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# 10 DPI vertical scaling

SCAT may need to be upgraded to a newer version due to increased volume of transit traffic. But this will require upgrading both the license and equipment. In case if a suitable hardware platform was originally chosen, the CPU upgrade and increasing the amount of RAM and network cards will be enough. And moreover the license upgrade plays into the calculation the cost of existing one.

The key platform parameters (the number of sessions, addresses, subscribers and so on) are adjusted by the following setting:

```
scale_factor=1
```

where the number roughly corresponds to the channel width in gigabytes.

In some cases it may be required to add a number of subscribers without increasing the traffic volume. In this case the following setting will do the trick:

```
mem_ip_metadata_recs=500000
```

where the number specifies the maximum quantity of subscriber profiles to be created, please, look through the technical details of platform and make it clear the maximum size of the subscriber base. Do not use a larger value here than you need.

In SCAT-40 and higher the method of vertical scaling <sup>1)</sup> is used named as a multicluster. In fact a 2-clusters it's like 2 dpi servers in one process. Each has its own set of ports, workflows, etc. but there are general data. A result symmetric traffic is not required as in the case of horizontal scaling. If you look at the hardware configuration of the server SCAT-40 is like two SCAT-20, but with one CPU, and SCAT-80 is four SCAT-20.

When configuring a multicluster, you need to specify the distribution of network interfaces over clusters:

```
in_dev = dna0 | dna2  
out_dev = dna1 | dna3
```

here,  
the sign | separates pairs of interfaces related to different clusters  
dna0 ↔ dna1 is the pair of the first cluster  
dna2 ↔ dna3 is the pair of the second cluster



Before changing the specified configuration, manufacturer should be consulted, since improper setup may cause the unstable operation of the platform.

<sup>1)</sup>  
scaling within a single server