NETGROOT vBNG Hardware requirements and performance

Minimum Requirements

vBNG platform runs on general purpose computers. However, due to deep code optimization and integration with the hardware, the hardware configuration has to meet some specific requirements:

- One CPU support staring from Intel Nehalem and AMD EPYC Zen2 with 4 or more processor cores, 2.5 Ghz clock speed and above.
- At least 3 ports are required: one for the remote management using SSH (any kind of chipset), the two other to process network traffic (network cards with DPDK support)

It is recommended to use only tested cards on Intel chipsets with 2, 4 or 6 ports.

1GbE interfaces

- e1000 (82540, 82545, 82546)
- e1000e (82571, 82572, 82573, 82574, 82583, ICH8, ICH9, ICH10, PCH, PCH2, I217, I218, I219)
- igb (82573, 82576, 82580, I210, I211, I350, I354, DH89xx)
- igc (I225)

10GbE interfaces

- ixgbe (82598, 82599, X520, X540, X550)
- 10GbE and 40GbE interfaces, 40GbE port can handle no more than 20G, it is recommended to use only one port on a dual-port card.

i40e (X710, XL710, X722, XXV710)

- 100GbE interfaces, 100GbE port can handle no more than 30G, it is recommended to use only one port on a dual-port card.
- mlx5 (Mellanox ConnectX-5 Ex)
- ice (Intel E810) - we do not recommend it, there are problems in intel firmware on the card: it does not pass GRE tunnels

RAM not less than 8Gb. The processor/memory parameters are determined according to the required bandwidth. We recommend you to look through the typical configurations and agree on the choice of software server with **NETGROOT** representatives.

It is recommended to use SSD disks in the M.2 form factor with support for NVMe with a capacity of 128GB or more to host the OS and BNG software.

Recommended Configuration

Server performance is determined based on peak traffic volume value on the channel. When choosing a CPU, RAM, it is necessary to take into account that the calculation is presented for asymmetric traffic. This means that when installing "in-line" for peak incoming traffic of 12 Gbps (Max IN traffic), you need to purchase hardware for 20Gbps.

Parameters: 1 CPU 16 cores and more, RAM 64GB and more.

Referral Information			
Traffic in Gbps	CPU cores	RAM	Public Addresses in NAT Pool
10	12	32	256
20	18	64	512
40	22	96	1024
60	32	128	1500
80	64	256	2000

Important when selecting a server:

1. The vBNG uses only one processor because of the impact on performance of NUMA for dual-processor configurations.
2. When choosing a CPU, it is necessary to consider the base frequency, the higher the frequency, the greater the performance.
3. When using vBNG as L2 BRAS (DHCP/ARP/PPPoE authorization) it is necessary to consider the additional load associated with the analysis of each packet by additional parameters. This leads to an increase in CPU power consumption. In such cases it is recommended to increase the number of CPU cores by 30%.
4. The use of 40G interfaces is possible only when the platform is delivered through a partner in order to control the server specification.