
* * A bi-monthly electronic news bulletin
* reporting on the activities of DANTE,
* the company that organises international
* network services for the European
THE WORKS OF D A N T E research community.

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Editor: Cathrin Stover

* HTML version: <http://www.dante.net/pubs/works/36.html> *

TEN-155 UPGRADES

As a result of the yearly TEN-155 service reviews which DANTE carries out with the suppliers of the TEN-155 network, significant upgrading is expected to be carried out on TEN-155 next year. The central ring connecting Germany, France, the Netherlands and the United Kingdom will be upgraded from 155 Mbps to 622 Mbps. Additionally, Belgium will become part of the ring. Italy, Sweden and Switzerland will each be connected via 2x155 Mbps links to each of two different locations. Further upgrades to the current services will also be carried out on the lines linking Budapest to Vienna and Athens to London. A new circuit will be added for Vienna to Geneva. All of these circuits are planned to then have 155 Mbps bandwidth.

TEN-155 ACCESS PORT AVAILABILITY

The figures for TEN-155 in November show an average access port availability of 99.54%, with ten of the nineteen connected networks enjoying 100% availability.

However, the average access port availability in October reached only 99.10%, with five of the nineteen networks enjoying 100% access port availability. The decline in the figures, compared to the preceding month, is mainly linked to two major service interruptions; BELNET (Belgium) suffered a long break, due to a problem with their local equipment. As a result of a loss of the local loop at the Paris PoP, RENATER (France) suffered a loss of connectivity of about 76 hours between 29 October and 1 November, which reduced their global access availability to just 89.78% for the month of October.

TEN-155 PERFORMANCE INVESTIGATION

Poor end-to-end performance between workstations at end user sites in Germany and the Netherlands were reported at the beginning of autumn, with packet loss occurring. In a joint effort with KPN, Cisco and Lucent, DANTE has thoroughly investigated the problem in the past weeks in order to find solutions quickly. The

investigation has uncovered a number of contributory factors, such as CRC errors occurring in Cisco routers, the lack of tuning of buffer parameters in ATM switches to exactly match the requirements of TEN-155 and faulty configuration of the switches used in the network.

DANTE is currently involved in intense discussions with KPN and the KPN ATM NOC to investigate how to prevent similar situations in the future.

As of now, the problems seem to be resolved on the ATM switches, and the current upgrade of the ATM hardware on the Cisco 7500 routers is expected to cure those still remaining.

TEN-155: NEW INTERNATIONAL CONNECTIONS

ESNet, the Energy Science network in the US, and DANTE are in the final stages of implementing an interconnection between ESNet and the DANTE Point of Presence in New York. DANTE has already provided connections to Abilene (one of the Internet2 networks in the US) and NACSIS, a Japanese Research Network. The ESNet interconnection will be made available to connected national networks on TEN-155. DANTE is in the process of finalising similar arrangements with the Canadian research network, CANARIE.

TEN-155 MBS SUPPORTED AWARD-WINNING PROJECT AT SUPERCOMPUTING '99

At the SuperComputing'99 "HPC Games", an intercontinental team consisting of computational scientists, networking and systems specialists in Stuttgart (Germany), Manchester (UK), Pittsburgh (USA) and Tsukuba (Japan) was awarded the top prize for the most challenging scientific applications. During this exhibition, a molecular dynamics simulation with over two million particles ran concurrently on a Hitachi SR8000 at ETL (Tsukuba), and on CRAY T3E's at the Pittsburgh Supercomputing Center, CSAR (Manchester) and HLRS (Stuttgart), with the TEN-155 Managed Bandwidth Service providing a Virtual Private Network between Stuttgart, Manchester and the DANTE New York PoP. This Teracomputer spanning more than 10,000 miles had a total peak performance of 2.2 Tflops.

TEN-155 MBS USER "SUSIE" A SUCCESS

One of the projects using the TEN-155 Managed Bandwidth Service regularly, SUSIE, enthusiastically reported on the success of a row of videoconferencing sessions which took place between 29 November and 3 December. SUSIE works by setting up remote teaching sessions, in which a virtual classroom is created by establishing connections (shared white board, audio and video) between classrooms in Canada, Dublin, Germany and Switzerland.

