

# MANLAN

9/12/2011

# Services

- MAN LAN is an Open Exchange Point.
- 1 Gbps, 10 Gbps, and 100 Gbps interfaces on the Brocade switch.
  - 40 Gbps could be available by 2012.
- Map dedicated vlans through for Layer2 connectivity beyond the ethernet switch.
- With the Brocade the possibility of higher layer services should there be a need.
  - This would include OpenFlow being enabled on the Brocade.
- Dynamic services via an IDC.
- PerfSonar Instrumentation.

# Current Connections / Capabilities

- Current Connections on the Core Director:
  - 9 OC-192's
  - 9 1 Gbps
- Current Connection on the 6513
  - 15 10G Ethernets
  - 7 1G Ethernet
- Projected Connectors:
  - 2 OC-192's for ACE on the Core Director
  - 1 10G for LHCONE activity
  - ESnet at 100G
  - Internet2 at 100G

# Roadmap

- Switch upgrade:
  - MLXe-16 was purchased with:
    - 24 10G ports
    - 24 1 G ports
    - 4 100G ports
  - Internet2 and ESnet will be connected at 100G.
  - Would like to implement 100G exchange point ring to Chicago, DC
- Next upgrade will be to allow landing transatlantic circuits of greater than 10G.
- An IDC for Dynamic circuits will be installed.
  - Comply with GLIF GOLE definition



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# **INTERNATIONAL UPDATE**

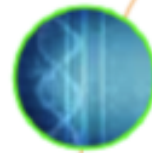
# Internet2 International

- Global Reach as a priority area
- Global program staffing
- Global Campus Support – (Includes reliable connectivity, potentially data centers & telepresence)
- Global capital planning group
- A-Wave and Washington Exchange Support
- IRNC – Performance and Dynamic Circuit Progress (IRIS/Dygar)
- Other Support of Global
  - NDDI/OS3E – Distributed Open Exchange built on OpenFlow/SDN
  - New 100G native national network coming online
  - Substantially refocused research support functions

# New Internet2 Network

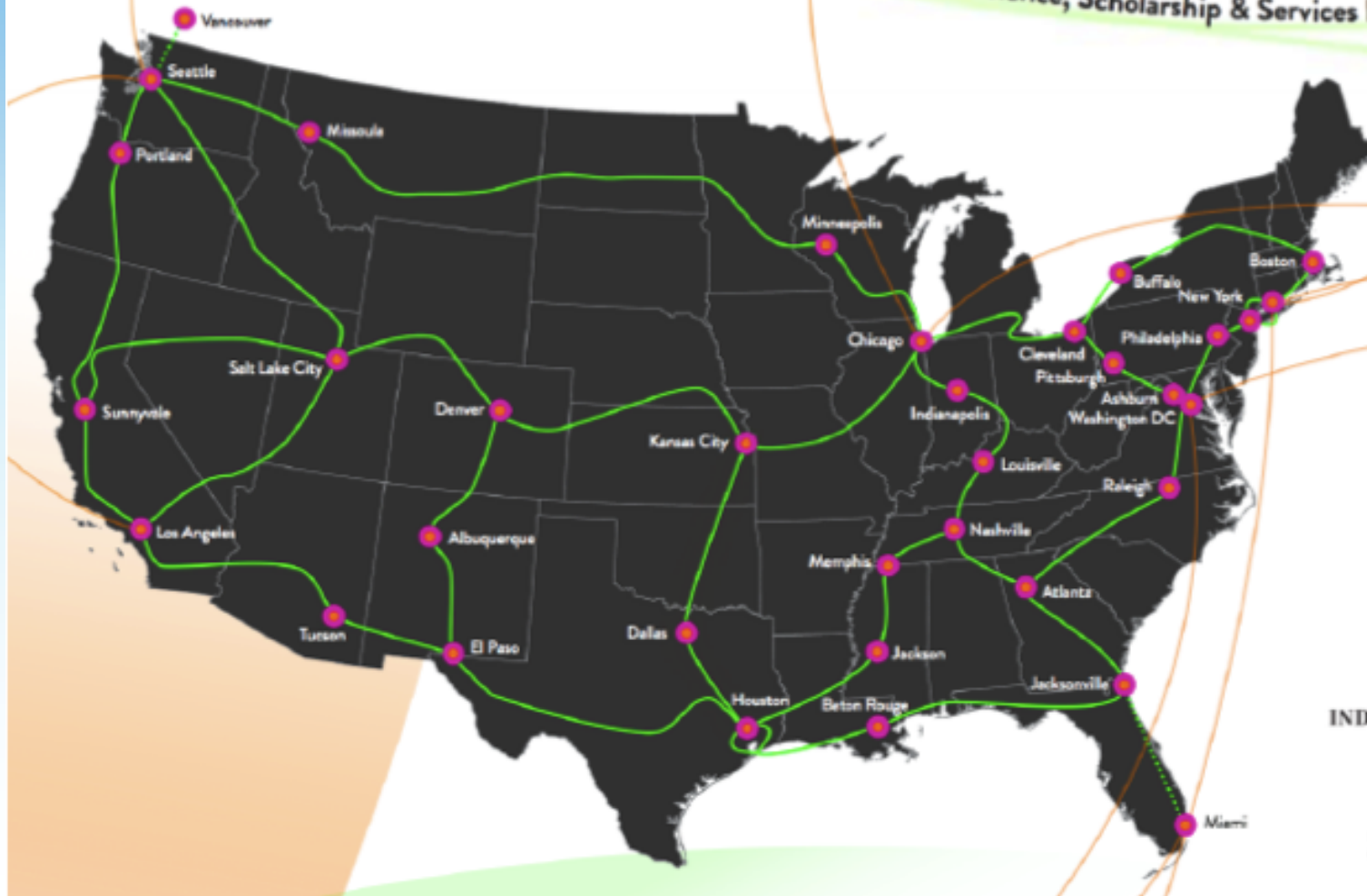
- Next Generation Network Infrastructure
  - New 20>30 Year Dark Fiber IRU on expanded footprint
  - Over **8.8 Tbs** of Wave Capacity
- Enhanced Services
  - 100G IP/MPLS Backbone
  - Delivery 10, 40 and 100G waves
  - Enhanced Commercial Peering
  - Integration with federated ID, middleware, cloud services, global reach
- Specific Research Opportunity
  - Move to native 40G, 100G waves
  - Collaboration with NSF/GENI & Department of Energy/ESnet
  - Global collaboration on new services
  - Sliceable network development environment for network research
  - New Support for Research





# OS<sup>3</sup>E

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