

Quarterly Status Report of UMLPEN as of Dec 1, 2009

Yan Luo, UMass Lowell, yan_luo@uml.edu

Major accomplishments

Milestones achieved

We have worked with the UMass Lowell campus IT and our ISP (UITS from UMass) on the establishment and testing plan of an Internet2 L2 VLAN connection from our CANS lab (located in Ball Hall of UMass Lowell campus) to NOX at Boston.

Deliverables made

N/A

Description of work performed during last quarter

Activities and findings

During this past quarter, we have been working with UMass Lowell IT network services staff on planning the VLAN connectivity from Internet2 POP at Boston to the Computer Architecture and Network Systems (CANS) Lab at UMass Lowell (Ball Hall 406). There is only one existing connection to the regular Internet due to historical reasons. Therefore, to have a dedicated new L2 connection to Internet2 is a major undertaking for the university and the PI. We had a series of meetings with the campus network services staff including Steve Drescher (Director of Network Services) and Marcie Byrd (network security specialist). The PI was notified about different options on the ISP such as Comcast and UITS. UITS is part of University of Massachusetts system's network service provider, and the ISP of our current Internet connection.

Based on the discussion with the IT staff and the university policy, the PI and the network services staff come up with a layout plan to connect CANS lab to the Internet2, as shown in Figure 1 (on the next page).

UML Second Connection and GENI Phase 1

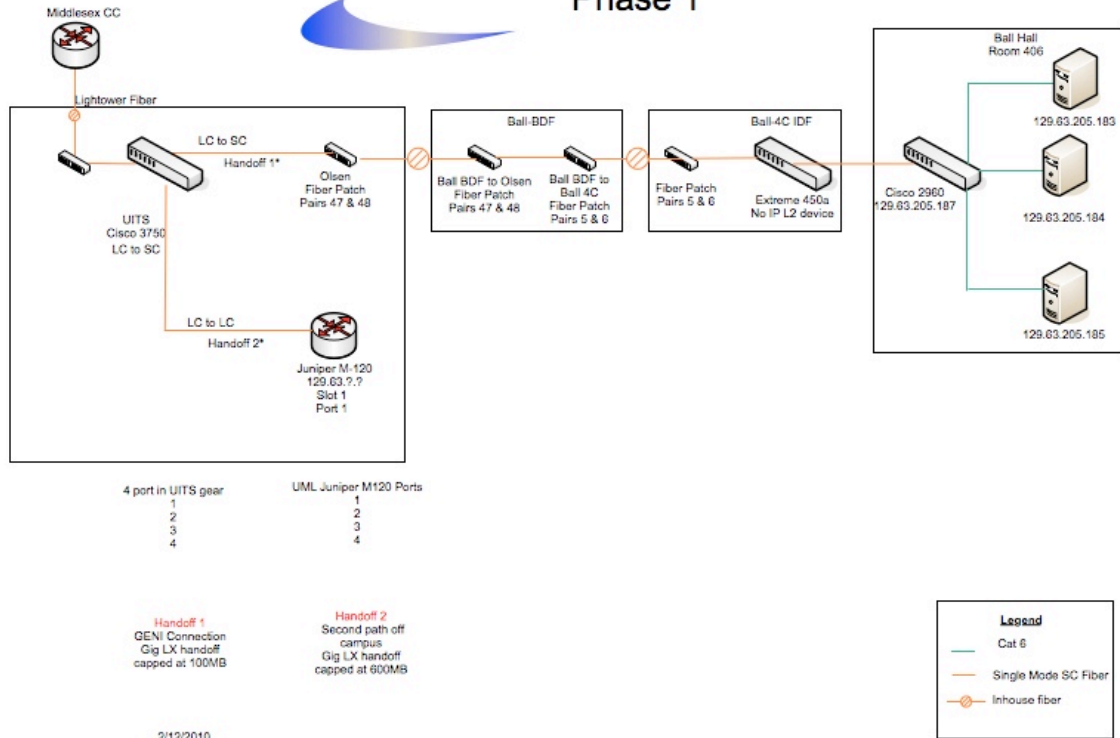


Figure 1. Diagram of Internet2 L2 VLAN connection to CANS Lab at UMass Lowell.

Plan for Demonstration at GEC6:

Our demo is on the PEN node-mapping within ProtoGENI control framework. The main goal of our demo is to demonstrate the integration of Programmable Edge Node with ProtoGENI control framework. We have designed a component manager against Utah's ProtoGENI component manager API version 1. As a result, the virtual routers and other resources on the PEN node are accessible through the ProtoGENI flash interface, which allows for the allocation of a virtual nodes by any member of the community. The demonstration included successful request and allocation of a PEN node, the networking of two physical machines through the PEN node, and traffic analysis via the network processor on the Netronome network interface cards.

We also demonstrate the OpenFlow switching ported to the network processor card on the PEN. This is an example use case of the PEN testbed.

Project participants

Yan Luo, PI
 Timothy Ficarra, student
 Eric Murray, student
 Sanping Li, student

Publications (individual and organizational)

N/A

Outreach activities

Collaborations

We have initiated collaboration with PrimoGENI team at Florida International University. We began working with the PI Jason Liu at FIU and his student on high performance conduit of simulation and emulation.

Other Contributions

The PI and the participating student attended GEC6 and gave a demo of the integration of UMLPEN with ProtoGENI control framework. Two undergraduate students (Julie Bissell and Eric Murray) have been participating the UMLPEN project since the summer of 2009. They are supported with the REU supplement grant. Eric Murray attended GEC6 and helped with the demonstration.