Integrated Identity and Access Management with I2MI Tools

http://arch.doit.wisc.edu/keith/i2/Integ-tb-kh-01.ppt

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Session overview

- Identity and Access Management (IAM) service-based model & I2MI tools
- Service integration across I2MI and with I2MI: illustrative examples
- I2MI suite and integration techniques
- Gaps in the tools and in the model
- Harmonization objectives for I2MI tools

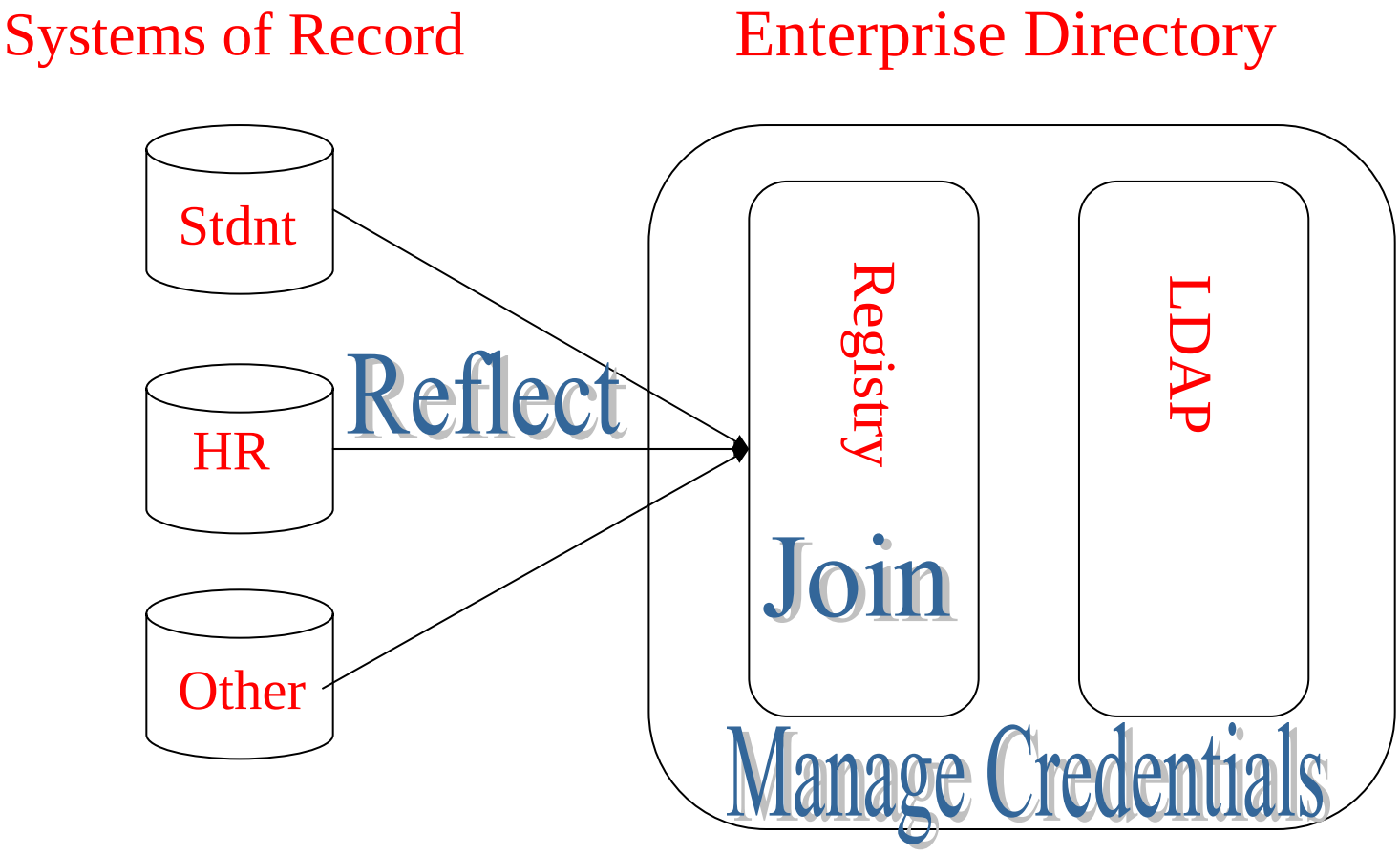
From Construction to Integration

- Construction
  - Raw materials into systems
- Integration
  - Subsystems into whole systems
  - Multiple systems into ecosystems
- We’re all moving from construction to integration
- The integration story across IAM services and with IAM services

