

# Internet<sup>2</sup> NET+

## The Internet2 NET+ Services Program

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# Cloud Benefits for Higher Education

- Leveraging the cloud to bring innovative, transformative technologies to teaching, learning research and institutional management
- IT department can focus on adding value rather than providing plumbing
- Converting CAPEX to OPEX: little or no capital outlay
  - No on-campus space requirements
  - Capacity becomes elastic: compute and storage almost infinite
- Leveraging highest economies of scale
- “Green” benefits: computer centers located near hydro power sources
- Reduced administrative process: automated “provisioning”

# Internet2 – Fundamentals

## Community

*We gain more by working together*

## Innovation

*Discovering and describing new paradigms*

## Transformation

*The more the merrier!*

*(or, shared pain is easier to tolerate)*

# Cloud Issues for Higher Education

- Individual/institution has minimal impact on the character, scope or quality of services
- Overall security, data privacy and accessibility
  - Concern about where the data is located
  - Compliance with HIPAA, FERPA, etc.
- Providing support to faculty and staff
  - Customized Solutions – developing innovative approaches to teaching, learning and research
  - Balancing commodity services against R&E needs
- Restructuring administrative processes and IT budgets – lowering IT costs
- Accommodating the need to support ‘hybrid’ environments and effectively managing vendors
- Concerns about vendor “lock in”

# Enabling Change: Internet2 NET+ Services

A community-based response to the emerging challenges of cloud-based services, intended to:

- Focus the efforts of the community on collaboration and innovation in provisioning and use of services
- Provide a mechanism for more effective engagement with technology companies providing essential services to HEd.
- Mitigate and/or remove the impediments to the provisioning and adoption of cloud services by the education sector
- Drive down the costs of provisioning/consuming services
- Provide a strategic partnership with service provider community in the development of new service offerings.

# What is Internet2 NET+ Services all about?

A partnership to provide a portfolio of solutions for Internet2 member organizations that are *cost-effective, easy to access, simple to administer, and tailored* to the unique, shared needs of the community:

- Define a new generation of value-added services for the Internet2 community
- Work with our members and vendors to develop solutions that meet performance, usability, and security requirements
- Provide a single point of contracting and provisioning
- Leverage community scale for better pricing and terms
- Leverage the Internet2 R&E Network and other services such as InCommon

# The Portfolio

- **InCommon Federation**

*Federated Authentication, Assurance Program, Certificate Service*

- **Middleware**

*MACE, Shibboleth<sup>®</sup>, Grouper<sup>™</sup>, Comanage*

- **Internet2 Commons**

*Virtual meeting rooms, desktop collaboration, telepresence, etc.*

- **Cloud Services**

Now up to 29 services in various stages of development

# Broad Business Development Focus

## Cloud applications and services of interest:

- *Scalable compute and storage resources*
- *File storage services*
- *Research computing (HPC)*
- Public facing web services
- Archiving
- SaaS (email, ERP, LMS, niche applications)
- Virtual computing labs
- Virtual desktop services
- Platform computing resources
- Identity management
- Library systems

# 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 **28** services and  
**87** participating campuses...

# Criteria for inclusion in the Portfolio

- Offered services scale to have a national impact
- Can/do/will leverage the Internet2 network
- Can/do/will use InCommon for federated identity
- Provider is willing to negotiate a national contract that will satisfy significant portion of the community
- Provider is willing to adopt and support the community's needs with respect to security, privacy, compliance and accessibility
- Provider is prepared to work with the Internet2 community to customized services to meet the unique needs of education and research

# Internet2 Campus Members *are* NET+

## *Campus Members:*

- Identify challenges they need solved and ***Propose*** offerings
- Initiate and support ***Research*** and exploration
- ***Evaluate*** proposed solutions and offerings
- ***Sponsor*** Service Validation phase in partnership with Internet2 and commercial providers
- Support broad ***Adoption***
- Work with Internet2, Participating Campuses, and Providers to decide when services are ready for ***General Availability***
- ***Participate*** in Advisory Groups supporting the offering

