July 25th, 2012 – 1:00 pm ET

INTERNET2 CIO CALL
Community Call with Internet2 Member CIOs

• Thank you for joining today’s call. We will begin soon.
• All participants joining the phone bridge will be muted.
• The phone lines will be open during discussion times within the presentation.
• Please add your questions and comments to the Adobe Chat window.
• If you are on the phone bridge, please turn down the volume on your computer.
For today

• Welcome
• Preview of our Fall 2012 Internet2 Member Meeting (Sept. 30 – Oct. 4; Philadelphia PA)
• CEO Update
• CFO Update
• Innovation Platform and new network deployment Update
• NET+ Services Update
• Time for Questions
• Close
Meeting Theme:

- **Community**: Understanding and embracing our community’s ability to innovate and transform research, education and economies

- **Innovation**: A deeply programmable, bandwidth-abundant innovation platform creating an environment for next-generation service delivery

- **Transformation**: Community developed services and applications that transform global research and education.
Keynotes

• Monday, Oct 1\textsuperscript{st} – Global Community
  – John Sexton, NYU President; Sam Pitroda, Advisor to the Prime Minister of India

• Tuesday, Oct 2\textsuperscript{nd} – Transformation
  – Farnam Jahanian, NSF Assistant Director, CISE

• Wednesday, October 3\textsuperscript{rd} – Innovation
  – Claudio Allocchio, GARR Sr Technical Director; LOLA (Low Latency Audio/Video) Demo and Presentation
Important Fall Member Meeting Dates

- Early registration rate ends August 1\textsuperscript{st}
- CIO Constituent Meeting Mon. pm Oct 1\textsuperscript{st}
- Combined CIO/Connector Meeting Tues. am Oct 2\textsuperscript{nd}
- All Constituent Lunch Meeting Tues. Oct 2\textsuperscript{nd}
- CIO focused program sessions Tues. pm Oct 2\textsuperscript{nd}
Other Dates to Keep in Mind

– TIP, January 13 – 17, 2013, Honolulu, HI

– Annual Internet2 Member Meeting, April 21- 24, 2013, Arlington, VA
Governance & Board Update

July 25, 2012

Dave Lambert
President & CEO
New Board Structure

The new Internet2 Board Governance Structure was approved in November 2011. The significant change to the process is to have the Board chosen through a direct election process by the member constituencies. As outlined in the Bylaws there will be 17 Trustees elected or appointed for 3-year terms* (staggered), with the following composition:

5  (Minimum of) University Member Presidents/Chancellors
3  University Member CIOs
1  Industry Member representative
1  Network Member representative
1  Researcher (Network or Discipline) Member Representative
5  (Up to) Appointed Representatives - selected to represent relevant expertise as determined by the Board including financial, legal, constituent or affiliate/agency representation.

Internet2 CEO
2012 Board of Trustees

**Presidents**
- Michael McRobbie, Indiana University (Chair) 2009 - 2015 (non-eligible)
- Linda Katehi, University of California, Davis 2011 - 2014 (eligible)
- Brit Kirwan, University Maryland System 2009 - 2015 (non-eligible)
- David Leebron, Rice University 2010 - 2013 (eligible)
- John Sexton, New York University 2011 - 2014 (eligible)

**CIOs**
- James Hilton, University of Virginia 2012 - 2015 (eligible)
- John Kolb, RPI 2011 - 2013 (eligible)
- Charlie McMahon, Tulane University 2010 - 2013 (eligible)

**Industry**
- John Evans, Evans Telecommunications 2012 - 2015 (eligible)

**Network/Connector**
- Joe Freddoso, MCNC 2012 - 2015 (eligible)

**Researcher**
- Larry Peterson, Princeton 2008 - 2014 (non-eligible)

**Appointments**
- Eric Isaacs, Argonne National Laboratory 2012 - 2014 (eligible)
- Tim Lance, NYSERNET 2007 - 2013 (non-eligible)
- Steve Relyea, University of California, San Diego 2009 - 2015 (non-eligible)
- Jack Suess, University of Maryland, Baltimore County 2007 - 2013 (non-eligible)
- Alan Whitney, MIT 2008 - 2014 (non-eligible)

