

Networking updates: CHECO CIO meeting

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Acronym soup

- University Corporation for Atmospheric Research (UCAR; <http://www.ucar.edu>)
 - National Center for Atmospheric Research (NCAR)
 - Front Range GigaPoP (FRGP)
 - UCAR Point of Presence (UPoP)
 - Bi-State Optical Network (BiSON)
- Questions and discussions throughout as needed – and as for acronym soup ingredients, please ask if I miss one or check decoder page at <http://bit.ly/acronym-soup>

Front Range GigaPoP (FRGP)

- <http://www.frgp.net>
- Netflow replacement coming
- Continued LANDER support
 - NANOG presentation
 - Other CSU projects: support for Rover, NDN, BGPmon too
- PerfSonar deployments
- Internet2 NPW April 3-4 at NCAR

FRGP

- Upgraded all routing hardware to Juniper MX480s
- Colocation updates
 - 1850 Pearl
 - 1200 Larimer
 - 910 15th (moved colocation from 10th to 6th floor)
- peering
 - 10G Google peering active at 910
 - Comcast
 - TR/CPS – largest single FRGP/UPoP usage
 - Akamai
 - Netflix (will deploy soon)

BiSON

- Bi-State Optical Network (BiSON)
- Major fiber move on BiSON-owned Mcleod fiber 10/ 13
 - Looking at move and replacement options

UCAR Point of Presence (UPoP)

- <http://upop.ucar.edu>
- 10G MOE coming
- Who using what for streaming?
 - Denver Open Media foundation question

NEON

- Boulder HQ connection
- national build out / project
- FRGP/ UPoP involvement pending fiber path
- <http://www.neoninc.org>

Internet2

- New cost model
- <http://www.internet2.edu>
- <http://www.internet2.edu/network/>
- <http://www.internet2.edu/netplus>

NLR/ CBREC

- CBREC meeting regularly
- Considering interconnecting east/ west via NLR existing lambdas/ transponders
- Meeting with NLR this week

Zayo

- Denver metro (and some beyond) fiber build out
 - <http://www.zayo.com/news/zayo-expands-network-presence-denver-metro-area>
 - <http://www.zayo.com/interactive-network-map>

CDOT

- Lots of fiber activity in various parts of the State
- I-25 build – pending EAGLE-Net
- US36 fiber
- S CO?

CO Broadband Roundtable

- Presentation to the Governors Cabinet
- executive order designating OIT as the coordinating agency for broadband activities signed
- CDOT planning comments filed
 - integrate telecommunications planning into the CDOT planning process

CO BB RT moving forward

- Core Constituents (Meet Quarterly)
 - A representative of each LTPT
 - Broadband Implementers (e.g., CTN, EN)
 - Government partners (e.g., CDOT, PUC)
 - State elected officials (2-3 from each chamber)
 - regional interest groups (e.g., club 20)

CO BB RT - moving forward

- Working Groups - meet as needed
 - at least monthly, 10-12 per group
 - funding
 - policy
 - digital literacy
 - coordination and collaboration
 - local engagement
- private carrier collaboration

