

Operations Update

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Denver, Colorado July 26, 2011
www.geni.net





http://commons.wikimedia.org/wiki/File:Wolf_Creek_Road_construction-Oregon-1933.jpg

- Progress preparing for at-scale operation
 - Policies and Procedures
 - Production Resources
 - Workflows
 - Tools
 - Trials

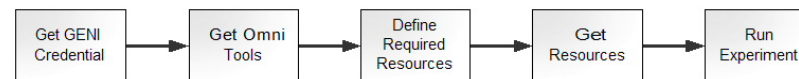


- Approved policies on GENI wiki front page
<http://groups.geni.net/geni>
- Draft policies circulated to mailing lists (omis-wg) for review
<http://lists.geni.net/mailman/listinfo>
 - Current draft Operational Security Plan
http://groups.geni.net/geni/attachment/wiki/ComprehensiveSecurityPgm/GENI_Operational_Security_Plan.pdf
- Discussions in campus track today

- GENI active Legal, Regulatory and Law Enforcement Representative: Adam Slagell, NCSA llr@geni.net
- Working procedures developing among trials participants
 - core outage discussions on geni-node-ops@geni.net
 - production resource requests (e.g. opt-in) to response-team@geni.net
 - early discussions of clearinghouse policies since GEC10
- All production resources listed at <http://groups.geni.net/geni/wiki/ProductionResources>
 - will grant resource access to GENI researchers who comply with local site access policies.
 - will keep resources available on a best-effort basis (no guarantees, but usually very responsive).
 - were successfully "road tested" by other GENI researchers

- GMOC now supports Meso-scale OpenFlow sites
<http://gmoc.grnoc.iu.edu/gmoc/index/support.html>

- Phone 317-278-6630
- email gmoc@grnoc.iu.edu
- Tickets
- Implemented Emergency Stop



- GMOC monitoring moved from development to production

- better security
- more capacity

- Experimenter support workflows

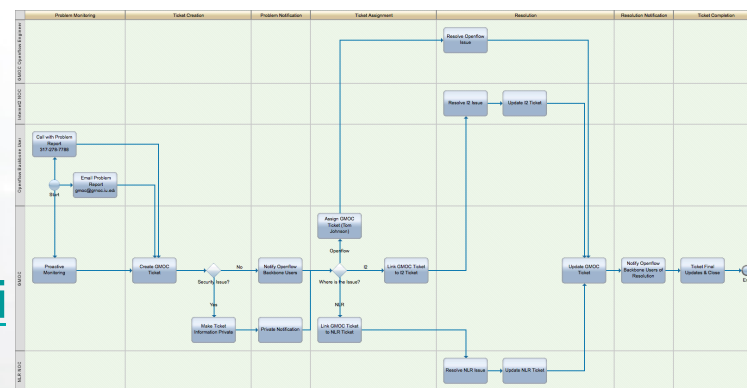
- Omni

<http://trac.gpolab.bbn.com/gcf/wiki/Omni>

- Hello GENI

<http://groups.geni.net/geni/wiki>HelloGENI>

- Tutorials in GEC11 Experimenter Track



- GENI Control Framework (GCF) releases used in several GENI projects <http://trac.gpolab.bbn.com/gcf/wiki>
- New project software for OpenFlow, Meso-scale monitoring, WiMax OMF/OML, others (see project pages) <http://groups.geni.net/geni/wiki/SpiralThree#GENIProjects>
- Meso-scale trials (includes pre-released software) <http://groups.geni.net/geni/wiki/PlasticSlices/ProjectPlan - a3.2.Softwarerepositories>
- GENI Integration Releases (evaluation and release info)
 - http://groups.geni.net/geni/wiki/GIR3_1 Spiral 3 Part 1 (done)
 - http://groups.geni.net/geni/wiki/GIR3_2 Spiral 3 Part 2 (September deadline)
 - http://groups.geni.net/geni/wiki/GIR2_1 Spiral 2 (legacy releases)

