

# GENI OpenFlow Project Status Report

Period: July 2010 – September 2010

## I. Major accomplishments

### A. Milestones achieved

- Contract completed May 25, 2010 (delaying milestones projected to occur beginning March, 2010).
- Completed initial deployment plan
- Ordered NEC IP8800 switches
- Installed an initial HP 3500 switch in Atlanta.
- Installed a 10GE connection to NLR OpenFlow

### B. Deliverables made

## II. Description of work performed during last quarter

### A. Activities and findings

- After discussions with the GPO, we found a way to supply shared 10 Gbps service to the GENI project. We will purchase eight 10GE interfaces, and spread them among the nodes. Initially the 10GE interfaces will be used for ProtoGENI, with 1GE connections used for OpenFlow.
- With 1GE backbone connections, NEC IP8800 switches became a cost effective viable and functional alternative for Stage 0 of our OpenFlow backbone implementation.
- We ordered eight 10GE Juniper interfaces for GENI.
- We ordered five NEC IP8800 switches for the OpenFlow backbone.
- We engineered a 10GE connection to NLR OpenFlow in Atlanta, using Internet2 fiber to connect between the Internet2 PoP and the NLR PoP, located about 0.75 mile apart.
- We installed a HP 3500 switch with OpenFlow 1.0 Firmware in Atlanta to allow us to set up the connection to NLR OpenFlow, start setting up the rest of the OpenFlow infrastructure, and allow for early experimentation prior to GEC9.

### B. Project participants

Eric Boyd (Internet2)

Matt Zekauskas (Internet2)

Brian Cashman (Internet2)  
Randy Frank (Internet2)

### **C. Publications (individual and organizational)**

### **D. Outreach activities**

### **E. Collaborations**

- Internet2 contracts with the Global Research NOC at Indiana University to supply NOC services to Internet2 in general. This project has relied on collaboration with the OpenFlow experts within the NOC, notably Chris Small and Matt Davy.
- Matt Zekauskas attended OpenFlow backbone + campus participants meeting at GEC8 (San Diego, July, 2010).
- Matt, Brian Cashman and Eric Boyd attended periodic OpenFlow backbone meetings ("backbone integration") organized by the GPO.

### **F. Other Contributions**