Internet2 K20/ SEGP

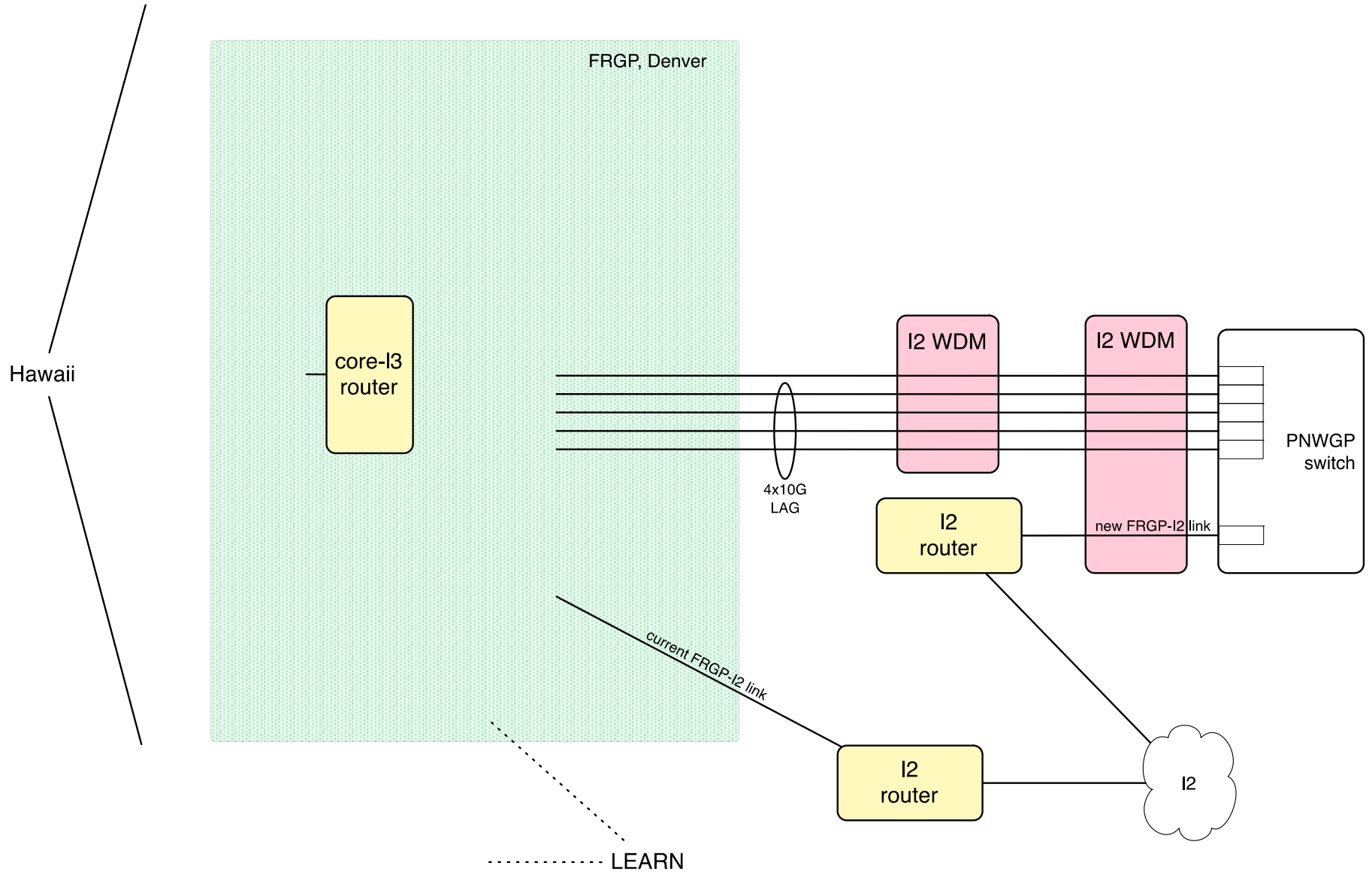
- good interactions and links between content providers and K-20 groups looking for content
- UCAR education and outreach involvement
- as one of the SEGP reps for CO - please let Jeff know about any K-20 interest, content or user side questions or issues
 - will coordinate with EN (other two reps there)
- Jeff is also serving as liaison between this k20 group and Quilt
 - (e.g., SEGP connectivity survey).

WRN

- Regular WTC and WPC calls
- LEARN has joined WRN
- WRN I2 KC Move to Chicago
- Giving up the backhaul circuit to KC in exchange for Starlight backhaul

FRGP Engineering Diagrams

WRN



The Quilt, Inc.

- <http://www.thequilt.net>
- New QEC membership
- Selected updates from Feb-2013 meeting

Quilt items

- Big Data – ESNNet
 - key differentiator for serving the science community is that we have to work together (very different than simple contractual/commercial agreements)
 - the entire infrastructure from universities on to regionals and national backbones
 - tremendous growth here will impact us all
 - ESNNet sees a factor of 10 growth every 4 years

Quilt items

- RON Big Data Panel (3Rox, LEARN, CENIC, MAX)
 - Question for CO/WY: to what extent do we think we are already aware of 'campus expectations' naturally as part of our regular meetings?
 - or do we need to get that separate item on the mind of our reps - and get them to report back?
- CENIC quote: 1G everywhere, 10G anywhere, and 100G somewhere

Quilt items

- **ARN: Advanced Regional & State Networks**
 - ARN Big Data Workshop coming soon – more later
- **NOAA: Federal Government OMB Mandate for Trusted Internet Connections (TIC) and Potential Opportunities for Regional Networks**
 - all Federal Civilian Agencies will be impacted
 - <http://www.dhs.gov/trusted-internet-connections>

Quilt items

- OpenFlow: interest now as a way to deal with complexity (but are you just trading one set of complexities for another?)
- Virtualization of the network; not trivial; what is the gain?
- may be useful for peering; route on bit fields in both layer2 and 3? Time of day policies?
- not production now; worth going to for certain scenarios though; keep as research environment
- do not push and harden to production environment just yet

Quilt items

- Briefing: Report from *Above-the-Net Services Provided by Regional Networks*
 - how to keep catalog fresh and work with Internet2 offerings and others that will not fit for them but might well with regional

Misc/ Other

- v6 workshop coming up - North American IPv6 Summit 2013
 - 17-19-Apr-2013
 - <http://rmv6tf.org/na-ipv6-summit/2013-north-american-ipv6-summit>
 - <http://rmv6tf.org/>

Misc/ Other

- any STEM resources for Teri Eastburn (UCAR Education and Outreach)
 - please provide contacts to Jeff (or Teri directly) if any contacts or interest in K12
 - Working on STEM K-12 education/outreach (via video - current grant); UCAR science oriented specifically

Discussion

- ✧ Any follow up questions or feedback?
- ✧ Other items?