

Campus Cyberinfrastructure – Network Infrastructure and Engineering (CC-NIE)

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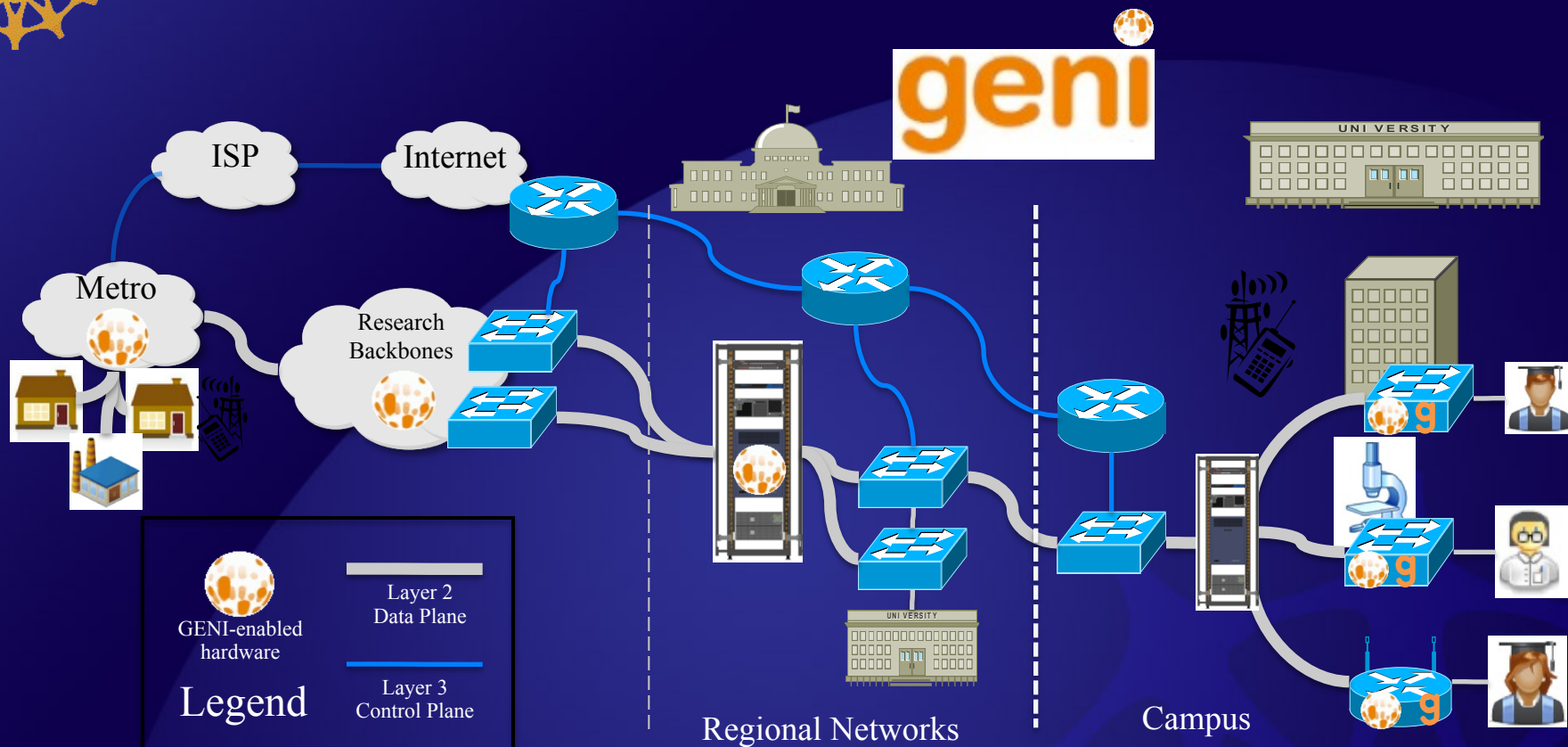