# Community Participation

## 150+ Schools in the Program



# Benefits to Internet2 Members

- Capabilities responsive to member demand
  - On-going relationship with vendors to ensure that features of offerings continue to meet unique HEd needs
  - Opportunities to leverage demand to lower costs
- Effective use of Internet2 services:
  - Direct connection of service providers to Internet2 network
  - Use of InCommon federated identity management to facilitate inter-university research
- Reduced administrative process:
  - No need for additional contract terms/negotiation
  - Pre-negotiated prices that leverage scale
  - Procurement as part of Internet2 membership

# What does Internet2 NET+ do?

## Higher Education

- Common identity and network
- Invest in R&E networks
- Common contract terms
- Change financial allocation
- Coordinate feature requests
- Support security and accessibility standards
- Speed procurement process
- Tier 1 support
- Participate in Service Validation

## Providers

- \* Support InCommon
- \* Move traffic to R&E networks
- \* Common contract terms
- \* Move to Site Licenses
- \* Higher education roadmaps
- \* Coordinate standards
- \* Reduce sales costs
- \* Tier 2 & 3 support
- \* Work closely with Sponsor
- \* Validate service to HE

# Internet2 NET+ Service Provider Ecosystem

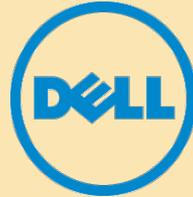
## Infrastructure-as-a-Service



CenturyLink<sup>™</sup>  
Business

Microsoft<sup>®</sup>

## Software-as-a-Service



DURASPACE<sup>™</sup>



## Communications-as-a-Service



Level(3)<sup>®</sup>



## Other Services



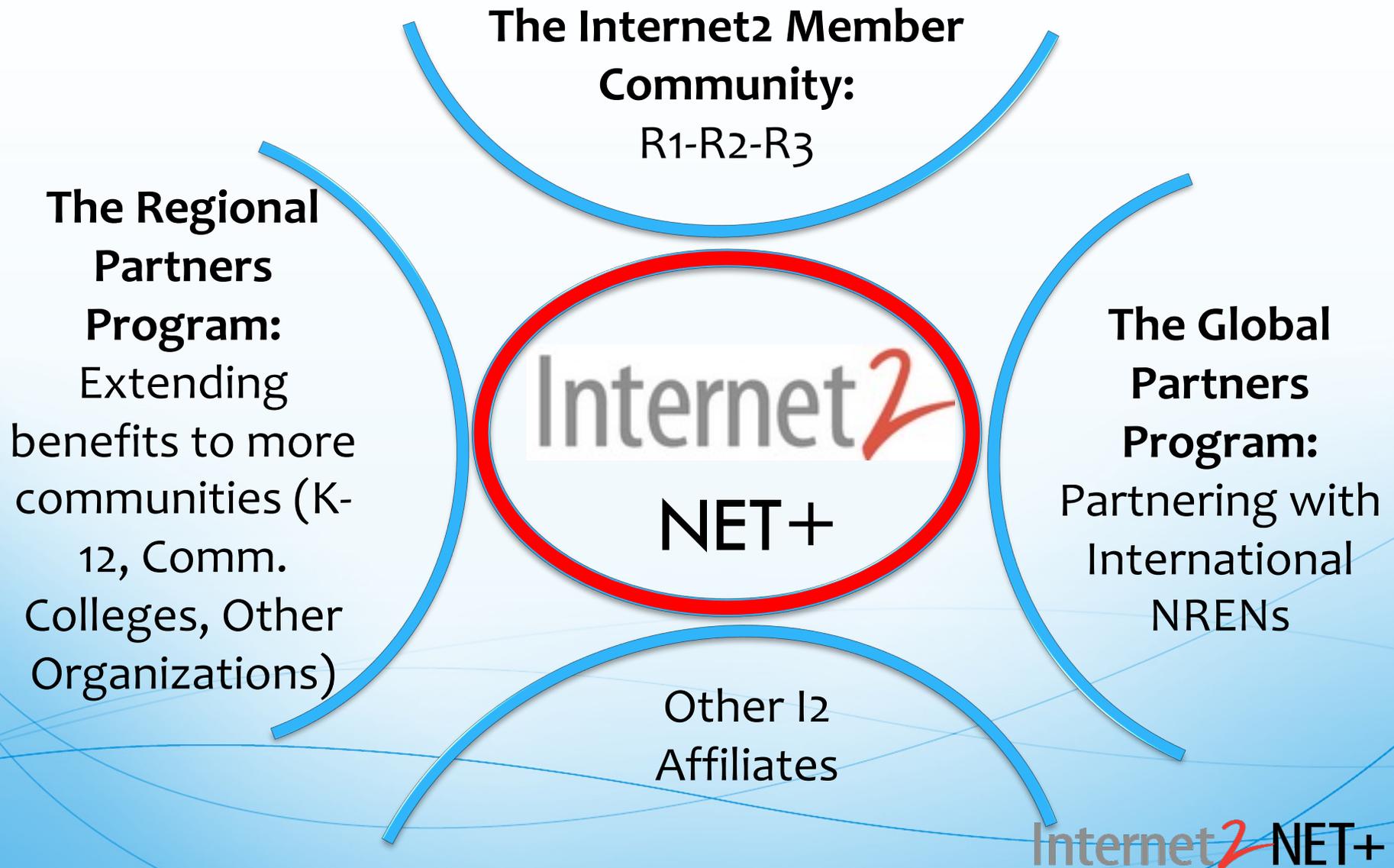
# Internet2 NET+ Service Development

 <b>Research Incubator</b>	 <b>Evaluation</b>	 <b>Service Validation</b>	 <b>Early Adopter</b>	 <b>General Availability</b>
Research driven activity incubates very early stage solutions & technical concepts	Internet2, service provider, and lead university study offering to determine suitability	Sponsor institution and group of universities work with service provider and Internet2 to define and tailor the service	Other universities begin using the service and work with Internet2 and service provider to smooth out glitches	Internet2 NET+ service open to all eligible universities; quarterly Advisory Board meetings continue to inform the service roadmap

# What's a campus to do? *Start now!*

1. Create a campus strategy for internal & external cloud services.
