SUMIT IT SECURITY EVENT SERIES
WEEKLY IN OCTOBER
Reimagined

INFORMATION AND TECHNOLOGY SERVICES
UNIVERSITY OF MICHIGAN

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What's New with MCommunity Groups

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First, A Little Context
The Dream

- IT professionals across campus can quickly create and manage their own access control groups from predefined, centrally available groups of institutional data.

- Access control groups automatically update based on current institutional data.

- Access control groups are easily integrated with consuming systems.

- It is easy to know who is in an access control group, what access it provides and why.
Intro to Grouper

Open Source software providing group management component of the InCommon Trusted Access Platform (TAP), identity and access management suite of software designed to integrate with existing systems

- Designed by and created for higher ed to address similar challenges of creating institutional role and access management solutions for a federated environment

**Benefits:**

- distributed access control governance
- fast flexible provisioning integrations
- robust auditing and reporting to answer who, why, when, and how someone has access to a resource.

~Grouper Executive summary
Successful Grouper Implementations at other Campuses

UPenn (10 years)
- A/D
- Zoom
- Box
- Atlassian

Illinois (since 2019)
- Splunk - all access control is set up in Grouper.
- Azure AD Groups - connects directly to Azure AD from Grouper; it skips AD.

Nebraska
- Housing has delegated access - to control door access
- Endpoint Management Team
  - Software access groups driven by Grouper
- Email lists for everyone with a specific major

University of Chicago - early adopter
- 100 services, including wireless, Box.com, business objects, Google Apps, file sharing, web-based file storage, VOIP services, VPN, faculty class management applications, email routing, and student information system.
How does Grouper work?

1. Define an access policy.
   a. All U-M faculty on Flint, Ann Arbor, and Dearborn campuses should have access to Awesome New Service. Access to Awesome New Service must be deprovisioned after a 33 day grace period. Chris Hable never should have access.

2. Create an access policy group enforcing membership to comply with policy through use of predefined, centrally-available current institutional data.

3. Provision the access policy group where needed, automatically in near real time.

“Access to systems is then automatically kept in sync with policy as subject attributes change in underlying systems of record (ERP, etc). This provides streamlined and automated access for existing and future applications.” ~ Grouper Deployment Guide
Loading Institutional Data into Grouper

MCommunity Identity Management System (subject source)
current state of ~600k identities

unifies identity data from:
- 3 different campus student systems
- central HR system
- alumni system
- sponsored guest system

Batch Loader for Institutional Role Data (runs every 15 min)
Incremental Loader for HR data (checks for changes every minute)
Reference Groups: Institutional Data Organized into Meaningful Cohorts

### Current Institutional Role Members
People who currently have the institutional role

- FacultyAA
- FacultyDBRN
- FacultyFLNT

### Current + 33 Day Grace
People who currently have the institutional role plus those who have lost it within the last 33 days

- FacultyAA - Current + 33 Day Grace
- FacultyDBRN - Current + 33 Day Grace
- FacultyFLNT - Current + 33 Day Grace

### HR Data by Department

<table>
<thead>
<tr>
<th>Role Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering 212000</td>
<td>(ref)</td>
</tr>
<tr>
<td>Aerospace Engineering 212000 - Active</td>
<td>(ref)</td>
</tr>
<tr>
<td>Aerospace Engineering 212000 - Emeritus</td>
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<td>Aerospace Engineering 212000 - Faculty</td>
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<tr>
<td>Aerospace Engineering 212000 - Faculty - Active</td>
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<tr>
<td>Aerospace Engineering 212000 - Faculty - On Leave</td>
<td>(ref)</td>
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<tr>
<td>Aerospace Engineering 212000 - Faculty - Retired</td>
<td>(ref)</td>
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<tr>
<td>Aerospace Engineering 212000 - NewHire</td>
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<td>Aerospace Engineering 212000 - On Leave</td>
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<tr>
<td>Aerospace Engineering 212000 - RegularStaff</td>
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<td>Aerospace Engineering 212000 - RegularStaff - Retired</td>
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<tr>
<td>Aerospace Engineering 212000 - Retired</td>
<td>(ref)</td>
</tr>
</tbody>
</table>
Access Policy Group: Awesome New Service

Awesome_New_Service_allow

- FacultyAA - Current + 33 Day Grace
- FacultyDBRN - Current + 33 Day Grace
- FacultyFLNT - Current + 33 Day Grace

allow_manual

Awesome_New_Service_deny

- Locked Accounts Group

deny_manual

△ Chris Hable
Provisioning Models

1. **Direct from Grouper to target service** covers Grouper specific components and plugins for various targets such as AD/LDAP, Duo, etc. Grouper contains a change log for loosely coupled connections to external systems.

2. **Message queue based delivery** relies on a message queue infrastructure to communicate changes to appropriate provisioning components. In this model the logic for communicating with the external system would not be executed / managed / monitored / audited inside of Grouper.

3. **External systems** can use web services or LDAP to pull data from Grouper into their data repository.
Two Main Strategies to Provision to Target Services

1. **Full-sync batch scheduled provisioning** looks at the source and the target and fully synchronizes the data.

2. **Incremental near real-time provisioning** looks at the change log to send focused events to the target. ~ Grouper Deployment Guide
Grouper is alive!

- **Virtual Sites**
  - virtual computer lab
  - 588,968 members

- **Active Directory**
  - (LDAP target)

- **eDirectory**
  - (LDAP target)

- **Adobe Creative Cloud**
  - 138,000 members
  - Spark
  - 162,000 members

- **Active Directory Full Provisioner**
  - (daily batch process)

- **eDirectory LDAP Full Provisioner**
  - (daily batch process)
We will build beyond on our current provisioning patterns.
Security Benefits

The right people have the right access at the right time
Enforced access policy - especially helpful for timely deprovisioning

Reports show membership changes over time

Easy to see who is in an access policy group and why

View of an individual’s membership across all access policy groups in Grouper
Who will be able to use Grouper?

Decentralized service offered to units* across campus to quickly create and manage their own access policy groups to meet business requirements.

Security scaffolding is in place which prevents viewing and/or updating access policy groups you do not administer.

*with training to guide responsible use of identity data
Institutional Roles

**Faculty** - defined as academic, instructional, and research appointments; includes emeritus faculty (job families 8, 9, 10, 11, 13, 14, 19, 20, 22 - emeritus)

**Regular Staff** - identified as Regular with current appointment not in the faculty job families and with a status of active, suspended, short-work break, leave, or paid leave

**Temporary Staff** - identified as Temporary with current appointment not in faculty job families with a status of active, suspended, short-work break, leave, or paid leave

**Enrolled Student** - enrolled in at least one credit hour for "'current"' term; next term information is used during gap between terms

**Student** - continuing and incoming students regardless of enrollment; includes detached study

**Sponsored Affiliate** - identities from the Sponsor System - only includes active

**New Hire** - some employee information and future start date

**Retiree** - retired from any U-M campus, regardless of other appointments that may still be active