

NetServ Tutorial

Quick and easy network service and packet processing using NetServ

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Outline

- Introduction to NetServ
- Hands-on tutorial
- NetServ under the hood
- Wrap-up

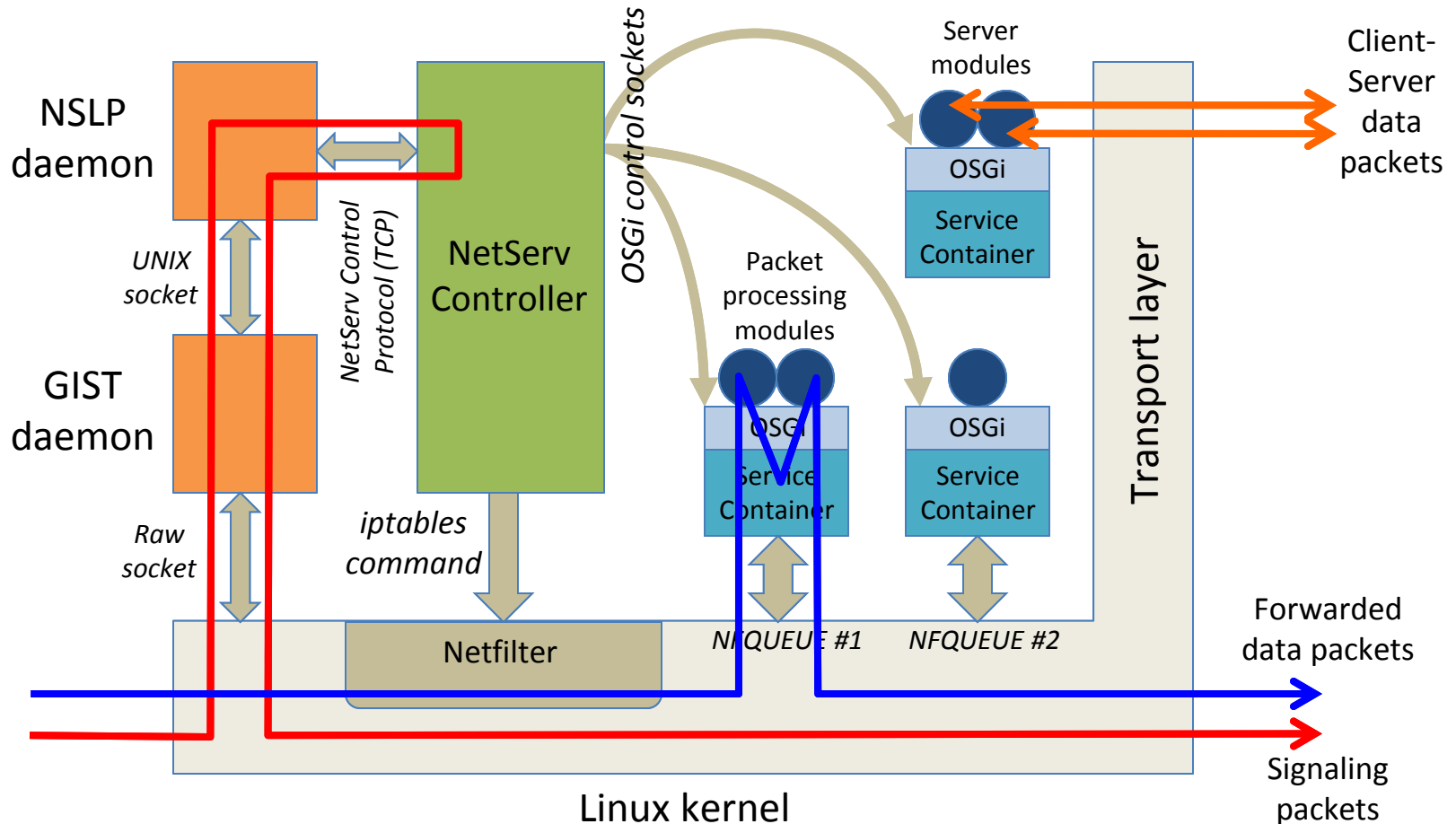
What is NetServ?

