



NSF Campus Cyberinfrastructure PI and Cybersecurity Innovation for Cyberinfrastructure PI Workshop

October 3-4 | Albuquerque, New Mexico

NSF Program: CC*

Program Area: **CC-NIE** Award Number: **1341008**

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Project Title: **CC-NIE Integration: Bridging, Transferring and
Analyzing Big Data over 10Gbps Campus-Wide Software Defined
Networks**

Project Goals:

- Building the 40Gbps software-defined network with OpenFlow switches to connect multiple research labs and HPC clusters
- Transferring Big Data over the SDN network achieving at most 40Gbps of disk-to-disk transfer rate
- Analyzing Big Data by developing data-intensive computing frameworks with Hadoop and MPI technologies parallelizing large number of jobs over HPC clusters.



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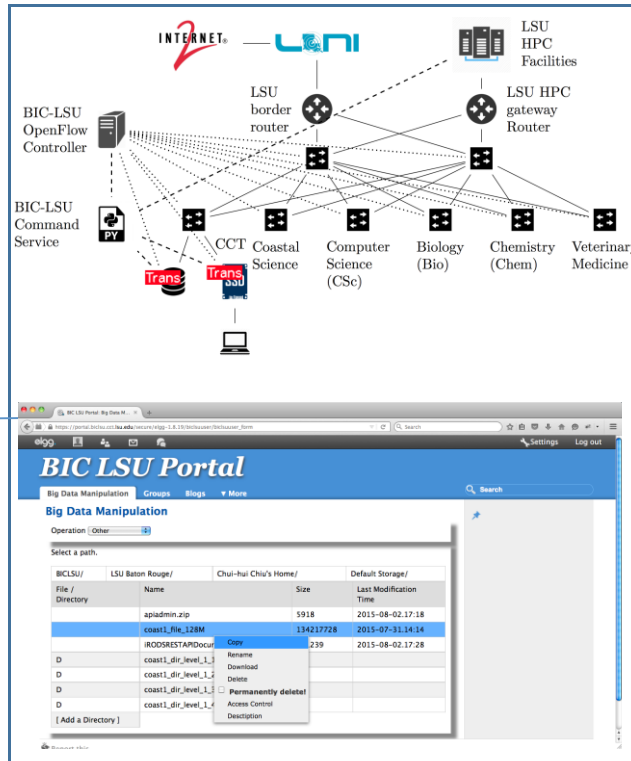
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Quad Chart for: CC-NIE Integration: Bridging, Transferring and Analyzing Big Data over 40Gbps Campus-Wide Software Defined Networks

Challenge or Approach:

- Different barriers or bottlenecks in networks, storages, HPC environments



Scientific Impact or Broader Impact: <pick one>

- Increased data transfer speed and improved job workflow over HPC clusters for different scientific and engineering applications

Solution(s) or Deliverables: <pick one>

- Integrating 40Gbps networks, SSD storage servers, HPC clusters by developing transport software, data analytics software, and a web portal

Metadata tag:

- <https://Portal.biclsu.cct.lsu.edu>
- <https://github.com/BIC-LSU>
- 11 papers in IEEE Bigdata, IEEE Clouds, IEEE ICDCS, ACM BCB