ACCI Task Force on Campus Bridging

- ❖ *Strategic Recommendation to the NSF #3: The National Science Foundation should create a new program funding high-speed (currently 10 Gbps) connections from campuses to the nearest landing point for a national network backbone. The design of these connections must include support for dynamic network provisioning services and must be engineered to support rapid movement of large scientific data sets."* - pg. 6, National Science Foundation Advisory Committee for Cyberinfrastructure Task Force on Campus Bridging, Final Report, March 2011
- ❖ www.nsf.gov/od/oci/taskforces/TaskForceReport_CampusBridging.pdf
- ❖ Also see Campus Bridging Technologies Workshop: Data and Networking Issues Workshop Report. G.T. Almes, D. Jent and C.A. Stewart, eds., 2011, <http://hdl.handle.net/2022/13200>



GENI Infrastructure architecture



- ❖ Flexible network / cloud research infrastructure
- ❖ Support “hybrid circuit” model plus much more (OpenFlow)
- ❖ Also suitable for physics, genomics, other domain science
- ❖ Distributed cloud (racks) for content caching, acceleration, etc.



Campus Cyberinfrastructure – Network Infrastructure and Engineering (CC-NIE)

- ❖ FY13 joint ACI(OCI)/CNS new solicitation!
- ❖ NSF 13-530 – solicitation released Jan 4, 2013
- ❖ 1st area: Data Driven Networking
Infrastructure for the Campus and Researcher
- ❖ 2nd area: Network Integration and Applied
Innovation
- ❖ **Proposals are due April 3, 2013**



CC-NIE

- ❖ **Estimated Number of Awards:** 15 - 30
- ❖ **Anticipated Funding Amount:**
 - \$15,000,000 to \$18,000,000 will be available for this competition in FY 2013.
 - Data Driven Networking Infrastructure for the Campus and Researcher awards will be supported at up to \$500,000 total for up to 2 years.
 - Network Integration and Applied Innovation awards will be supported at up to \$1,000,000 total for up to 2 years.
- ❖ Proposals may only be submitted by Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.



CC-NIE Area#1 - Data Driven Networking Infrastructure for the Campus and Researcher

- ❖ network infrastructure improvements at the campus level
- ❖ network improvements include:
 - network upgrades within a campus network to support a wide range of science data flows
 - “(including large files, distributed data, sensor networks, real-time data sources, and virtualized instruments for computer systems research)”
 - re-architecting a campus network to support large science data flows, for example by designing and building a "science DMZ" (see <http://fasterdata.es.net/science-dmz/> for more information on the "science DMZ" approach)
 - Network connection upgrade for the campus connection to a regional optical exchange or point-of-presence that connects to Internet2 or National Lambda Rail.



Small Institution Note on Area#1

- ❖ **“Smaller institutions with fundamental challenges to address in networking infrastructure and resources may also choose to apply for planning grants, professional staff support for networking expertise in their Campus IT organization, or other professional network infrastructure help for education driven networking improvements. Smaller institutions are encouraged to partner with institutions to share expertise and share resources to support these activities. As with all proposals, requested funding amounts should be commensurate with activities described in the project description. “**



CC-NIE Area#2 – Network Integration and Applied Innovation

- ❖ end-to-end network CI through integration of existing and new technologies and applied innovation
- ❖ Applying network research results, prototypes, and emerging innovations to enable (identified) research and education
- ❖ May leverage new and existing investments in network infrastructure, services, and tools by combining or extending capabilities to work as part of the CI environment used by scientific applications and users



Wrap up

- ❖ As always: ***Read the solicitation carefully!***
- ❖ 2012 award abstracts available on fastlane.nsf.gov (try searching on the term “CC-NIE”)
- ❖ Jan 7/8 GENI/CC-NIE 2 day workshop at NSF
 - Almost all 2012 awards were represented and gave talks
 - <http://groups.geni.net/geni/wiki/CCNIEWorkshop>
- ❖ Any comments/questions on CC-NIE:
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