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IX Update - **North American IXPs**

NANOG 43

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IX Update - **North American IXPs**

Agenda

- Overall PAIX Facts
- Distributed Peering Platform – MetroPAIX
- PAIX New York Overview
  - Current Network Architecture
    - 111 8th Ave
    - 60 Hudson
  - Current Participants
    - Traffic
  - Future Plans

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Overall PAIX Facts

The PAIX established in 1996 in Palo Alto

6 PAIX Metros in North America

- San Francisco Bay Area, New York City, Seattle, Dallas, Atlanta, Northern Virginia

Ethernet-based Peering Services

- Scalable Ports Increments - 100Mb, 333Mb, 500Mb,1G, Nx1G, 10G, Nx10 GigE
- Dual Stack: IPv4 & IPv6
- Multicast Capable
- Private interconnections over public fabric (VNI)
- PAIX VoIP Exchange

Carrier Neutral Colocation Model

Non-Profit IX & Research Network Interconnections

- Seattle SIX (10G Interconnect)
- Pacific Northwest GigaPoP (Seattle)
- CENIC (Palo Alto)
- Southern Crossroads (Atlanta)
- Internet2 (New York & Palo Alto)

Distributed Peering Platform - MetroPAIX

San Francisco Bay Area

Multi-site core switch deployment
- – Palo Alto - 529 Bryan St.
- – Sunnyvale – 444 Toyoma
- – San Jose - Market Post Tower
- – San Francisco - 200 Paul St.
- – San Jose - Stockton St.

Scalable trunk between locations
Fiber ring topology

New York City

Dual-site core switch development
- – 111 8th Ave.
- – 60 Hudson St.

Dual hub and spoke designs
- – All suites fully interconnected

Scalable trunk between facilities

- Q3 2008 New site interconnection
  - – North Bergen, NJ

Dallas

Dual-site core switch deployment
- – 2323 Bryant St.
- – INFOMART

Scalable trunk between sites

Seattle

Dual-site core switch deployment
- – Westin Bldg
- – Securities Technology Bldg

Scalable trunk between sites

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PAIX New York Overview - Current Network Architecture

