



Hardware Comparison

The Netgate® hardware comparison chart is designed to give visitors a quick side-by-side comparison of Netgate appliances against one another. While most of this data (and more) exists on individual product pages, we believe the chart makes it fast and easy for viewers to quickly determine which appliance is best for their needs.

The comparison matrix has two critical dimensions:

1. Packet Sizes: iPerf3 and IMIX
2. Secure Networking Function: Routing (Forwarding), Firewall, VPN

This provides a very clear manner by which products can be compared - and under different levels of user-experienced traffic conditions. We see this as crucial given our user base varies, literally, from home consumers (with relatively light bandwidth and firewall needs) all the way to sophisticated enterprises (who demand predictable performance under the most strenuous encryption and packet mix conditions).



Netgate Hardware Comparison Chart

SG-1100
Desktop



\$179

SG-3100
Desktop



\$399

SG-5100
Desktop



\$699

XG-7100
Desktop/Rack



\$899/\$999

XG-1537
Rack



\$1,949

XG-1541
Rack



\$2,649

WHO

Consumer



Business



Enterprise



NEEDS

- Cost efficient / Low power
- Sleek, compact
- Silent operation (fanless)
- Put on a desktop, shelf, or wall
- (3) 1 GbE switched ports
- High Availability

- Cost efficient / Low power
- Sleek, compact
- Silent operation (fanless)
- Put on a desk or shelf
- (2) 1GbE ports
- (4) 1 GbE switched ports
- High Availability

- Cost efficient / Low power
- Compact
- Silent operation (fanless)
- Put on a desktop, shelf, or wall
- (6) 1 GbE ports
- Upgradeable memory and storage
- QuickAssist & AES-NI
- High Availability
- Runs pfSense® or TNSR™ Software

- Desktop or Rack Mount
- (2) 10 GbE SFP+
- (8) 1 GbE switched ports
- Expandable memory
- Upgradeable storage
- Network expandable (1U rackmount)
- QuickAssist & AES-NI
- High Availability

- Rack Mount
- (2) 10 GbE SFP+
- (2) 1 GbE ports
- Expandable memory
- Expandable storage
- Network expandable
- High Availability
- Runs pfSense or TNSR Software

- Rack Mount
- (2) 10 GbE SoC 10GBase-T
- (2) 1 GbE ports
- Expandable memory
- Expandable storage
- Network expandable
- High Availability
- Runs pfSense or TNSR Software

PERFORMANCE¹ (Running pfSense 2.4.4-p3 software)

iPerf3²

Basic Traffic
(Primarily Data Download)

L3 Forwarding: **880 Mbps**

Firewall: **656 Mbps**
(10k ACLs)

IPsec VPN: **74.2 Mbps**
(AES-128-CBC + SHA1)

L3 Forwarding: **3.64 Gbps**

Firewall: **2.44 Gbps**
(10k ACLs)

IPsec VPN: **453 Mbps**
(AES-128-CBC + SHA1)

L3 Forwarding: **3.66 Gbps**

Firewall: **3.65 Gbps**
(10k ACLs)

IPsec VPN: **923 Mbps**
(AES-128-GCM)

L3 Forwarding: **18.60 Gbps⁴**

Firewall: **6.81 Gbps**
(10k ACLs)

IPsec VPN: **1.28 Gbps**
(AES-128-GCM)

L3 Forwarding: **16.40 Gbps**

Firewall: **14.48 Gbps**
(10k ACLs)

IPsec VPN: **2.77 Gbps**
(AES-128-GCM)

L3 Forwarding: **17.40 Gbps**

Firewall: **14.63 Gbps**
(10k ACLs)

IPsec VPN: **2.82 Gbps**
(AES-128-GCM)

IMIX³

Complex Traffic
(Voice, Data, and Video)

L3 Forwarding: **480 Mbps**

Firewall: **190 Mbps**
(10k ACLs)

IPsec VPN: **46 Mbps**
(AES-128-CBC + SHA1)

