Grouper BaseCAMP session
August 15, 2019
Milwaukee, Wisconsin

Agenda

Introduction to Grouper
Features and Roadmap
Use cases from Duke
Use cases from Penn

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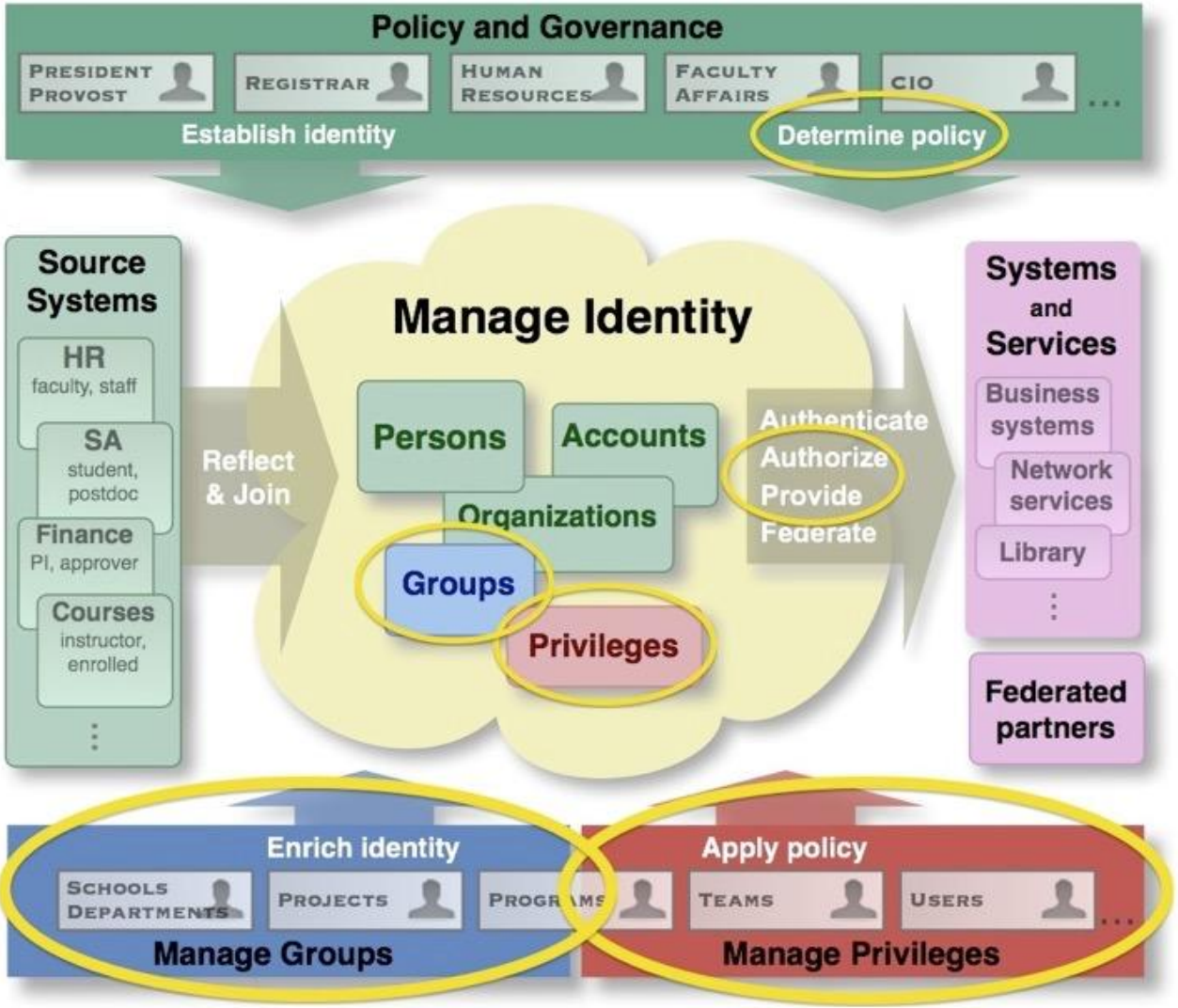
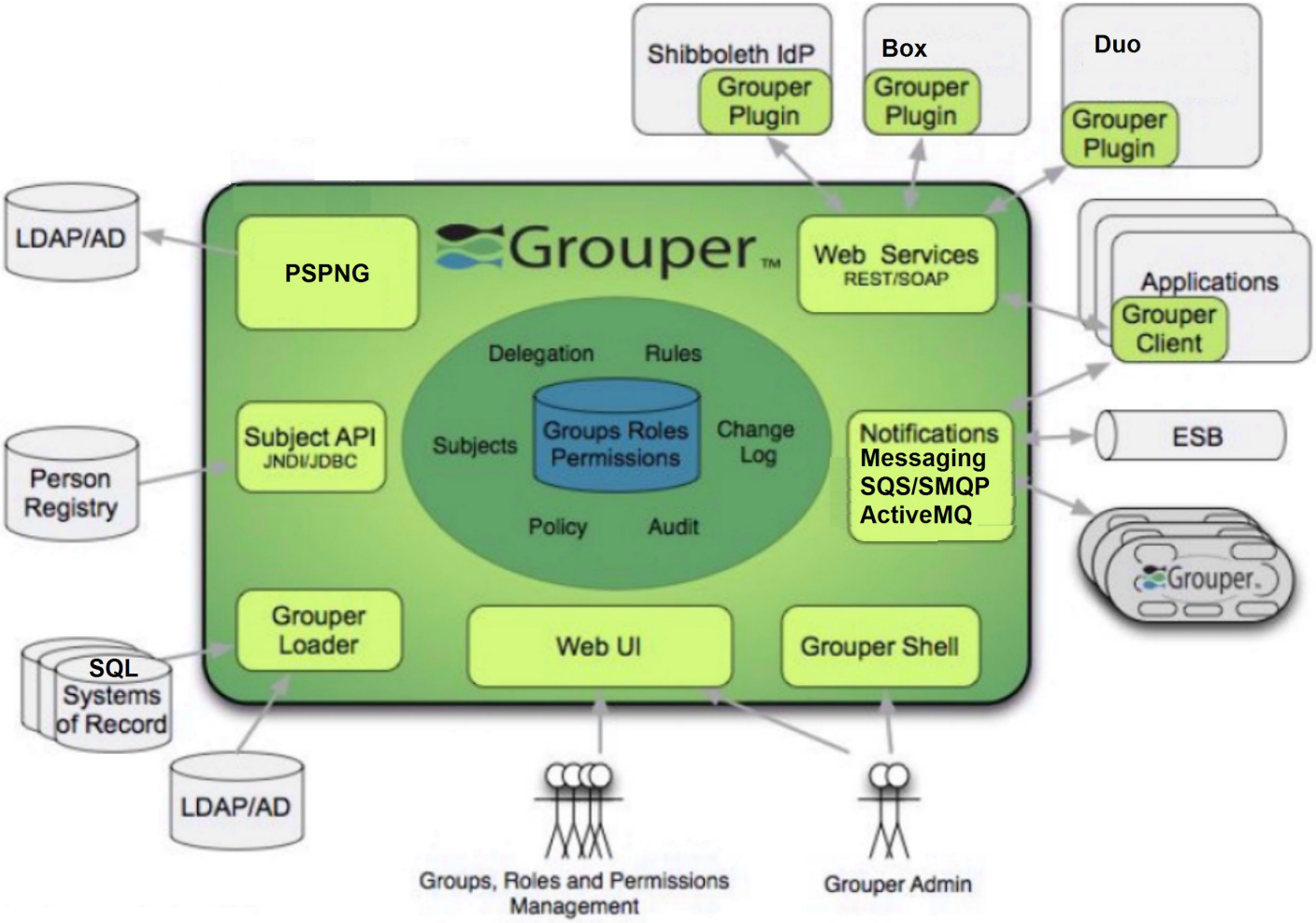
Shilen Patel: Duke