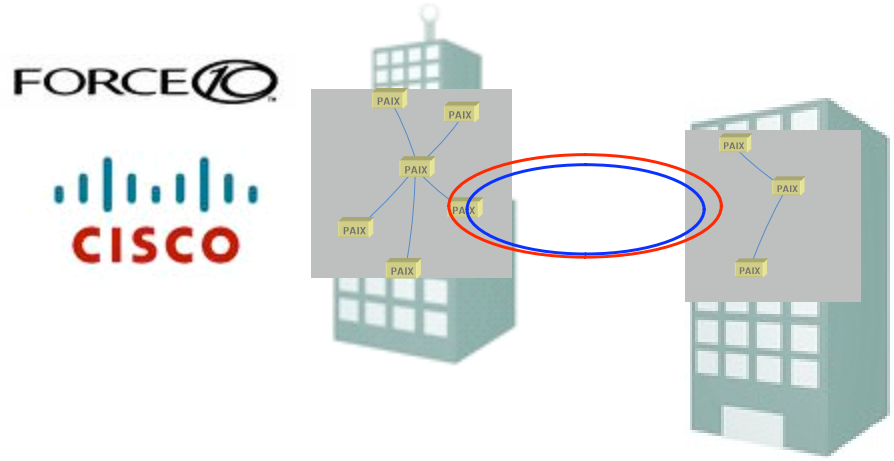
New York City

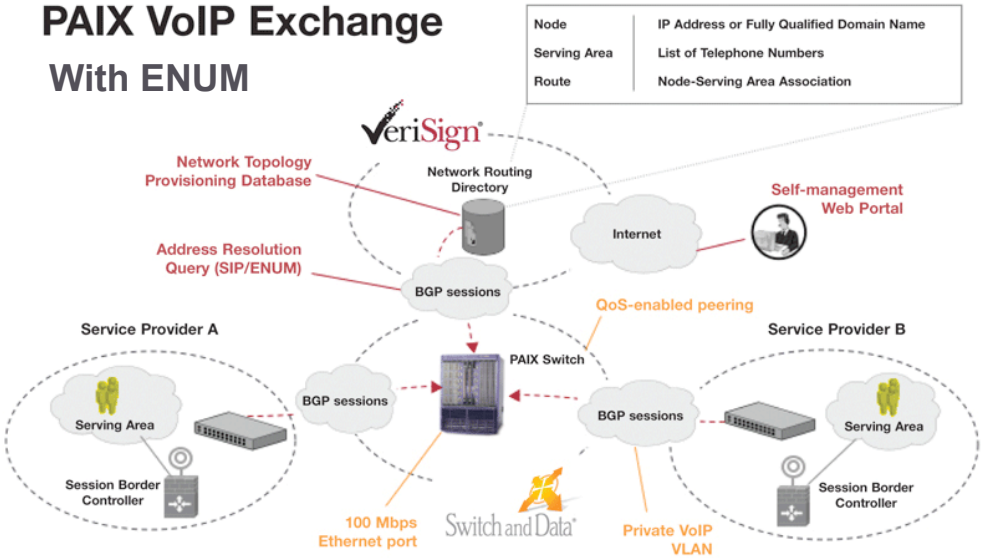
PAIX exchange established
July 26, 2001

Dual-site core switches
- 111 8th Avenue & 60 Hudson St.
- Ethernet & DWDM

Metro Dark Fiber Ring
- 20GigE
- Diverse entrances

Switch and Data PAIX - NY
- 100Mb – 10GigE Port Capacity all core sites
- Multicast
- IPv6
- Internet2
- VoIP Exchange





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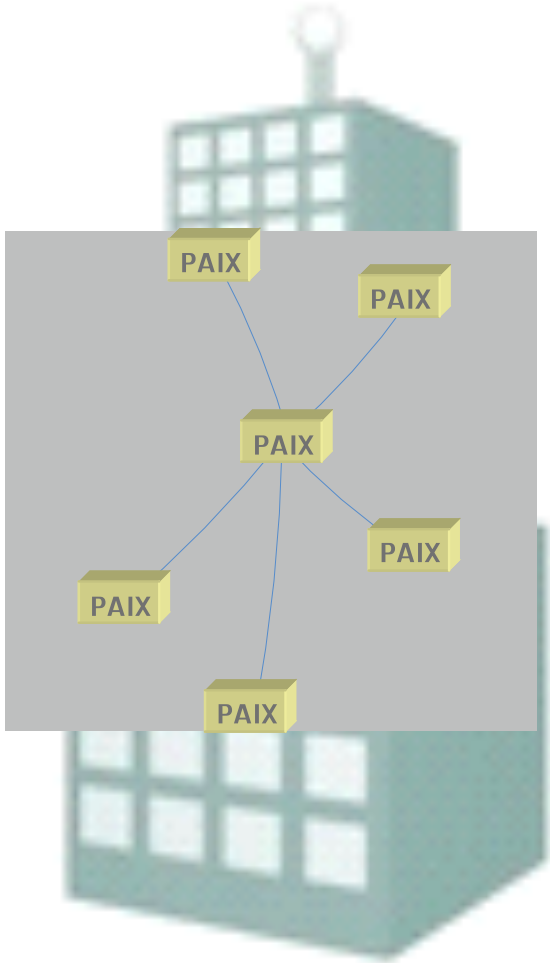
PAIX New York Overview - Current Network Architecture

New York City
111 8th Ave.

