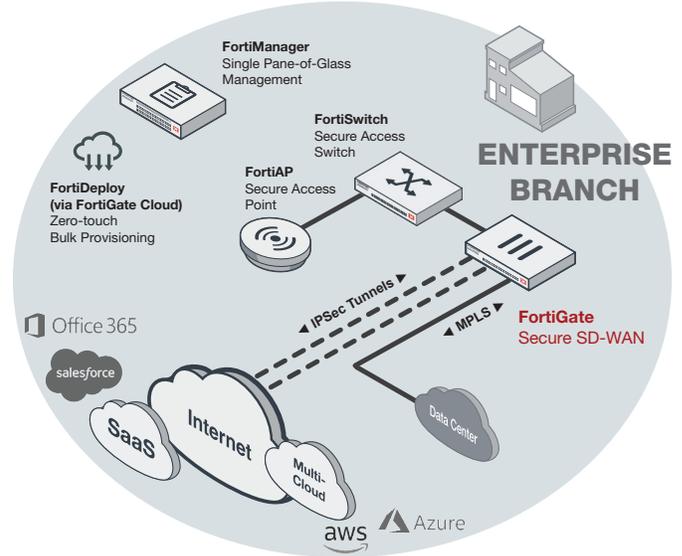
FortiGate 500E/501E deployment in Enterprise Branch
(Secure SD-WAN)

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# Hardware

## FortiGate 500E/501E
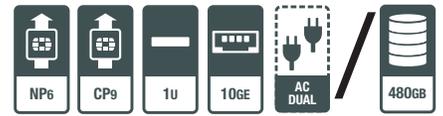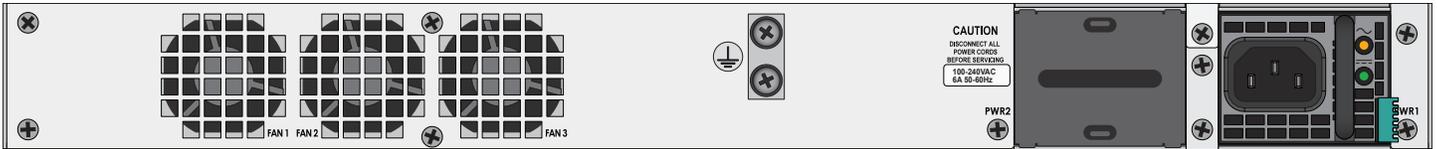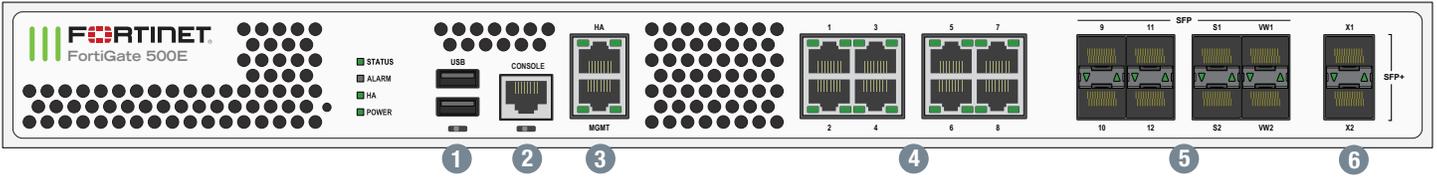


## Interfaces

1. USB Port
2. Console Port
3. 2x GE RJ45 MGMT/HA Ports

4. 8x GE RJ45 Ports
5. 8x GE SFP Slots
6. 2x 10 GE SFP+ Slots

## Powered by SPU

- Custom SPU processors deliver the power you need to detect malicious content at multi-Gigabit speeds

- Other security technologies cannot protect against today's wide range of content- and connection-based threats because they rely on general-purpose CPUs, causing a dangerous performance gap

- SPU processors provide the performance needed to block emerging threats, meet rigorous third-party certifications, and ensure that your network security solution does not become a network bottleneck

## Network Processor

Fortinet's new, breakthrough SPU NP6 network processor works inline with FortiOS functions delivering:

- Superior firewall performance for IPv4/IPv6, SCTP and multicast traffic with ultra-low latency down to 2 microseconds
- VPN, CAPWAP and IP tunnel acceleration
- Anomaly-based intrusion prevention, checksum offload and packet defragmentation
- Traffic shaping and priority queuing

## Content Processor

Fortinet's new, breakthrough SPU CP9 content processor works outside of the direct flow of traffic and accelerates the inspection of computationally intensive security features:

- Enhanced IPS performance with unique capability of full signature matching at ASIC
- SSL Inspection capabilities based on the latest industry mandated cipher suites
- Encryption and decryption offloading

# Fortinet Security Fabric

## Security Fabric

The Security Fabric delivers broad visibility, integrated AI-driven breach prevention, and automated operations, orchestration, and response across all Fortinet and its ecosystem deployments. It allows security to dynamically expand and adapt as more and more workloads and data are added. Security seamlessly follows and protects data, users, and applications as they move between IoT, devices, and cloud environments throughout the network. All this is ties together under a single pane of glass management for significantly thereby delivering leading security capabilities across your entire environment while also significantly reducing complexity.

