Experimenter Support: Update
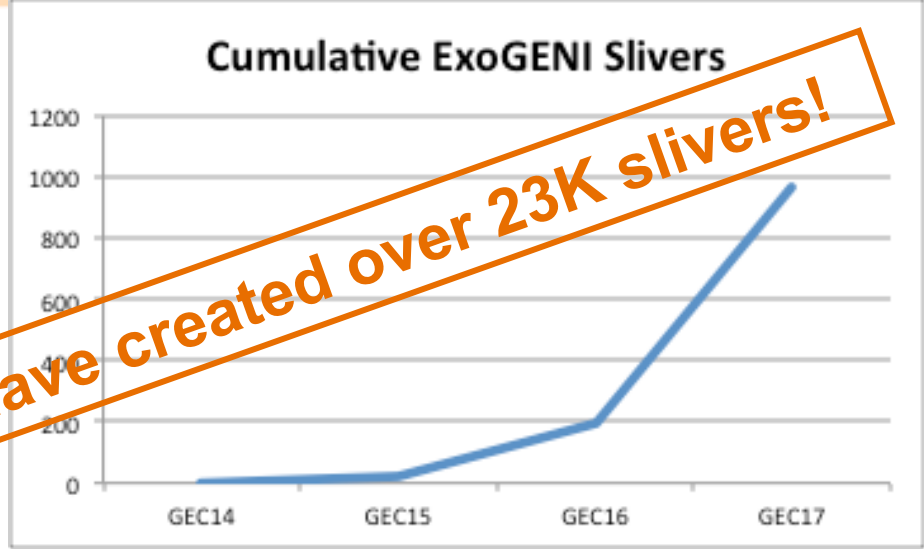
GENI Engineering Conference 17

July 2013

Cumulative Unique Users creating ExoGENI Slivers

Cumulative ExoGENI Slivers

Cumulative Unique Users Creating ProtoGENI Slivers (all sites)

Cumulative ProtoGENI Slivers by Site

Nearly 1000 experimenters have created over 23K slivers!
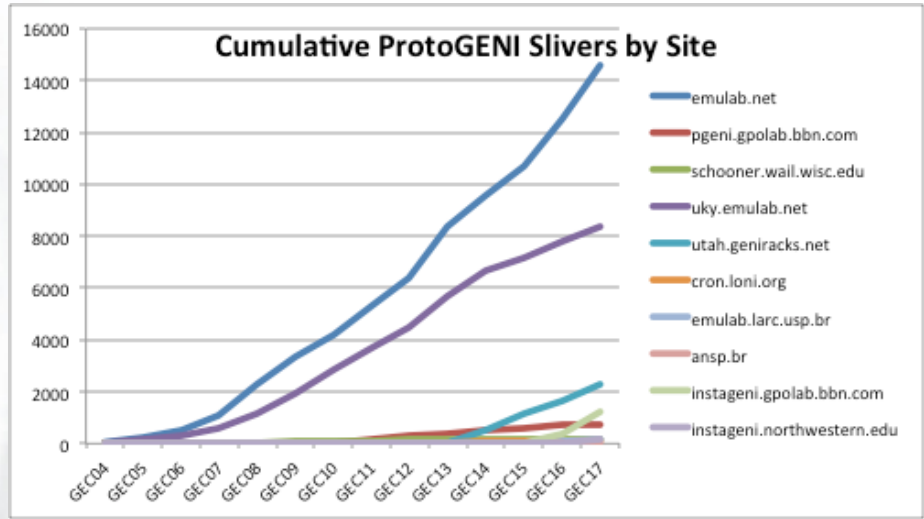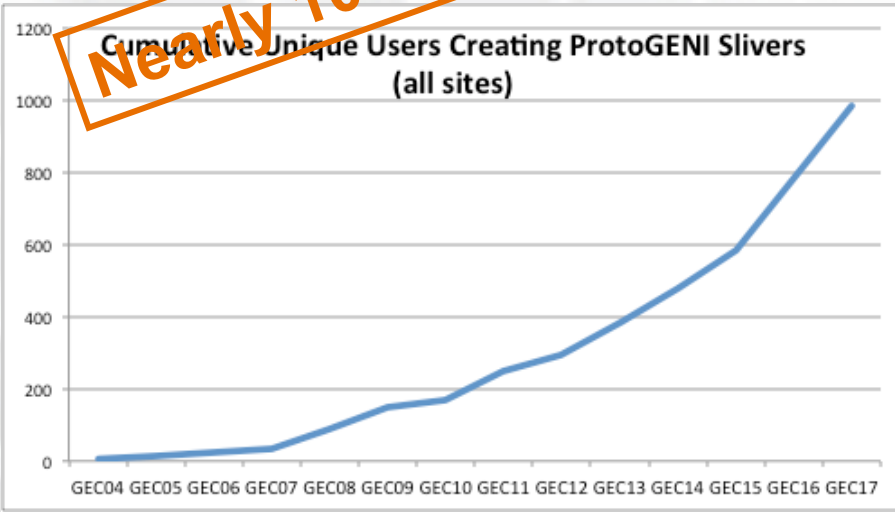
Over 100 publications