Six individual suites
- Building MMRs

Hub and spoke design
- Edge Switches for 10/100 Connections
  - Edge Traffic
- Fiber Conduit for all GigE and 10GigE connections
  - Core Traffic
- All suites fully interconnected
  - Scalable trunk between facilities
  - Multiple Fiber Conduits per suite



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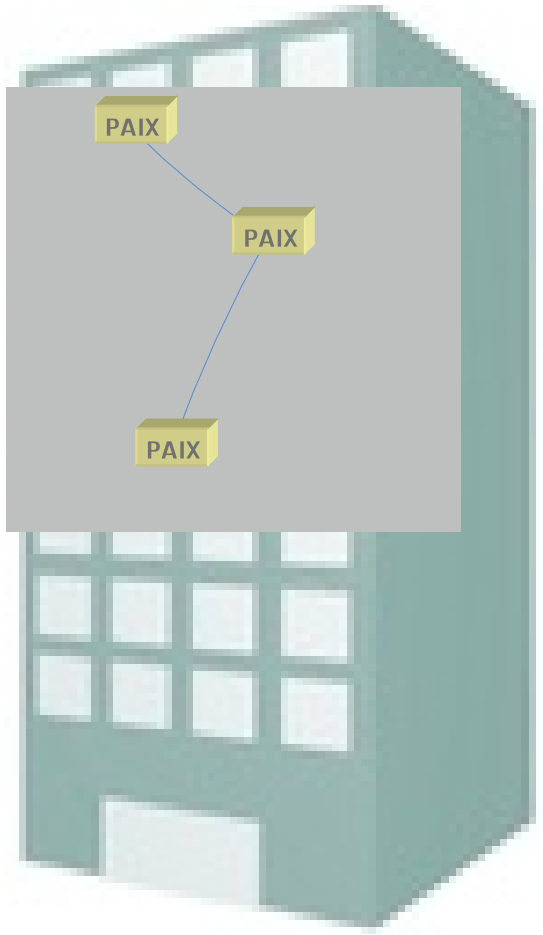
PAIX New York Overview - Current Network Architecture

New York City - 60 Hudson.

Three individual suites
•Building MMR

Hub and spoke design
•Edge Switches for 10/100 Connections
  – Edge Traffic
•Fiber Conduit for all GigE and 10GigE connections
  – Core Traffic
•All suites fully interconnected
  – Scalable trunk between facilities
  – Multiple Fiber Conduits per suite



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PAIX New York Overview - Current Participants

