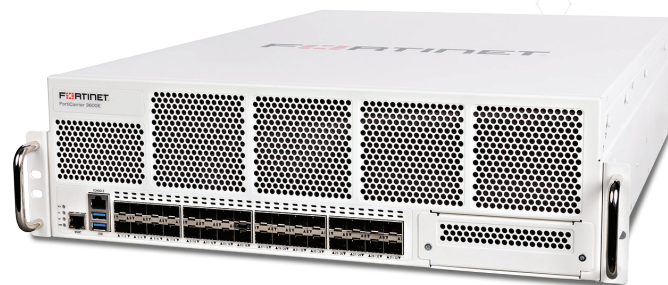


# FortiCarrier™ 3000 E-Series

FortiCarrier 3600E and 3800E

Fortinet introduces the FortiCarrier 3000 E-Series appliances — a Carrier-Grade Network (CGN) solution that is purpose-built from the ground up to facilitate the massive device growth of the all-connected world. The platform's advanced architecture comes with the industry's largest connection scale designed for the most-demanding IPv4 BYOD roll-out and tomorrow's IPv6 IoT expansion.



## Proven Carrier-Grade Network Service (CGN) Solution

The FortiCarrier series has long provided iron-clad security services in many service provider and large enterprise networks. The new FortiCarrier 3000 E-Series focuses on the Carrier-Grade IPv4/v6 Network services, based on the same familiar interface and proven carrier-grade reliability of the FortiCarrier OS.

Coupled with a new architecture that is designed specifically for mobile deployments, the new FortiCarrier 3000 E-Series brings high predictability and service-level consistency to environments that generate massive amounts of connection set-ups and tear-downs. Thanks to Fortinet's powerful Security Processing Unit (SPU) XP, FortiCarrier 3000 E-Series leads the industry in high-scalability (450 million concurrent sessions) and high-performance (160 Gbps) in a single CGN appliance.



## Highlights

- Built for BYOD and IoT scales with support for 450 million concurrent sessions
- Specialized architecture capable of processing massive signaling surges up to 3 million connections per second
- Compact 3RU form factor is ideal for space-constraint applications and lowers colocation cost for service providers
- Comprehensive Carrier-Grade NAT and IPv6 migration option including: NAT44, NAT444, NAT64/DNS64, NAT46

## Key Features and Benefits



High Performance in Three Dimensions

Specialized architecture designed for the most demanding IPv4/ v6 mobile network expansions that require massive connection scalability, high forwarding capacity and powerful processor to stabilize core networks from frequent signaling surges.

Reduces Upgrade Churns

Comprehensive Carrier-Grade NAT (NAT44, NAT444) options to meet any legacy IPv4 network upgrade requirements. A broad range of advanced IPv6 Migration technologies are included.

Lowest Total Cost of Ownership

The three-dimensional high-performances combined with the rich feature set in CG-NAT and IPv6 migration technologies enable FortiCarrier 3000 E-Series to offer the lowest total cost of ownership (TCO) of any CGN appliances in the market.

