NEXT GENERATION INFRASTRUCTURE

Update for NOX NeXUS
September 25, 2020

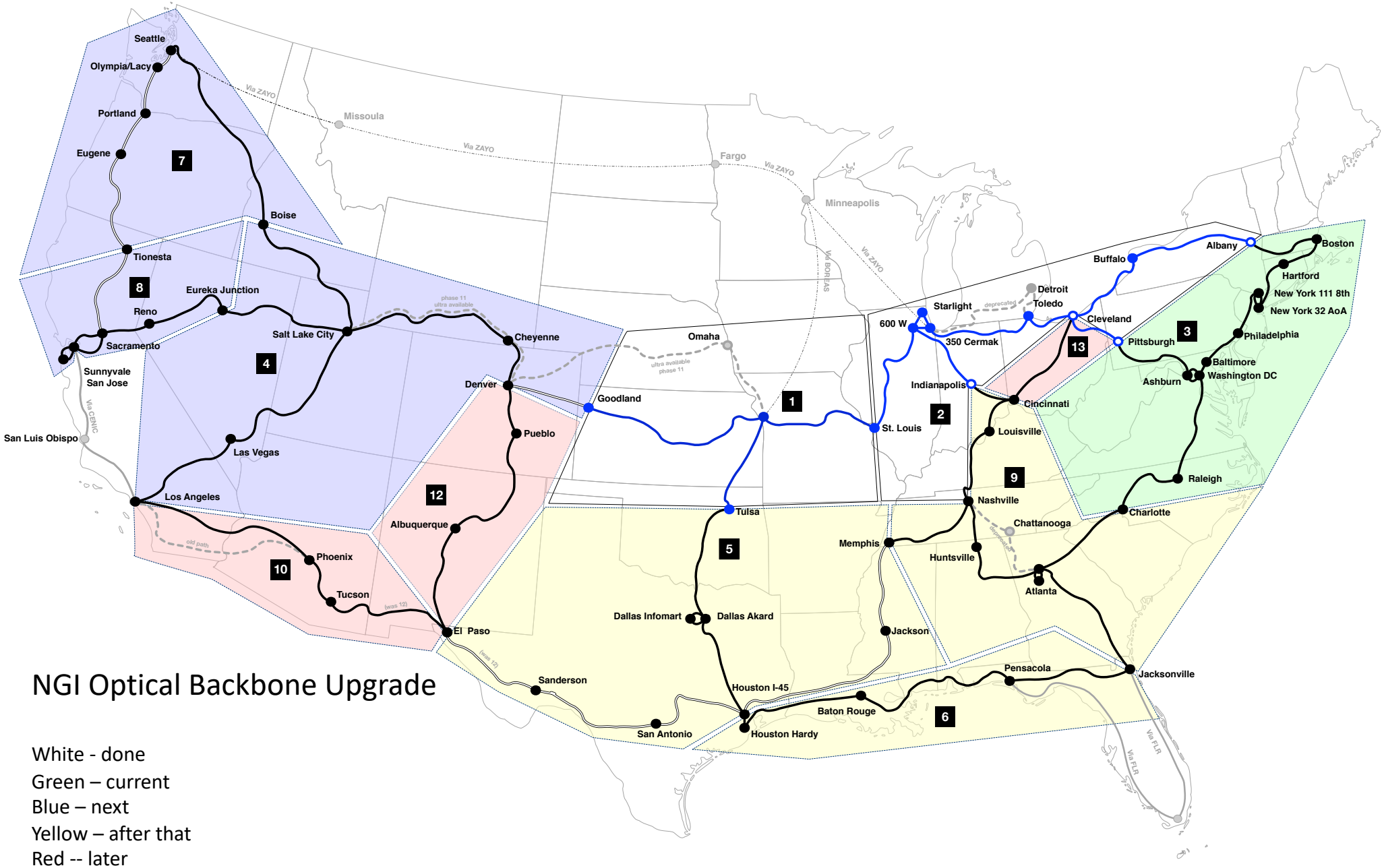
NGI Happenings

- Currently implementing NGI Nationwide Optical Upgrade (Gary Pierce)

- Closing Contracts on selection of Packet Network Provider
  - Be sure to attend TechExtra October 6-7 for announcement
  - Benefits to the community
  - Significant Automation and Orchestration Efforts