- In-network service container
- Java-programmable, signal-driven router
- Active networking 2.0

NetServ and GENI

- NetServ was a GENI Alpha project
 - Demonstrated at GEC9 plenary session
- NetServ as GENI-Lite
 - Deploy Java modules instead of VMs
- What is it good for?
 - Rapid development and prototyping on GENI
 - Sharing GENI resources – ex. classrooms

NetServ Node Architecture



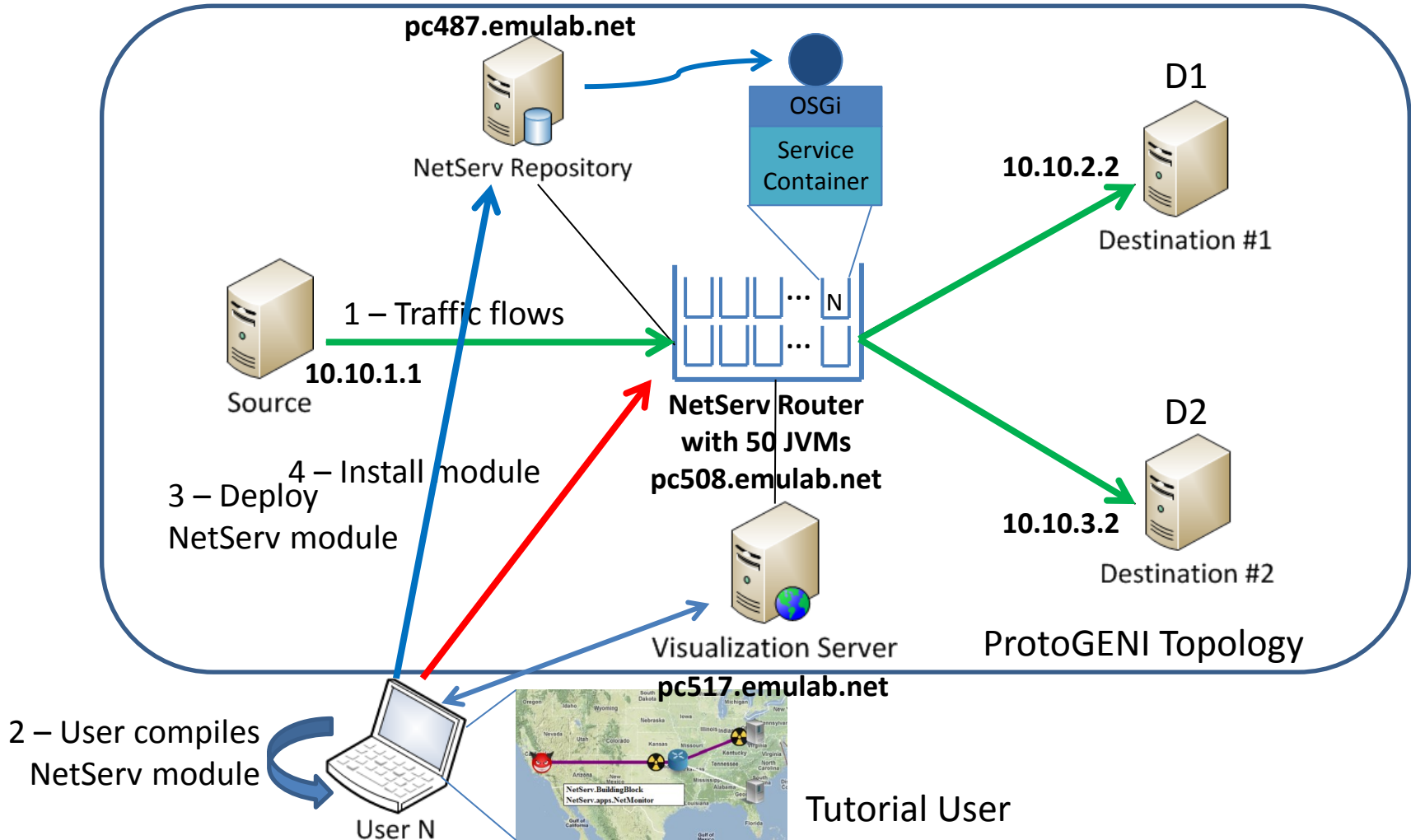
Screenshot

- Traffic visualization:

