

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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29 July 2003

TO: Distribution
FROM: Alan R. Whitney
SUBJECT: 28 July 2003 e-VLBI telecon summary

Attendees:

Bill Fink, Lee Foster, Pat Gary, Andy Germain, Kevin Kranacs, Mary Shugrue– GSFC

Tom Lehman – ISI-E

Guy Almes – Internet2

Kevin Dudevoir, Hans Hinteregger, David Lapsley, Arthur Niell, Alan Whitney – Haystack Observatory

This telecon is one of an ongoing series of telecons to prepare for gigabit/sec e-VLBI demonstrations between NASA GSFC and MIT Haystack Observatory using a combination of network facilities including all or part of Glownet, Bossnet, ISI-E, SuperNet, Max and GSFC/HECN.

ACTION ITEMS ARE HIGHLIGHTED IN RED.

Glownet/Bossnet

Tom reported mixed results in recent Bossnet OC-48 testing. Planning to do some more testing this week, but Peter Schulz is currently on vacation. In any case, additional testing will resume when Peter returns.

NASA/GSFC

No changes to e-VLBI path. No testing yet to GGAO Mark 5A; **Kevin D. will test soon.**

GigE switch testing

David reported that Rick Larkin has traced the problem observed with performance with the Dell 5224 GigE switches to the implementation of the spanning-tree algorithm. When host is first connected into switch, the switch doesn't trust ARP table entries and won't accept packets until after ~30 seconds, leading to apparent mis-performance in the first 30 seconds. With this feature disabled, performance appears to be OK. Bill Fink reported he has seen similar behavior on the nearly identical SMC switch.

International Connections

Kokee: Kevin D. reported that the Kris Blackstad, network administrator at PMRF, has identified a fault in the microwave link from PMRF to Kokee and made some configuration changes, but Kevin is not aware of details. Nonetheless, performance has not changed – remains 4-5% UDP data loss rate. Plan is to deploy some intermediate test workstations to allow more detailed testing.

Germany: Wettzell plans to install a 34 Mbps optical link from Wettzell to U. of Regensburg; should be completed by ~end of October 2003. U. of Regensburg has test server that should allow us to duplicate most of the path and do testing ahead of the fiber link to Wettzell.

Japan: David reported a successful RTP test between Haystack and Kashima using new software written by REU student Amanda Morrow. Expect intensified testing to resume soon.

David will attend the Internet2 Technical Workshop in Lawrence, KS next week. He will also attend a meeting of the Joint Engineering Team (JET), which is more international in scope, where there may be an opportunity to introduce e-VLBI to a wider international audience, to meet some of the key international players, and to discuss some of the difficulties we have been having establishing international connections.

Performance Monitoring

Lee reported that he has a summer student from Oregon Institute of Technology working on nuttcp as a service under Windows; he is putting together a package for general distribution in the near future.

Andy reported he now has 32 test sources, ~100 sinks, with ~210 tests being performed every hour. Testing results are reported at <http://netstats.eos.nasa.gov/> (under Active Network Measurements, click on ESTO/CT or Abilene-DC). Observing ~200 Mbps to Abilene-DC node, somewhat lower than expected; 200-250 Mbps max to MIT. Andy welcomes deployment of new sites to the testing web; **Andy will update his writeup and send to Alan for distribution to the group**; Andy volunteers to help add new sites to the testing web. He also plans to add traceroute information in the future.

David has been looking at the WEB100 performance suite. One thing he particularly likes is an API that automatically logs all the 'hidden' TCP parameters that are not normally accessible (cwnd, ssthresh, #of bytes out, packet loss, etc).

David has signed up Haystack as a beta site for the new FAST TCP algorithm from Stephen Low's group at Caltech. The hope is that this new algorithm will dramatically improve TCP performance over high-speed long-distance links. New FAST algorithm only needs to be set up on sender side.

David asked Andy whether it might be possible to create a simple API to access the statistics in the performance data base that Andy is creating. A user who wanted to use a particular link could then download statistics on that link from the performance data base and use them as a guide to intelligently adjust TCP parameters to help optimize TCP performance. Tom reported that he thinks that some of the people working on WEB100 at Lawrence Berkeley Lab have implemented, or are working to implement, such a system. We should do a survey of this work and perhaps try to coordinate efforts; **David agreed to do a survey of the work in this area and report back to the group.**

NoX meeting at Haystack

Alan reported briefly on a NoX (Northern Crossroads, New England counterpart of MAX), attended by representatives of NoX (Leo Connelly, Harvard and Michael Krugman, BU), Internet2 (Guy Almes and Stanislav Shalunov), MIT Lincoln Labs (Steve Bernstein, Rick Larkin) and Haystack. The primary goal of the meeting was to acquaint the NoX people with e-VLBI and the current e-VLBI development efforts. There was much enthusiasm about the ability of e-VLBI to use 'scavenged' bandwidth, which would otherwise go unused, and we were encouraged to continue and expand our efforts.

VSI-E

Alan reported that David has nearly completed the draft VSI-E (VLBI Standard Interface – e-VLBI) specification, which should be ready for distribution in a week or two. Alan offered to send a copy of the draft to anyone who would like one (Tom would like one).

Pending proposals

Still waiting for things to be announced, though it is known that the UltraLight proposal has been turned down.

Next telecon

Next telecon is scheduled for Mon, 18 August 2003 at 2 pm EDT

cc: Steve Bernstein, LL
Jim Calvin, LL
Rick Larkin, LL
Lorraine Prior, LL
Peter Schulz, LL
Leslie Weiner, LL
Herbert Durbeck, GSFC
Bill Fink, GSFC
Lee Foster, GSFC
Pat Gary, GSFC
Andy Germain, GSFC
Chuck Kodak, GSFC
Kevin Kranacs, GSFC
Paul Lang, GSFC
Aruna Muppalla, GSFC
Mary Shugrue, GSFC/ADNET
Bill Wildes, GSFC
Dan Magorian, UMCP
Tom Lehman, ISI-E
Jerry Sobieski, MAX
Guy Almes, Internet2
Charles Yun, Internet2
Richard Crowley, Haystack
Kevin Dudevoir, Haystack
Hans Hinteregger, Haystack
David Lapsley, Haystack
Arthur Niell, Haystack
Joe Salah, Haystack