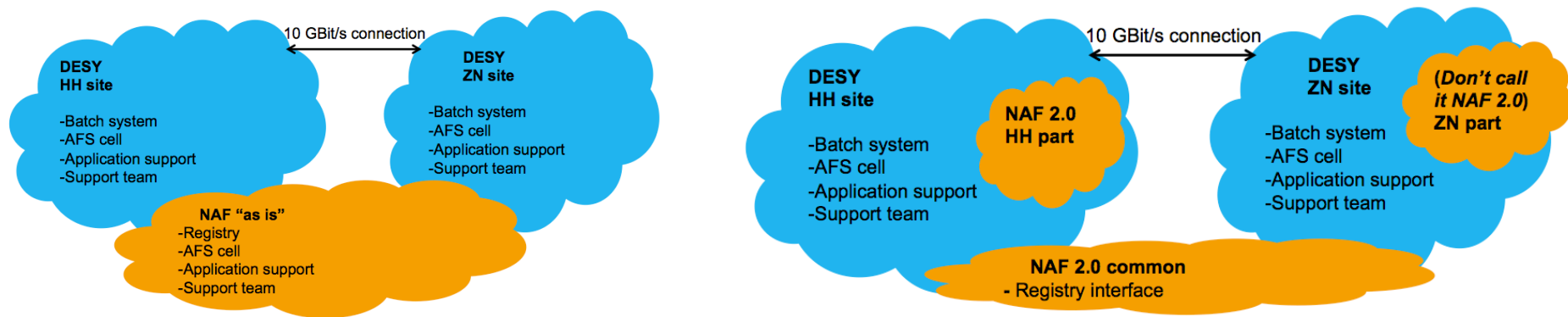# Making the transition to NAF 2.

Guidelines and help for the DESY-ATLAS Group

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Introduction to NAF-2

> NAF-2 has been in preparation for > 1 year, but now it's really here

> Simply put, the main differences are that NAF is now solely based at the DESY-HH site and is fully integrate in to "normal" DESY-IT infrastructure

> Idea behind this being to make things easier: no separate /afs cell, no additional or different software support, and a much bigger dCache storage provided as `DESY-HH_LOCALGROUPDISK`

> Today: just the basic information. More details on NAF-2 available:

Working Group Servers

> In NAF-1 we have 6 wgs, `tcx80,.. 130`, with `tcx090` at DESY-ZN

  ▪ Two of these have already been retired (`tcx120` and `tcx130`)

> We now have 6 wgs in NAF2: `nafhh-atlas01-06`

  ▪ All machines are still SLD5, except `nafhh-atlas02`, which is SLD6

> Access via usual ssh, but user needs to be a member of "AF-ATLAS"

> All SLD5 machines may be accessed via the load-balancing alias "`naf-atlas`"

> SLD5 wgs to be migrated to SLD6 depending on user requirements, some do already need SLD6

> Finally, `xxl` replaces `scratch` in desy /afs cell. You need to ask for this

> There are also `nx`-like machines for remote login, more details to come

Batch System

> SGE batch system, like before in NAF-1 (qsub, qstat and so on)

> Integrated into the Bird system in Hamburg, details can be found here:
  `http://bird.desy.de/info/index.html.en`

> Migration of resources from NAF-1 to NAF-2 on-going. NAF-1 today:

  - 2040 Cores on SLD5 in Hamburg, 104 Cores on SLD5 in Zeuthen

> NAF 2 today:

  - 1552 Cores on SLD5, to stay as SLD5 for at least 6 months

  - 2000 Cores on SLD6, 516 additional cores being installed at this time

> Future migrations:

  - 500 cores from NAF-1 to SLD6 NAF-2 in November

  - 1000 cores from NAF-1 to SLD6 NAF-2 in December

  - Final 500 cores from NAF-1 to SLD6 NAF-2 by April 2014, probably in two steps

> *If people have difficulties getting their jobs through, they should contact DS and IT and we will try to understand why*

Sonas

> `Lustre` is now gone

> Replaced by `Sonas`, similar distributed storage, ~ 850 TB in total

> Appears here: `/nfs/dust/atlas/user`

> Initial quota is 1 TB, can be increased up to 10 TB as required

> This is scratch space – no back up

> A single user *cannot* have both NAF-1 `Sonas` and NAF-2 `Sonas`

> Moving data to NAF-2 `Sonas` from NAF-1 `Sonas` done on request, is relatively quick (no copying, just dataset reassignment)

> NAF-2 `Sonas` is mounted on the NAF-2 wgs, and NAF-2 batch

> In addition to `Sonas` we have the large dCache storage as before: `DESY-HH_LOCALGROUPDISK` (preferred) and `DESY-ZN_LOCALGROUPDISK`

Atlas Software

> This should now all be a lot simpler!

> No problem to have special versions of ROOT with more modern python or complier or whatever: take whole software stack from CERN

> Three `CVMFS` volumes now available on each of the NAF-2 wgs:

- `/cvmfs/atlas.cern.ch`

- `/cvmfs/atlas-condb.cern.ch`

- `/cvmfs/atlas-nightlies.cern.ch`

- `/cvmfs/sft.cern.ch`   (this one may also come soon)

> Software also available to jobs running on NAF-2 batch

> It is still possible to install additional software not available on `CVMFS`, but we hope this will not be needed

CVMFS style set up

> First these run these lines

```
export ATLAS_LOCAL_ROOT_BASE=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase

export DQ2_LOCAL_SITE_ID=DESY-HH_SCRATCHDISK

source /cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase/user/atlasLocalSetup.sh
```

> Then you get a list of software available from CVMFS

> For example, to get dq2:

```
localSetupDQ2Client
```

> asetup as usual, but now with all options available at CERN, such as devval,rX

```
Your shell is zsh and extendedglob was set ...
  Now doing unsetopt extendedglob ...
 Your shell is zsh and braceccl was set ...
  Now doing unsetopt braceccl ...

...Type localSetupDQ2Client to use DQ2 Client
...Type localSetupEmi to use emi
...Type localSetupGanga to use Ganga
...Type localSetupGcc to use alternate gcc
...Type localSetupGLite to use GLite
...Type localSetupMana to setup mana
...Type localSetupPacman to use Pacman
...Type localSetupPandaClient to use Panda Client
...Type localSetupPyAMI to setup pyAMI
...Type localSetupPoD to setup Proof-on-Demand
...Type localSetupROOT to setup (standalone) ROOT
...Type localSetupRucio to setup Rucio
...Type showVersions to show versions of installed software
...Type asetup [--help] to setup a release
...Type changeASetup [--help] to change asetup configuration
...Type diagnostics for diagnostic tools
...Type helpMe for help
```

NAF-2 summary: making the transition

> You need to be a member of `AF-ATLAS` (DS can do that)

> Use NAF-2 batch system: would also be useful to try running SLD5 executables on the SLD6 queues. But SLD6 will be necessary soon

> Ask for an `xxl` afs directory for scratch space

> Ask for `Sonas` NAF-2 space (new user) or ask for your NAF-1 `Sonas` data-set to be migrated to NAF-2

> Further details are available on the NAF-2 twiki (e.g. for Ganga, Pathena), which you are also invited to contribute to:
`https://wiki-zeuthen.desy.de/ATLAS/WorkBook/NAF2`

> Any problems:

 ▪ ATLAS related: `naf-atlas-support@desy.de`

 ▪ NAF related: `naf-helpdesk@desy.de`