

Dipartimento di Matematica *"U.Dini"* Università degli Studi di Firenze

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The Dept. of Math. “U.Dini”

“U.Dini”

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a small Dept.

- \approx 50 faculty
- \approx 500 students (math and IT)
- \approx 500 former students
- a few (< 100) managed workstations
- 3 (tech) staff + some coworkers (students)
- provide “IT infrastructure” to 3 mathematical institutions and to part of the administration of the University.

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Current status

Kerberos

OpenAFS

nix/afs

around 2002

We switched to AFS/Kerberos (actually *AFS/Kerberos/LDAP*) a few years ago, moving from a setup essentially based on SaMBa, nis and nfs, looking for

- improved security
- access to resources from outside
- better manageability



xen dom0's

afs fileserver
afs dbserver
kdc + ldap

iSCSI
shared storage
afs
(internal)
cell
AliEn
grid node

private cell for "offices"

- 1 KDC (MIT)
- 2 OpenAFS fileserver
- 1 OpenAFS dbserver
- hosting administration's data;
- groups mimic administrative structure

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cell for our AliEn grid's node

- 1 KDC (MIT)
- 1 OpenAFS fileserver
- 1 OpenAFS dbserver
- testbed for KCA/pkinit
- currently **NOT USED** in production (issues with locking)

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public cell: math.unifi.it

- 1+1 KDC (MIT)
- 3 OpenAFS fileserver
- 1 OpenAFS dbserver
- 1+1 LDAP (OpenLdap) servers
- some are virtual (xen) machines

- \approx 2000 rw volumes
- \approx 800GB online storage (60%+ free)

- users "home" dirs worldwide accessible
- common filespace on every workstation
- "CopyOnWrite" backup twice a week
- all software served over AFS
- (authenticated) print-queues
- pts groups for research groups

Kerberos (in our experience)

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the Good

- integrates (quite) well
 - with our "captive portal" (through radius)
 - with our CMS (through apache's mod-auth-kerberos)
 - with linux's login (through pam)
 - with our cyrus (through saslauthd)
 - with (through)
- "slave" KDC works as expected

the Bad

- "trough"
sometime is a mess to handle authentication (mainly in webapps)
- a bit ... complicated
Kerberos/GSSAPI/SASL documentation sometime "helps"
- lack of expertise
it's hard to find commercial support at least, at our "budget level"

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OpenAFS (in our experience)

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the Good

- flexibility (volumes etc...)
- ACL's vs UNIX permissions
- volume replicas
- "CopyOnWrite" online backups
- ...

the Bad

- "users"
users find too complex the use of fs and vos
- granularity of permissions
e.g. volume's release
- (offline)backup
full dump of volumes once a week
- relation between mount points and volumes
our external db (ldap) rarely is coherent with the filesystem

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nix/afs

nix repository over afs (plannig/preliminary tests)

- nix (<http://nixos.org>)

Nix is a purely functional package manager. It allows multiple versions of a package to be installed side-by-side, ensures that dependency specifications are complete, supports atomic upgrades and rollbacks, allows non-root users to install software

- openAFS

... common filespace ... replicated volumes ...

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Thank you

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