AUCS INTERCONNECTIONS

As planned, the interconnections between TEN-155 and the European

commercial Internet via AUCS (AT&T Unisource Carrier Services) are gradually being rolled out, with three of the four planned connections already in place. The interconnection in London became operational on 8 November, only a couple of weeks after the set-up of that in Geneva, while the existing AUCS connection in Amsterdam has been upgraded. The last interconnection with AUCS in Stockholm is planned to be completed by the end of December.

QUANTUM TEST PROGRAMME

Activity on the QUANTUM Test Programme (QTP) started in November 1998 and is being carried out by a joint DANTE/TERENA taskforce called TF-TANT. One year later, substantial work has been performed on MPLS, Differentiated Services and IP multicast, while a more limited amount of work has been done on flow-based monitoring, route monitoring, IP over ATM, IPv6, QoS monitoring, policy control and ATM signalling, for all of which some results are nonetheless available. Finally, there are a few activities that have been defined but have not yet been developed, such as RSVP to ATM signalling mapping, ATM multicasting, WDM and STM-4 concatenation issues.

More information can be found in the interim report delivered to the European Commission regarding the progresses achieved in the Programme, available at: <http://www.dante.net/quantum/qtp/QUA-99-070.pdf>

NAMEFLOW UPDATE

NameFLOW is still based on the X.500 model largely using Quipu servers. DANTE maintains the root level with information on all First-Level servers and countries. All references to the country-level databases unavailable for several months were removed together with the corresponding country entries. 17 country entries remain, of which two (Great Britain and Hungary) are mastered now by Giant Tortoise.

An experimental LDAP gateway to the X.500 service was installed at ldap.dante.net:1389. It is open for the user "cn=LDAP Gateway, o=DANTE, c=GB" (without a password). The WWW gateway to the Directory was set up at <http://www.gateway.nameflow.net/>.

DANTE is migrating to the '93 edition of the X.500 Directory standard. The evaluation copy of a new directory software was installed on a separate server and is being set up for maintaining the coordination information for country-level servers. The new server is working in parallel with the old one. There is the work in progress on integration between the old Quipu-based country-level servers and the new X.500 (93) servers, as well as LDAP-only servers.

DANTE is planning to hold an open meeting on NameFLOW in January, to discuss the questions of the current national activities in the directory area, '93 migration and Quipu/LDAP interoperability.

QUANTUM AND Q-MED ANNUAL PROJECT REVIEW

DANTE's offices hosted a review of the QUANTUM and Q-MED project developments on 17 and 18 November by the Project Officer for the European Commission and three external experts. The preliminary results included very favourable comments on the achievements of QUANTUM, Q-MED and TEN-155 to date.

FUTURE DEVELOPMENTS

DANTE has produced a blueprint for the further development of the TEN-155 network. This sets out the way pan-European research networking should be progressed in the next several years. The proposal, known as GÉANT, advocates an evolutionary approach to the development of TEN-155 based on the existing structure to create a shared multi gigabit core network available to all of the national research networks across Western, Central, and Eastern Europe. This will be complemented by a continuation of the Managed Bandwidth Service and the technology and service test programme which are currently part of TEN-155.

In addition, for the first time, it is proposed to provide global connectivity between GÉANT and other world regional Research Networks as an integral element of the pan-European service.

STAFF AT DANTE

Konstantin Chuguev (RU) joined DANTE on 2 November 1999 and works as an Applications Engineer mainly on the NameFLOW service and DESIRE project. Konstantin was previously employed by the Southern Ural Regional Centre of FREENet in Russia where he worked for five years as a network administrator/programmer and was also responsible for the setting up of new network applications.

Edna Hussey (UK), who has been one of DANTE's secretaries/administrators since March 1998, leaves DANTE on 17 December; she will now be working for UUNet Commercial Internet Services as a legal assistant, incorporating companies across Europe into UUNet. We wish her well in her new job.

Alex Gosnell (UK) has joined DANTE's staff on 13 December in order to take over from Ed. Alex has previously worked for 13 years for TSB bank, doing secretarial work.

DANTE wishes you all a very merry Christmas, and a bug-free start into the new millennium!