



Hardware Recommendation Guidelines

Vyatta software is designed to take maximum advantage of the scalability of the x86 hardware platforms that exist today as well as those that are expected in the future. The multi-processing capability of Vyatta, coupled with today's low-cost multi-core hardware architectures, means that Vyatta implementations can scale from the small branch office to the large data center.

These hardware recommendations are intended to provide general guidelines for selecting a hardware platform for use with Vyatta software across a very wide range of environments. If you have a specific network design in mind and you would like specific recommendations for hardware, please consult your Vyatta sales team.

General Guidelines

Processors

Vyatta software is multi-processing and can take advantage of multi-processor/multi-core hardware architectures. Each interface and each routing protocol or other active subsystem can run on a separate processor. For maximum performance, use more cores when scaling up the following parameters:

- Number of interfaces
- Number of routing protocols (RIP, OSPF, BGP, ...)
- Number of other active subsystems (VPN, NAT, Firewall, SNMP, ...), especially processing intensive subsystems such as: VPN, Intrusion Detection/Prevention, Anti-Virus
- Other processing intensive applications that you may add to the system

The specific type of processor used will also affect performance. Variables like clock speed, front side bus speed, cache size, and other parameters should be reviewed. Processor speeds and capabilities are evolving and improving so rapidly that a complete analysis is beyond the scope of these recommendations.

Memory

Vyatta software makes very effective use of memory and can support very large routing tables and large numbers of peers. For maximum performance, use more memory when scaling up the following parameters:

- Number of routes
- Number of routing protocols
- Number of peers
- Number of VPN tunnels
- Web caching
- Other memory intensive applications that you may add to the system

The system will dynamically allocate buffers from available memory. More buffers can be allocated if memory is larger. Therefore, disk I/O-intensive applications (e.g., web caching) can also benefit from more memory.

Storage

Vyatta software uses storage for logging activity, web caching, and other typical storage applications. In addition, software updates take an additional but temporary amount of storage. Vyatta recommends a minimum of 2 GB of storage for running Vyatta software. For maximum performance, configure more storage when scaling up the following parameters:

- Move verbose logging than standard settings
- Web caching (Note: Vyatta recommends against running web caching on a flash-based storage system)
- Intrusion Prevention rule download and decompress process
- Other storage intensive applications that you may add to the system

Summary

The following table summarizes the above guidelines for a few common configurations. These examples do not necessarily represent any one specific installation, but are indicative of general system requirements. Throughput and performance are strongly related to the type of processor used. Since so many variables are involved, the following table generalizes the processor selection to number of cores.

	SUGGESTED MINIMUM HARDWARE		
Design Considerations	Memory	Storage	Cores
<ul style="list-style-type: none"> ■ 1-4 100Mb interfaces and 1-2 T1/E1 interfaces ■ 1 routing protocol ■ Up to 100 routes 	512 MB	2 GB	1 core
<ul style="list-style-type: none"> ■ 2-to-6 interfaces (combination of 1GB Ethernet, T1/E1, T3/E3) ■ Up to 2 routing protocols ■ Up to 10,000 routes ■ Firewall, NAT 	1 GB	2 GB+	1-2 cores
<ul style="list-style-type: none"> ■ 6-to-10 interfaces (combination of 1GB Ethernet, T1/E1, T3/E3) ■ 2 or more routing protocols ■ Full internet routing table ■ Firewall, NAT, VPN 	2 GB	2 GB+	2-4 cores
<ul style="list-style-type: none"> ■ 10 or more interfaces (combination of 1GB Ethernet, T1/E1, T3/E3) ■ 2 or more routing protocols ■ Full internet route table from multiple BGP peers ■ Complex Firewall, NAT, VPN 	4 GB	4 GB+	4-8 cores

For more specific recommendations for your specific situation, consult with your Vyatta account team.