IAM: Generic Services

Verb	**Objects**
Reflect	Data of interest from systems of record into registry, directory
Join	Identity information across systems
Manage	Credentials, group memberships, affiliations, privileges, *services, policies*
Provide	IAM info via - relay thru run-time request/response - provisioning into App/Service stores
Authenticate (AuthN)	Claimed identities
Authorize (AuthZ)	Access or denial of access
Log	Usage for audit

Reflect, Join, and Manage Credentials: One mapping to I2MI



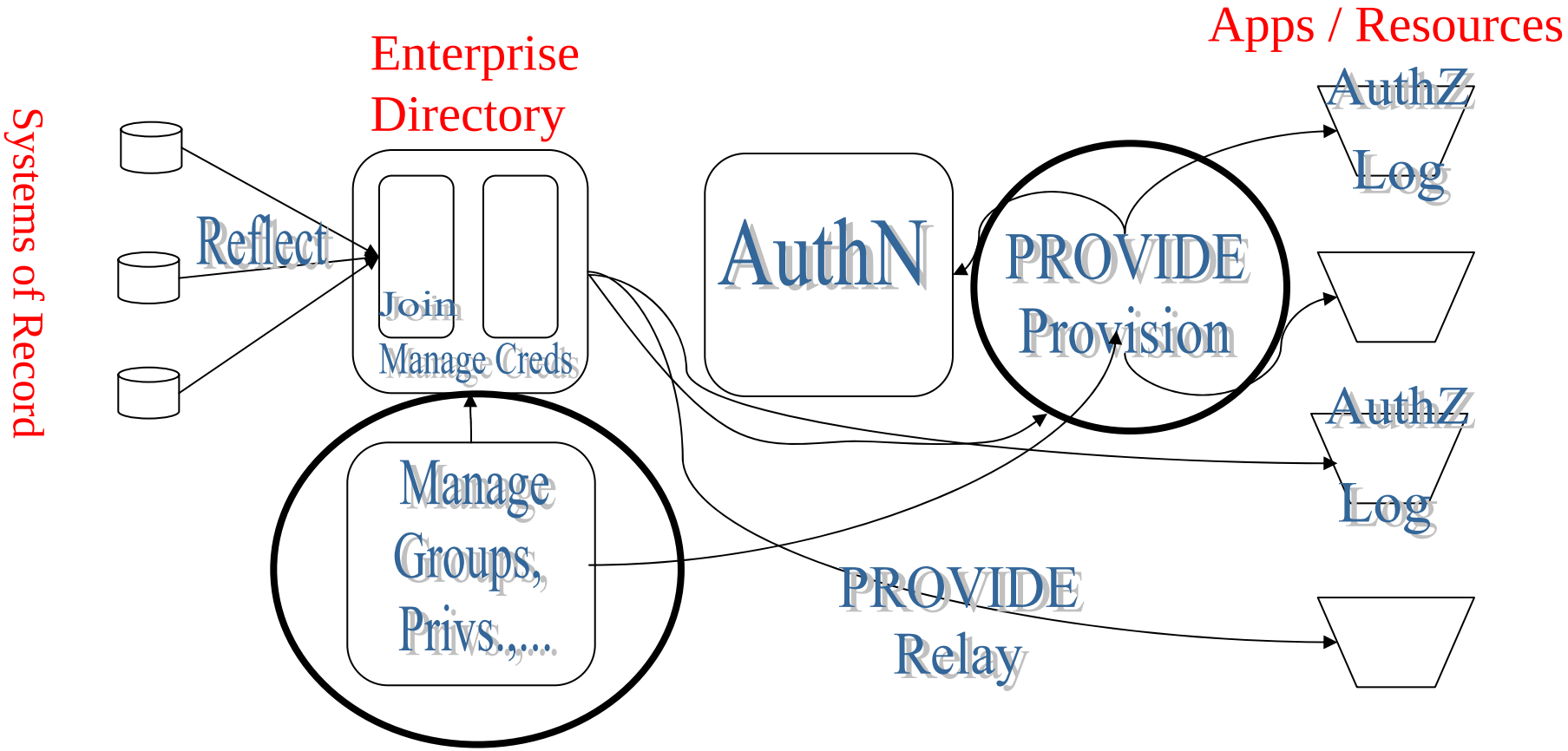
Reflect, Join, and Manage Credentials

- Collect bits of identity information in all the relevant IT systems
- Use business logic to
  - Establish which records correspond to the same person
  - Maintain that identity join in the face of changes to data in collected systems
- Assign a unique identifier for cross-system link