– List at "GENI Bibliography" on Experimenter Page

Please send us your GENI related publications

Resources for experimenters

GENI is a federated virtual laboratory that provides access to multiple different testbeds to GENI experimenters, enabling networking and distributed systems research. However, the GENI ecosystem, terminology and ling might appear to be overwhelming to a new GENI user. Don't worry, we are here to help! These are some useful pointers that will help you navigate through the GENI world. Feel free to email us with any questions you might have at ⇨ help@geni.net.

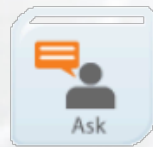| Learn	Discover	Use	Ask	Help	Go	Cite	Connect
GENI Tutorials	GENI Resources	GENI Tools	Tips & Tricks	Help using GENI	GENI Events	GENI Bibliography	GENI mailing lists
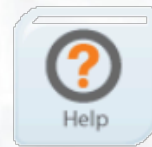
Grow Number of Experimenters

Support Existing Experiments

Direct Support

Classroom Use

Documentation

Advocacy

Tutorials

Invited Talks

Summer Camps

Helper scripts & programs

Select Recent Talks

ICCN 2013 – July 2013
UC Berkley – April 2013
UC Davis – April 2013
U. of MN – February 2013
IEEE CCW – November 2012
ITG Workshop "Visions of Future
Generation Networks" – July 2012

Tutorials

Recent Tutorials & Camps
ICDCS – July 2013
Summer Camp – June 2013
NSDI – April 2013
GEC 16 – March 2013
SIGCSE – March 2013
GEC 15 – November 2012
GEC 14 – July 2012
Summer Camp – June 2012
Tridentcom – June 2012

GENI in the Classroom

Invited Talks

Fall 2012:
Rudra Dutta (NCSU)
Zongming Fei (U. of KY)
Fraida Fund (NY Poly)
Kaiqi Xiong (RIT)

Spring 2013:
Jay Aikat (U. of NC)
Rudra Dutta (NCSU)
Khaled Harfoush (NCSU)
Jelena Marasevic (Columbia U)
Parmesh Ramanathan (U. Wisc)
Violet Syrotiuk (Arizona State U.)
KC Wang (Clemson)

Fall 2013 (planned):
Zongming Fei (U. of KY)
Christos Papadopoulos (Col. State)
Michael Zink (U. of MA)

BoF Dinner Tonight: RSVP vthomas@bbn.com

Mailing Lists
- `help@geni.net`
- Aggregate and tool specific lists

IRC Channels
– `geni@irc.freenode.net`

Direct
Support

"The author would like to thank the GENI Project Office, especially Niky Riga, for her continuous help and support while setting up the OpenFlow testing environment on the GENI mesoscale deployment."
- *Levente Ilyes, Purdue U., Thesis Acknowledgement*

Newcomers page on the GENI wiki

"Key GENI Concepts" page for newcomers

"How-Tos" for common tasks

On-line tutorials ranging from simple "Hello GENI" type experiments to non-IP experiments

Key GENI Concepts

This page introduces:

1. GENI concepts and terms you will need to know before you use GENI, and
2. the GENI experimenter workflow that ties together these concepts and terms.

Project

A *project* organizes research in GENI, containing both people and their experiments. A project is created and led by a single responsible individual: the *Project Lead*. A project may have many experimenters as its members and an experimenter may be a member of many projects. The Project Lead is ultimately accountable for all actions by project members in the context of the project. GENI experimenters must have Project Lead privileges to create projects. Only faculty and senior members of an organization can be project leads (e.g. students *cannot* be project leads).

