AmLight Express and Protect (AmLight-ExP) project

The Global Network: Evolving from an Architecture to an Infrastructure
Internet2 Global Summit
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AmLight Express and Protect (AmLight ExP)

- Project of the U.S. National Science Foundation (NSF), Award #ACI-1451018

- Interconnects the U.S. to key aggregation points in South and Central America (Brazil, Chile, Panama)

- Cooperative partnership with ANSP, RNP, CLARA, REUNA, AURA, FLR, Internet2

- Evolving a rational network infrastructure, using both spectrum and leased capacity

AmLight-ExP Today

- 100G Miami-São Paulo, Atlantic

- 100G Miami-São Paulo, Pacific

- 4x10G links, landings in São Paulo, Fortaleza, Santiago

- 240G of aggregate bandwidth capacity

- 100G ring to include Santiago and Fortaleza in Q3 2017
  - Eliminating 10G links in Santiago and Fortaleza
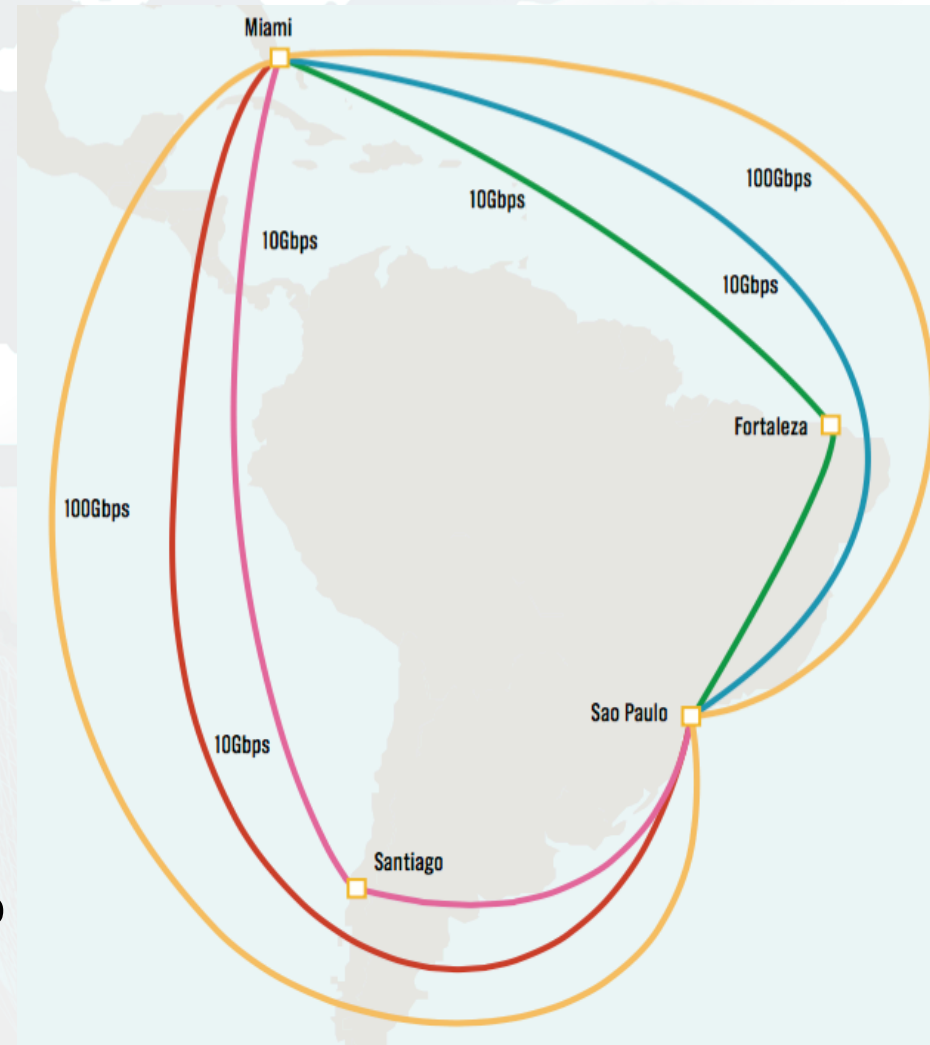
AmLight-ExP Future

- AmLight Express:
  – 300GHz of spectrum: Santiago-São Paulo, and São Paulo-Miami
  – São Paulo-Miami activation planned for Dec. 2017

- AmLight Protect:
  – 100G leased capacity ring
  – Miami, São Paulo, Santiago, Panama City, Miami
  – AMPATH, Southern Light, REUNA, and RedCLARA operated

