October 2, 2012
Shelton Waggener
Senior Vice President Internet2

NET+ Services General Update
October 2012
Internet2 NET+ PAG Membership 2012-2013

- Pete Siegel, CIO UC Davis
- Michael Corn, CPISO U Illinois Urbana-Champaign
- Bruce Vincent, Stanford
- Bill Wrobleski, U. Michigan
- Brad Wheeler, CIO IU
- Eric Denna, CIO Utah
- Jack Suess, CIO Univ. MD Baltimore County
- James Deaton, OneNet
- John Charles, COO CENIC
- Kevin Morooney, CIO Penn State
- Mike McPherson, UVA
- Rich Fagen, CIO Cal Tech
- Ron Kraemer, CIO Notre Dame
- Ted Dodds, CIO Cornell
NET+ Service Progression Expectations

- **Research Incubator**: Higher percentage of experimentation and early shutdown before reaching Service Validation.
- **Evaluation**: Higher percentage of production usage and likelihood of General Availability.
- **Service Validation**
- **Early Adopter**
- **General Availability**
# Internet2 NET+ Services Process Overview

<table>
<thead>
<tr>
<th>Research Incubator</th>
<th>Evaluation</th>
<th>Service Validation</th>
<th>Early Adopter</th>
<th>General Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A research driven activity to incubate very early stage solutions &amp; technical concepts towards service creation.</td>
<td>I2, service provider, &amp; 1 university, studies an offering to determine whether suited for a NET+ scale</td>
<td>Sponsor institution and group of universities work with service provider and Internet2 to define and tailor the service for a NET+ offering.</td>
<td>A small number of universities not previously involved begin using the NET+ service and to with I2 and service provider to smooth out any glitches and assist in roadmap</td>
<td>NET+ service open to eligible universities and quarterly Advisory Board meetings continue informing roadmap</td>
</tr>
</tbody>
</table>
# Internet2 Service Validation

<table>
<thead>
<tr>
<th>Functional</th>
<th>Integration</th>
<th>Security / Compliance</th>
<th>Business</th>
<th>Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Tuned for Higher Ed</td>
<td>InCommon integration</td>
<td>Standard Assessment</td>
<td>Legal</td>
<td>Documentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FERPA</td>
<td>Business terms</td>
<td>Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIPAA</td>
<td>Pricing model</td>
<td>Use Cases</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accessibility</td>
<td>Business model</td>
<td></td>
</tr>
</tbody>
</table>
Internet2 NET+ Service Provider Ecosystem

Infrastructure-as-a-Service
Software-as-a-Service
Communications-as-a-Service
Other Services

HP + SHI
merit
Aastra
DUO
Box
Dell
Level(3)
SDG
CenturyLink
Duraspace
Adobe
EVO GH Inc.
Microsoft
cenic
Desire2Learn
## Infrastructure as a Service/Platform as a Service

<table>
<thead>
<tr>
<th>Box</th>
<th>Service participation status</th>
<th>Internet2 membership required?</th>
<th>InCommon participation required?</th>
<th>Highered only?</th>
<th>Read the FAQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Open</td>
<td>No, but members get additional discount</td>
<td>Yes</td>
<td>Yes</td>
<td>Institutions</td>
</tr>
</tbody>
</table>

**Description:** Storage and collaboration service that gives faculty, staff and students the ability to access, store, and share content securely—anywhere, anytime, on any device

## DuraSpace

<table>
<thead>
<tr>
<th>Service participation status</th>
<th>Internet2 membership required?</th>
<th>InCommon participation required?</th>
<th>Highered only?</th>
<th>Read the FAQ (PDF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Description:** DuraSpace will provide automatic access to DuraCloud, a trusted service for archiving and managing content in the cloud, featuring one-click creation of many copies, in multiple locations with several providers.

## CENIC Amazon Web Services

<table>
<thead>
<tr>
<th>Service participation status</th>
<th>Internet2 membership required?</th>
<th>InCommon participation required?</th>
<th>Highered only?</th>
<th>Read the FAQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** The Corporation for Education Network Initiatives in California (CENIC) is extending its unique purchasing program for Amazon Web Services (AWS) nationally, making it easier for Internet2’s K-20 research and education (R&E) community to take advantage of the AWS cloud.
## Current Services Portfolio – 28 Services