What is Grouper

Grouper components



Control access policy centrally

Leverage “system of record” groups

To assign access

To deprovision assignments

Add or subtract exceptions

Manage ad hoc groups

Share policies among several applications

See what resources someone has access to

View access from a person or service principal point of view

Easily onboard someone to be “like” an existing or past employee

Deprovision access when affiliations change

Depends on how many applications Grouper is integrated with

Delegation

Assign folder privileges

Allow departments and groups to manage their resources

Privileges available on folders, groups, and attributes

Privileges can inherit from ancestor folders

Auditing

Keep track of changes, who made them and when

Point-in-time gives you a view in the past

Certain point in time

Time range

Who was in a group at a certain point in time

Who was in the group over the last year

What access someone had 2 years ago

Rules

When an action happens

If a condition is true

Make something else happen

E.g. remove access if user changes affiliation

E.g. email access administrator if user chances jobs

E.g. veto if not eligible

E.g. automatically assign expire date

Attributes

Grouper attribute framework

Assign attributes to groups, folders, entities, attribute assignments, etc

Attribute assignments can have values

Can be multi-assign

Can be multi-valued

Permissions

Implement RBAC permissions

Roles

Role inheritance

Resources that a role or user has access to

Resource hierarchies

Actions that the user or role can perform on the resource

Action hierarchies

Subjects / entities

Entities (aka Subjects) are things that can be used in Grouper

- Member of group
- Assignee of privilege
- Has permission
- Assigned attributes

Grouper is connected to one or many subject sources (SQL or LDAP)

It's nice if you have an IdM to merge your entities into one identifier namespace

Folders

Folders hold Grouper objects:

- Groups
- Folders
- Attributes

Folders are a namespace

Privileges, attestation, other features can be assigned at the folder level and inherit to sub-objects

Privileges

Configure who has access to various objects and features in Grouper

Inherit privileges from folders

Delegate folders to various organizational levels

For example group privileges control:

- Who can view the group exists
- Who can read the memberships
- Who can admin the group
- Who can change memberships
- Etc

Composites

Composite groups help create policies

A composite owner has two factors

‘Intersections’ require members are in both factor groups

- For example: require members are active employees

‘Complements’ require members in first factor but not second factor

- For example: subtract members in the red button group

‘Union’ doesn’t exist, just add a group as a member of another group

- For example: members can be faculty or staff

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Types

Grouper Deployment Guide defines certain types of groups and folders

Grouper manages attributes to identify objects as being a certain type

- basis: Basis groups represent arcane codes or attributes from external systems are used generally in reference groups and not directly in access policy.
- ref: Reference groups are institutionally meaningful cohorts used in access policy
- policy: Access policy groups are used by downstream systems to allow or deny users access to services or resources.
- security: Security groups are collections of entities who have from access privilege on a group/folder/attribute, e.g. studentSystemAdmins.
- others: readonly, org, test, app

