INTERNATIONAL NETWORKS
At Indiana University

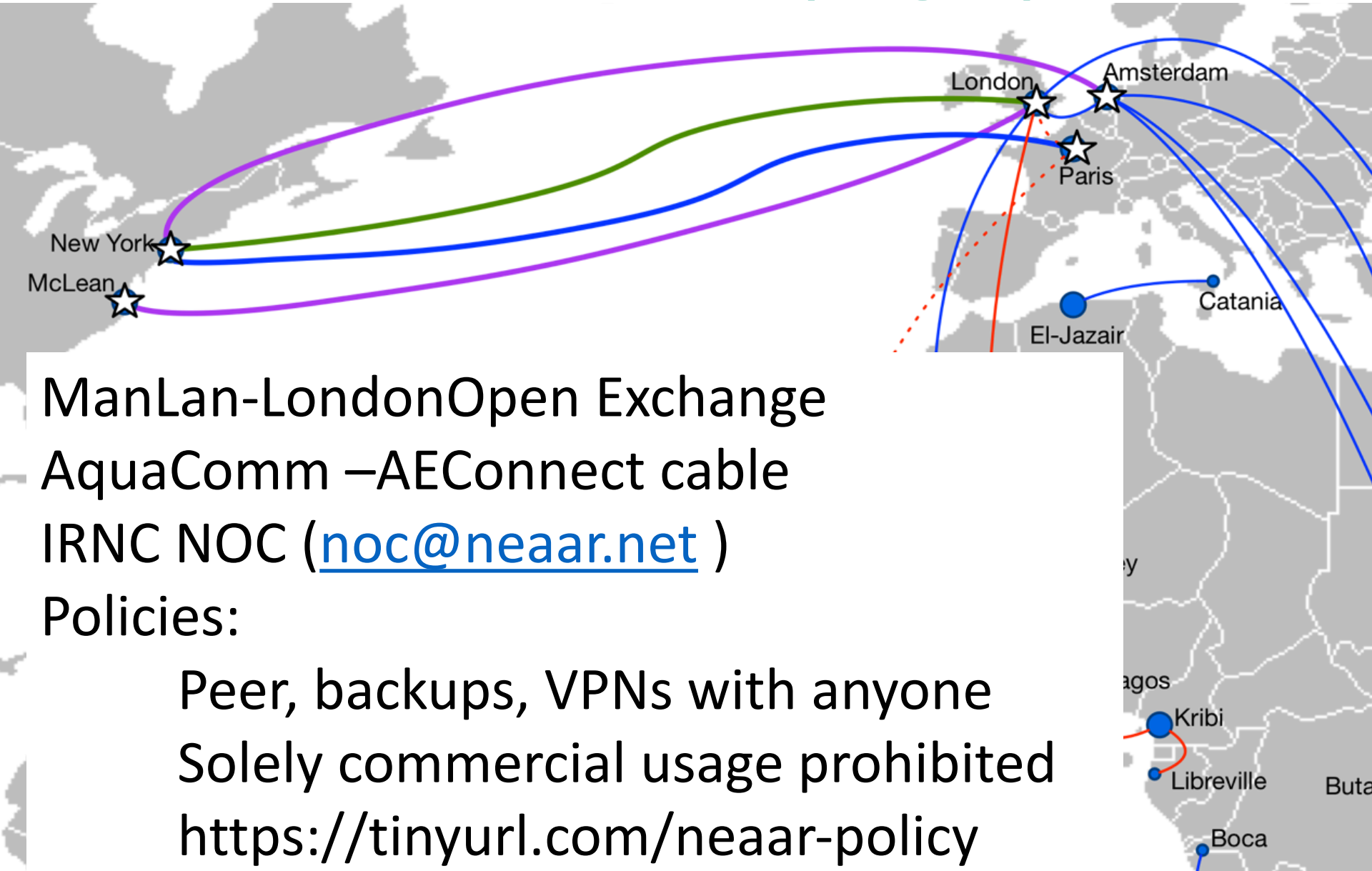
IN@IU and GNA – TransPAC, NEAAR, and NetSage

Jennifer Schopf

International Networks, Indiana University

Supported by the National Science Foundation

NEAAR 100G Circuit (IN@IU)



