IAM Online

January 25, 2017

What is TIER?
What Does It Mean for Me?

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Two Topics for Today

• Trust and Identity Overview
• Dive into TIER (Trust and Identity for Education and Research)
The Story

Faculty Member

Collaborates With

Collaborative Science Project in UK
How it Works

Campus A
Faculty Member

Campus Z
Science Project

eduGAIN

InCommon®
How it Works

Campus A
Faculty Member

Campus Z
Science Project

Focus of TIER
Trust and Identity at Internet2

- In January 2016, Internet2 established a division of Trust and Identity Services
  - However, the work has been going on for a long time

- The core services/activities are InCommon Trust Federation, TIER, eduroam, and the InCommon Certificate Service
How TIER and InCommon Interact
How TIER and InCommon Federation Interact
Important Guiding Principles

• Reductions in the variances of technologies leveraged and policies developed - among the membership/participants - increases the collective ability to trust, to collaborate.

• “Participants” need flexibility

• All moving parts have to become more trustworthy over time
QUESTIONS SO FAR?
LET’S DIVE INTO TIER
What is TIER all about?

• Sustain components that we've developed together

• Fill the gaps by providing a set of integrated components that address IAM as a whole

• Address community requirements across the components

• Developing, maintaining community and corporate partnerships
Evolution of TIER

History To-Date

Present Day

Future Direction

3 Years In the Making
TIER Background

- Investors:
  - 49 CIO investors
  - All Internet2 members.
  - 25K/year for three years.
- 9 months of requirements gathering among the investors institutions, generating 200+ use cases and 70 requirements
- Final Year of 3-year Financial Enrichment
## TIER Investors

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<th>Arizona State University</th>
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<td>Baylor University</td>
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<td>Boston University</td>
<td>Penn State (Pennsylvania State University, The)</td>
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<td>University of California – Berkeley</td>
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<td>University of California – Merced</td>
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<td>Lafayette College</td>
<td>University of Florida</td>
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<td>Louisiana State University</td>
<td>University of Hawaii – Manoa</td>
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<td>MIT (Massachusetts Institute of Technology)</td>
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<td>New York University</td>
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<td>Northwestern University</td>
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<td>University of Wisconsin - Madison</td>
<td>Virginia Polytechnic Institute and State University</td>
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<td>Washington University in Saint Louis</td>
<td>Yale University</td>
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TIER Community Investor Council

• Klara Jelinkova, Rice University (Chair)
• Dennis Cromwell, Indiana University
• Eric Denna, University of Maryland
• Tracy Futhey, Duke University
• Ron Kraemer, University of Notre Dame
• Tom Barton, University of Chicago
• John O’Keefe, Lafayette College
• Kelli Trosvig, University of Michigan
Evolution of TIER

- History
- To-Date
- Present Day
- Future Direction

Direction from Future to Present Day.
Trust and Identity Governance & Areas of Work

- CACTI – Ad-Hoc Architecture Council (Tom Barton / Trust and Identity / Internet2)
- Security and Audit (Helen Patton)
- Component Architecture (Steve Zoppi)
- APIs and Data Structures (Keith Hazelton)
- Entity Registry (Warren Curry / Benn Oshrin)
- Packaging and Deployment (Jim Jokl)
- Federation Operation (Nick Roy)
- Instrumentation and Monitoring [Preliminary] (Paul Caskey)
- TIER Community Investor Council (Klara Jelinkova)
- InCommon AAC (Brett Bieber)
- InCommon Steering (Sean Reynolds)
- InCommon TAC (Mark Scheible)
- InCommon TAC – OpenIDConnect Use Cases (Albert Wu)
- InCommon TAC – Federation Deployment Profile (Keith Wessel)

Over 400 People!
# TIER Goal: Unified (and Scalable) Model

## Secure Directory, Identity and Metadata Services

### Single Signon and Identity Components

- **AuthN (Who)**
- **AuthZ (What)**
- **Federated Registry (Directory Search / Lookup)**

### Persistence and Replication

- **Multi-Factor**
- **Multi-Level (Groups)**
- **Business Rules Engine / Grammar**
- **Network Objects (Files, Datasets, etc.)**
- **People**
- **Files / Datasets**
- **Nodes**

### Automated Provisioning / Deprovisioning and Rules Enforcement

- **Registry Services**
- **Workflow Services**
What’s Been Completed

• Held workshops for investor CIOs and Identity Architects
• Collected hundreds of use cases and requirements
• Priorities developed
• Two releases (April 2016, December 2016)
Proposed Milestones for April 2016

• Backbone usage scenario (BUS) proof of concept
• An open IAM testbed based on the proof of concept
• A containerized version of the IAM testbed for local experimentation
• Well-instrumented code that can reveal behavior and health of the IAM infrastructure components and their interactions
• First edition of a living guidebook: architectural patterns for IAM integration
Delivered April 2016

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Proposed Milestones for End of Year 2016

- Testing and enhancement of the container/vm distributions
- Exploring Instrumentation
- Prioritize usability enhancements
  - Setup automation and pre-configuration
  - Campus metadata
  - etc., etc.
- Build on the packaging foundation
  - Automate the container and VM builds
  - Operationalize the build process; produce regularly scheduled updates
  - Start the process of automating testing
  - Complete the work with the initial components
Delivered December 2016

- Testing and enhancement of the container/vm distributions
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In Progress

Build on the packaging foundation

- Automate the container and VM builds
- Operationalize the build process; produce regularly scheduled updates

POC Ready

- Start the process of automating testing
- Complete the work with the initial components

Pending

- Setup automation and pre-configuration
- Campus metadata
- etc., etc.

Campus Adoption

- Start the process of automating testing
- Complete the work with the initial components

This Release

- Automate the container and VM builds
- Operationalize the build process; produce regularly scheduled updates

Next

- Start the process of automating testing
- Complete the work with the initial components

This Release
Evolution of TIER

History To-Date

Present Day

Future Direction
DevOps Model: Enabling Autonomy

**Workbench Path 1:**
Development and Iteration / Ideation

**Workbench Path 2:**
UAT/QA/Security Audit/Performance Assessment/Release
Lessons Learned

• Data Structures and APIs Working Group (WG) and Entity Registry Working Group
  – attracted talented people from higher education institutions across the land (well over 120 on the mailing lists)
  – work hard and deliver what the WG charters required

• Institutions share their experience, documents and code
  – Penn State contributed Apache 2-licensed SCIM server and client libraries, significantly accelerating the API work.
Lessons Learned

• The community is productive:
  – Dedicated set of volunteers
  – Weekly calls
  – Problem space evaluation
  – Survey development and analysis
  – Technical packaging strategy and prototyping
  – Initial testbed
  – If you have interest in this space, please join us

• Significant software development requires dedicated resources
  – The foundational work done by volunteers
  – Engaged commercial firm to build packaging
Lessons Learned

• Institutions with significant IAM projects underway have skin in the game and will make sure the Working Groups stay focused on essentials

• Measurement helps enable management
NEXT STEPS
Adoption Is **Imperative** Because ...

- It establishes the new and current baseline for all products
- It establishes the foundation for future (incremental) updates and enhancements. **Goals ...**
  - Simple upgrades using latest integration techniques
  - Simple deployment into a scalable environment
  - Releases are instrumented for continual feedback and improvement of the product (Anonymized data / Opt-In Data)
How can you stay engaged?

• Join a working group list

• Download TIER Production Candidate Containers and ’Kick the Tires’
QUESTIONS?
February IAM Online

User Consent: Implementations and Advantages

Wednesday, February 8, 2017 – 2 pm ET

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IAM Online Evaluation

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