2. Shift from a culture of central or departmental IT management to one of sharing, reuse and value-added differentiation
3. Evaluate NET+ opportunities. Examine your own portfolio and consider which projects could benefit from NET+ scale
4. Develop a campus identity solution built on open standards. Join the 300+ schools in InCommon.
5. Support competition for services so there are choices—not *unlimited* choices, but *constrained* to those that meet the community's requirements
6. Develop positions that focus on Cloud Product Management: Create new or reposition existing positions to get started
7. Create a “cloud first” culture by partnering with your legal and procurement teams. Restructure internal processes and policies with cloud in mind

# Future View: Internet2 NET+ Partnerships



# Internet2 NET+ Services: 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

# eText Pilot Series



EDUCAUSE

- Pilot goals:
  - To continue to advance the higher education community's understanding of what is necessary for online materials to attain and surpass the effectiveness, accessibility, economy, and other relevant outcomes associated with traditional textbooks
  - To explore innovative business models, terms, and conditions that make access to digital educational materials more flexible, economical, efficient, and simple for institutions and publishers alike
- eText: Fall 2013 eText Pilot
  - Details will be announced in January
  - [eText-Pilot@internet2.edu](mailto:eText-Pilot@internet2.edu)

# Pilots to Date

Spring  
2012

5 Institutions

McGraw-  
Hill/  
Courseload

Fall  
2012

27 institutions

McGraw-  
Hill/  
Courseload

Spring  
2013

18 institutions

McGraw-  
Hill/  
Courseload

Elsevier/  
Courseload

CourseSmart

## Collaborative Research

### Impact on Teaching and Learning Research

How integral was the eText and in what ways, any differing perceptions or observations?

Were learning needs met?

Were teaching needs met?

### Baseline Research

### Longitudinal research

How would you compare the experience of using etextbooks with printed books?

Importance of cost vs. platform vs. availability vs. features/functionality

# Internet<sup>2</sup>NET+

**For More Information:**

***[www.internet2.edu/netplus](http://www.internet2.edu/netplus)***

***[NETplus@internet2.edu](mailto:NETplus@internet2.edu)***