ManLan-LondonOpen Exchange

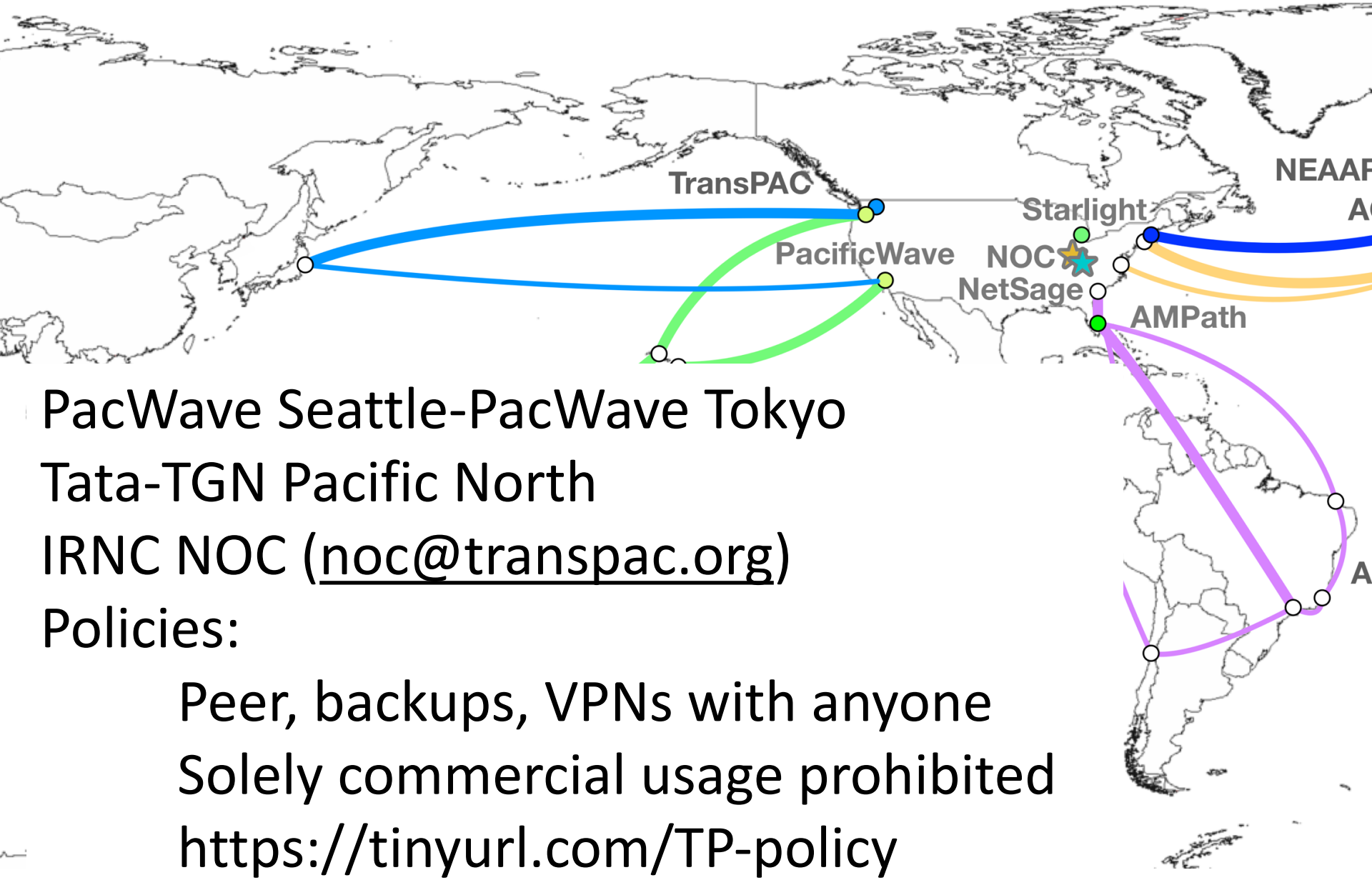
AquaComm –AEConnect cable

IRNC NOC (noc@neaar.net)

Policies:

- Peer, backups, VPNs with anyone
- Solely commercial usage prohibited
- https://tinyurl.com/neaar-policy

TransPAC/PacWave 100G Circuit



PacWave Seattle-PacWave Tokyo

Tata-TGN Pacific North

IRNC NOC (noc@transpac.org)

