Getting started on the NAF: ATLAS

Detector Understanding with First LHC Data — 29th June 2009

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DESY

Content

National Analysis Facility

`http://naf.desy.de`

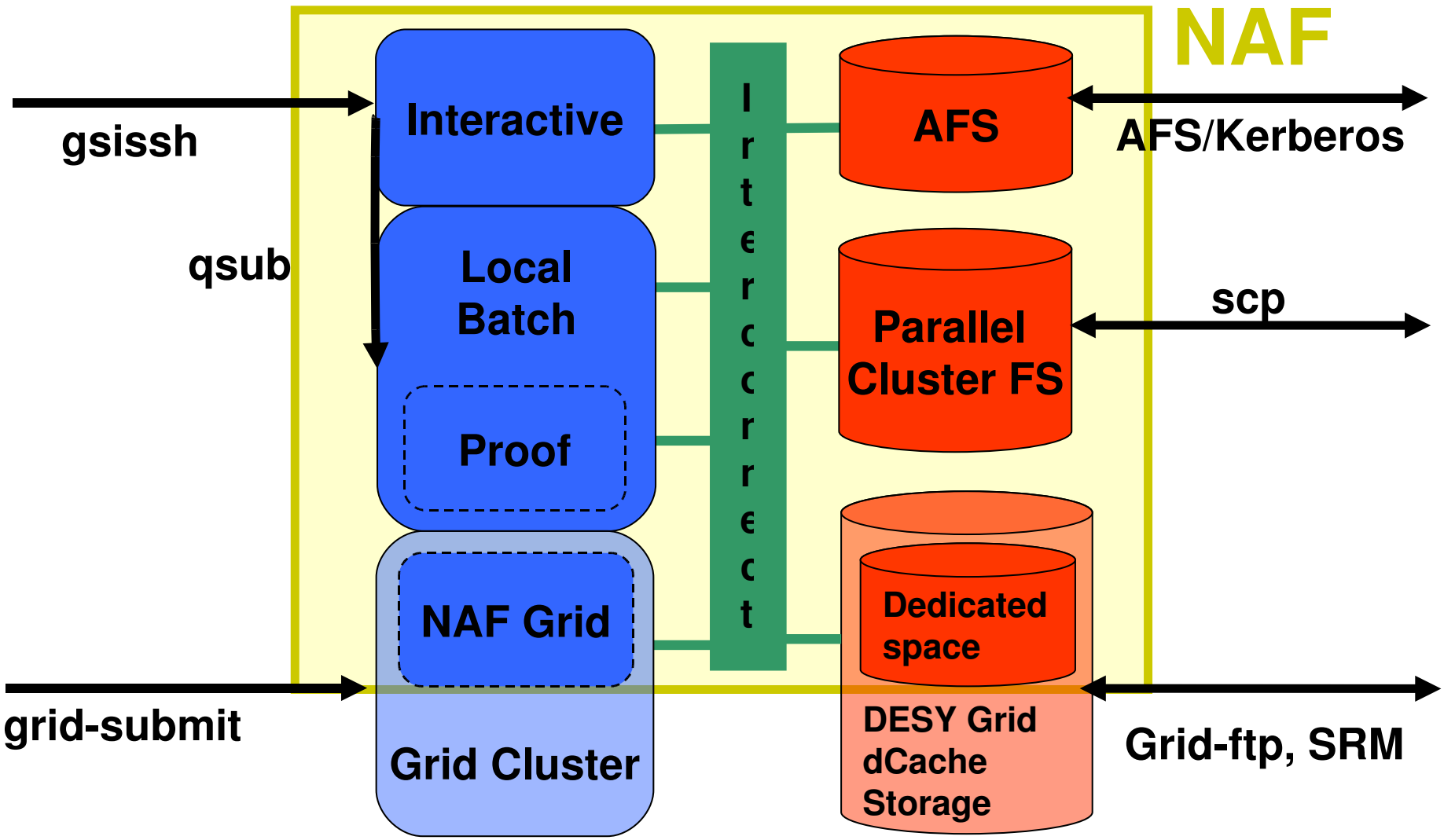
The National Analysis Facility (NAF) is part of the Strategic Helmholtz Alliance (`http://terascale.de`) for German particle physics.

It should provide additional computing resources for analysis work to the German particle physics community.

Planned for a size of about 1.5 average Tier2, but with more data.

The NAF provides:

- additional Grid resources
- interactive resources


NAF
gsissh
Interactive
qsub
Local Batch
Proof
NAF Grid
Grid Cluster
Interconnect
AFS
AFS/Kerberos
Parallel Cluster FS
scp
Dedicated space
DESY Grid dCache Storage
grid-submit
Grid-ftp, SRM

Interactive Login

Authentication at the NAF will be done via a Grid proxy!

