USG12004

USG12008

HiSecEngine USG12000 Series
Huawei HiSecEngine USG12000 series AI firewalls

Overview

Combining advanced hardware architecture with a wide array of cutting-edge technologies — from energy conservation to reliability mechanisms and security features — HiSecEngine USG12000 offers highly accurate, real-time defense against known and unknown threats at the network edge for large data centers and campus networks.

Product Description

Huawei USG12000 is the industry's first Terabit firewall series. This series includes USG12004 and USG12008. They provide industry-leading security protection performance and service expansion capabilities. These firewalls can provide up to 2.4 Tbit/s throughput.

The USG12000 series uses multi-core processing chips and a distributed hardware platform to provide industry-leading service processing and expansion capabilities. All components are fully redundant to ensure core router-level high reliability and service continuity on high-speed networks.

The USG12000 series provides multiple types of line processing units (LPUs) for external connections and data transmission. LPUs and service processing units (SPUs) can reside on the same port slot. These modules are combined as needed to provide a security solution best suited to customers' requirements on interfaces and network performance. In addition, the USG12000 series supports GE, 10GE, 40GE, and 100GE interfaces to meet diversified requirements, such as high-capacity or high-density interface requirements.

The SPUs of the USG12000 process all services. SPUs are classified into service boards and extended sub-cards, which can be flexibly combined to provide different board performance. The multi-chip multi-processor hardware is used, and various service features are implemented through software modules.

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Hardware

Chassis

USG12004

USG12008

	USG12004	USG12008
Cabinet installation standard	The device can be installed in a standard 19" cabinet with a depth not less than 1000 mm. It can be equipped with a noise reduction module if being installed in a 1200 mm-deep cabinet.	
Dimensions without packaging (H×W×D) [mm(in.)]	438 mm × 442 mm × 874 mm (17.24 in. × 17.40 in. × 34.41 in.)	703 mm × 442 mm × 874 mm (27.68 in. × 17.40 in. × 34.41 in.)
Chassis height [U]	9.8 U	15.8 U
Maximum power consumption [W]	3660 W	8120 W
Maximum heat dissipation [BTU/hour]	12488 BTU/hour	27705 BTU/hour
MTBF [year]	34.93 year	34.55 year
MTTR [hour]	1 hour	1 hour
Availability	0.99999717	0.999997158
Power supply mode	AC built-in, HVDC built-in, DC built-in	
Rated input voltage [V]	AC: 220 V, 50 Hz/60 Hz, High-voltage DC: 240 V/380 V, DC: -48 V/-60 V	
Input voltage range [V]	AC: 176 V to 290 V, 45 Hz to 65 Hz, High-voltage DC: 188 V to 288 V/260 V to 400 V, DC: -40 V to -72 V	
Maximum input current [A]	AC: 16 A for the voltage of 200 V or 18.5 A for the voltage of 176 V, High-voltage DC: 18 A for the voltage of 188 V or 13 A for the voltage of 260 V, DC: 58.5 A for the voltage of -40 V	
Types of fans	Pluggable	
Number of fan modules	3	3
Number of MPU slots	2	2
Number of SFU slots	-	9
Number of service board slots	4	8
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F)	
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)	
Long-term operating relative humidity [RH]	5% RH to 85% RH, noncondensing	
Long-term operating altitude [m(ft.)]	≤ 5000 m (16404 ft.)	

Service Processing Unit (SPU)

	SPUB-USG-01/ SPUB-USG-TP-01	SPUB-USG-02/ SPUB-USG-TP-02
Dimensions without packaging (H×W×D) [mm(in.)]	55.4 mm × 433.0 mm × 523.5 mm (2.18 in. × 17.05 in. × 20.61 in.)	
Typical power consumption [W]	305 W	415 W
Typical heat dissipation [BTU/hour]	1041 BTU/hour	1416.3 BTU/hour
Maximum power consumption [W]	470 W	597 W
Maximum heat dissipation [BTU/hour]	1604.1 BTU/hour	2037.6 BTU/hour
CPU	One CPU, 64 cores/CPU, 2.6 GHz	Two CPUs, 64 cores/CPU, 2.6 GHz
Memory	Standard DDR4 36 GB	Standard DDR4 68 GB

