# DIM Performance Measurements

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Description:

- A server updates DIM services at full speed and a client counts the number of received services
- Srv04 and Srv03 are Linux Machines, Xeon dual-processor 2.8 GHz, 1 GB of Ram. Connected via a private Ethernet network 100Mbit/s
- pclhcb155 is a Windows XP PC, 1CPU, 3 GHz Pentium 4, 1 GB of Ram

Results:

Number of services received per second for different data sizes (in bytes):

	4	128	512	1024	2048	4096	8192	16384	32768	65536
srv04->srv04	26795	26362	26370	25980	24977	22703	19022	11398	6621	3226
srv04->srv03	21176	24399	17541	10214	5384	2794	1414	711	358	179
pclhcb155->pclhcb155	9254	9154	8253	8188	8048	6443	5182	3314	1933	1015
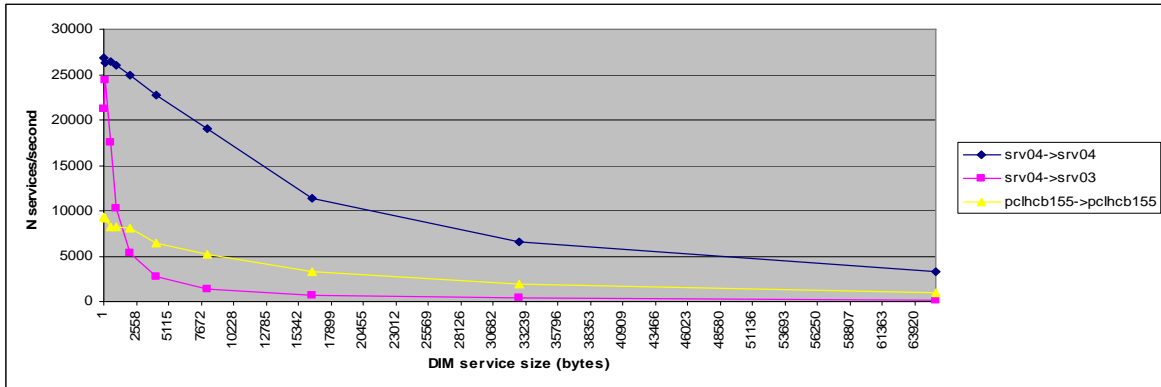
Throughput in Kbytes/second for different data sizes (in bytes):

	4	128	512	1024	2048	4096	8192	16384	32768	65536
srv04->srv04	104.7	3295	13185	25980	49954	90812	152176	182368	211872	206464
srv04->srv03	82.6	3049	8771	10214	10696	11176	11312	11376	11456	11456
pclhcb155->pclhcb155	36.1	1144	4127	8188	16098	25772	41456	53024	61856	64960
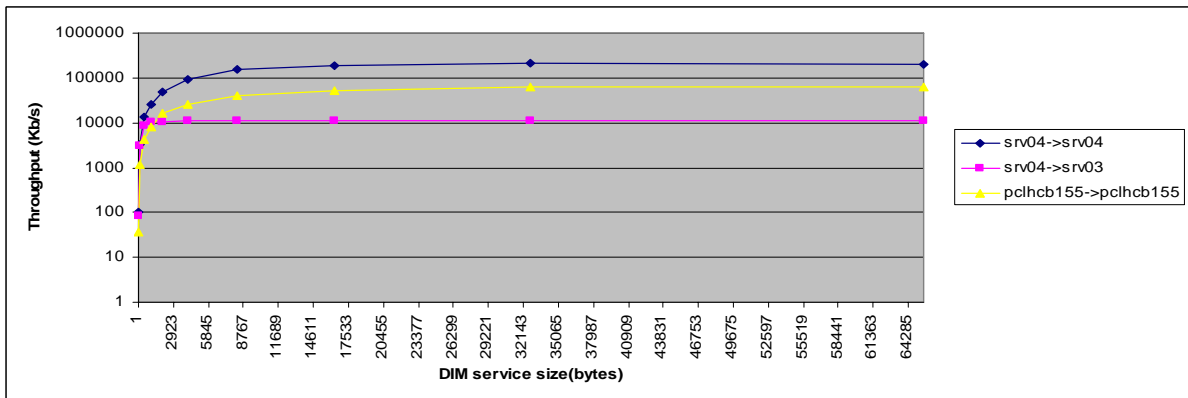
Conclusions:

Since the nominal wire speed throughput (i.e. without the Ethernet and IP overhead) between srv04 and srv03 is 12500 Kbytes/s the measurements show that DIM is very close to saturating the available bandwidth (with the achieved 11450 Kbytes/s)

Srv04 performs much better than pclhcb155 for local communications, there are two reasons for this:

- Srv04 has two CPUs so the server can use one while the client uses the other one while on pclhcb155 they have to share the same CPU.
- On Linux, local TCP/IP communications are very much optimized, transfers within the same machine bypass the TCP/IP stack, while on windows the packets go through the whole protocol stack and then come back.

The maximum throughput on the windows machine is 65Mbytes/s so it would easily saturate a 100Mbit/s network.

While for the Linux machine it seems like it would saturate a 1 Gbit/s network. But this would have to be checked, due to the optimized local communications, it might be difficult to achieve similar performances over the network.