The First GENI Research and Educational Experiment Workshop

Jointly with the 13th GENI Engineering Conference (GEC 13) Los Angeles, CA

March 15 – 16

Program

THURSDAY, MARCH 15

Opening remarks Chip Elliott, Bryan Lyles, and Kaiqi Xiong

1:30-2:30pm	Keynote speech Session Chair: Marshall Brinn Foundations of a Future "InterCloud" Architecture Speaker: Jeff Chase, Duke University Cloud Computing Session Chair: Michael Zink				
2:30-3:30pm	 Performance of GENI Cloud Testbeds for Real Time Scientific Application Dilip Kumar Krishnappa, Eric Lyons, David Irwin, and Michael Zink Closer to the Cloud - A Case for Emulating Cloud Dynamics by Controlling the Environment Ashiwan Sivakumar, Shankaranarayanan P N, and Sanjay Rao Experiences from Virtual Desktop Cloud Experiments in GENI Prasad Calyam, Aishwarya Venkataraman, Alex Berryman, and Marcio Faerman OneCloud: Controlling the Network in an OpenFlow Cloud Greg Stabler, Sebastien Goasguen, Aaron Rosen, and Kuang-Ching Wang 				
3:30-3:50pm	Break				
3:50-4:30nm	NSF Advice for New GENI Experimenters Session Chair: Chip Elliott I aff Forbes				
5.50- 4 .50pm	- JULI TOLUES				

r

- Suzi Iacono
- Bryan Lyles

	Wireless and P2P Networks
	Session Chair: Sonia Fahmy
4:35-5:35pm	 WiMAX: Bandwidth Contention Resolution Vulnerability to Denial of Service Attacks <i>Katherine Cameron</i>, R. R. Brooks, Juan Deng, Lu Yu, KC Wang, and James Martin Towards a Representive Testbed: Harnessing Volunteers for Networks Research <i>Monzur Muhammad</i> and Justin Cappos Lehigh Explorer: Android Application Utilizing Content Centric Features Z. Qin, X. Xiong, and M. Chuah Experimentation of a MANET Routing Algorithm on the GENI ORBIT Testbed Kang Chen, Ke Xu, Steven Winburn, Haiying Shen, Kuang-Ching
5:40-6:00pm	 Educational Experiments in Networking Session Chair: Jay Aikat Exercises for Graduate Students using GENI Sriharsha Gangam, Ethan Blanton, and Sonia Fahmy, Understanding the Performance of TCP and UDP-based Data Transfer Protocols using EMULAB

FRIDAY, MARCH 16

Security and Networking - I

Session Chair: Richard Brooks

 Performance Analysis of DDoS Detection Methods on Real Network

Sunae Shin, Kaustubh Dhondge, and Baek-Young Choi

- Ilker Iozceli and Richard R. Brooks
- Steroid OpenFlow Service: Seamless Network Service Delivery in Software Defined Networks *Aaron Rosen* and *Kuang-Ching Wang*
- Discrete-Approximation of Measured Round Trip Time Distributions: A Model for Network Emulation Jay Aikat, Shaddi Hasan, Kevin Jeffay, and F. Donelson Smith

Security and Networking – II

Session Chair: Yang Xiao

• Measurement-based IP Geolocation of Routers on Planetlab Infrastructure

8:50-9:20am

8:00-8:45am

- Hellen Maziku, Sachin Shetty, and Tamara Rogers
 ProtoGENI DoS/DDoS Security Tests and Experiments Jingcheng Gao and Yang Xiao
- Assessment of Router Vulnerabilities on PlanetLab Infrastructure for Secure Cloud Computing N. Luna, S. Shetty, T. Rogers, and K. Xiong

Work-in-progress

9:20-9:30am Session Chair: Yang Xiao

• Socially Aware Single System Images Lokesh Mandvekar, Anandatirtha Sathyaraja, and Chunming Qiao

•	Empirica	al Verifi	cation	of A	Subset	Sum	Нуро	thesis in	GENI
	Cloud								
			-	-					

Jun Liu, Thomas O'Neil, Travis Desell, and Ross Carlson

9:30-9:50am	Break
9:50-11:45am	PrimoGENI Tutorial Jason Liu
11:45am -12:30nm	Panel/Open discussion Mark Berman (Chair), Jason Liu, Robert Ricci, Niky Riga, and KC Wang
11. 4 3am -12.50pm	Closing remarks Mark Berman and Yong Guan

Keynote Speech

Foundations of a Future "InterCloud" Architecture

Speaker: *Jeff Chase, Duke University*

Abstract

A multi-domain cloud combines virtual infrastructure from multiple providers to create a powerful platform for network services, computation, and experimental systems research. NSF's GENI initiative (Global Environment for Network Innovation) is building a new foundation for such multi-domain infrastructure-as-a-service (IaaS) systems.

This talk gives an overview of architectural issues and solutions in ExoGENI, a GENIcompatible IaaS cloud testbed with a high degree of control over networking functions, including linkages to dynamic circuit fabrics and OpenFlow-enabled network datapaths at each site. It then considers some new directions for multi-domain IaaS architecture as a foundation for deeply networked cloud applications and a trustworthy software ecosystem incorporating commercial and non-commercial providers.

A short bio:

Jeff Chase is a Professor of Computer Science at Duke University and a Visiting Scientist at the Renaissance Computing Institute (RENCI). He has spent much of the last four years working on the GENI control framework in various capacities. He leads the Open Resource Control Architecture (ORCA) project and is co-PI of the ExoGENI project (http://www.exogeni.net).