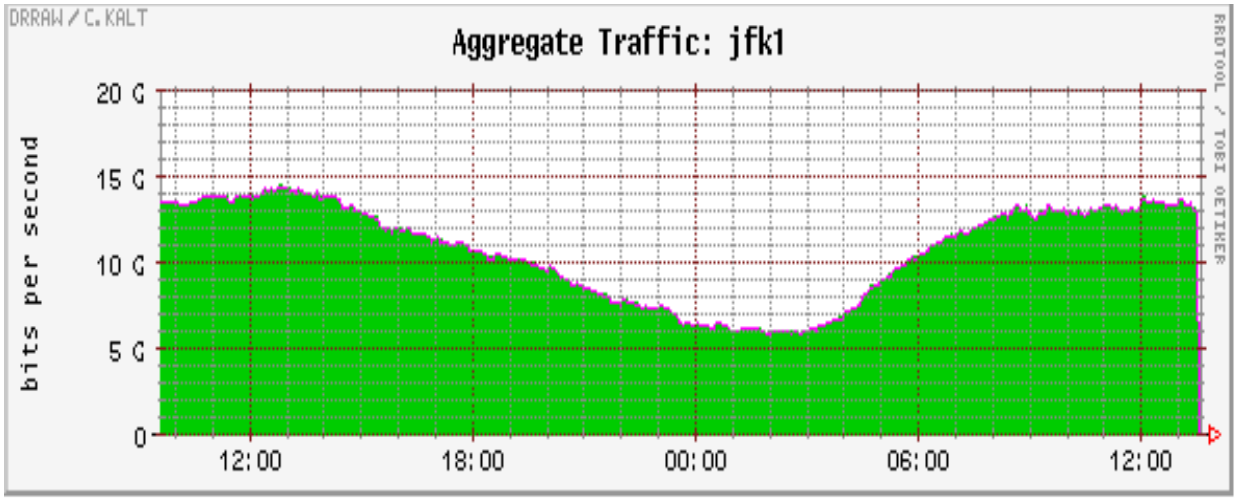
•Public Peering in 9 locations in NYC

– 50+ participants actively peering on the Public vlan

– sFlow & MRTG reported on all ports

•Traffic

– Individual traffic pockets



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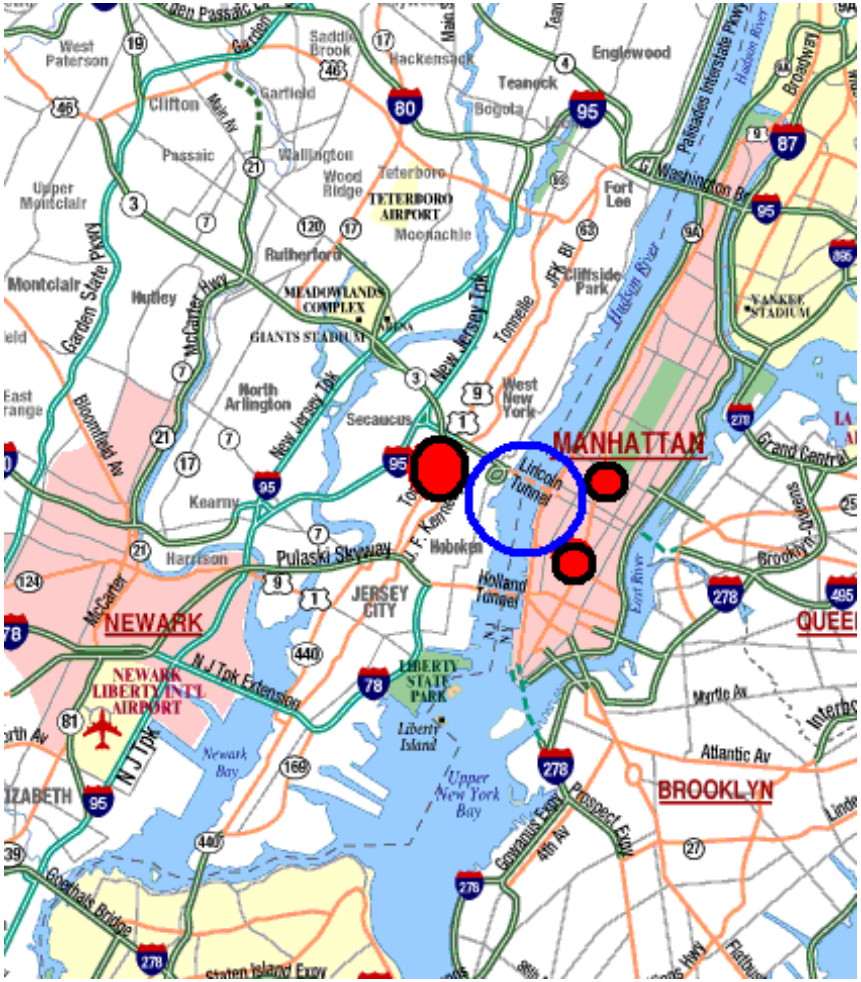
PAIX New York Overview – Future Plans

Q3'08 - North Bergen, NJ

- New PAIX location 163,000 sq. ft.
- New Metro Ring
  - Dark Fiber
  - ADVA DWDM
- Hub and spoke design
- Edge Switches for 10/100 Connections
- Fiber Conduit for all GigE and 10GigE connections
- All suites fully interconnected
  - Scalable trunk to NY facilities
  - Multiple Fiber Conduits per suite