Grouper loader

- The Grouper loader loads groups on cron and real-time from external sources
- Two types
  - SQL
    - Load a single group from SQL
    - Load a list of groups from SQL
  - LDAP
    - Load a single group from an LDAP filter
    - Load a list of groups from LDAP filter returning groups
    - Load a list of groups from an LDAP filter returning people with attributes

Grouper reports

- Composite, see members (e.g. users who aren't employees)
- Folder reports (memberships in folder who do not have training)
- SQL report (most anything is possible)
- Your own report engine with the Grouper database

Set report security by a group

Schedule reports with email notifications

View past reports to identify trends

Deprovisioning

Centrally view memberships, privileges, permissions

Unassign someone's access in one screen

Manage metadata settings about deprovisioning so the correct entitlements get adjusted when someone's affiliation changes

Buffer changes with grace periods and corrections for delays in source systems

Attestation

Periodically review groups

Configure the schedule

Email reminders

Configure at a folder or group level

Folder level will inherit to group descendant

Soon reports will be able to be attested

Visualization

See how groups are connected

View policies visually

See an entities access visually

See where groups are provisioned

See member counts at a glance

Workflow / approvals / electronic forms

Will be released hopefully by 8/21/2019 (in the next week)

Configure a workflow on a group with custom form and form elements

Various people or groups approve the workflow at various states (nodes)

Requestor is automatically added to group(s) at end of workflow

Email notifications for approvers

UI screens to see forms from various views (requestor, approver, admin)

Auditing of who did what when

Snapshots of forms stored at each step in workflow

Roadmap

2.5 to be released in the next few months

2.4 will be feature frozen and only bug fixes and security issues will be made

- Configuration in the database
- E-forms (workflow and approvals)
- Configuration wizards
- Delete dates on groups
- Rules in UI
- Grouper Deployment Guide V2

Training

- Attend a two day Grouper training
- Given twice per year
- For new users or not so new users
- Learn how to use Grouper and how to authorize services the right way
- Read the Grouper Deployment Guide
- See self service training videos (a little dated, will be updated in next year hopefully)

Demo server

Sign up for demo server: https://grouperdemo.internet2.edu

See Grouper is various versions

You can see the UI and WS

Use Cases from Duke

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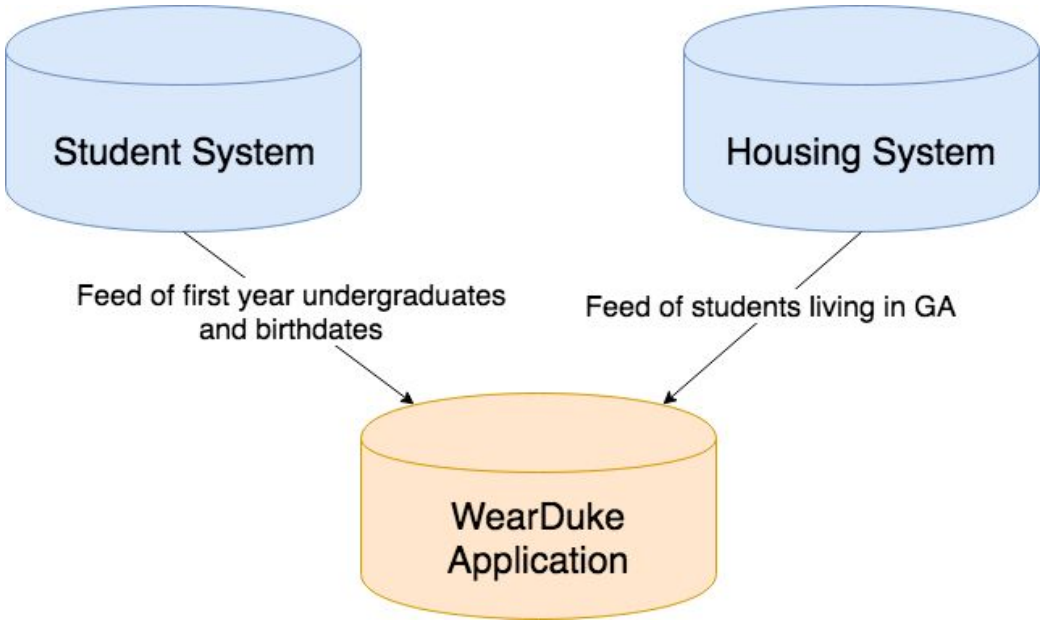
Grouper Use Case: WearDuke

- Initiative to use wearable devices to track student activity and sleep patterns.
- Students would enroll and take surveys using the WearDuke application.
- Eligible students are first year undergraduates who live in Gilbert-Addoms (GA).
- Students have to sign a consent and re-consent after they turn 18.