**Internet2 CEO**
- Dave Lambert
Board of Trustees

Executive Committee
- BOT Chair
- BOT Vice/PPC Chair
- A&F Chair
- NC Chair
- Internet2 CEO
  (5)

Audit & Finance Committee
- Financial Expert
- 3 BOT Members
- BOT Chair
- CEO (ex-officio)
- CFO (ex-officio)
  (7)

Program & Priorities Committee
- BOT Vice Chair
- 2 BOT Constituent Reps
- 3 Exec Officers of University Members
- Internet2 CEO
  (7)

Nomination Committee
- 3 Board members (one serves as Chair)
- 3 Constituent Members Reps
- 2 Experts as designated by the Board/as needed
  (8)

Special Committees
- BTOP

Special Committees

Special Committees
Program Advisory Structure

The Executive Leadership team members for the Program Advisory Groups will in consultation with the Nominations Committee be responsible for the transition from the current Advisory Council structure to implementation of the Program Advisory Groups (PAGs).

- The initial Program Advisory Groups (PAGs) will be:
  - External Relations Program Advisory Group  
    - Executive Sponsor: John Morabito
  - Member Relations Program Advisory Group  
    - Executive Sponsor: Ana Hunsinger
  - Network Services Program Advisory Group  
    - Executive Sponsor: Rob Vietzke
  - NET+ Services Program Advisory Group  
    - Executive Sponsor: Shel Waggener
  - Program Advisory Group - Research  
    - Executive Sponsor: Steve Wolff
  - Standing Committee Int’l Strategies (SCIS)  
    - Executive Sponsor: Ana Hunsinger

- Each PAG will have at least one Board member
- All current AC members whose terms have not expired shall have a seat on a PAG should they wish to serve
- Initially each PAG member will serve from August 2012 - December 2013 unless otherwise designated by their elected term. (Future terms will be determined based on program needs including consideration of expertise, continuity and broad constituent representation.)
- PAGs will meet at least once a quarter and there will be one face-to-face meeting annually at the Member Meeting
- The Nominations Committee will meet annually with the Exec Sponsors to review and assist in identifying and populating the PAGs
- Quarterly, the Exec Sponsor will report to the membership on PAG activities
Internet2 Network Services

Update, July 25, 2012

Robert P. Vietzke
Vice President, Network Services
New Network, New Services

- Enhanced Advanced Internet2 Layer 3 Service
- Introducing new national layer 2 Ethernet service
  - Operated as a distributed open exchange
  - Global Reach
  - Long term and short term capabilities
- Introducing new national Layer 1 Wave Services
Internet2 Network Project Status

Project Statistics
as of March 31, 2012
(60% through 12 quarter project timeline)

100% of design is complete
89% of the network build is done
67% completion by spending metric

$96.5M Investment Program
13,904 new fiber miles acquired
Over 300 Optical Equipment Nodes
17 SDN Layer 2 Core Switches

22 Layer 3 Network Connectors
7 100G Layer 2 Ports
14 Innovation Campuses

Open Issues
Northern Tier Network
Final Layer 2 Node Placement
Project Closeout
Project Background

Leadership Program to support the most demanding applications and position for innovation

Announced January, 2012 expanding our NDDI collaboration with IU and Stanford

$14M commitment from BTOP funds

Deployment underway for availability during fall 2012

Community Involvement

Leadership Program to engage leading campuses in a 3 year program

- Science DMZ for Data Intensive Science
- 100G Connection to the Campus
- Software Defined Networking

Steering & Coordination Group

Use Case Development & Publication

15 Campuses and 7 Regionals as of July 1st
Review of Network Fees

• Goals
  – Propose a new set of fees for the new network and new organization that more fairly recovers the cost of services by the users of those services
  – Potentially rebalance incentives & benefits of services
  – Encourage utilization of the new network

