

NTNC Annual Meeting

Hosted by Washington State University, Pullman, WA
and University of Idaho, Moscow, ID
July 21, 2014

Present:

Marc Wallman, NDSU	Paul Kern, SD BOR	John Krogman, UW Madison	Robert Aylward, Univ WY	Randy Gaines, ID State Univ
Bruce Curtis, NDSU	Stan Harris, U MT	Mike Schlicht, U Wisc System	Dave Lois, WiscNet	Tom Ambrose. WSU
Dave Farmer, UMN	Michael Bloom Univ MT	Pat Christian U – Madison	Warren Wilson, Black Hills State Univ	, Asst CIO MSU
Mike Rechtenbaugh, EROS	Mike Adelaine, SDSU	Steve Fleagle Univ Iowa	Joe Adams, Merit	Allen Schmoock,
Michael Klostermon, EROS	Roberta Ambur, USD	Dan Ewart, Univ ID, IRON	Robert Duncan, Merit	Mike Ruhrdance, Univ NE Lincoln
Jeff Mahlum, SDSU	Bob Stovall, Merit	Kim Owen, NDSU	Amy Philipson, PNWGP	Gordy Pace, Univ MT

Meeting minutes

1. President Steve Fleagle opened the meeting, reviewing the agenda and housekeeping items for the conference.
2. Minutes from the 2013 NTNC Annual meeting and the current financial report were presented and approved.
3. Cyber Range presentation by Joe Adams, Merit Network (www.merit.edu/cyberange)
4. Internet2 updates on current initiatives were presented by Steve Fleagle in absence of an Internet2 representative. Highlights included updates on current initiatives including:
 - a. PBS proof of concept (Univ NE worked with one of the pilot sites),
 - b. Deepfield (<http://www.internet2.edu/products-services/performance-analytics/deepfield-analytics-service/#overview>)
 - c. UNIZIN (<http://unizin.org>)
 - d. TIER (<http://www.internet2.edu/products-services/trust-identity-middleware/>)
 - e. Broadening the Reach workshops (<http://meetings.internet2.edu/2014-05-broadening-reach-nsf-workshop/>)
 - f. Technology Exchange (<http://www.internet2.edu/news-events/events/technology-exchange/>)
 - g. Internet2 is developing support for federal labs (USDA – Agricultural Research Services).
 - i. (http://meetings.internet2.edu/media/medialibrary/2014/03/25/20140409-wiggans-ars_big_data_ag_panel.pdf)
 - USDA is looking to connect all of their labs with a 100 G network; Internet2 wants to identify these efforts and encourage collaboration on network access.
5. State Updates:
 - a. IA
 - i. Boreas upgrade completed
 - b. WI
 - i. Separation between WiscNet and UW System will be complete by end of January 2015. CIC completed infrastructure upgrade in Chicago including new suite.
 - c. MN
 - i. BoreasNet main ring upgrade is complete; Kansas City node soon to be completed.
 - ii. MN is on course to get their own connection in to the AL2S connection in Mpls that will help supplement the AL2S service between Mpls and KC and also benefit NTNC members by providing additional routes at a lower cost.
 - d. SD