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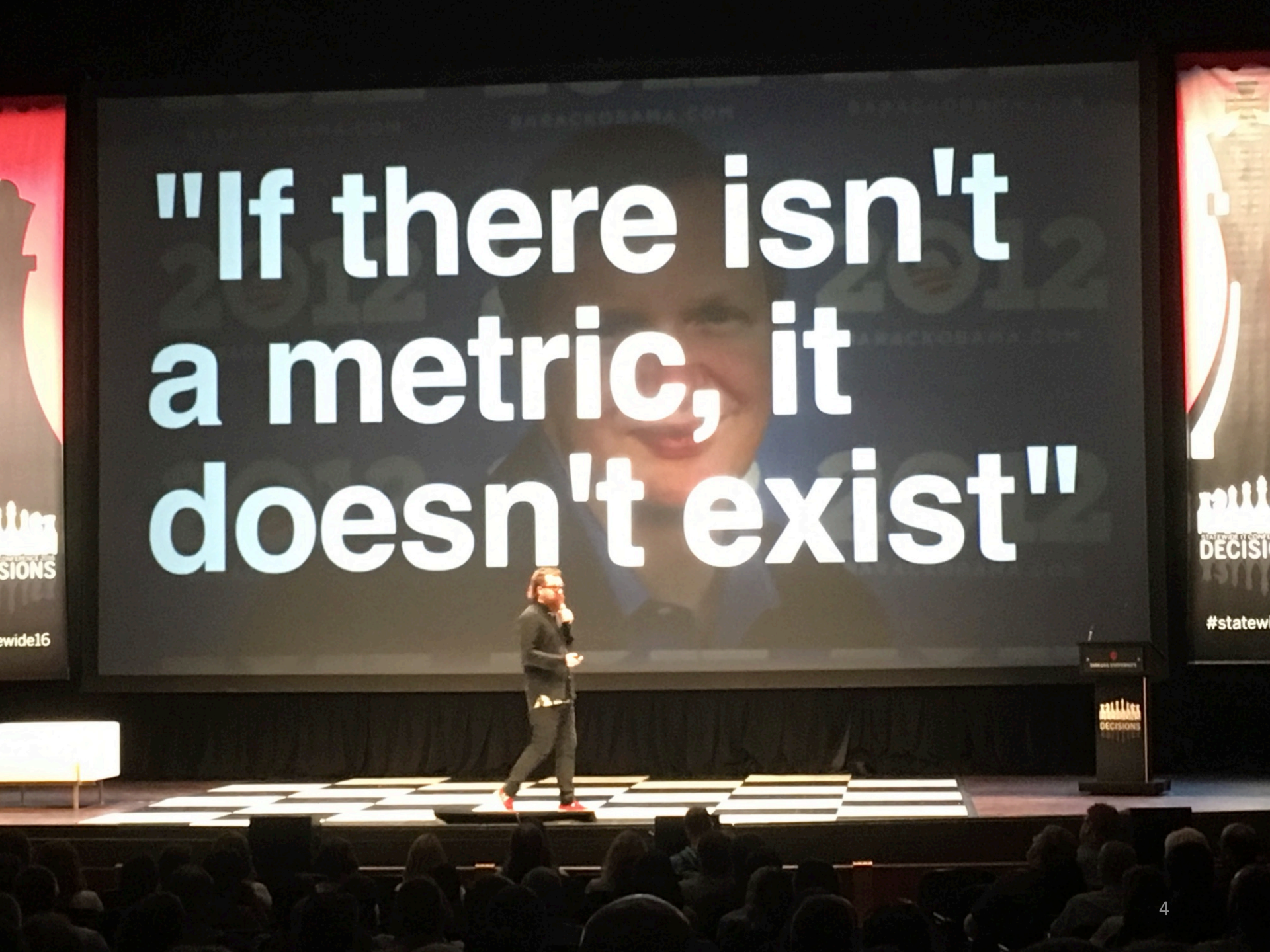
