NAF Status

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When / how should users migrate?

> NAF 2.0 is basically ready

> You can register now – and start working

> NAF 1.0 will continue to work for some time – but resources will be reduced – soon!

> After 1.1.2014 major work should happen on NAF 2.0

> We want to shut down NAF 1.0 in spring 2014

Migration: AFS

> Personal space in NAF 1.0 : /afs/naf.desy.de/user/f/foobar

  ▪ YOU should migrate the space: e.g. using gsiscp

> Personal space in NAF 2.0 : /afs/desy.de/user/f/foobar

  ▪ Quota can be adjusted – starting with 4 GB

> Aditional space: XXL-Volume: : /afs/desy.de/user/f/foobar/xxl

  ▪ Quota can be adjusted – starting with 8 GB

  ▪ Lesser quality of service

> DESY-AFS (NAF 2.0) can be easily accessed from outside:

  kinit foobar@DESY.de   (enter your password)

  aklog −c desy.de

> Group space: Admins will take care of this

Migration: dCache

> dCache migration trivial – there is none!

> Access to dCache with the normal tools. Software might need to be adapted to slightly different environment on NAF 2.0

> Data path and access method remain identical

> dcTools

  - SL5: Maintained for short time (until SL6 migration is done)

  - SL6: Working on mounting dCache read-only using NFS 4.1 - make dcTools obsolete

Migration: Lustre

> Lustre will NOT be migrated to NAF 2.0

> Lustre decommissioned since 1.10.2013

lustre®
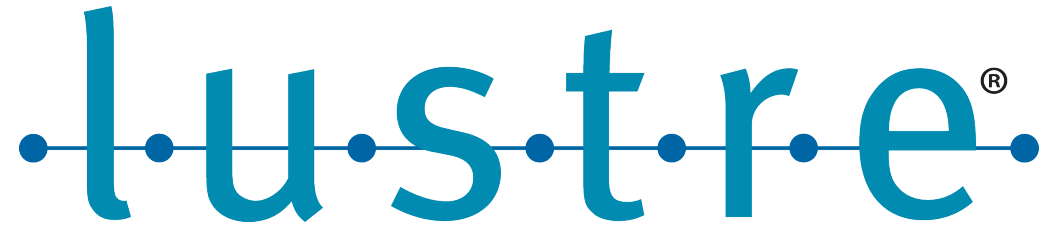
> Only one late-comer so far

DESY

Migration: Sonas

> Some theory: Sonas is organized in filesets

- Each person has one fileset per experiment

- Some physics groups also have (usually larger) filesets

- A fileset is a management entity within Sonas

> More theory: User ID and Group ID

- NAF 1.0: "id" `uid=1234(foobar) gid=1009(cms) groups=1009(cms)`

- NAF 2.0: "id" `uid=5678(foobar) gid=3118 (cms) groups=3118(cms)`

- Same person has two UID/GID pairs … clashes with NFS exports

> Therefore: One fileset can *either* be exported to NAF 1.0 *or* to NAF 2.0

- Users can decide individually when to change the export

- Migration steps by expert: Remove fileset from NAF 1.0 – apply UID/GID changes – attach fileset to NAF 2.0 … after ~10 minutes, a Sonas fileset is migrated

- Group filesets are technically identical, need more organization among users

Current Sonas status:

> ILC: Complete migration to NAF 2.0

> ATLAS & CMS: Only few users migrated to NAF 2.0

  - Some still work in the general-purpose test directories in NAF 2.0. These will disappear at some time!

> Quota and management status:

  - NAF 1.0 quota management with certificate authorization

  - NAF 2.0 will need Kerberos authorization – under development

  - "Which user has space in NAF 1.0 and NAF 2.0 Sonas?" – "Is on a respective WGS in NAF 1.0 or NAF 2.0"

  - Experiment admins can and should manage quotas of their users

> Currently total Sonas capacity is ~650 TB

  - 200 TB purchased and will be deployed end of the year

Sonas NFS mount and internal / external users

> DESY users primary group: cms (as an example)

> External users primary group: af-cms

> By default: files in Sonas readable by all CMS people:

- Solution: DESY are given additional secondary group af-cms

> Make sure that primary group when on NAF 2.0 is af-cms

- Need to change this on WGS and batch for internal people

- Performed using a script running at login time on WGS

- Batch honors primary group at submission time

Script working on ATLAS&ILC WGS
Debugging needed for CMS

> People still can decide differently: e.g. chown …

Migration: Workgroup-Server

> This is the place where you work interactively

> You can work in parallel with NAF 1.0 and NAF 2.0

  ▪ If you want and/or need to – but not for too long!