600G+ bandwidth capacity


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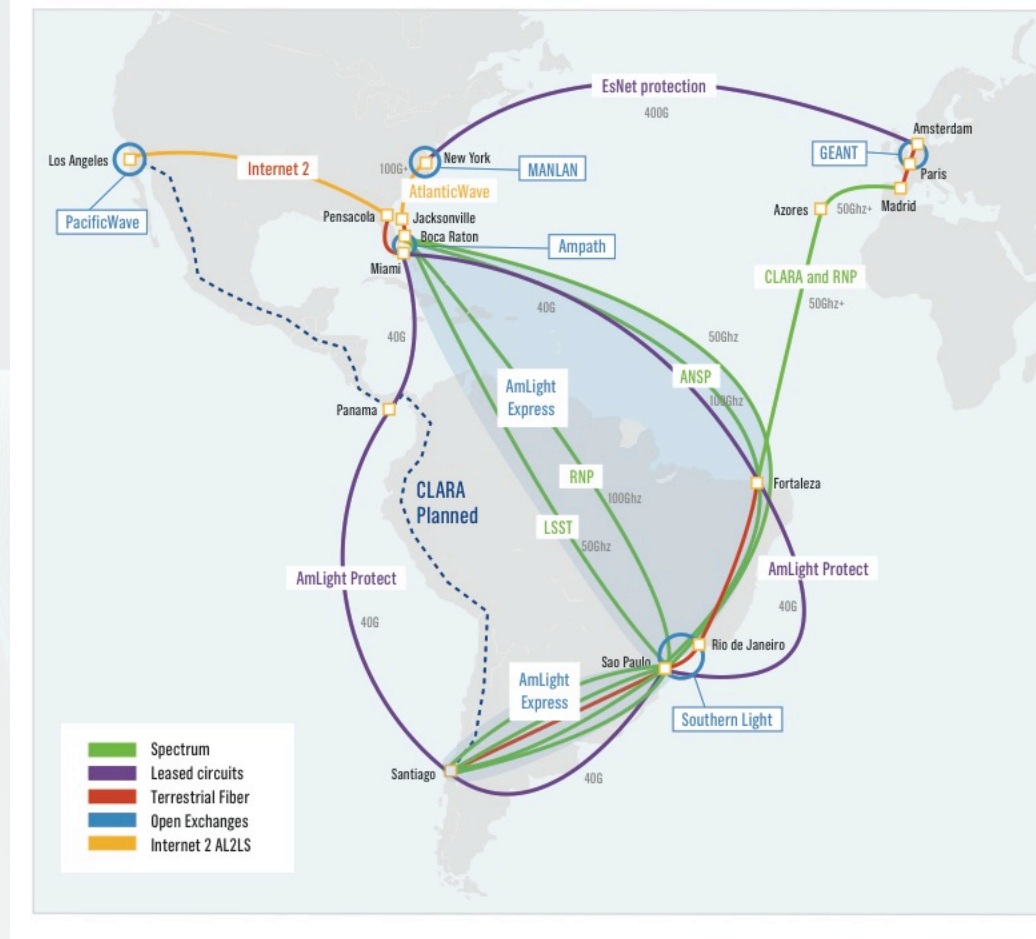
Monet submarine cable

- Monet landed in Boca Raton in October 2016
- Shore landings were completed earlier this year in Fortaleza and Praia Grande, Brazil
- Monet will provide spectrum for AmLight
- Access to spectrum planned for 12/2017

MONET CABLE SYSTEM

BOCA RATON

ATLANTIC OCEAN

BU1
FORTALEZA

BRAZIL

SANTOS

Regional Aggregation

AMPATH and SouthernLight International Open eXchange Points:

- 100G-capable
- OpenFlow-based network provisioning and operation:
  - L2VPN: OESS
  - L3VPN: ONOS/SDN-IP and CasTOR
- Support dynamic services with Network Services Interface (NSI)
- Support network slicing for network experimentation using OpenFlow 1.0 and 1.3 (overlay)
- Preparing to be SDX-ready using Corsa switches

http://measurements2.ampath.net/
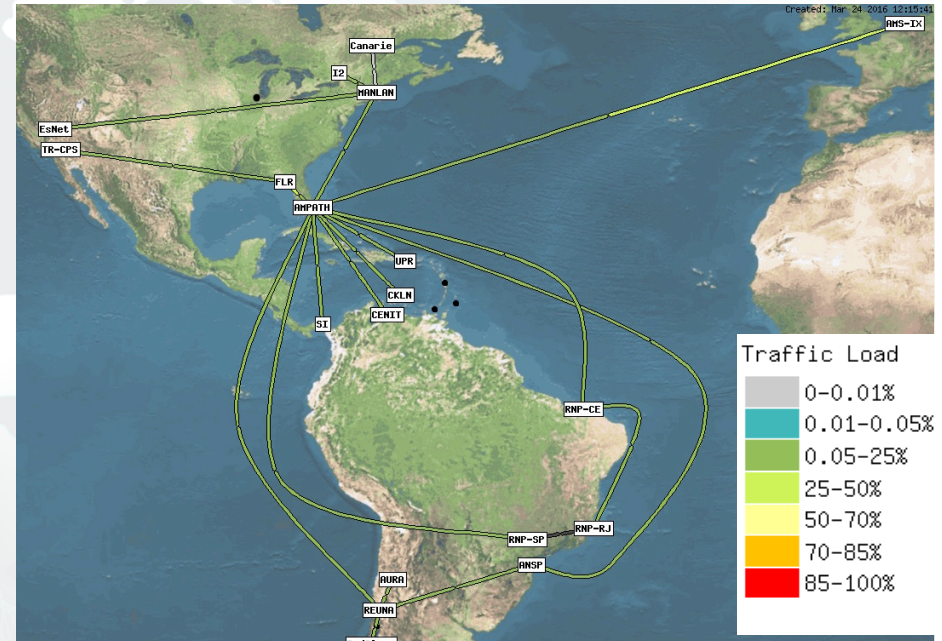
Emerging Capacity and Aggregation

680G+ bandwidth capacity

- New submarine cables in the South Atlantic
  - EulaLink submarine cable from Fortaleza to Portugal
  - SACS submarine cable to Angola (Q3 2018)
  - South Atlantic Inter-Link (SAIL), to Cameroon (2018)
- Fortaleza, Brazil emerging as a South Atlantic hub

Source: Michael Stanton

Thank You!
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