<http://pc517.emulab.net/visual/index.html?id=50>

(If you open this URL in your browser, remember to replace “50” with your user number)

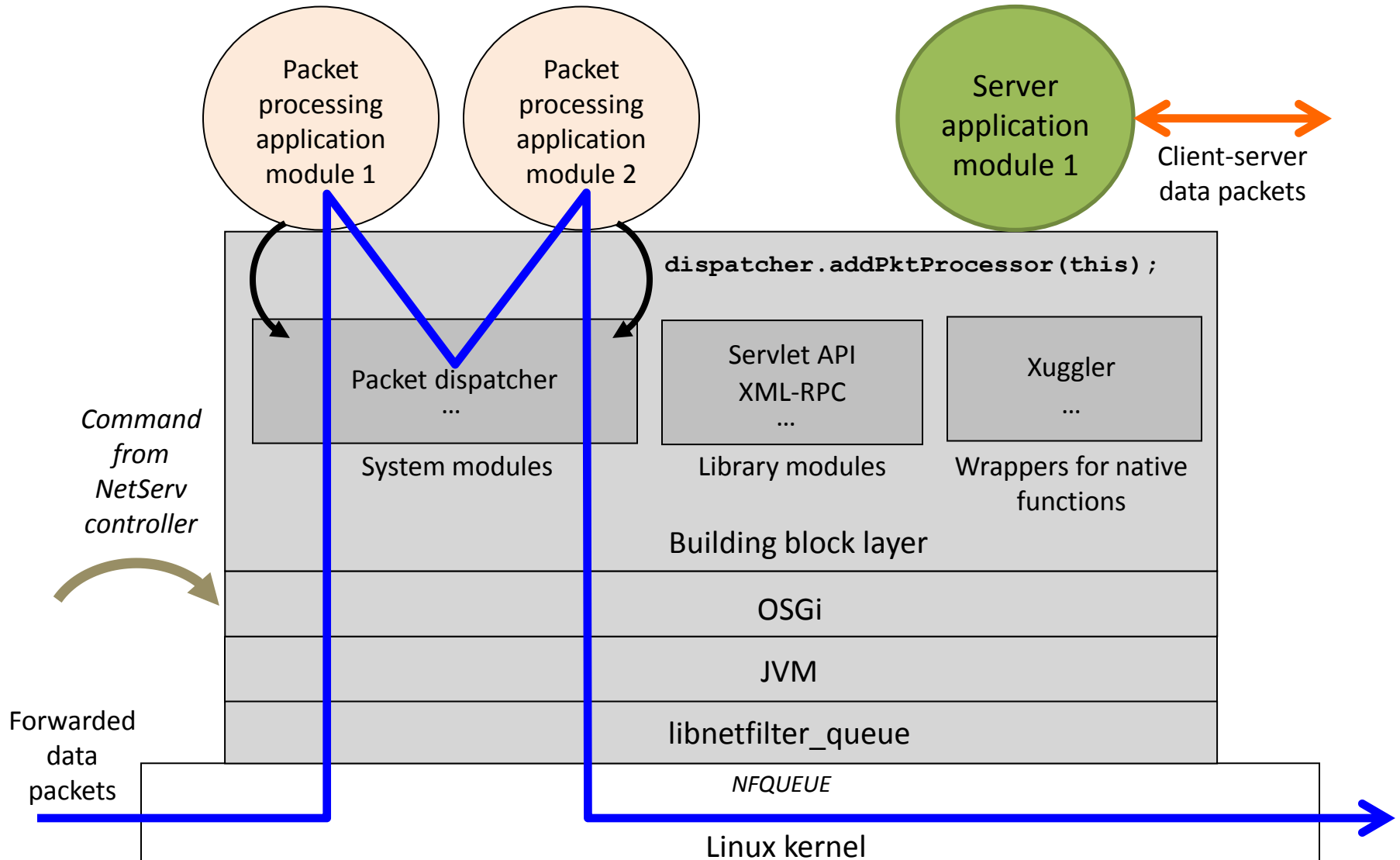
Tutorial GENI Topology



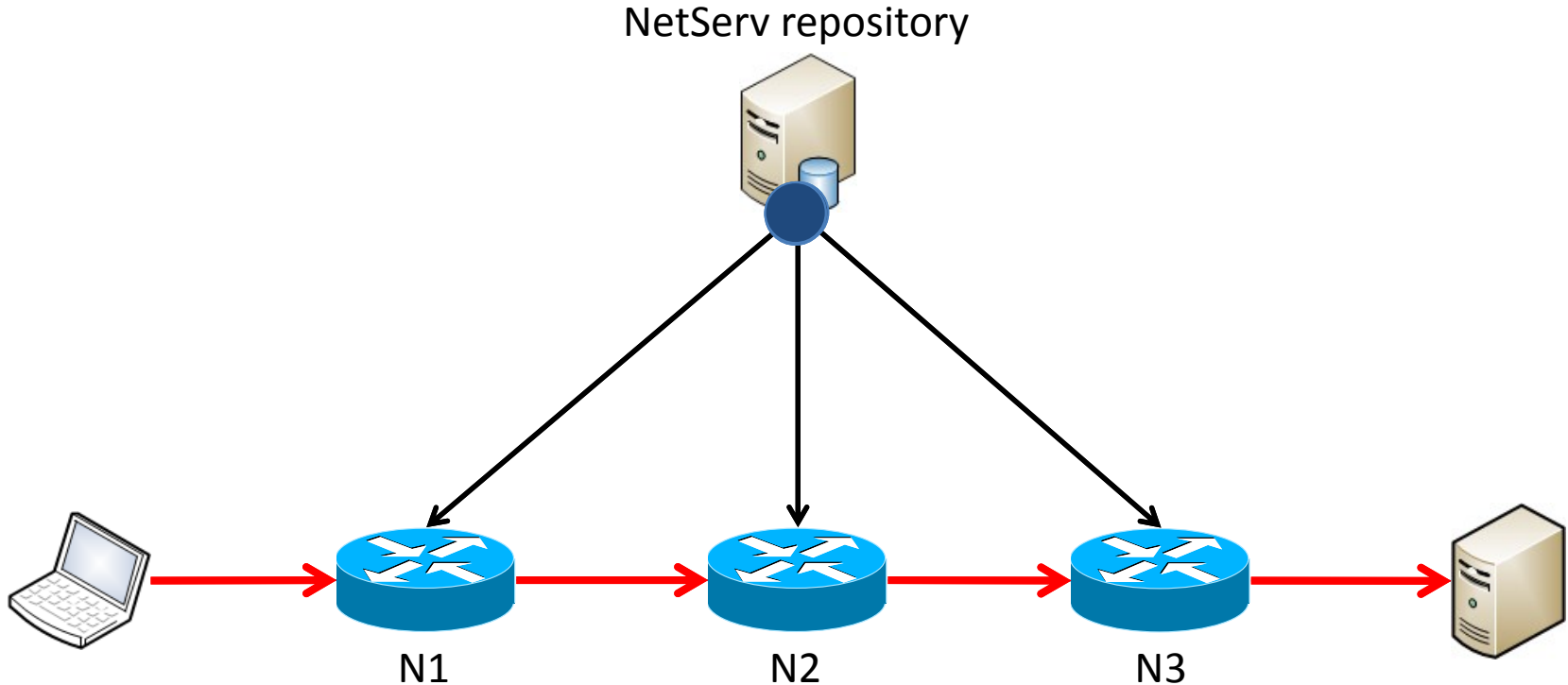
Hands-on Tutorial

- Step-by-step instruction:
 - <http://groups.geni.net/geni/wiki/GEC11NetServTutorialInstruction>

NetServ container under the hood



NSIS-based on-path signaling



Signaling message is sent *towards* the destination rather than to a specific router

Future Work

- OpenFlow integration
 - NetServ node as a *side-car*
- NetServ on commercial router
 - JUNOS SDK
- Internet multicast using NetServ
 - Hybrid of ALM and IP multicast
- Authentication and authorization using RPKI

Wrap-up

- Please complete a (very) short survey
 - Link at the end of the step-by-step instruction
- NetServ homepage
 - <http://www.cs.columbia.edu/irt/project/netserv/>
- Subscribe to netserv-users mailing list
 - We would appreciate your feedback!