- i. REED network is now approx. 6 years old and needs refreshing. Router upgrade (100 G capable) is planned in 2015.
 - ii. School of Mines and SDSU are looking to go through GPN to access Netflix.
 - iii. SDSU is working with USDA on their research network.
 - iv. SURF update provided by Mike Rechtenbaugh: Lab is connecting to classes on the surface and other labs out of state. Local support and the Department of Energy provide consistent funding stream. Two NSF grants have been secured for the Lux and Marjorana projects.
 - v. EROS updates: the Center has seen more than 100% increase in network traffic over the last year. Google is driving the need for all Landsat daily data. The NTN connection has allowed Google to download 600 Tb last year. In 2015 a new European satellite (Sentinel-2) is being launched and will generate 2-3 times the amount of current satellites so growth will continue.
- e. ND
- i. The state is negotiating for new network
 - ii. NDSU has completed two NSF grants, and looking to finish third grant in partnership with the state Tribal Colleges.
 - iii. Campus core network updates are being completed, involving upgrade/installation of approximately 800 wireless network access points. For residence halls NDSU is looking at small wireless access points, managed and attach to the wall.
- f. WY
- i. Now have a new CIO for the state. Governor is seeking a second term and is running on platform of getting 100G service broadband across the state.
 - ii. The BISON ring is connecting to U WY and will also connect K12s in the state.
- g. ID
- i. IRON completed full 10G connectivity across the state and to the research site using CC-IIE funds.
 - ii. A large privately funded grant expanded IRON's distance ed infrastructure for the state, including server and storage, learning management, videoconference capability – all building up to full capacity.
- h. MT
- i. Univ MT-Missoula is changing Internet2 connections and moving toward 100G connection to be completed by fall semester. Also changed commodity Internet connection to PNWGP.
 - ii. MT State Univ-Bozeman: upgraded campus core to 100G; implemented separate commodity back up and significant wireless upgrades. Will sign with PNWGP for Internet2 connection.
- i. WA
- i. PNWGP provides K20 network for WA: 40G state backbone with separate 10G backbone allocated for government.
 - ii. Upgraded Pacific Wave, worked with CENIC to upgrade PW peering along west coast
 - iii. Now have a ring partly on land and partly under water connected with CANARIE and BCNet; By end of 2014 will bring up 100G full diverse ring
 - iv. PNWGP 100G science DMZ capability: Connects to U WA and to CENIC – will have two 100G waves between CENIC and PNWGP. Others are welcome to connect to the science DMZ fabric.
 - v. Between Seattle and Spokane, upgrading to 100G; WREN will have a 100G wave on Seattle/Boise path.
- j. MI
- i. Finishing 4 year project from the stimulus funded builds
 - ii. Collaborating with OARNet, meeting them to enhance shared path between Toledo and Detroit to exchange waves. Merit extends to Cleveland for Internet2; also extends to Chicago for redundancy.
 - iii. Partnering with WiscNet to build across UP of MI and connect to WiscNet in Ashland and at Green Bay. Also allows Superior an alternate path thru UP and down through Green Bay.
 - iv. Michigan Lambda rail (MiLR milr.org/)- in operations for approx. 10 years and operates the network for this group. They are not upgrading to 100G at this time.

- k. NE
 - i. 100G network should be ready to turn up in next couple of months
 - ii. A major area of focus is disaster mitigation; they will be signing up for Crashplan (Internet2 Net+) in the near future
 - iii. Access points in residence halls: in the process of moving toward one access point in every hall. Sporting venues have about 1000 access points.
 - l. AK
 - i. Group of investors looking to run connection from Tokyo to London – initially they intended to jump off only at Prudhoe Bay, but have since added more sites.
6. Exploring paths to owned infrastructure:
 - a. Background and ‘what’s next’?
 - i. Options include owning our own infrastructure. Need to account for lead-time required to move forward and to consider Internet2’s existing leased infrastructure along the same path.
 7. What does “owned infrastructure” mean to us? How does Internet2 fit into this picture?
 - a. If one region/state has an opportunity – how can NTNC enable that entity to take advantage of it?
 - b. How does NTNC build agility to meet future needs?
 - c. How many states are getting close to seeing the current IRU end?
 8. What constraints do we have?
 - a. Do we have issues that are facilities based?
 - b. What services will be needed in 10 years?
 - c. The trend toward the Internet of things/sensor networks will dwarf any kind of activities we see now. How will this impact the landscape? Are campuses going to remain the center of information and where it flows from?
 9. What are our next steps? Options? What might a vision look like (10 years ± ?).
 - a. How to align NTNC to anticipated expansion of infrastructure
 - b. Consensus: membership prefers owned infrastructure, look to contract with teleco’s for dark fiber and O&M.
 - c. Develop a “NTNC” talking point document; an rfi / white paper that serves as a go-to document that includes a position statement.
 - d. Opportunities: Owned assets, railroads
 - e. Engage in discussion with potential partners
 10. What are potential problems/challenges?
 - a. IRU’s expire and some carriers have indicated their desire to not do IRU’s in the future
 - b. Teleco products interfere with research and education (both cyclical and evolutionary)
 - c. Define the time line and strategic issues that will best serve NTNC
 - d. Ensure our institutions have the infrastructure they need for the long term.
 - e. CENIC/PNWGP work to keep up ongoing conversations with partners who may potentially be interested in going there with smaller RONS like NTNC.
 11. CANARIE updates
 - a. Potential for negotiations with CANARIE regarding their waves that link in Mpls? Right now they have waves that go from Winnipeg to Chicago, going through Mpls but not stopping. If CANARIE is not an option, re-routing is another option. Several groups also have capacity on that fiber path.
 - b. In ND, NTN-ND has fiber up to GF and could extend up to Winnipeg going through Emerson. Mid Con (who provides fiber to GF) can go all the way to Dawson, MB. Initial efforts included working with MB Hydro when the fiber was less expensive than they are now. There is interest between UND and Winnipeg for discipline related work. MT is also exploring connections north into Calgary.
 - c. Encourage Winnipeg and MRNet to get that conversation going. From the ND perspective it’s roughly 100 miles of build but need the commitment from the CA side.
 - d. ORANO (Ontario network?) was involved on the Ontario side and completed a route that went to Fort Francis (across the river from International Falls, MN).
 12. Web site updates:
 - a. Target audiences moving forward -