Grouper Use Case: WearDuke

Traditional approach

- A lot of sensitive data moving around
- A lot of applications like WearDuke – this approach doesn't scale well
- SoRs have custom integrations with many applications

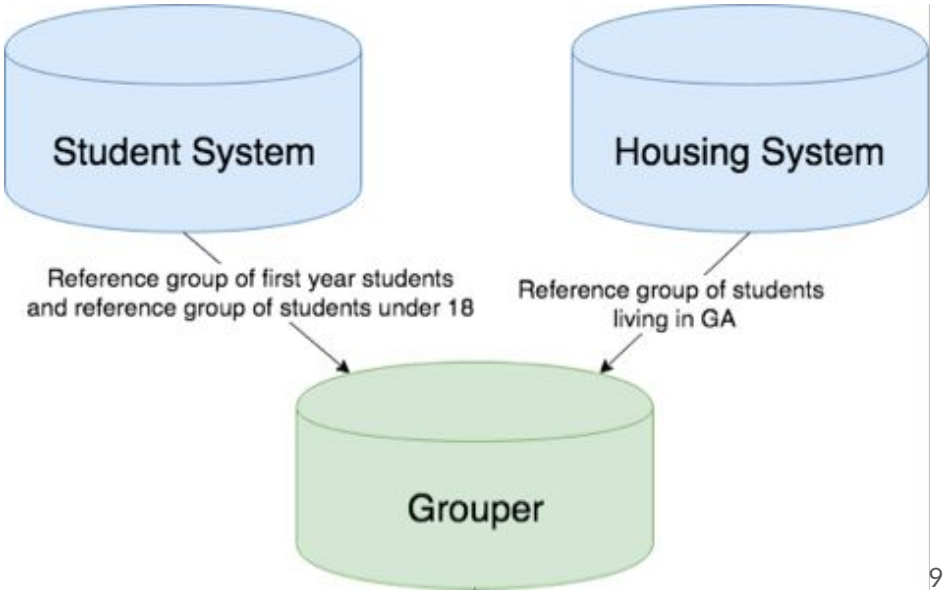


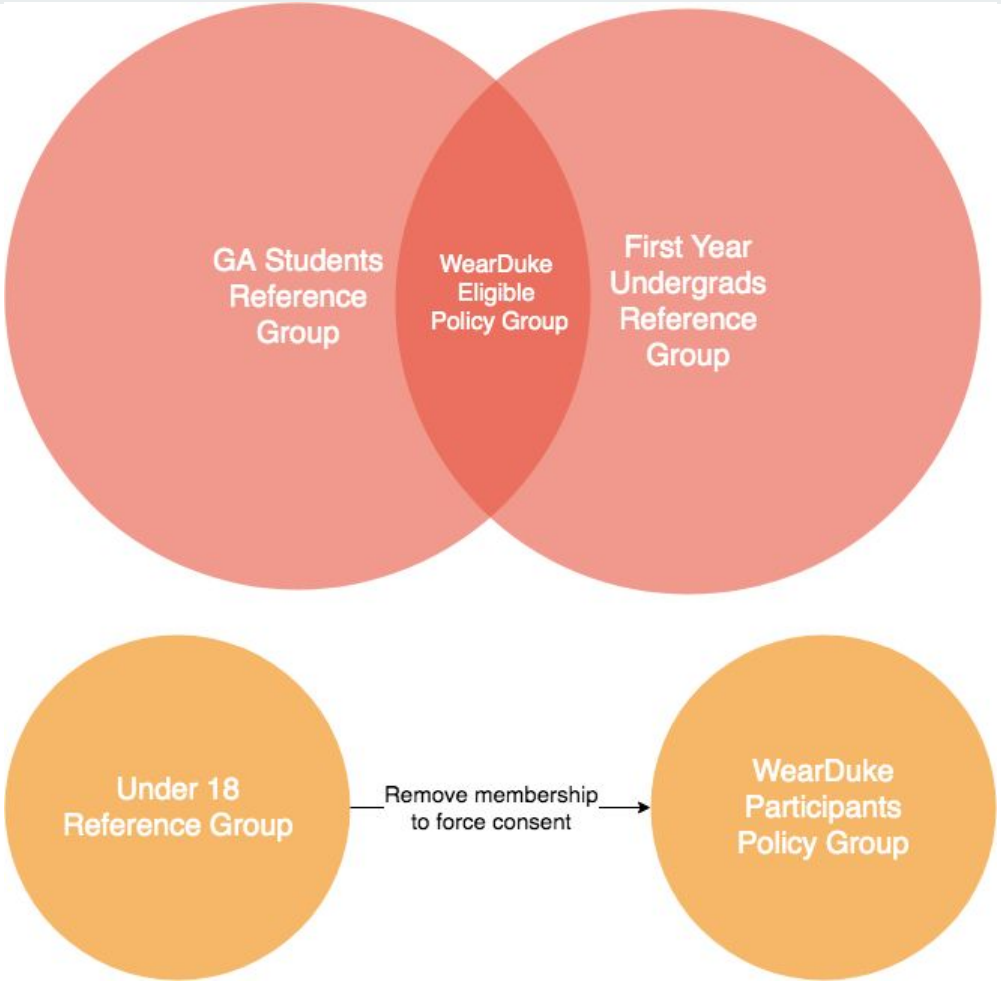
Grouper Use Case: WearDuke

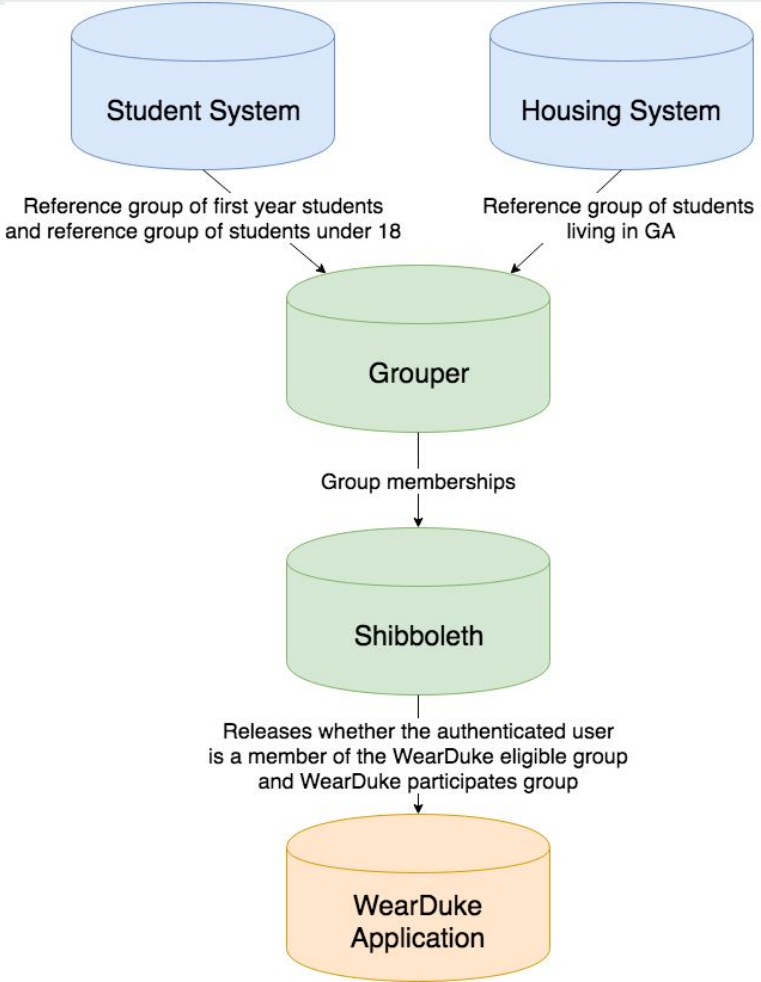
Grouper approach

- SoRs send data to Grouper instead

- Reference groups are created in Grouper




GA Students Reference Group