  ▪ Your Sonas space is either in NAF 1.0 or in NAF 2.0 … here you have to decide

  ▪ No "big-bang" migration – you can adapt your scripts, test the environment and do the full migration once you are ready

> Basically, NAF 2.0 workgroupserver are there

  ▪ E.g. ssh nafhh-cms01.desy.de

  ▪ Similar to normal DESY workgroupserver

  ▪ SL 5 for the moment – some SL 6 being deployed

  ▪ NAF 1.0 will not have SL 6

  ▪ More WGS to come – and also a load balancer

Migration: Batch Worker Nodes

> NAF 2.0 batch is part of the general purpose DESY BIRD cluster

> BIRD currently consisting of ~1600 cores@SL5 and ~1000 cores@SL6

> ~400 new CPU cores to be deployed within soon in NAF context and another ~400 new CPU cores in procurement (-> SL 6)

> Migration of minimum ~500 CPU cores/month to NAF 2.0 envisaged

  - Currently ~3000 cpu cores

  - Relative fairshare for CMS similar as in NAF 1.0 after full migration

> NAF 1.0: SGE – NAF 2.0: SonOfGridEngine – quite similar in handling

  - Submission scripts should work with little adaption

  - PROOF on Demand should work on BIRD / NAF 2.0

WN & WGS migration plan

> October: 500 cores -> SL6@NAF 2.0 (2500 remaining in NAF 1.0)

> November: 1000 cores -> SL6@NAF 2.0 (1500 remaining in NAF 1.0)

> December: 1000 cores -> SL6@NAF 2.0 (500 remaining in NAF 1.0)

> January: 350 cores -> SL6@NAF 2.0 (150 remaining in NAF 1.0)

> March: 150 cores -> SL6@NAF 2.0 (no batch @ NAF 1.0)

> April: Shutdown of WGS in NAF 1.0

> Zeuthen currently has ~120 cores in NAF 1.0 batch

   ▪ Moved into "The Zeuthen Farm" or decommissioning (6y old)

What needs to be done?

> Monitoring of all components

- Some already exists – will need to be made available to users
- Batch system monitoring and accounting to come

> More documentation

Current documentation and link to registry:

http://it.desy.de/services/computing_infrastructure/national_analysis_facility___naf/index_eng.html

> Fine-Tuning of WGS and Batch configuration

- E.g. RPMs – usually deployed soon after the request

> **… all this should not prevent users from using NAF 2.0 already now for production!**
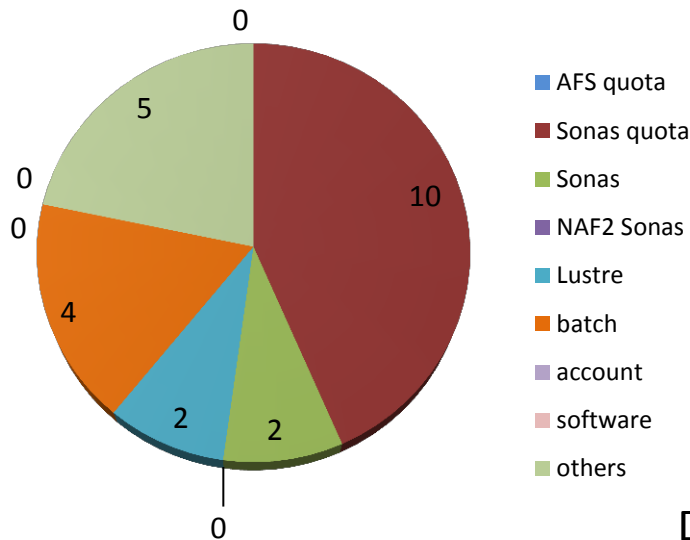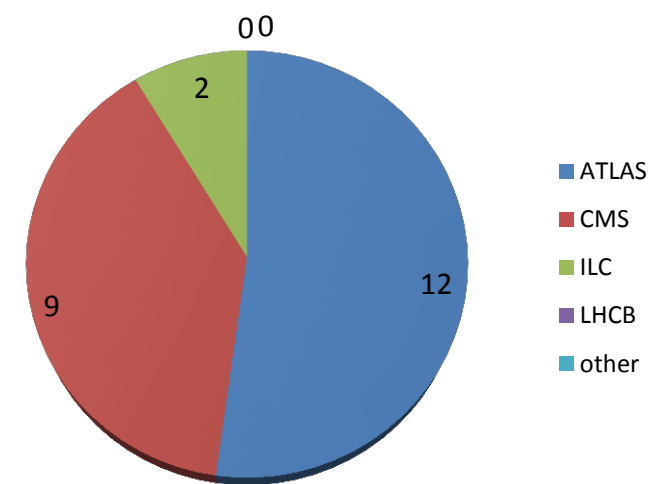
Naf-helpdesk@desy.de (Sep 1ˢᵗ- Sep 30ᵗʰ 2013)

23 tickets in total

Again many Sonas requests

Category of Requests

- AFS quota
- Sonas quota
- Sonas
- NAF2 Sonas
- Lustre
- batch
- account
- software
- others

Requests by Experiment

- ATLAS
- CMS
- ILC
- LHCB
- other

Date/Category of Requests

- AFS quota
- Sonas quota
- Sonas
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