Memorandum of Understanding

Office of Information Technologies/Network Systems and Services

Computer Science Department Global Environment for Network Innovations (GENI) Researchers

"Layer2" to Internet2 Network Transport Agreement for Support of GENI Research

Whereas one of the principle missions of the University of Massachusetts Amherst is research;

And whereas members of the Computer Science department (CS) are engaged in research under the GENI project;

And whereas these researchers require "layer 2" transport to Internet2 to support their GENI research;

And whereas the Office of Information Technologies (OIT) supports the campus connection to Internet2;

And whereas the Office of Information Technologies is interested in learning how to effectively support network research needs;

Then therefore the two parties do agree that:

a) CS shall order OIT-provisioned network jacks in appropriate locations in the Computer Science building using normal OIT processes;
b) OIT shall configure these jacks into a single VLAN that shall be extended over existing OIT-managed network infrastructure between the Computer Science building and the Northern Crossroads (NoX) Internet2 Gigapop located at 300 Bent St in Cambridge, MA.
c) OIT agrees to provide a single VLAN for "proof-of-concept" testing and initial GENI research activities.
d) The assigned VLAN shall not be extended to network locations outside of the Computer Science building through OIT network infrastructure.
e) Any researcher-managed downstream network equipment connected to jacks in the assigned VLAN shall not emit spanning-tree BPDU frames. Emission of BPDU frames to OIT network jacks shall result in automated shut-down of that network jack to protect the integrity of the campus network.
f) The interconnection of the provided VLAN between the NoX termination point and other Internet2 locations remains strictly the province of the CS researchers and the GENI organization.

August 21, 2009

g) Requests for additional VLANs to support GENI research shall require revisiting this MOU and renegotiating a mutually acceptable solution in order to support the projected research needs for both VLAN counts and network utilization levels.

h) Exploration of mechanisms to provide connectivity to multiple VLANs through a single network port will be undertaken when CS determines this function has a reasonable likelihood of being required to support ongoing research. A mutually acceptable solution must be renegotiated that both supports research needs and minimizes risk of adverse impact on the campus "production" data network.

i) CS anticipates that maximum traffic utilization levels on this VLAN will be intermittent and will remain below 20 megabits per second at peak for the first year of this project.

j) OIT reserves the right to place a maximum bandwidth cap on network traffic transiting this VLAN to protect campus network functionality. CS will be informed of the value of this cap and the potential consequences if such a cap is implemented in advance of implementation.

k) Exceeding the defined maximum level of utilization shall require renegotiation of a mutually acceptable agreement that supports research needs while minimizing the risk of adverse impact to the campus "production" data network.

l) The structure of Internet Protocol or other higher-than-layer-2 addressing on this VLAN is subject to further exploration and joint discussion between CS, OIT, and GENI. Use of "standard" UMass Amherst campus IP address space is likely to create significant unintended routing complexities.

m) This service shall be provided by OIT at no charge to CS for the term of one year in the interest of OIT learning more about effectively supporting network-related research efforts on campus.

n) Beyond the one year initial term, OIT intends to charge CS researchers for support of research-specific network connectivity on a cost-recovery basis.   Rough estimates on costing for this service will be developed and refined throughout the course of the one year pilot phase.

Computer Science Representative	OIT Representative
Name	Name
Title	Title
Date	Date
Signature	Signature

August 21, 2009