WearDuke Eligible Policy Group
First Year Undergrads Reference Group
Under 18 Reference Group
Remove membership to force consent
WearDuke Participants Policy Group

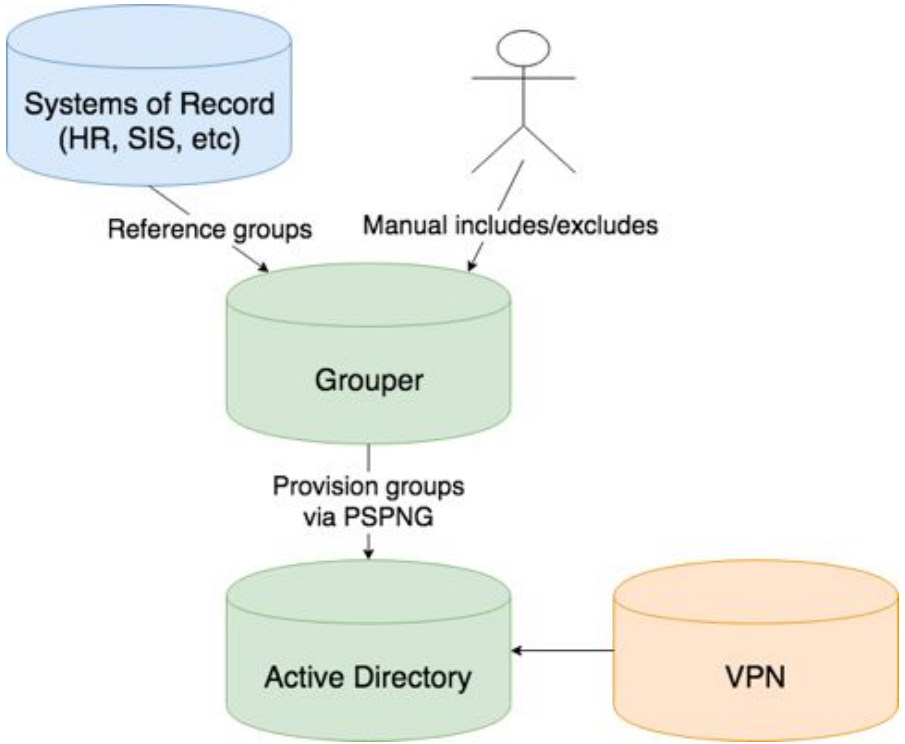

Student System
Housing System
Reference group of first year students and reference group of students under 18
Reference group of students living in GA
Grouper
Group memberships
Shibboleth
Releases whether the authenticated user is a member of the WearDuke eligible group and WearDuke participates group
WearDuke Application