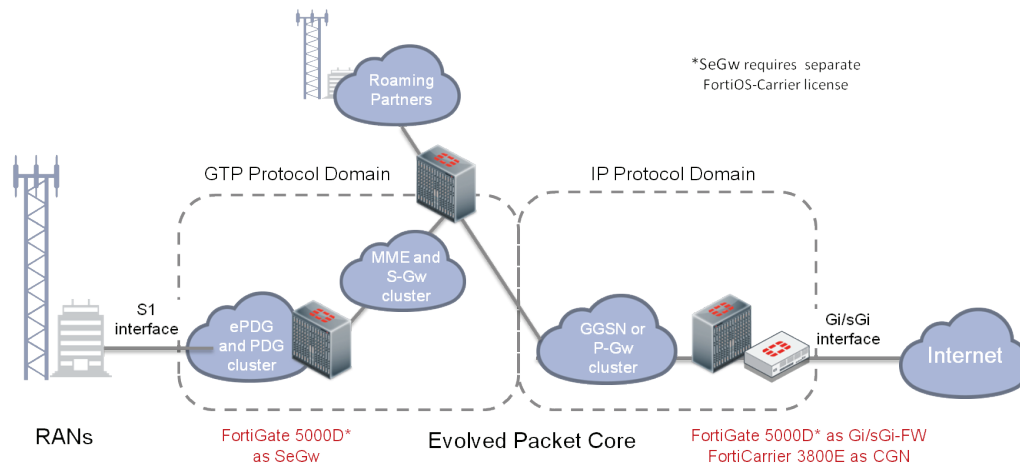
## DEPLOYMENT

### Mobile Service Providers

The FortiCarrier 3000 E-Series CGN provides two critical functions for mobile broadband services. The architecture's high scalability can be used to generate more revenue by expanding the subscriber base and the associated IP address infrastructure capacity, from a single internet-facing IP address into hundreds of thousands more private IP addresses.

Additionally, a deployment of the CGN appliance on the Gi/sGi interface also enhances the overall network security by hiding the subscribers' IP addresses from the internet.

To completely secure the mobile Evolved Packet Core, Fortinet recommends a complementary FortiGate with the FortiOS-Carrier license to be deployed as a Gi/sGi firewall. The same FortiGate can perform a secondary function as a RAN Security gateway to aggregate advanced mobile protocols, such as GTP, SCTP and IPsec.



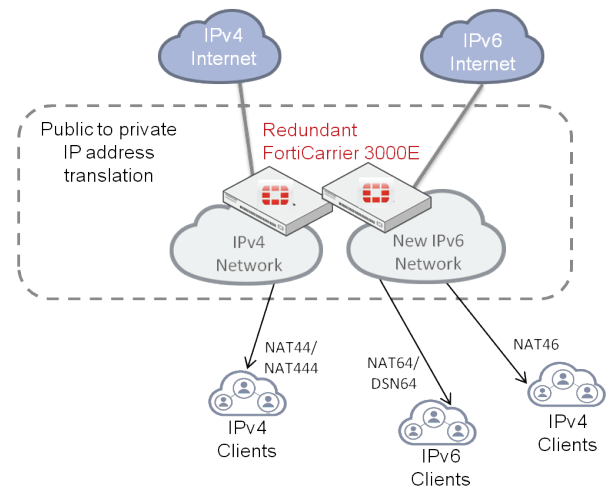
CGN Deployment in Mobile Service Provider Networks

### Enterprise or Managed Service Providers

The comprehensive IPv4 and IPv6 feature sets allow FortiCarrier 3000 E-Series CGN to provide maximum deployment flexibility.

Broad options of tunneling and encapsulation of IPv4 and IPv6 technologies are available to seamlessly connect any type of IP clients into any type of IP networks and finally to any internet content.

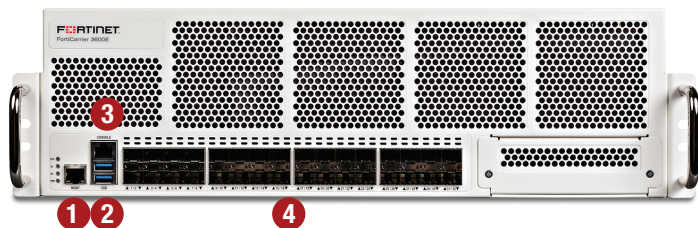
The accompanying diagram shows a typical use case — starting with the expansion of an existing IPv4 network and followed by the introduction of a new IPv6 network. Using different IPv4 and IPv6 transition technologies, both new native IPv6 and IPv4 clients can coexist.



CGN Deployment in Enterprise or Managed Service Provider Networks

## HARDWARE

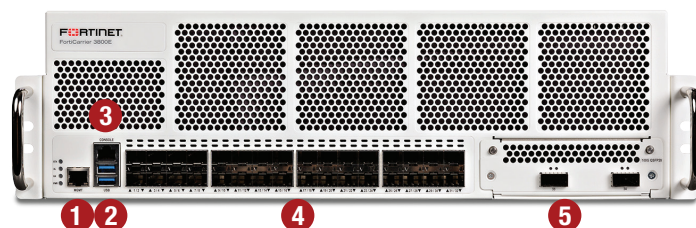
### FortiCarrier 3600E



#### Interfaces

1. GE RJ45 Management Port
2. 2x USB Ports
3. Console Port
4. 32x 10 GE SFP+ Ports

### FortiCarrier 3800E



#### Interfaces

1. GE RJ45 Management Port
2. 2x USB Ports
3. Console Port
4. 32x 10 GE SFP+ Ports
5. High-Speed Network Interfaces: 2x 100 GE QSFP28