FortiGates are the foundation of Security Fabric, expanding security via visibility and control by tightly integrating with other Fortinet security products and Fabric-Ready Partner solutions.

## FortiOS

Control all security and networking capabilities across the entire FortiGate platform with one intuitive operating system. Reduce complexity, costs, and response time with a truly consolidated next-generation security platform.
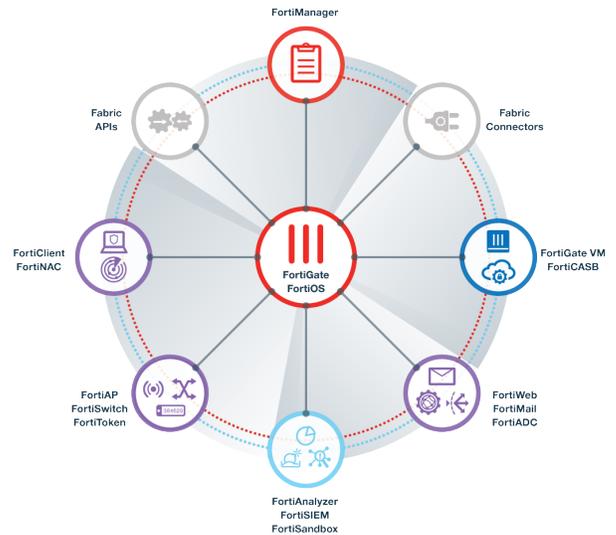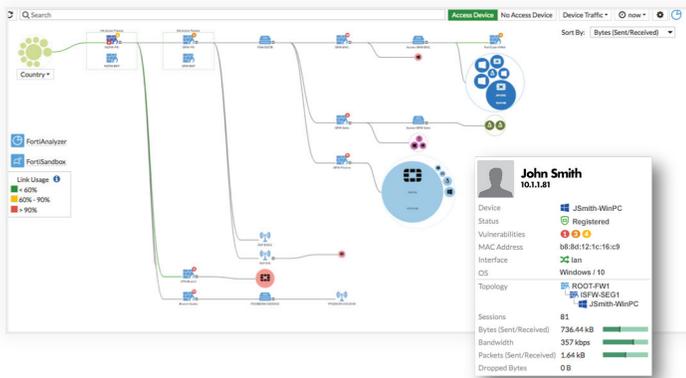
- A truly consolidated platform with a single OS and pane-of-glass for all security and networking services across all FortiGate platforms.
- Industry-leading protection: NSS Labs Recommended, VB100, AV Comparatives, and ICSA validated security and performance. Ability to leverage latest technologies 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.
- Prevent, detect, and mitigate advanced attacks automatically in minutes with integrated AI-driven breach prevention and advanced threat protection.
- Fulfil your networking needs with extensive routing, switching, and SD-WAN capabilities along with intent-based segmentation.
- Utilize SPU hardware acceleration to boost security capability performance.

# Services

## FortiGuard™ Security Services

FortiGuard Labs offers 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

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# Specifications

| | FORTIGATE 500E | FORTIGATE 501E |
|---|---|---|
| **Interfaces and Modules** | | |
| 10 GE SFP+ Slots | 2 | |
| GE RJ45 Interfaces | 8 | |
| GE SFP Slots | 8 | |
| GE RJ45 Management Ports | 2 | |
| USB Ports | 2 | |
| RJ45 Console Port | 1 | |
| Local Storage | NIL | 2x 240 GB SSD |
| Included Transceivers | 2x SFP (SX 1 GE) | |
| **System Performance — Enterprise Traffic Mix** | | |
| IPS Throughput [2] | 7.9 Gbps | |
| NGFW Throughput [2, 4] | 5 Gbps | |
| Threat Protection Throughput [2, 5] | 4.7 Gbps | |
| **System Performance and Capacity** | | |
| IPv4 Firewall Throughput (1518 / 512 / 64 byte, UDP) | 36 / 36 / 22 Gbps | |
| IPv6 Firewall Throughput (1518 / 512 / 64 byte, UDP) | 36 / 36 / 22 Gbps | |
| Firewall Latency (64 byte, UDP) | 2 µs | |
| Firewall Throughput (Packet per Second) | 33 Mpps | |
| Concurrent Sessions (TCP) | 8 Million | |
| New Sessions/Second (TCP) | 300,000 | |
| Firewall Policies | 10,000 | |
| IPsec VPN Throughput (512 byte) [1] | 20 Gbps | |
| Gateway-to-Gateway IPsec VPN Tunnels | 2,000 | |
| Client-to-Gateway IPsec VPN Tunnels | 50,000 | |
| SSL-VPN Throughput | 5 Gbps | |
| Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode) | 10,000 | |
| SSL Inspection Throughput (IPS, avg. HTTPS) [3] | 5.7 Gbps | |
| SSL Inspection CPS (IPS, avg. HTTPS) [3] | 3,500 | |
| SSL Inspection Concurrent Session (IPS, avg. HTTPS) [3] | 800,000 | |
| Application Control Throughput (HTTP 64K) [2] | 14 Gbps | |
| CAPWAP Throughput (1444 byte, UDP) | 18 Gbps | |
| Virtual Domains (Default / Maximum) | 10 / 10 | |
| Maximum Number of FortiSwitches Supported | 48 | |
| Maximum Number of FortiAPs (Total / Tunnel) | 512 / 256 | |
| Maximum Number of FortiTokens | 5,000 | |
| Maximum Number of Registered Endpoints | 2,000 | |
| High Availability Configurations | Active-Active, Active-Passive, Clustering | |