Grouper Use Case: VPN

- Fuqua
- Fuqua excludes
- Fuqua includes
- Fuqua system of record

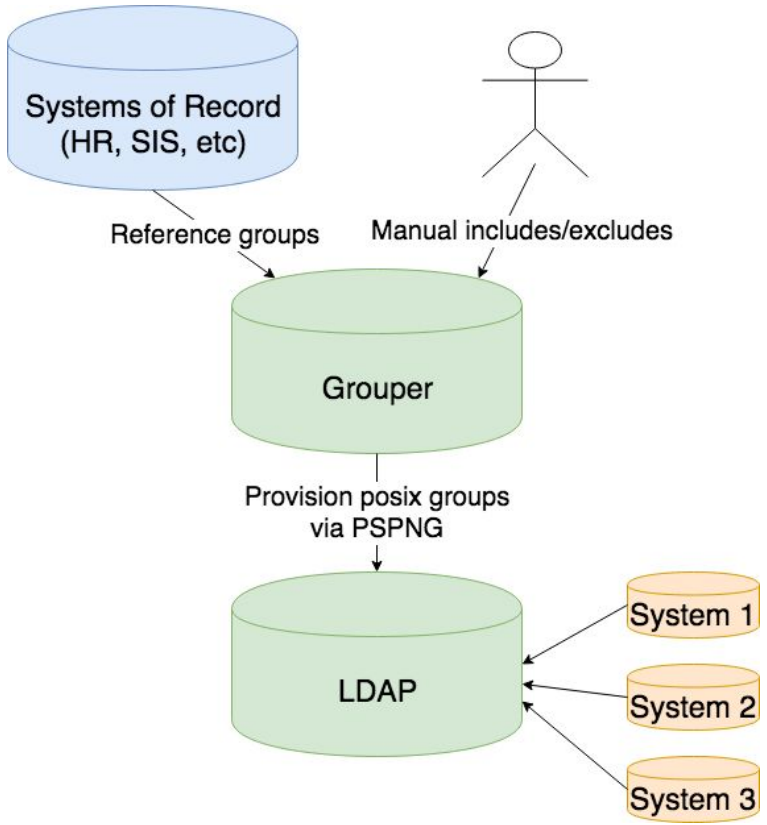
Grouper Use Case: VPN

- Systems of record provide most of the data
- Include/exclude groups delegated out to departments to manage
- All manual changes are audited
- Provisioning to AD is a built-in feature



Grouper Use Case: UNIX login and file permissions

- UNIX systems use LDAP for user and group data
- Grouper provisions groups to LDAP as well
- Provisioning includes gidNumbers

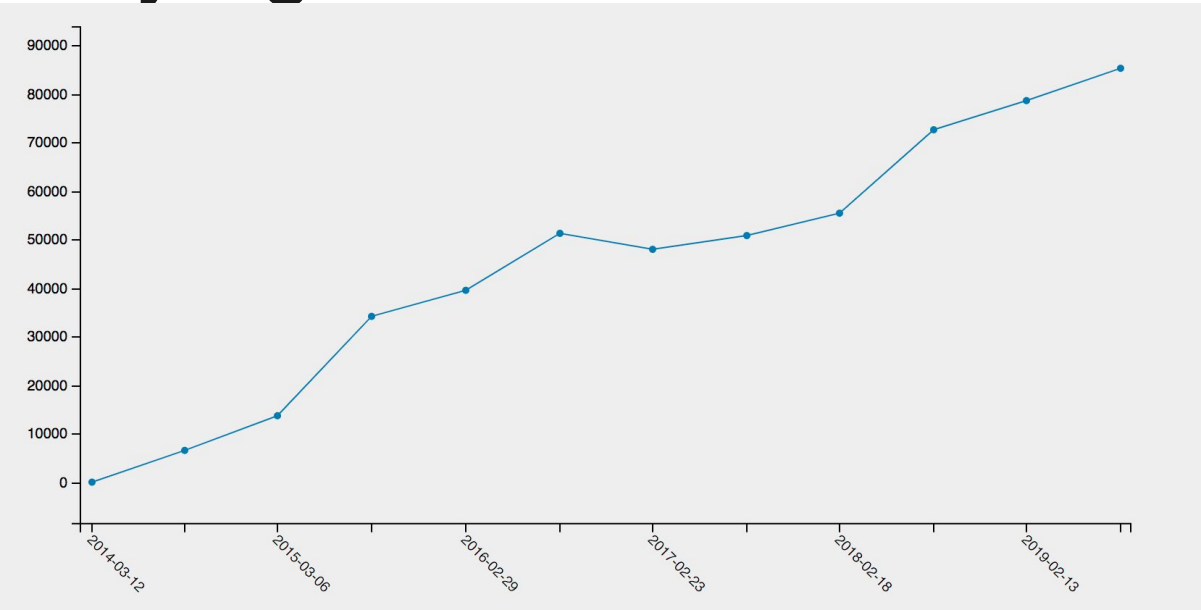


Grouper Use Case: AWS

- Grouper groups are used to manage “roles” in Amazon
- Amazon’s SAML integration allows us to easily pass group memberships

- Many other Shibboleth integrations

Using Grouper audit data to pull membership history (e.g. multi-factor enrollment)