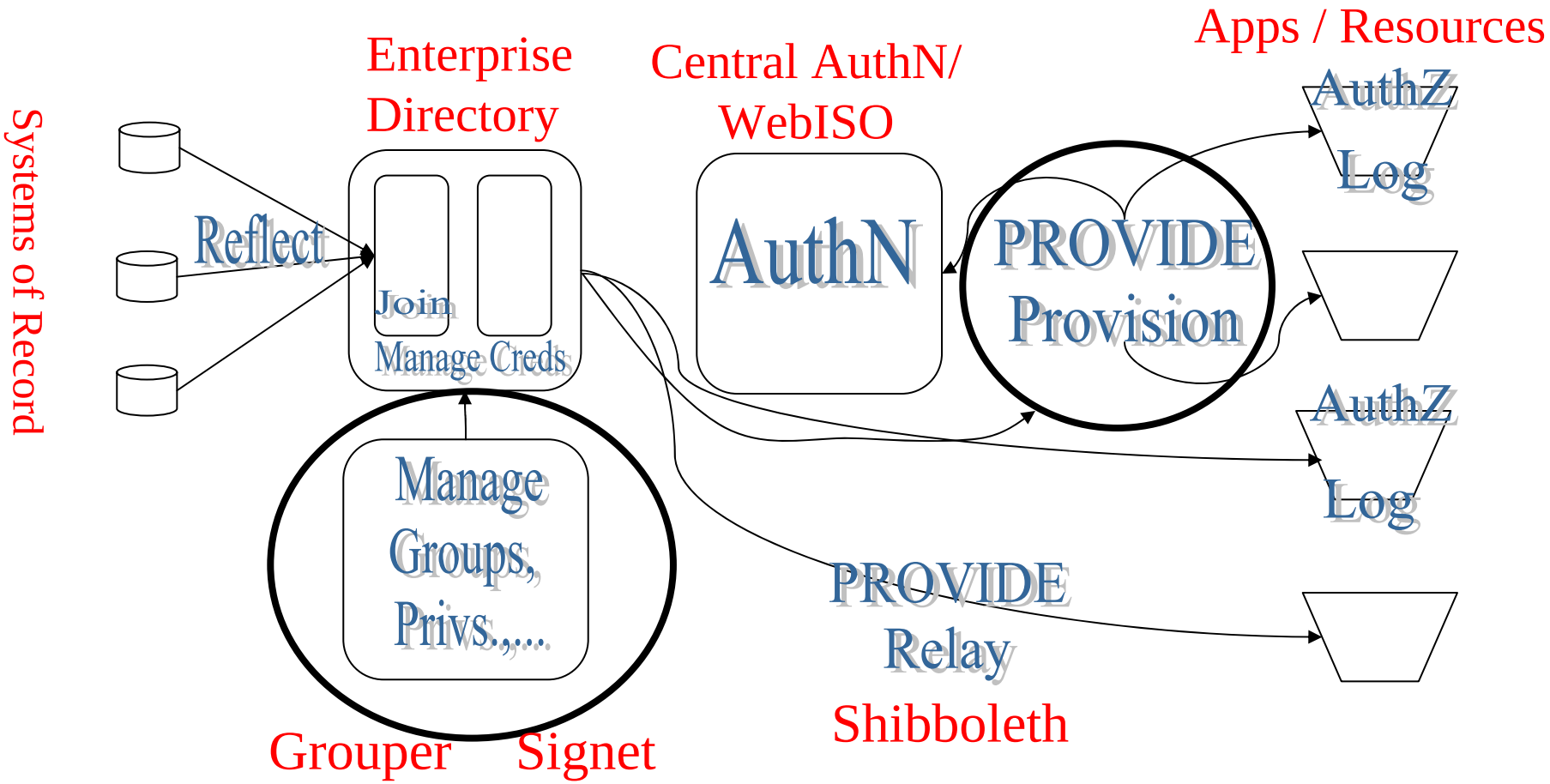
Manage Credentials

- When to assign, activate credentials
  - (as early as possible)
- Who gets them? Applicants? Prospects?
- “Guest” NetIDs (temporary, identity-less)
- Reassignment (never; except…)
- Please send me a feed…
  - Argument for WebISO

