



**9<sup>th</sup> Annual Global Lambda Workshop**  
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# Outline

- Update on AtlanticWave
- Update on AMPATH GOLE

# AtlanticWave

- AtlanticWave is a distributed exchange point peering service along the Atlantic rim
- AtlanticWave facilitates exchange and peering services between U.S. and international networks interconnected at the following key exchange points on the U.S. East Coast:
  - International Exchange Points MANLAN in NYC and AMPATH in Miami
  - MAX gigapop and NGIX-East in Washington, DC
  - SoX gigapop in Atlanta
  - SouthernLight in Sao Paulo (in progress)
- AtlanticWave is an integral component of the NSF IRNC WHREN-LILA project, extending open distributed exchange and transport services to Brazil and Latin America
- AtlanticWave partners include SURA, FIU-AMPATH, IEEAF, FLR, MAX, SLR/SoX, Internet2/MANLAN, Rede Nacional de Ensino e Pesquisa (RNP), and Academic Network of Sao Paulo (ANSP)
- AMPATH, MANLAN, NGIX-East/MAX, SouthernLight participate as GLIF GOLEs

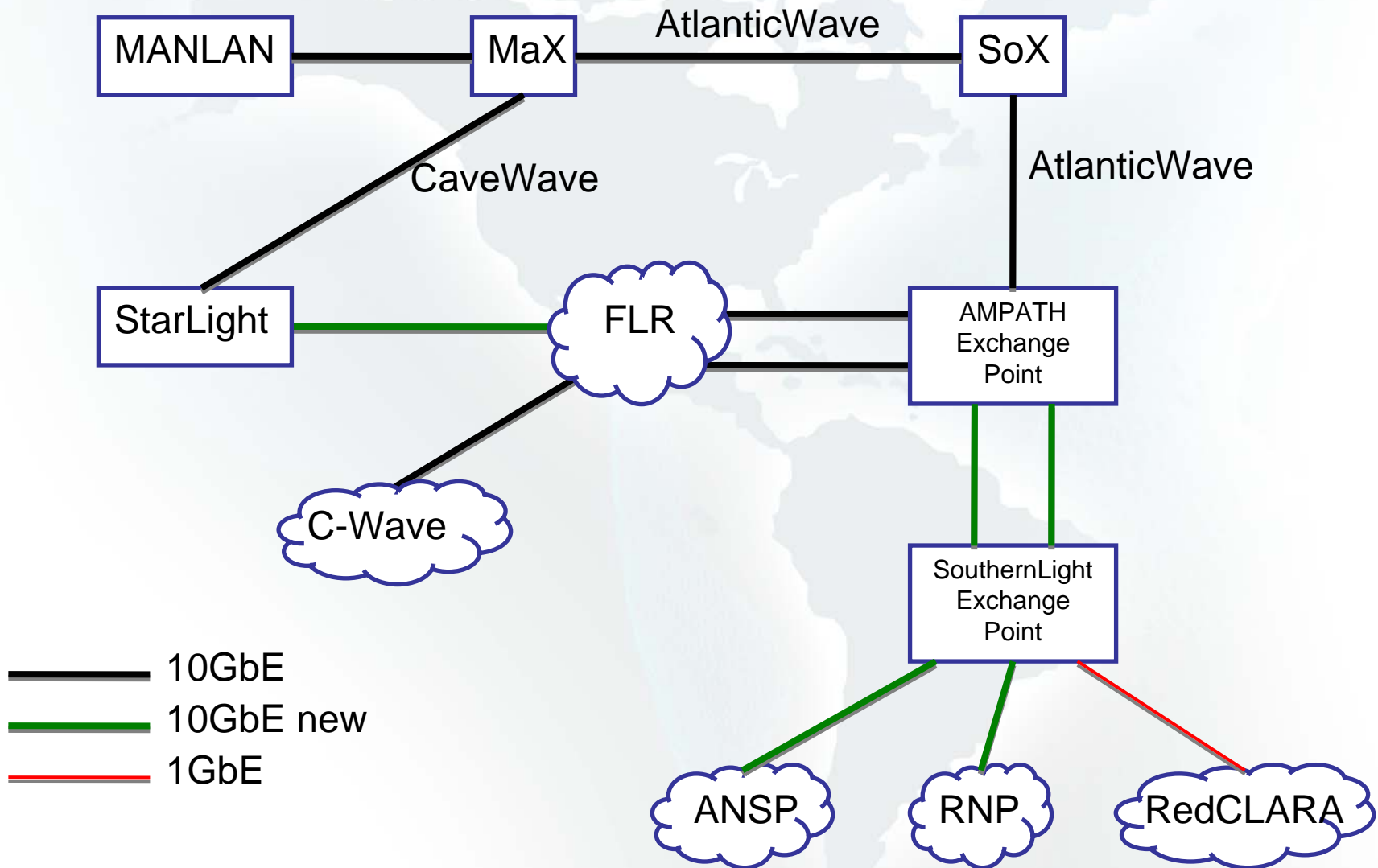
# AtlanticWave Concept

- Collaborating exchange points with a common set of goals
- Each exchange point operates independently and manages its connectors
  - Do not disrupt business and operating models
- Provide international connectors with the option to peer from multiple locations across a common layer2 exchange fabric
- Provide a platform to enhance international science collaboration and network enabled research and education

## Paths at AMPATH to U.S. and international R&E backbone networks

- AMPATH is an international exchange point serving network-enabled U.S.-Latin America and Caribbean science research and education communities
- AMPATH provides multiple layer2 and layer3 paths to U.S. and international R&E backbone networks
- Production layer2 10GigE transport service via AtlanticWave to U.S. national and international backbone networks
- Experimental layer2 10GigE transport via Cisco Research Wave (C-Wave)
- Production layer2 10GigE shared transport to StarLight via FLR and NLR
- Layer 3 routed connections

# AMPATH Connections and Paths



# AMPATH Activities

- SC09 Bandwidth Challenge Preparations
  - Organized by Caltech. Providing up to 20Gbps of shared bandwidth capacity from Miami to SC09 through Cisco C-Wave and NLR FrameNet using FLR-StarLight wave
- GENI-Brazil Development testbed
  - GENI project at FIU to integrate a large scale, real time network simulator, enabling slices involving both physical and simulated networked components
  - Implementing a testbed environment to federate resources in a hybrid networked environment
- Hybrid Network Services
  - Currently supporting L2 virtual circuits (ethernet VLANs) and routed IP connections
  - Plans are to support connectors to establish end-to-end circuits using either static or dynamic provisioning methods
  - RNP, along with research groups in Brazil, is evaluating AutoBAHN, ION, Argia, etc.
- PerfSONAR testbed installed at AMPATH
  - Installed are: LookupService, MeasurementArchive Service, perfSONAR Buoy
  - To be installed are: Topology Service, LookingGlass Service



**Thank You  
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