L3 Forwarding: **1.98 Gbps**

Firewall: **1.04 Gbps**
(10k ACLs)

IPsec VPN: **108 Mbps**
(AES-128-CBC + SHA1)

L3 Forwarding: **3.78 Gbps**

Firewall: **1.84 Gbps**
(10k ACLs)

IPsec VPN: **380 Mbps**
(AES-128-GCM)

L3 Forwarding: **6.18 Gbps**

Firewall: **1.85 Gbps**
(10k ACLs)

IPsec VPN: **385 Mbps**
(AES-128-GCM)

L3 Forwarding: **11.46 Gbps**

Firewall: **5.00 Gbps**
(10k ACLs)

IPsec VPN: **2.10 Gbps**
(AES-128-GCM)

L3 Forwarding: **15.41 Gbps**

Firewall: **6.10 Gbps**
(10k ACLs)

IPsec VPN: **2.81 Gbps**
(AES-128-GCM)

HARDWARE

CPU

Dual Core Cortex-A53
ARM64 SoC @ 1.2GHz

Dual Core Cortex-A9
ARM7 SoC @ 1.6GHz

Quad Core Intel® Atom™
C3558 @ 2.2GHz

Quad Core Intel Atom
C3558 @ 2.2GHz

Eight Core Intel Xeon® 1.7 GHz

Eight Core Intel Xeon 2.1 GHz

Storage

8 GB eMMC

8 GB eMMC
(Upgradeable)

8 GB eMMC
(Upgradeable)

32 GB eMMC
(Upgradeable to 256GB M.2 SSD)
(Expandable to 2x 256GB SSD SATA on 1U)

256 GB Micron M.2 SSD
(Expandable to 512GB)

256 GB Micron M.2 SSD
(Expandable to 512GB)

Memory

1 GB DDR4

2 GB DDR4

4 GB DDR4
(Upgradeable to 16GB)

8 GB DDR4
(Expandable to 24GB)

8 GB DDR4 RDIMM
(Expandable to 32GB ECC)

16 GB DDR4 RDIMM
(Expandable to 32GB ECC)

Network Ports

(3) switched ports:
(3) 1 Gbps Marvell switch
with 1 Gbps uplink

(6) independent and switched ports:
(2) 1 Gbps WAN/OPT ports
(4) 1 Gbps LAN Marvell switch
with 2.5 Gbps uplink

(6) independent ports:
(4) GbE RJ45 Intel SoC Integrated MAC
(2) GbE RJ45 Intel i210

Up to (14) independent and switched ports:
(2) 10 Gbps Intel x553 SFP+ ports
(8) 1 Gbps Marvell switch
with 2 x 2.5 Gbps uplink
(Expandable to 4-Port Intel GbE)

Up to (8) independent ports:
(2) 1 GbE LAN/WAN via Intel i350-AM2
(2) 10 GbE SFP+ LAN/WAN via SoC
(Expandable to 4-Port Intel GbE)
(Expandable to 2-Port Chelsio 10 GbE SFP+)

Up to (8) independent ports:
(2) 1 GbE LAN/WAN via Intel i350-AM2
(2) 10GBase-T LAN/WAN via SoC
(Expandable to 4-Port Intel GbE)
(Expandable to 2-Port Chelsio 10 GbE SFP+)

Footnotes:

1. All performance tests are based upon maximum memory configuration and base model port configuration (no port expansion). Throughput measurements are based upon maximum bidirectional traffic across all available ports.

2. iPerf3 traffic is TCP - 1460 byte payload and TCP framing.

3. Simple IMIX traffic is sets of 7 (40) byte packets, (4) 576 byte packets, 1 (1500) byte packets, plus Ethernet framing overhead.

4. XG-7100 performance number exceeds that of the XG-1537/41, as all tests were run by maximizing throughput across available base model physical ports (XG-7100 with 10 ports vs. XG-1537/41 with only 4 ports). The XG-1537/41 exceed the XG-7100 by per-port performance.

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