• Approach
  – AOAC Fee Subcommittee leads effort (chair: David Gift)
  – Joint CIO/Network Connector meetings
  – Listening Tour of key CIO/Regional pairs
  – Report progress through AOAC pag
    • Report progress to Board at fall BOT F2F Meeting
Global Campus Initiative

Project Overview

• Long term collaboration with leading members to support campuses outside the US.
• Initial project will build a colocation facility in Singapore to support campuses in China, Middle East and India
• Leveraging global R&E links to start, may build dedicated infrastructure as needs evolve
• Duke, NYU are actively leading this initiative with Internet2
Internet2 NET+ Services

Update, July 25, 2012

Shelton Waggener
Senior Vice President
“Cloud Computing Market Will Top $241 Billion in 2020”
Forester Research 2012 “Sizing the Cloud”

1. Top 200 R1 institutions (I2 Members) >$10b in IT spend.
2. Major Cloud investments (Venture capital $$) flowing into cloud services for commercial services that can be adapted to higher ed use.
3. Costs of staff and pensions increasing faster than IT equipment and cloud costs.
4. Average spend is currently >70% staff related and <30% non staff equipment costs.

http://net.educause.edu/ir/library/pdf/PUB8008i.pdf
What is Internet2 NET+?

Higher Education
- Common identity and network
- Invest in R&E networks
- Common Contract Terms
- Change Financial Allocation
- Coordinate Feature Requests
- Support Security Standards
- Speed procurement process
- Tier One Support
- Sponsor new NET+ Services
- Participate in Service Validation

Providers
- Support InCommon
- Move traffic to R&E networks
- Common contract terms
- Move to Site Licenses
- Higher Education Roadmaps
- Coordinate Security Standards
- Reduce Sales Costs
- Tier Two & Three Support
- Work closely with Sponsor
- Engage in Service Validation
# Four Phases of NET+ Services

<table>
<thead>
<tr>
<th>Research &amp; Evaluation</th>
<th>Service Validation</th>
<th>Early Adopter</th>
<th>General Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial phase with limited expectation of production pilot from “as is” state</td>
<td>Member CIOs as steering committee. Proof-of-concept, tuning of service and development of business model</td>
<td>Limited number of early adopters Business model finalized. Master Contract in place. Provisioning being tested</td>
<td>Full availability to target community. Contracts signed and service level agreements in place and provisioning in production</td>
</tr>
</tbody>
</table>

Internet2 - NET+
The Campus NET+ Sponsor Process

1. Campus Needs/Has Service
   - Checks NET + Service Catalog*
     - No Service? Sponsor one!
       - Send email to NETPlus@I2 with idea

2. Sponsor, Provider, and I2 Meet to develop scope
   - Research Effort or Service Validation?
     - Call for Participation Posted

3. Sponsor, Provider &I2 select SV campuses
   - Service Validation Phase Kickoff!
Service Validation Process

ROADMAP:

1. Service Tuned for HE
2. Quarterly Plan
3. Security Information Published & Peer Reviewed
4. Master Contract: Provider & Internet2 in Place
5. Customer Contract: Campus and Internet2 in Place
6. Waterfall /Special Pricing
7. Best Practices and FAQ
8. Crowd Sourced Support
9. SLA and Escalation
10. Exit Strategy
## Internet2 NET+ Services: Spring 2012

<table>
<thead>
<tr>
<th>Research &amp; Evaluation</th>
<th>Service Validation</th>
<th>Early Adopter</th>
<th>General Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft</td>
<td>HP-SHI</td>
<td>Adobe</td>
<td>Box</td>
</tr>
<tr>
<td></td>
<td>CENIC</td>
<td>Aastra</td>
<td>Comodo</td>
</tr>
<tr>
<td></td>
<td>Courseload -</td>
<td>Desire2Learn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>McGrawHill</td>
<td>DuraSpace</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CenturyLink-</td>
<td>Evogh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Savvis</td>
<td>Level 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dell</td>
<td>Merit Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DUO</td>
<td>Solution Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group</td>
<td></td>
</tr>
</tbody>
</table>
Changes

• Providers:
  • HP and SHI now both independently NET+ providers
    • HP shifting to focus on Research & Evaluation
    • SHI high end application hosting in VMWare based Linux stack
  • Amazon still not ready for restructuring of existing offerings
  • Most NET+ offerings will start at Research and Evaluation or Service Validation phases in order to complete preliminary work with SV campuses.