Service Processing Card (SPC)

	SPCB-USG-01/ SPCB-USG-TP-01	SPCB-USG-02/ SPCB-USG-TP-02
Dimensions without packaging (H×W×D) [mm(in.)]	55.4 mm × 390.6 mm × 204.7 mm (2.18 in. × 15.38 in. × 8.06 in.)	
Typical power consumption [W]	152 W	258 W
Typical heat dissipation [BTU/hour]	569.8 BTU/hour	880 BTU/hour
Maximum power consumption [W]	235 W	405 W
Maximum heat dissipation [BTU/hour]	870.06 BTU/hour	1382 BTU/hour
CPU	One CPU, 64 cores/CPU, 2.6 GHz	Two CPUs, 64 cores/CPU, 2.6 GHz
Memory	Standard DDR4 32GB	Standard DDR4 64 GB

Line Processing Unit (LPU)

LPUA-18CQ

LPUA-48XS

LPUA-4CQ-24XS

LPUA-2CQ-24XS

	LPUA-18CQ[1]	LPUA-48XS	LPUA-4CQ-24XS	LPUA-2CQ-24XS
Dimensions without packaging (H×W×D) [mm(in.)]	55.4 mm × 433.0 mm × 523.2 mm (2.18 in. × 17.05 in. × 20.60 in.)			
Weight without packaging [kg(lb)]	7.64 kg (16.84 lb)	6.7 kg (14.77 lb)	6.5 kg (14.33 lb)	6.5 kg (14.33 lb)
Typical power consumption [W]	251 W	103 W	92 W	90 W
Typical heat dissipation [BTU/hour]	857 BTU/hour	325 BTU/hour	314.2 BTU/hour	307.3 BTU/hour
Maximum power consumption [W]	388 W	193 W	190 W	182 W
Maximum heat dissipation [BTU/hour]	1325 BTU/hour	659 BTU/hour	648.8 BTU/hour	621.5 BTU/hour
CPU	Quad-core, 1.4 GHz clock speed	Quad-core, 1.4 GHz clock speed	Quad-core, 1.4 GHz clock speed	Quad-core, 1.4 GHz clock speed
Memory	Standard 4 GB	Standard 4 GB	Standard 4 GB	Standard 4 GB

1. LPUA-18CQ is not applicable to USG12004.

Specification

Performance and Capability	USG12004	USG12008
Firewall Throughput[1] (1518/512/64-byte, UDP)	960/800/200 Gbps	2.4/2.4/0.6 Tbps
Firewall Latency	35 μs	35 μs
Concurrent Sessions (HTTP1.1)[1]	640 Million	1.92 Billion
New Sessions/Second (HTTP1.1)[1]	19.2 Million	57.6 Million
IPsec VPN Throughput[1] (AES-256 + SHA256, 1420-byte)	540 Gbps	1 Tbps
Maximum IPSec VPN Tunnels	768,000	1 Million
FW+SA Throughput[2]	460 Gbps	1.2 Tbps
FW + SA + IPS Throughput[2]	400 Gbps	960 Gbps

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Performance and Capability	USG12004	USG12008
Full protection Throughput (Real-world)[3]	128 Gbps	307 Gbps
Security Policies (Maximum)	200,000	200,000
Virtual Firewalls (Default/Maximum)	10 / 4095	10 / 4095
URL Filtering: Categories	More than 130	
URL Filtering: URLs	Can access a database of over 120 million URLs in the cloud	
Automated Threat Feed and IPS Signature Updates	Yes, an industry-leading security center from Huawei (http://sec.huawei.com/sec/web/index.do)	
Third-Party and Open-Source Ecosystem	Open API for integration with third-party products, providing RESTful and NetConf interface Other third-part management software based on SNMP, SSH, Syslog	
Centralized Management	Centralized configuration, logging, monitoring, and reporting is performed by Huawei SecoManager	
High Availability Configurations	Active/Active, Active/Standby	

Note:

1. Performance is tested under ideal conditions based on RFC2544, 3511. The actual result may vary with deployment environments.
2. Antivirus, IPS, and SA performances are measured using 100 KB HTTP files
3. Full protection throughput is measured with Firewall, SA, IPS and Antivirus enabled, Enterprise Mix Traffic Model.

