



Great Plains Network

Kate Adams, GPN

Who Am I?

I am one of three Great Plains Network employees.

- Official title is Research Assistant
- System Administrator
- XSEDE Regional Champion

Others:

- Bill Mitchell, Executive Director
- Greg Monaco, Director for Research & Cyberinfrastructure

About GPN

The Great Plains Network is a consortium of universities in the midwestern states, dedicated to supporting research and education through the use of advanced networking technology.

- Founded in 1997
- 1st regional to connect to Internet2 backbone
- 1st to upgrade to 2 x 10g
- Administrative services via University of Missouri
- Three aspects: Community, network and cyberinfrastructure

Community Strengths

- Excellent faculty and institutions
- 25 year history of working together
- Large scale issues which stretch our thinking
- Optical network interconnects

Large - Scale:

GPN Covers
430,000 square
miles

A population of
around 17.5M. This
is roughly 1.6 times
as large as Texas in
landmass but only
about 1/2 the
population.

Average
population/sq. mile
in GPN is 40.



Membership and Governance

- 22 Regular Members in 6 states:
 - MO, KS, NE, SD, OK, and AR
- 3 University Affiliates
 - IA State, University of MN, WiscNet
- 3 Corporate Affiliates
- Each university member has an Institutional Representative

Executive Council

- One member per state
- Elected by Institutional Reps from the state

GPN Strategic Plan

Mission: ...support the research and education missions of our members through the use of advanced cyberinfrastructure.

Vision: ...develops and maintains a high performance network that meets the needs of the membership's research community, is a resource for cyberinfrastructure to the membership and supports multi-institutional, multi-disciplinary research and education initiatives that require advanced cyberinfrastructure.

Strategic Plan

Strategic Direction 1: Community

GPN will advance the spirit of community through communication, professional development and partnerships with other organizations.

- Newsletter (Now a blog)
- Professional Development Program
- Partnerships
- Identify & Communicate Emerging Trends
- Annual Meeting (more later)

Community Guidance Groups

- GPN Institutional Representatives
 - Matt Younkens, Director of Infrastructure
- GPN Executive Council
 - James Deaton, OneNet
- Research Advisory Board (one per member institution)

Strategic Plan

Strategic Direction 2: Networking

GPN will provide leadership in advanced networking at the regional and national level by promoting technical, collaborative and informative efforts on behalf of the membership

Network Philosophy

Quick to Respond

GPN should be ready to implement new services as they become available, balancing current investments to be 'ready', while not buying earlier than needed.

Value-based decisions

Decisions should be based on delivering value to our membership, with a solid cost/benefit analysis.

Philosophy in Action

- Backup routes through KC and Chicago, working on redundant southern route
- In the process of a networking equipment refresh
 - Juniper MX960 platform
 - Current timeline: Complete by December 2012
 - Do everything current equipment does plus
 - 2 100G ports that are ready to go
 - Will support OpenFlow
 - Will have better support for dynamic bandwidth provisioning, such as I2 ION service
- Always looking for new redundant routes

GPN's network deployment is guided by

- Network Program Committee (NPC) and
- Network Technical Advisory Committee (NTAC)

To get involved, email

- d1m@areon.net (Dave Merrifield)
- bill@greatplains.net (Bill Mitchell)
- kate@greatplains.net

Strategic Plan

Strategic Direction 3: Cyberinfrastructure

GPN will help to build a regional community of practice in the application and use of cyberinfrastructure in support of member missions and the competitiveness of the region.

CI Objectives 1

- Facilitate use of existing cyberinfrastructure resources and applications at campus, state, regional and national levels.
 - Globus Online
 - Shibboleth/InCommon Identity Management
 - XSEDE Campus Champion Program
 - Calendars
- Identify and promote promising CI and research collaboration opportunities among members.
 - Planning Grant from ILMS
 - Arthropod genomics storage problem
 - MCBIOS - MidSouth Bioinformatics Consortium (Upcoming meeting in Columbia, MO)
 - Greater Western Library Alliance

CI Objectives 2

- Facilitate identification and development and implementation of cost-effective services.
 - Filesender email file transfer
 - Regional storage
- Partner and/or provider in research projects that advance the future of innovative, Internet-based technologies.
 - gp-geni initiative
- Participate in and contribute to CI workshops and conferences
 - MST, OK Supercomputing Symposium, GPN Big Data Summit

How GPN is Pursuing These Goals

- Projects that foster and rely on collaboration and cooperation
 - Regional storage will use Shibboleth for access. The ids can be via InCommon, or an approved id provider.
 - A proof of concept has been demonstrated, the next step is a more robust prototype for testing
 - GP-GENI (Global Environment for Network Innovation) Collaboration (multi-university collaboration across GPN)
 - Partnership of researchers, libraries and IT for curation and storage of research data

Regional Storage Project

<http://dropoff.rnet.missouri.edu> is where to start.

- Uses Shibboleth to authenticate
- Files expire in 14 days, not meant for long term storage

Globus Online Pilot Storage Project

- Globus Online is a way to efficiently move files between Globus end points. (XSEDE)
- Globus is piloting Globus storage
 - Globus will provide a (small) amount of storage space on their servers.
- Greg has tested out Globus online as was impressed with the transfer rates once he was on Globus end points. <http://www.greatplains.net/display/Home/2012/09/17/Putting+Globus+Online+for+Data+Transfer+to+the+Test+%28Part+1%29>

ILMS Planning Grant

Institute for Museum and Library Sciences

- Joint effort between KU, GWLA (Great Western Library Alliance), and GPN
 - Will collect and analyze data from regional universities about storage plans
 - Develop a two day workshop to explore issues, policies, and practices related to data management
 - Develop a plan for funding and a strategy for a regional storage test bed

CI Guidance Group

- Cyberinfrastructure Program Committee (CIP)
- CI Working Groups on Storage, HPC, EOT

Also, Various mailing lists for various interests

- Bioinformatics
- General CI interests
- Data management
- See <http://lists.greatplains.net/mailman/listinfo/> for more information

To get involved, email the particular list or

- greg@greatplains.net
- kate@greatplains.net.

Annual Meeting

Held every year in Kansas City, MO the first Wednesday thru Friday after Memorial Day.

- Networking, library, and CI tracks last year
- There was also a grad student meeting where the topic was networking research
- This year's tracks will depend on you! We want to make the meeting relevant and helpful.
- Good place to meet collaborators

Questions?