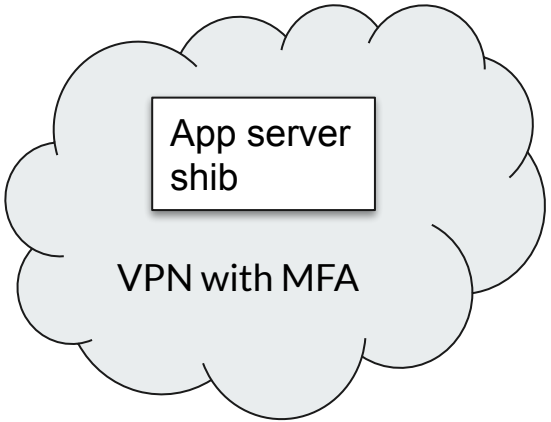
Use Cases from Penn

Use case 1 from Penn: coarse grained authz

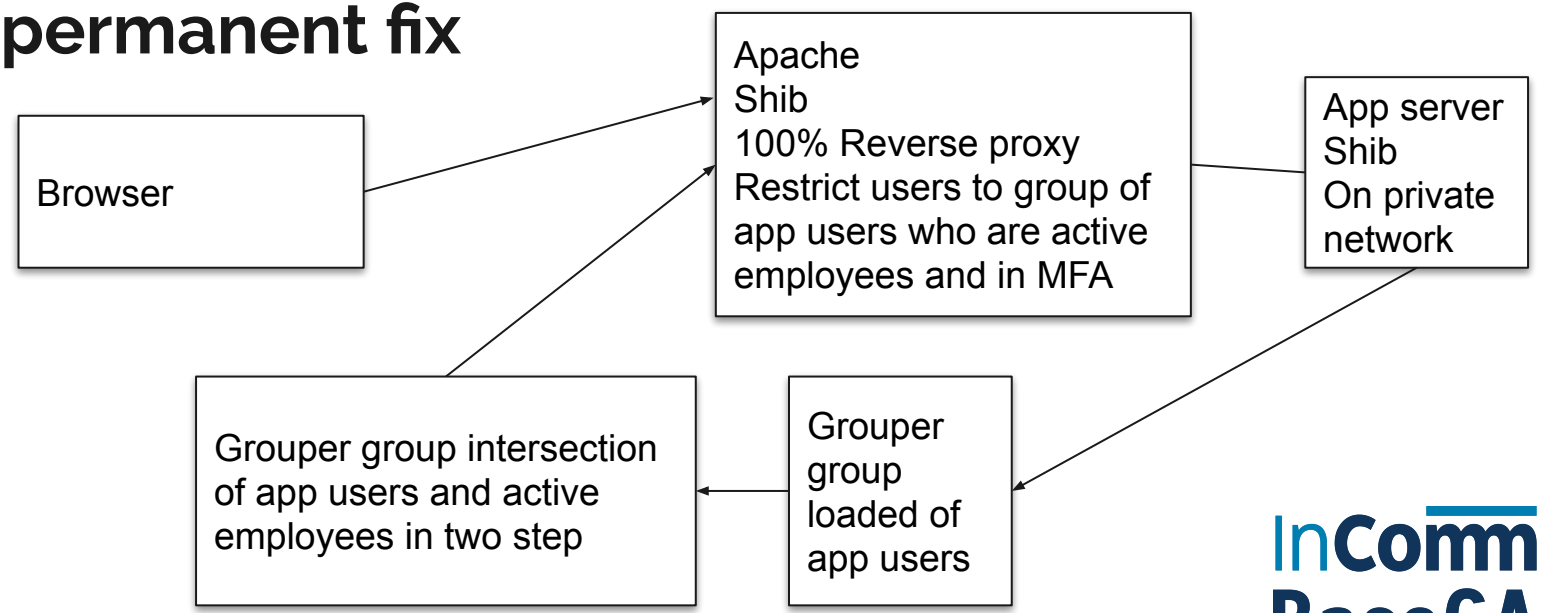
- System was compromised

Use case 1 from Penn: coarse grained authz - temporary fix

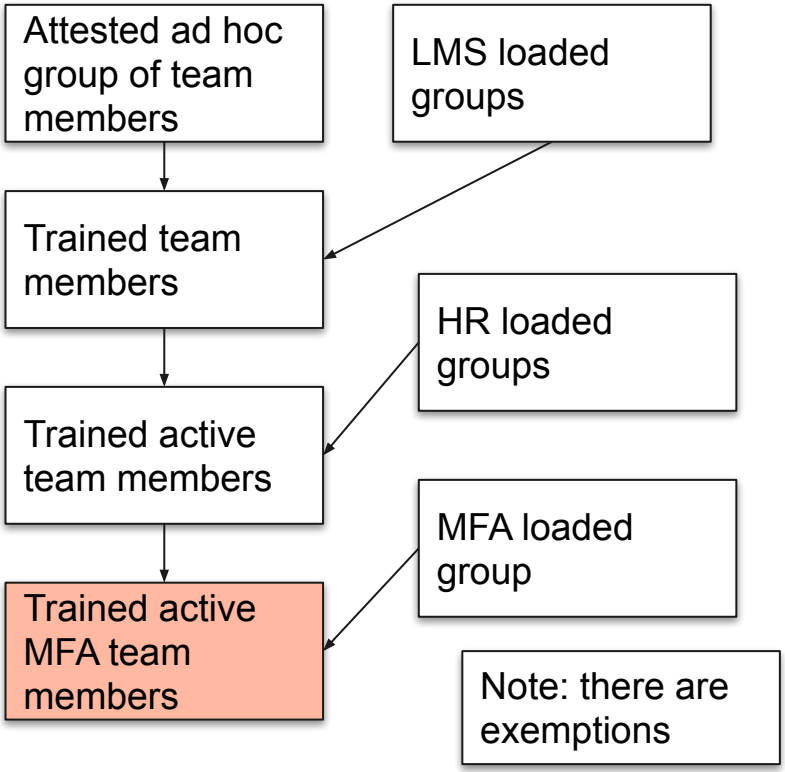
- Add VPN
- Users hate VPN
- Tedious on mobile devices
- Users allowed on VPN need to be added, removed, superset of app users