| | FORTIGATE 500E | FORTIGATE 501E |
|---|---|---|
| **Dimensions and Power** | | |
| Height x Width x Length (inches) | 1.75 x 17.0 x 15.0 | |
| Height x Width x Length (mm) | 44.45 x 432 x 380 | |
| Weight | 16.1 lbs (7.3 kg) | 16.6 lbs (7.5 kg) |
| Form Factor | 1 RU | |
| Power Consumption (Average / Maximum) | 95 W / 193 W | 105 W / 200 W |
| Power Source | 100–240V 60–50Hz | |
| Current (Maximum) | 6A | |
| Heat Dissipation | 613 BTU/h | |
| Redundant Power Supplies (Hot Swappable) | optional | |
| **Operating Environment and Certifications** | | |
| Operating Temperature | 32–104°F (0–40°C) | |
| Storage Temperature | -31–158°F (-35–70°C) | |
| Humidity | 10–90% non-condensing | |
| Noise Level | 43 dBA | |
| Operating Altitude | Up to 7,400 ft (2,250 m) | |
| Compliance | FCC Part 15 Class A, C-Tick, VCCI, CE, UL/cUL, CB | |
| Certifications | ICSA Labs: Firewall, IPsec, IPS, Antivirus, SSL-VPN; USGv6/IPv6 | |

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.

# Order Information

| Product | SKU | Description |
|---|---|---|
| FortiGate 500E | FG-500E | 2x 10 GE SFP+ slots, 10x GE RJ45 ports (including 1x MGMT port, 1x HA port, 8x switch ports), 8x GE SFP slots, SPU NP6 and CP9 hardware accelerated. |
| FortiGate 501E | FG-501E | 2x 10 GE SFP+ slots, 10x GE RJ45 ports (including 1x MGMT port, 1x HA port, 8x switch ports), 8x GE SFP slots, SPU NP6 and CP9 hardware accelerated, 2x 240 GB onboard SSD storage. |
| **Optional Accessories** | | |
| 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 Copper SFP+ Transceiver Module, up to 30m | FS-TRAN-SFP+GC | 10 GE copper SFP+ RJ45 transceiver. For FortiSwitch only, up to 30m. |
| 10 GE SFP+ Active Direct Attach Cable, 10m / 32.8 ft | SP-CABLE-ADASFP+ | 10 GE SFP+ active direct attach cable, 10m / 32.8 ft for all systems with SFP+ and SFP/SFP+ slots |
| Optional Power Supply | SP-FG300E-PS | AC power supply for FG-300/301E and FG-500/501E. |

# Bundles

### FortiGuard Bundle

FortiGuard Labs delivers a number of security intelligence services to augment the FortiGate firewall platform. You can easily optimize the protection capabilities of your FortiGate with one of these FortiGuard Bundles.

| Bundles | 360 Protection | Enterprise Protection | UTM | Threat Protection |
|---|---|---|---|---|
| FortiCare | ASE [1] | 24x7 | 24x7 | 24x7 |
| FortiGuard App Control Service | • | • | • | • |
| FortiGuard IPS Service | • | • | • | • |
| FortiGuard Advanced Malware Protection (AMP) — Antivirus, Mobile Malware, Botnet, CDR, Virus Outbreak Protection and FortiSandbox Cloud Service | • | • | • | • |
| FortiGuard Web Filtering Service | • | • | • | |
| FortiGuard Antispam Service | • | • | • | |
| FortiGuard Security Rating Service | • | • | | |
| FortiGuard Industrial Service | • | • | | |
| FortiCASB SaaS-only Service | • | • | | |
| FortiConverter Service | • | | | |
| SD-WAN Cloud Assisted Monitoring [2] | • | | | |
| SD-WAN Overlay Controller VPN Service [2] | • | | | |
| FortiAnalyzer Cloud [2] | • | | | |
| FortiManager Cloud [2] | • | | | |

1. 24x7 plus Advanced Services Ticket Handling     2. Available when running FortiOS 6.2

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