

UCI Lightpath Access Policy

4/30/2015

1. Introduction

This document defines the policy for accessing UCI Lightpath and enabling its growth on the UCI campus. UCI Lightpath is a high-speed network infrastructure on campus, dedicated for researchers whose data-intensive projects require fast data transfer within and beyond the campus. UCI Lightpath is composed of a Science DMZ [1] with a 10 Gbps connection to the science and research community on the Internet, and a dedicated 10 Gbps network infrastructure on campus. The initial infrastructure covers eight campus locations including the OIT Data Center where computing clusters, such as HPC and Greenplanet reside. The UCI Lightpath network infrastructure is separate from the existing campus network (UCINet.) It is funded by the NSF CC-NIE Grant to UC Irvine in 2014 [2].

If further funding is provided, UCI Lightpath can be extended to other locations on campus where fast transfer of large volumes of data is needed.

2. Access Policy

Networked hosts which need to transfer large quantities of research data, either within or beyond the campus, are good candidates for connecting to UCI Lightpath. We refer to this type of host as a Data Transfer Node (DTN) or a Server. A DTN/Server usually resides either at the OIT Data Center or in a researcher's lab on campus. Throughout this document, the terms DTN and Server will be used interchangeably.

Initial access policy is defined below and the policy is expected to evolve as we gain more experience:

- Our priority will be to connect DTNs or Servers, owned by those researchers identified in the UCI CC-NIE grant proposal, to UCI Lightpath. The connection costs are covered by the grant.
- Researchers with DTNs, other than those in the above category, will submit an application for connecting to UCI Lightpath to Jessica Yu of OIT (jyy@uci.edu). The application will be brought to the UCI Research Computing and Networking Advisory (RCNA) [3] for consideration.
- The applicant will be provided with a cost estimate to have their DTN connected to UCI Lightpath. The cost will include network equipment, cabling and labor. The cost will vary depending on requirements and existing available infrastructure, and will be assessed on a case-by-case basis. If the RCNA approves the application to connect to UCI Lightpath, it will be the responsibility of the applicant to identify or provide the required funding.

3. Technical Requirements

3.1 No Dual Connections

As mentioned above, UCI Lightpath is provided using infrastructure that is independent of UCINet. A server or DTN will either connect to UCINet or UCI Lightpath but not both. A server with UCI Lightpath connection can reach any UCINet host, and vice versa, through the campus border router and firewall. For example, researchers will be able to access the HPC or Greenplanet clusters on UCI Lightpath from workstations in their respective offices or labs that are connected to UCINet.

3.2 Security

While external communications to UCINet hosts are protected by the campus border firewall, to improve data transfer performance, a DTN on UCI Lightpath will not go through a firewall. Instead, external communication will be protected by an Access Control List (ACL) implemented at the UCI Lightpath router. Although this ACL provides a layer of security protection, as a good security practice we strongly recommend DTNs are implemented with local filter/firewall in order to add another layer of protection. The ACL will be adjusted to allow the servers to communicate with the desired external destinations.

OIT network engineers will work closely with the administrators of the servers on UCI Lightpath to develop and maintain the ACL.

We recommend servers containing HIPPA or other sensitive data not be connected to UCI Lightpath.

4. Operational Aspects

UCI Lightpath is managed and operated by OIT Network Operations and the OIT Help Desk in the same manner as UCINet. The OIT Help Desk will provide first level support and will escalate as needed to resolve operational issues.

Initial establishment and on-going modifications of the ACL will be requested using the OIT Service Request Form (SRF) [4]. The ACL will be updated during normal business hours.

5. References

[1] <https://fasterdata.es.net/science-dmz/>

[2] National Science Foundation Campus Cyberinfrastructure - Network Infrastructure Engineering Program (CC-NIE). NSF #ACI-1341038

[3] Research Computing and Networking Advisory (RCNA) is a UCI advisory composed of faculty members; OIT, The Libraries and Office of Research personnel; and computing support personnel from academic schools (<http://sites.uci.edu/RCNA>).

[4] SRF is a form used to submit Telecommunication-related requests to OIT. It can be accessed at <http://apps.oit.uci.edu/service-request/index.php>