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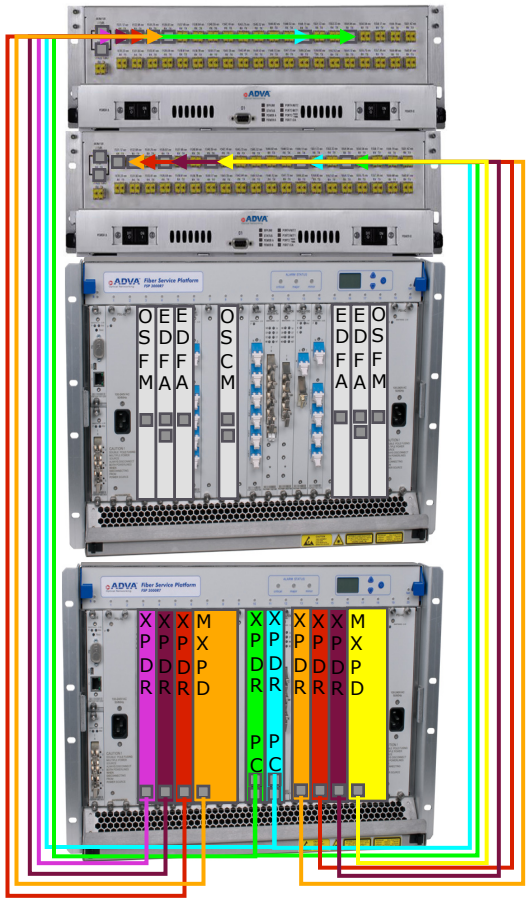
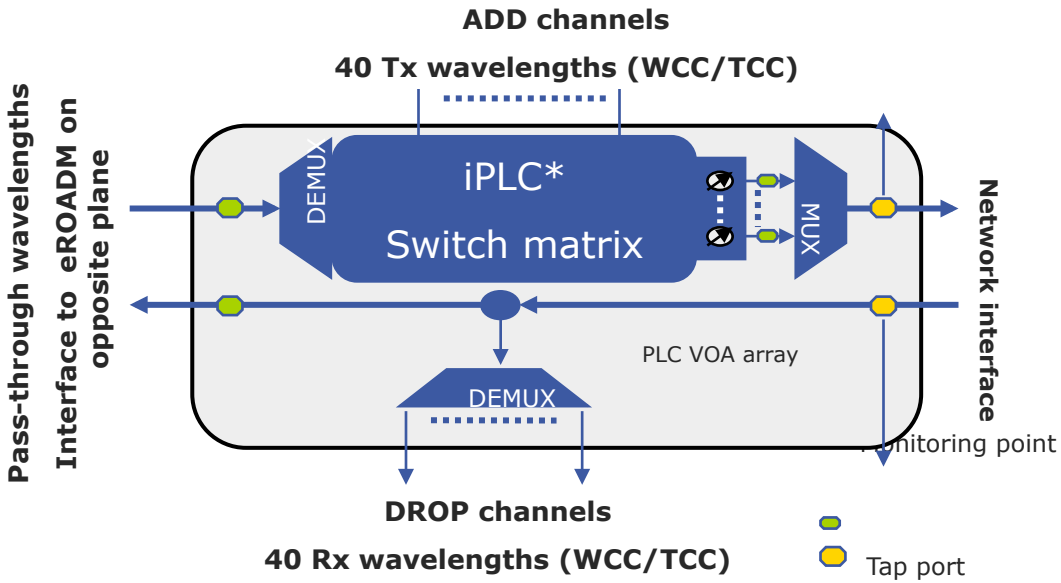
PAIX New York Overview – Future Plans



ADVA ROADM Benefits

- More channel capacity with 40 channels
- No constraint in channel usage versus banded approach
- Any alien wavelengths can be connected directly to the ROADM
- Easy expansion beyond 3 sites for future growth



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