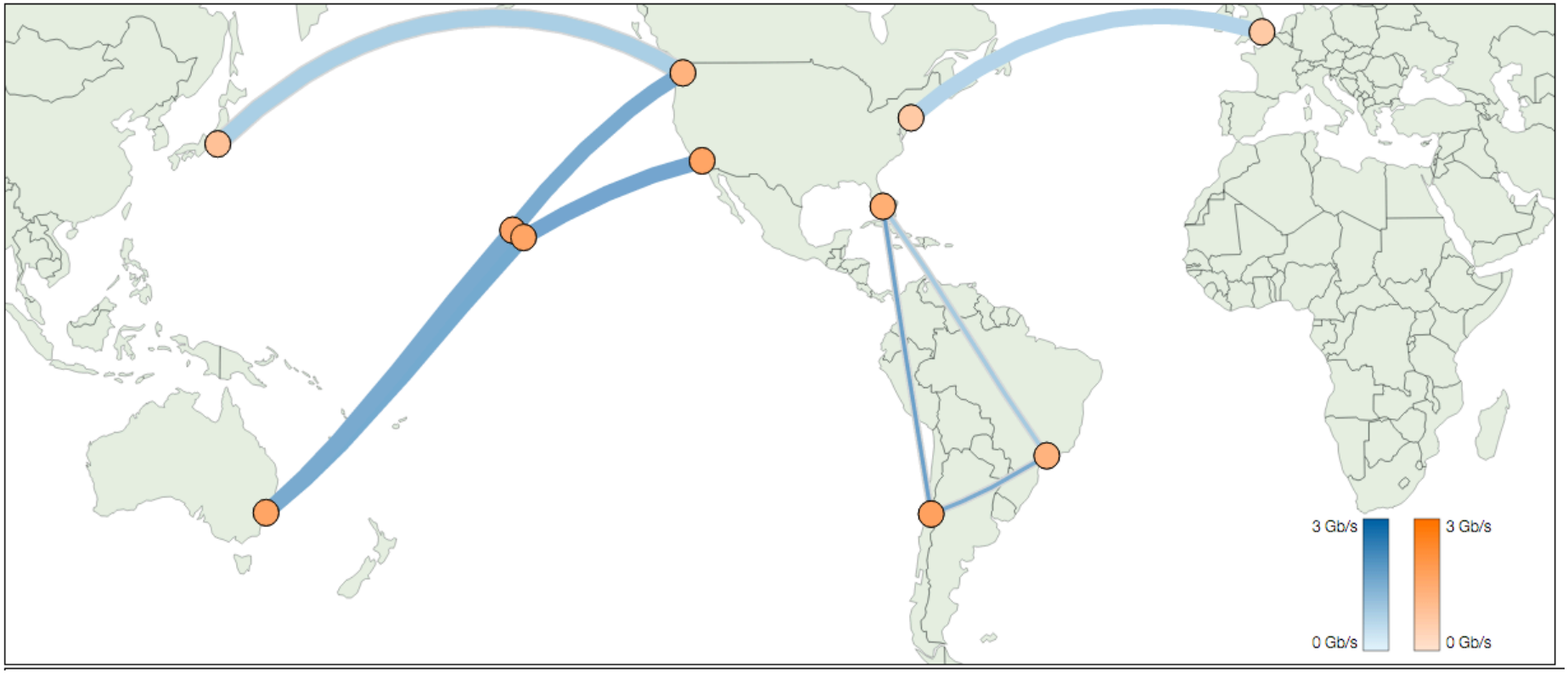
- https://tinyurl.com/TP-policy