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Service Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP</td>
<td>OpenFlow [Research]</td>
<td></td>
</tr>
<tr>
<td>Microsoft</td>
<td>Big Data Data Genomics [Research]</td>
<td></td>
</tr>
<tr>
<td>Microsoft</td>
<td>CI for Social Sciences [Research]</td>
<td></td>
</tr>
<tr>
<td>CENIC</td>
<td>AWS [Evaluation]</td>
<td></td>
</tr>
<tr>
<td>CenturyLink/Savvis</td>
<td>[Evaluation]</td>
<td></td>
</tr>
<tr>
<td>Dell Community HPC</td>
<td>[Evaluation]</td>
<td></td>
</tr>
<tr>
<td>eContent (Five Pilots)</td>
<td>[Evaluation]</td>
<td></td>
</tr>
<tr>
<td>LectureTools</td>
<td>[Evaluation]</td>
<td></td>
</tr>
<tr>
<td>Microsoft</td>
<td>Windows 8 [Evaluation]</td>
<td></td>
</tr>
<tr>
<td>SHI Linux Cloud</td>
<td>[Evaluation]</td>
<td></td>
</tr>
<tr>
<td>Solution Design Group</td>
<td>[Evaluation]</td>
<td></td>
</tr>
<tr>
<td>Adobe Connect</td>
<td>[Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Code42 CrashPlan</td>
<td>[Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Desire2Learn</td>
<td>[Service Validation]</td>
<td></td>
</tr>
<tr>
<td>ICE Dental Systems</td>
<td>[Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Microsoft</td>
<td>AZURE [Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Microsoft</td>
<td>Office365 [Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Splunk!</td>
<td>[Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Vidyo</td>
<td>[Service Validation]</td>
<td></td>
</tr>
<tr>
<td>Evogh</td>
<td>[Early Adopter]</td>
<td></td>
</tr>
<tr>
<td>Instructure - Canvas</td>
<td>[Early Adopter]</td>
<td></td>
</tr>
<tr>
<td>SIP (Aastra &amp; Level 3)</td>
<td>[Early Adopter]</td>
<td></td>
</tr>
<tr>
<td>Box</td>
<td>[General Availability]</td>
<td></td>
</tr>
<tr>
<td>Comodo Certificate Service</td>
<td>[General Availability]</td>
<td></td>
</tr>
<tr>
<td>Duo</td>
<td>[General Availability]</td>
<td></td>
</tr>
<tr>
<td>DuraSpace</td>
<td>[General Availability]</td>
<td></td>
</tr>
<tr>
<td>Eduroam</td>
<td>[General Availability]</td>
<td></td>
</tr>
<tr>
<td>MERIT</td>
<td>[General Availability]</td>
<td></td>
</tr>
</tbody>
</table>
Internet2 NET+ Portfolio Growth

One year ago, Internet2 NET+ was announced with 2 services and 13 participating campuses

Six months ago, there were 20 services and 23 participating campuses

Today, there are 29 services and 87 participating campuses…
Internet2 NET+ Portfolio Growth

...plus service trials already underway means over 150 campuses now involved in Internet2 NET+!
Internet2 NET+ Portfolio Growth

Regional Partners Program extends the benefits of Internet2 NET+ services to more communities

A new Global Partners Program to follow in the near future
Internet2 NET+ Connect

Area: SaaS
Solution: Desktop Remote Meeting & Presentation Software
Provider: Adobe
Sponsor: Case Western

Service Validation

Status
- SV Participation Full Finishing functional validation
- Integration with InCommon
- Pricing
- Business model

Next Steps
Early availability targeted for Jan 2013
Internet2 NET+
Desire2Learn Capture

Area: SaaS
Solution: Webcasting For Live and on Demand Rich Media Presentations
Provider: Desire2Learn
Sponsor: Tulane University

Status
- SV Participation Open
- Kick-off on Sept 26

Next Steps
Begin functional & technical validation work, and work on business agreements
Internet2 NET+ eContent

Area: Other Services
Solution: Pilot series to evaluate technology and business models as textbooks evolve from paper to electronic form
Provider: Several
Sponsor: N/A

Evaluation

Status
- 27 universities engaged in Fall 2012 Pilot
- Kick-off on September 21, 2012

Next Steps
Spring 2013 Pilot enrollment open this week—multiple options
Internet2 NET+ ICE Dental

Area: SaaS  
Solution: Dental system for higher education  
Provider: ICE Health Systems  
Sponsor: University of Michigan

Service Validation

Status
- SV Participation Closed
- Kick-off on September 21, 2012

Next Steps
All-day retreat in November to do a gap analysis and build roadmap for the service validation effort
Status
• SV Participation Open
• Kick off on Sept 28

Next Step
Begin functional & technical validation work, and work on business agreements
Internet2 NET+ LectureTools