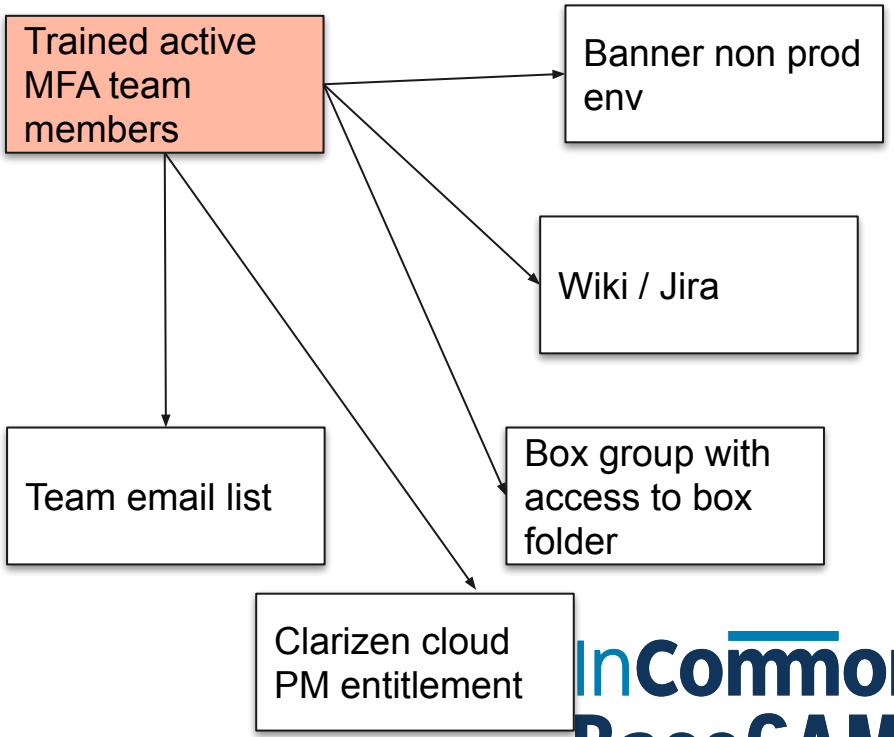


Use case 1 from Penn: coarse grained authz - permanent fix



Use case 2 from Penn: banner team collaboration





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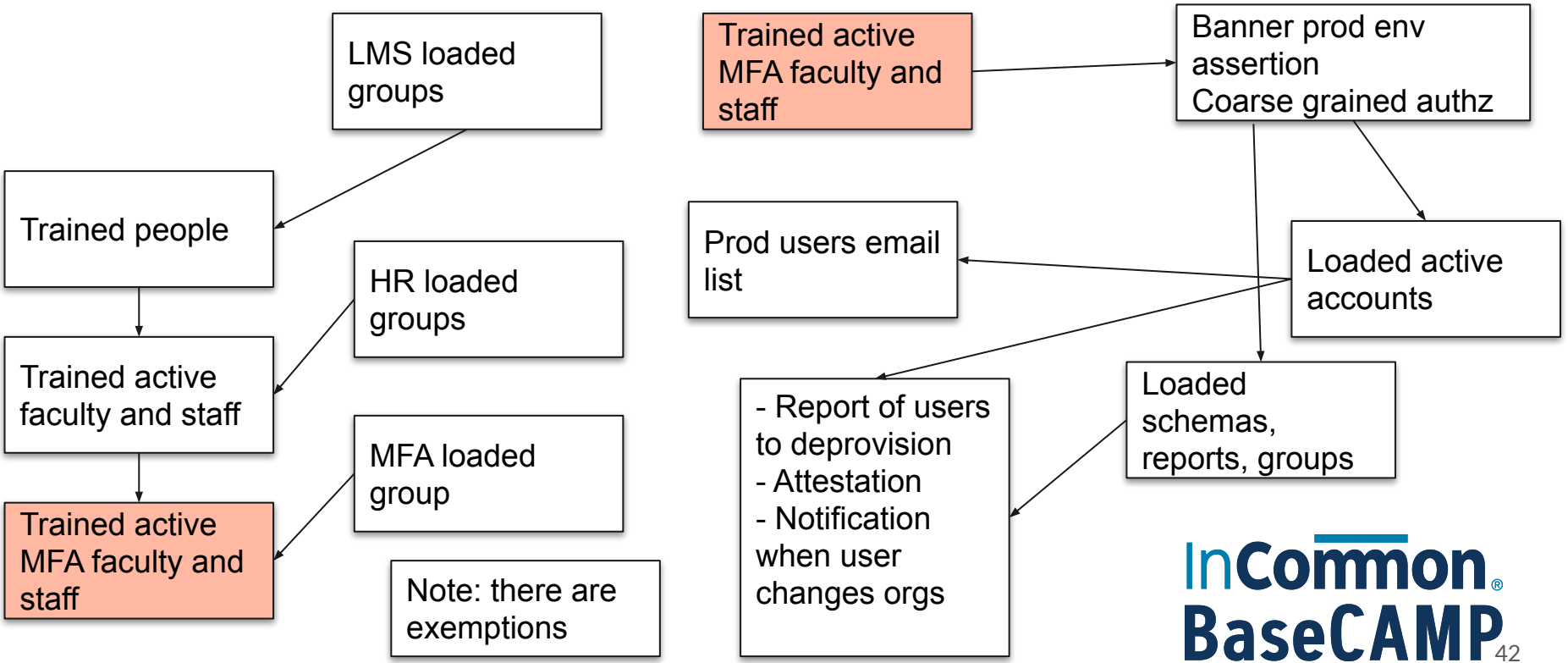
Use case 3 from Penn: banner production



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