GENI

New Projects
Experimenter Support and Training

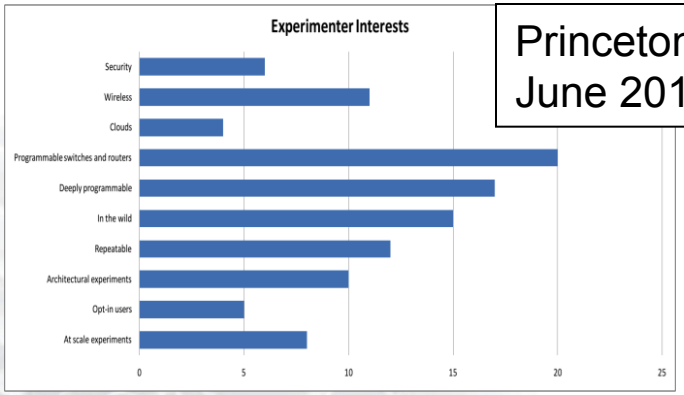
GENI Engineering Conference 12
Kansas City, Missouri

Mark Berman
November 3, 2011
www.geni.net

Sponsored by the National Science Foundation

Hearing What GENI Experimenters Want

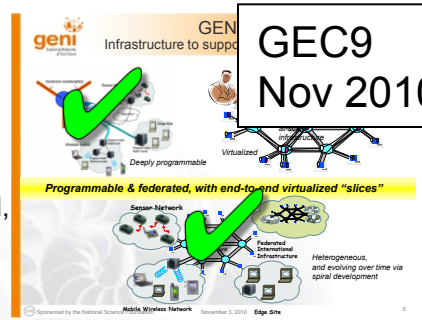
Your Ideas for Experiments



Princeton
June 2010

GENI – What We've Learned

- Experimenters are successfully using
  - Deep programmability
  - Distributed, virtualized infrastructure
  - Interoperable, federated, and heterogeneous resources
- GENI should work on
  - Improving experimenter tools – reduce hand engineering
  - Expanding in-network deep programmability opportunities
  - Expanding GENI AM API to richer set of aggregate types



GEC9
Nov 2010

GEC10,11
Mar, Jul 2011

GENI Experimenter Feedback Roundtable

Leads: Mark Berman, Aaron Helsinger
March 17, 2011
www.geni.net

Experimenters' GENI needs

- Larger scale deployment
- Improved tools
- Better stability & support
- Training

GENI Expansion Addresses Some Key Experimenter Needs (but not all)

Campus expansion

- As GENI grows to 100-200 campuses, opportunities for at scale experimentation are greatly enhanced

GENI rack deployments

- Address relative shortage of dedicated computing and storage resources in GENI
- Increase number of deep programmability locations in the network

The Future of Experiment Support

Goal is to improve self-sufficiency of experimenters

- More self-service access to GENI resources
- Coursework and training materials available for
  - GENI experimentation (in general)
  - Targeted experimenter tools
- Improved documentation
- Initial help desk operations in place
- Community-based learning resources (on-line tutorials, camps, model experiments, etc.)

Planned SoI3 Awards – Experiment Support

- Strong base of educational material and activities
  - Robert Ricci: Education and Support for GENI Experimenters
    - GENI tutorials, model experiments, and support mailing list
  - Kaiqi Xiong: APRA-GENI
    - Project-based summer camp and workshop training
- Targeted experimenter tools
  - Kevin Jeffay: Education and Training Resources for Experimenters
    - Reproducible experiments via realistic synthetic workloads
  - Anish Arora: GENI Educational Kits for Wireless Sensor Networks
    - Low barrier-to-entry wireless sensor experimentation kits
- Operational support
  - Matthew Davy: OpenFlow Training for Network Administrators
    - Train campus administrators in OpenFlow concepts and use
  - Marianne Chitwood: GENI Operations Service Desk Support
    - 24x7 service desk, monitoring, security event response

Agenda

- Session objectives. Mark Berman, GPO
- New Project Presentations
  - Education and Support for GENI Experimenters, Robert Ricci, University of Utah
  - GENI Educational Kits for Wireless Sensor Networks, Anish Arora, OSU (via Skype)
  - APRA-GENI: Applying a Project-Based Approach to Understanding Multiple GENI Resources for Networking Research and Education, Kaiqi Xiong, RIT
  - Development of Education and Training Resources for GENI Experimenters, Jay Aikat, UNC
- Open discussion