"If there isn't a metric, it doesn't exist"

http://portal.netsage.global

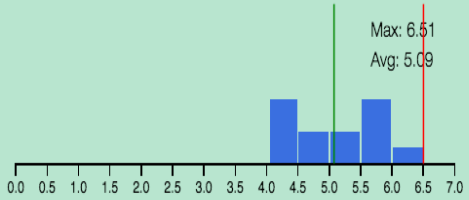
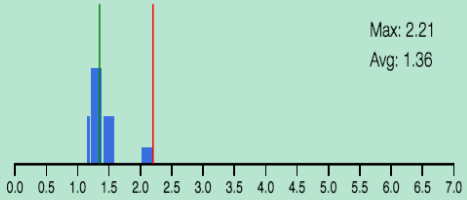
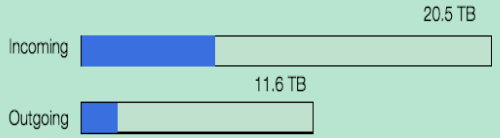
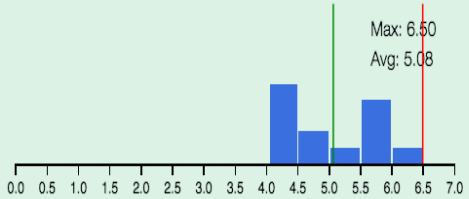
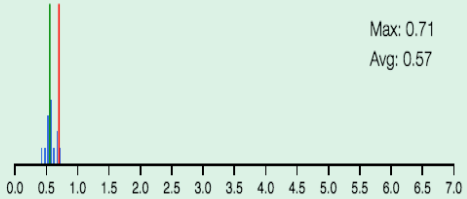
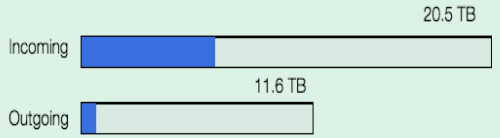
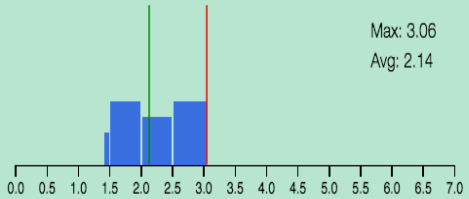
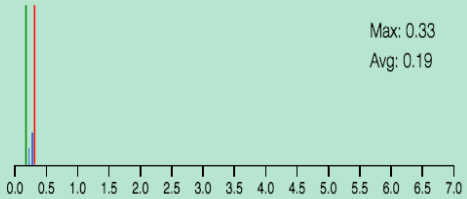
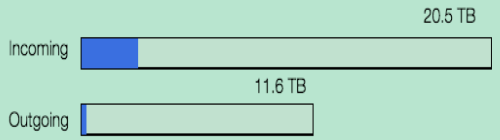
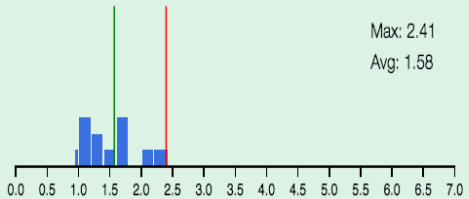
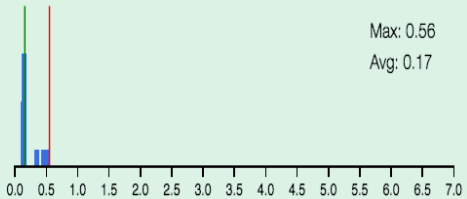
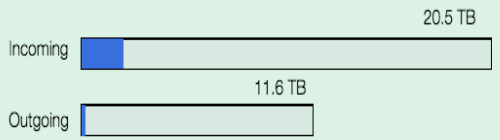
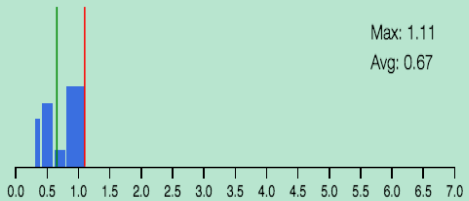
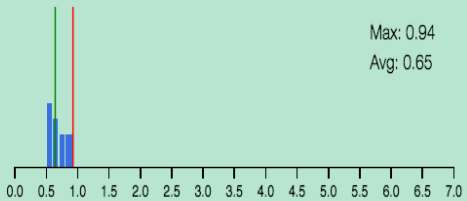
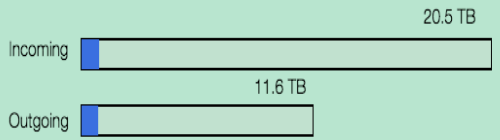
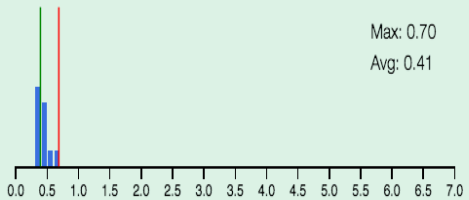
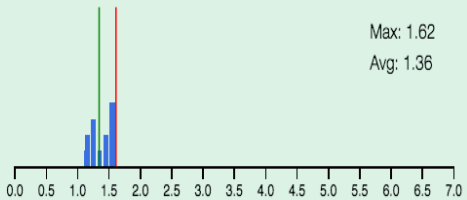
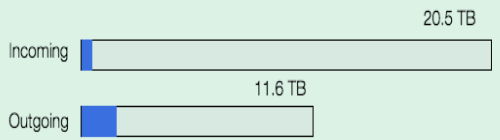


