

ESnet and Internet2 Partner To Deploy Next Generation Network for Scientific Research and Discovery

ANN ARBOR, Mich., and BERKELEY, Calif. August 31, 2006 — The Department of Energy's (DOE) Energy Sciences Network (ESnet) and Internet2 — two of the nation's leading networking organizations dedicated to research — today announced a partnership to deploy a highly reliable, high capacity nationwide network that will greatly enhance the capabilities of researchers across the country who participate in the DOE's scientific research efforts. The partnership brings together two advanced networks which have a combined 30 years of experience in providing network support to thousands of researchers around the world.

The ESnet community requires a high performance and extremely reliable production network to support research at national laboratories and universities across the country. Called ESnet4, the new network created through this partnership will initially operate on two dedicated 10 gigabit per second (Gbps) wavelengths on the new Internet2 nationwide infrastructure and will seamlessly scale by one wavelength per year for the next four to five years in order to meet the needs of large-scale DOE Office of Science projects such as DOE's participation in the Large Hadron Collider, the Relativistic Heavy Ion Collider at Brookhaven National Lab and several supercomputing centers. The network will deliver production IP capabilities and new optical services like point-to-point dynamic circuits which will serve as an advanced and dependable platform for scientists and researchers supported by ESnet.

"ESnet and Internet2 share a common technical vision for the evolution of dynamically delivered network capabilities that will enable the next-generation of scientific breakthroughs," said Bill Johnston, head of ESnet at Lawrence Berkeley National Laboratory. "In creating this partnership, ESnet and Internet2 will extend the most cutting-edge network capabilities with guaranteed carrier-class dependability, allowing our scientific community to focus its resources on its core research and educational objectives."

ESnet, funded by DOE's Office of Science and operated by Lawrence Berkeley National Laboratory, connects more than 30 DOE laboratories and provides networking to over 100,000 DOE laboratory scientists. It is also used by more than 18,000 researchers from universities, other government agencies and private industry. ESnet directly serves major science facilities including particle accelerators, supercomputing centers, and massive scientific data storage systems.

Among the most ambitious projects to be undertaken by physicists around the globe is the new Large Hadron Collider (LHC) at CERN, which will be the world's largest particle accelerator. Expected to go online by the end of 2007, the LHC is a collaboration by over two thousand scientists from universities and laboratories around the world investigating fundamental questions about matter and the origins of the universe. In the U.S., researchers at universities and laboratories will participate in this global research effort through the ESnet4 network, enabling the analysis and transmission of multiple-terabytes of data from the LHC in Geneva, Switzerland.

"This partnership will provide a quantum leap in providing the network support required by our scientific research community, and is a natural culmination of the extremely close working relationship the DOE networking community has had with Internet2," said Scott Bradley, Network Operations and Voice Services Manager at Brookhaven National Laboratory in New York. "While DOE laboratories have had to deal with network throughput requirements of unprecedented scale -- Brookhaven's wide area network requirements have increased by a factor of 64 over the past 5 years -- the overwhelming majority of our data transfer requirements have been to institutions outside of DOE. This partnership with Internet2 will greatly enhance our operational networking

capabilities between labs such as Brookhaven, and the multitude of non-DOE academic and scientific research institutions we collaborate with.”

Today, Internet2’s network connects over five million users at 270 research and education institutions in the U.S. and also provides access to over 80 international research networks. This partnership will allow university and lab researchers participating in ESnet activities to leverage their institutions’ existing Internet2 network connection to access the ESnet4 infrastructure and its global network partners around the world.

The new ESnet4 infrastructure will be provided by Internet2 through its recently announced agreement with Level 3 Communications to develop and deploy a new advanced nationwide hybrid network infrastructure with enhanced IP services as well as new dynamic optical capabilities that will serve the broad Internet2 member community. Through the agreement with Internet2, Level 3 will provide the underlying bandwidth services over a dedicated optical platform with carrier-class reliability. Internet2 and ESnet will operate the ESnet4 optical infrastructure to provide flexibility and control in the dynamic provisioning of lightpaths and sub-channels needed to support today’s large-scale and highly complex scientific research. Level 3 will deploy Infinera’s Digital Optical Networking equipment across the Internet2 infrastructure to enable the dynamic provisioning of optical circuits. The new Internet2 network builds upon successful tests of dynamically provisioned optical waves for ESnet conducted earlier this year by the Hybrid Optical and Packet Infrastructure (HOPI) project of the Internet2 member community.

“The partnership with ESnet will significantly advance the networking capabilities of the U.S. scientific community as well as extend the collaborative opportunities of the Internet2 research and education community,” said Douglas Van Houweling, president and CEO of Internet2. “This is an important milestone in our mission of the past 10 years to develop and deploy next-generation networking technologies and applications and to engage and support collaboration among academia, science, government and business.”

About ESnet

ESnet is a high-speed network serving thousands of Department of Energy scientists and collaborators worldwide. A 20 year pioneer in providing high-bandwidth, reliable connections, ESnet enables researchers at national laboratories, universities and other institutions to communicate with each other using the collaborative capabilities needed to address some of the world’s most important scientific challenges. Funded principally by DOE’s Office of Science, ESnet services allow scientists to make effective use of unique DOE research facilities and computing resources, independent of time and geographic location. ESnet is managed by Lawrence Berkeley National Laboratory. For more information: <http://www.es.net/>

About Internet2(R)

Internet2 is the foremost U.S. advanced networking consortium. Led by the research and education community since 1996, Internet2 promotes the missions of its members by providing both leading-edge network capabilities and unique partnership opportunities that together facilitate the development, deployment and use of revolutionary Internet technologies. Internet2 brings the U.S. research and academic community together with technology leaders from industry, government and the international community to undertake collaborative efforts that have a fundamental impact on tomorrow’s Internet.

For more information: <http://www.internet2.edu>

Jon’s info

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