Manage IAM Info and Provide it via run-time calls or provisioning



IAM Services mapped to I2MI Tools



Other I2MI artifacts

- Object classes (info models, data structures, protocol bindings)
- Documentation of practices
- Implementation roadmaps

New services: integration issues

- "New hires should get into system as soon as they accept the offer of employment instead of after they show up for work.”
- They should get NetIDs, email, calendar, portal, but not Health Services or Rec. Sports facility access."

New services: integration issues

- “Undergrad applicants should get into the system once they've accepted offer of admittance and not when they show up to register for classes.”
- They should get NetIDs, email, calendar, portal, but not Health Services or Rec. Sports facility access."

Weaving in the new service

- Reflect
  - Employee/Applicant lifecycle events (accepted offer, start date,...)
- Join
  - Many new employees are students; Some employees apply to become students.
- Credential / AuthN
  - Give them NetIDs with lower level of assurance because Identity proofing is weak until they show up in person.

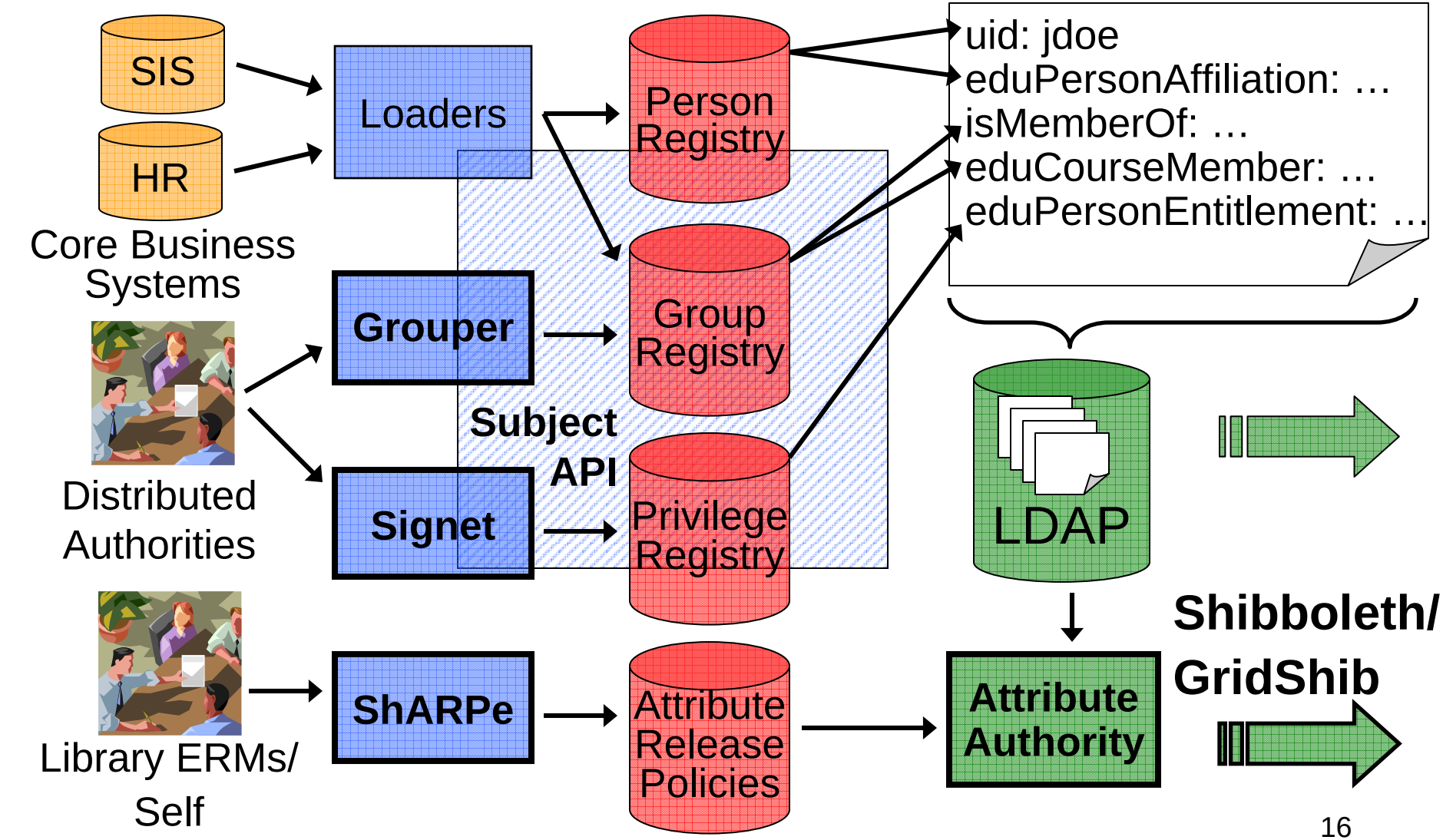
Weaving in the new service

- Manage affiliations
  - Define lifecycle of employee/applicant role, automate state changes based on events in Systems of Record / Authoritative Systems (HR, SIS)
- Manage privileges
  - Map employee/applicant-lifecycle affiliations to appropriate set of privileges

Weaving in the new service

- Provide/Provision
  - Push new hire info out to systems that need to create accounts/user records
- Provide/Relay
  - Make Affil/Priv info available at App/Service run time when user requests it
- AuthZ
  - Make sure target apps act in line with the person/affil/privilege info

Attribute Management & Delivery: Affiliation, Privilege, & Privacy



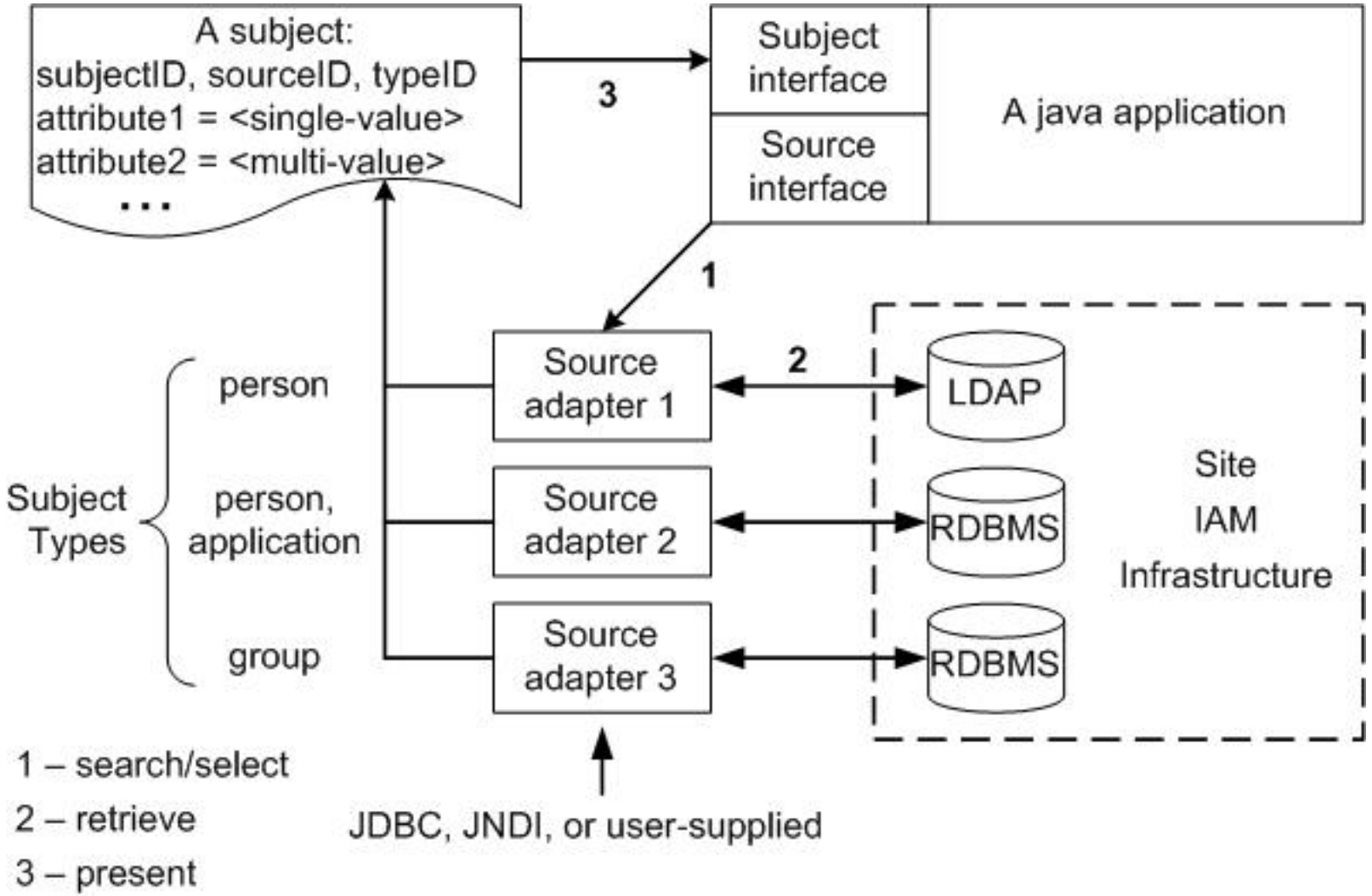
ShARPe – Shibboleth Attribute Release Policy Editor