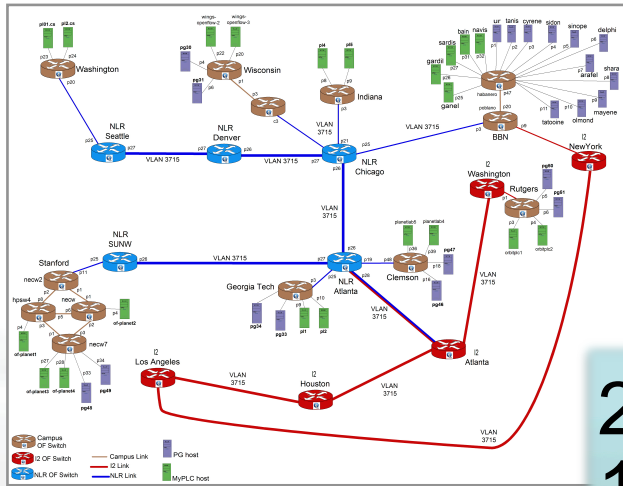
- Plastic Slices and TangoGENI
 - <http://groups.geni.net/geni/wiki/PlasticSlices>
 - <http://groups.geni.net/geni/wiki/TangoGENI>
 - Campuses managing local resources
 - GMOC performing meta-operations activities
 - Experimenters running experiments (GPO also in for this role)
- Meso-scale trials include some security–related areas e.g. Emergency Stop
- Bring more experimenters into trials before GEC12
Campus volunteers?

- Support more GENI Experiments
- Begin initial/trial GENI operations
- Support efforts to solidify GENI designs for control and data planes



Plastic Slices

- Monitor and characterize OF on core NLR and I2 VLANs
- Exercise end-to-end OpenFlow networks continuously, share reporting
- Define and improve campus workflows, GENI procedures, and GENI policies
- Support multisite experiments (GEC12)



VLAN 3715 with Plastic Slices resources.
<http://groups.geni.net/geni/wiki/NetworkCore>

2 months
 10 slices
 10 campuses
 8 baselines

Status of core connectivity

Description	Reporting interface	Target interface	Status	RTT (Past Hour)	RTT (Past Week)
3715: NEWY I2 to WASH I2	iolkos-vlan3715.bbn.dataplane.geni.net (10.37.15.102; BC:30:5B:D1:A3:EA)	monitor-vlan3715.mgen.dataplane.geni.net (10.37.15.145; F4:CE:46:80:FE:E1)	OK		
3715: NEWY I2 to SEAT NLR	iolkos-vlan3715.bbn.dataplane.geni.net (10.37.15.102; BC:30:5B:D1:A3:EA)	monitor-vlan3715.saw.dataplane.geni.net (10.37.15.90; 00:23:47:BA:30:80)	OK		
3715: NEWY I2 to SUNN NLR	iolkos-vlan3715.bbn.dataplane.geni.net (10.37.15.102; BC:30:5B:D1:A3:EA)	monitor-vlan3715.stanford.dataplane.geni.net (10.37.15.3; 00:00:9F:44:83:3F)	OK		
3715: SUNN NLR to WASH I2	yoza-vlan3715.stanford.dataplane.geni.net (10.37.15.3; 00:00:9F:44:83:3F)	monitor-vlan3715.mgen.dataplane.geni.net (10.37.15.145; F4:CE:46:80:FE:E1)	OK		

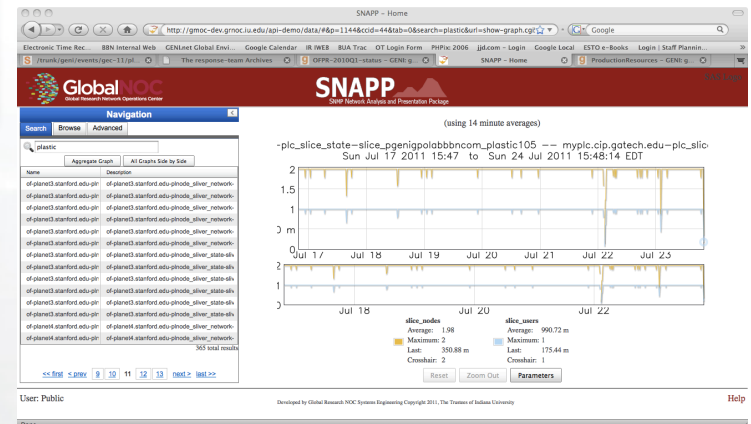
VLAN 3715 as seen at GPO lab (partial).
<http://groups.geni.net/geni/wiki/NetworkCore>