Use Cases Year 1 and 2

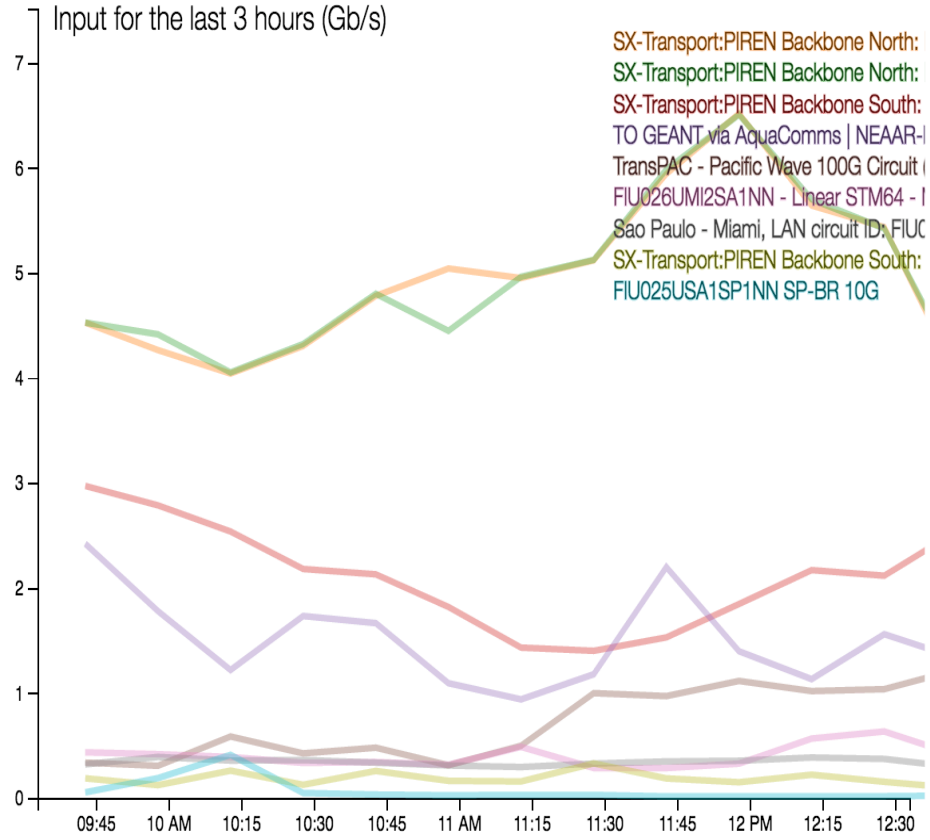
- What is the max, min, average bandwidth used between links?
- Which exchange points or networks are congested?
- When and how often do they remain congested?