- Manages claims expressed about organization's managed identities
- Under development by the Meta-Access Management System (MAMS) project in Australia
- Initially targeted at Library Enterprise Resource Managers
  - Possibly expand to all users for self-management of per-user ARPs
  - Enables ARP assignment to groups too
- Organizational counterpart to MS's "Identity Metasystem" concept?

Grouper & Signet: Site IAM Integration Requirements

- **Subject** - a person, group, application, or other type of object whose identity is managed by your IAM system
- Abstract the underlying technology and data model from a relying application
- Enable identifier namespaces to be selected to match application needs
  - Username vs. opaque registryID vs. …
- Scenarios
  - Map authenticated user to internal security principal
  - Search for or select subjects within application

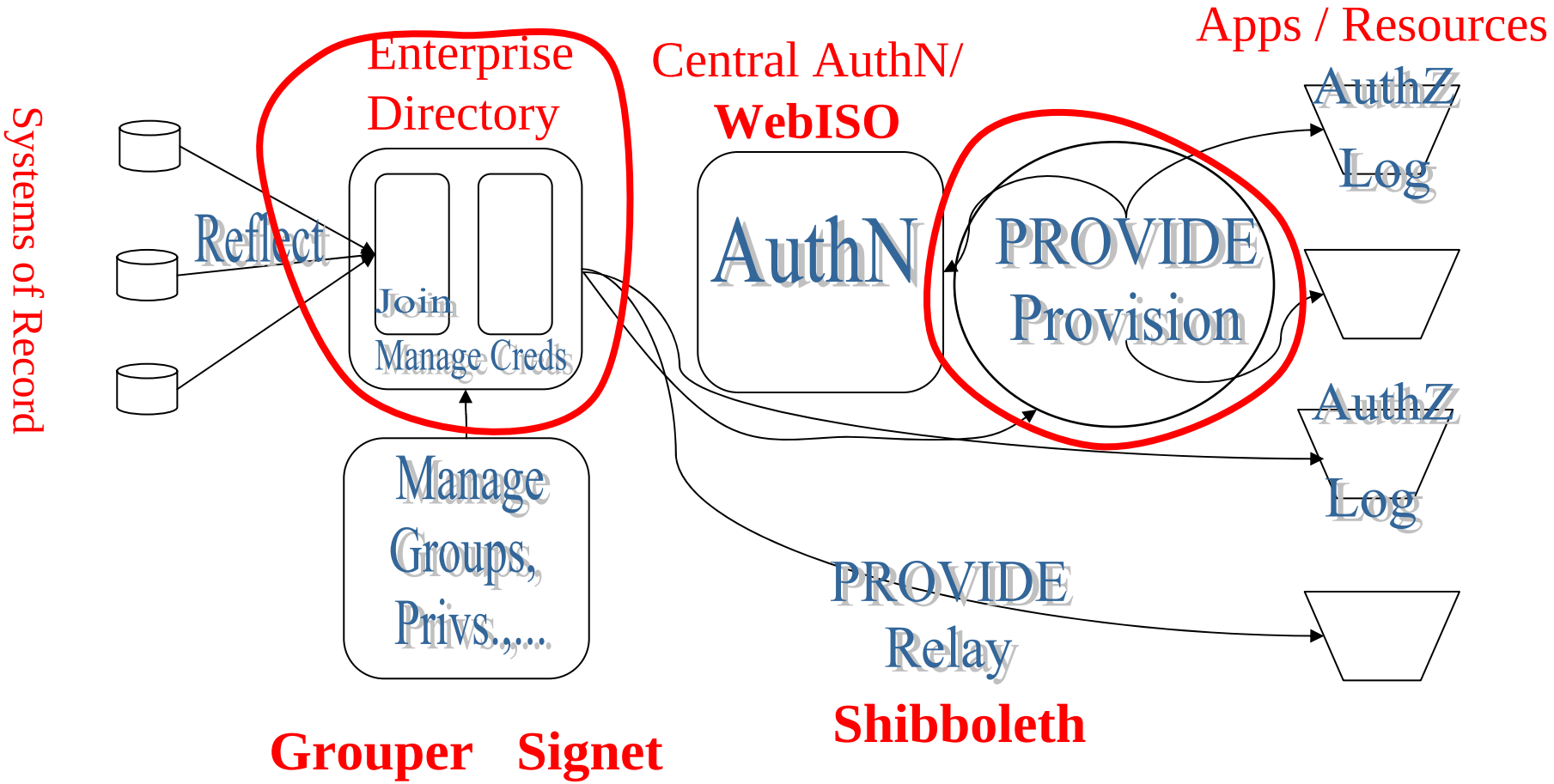
Subject API: Integration with Site's IAM



