Manhattan Landing Exchange Point

MAN LAN is a high-performance exchange point in New York City that facilitates peering between US and international research and education networks.

MAN LAN is a collaborative effort of Internet2, NYSERNet, the IEEAF, and Indiana University.

Overview

Manhattan Landing (MAN LAN) is an international research and education exchange point that interconnects a variety of networks across the globe.

MAN LAN provides an open network exchange facility for a rich community of international and domestic research and education networks. It also serves as a high-performance optical and Ethernet exchange point that facilitates peering between U.S. and international research and education networks. By providing this critical connection point, MAN LAN enables researchers to partner and collaborate with their peers around the world.

MAN LAN is also an active participant in the Global Lambda Integrated Facility (GLIF). The GLIF community shares a common vision of supporting the most demanding e-science applications by building a new Grid computing paradigm in which the central architectural element is optical networks, not computers. GLIF links are being made available for scheduled use by researchers and scientists involved with advanced data-intensive applications, middleware, protocol, and optical networking development.

MAN LAN and the Internet2 Network

The Internet2 Network is a participant in MAN LAN through a 10 GigE LAN PHY connection from its New York City core router node collocated in the same building. The Internet2 Network also has a 10 Gig SONET connection to the MAN LAN optical facility.

MAN LAN Ethernet Infrastructure

The layer-2 component is an Ethernet frame-based exchange point that utilizes VLANs to complete peering connections. It is currently based on a Cisco 6513 switch and provides both 1 and 10 Gigabit Ethernet (GigE) connections. A variety of different reach options are available.

MAN LAN Optical Infrastructure

MAN LAN also provides an optical networking component. Ciena equipment is used to provide layer-1 switching capabilities.

MAN LAN Collaborators

MAN LAN is operated by Internet2 through a partnership between Internet2, NYSERNet, the IEEAF, and Indiana University.

- **Internet2** – Provides program management and operational oversight
- **NYSERNet**, The New York State Education and Research Network – Provides Manhattan colocation facilities, and metropolitan fiber resources
- **The Global Research NOC at Indiana University** – Provides engineering support and is responsible for the daily technical operation of the MAN LAN exchange point
- **IEEAF**, The Internet Educational Equal Access Foundation – Provides support to the research and education community via network based initiatives and advocacy

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International connections are primarily supported by the Ciena equipment. A Ciena Core Director supports MAN LAN optical connections. The Ciena equipment facilitates the SONET-level cross connection of the majority of the trans-atlantic links, and allows for SONET-to-Ethernet translation on those circuits.

How to Participate

Networks wishing to participate in MAN LAN may contact *manlan@internet2.edu* to obtain a copy of the MAN LAN Participation Agreement. Internet2 has established cost recovery fees for both the layer 1 optical infrastructure and layer 2 ethernet connections to MAN LAN.

For details, please see the MAN LAN web page at *http://www.internet2.edu/manlan/*.

MAN LAN TOPOLOGY