

## European Research Networks Set New Internet Speed Record With IPv6 Protocol

October 3, 2002

### **Team from ARNES, DANTE, Juniper Networks and RedIRIS write Internet history by transferring 1215 terabit metres per second using standard TCP transfer over IPv6**

The extraordinary achievement was performed across three production Research & Education networks by a team from ARNES (the Slovenian National Research and Education Network), DANTE (which operates the GÉANT pan-European gigabit research network), RedIRIS (the Spanish National Research and Education Network), and Juniper Networks, a leading provider of trusted infrastructures for the New Public Network.

The team succeeded in transferring a single stream of data at an average rate of 483 megabits per second over a distance of 2518 kilometres of network from Slovenia to Spain in 11.73 seconds using the IPv6 protocol and Juniper Networks M-series routers. The data was transferred from Ljubljana (Slovenia) to Madrid (Spain) via Vienna (Austria), Geneva (Switzerland) and Milan (Italy).

The joint effort has been made as part of the ongoing Internet2 Land Speed Record (I2-LSR) competition. If accepted by the competition organisers, it will establish the first single stream IPv6 Land Speed Record mark of **1215 terabit metres per second** (1,215,000,000,000,000 bit meters per second).

Internet2 Land Speed Record entries are judged based on how much bandwidth they use and how much distance they cover end-to-end, using standard Internet (TCP/IP) protocols. The Internet2 Land Speed Record is an open, ongoing competition organised by Internet2. Details of the competition are available from <http://www.internet2.edu/html/i2lsr.shtml>.

“This is an achievement we can be proud of,” said Avgust Jauk, Technical Director of ARNES, “not only that we have a very high speed pan-European research network, GÉANT, but we have also proven how effectively IPv6 can be used on the European research infrastructure.”

“The European Research Networking community is committed to IPv6, and this attempt – achieved by a European team using the pan-European world-class GÉANT network – demonstrates that IPv6 is no longer just an idea – it’s becoming a reality,” said Roberto Sabatino, Chief Technical Officer of DANTE. “I am pleased we have been able to work together with ARNES, Juniper Networks and RedIRIS to achieve this.”

Esther Robles, Network Manager of RedIRIS, said “We have been working on IPv6 technology for a long time and this record attempt is proof of the maturity of our European networks and our ability to implement advanced services. We are proud to be at the forefront of the implementation of the next generation Internet.”

“Research networks ARNES, DANTE and REDIRIS are paving the way to the acceptance of IPv6 as the preferred protocol for next generation IP infrastructures,” said Alan Taylor, technical director, EMEA, Juniper Networks. We’re proud to have played such an integral part in the success of this attempt – it is a testament to the quality of our products. All our M and T-series routers run IPv6 traffic at line rate and any of our customers can deploy IPv6 today without expensive hardware upgrades.”

### **About ARNES**

ARNES operates and develops the national research and education network of Slovenia. It provides national and international connectivity and advanced services to Universities, Research Institutions, Secondary and Primary Schools, Libraries and Cultural institutions since 1992. For more information, see:

<http://www.arnes.si/english/about.htm>

### **About DANTE**

DANTE, a Cambridge based organisation set up to build and manage advanced network services for the European research and educational community, is the co-ordinating partner of the GÉANT consortium and responsible for the construction of GÉANT. GÉANT, the pan-European gigabit research network, enables European scientists to compete on an international stage by providing them with a world-class backbone that offers the bandwidth and the Quality of Service required for research and development activities at this level. It represents the basis for the introduction of 'virtual laboratories' and 'virtual institutes' in Europe.

DANTE has developed a range of interconnectivity agreements with other national research networks, such as Esnet, Abilene and the Internet2 project in the United States, CANARIE in Canada and NII in Japan. More information on DANTE and on GÉANT is available on the DANTE web site at <http://www.dante.net/>.

### **About Juniper Networks**

Juniper Networks leads the industry in turning network innovation into the reliable delivery of core, edge, mobile and cable Internet services at scale for the New Public Network. Headquartered in Sunnyvale, California, Juniper Networks offers additional information on its product and service offerings at [www.juniper.net](http://www.juniper.net).

### **About RedIRIS**

RedIRIS is the Spanish National Academic and Research Network, funded by the National Plan for R&D and at present managed by the Scientific Research Council (Consejo Superior de Investigaciones Científicas). Since 1988, RedIRIS has provided network infrastructure to Spanish R&D institutions. The number of institutions connected – mainly universities and R&D centres - has increased continuously and now stands at about 250. The [services](#) offered by RedIRIS to the Spanish Academic and Research Community require the support of an advanced [infrastructure of transport](#), technologically adapted to the needs of the connected centres. These services are provided in collaboration with other [academic networks](#) in Europe and the US through the pan-European network GÉANT. For more information, visit <http://www.rediris.es>.

### **PRESS CONTACTS:**

**For Dante:**

Dale Robertson

Public Relations Manager

Tel +44 1223 302992

Dale.Robertson@dante.org.uk

**For Juniper Networks:**

Niek van Bommel

Corporate Communications Manager EMEA

Tel +31 20 7125 846

niek@juniper.net