Order Information

Hardware	
USG12004-AC-B03	USG12004 AC Basic Configuration (include AC Chassis, 2*MPUB, 2*PM, Full Configuration FAN, HTM, overseas)
USG12004-DC-B03	USG12004 DC Basic Configuration (include DC Chassis, 2*MPUB, 2*PM, Full Configuration FAN, HTM, overseas)
USG12008-AC-B03	USG12008 AC Basic Configuration (include AC Chassis, 2*MPUB, 4*SFUA, 2*PM, Full Configuration FAN, HTM, overseas)
USG12008-DC-B03	USG12008 DC Basic Configuration (include DC Chassis, 2*MPUB, 4*SFUA, 2*PM, Full Configuration FAN, HTM, overseas)
SPUB-USG-01	USG12000 Service Processing Unit B-01
SPUB-USG-02	USG12000 Service Processing Unit B-02
SPUB-USG-TP-01	USG12000 Threat protection Service Processing Unit B-01
SPUB-USG-TP-02	USG12000 Threat protection Service Processing Unit B-02
SPCB-USG-01	USG12000 Processing card B-01
SPCB-USG-02	USG12000 Processing card B-02
SPCB-USG-TP-01	USG12000 Threat protection Processing card B-01
SPCB-USG-TP-02	USG12000 Threat protection Processing card B-02
LPUA-18CQ	USG12000 18 Port 100GBase-QSFP28 Interface Card
LPUA-48XS	USG12000 Port 10GBase SFP+ Interface Card
LPUA-4CQ-24XS	USG12000 24 Port 10GBase SFP+ + 4 Port 100GBase-QSFP28 Interface Card
LPUA-2CQ-24XS	USG12000 24 Port 10GBase SFP+ + 2 Port 100GBase-QSFP28 Interface Card

Virtual System License	
LIC-USG12000-VSYS-5	Quantity of Virtual Firewall (5 Vsys)
LIC-USG12000-VSYS-10	Quantity of Virtual Firewall (10 Vsys)
LIC-USG12000-VSYS-25	Quantity of Virtual Firewall (25 Vsys)
LIC-USG12000-VSYS-50	Quantity of Virtual Firewall (50 Vsys)
LIC-USG12000-VSYS-200	Quantity of Virtual Firewall (200 Vsys)
LIC-USG12000-VSYS-500	Quantity of Virtual Firewall (500 Vsys)
LIC-USG12000-VSYS-1000	Quantity of Virtual Firewall (1000 Vsys)
LIC-USG12000-VSYS-2000	Quantity of Virtual Firewall (2000 Vsys)
LIC-USG12000-VSYS-4000	Quantity of Virtual Firewall (4000 Vsys)
USG12000 Performance RTU	
LIC-USG12000-PERF-20G	Firewall 20G Performance RTU
LIC-USG12000-LPU-100G	1*Firewall 100G interface capacity expansion RTU (Applies to 18*100GE interface board)

Threat Protection License	
LIC-USG12004-AV-1Y	AV Update Service Subscribe 1 Year (Applies to USG12004)
LIC-USG12008-AV-1Y	AV Update Service Subscribe 1 Years (Applies to USG12008)
LIC-USG12004-IPS-1Y	IPS Update Service Subscribe 1 Year (Applies to USG12004)
LIC-USG12008-IPS-3Y	IPS Update Service Subscribe 1 Years (Applies to USG12008)
LIC-USG12004-URL-1Y	URL Update Service Subscribe 1 Year (Applies to USG12004)
LIC-USG12008-URL-1Y	URL Update Service Subscribe 1 Years (Applies to USG12008)
LIC-USG12004-IAU-1Y	IPS+AV+URL Filtering Feature Database 1 Year Upgrade Service (Applies to USG12004)
LIC-USG12008-IAU-1Y	IPS+AV+URL Filtering Feature Database 1 Year Upgrade Service (Applies to USG12008)

For more information, visit http://e.huawei.com/en/products/enterprise-networking/security.

HUAWEI TECHNOLOGIES CO., LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129, P.R. China
Tel: +86-755-28780808