INTERNET2 NET+
Addressing R&E challenges through community-developed technology
Why Internet2 NET+? Addressing big R&E challenges

- Rising Costs & Shrinking Funds
- Technology Proliferation
- Globalization Pressures
- Pedagogy & Online Competition

"This is a tsunami… The potential upside for this experiment is so big that it’s hard for me to imagine any large research university that wouldn’t want to be involved.”

—Richard DeMillo, Director, Center for 21st Century Universities
Internet2 Cloud Services harness the power of the R&E community to:

- Secure best-in-class pricing
- Obtain *customized*, not just *commodity* services
- Eliminate redundant admin/legal costs and efforts
- Mobilize our considerable ingenuity and clout to create our own solutions

“The cloud computing market will top $241 Billion in 2020.”

—Forrester Research 2012, “Sizing the Cloud”
Internet2 Cloud Services help position our community to successfully:

- Compete with a new breed of online providers
- Implement new higher education solutions more quickly, more easily and with lower risk
- Offer courses and services to broader national and international markets
Internet2 Cloud Services help our members fulfill their global missions by:

- Leveraging Internet2 Network international exchange facilities for global connections
- Offering courses and services to broader national and international markets
- Extending services throughout global R&E community with minimal investment but significant increase in benefit
- Leveraging connections throughout community for more efficient, effective solutions

Global Cloud Working Group
Volunteer charter member National R&E networks representing Europe, Americas, Asia-Pacific, dedicated to the widespread adoption of federated cloud services that benefit the global R&E community
Internet2 Cloud Services prepares members for explosive technology change by helping them to:

- Share experiences, learn from experiences of others
- Take part in exploring and validating solutions
- Learn methodologies, best practices and get help with training and development
- Leverage trusted identity solutions
### What it is not

<table>
<thead>
<tr>
<th>a buyer’s club</th>
<th>services tailored for R&amp;E, with special pricing and business terms</th>
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<tbody>
<tr>
<td>a marketing system where providers sell to higher education</td>
<td>a process where providers help shoulder the risk as partners</td>
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<tr>
<td>primarily about price</td>
<td>primarily about delivering value to both higher ed and providers</td>
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<tr>
<td>a one-way street</td>
<td>a collaboration to increase rewards and reduce overhead</td>
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<td>driven by one campus, country, NREN or provider</td>
<td>driven by the real needs of research universities to benefit all</td>
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<tr>
<td>delivered over unreliable networks</td>
<td>delivered over the most advanced networks around the world</td>
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Cloud Services with a Firm Foundation

Commercial/community service providers

NET+ development phases and catalog of service participation opportunities

Community requirements developed in a standardized approach

Convening and representing the R&E community

Describe basis for and facilitate external audit services [commercial audit firms]

Identity management “Trusted Identity in Education” (not part of NIST model)

Global R&E networks


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Community-developed identity and access management framework of trust enables:

- Secure, streamlined sharing of protected resources
- Consolidated management of user identities and access
- Delivery of an integrated portfolio of community-developed solutions

Trusted Identity in Education

The standard for over 500 higher education institutions—and counting!
Criteria for including services in NET+ portfolio

- Scales to ensure national impact
- Leverages global R&E networks
- Leverages common R&E federated identity
- Global contract serves significant portion of community
- Provider supports community’s security, privacy, compliance, accessibility needs
- Provider works with community to meet unique needs of education and research
Range of Services – Consolidated Process & Delivery

- Identity & Access Management
- Infrastructure, Platform, Security
- Software as a Service
- Video, Voice and Collaborations
- Digital Content for R&E

Delivered via next-generation, high-speed R&E global networks
Built on federated identity and integration architectural standards
Administered via global agreements, contracts and provisioning
Cloud Service Lifecycle

*Sponsorship by* members

*Subscription by* members and through regional and global partners

*Designed with* participating network organizations

All for global scale and R&E community benefits
Growing Ecosystem of NET+ Services & Providers

“We are seeing the…emergence of a meta-university—a…dynamic, communally constructed framework of open materials and platforms on which much of higher education worldwide can be constructed or enhanced.”

—Charles M. Vest, President Emeritus, MIT
Succeeding in the cloud takes more than technology

- Change Management
- Community
- Integration
- Templates
- Position Descriptions
- Skills
- Best Practices
- Repositories

Training: Risk Contracts

Development: Cloud Elements
How can campuses prepare for the cloud?

1. Create campus strategy for internal and external cloud services
2. Shift from culture of central control to one of sharing, reuse, and value-added differentiation
3. Evaluate Internet2 NET+ portfolio, examine your portfolios, consider which projects could benefit from NET+ scale
4. Develop campus identity solution built on open standards
5. Support service competition choices—*but constrained, not unlimited choices*
6. Start implementing cloud-ready language *now* in all contracts
7. Create “cloud first” culture by partnering with legal and procurement teams, restructuring internal processes and policies with the cloud in mind
Unleashing new waves of global discovery, together.