Our partners in Latvia have completed the testing of their 1 Gbps connection successfully per the email conversation below. Testing was able to reach ~940 Mbps (the pertinent section of the email has been highlighted). The email references a diagram which is attached below. This diagram shoes the effect of TCP's bandwidth reduction during long round trip times.

```
From ivarss@venta.lv Tue Sep  2 23:12:21 2008
Message-ID: <5BE2EA75881440E2BA543AE52CB29B1E@mercury>
From: "Shmeld" <ivarss@venta.lv>
To: <f.colomer@oan.es>
Subject: Fw: VIRAC - GEANT
Date: Wed, 3 Sep 2008 00:12:21 +0300

----- Original Message -----=20
From: Gints Neimanis=20
To: Paul Boven=20
Cc: Dmitry Bezrukov VIRAC ; Ivars Smelds=20
Sent: Monday, June 09, 2008 4:42 PM
Subject: Re: VIRAC - GEANT


Hi Paul,

Sorry  for the delay.
Our VIRAC people are trying to set up  the MARK5 device (this MARK5 =
stores the actual data) at VIRAC, but there are some problems.
After that it would be better, if we test  some sample data from MARK5 =
to JIVE.

About Jumbo frames - we will enable Jumbo frames at each device and =
switch in our path, if this is possible.

I hope that we will be ready in next week with MARK5.

With regards from Ventspils!
Gints Neimanis


Paul Boven rakst=C4=ABja,  2008.06.03. 12:25:=20
Hi Gints, Ivar, Bjorn, Voravit,

Gints Neimanis wrote:
  Gints Neimanis wrote:
    Hi, Paul

At Ventspils we are ready to test connection from VIRAC to JIVE.

Colleges from KTH made a big job to connect the fibres from Ventspils
direct to the KTH core equipment and we hope for better bandwidth
results.

I will ask Bjorn about new rules: are we now free to test the link at
any time? If our 1Gbps link is in the KTH core 10Gbps+ connection,
then our test traffic should bee unimportant and doesn't disturbs the
KTHLAN, or should we arrange the time for the tests?

It is very nice to hear from you again, especially with such good news.

***
I've run a number of tests from the VIRAC test machine to JIVE, and the
```

connection seems to work very well. Please find attached the graph I made when testing with iperf and TCP - it **shows that the maximum throughput is indeed 940Mb/s**. Because of the much longer delay between VIRAC and JIVE, as soon as the connection reaches 940Mb/s and packet loss occurs, the throughput is halved, and then slowly increased again.

I've also tested with UDP, and I found that we can sustain about 700Mb/s of iperf traffic without much loss (0.08%), anything higher and apparently the VIRAC test machine runs out of resources (CPU or bus).

I've also noticed that the MTU is set to 1500. Would it be possible to enable Jumbo frames on this path? That would make operations at e.g. 512Mb/s eVLBI much easier as it significantly reduces the CPU load for the sending and receiving Mark5.

Do you have any news on receivers etc.?

Regards, Paul Boven.