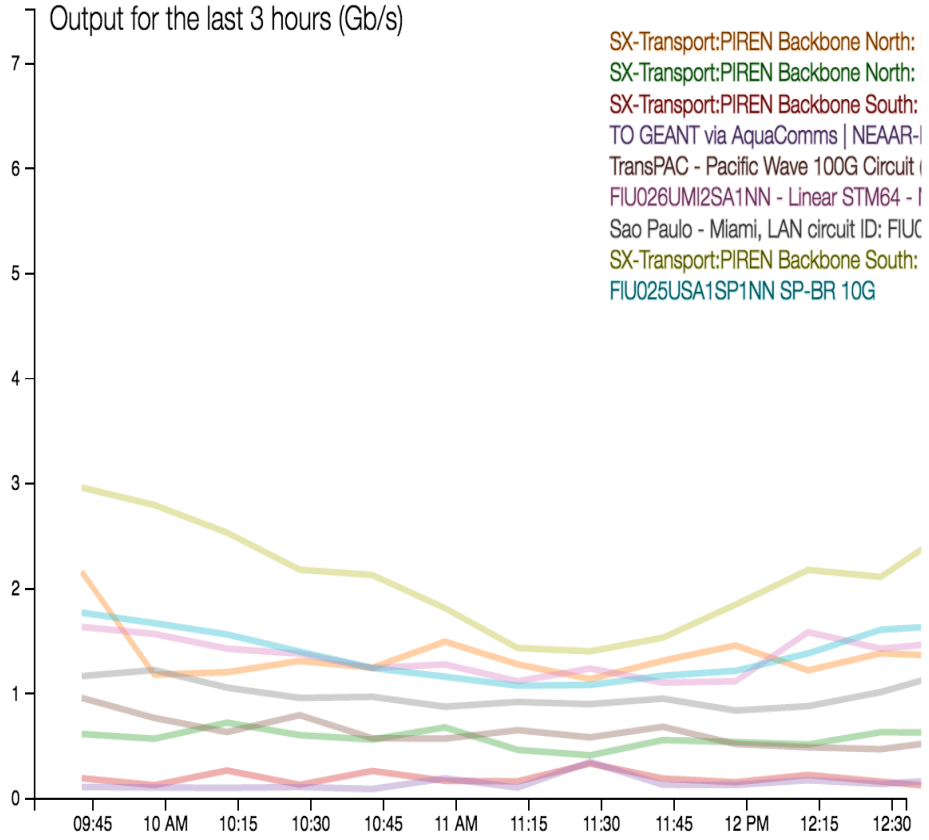
Data Sources for Year 1-2

- Passive Measurements
  - SNMP
- Active Measurements
  - PerfSONAR

Links	Incoming Bandwidth (Gb/s)	Outgoing Bandwidth (Gb/s)	Total Data (TB)
SX-Transport:PIREN Backbone North: BRO-SEA 100GET0001 facing Oahu			
SX-Transport:PIREN Backbone North: BRO-KAH 40GET0001 facing Sydney			
SX-Transport:PIREN Backbone South: MOR-SPE 100GET0001 facing Los Angeles			
TO GEANT via AquaComms | NEAAR-NEWY32AOA-LOND-100GE-01500			
TransPAC - Pacific Wave 100G Circuit (provided by PNW Gigapop)			
FIU026UMI2SA1NN - Linear STM64 - MIA SGO - LAN - Pacific			
			

http://portal.netsage.global





IRNC PerfSONAR Mesh

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Netsage Mesh Dashboard

Netsage Mesh - NetSage BWCTL Testing - Atlantic

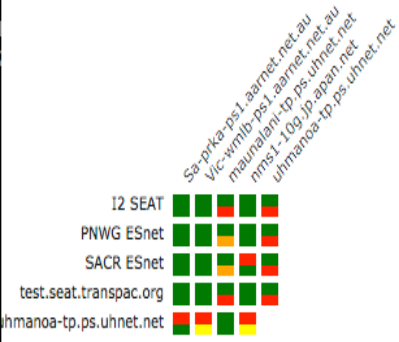
Throughput >= 2000Mbps | Throughput < 2000Mbps | Throughput <= 1000Mbps | Unable to retrieve data | Check has not yet run

Netsage Mesh - NetSage OWAMP Testing - Atlantic

Loss rate is <= 0 | Loss rate is >= 0 | Loss rate is >= 0.01 | Unable to retrieve data | Check has not yet run

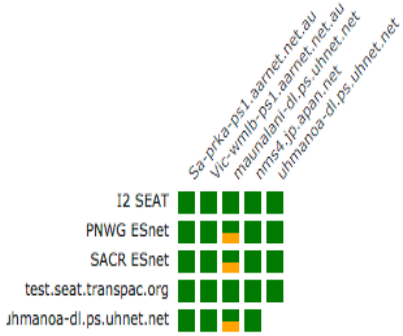
Netsage Mesh - NetSage BWCTL Testing - Pacific

Throughput >= 2000Mbps | Throughput < 2000Mbps | Throughput <= 1000Mbps | Unable to retrieve data | Check has not yet run



Netsage Mesh - NetSage OWAMP Testing - Pacific

Loss rate is <= 0 | Loss rate is >= 0 | Loss rate is >= 0.01 | Unable to retrieve data | Check has not yet run



Acknowledgements

- We thank NSF for funding:
  - TransPAC (#)
  - NEAAR (#)
  - NetSage (#1540933)
- The TransPAC/Pacific Wave 100G link is supported by PNWGP

- More information in IN@IU
  - http://internationalnetworks.iu.edu/
- Questions? Contact:

Jennifer Schopf – jmschopf@indiana.edu