Area: SaaS
Solution: Platform for in-class instruction that compliments LMS solutions with tools for student engagement, particularly in large lecture classes
Provider: LectureTools
Sponsor: University of Michigan

Service Validation

Status
• SV Participation Open

Next Steps
Service validation kick-off in October, 2012
Internet2 NET+ VCL Services

Area: IaaS
Solution: Open source “Virtual Computing Lab” services (cycles and management) for the Internet2 community
Provider: NCSU and IBM
Sponsor: George Mason University

Service Validation

Status
• Participation is open

Next Steps
Service Validation kick-off in October 2012
Area: IaaS
Solutions: (1) Dell Cloud VMware® datacenter
(2) Dell Community HPC
(3) Dell Big Data as a Service

Status
- First two in Service Validation, BDaaS in Evaluation
- Open for Participants
# Internet2 NET+ Big-Data/Research

<table>
<thead>
<tr>
<th>Area:</th>
<th>SaaS and IaaS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution:</td>
<td>Working with Microsoft Research and Azure Product groups, conduct a series of workshops with researchers and research cyberinfrastructure professional to develop customized solutions to support scientific research and scholarship</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provider:</th>
<th>Microsoft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor:</td>
<td>University of California, Davis, University of California, Berkeley, University of Washington</td>
</tr>
</tbody>
</table>

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## Status
- Participation is Open
- Genomics Workshop held in July 2012 at UC-Davis
- Research Grants available

## Next Steps
- CyberInfrastructure for the Social Sciences Workshop to be held in October 2012
- Earth, Ocean, Sky, and Space Workshop being planned for Q1 2013
Internet2 NET+ Canvas

Area: IaaS/PaaS
Solution: Open learning management system
Provider: Instructure
Sponsor: University of Washington

Service Validation

Status
• SV Participation Full
• Pricing finalized
• SAML2 implementation complete
• Technical integrations with other NET+ services being scoped
• Documentation being developed

Next Steps
Open to early adopters on November 1, 2012
Area: IaaS
Solution: Savvis Virtual Private Data Center Services and Savvis Management Console
Provider: CenturyLink/Savvis
Sponsor: Florida State University

Status
• Participation is Open
• Continued evaluation of services and identification of use cases

Next Steps
Service validation kick-off once initial evaluation is completed
Internet2 NET+ SHI Cloud

**Area:** IaaS

**Solution:** Highly secure VMWare solutions, seamless bursting to cloud, delivered directly through the R&E Network

**Provider:** SHI

**Sponsor:** Pending

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**Status**

- SV Participation is Open
- Completed proof-of-concept with 4 universities in 2012
- Major enhancements to service offering now in place (including InCommon integration) and more planned
- Currently in proof-of-concept evaluation with another university
- Business agreement nearly completed

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**Next Steps**

Service validation kick-off Q4 2012 with anticipated Early Adopter rollout in Q1 2013.
Internet2 NET+ SeeVogh

Area: CaaS
Solution: Using a simplified interface and a cloud-based architecture, SeeVogh provides high-end, video collaboration and standards based interoperability

Provider: Evogh
Sponsor: UMBC

Status
• Participation is Open
• InCommon integration completed
• Business agreement nearly completed

Next Steps
Early Adopter rollout in Q4 2012
Internet2 NET+ DuraCloud

Area: SaaS
Solution: Internet2 members have automatic access to DuraCloud, a community-developed service aimed at meeting the preservation needs of Internet2 members to ensure that irreplaceable documents, imagery and videos are always accessible.
Provider: DuraSpace
Sponsor: UVA

Status
- Participation is Open
- Business agreement nearing completion

Next Steps
Early Adopter availability in Q4 2012.
**Internet2 NET+ CrashPlan**

<table>
<thead>
<tr>
<th>Area:</th>
<th>IaaS/PaaS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solution:</strong></td>
<td>Flexible, reliable, secure cloud backup solution</td>
</tr>
<tr>
<td><strong>Provider:</strong></td>
<td>Code 42 Software</td>
</tr>
<tr>
<td><strong>Sponsor:</strong></td>
<td>Notre Dame University &amp; the University of Texas at Austin</td>
</tr>
</tbody>
</table>

**Status**
- SV Participation Open
- Business model being developed
- Legal agreement review
- Technical and functional validation beginning

**Next Steps**
Service Validation kick-off meeting in October 2012
Internet2 NET+ Office 365

Area: SaaS
Solution: Cloud-based email, conferencing, sharing, and Office Web Apps
Provider: Microsoft
Sponsor: Colorado State University & University of Florida

Status
- SV Participation Full
- Standard agreement under review
- BAA complete
- InCommon integration being scoped

