

Status of the Internet2/P2P working group and present activities



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A little bit of history-1960/70s

1969:

- ARPANET
 - Stanford Research Inst. (SRI), UCLA, UCSB, U. Of Utah
 - October 29, 1969-first transmission UCLA->SRI
 - Peer computing status among independent computing sites

1970s:

- 61 nodes on ARPANET (1975)
- ARPANET completed (1978)
- Usenet (1979)
 - Post and read messages
 - No central control



A little bit of history-1980/90s

1980s:

- DNS created to manage host names (1983)
 - Previously a file (hosts.txt) had to be transferred
- 2000 TCP/IP connected Internet hosts/networks (1985)
- 56kbps connections between NFS sites (1986)
- T1 connections provide international access (1988)

1990s:

- ARPANET shuts down (1990)
- Expansion of Internet access



A little bit of history-1999/2000

1999:

- May: Napster is born
- December: RIAA files suit against Napster

2000:

- Jan-Feb: Some universities begin blocking Napster access
- May: Metallica suit
- June: RIAA seeks injunction



2000...

- August:

- Judge stays Napster injunction
- CANARIE/NLANR/Internet2 Techs meeting (Aug. 24):
“Punishing the traffic of one application, using the rough technology we currently have available, accelerates users migrating to new apps more difficult to identify.” *Steve Wallace, Indiana University*
- Indiana University - one of the first served in Metallica lawsuit
 - Napster blocked on a well known port basis
 - ‘Students against Censorship’ started by IU students
- Discussions on ResNet listserv appear
 - Control and traffic monitoring/shaping
 - LISTSERV.ND.EDU/archives/resnet-l.html



2000 continued

- September:

- “Blocking Napster is like standing before hundreds of hungry jackals and shouting “Shoo!” to keep them from 400 pounds of raw hamburger.” (*Chronicle*, 9/21/00) Discussions on Educause’s
- Discussions on CIO listserv (policy)

- October:

- Internet2 Member Meeting (Atlanta, GA) BoF: *Taming the bandwidth hogs...how can your campus do it.* Ana Preston and Linda Roos. Attended by over 90
- Creation of list to further discuss issues brought up at Internet2 BoF
- listserv.utk.edu/archives/p2p.html



2000: What did universities do?

- Block access to Napster because:
 - Liability for being a content provider
 - Network performance
- Not block access and wait...
- News.com: a third of U.S. colleges and universities are blocking Napster
- Napster remained very much alive
- Something appears to be coming over the horizon...



2001

- Feb. 14 : 9th Circuit Ruling (Federal appeals court sends injunction down to district court)
- Feb. 14-16: O'Reilly P2P Conference
 - Over 900 participants, but less than ten from universities. Application developers, venture capitalists, and lots of established companies as well as start ups
 - *To explore the technical and business dimensions of the P2P space...*



2001 continued

- March:

- **By March 11**, *Napster "shall use reasonable measures in identifying variations of the filename(s), or of the spelling of the titles or artists' names, of the works identified by plaintiffs."*
- Spring Internet2 Member Meeting:
 - P2P thunderdome: *The Impact of p2p apps on campuses*
 - *The Old is New Again: or is it*, i.e., good uses of P2P in other areas other than file sharing: folding@home
- educommons project - file sharing for education/NFS funding (educommons.org)
- Pig-latin encoders (e.g. Aimster) changing song titles, new and better implementations of Gnutella and so on...



2001 continued

- April:

- **April 10-11: Networking 2001**

- The future of P2P applications*

- What policy (including legal) steps will be necessary to ensure campus bandwidth is used for its primary purposes - research, teaching and learning.
 - How will this be accomplished? Still reactive overtones

- May:

- **8th NLANR/I2 Joint Techs**

- P2P in the research and education community
 - Proactive approach to the P2P environment



2001 continued

■ September:

- The Chronicle of Higher Education hosts a live discussion on “Managing Students Insatiable Demand for Bandwidth.” September 27, 2001
- “In this new round of bandwidth battles, Napster is a distant memory.” (The Chronicle, September 28, 2001)
- Digital video/movie files of 200-800MB downloaded with KaZaA or similar P2P file sharing applications
- Universities opting for user education and cooperation, bandwidth limiting, adding capacity, additional fees to cover bandwidth costs



2002 Events

- Internet2/P2P workshop, January
 - Collaborative Computing in Higher Education:Peer to Peer and beyond
 - An opportunity to demonstrate the many sides of peer to peer
- Internet2/P2P working group formed
 - A response to the I2 community needs
 - Follow up session at Spring and Fall member meeting



Internet2/P2P Working Group

- The mission of the P2P working group is to provide an open, collaborative environment in which all aspects of computing related to peer-to-peer may be discussed, researched and explored. The collaboration will include investigation of innovative uses of peer-to-peer in higher education as well as with corporate entities.



Working Group Goals

- 1. To provide a forum for reporting on recent occurrences and future trends within the peer-to-peer and distributed computing space. The forum may occur at the regular member meetings, at Joint Techs meetings or at specific workshops designated for the topic.
- 2. To be a clearinghouse for collaborative opportunities within the higher education community and between that community and corporate entities as new peer-to-peer and distributed computing applications and tools are investigated.
- 3. To provide best practices documents for both resource management as well as innovative uses of peer-to-peer technologies.
- 4. To provide a central repository for resources and documents related to all aspects of peer-to-peer computing.



Present Initiatives

- Seeking forum venue
- Collaboration with vendors and I2 sub groups on projects
- Content management for the P2P web site



Working group information

- Co-chairs
 - David Futey (dfutey@stanford.edu)
 - Linda Roos (lroos@oar.net)
- Peer to peer working group
 - p2p.internet2.edu
- P2P list
 - listserv.utk.edu/p2p/archives.html