The following figure illustrates a situation where a professor is the Lead for two GENI projects, one that he uses for his research project Hactar and the other for the networking class CS404 he is teaching . Members of the project Hactar are the professor's research assistant and his post-doc. Members of the project CS404 are the teaching assistant for CS404 and all the students in the class. The professor gives his teaching assistant administrative privileges to Project CS404 so the assistant is able to add students to the project or remove them.
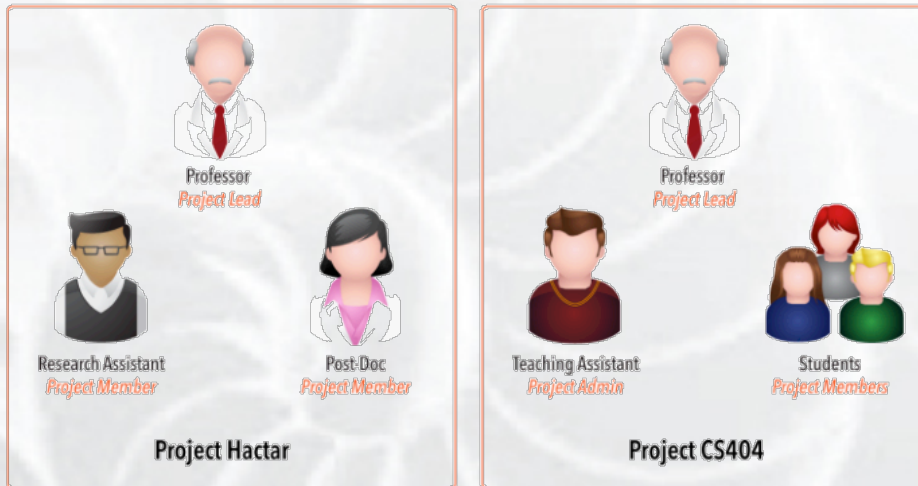
Helper
Scripts

`omni-configure.py:`
Automatically generates a
configuration file for the Omni tool

`ready-to-login.py:` Checks if
compute nodes are ready to use;
shows ssh commands to use to log
in to nodes

Dingbot: Enables experimenters to
write rack-type independent post-
boot scripts

GENI Experimenter Portal makes it
easy for tools to access
experimenter certs and keys

Advocate on behalf of experimenters to tool, service and other GENI developers

- Slice membership implemented by all rack aggregates
- Shared interfaces in InstaGENI
- Reproduce experimenter reported bugs and work with developers

- **Spend more time supporting advanced GENI experimenters (FIA teams, Domain Science, etc.)**
  - **Better tools and documentation have greatly reduced time spent answering common questions**
    - `omni-configure.py`: **Reduced number of Omni configuration questions from 2–3 per week to ~zero**
    - **Experimenter Portal: Seamless login to tools has almost completely eliminated questions about keys and certs**

- # Ramp up training opportunities
  - ## Packaged training material so community members can do more training
    - ### E.g. Introductory GENI tutorial and Introductory OpenFlow tutorials successfully used at Arizona State and University of Illinois

PRESENTATION DATE HERE

GREE-SC13 Out brief
2nd GENI Research and Educational Experiment Summer Camp

Kaiqi Xiong (RIT)
Yin Pan (RIT)
Yong Guan (Iowa State University)
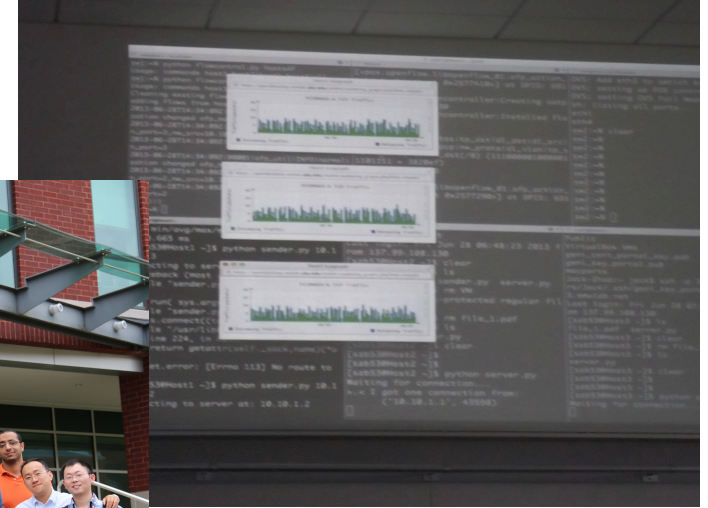## Bing Wang (University of Connecticut)

- **June 24ᵗʰ – June 28ᵗʰ @ University of Connecticut**

- **Wireless theme**
  - **7 Tutorials** on multiple GENI tools covering the GENI Experiment Life Cycle

- **17 attendees**

  (ugrad, grad, professor)

- **5 Final Projects w/ live demos!**
  - **WiMAX**

    Surveillance Network
  - **OpenFlow**
    - **VM Migration, Path Restoration, Resilient Routing, User-controlled flows-policies**
  - **GEMINI and GIMI**

2 Demos at GEC17 based on SC projects

PRESENTATION DATE HERE   18

Great ice cream!