Plastic Slices: Slivers per Slice

Last update: 2011-07-22 11:24:50.060997

Slice	OpenFlow slivers in slice	MyPLC slivers in slice
plastic101	naxos-33101_ID_endpoint_stanford_edu_75@endpoint.stanford.edu	pgenisgpolabbbncom_plastic101@hegen.gpolab.bbn.com
	naxos-33102_ID_expedit_clemson_edu_8@expedit.clemson.edu	pgenisgpolabbbncom_plastic101@myplc.cip.gatech.edu
	naxos-33101_ID_expedit_flow_cip_gatech_edu_2@flowvisor.flow.cip.gatech.edu	pgenisgpolabbbncom_plastic101@myplc.clemson.edu
	naxos-33101_ID_nox_orbit_lab_eng_6@nox.orbit.lab.org	pgenisgpolabbbncom_plastic101@myplc.gmcc.iu.edu
	naxos-33101_ID_tulum_gpolab_bbn_com_60@tulum.gpolab.bbn.com	pgenisgpolabbbncom_plastic101@myplc.stanford.edu
plastic102	naxos-33101_ID_wings-openflow-1_wall_wisc_edu_7@wings-openflow-1.wall.wisc.edu	pgenisgpolabbbncom_plastic102@hegen.gpolab.bbn.com
	naxos-33102_ID_endpoint_stanford_edu_76@endpoint.stanford.edu	pgenisgpolabbbncom_plastic102@myplc.cip.gatech.edu
	naxos-33102_ID_expedit_clemson_edu_82@expedit.clemson.edu	pgenisgpolabbbncom_plastic102@myplc.clemson.edu
	naxos-33102_ID_expedit_flow_cip_gatech_edu_5@flowvisor.flow.cip.gatech.edu	pgenisgpolabbbncom_plastic102@myplc.gmcc.iu.edu
	naxos-33102_ID_nox_orbit_lab_eng_8@nox.orbit.lab.org	pgenisgpolabbbncom_plastic102@myplc.stanford.edu
plastic103	naxos-33102_ID_tulum_gpolab_bbn_com_58@tulum.gpolab.bbn.com	pgenisgpolabbbncom_plastic103@hegen.gpolab.bbn.com
	naxos-33102_ID_wings-openflow-1_wall_wisc_edu_5@wings-openflow-1.wall.wisc.edu	pgenisgpolabbbncom_plastic103@myplc.cip.gatech.edu
	naxos-33103_ID_endpoint_stanford_edu_77@endpoint.stanford.edu	pgenisgpolabbbncom_plastic103@myplc.clemson.edu
	naxos-33103_ID_nox_orbit_lab_eng_2@nox.orbit.lab.org	pgenisgpolabbbncom_plastic103@myplc.gmcc.iu.edu
	naxos-33103_ID_tulum_gpolab_bbn_com_84@tulum.gpolab.bbn.com	pgenisgpolabbbncom_plastic103@myplc.stanford.edu
plastic104	naxos-33104_ID_expedit_clemson_edu_10@expedit.clemson.edu	pgenisgpolabbbncom_plastic104@hegen.gpolab.bbn.com
	naxos-33104_ID_nox_orbit_lab_eng_9@nox.orbit.lab.org	pgenisgpolabbbncom_plastic104@myplc.cip.gatech.edu
	naxos-33104_ID_tulum_gpolab_bbn_com_86@tulum.gpolab.bbn.com	pgenisgpolabbbncom_plastic104@myplc.clemson.edu
	naxos-33104_ID_wings-openflow-1_wall_wisc_edu_12@wings-openflow-1.wall.wisc.edu	pgenisgpolabbbncom_plastic104@myplc.gmcc.iu.edu
	naxos-33105_ID_expedit_clemson_edu_11@expedit.clemson.edu	pgenisgpolabbbncom_plastic104@myplc.stanford.edu

A monitoring page at GPO lab showing the slivers in each slice.
<http://monitor.gpolab.bbn.com/plastic-slices/slivers-per-slice.html>



Spiral 3 Operations: What's Next?

- Campus Track at GEC11 including Monitoring Mini-Workshop <http://groups.geni.net/geni/wiki/Gec11Agenda>
- Continue tests like Plastic Slices
 - Longer duration, higher throughput, more participants
- Milestone wrap-up
 - Experiments, operational procedures, documentation
- Experiments for GEC12
- GENI racks and US Ignite planning
- Design Inputs
 - Aggregate control (RSpecs, Aggregate Manager API, identity, security)
 - Monitoring
 - Programmable networking integration (DYNES, ESnet, Internet2 SDN + NDDI, ProtoGENI)



<http://commons.wikimedia.org/wiki/File:V%C3%A9locip%C3%A9domanie.jpg>