#### Hardware-based Performance

- Route/policy lookup, NAT, logging, and port resource management are performed by SPU XP2
- Predictable and consistent performance

## FEATURES

### NAT and Session Setup

- Fixed/deterministic NAT: private IP to public IP mapping and/or port range mapping
- Port block allocation (PBA) mode for lower logging overhead and higher cps rate
- Single port allocation (SPA) mode for better port resource sharing
- Full cone NAT (EIM/EIF) support
- Hairpinning support
- User quota control on port resource usage
- User quota control on max concurrent session count
- Source port preservation pool for special applications
- Essential service pool enables better user experience

### Resource Pool Management

- Software assisted IP selection for dynamic NAT: round robin or random

### Session Handling

- Per application time-out control
- ICMP translation
- GRE/PPTP/L2TP translation
- IP fragment translation

- IP fragments are first defragmented and then translated
- Application Layer Gateway support (FTP/TFTP/SIP/MGCP/PPTP/L2TP/ICMP Error/IP-options)
- Logging on NAT mapping or every session
- Two logs per mapping/session
- Support up to 16 logging servers with hash-based load balance
- Syslog over UDP
- NetFlow v9 or IPFIX over UDP
- Customized template can be supported with advance notice
- HA clustering: active/passive mode with hardware-based NAT/session sync

### IPv6 Support and Transition

- IPv6 Network address translation support including NAT66, NAT64 and DNS64 (DNS proxy) and NAT46
- IPv6 firewall policies
- IPv6 in dynamic routing including RIPng and BGP
- Dual stack routing
- IPv6 Tunneling
- SIP over IPv6
- DHCPv6, ICMPv6 and IPv6 IPsec VPN
- CPU to handle the IPv6 traffic

# SPECIFICATIONS

	FORTICARRIER 3600E	FORTICARRIER 3800E
<b>System Specifications</b>		
Throughput	160 Gbps	160 Gbps
Packet per Second	120 Mpps	120 Mpps
Connection per Second (Full TCP)	3 Million	3 Million
Concurrent Sessions	450 Million	450 Million
<b>Hardware Specifications</b>		
Network Interfaces	32x 10 GE SFP+	32x 10 GE SFP+, 2x 100 GE QSFP28
GE RJ45 Management Interface	1	1
Storage	2x 480 GB (960 GB total)	2x 480 GB (960 GB total)
Power Supply	Dual	Dual
<b>Environment</b>		
Form Factor	3U Appliance	3U Appliance
Input Voltage	100–240V AC, 50–60 Hz	100–240V AC, 50–60 Hz
Power Consumption (Average / Maximum)	613 W / 834 W	633 W / 858 W
Maximum Current	120V/12A, 240V/7A	120V/12A, 240V/7A
Heat Dissipation	2847 BTU/h	2929 BTU/h
Operating Temperature	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)
Humidity	20–90% non-condensing	20–90% non-condensing
<b>Compliance</b>		
Regulatory Compliance	FCC Part 15 Class B, VCCI, CE, CB, UL/c	FCC Part 15 Class A, VCCI, CE, CB, UL/c
Safety	CSA, CE, UL	CSA, CE, UL
<b>Dimensions</b>		
Height x Width x Length (inches)	5.16 x 17.24 x 26.18	5.16 x 17.24 x 26.18
Height x Width x Length (mm)	131 x 438 x 665	131 x 438 x 665
Weight	55.98 lbs (25.39 kg)	57.17 lbs (25.93 kg)

# ORDER INFORMATION

Product	SKU	Description
FortiCarrier 3600E	FCR-3600E	High Performance CGN Security Gateway — 1x GE RJ45 port, 32x 10 GE SFP+ slots, SPU accelerated, 2x 480 GB SSD internal storage, dual AC power supplies.
FortiCarrier 3800E	FCR-3800E	High Performance CGN Security Gateway — 1x GE RJ45 port, 32x 10 GE SFP+ slots, 2x 100 GE QSFP28 slots, FortiASIC accelerated, 2x 480 GB SSD internal storage, dual AC power supplies.



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