

# **GEC 18**

## **GENI Rack Operations and Measurement Plastic Slices Update**

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**Brooklyn NY, 2013-10-28**  
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- Artificial flexible experiments to exercise GENI
- Slivers at all sites with production GENI resources
- Simple traffic generation with iperf (TCP & UDP)
- Uses the shared-VLAN OpenFlow mesoscale
- Original project started in April 2011:
  - Six runs of various levels of traffic
  - Two other operational tests
  - Another 20+ “continuation” rounds since then

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

- Started with 6 - 8 OpenFlow Campus Trials sites:
  - MyPLC for compute nodes
  - Expedient for OpenFlow
- Dormant for several months after that
- Revived in March 2012 with 5 - 7 OFCT sites:
  - MyPLC compute nodes, FOAM for OpenFlow
- Added Utah ProtoGENI in October 2012
- Added 5 racks (and dropped OFCT) in April 2013
- 20 racks plus Utah PG in the next run after GEC

<http://groups.geni.net/geni/wiki/PlasticSlices/Continuation>

- We delete and re-create slivers between runs
- Too many in a row causes FlowVisor problems:
  - Usually the process is running but stuck
  - Sometimes it actually crashes
  - Restarting FV generally fixes it
- FOAM is also sometimes affected:
  - Typically “database is locked” errors
  - Restarting FOAM should fix that
- Still an open issue

- We create many slivers at a given aggregate:
  - One for each slice at that aggregate
  - Generally two VMs per slice
- Creating many ProtoGENI Xen VMs at once:
  - Some try for a while and then fail to come up
  - Used to sometimes crash the AM
- Two at a time seems to work all right
- Utah folks are actively working on this

- Graphs & analysis were sporadic and ad hoc:
  - Reasonably good for the initial project
  - Too manual and time-consuming in later runs
- Real I&M tools can help:
  - GEMINI and GIMI have nice user interfaces
  - For this scale, we need non-interactive UIs
- Integration is still ongoing

- Wrangling 10 slices x 20 sites needs automation
- Tarvek manages experiment configuration
- Copy-and-paste commands provision resources
- Dingbot does initial compute node configuration
- Zoing runs experiments out of cron
- Planning to move provisioning into Tarvek
- Some overlap with I&M tools
- Solicitation 4 tools will be much richer