

The way to IdM at uma.es

Identity Management Workshop

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May, 15th 2007



The corporate directory is the cornerstone for the middleware infrastructure



Overview

1 Past

- Preliminaries
- Design
- Research work



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- 2 Present
 - Data load
 - Applications
 - Mailsystem redesign



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 - Preliminaries
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- 2 Present
 - Data load
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 - Mailsystem redesign
- 3 Future
 - Classifications
 - Tree stabilising
 - Evolving the schema



Coordinated work

Joining efforts and seeding

Our main aim was that our work could be useful to others.



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- Esquema IRIS (Spanish coordinated schema effort)
- Schema comitee
- TF-EMC²
- SCHAC



Tree structure and attributes

On pine trees, bonsais and forests

Main points of our Directory Information Tree design



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Main points of our Directory Information Tree design

- **Shallow tree**

The fewer the branches,
the fewer the problems

One branch for each kind of object with
a reduced count,
greatly simplifies administration.
Above all, objects do not usually
change kind.



Tree structure and attributes

On pine trees, bonsais and forests

Main points of our Directory Information Tree design

- Shallow tree
- **One branch for persons**

Persons are persons

Regardless of their relationship to the University at a given moment in time. And they often have more than one kind of relationship.



Tree structure and attributes

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- Shallow tree
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- **Classifications**

Overlaid hierarchies

The use of classification codes allows an object to be at different places in different hierarchies and even in the same hierarchy.



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- Shallow tree
- One branch for persons
- Classifications
- **Privacy**

Opaque DN's

Opaque data are used to build DN's that can't be associated to the persons described in the directory entries, in order to avoid privacy *leaks*:
idnc,dc=uma,dc=es, idnc being an UUID we produce when the entry is created.



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- **Privacy**

I own my data

We designed the privacy attribute, now `schacUserPrivateAttribute`, to allow users control on publishing of certain publically accesable information.



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- Shallow tree
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- Classifications
- Privacy
- **Authorisation**

Who does what

Granting privileges through URNs allows for fine grained control of access levels, both for persons to applications and for applications to persons data.



Source identification

Are all bases covered?

We know for certain were all data about our
University members are



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Who ... does this address belong to?



External data maintenance

Perennial tree

Entries are created, but never destroyed.



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- **Status transitions**

Entries evolve

We load directory stored data changes as transitions from a previous state to a new one.



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- Status transitions
- *SQL Triggers*

Systems of record log their changes

Functions and triggers have been programmed to log the changes that the SoRs make to data that affect the directory. This log is stored into a state transition table that keeps the same data for all persons, but with different states for each system.



External data maintenance

Perennial tree

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- Status transitions
- SQL *Triggers*
- **The linkage problem**

Linking entries to their origin

A unique code that links directory entries to the registers in the various systems of record is fundamental.

The IRIS schema lacked a proper solution to this, but it is properly dealt with in SCHAC.



Changes in authentication methods

The directory as the authorisation centre

This is the way to a real Authentication and Authorisation Infrastructure.



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- **Web applications**

Old applications

We have developed a classic web authentication mechanism for our web server, that validates against the directory, similar to Apache mod_authz_ldap, which allows applications to run unmodified.



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- **Web applications**

New applications

New applications do authN and authR against the directory, as preliminary step for federation mechanisms.



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- Web applications
- **Non web applications**

Directory validation

Conventional applications like mailbox access, authenticated mail sending or wireless access, do direct validation against the directory, for a better user experience.



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An owner for each mail address

This process has been key both to directory advancement as to data cleansing.



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- AA

Authenticate and Authorise

We have opted for virtual users, which bring some nice features and allow users to authenticate with any of their mail addresses. It is used for mailbox access and mail sending through the University MTA.



The first big project

An owner for each mail address

This process has been key both to directory advancement as to data cleansing.

- AA
- **Routing**

Deliver mail to its recipient

The system is very flexible thanks to the use of mail routing recommendations from the IRIS schema.



The first big project

An owner for each mail address

This process has been key both to directory advancement as to data cleansing.

- AA
- Routing
- **Storing**

A permanent mailbox

Using the entryUUID to identify mailboxes associated to entries, instead of other attributes that may change, allows for moving and modifying entries at will without losing track of the mail store.



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in diverse ways

We are working in several classifications at present.



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Though, there is little automated information.



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- White pages
- Departments
- Geographical location
- Subject areas



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Time for pruning and grafting

We have been able to achieve a reasonable health in the persons branch.



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- Clear definitions of University roles.
- Place non-person entries at their final locations.
- Delete the transient branches.



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like wine, they improve with time

Our aim is to apply new development we deem valuable.



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- We are transitioning from iris* to SCHAC, where applicable.
- Improve authorisation management. eduPermissions?
- We are working on a URN registry.



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- Persons are persons.
- The directory can be organised in many ways through classifications.