More Subject API Info

- Subject and Source interface specs are at v0.1 – they may yet change
  - Searching
  - Some per-subjectType methods?
- Grouper includes a GroupSourceAdapter that is a provider of ‘group’ subjectTypes from the Group Registry
- Subject API will not support the Join function
- JDBC source adapter is included now, JNDI source adapter will be provided in a subsequent release

IAM Services mapped to I2MI Tools



Empty spaces in the I2MI toolbox

- Those pesky lines between the boxes--left to the reader
- The lines are where service integration happens
  - Metadirectory functions
  - Provisioning (in the general sense)
  - ??
- Should I2MI try to help with integration tasks?

Modeling the lines: Initial thoughts

- Data flows?
  - Event publication on a service bus
  - Content-based routing (a la OM)
- Service invocations?
  - SAML request/responses
  - WS-* wide world of web services
- Is it a particle or a wave?
  - Document-oriented transformation services

Revive MOM & SIS?

- Keith's early, prescient ideas
  - MOM = Message Oriented Middleware
  - SIS = Smart Information Switch
- Roland's deep design (mantra: OM)
  - Content based information routing
  - Governed by embedded policy engine (SPOCP's brain)
- Walter's Nth generation provisioner
  - Nexus: consumer-specific mappings & transforms configured transparently