Next Steps
Technical, functional validation continues; SharePoint community to exchange best practices, use cases will be established
Internet2 NET+ Splunk

Area: SaaS
Solution: Collects, indexes and analyzes machine data
Provider: Splunk Inc.
Sponsor: University of Utah

Service Validation

Status
- SV Participation Full
- Business model being developed
- Legal agreement review
- Technical and functional validation beginning

Next Steps
Service Validation kick-off meeting in October 2012
Internet2 NET+ Vidyo

Area: CaaS
Solution: Video conferencing and personal telepresence
Provider: Vidyo
Sponsor: Arizona State University

Status
- SV Participation Open
- Business model and pricing being developed
- Legal agreement review
- InCommon integration underway

Next Steps
Technical and functional validation continues; Early Adopters Q1 2013
Internet2 NET+ eduroam!

**Area:** IaaS/PaaS

**Solution:** International solution for guest access to wireless networks on participating campuses

**Provider:** Anyroam LLC

**Sponsor:** University of Tennessee, Knoxville

**Status**
- Service is open to Internet2 members at NO COST
- Signups for early adopters can begin immediately
- Email netplus-eduroam@internet2.edu

**Next Steps**
Internet2 will move forward to General Availability by end of year.
Internet2NET+

It’s the community that makes it grow!
Internet2 Campus Members are NET+

Campus Members:

- Identify challenges they need solved
- Start **Research** and exploration
- **Evaluate** proposed solutions
- Partner with commercial providers
- **Sponsor** Service Validation phase
- Participate in collaboration to facilitate **Adoption**
- Work with Internet2, Participating Campuses, and Providers to decide when services are ready for **General Availability**
So what does a NET+ Campus look like?
Sharing Specialization with the Community

- Long standing relationship with provider
- Deep expertise with a product
- Seat at the table to design roadmap going forward

Sponsored SV Adobe Connect
Subscribed GA Box
Subscribed GA Comodo Cert
Setting the Path for the Future

Charter Member Internet2 NET+
Participated in SV Box
Sponsoring SV ICE Dental
Subscribed Comodo Cert

• Strategic project to evaluate cloud offerings
• Focus on campus-wide solutions
• Partnership with peers to create solution for functional community
Goal to play lead role in design phase
Join larger campuses to partner on solution design

Participated In SV Box
Sponsoring SV Code 42 Crashplan
Subscribed Comodo Cert
Evaluate Options

- Commitment to cloud strategy
- Engagement of campus in exploring options
- Sharing results with the community

Participated In GA Trial Box
Participated in Eval eContent
Subscribing GA Comodo Certs
Solving a Problem Once for Many – RFP

- Needed a solution in a specific area, developed RFP
- Approached Internet2 about benefits of expanding service at scale

Sponsored SV VOIP
Subscribing GA Box
Subscribing GA Comodo Certs
Community Participation

150+ schools in Internet2 NET+ program
What’s a campus to do? **Start now!**

Create a campus strategy for internal & external cloud services.

Shift from a culture of central or departmental to one of sharing, reuse, and value added differentiation.

Evaluate NET+ opportunities. Examine your own portfolios and consider which projects could benefit from NET+ scale.
What’s a campus to do? Start now!

4. Develop a campus identity solution built on open standards. Join the 300+ campuses in InCommon.org.

5. Support competition for services so there are choices—but constrained, not unlimited choices.

6. Develop positions that focus on Cloud Product Management: Create new or reposition existing positions to get started.
What’s a campus to do? **Start now!**

Create a “cloud first” culture by partnering with your legal and procurement teams. Restructure internal processes and policies with cloud in mind.
Internet2 NET+ Can Help You Get There!

Thomas Trappler: Leading Author, Speaker, Trainer, Cloud Computing: Negotiations, Vendor, and Risk Management

Monthly Webinars: “Contracting for Internet2 NET+ Services"

- Webinars no cost to any Internet2 campus
- Additional in-person trainings for procurement legal and technology teams on request.
- Special discount for any NET+ campuses for upcoming 10/29–10/30 Washington DC training
- Email netplus-training@internet2.edu
Internet2 NET+ Impact

Generally Available Services
Over one million accounts
Hundreds of thousands of certificates
Minimal administration
All tailored to the unique needs of research and education

Commercial Value of Over $400 Million
For community investment of $4 million
Higher Education Islands

“Fire, fire, we need FIRE!”

“They built HUTS! We must build huts.”

“SWINGS! They’ve built SWINGS! We’re gonna need Swings.”

Building Solutions Together

Internet2NET+