- No new password to remember
- Getting an AFS token needs slightly more work

Steps to login in:

1. setup recent Grid User Interface (UI) (Glite >= 3.1)
2. create a valid proxy in version 4 (option -rfc)
3. log into ATLAS NAF login server: atlas.naf.desy.de and you will be forwarded to one of the ATLAS work group server (load balancing)

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1. `source /afs/desy.de/project/glite/UI/etc/profile.d/grid-env.sh`
2. `voms-proxy-init -voms atlas -rfc`
3. `gsissh -Y atlas.naf.desy.de`

Software

DESY provides operating system (SL4 and SL5 in 64bit) and general software:

- Grid User Interface (UI)
- ROOT

We provide ATLAS specific software:

- ATLAS kits and production releases
- DQ2
- Ganga

UI, ROOT, DQ2 and Ganga can be set up via the *ini script*.

Initial ATLAS software setup is done with

```
ini atlas; atlas_setup.py --create
```

Storage Overview

- AFS
- dCache
- Lustre
- local disc

AFS

Your home directory is in AFS:

- e.g. `/afs/naf.desy.de/user/e/efeld`
- comes with backup (expensive storage)
- Quota: 500MB,
  can be increased $\rightarrow$ email to ATLAS NAF support

In addition there are resources for additional user, project and group space.

- with or without backup $\rightarrow$ expensive or cheap storage
- send request to ATLAS NAF support

(AFS) File Access

From NAF to outside (preferred direction):

- `scp/sftp`,`rsync`
- direct access to other AFS cells: use klog -cell NAME

From outside to NAF:

- `gsiscp/gsisftp` to login server (`atlas.naf.desy.de`)
- direct access to users `public` directory
- direct access to full user directory via `naf_token` script (convert grid proxy into kerberos 5 ticket via heimdal)

Cluster File System - Lustre

Lustre is a clustered file for fast. multi client access

- high bandwidth (200 MB/s write/ 600 MB/s read) to large Storage (O(10TB))
- copy data from Grid, process data, save results to AFS or Grid
- in the NAF Lustre space is scratch space (no backup and no guaranteed lifetime (needs to be defined))

ATLAS space mounted here: `/scratch/current/atlas`

Support and Documentation

Support:

- non-experiment specific: `naf-helpdesk@desy.de`
- ATLAS specific:
  - HN: `gridkaCloudUserSupport`
  - `naf-atlas-support@desy.de`

User Communication:

- NAF User Committee: `http://naf.desy.de/nuc`
  Jan Erik Sundermann, Wolfgang Ehrenfeld

Documentation (feel free to contribute):

- general NAF: `http://naf.desy.de`
- ATLAS@NAF: `http://naf.desy.de/atlas`

Tutorial

The tutorial Wiki for today is located at `https://znwiki3.ifh.de/ATLAS/WorkBook/NAF/DUW09Introduction` and also linked from the Indico agenda.

The tutorial will cover:

- login
- software setup
- AthenaROOTAccess

Where to start from?

Choosing a good starting point to log into the NAF is difficult:

- log into the NAF from your laptop, if you have a working Grid UI
  (you should know, what you are doing)
- log into the NAF from your favourite DESY work group server, if you have a DESY account
  (use `ini glite` to setup the Grid UI)
- log into the NAF from the school cluster and start from there
  (the Grid UI is already setup, but you need to copy your Grid certificate to your school account)
- avoid going first to your home institute or CERN and then back to DESY for the NAF
  (this will produce unnecessary network traffic)

Login to the NAF

Login to the NAF is straight forward:

1. set up Grid UI
2. `voms-proxy-init -voms atlas -rfc`
3. `gsissh -Y atlas.naf.desy.de`

Work through the section “Grid Setup” on the WIKI page `https://znwiki3.ifh.de/ATLAS/WorkBook/NAF/DUW09Introduction`

You might also be interested into the section “AFS” in order to learn how to access your AFS home directory from outside the NAF.

ATLAS Software at the NAF

Standard tasks needed to work with athena:

- create a standard requirements file
- run athena hello world
- checkout a package from CERN SubVersioN server
- compile a package

Work through the section “ATLAS Software” on the WIKI page `https://znwiki3.ifh.de/ATLAS/WorkBook/NAF/DUW09Introduction`

Even if you have already a working requirement file, recreate it! This will provide the tag `local`, which will reduce compile time significantly.

AthenaROOTAccess

Most of the tutorials will use `AthenaROOTAccess` to analyse some data. Usually, you need to check out a few packages to get is properly working.

Work through the section “AthenaROOTAccess ” on the WIKI page `https://znwiki3.ifh.de/ATLAS/WorkBook/NAF/DUW09Introduction` to install `AthenaROOTAccess` for release 15.1.0 and get used to it.

Summary

If you have finished everything, you should be well prepared for the tutorials in the next days!

Indico:
`https://indico.desy.de/conferenceDisplay.py?confId=1811`

Introduction:
`https://znwiki3.ifh.de/ATLAS/WorkBook/NAF/DUW09Introduction`

Tutorials:
`https://twiki.cern.ch/twiki/bin/view/AtlasProtected/TutorialsDU09`