



## Sizing Guide for Deploying NGINX Plus on Bare Metal Servers

Powering half of the world's busiest sites, NGINX is the heart of the modern web. We provide a complete software application delivery platform at a fraction of the cost of dedicated hardware appliances or ADCs. NGINX Plus easily runs on bare metal x86 hardware for maximum performance and incredible cost savings.

The table below outlines the performance levels you can achieve with NGINX Plus running on specific server sizes. Each row details the specifications of the hardware you will need to achieve each level of performance, along with the typical cost for that hardware.

Size	Performance	Hardware Specs	Hardware Cost <sup>5</sup>
X-Small	45,000 Requests/Sec <sup>1</sup> 430 SSL TPS <sup>2 3</sup> 2 Gbps Throughput <sup>4</sup>	1 CPU core <sup>6</sup> 2 GB RAM 2x 1 Gbe NIC 250 GB HDD	\$250
Small	90,000 Requests/Sec <sup>1</sup> 850 SSL TPS <sup>2 3</sup> 14 Gbps Throughput <sup>4</sup>	2 CPU cores <sup>6</sup> 4 GB RAM 2x 10 Gbe NIC 500 GB HDD	\$850
Medium	175,000 Requests/Sec <sup>1</sup> 1,700 SSL TPS <sup>2 3</sup> 20 Gbps Throughput <sup>4</sup>	4 CPU cores <sup>6</sup> 4 GB RAM 2 x 10 Gbe NICs 500 GB HDD	\$1100
Large	350,000 Requests/Sec <sup>1</sup> 3,400 SSL TPS <sup>2 3</sup> 35 Gbps Throughput <sup>4</sup>	8 CPU cores <sup>6</sup> 4 GB RAM 4x 10 Gbe NIC 1 TB HDD	\$2600
X-Large	650,000 Requests/Sec <sup>1</sup> 6,500 SSL TPS <sup>2 3</sup> 35 Gbps Throughput <sup>4</sup>	16 CPU cores <sup>6</sup> 8 GB RAM 4x 10 Gbe NIC 1 TB HDD	\$3,400
XX-Large	1,100,000 Requests/Sec <sup>1</sup> 9,000 SSL TPS <sup>2 3</sup> 35 Gbps Throughput <sup>4</sup>	32 CPU cores <sup>6</sup> 8 GB RAM 4x 10 Gbe NIC 1 TB HDD	\$9,000
XXX-Large	1,200,000 Requests/Sec <sup>1</sup> 10,000 SSL TPS <sup>2 3</sup> 35 Gbps Throughput <sup>4</sup>	36 CPU cores <sup>6</sup> 16 GB RAM 4x 10 Gbe NIC 1 TB HDD	\$12,000

1. 1 KB response size with keepalive connection

2. 0 byte response size without keepalive connection

3. RSA Key: 2048 bit, Cipher: ECDHE-RSA-AES256-GCM-SHA384

4. 1 MB response size

5. Except for X-Small, prices are based on Dell PowerEdge servers

6. Testing done with Intel Xeon CPUs @ 2.3 GHz

*NOTE: NGINX Inc. does not sell hardware; the costs presented here are typical costs you would expect to pay when purchasing from a reseller.*

## Memory Sizing

NGINX Plus memory usage grows slowly with the number of concurrently active connections. Though dependent on the configuration, it is typically less than 10 - 20 Kb per connection.

When caching content in NGINX Plus, additional memory may be needed. Size the memory so that there is sufficient unused memory to store the hot cached content in the operating system page cache.

## Perfect Forward Secrecy

The SSL TPS numbers presented above are for SSL with Perfect Forward Secrecy (PFS). PFS makes it difficult for an attacker to decrypt past messages they have captured even if they are able to compromise the private key. PFS is recommended to provide maximum protection and user privacy, and will be the industry standard going forward.

PFS is more computationally expensive and as a result gives lower overall Transactions Per Second (TPS) than SSL without PFS. Other vendors do not publish PFS performance, so please keep this in mind when doing comparisons.

## About the Tests

Requests/Sec - Measures the ability of NGINX Plus to process HTTP Requests. The client sends requests down keepalive connections. NGINX Plus processes each request and forwards it on to a web server over another keepalive connection.

SSL TPS - SSL Transactions per Second (TPS) measures the ability of NGINX Plus to process new SSL connections. Clients send a series of HTTPS requests, each on a new connection. NGINX Plus parses the requests and forwards them onto a web server using an established keepalive connection. The web server sends back a 0 byte response for each request.

Throughput - The throughput that NGINX Plus can sustain when serving large files over HTTP.

## About NGINX PLUS

[NGINX Plus](#) helps you achieve performance, reliability, security, & scale by providing a complete application delivery platform; combining load balancing, content caching, web serving, security controls, and monitoring in one easy-to-use software package

NGINX Plus ensures maximum performance and flawless delivery for almost any application (whether a legacy application, traditional web app, or interconnected microservices) and equally for all types of infrastructure (bare metal, the cloud, or in containers).

[Try NGINX Plus for free today](#)