• NET+ Deployment
  • Changed Research to “Research and Evaluation” for early stage exploration
  • Shifted “Early Adoption phase” to only to start after SV work is done.
  • Most existing providers have sponsors and service validation teams identified. Some providers have not identified sponsors and will be put on hold. In future, only offerings with identified sponsors can move forward.

• Campus Participation
  • Participating I2 campuses now number 50+ and are represented in all phase
  • Opening up to include Labs affiliated with campuses. Working with providers on K-20 non I2 community.
  • Modified sponsorship rules to expand beyond CIO to C or VP level at campuses

• Staffing:
  • Program Managers (Andrew Keating, Dana Voss) & Support (Tony Ryan) now on board. CTO for NET+ to be recruited in Fall.
<table>
<thead>
<tr>
<th>Research &amp; Evaluation</th>
<th>Service Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Microsoft - Big Data Genomics</td>
<td>• Crashplan – (Remote Backup)</td>
</tr>
<tr>
<td>• Microsoft – Big Data “Long Tail”</td>
<td>• Dell – (Virtual Desktop)</td>
</tr>
<tr>
<td>• HP – High Performance Cluster</td>
<td>• Pearson eText (Volume Discount)</td>
</tr>
<tr>
<td>• eText 1: Courseload/McGraw-Hill</td>
<td>• SHI – (Linux Servers)</td>
</tr>
<tr>
<td>• eText 2: CourseSmart/Pearson</td>
<td>• Splunk – (Big Data Analytics Software)</td>
</tr>
<tr>
<td>• eText 3: Inkling/ Cengage</td>
<td></td>
</tr>
<tr>
<td>• eText 4: Kno/Wiley</td>
<td></td>
</tr>
<tr>
<td>• CenturyLink-Savvis (Linux Servers) **</td>
<td></td>
</tr>
</tbody>
</table>

**RED:** NEW Open for Sponsor / SV campuses  **GREEN:** NEW- Team in place.  **BLACK:** Open for Sponsor/ SV Campus
# Internet2 NET+ Services: Fall 2012

<table>
<thead>
<tr>
<th>Early Adopter</th>
<th>General Availability</th>
</tr>
</thead>
</table>
| • Amazon AWS (Cenic)  
• Aastra (Voice over IP Phone)  
• Desire2Learn (Lecture Capture)  
• Evogh (Desktop Video Conference)  
• Instructure (Canvas LMS)  
• Solution Design Group | • Box (File Collaboration)  
• Comodo (Web/Personal Certificates)  
• Adobe (Connect)  
• DuraSpace (Research File Storage)  
• Merit Storage (File Storage)  
• Merit Email (Email Service)  
• Merit Maillist (Email List Manager)  
• Duo (Two Factor Authentication)  
• SafeNet (Two Factor Authentication) |

RED: NEW Open for Sponsor / SV campuses  
GREEN: NEW- Team in place.  
BLACK: Open for participation
Why we need NET+…

"They built HUTS! We must build huts."

"Fire, fire, we need FIRE!"

"SWINGS! They've built SWINGS! We're gonna need Swings."

BIGU
Q&A/Open Discussion

- Phone lines will now be un-muted
- Please make sure that your computer volume is turned all the way down if you are on the phone bridge
- If you are not on the phone bridge please enter your questions into the Adobe Connect chat window
- Please mute your telephone locally if you are not speaking
Community Call with Internet2 Member CIOs

• We hope you found today’s call informative and worthwhile. Thank you for joining us.

• We look forward to your participation at the Fall 2012 Member Meeting in Philadelphia