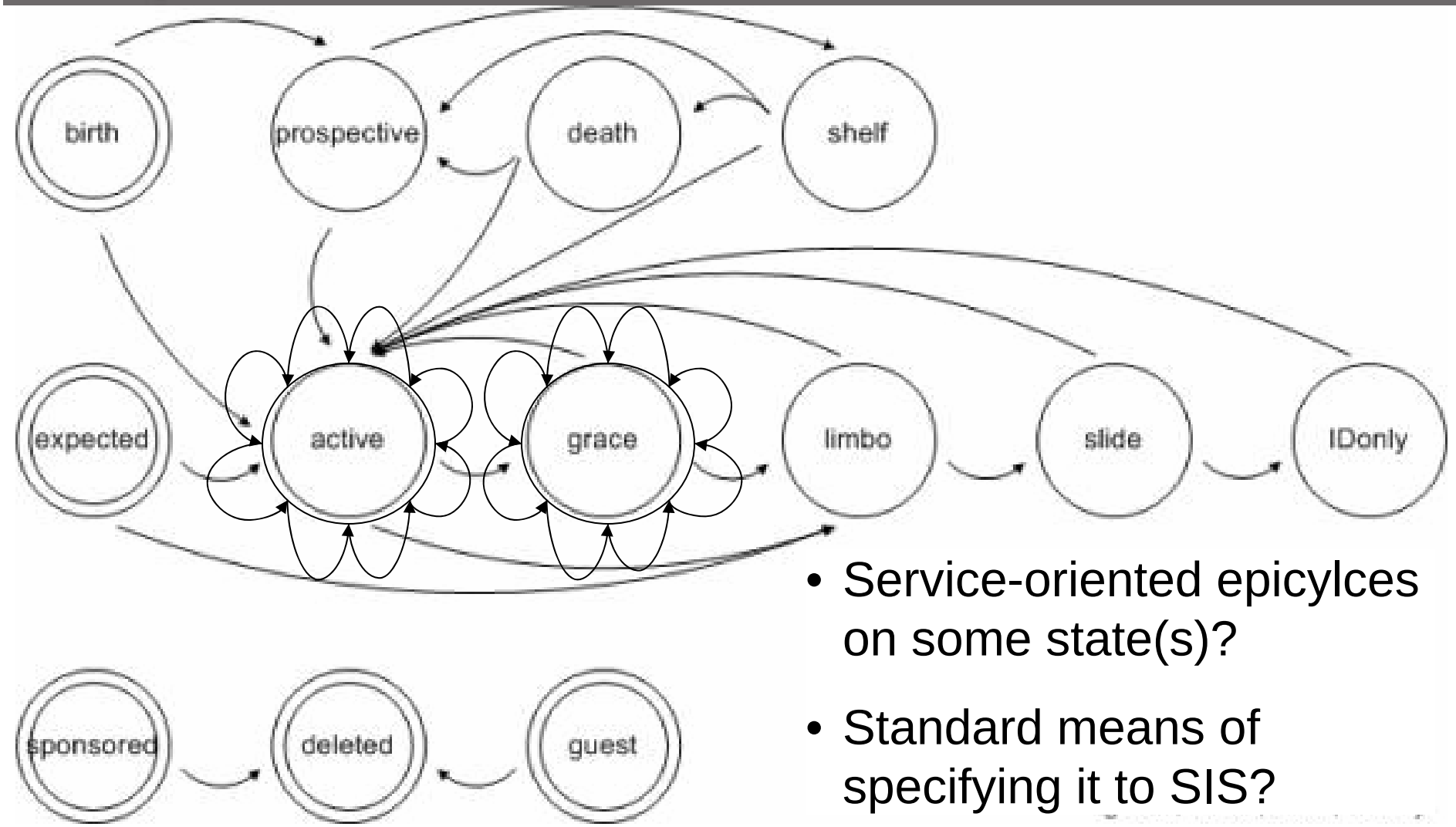
Identity Information Integration Specifications

- Standard interfaces and constructs are needed to develop, evaluate, or integrate off-the-shelf “identity information integration tools” into the IAM picture
  - Interface between SIS and provisioner
  - Structure of a stateful lifecycle policy
  - Presentation, management & persistence of policy configuration

Role of Grouper, Signet (& ShARPe?)

- Are they source systems?
- Are they registries?
- Until we've got a SIS, need to provision directly from each, treated as registries
- Probably should ultimately be treated as source systems
  - Avoid duplicating lifecycle management logic in multiple provisioners

Refine Model of Stateful Lifecycle Management?



- Service-oriented epicylces on some state(s)?
- Standard means of specifying it to SIS?

Clarify Policy Management

- ShARPe manages Attribute Release Policy
  - Currently siloed with the Shibboleth Attribute Authority
  - Should it somehow expand to constrain the Delivery service more generally?
- Signet is also a policy execution tool
- We lack a unifying framework and an understanding of the requirements it should serve

Harmonizing I2MI Tools: Objectives

- Deployment of second and subsequent I2MI tools should be harmonious with the first
  - Common UI look and feel
  - Common 3rd party libraries
  - Common customization & configuration technique
  - Common & complementary build layout & build process

Harmonizing I2MI Tools: Objectives

- We should eat our own dogfood
  - Common technique for integration with site IAM infrastructure
  - Capable of integration with external privilege and/or group management
- Common or coordinated web presence, documentation, product placement info
  - Just starting to address this
  - Steering group formed & documentation resource assigned

Further I2MI Integration Needs

- Cookbook of ways to deploy I2MI tools to address various attribute and access management scenarios
- Mechanism for sustained viability of I2MI tools
  - On-going support
  - Post-working-group model for continued development & QA

Alternative boxes & lines

- The service model could be implemented with any number of toolsets
  - I2MI
  - Home-grown (perl scripts, SQL tables & procedures, OpenLdap directories,…)
  - Vendor offerings
    - Novell, Sun, Oracle, Microsoft, IBM,…
- The latter is how many of the non-I2 institutions will proceed. Are their needs out of scope for us?