- i. Parts of the site are more for members; parts that could be targeted at “potential partners”, vendors, and potential members
- b. Include technical contacts for each state/ each regional network that partners with NTNC. Where to go to on each member’s website?
 - i. Include highlights of your work, collaborations, research, and uses of the network.
 - ii. Contact info for point of contact
- c. Consensus of group is in favor of moving the web site to Univ MT, continuing contract with them for web management.
- d. The Map: initially it was built to show the big “void” and why we wanted to fill it. Now needs to identify the vision for the future.
- e. Historical narrative:
 - i. Mike A. previously wrote a draft and circulated for review; retrieve and review again (Mike, Roberta, KO to revisit)
- f. Goals and objectives (<http://www.ntnc.org/about/goals.php>)
 - i. The **primary** NTNC goals are:
 1. **Bullet 1: (current)** to provide a premier research network that connects the Northern Tier states, from current endpoints in Chicago, IL and Seattle, WA, to ensure that every Internet2 member in the Northern Tier has the ability to establish an appropriate high speed connection to a national or international aggregation point;
 2. **(suggested change)** to *continue* to provide a premier research network that connects the Northern Tier states, from current endpoints in Chicago, IL and Seattle, WA, to ensure that every Internet2 member in the Northern Tier has the ability to establish an appropriate high speed connection to a national or international aggregation point;
 3. **Bullet 2: (current)** to maximize network peering and interconnection opportunities between Northern Tier networks and other research networks and networking consortia;
 4. **(suggested change)** continue to maintain and develop new relationships with orgs such as (teleco’s Internet2 research labs, etc) Word in such a way that a potential partner reading this knows that they’re talking about “me”
 5. **Bullet 3: (current)** to provide a network which can serve as a foundation for regional economic development, as well as academic and educational development;
 6. **Bullet 4: (current)** to leverage intellectual, political and financial resources across the region to expand relationships with state and national leaders, attract greater federal interest, maximize opportunities for grant and contract support, and create greater leverage with vendors;
 7. **(suggested change)** to leverage intellectual, public sector and financial resources across the region to expand relationships with state and national leaders, attract greater federal interest, maximize opportunities for grant and contract support, and create greater leverage with vendors;
 8. **Bullet 5: (current)** to enhance national security and network redundancy by establishing one or more interconnection points between NTNC and Canadian national networks.
 9. **(suggested change)** suggest removing this last statement?
 - ii. The **initial** NTNC objectives are:
 1. **Bullet 1: (current)** to create NTNC networks and shared cyber infrastructure in a manner governed by flexible acceptable use policies (e.g., be AUP free);
 2. **(suggested change)** to ensure....
 3. **Bullet 2: (current)** wherever possible, to secure network backbones as “fiber assets” connecting NTNC member sites;
 4. **Bullet 3: (current)** in network construction, to build a regional locus of optical networking in the Northern Tier with core east/west links supplemented by

redundant, “mesh connectivity” through redundant east/west links and specific north/south connections;

5. **Bullet 4: (current)** to catalyze individual state activity in support of the NTNC mission and goals, by developing coordinated communication and marketing plans and seeking to integrate Northern Tier goals and objectives into state and local network goals;
6. **Bullet 5: (current)** to develop relationships with regional, national and international network organizations, particularly the Internet2, National Lambda Rail, the Pacific Northwest Gigapop, and the CIC and Northern Lights Gigapop.
7. **(suggested change)** edit out NLR, update others

iii. **Other suggestions:**

1. Tighten up the wording on all to minimize text
2. Gordy to look at moving content around so it flows better and is easier for readers to navigate through
3. Member sign-on? Hard to maintain
4. For member area: maybe just a simple purpose pw like “ntnc” to allow us to keep out web crawlers, etc
5. Suggest including all the member institutions on the home page so a visitor can tell, “who are these people?”
6. Consensus by the group that we are currently not too concerned about keeping meeting minutes pw protected: we might actually be inviting unwanted attention by having a pw protected area on the site
7. Include email addresses?

9. 2015 annual meeting In Ann Arbor, MI (Bob Stovall) at campus location

10. Beyond 2015 – locations?

- a. Suggestions: in alternate years should we consider meeting just before or after GPN in their location. Possibly a joint meeting with GPN at some point; not concurrent, but a day ahead or day after

11. Elections:

- a. President: Marc Wallman
- b. VP: Matt Riley
- c. Sec/treas: Kim Owen