- Infrastructure sharing
  - Collaborating with CENIC to use their Coastal fiber path between LA and Sunnyvale which now supports 400G waves

- NGI Platform takes affect July 2021
  - Small Platform adopters can obtain 2nd connection now ($2K / month)
  - Large Platform adopters can request an additional 100G port starting Jan. 1 at no fee



NGI Optical Backbone Upgrade

White - done
Green – current
Blue – next
Yellow – after that
Red -- later

As of 9/25/20

NGI Optical Phase Map
C Wilkinson, R Milford et al
2020-AUG-27

Getting to the Cloud

Internet2 Peer Exchange
I2PX

Use of the community's existing 3Tbps of peering capabilities to the major cloud providers for access to cloud SaaS services (e.g. Zoom or Office 365)

Internet2 Cloud Connect
I2CC

Enables USDA ARS to use the Internet2 and USDA ARS infrastructure to obtain up to 5Gbps of "direct-connect" private Layer 2 and Layer 3 access to Microsoft, Amazon and Google cloud platforms at no additional fee. Extending your data center to the cloud. (Cloud provider fees apply)

Internet2 Rapid Private Interconnect
I2RPI

Provides private 10G interconnections at major peering points across the country at low annual rates. Leverages current investment in USDA ARS and Internet2 infrastructure to reach cloud providers, for dedicated access or improved resiliency. May be used to connect to any commercial provider located at the peering point

Networking for Cloud

- Cloud Connect (I2CC)
  - Over 100 Campuses using I2CC
  - Over a dozen using RPI
  - 100G connection to Azure in San Jose (pushing for more)

- Cloud Services
  - Cloud Services Technnology Arhitecture Advisory Committee (CSTAAC) (Dave Marble)
    - Improvements to Cloud Connect Portal form Working Group Input (Jefferson Burson)

Other Service Updates

- I2PX Peering Upgrades
  - Significantly increased peering capacity through I2PX and home network providers
  - Quadrupled peering with Oracle to support Zoom
    - Was 2x1x10G, and is now 2x4x10G (LAGs)
    - Utilized 80% in first 3 days
    - Oracle offered to upgrade the 4x10G's to 100G ports
- DDOS – CENIC (4) and Northern Lights (U. MN) increase Subscribers to 13
  - CENIC adds 50 Tenants to the Service supporting U of C schools (10) and K-12 districts (40)
  - Northern Lights joins to support security for MN Dept of IT after events in Minneapolis
- rIPcord - Essential capacity is in place and available in emergency
  - Plan for community work group to define and select business model this Gall

Reboot of NAOP

Member	Affiliation	Title
Melody Childs	Texas A&M University	Vice President for Information Technology and CIO
Sarah Christen	Cornell University	Director, IT Infrastructure
Michael Corn	University of California - San Diego	CISO
James Deaton	GPN (Great Plains Network)	Executive Director
Bernard S. Gulachek	University of Minnesota - Twin Cities	VP for Information Technology and CIO
Jonah Keough	PNWGP (Pacific Northwest GigaPOP)	Managing Director
Derek Masseth	Sun Corridor Network (Arizona)	Executive Director
Shawn McKee	University of Michigan	Research Scientist
Michele Norin	Rutgers, The State University of New Jersey	Senior Vice President and Chief Information Officer
Daniel Schmiedt	C-Light	CEO
Antonius (Frank) Seesink	University of North Carolina - Chapel Hill	Senior Network Engineer/NTAC Rep
Tracy Smith	University of Illinois - Urbana-Champaign	Deputy CIO for Innovation & Technology Strategy
James Stewart	UETN (Utah Education Telehealth Network)	Chief Technology Officer- UEN Technical Services
Scott Valcourt	Northeastern University	Associate Teaching Professor
Robert Vietzke	Internet2	Vice President, Network Services
Rodney Wilson	Ciena Corporation	Chief Technologist, Research Networks

Tuesday October 6 – Plenary & Packet Announcement
Wednesday October 7 – Advanced Network Track with Overview of NGI Optical, Packet and Automation Migration
Throughout the Fall – Advance Network Deep Dives

No Fee for Members
Register Here
https://www.internet2.edu/news-events/events/techextra-2020/#registration