

GNSS and Docker

Clock@LPNHE, November 27th 2024

- Access to GNSS monitoring webpage on Ipngnss01:80
- download logging files (CGGTTS, RINEX, SBF...)
 - setup a NMEA/BINEX/SBF TCP server

For NMEA files:

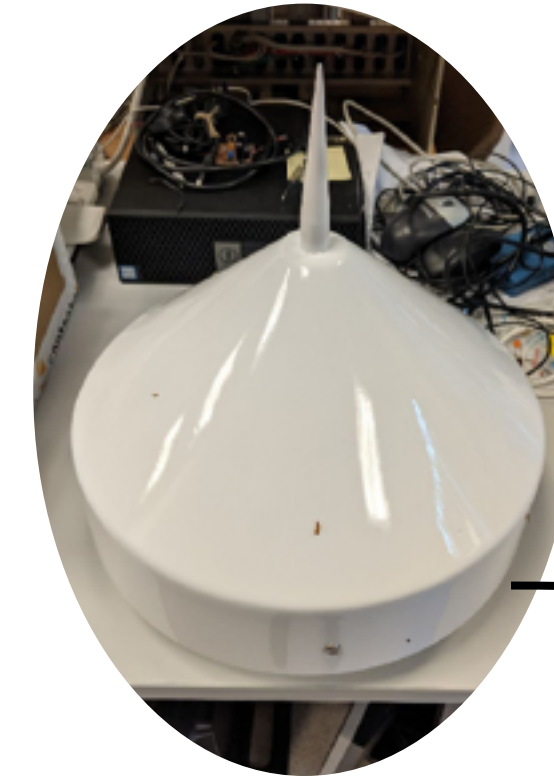
- listen to port 28000 and interpret lines on the fly

For CGGTTS:

- **continuously read the CGGTTS files on the receiver**
- copy them somewhere safe once they are complete**

For SBF:

- log and copy somewhere safe (TBD)
- listen to port X and interpret lines on the fly (TBD?)



Lab network

Produced by the receiver by internal conversion of RINEX files

Currently using LOG4 (CGGTTS only)

- Files saved on the internal disk
- FTP push to a remote computer

Method consists in

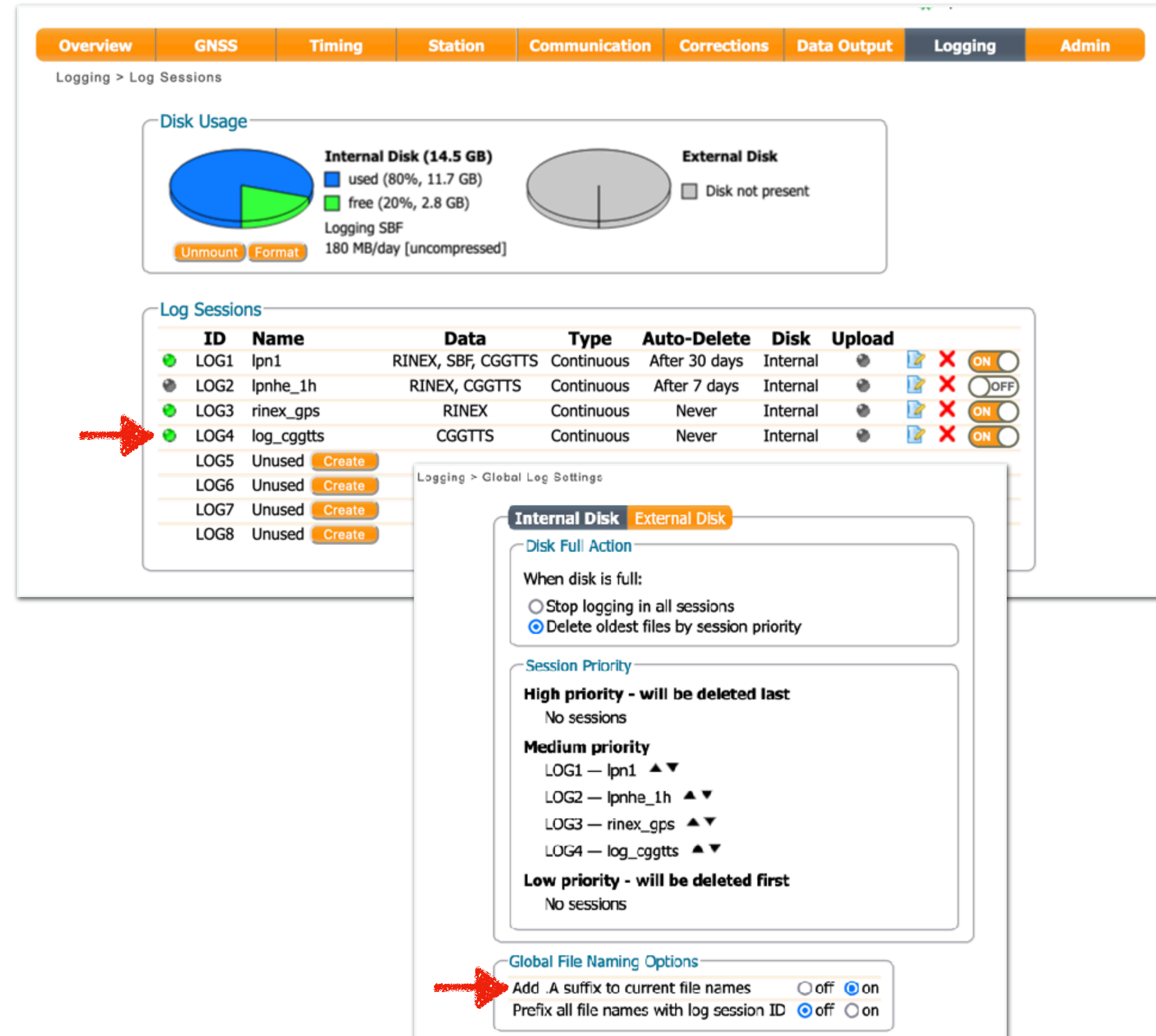
- looking for the active file (.A suffix) (every 10 sec)
- extracting latest info
- interpreting the header and the new lines

Regular crash because of issue with accessing the file (recoverable) but:

- Caused a connection closure
- Next attempt couldn't use connection...

Implemented patch:

- failure to read a file closes the connection
- next attempt first reopens the connection before reading the file



Logging > Log Sessions

Disk Usage

Internal Disk (14.5 GB)

- used (80%, 11.7 GB)
- free (20%, 2.8 GB)

External Disk

- Disk not present

Logging SBF
180 MB/day [uncompressed]

Log Sessions

ID	Name	Data	Type	Auto-Delete	Disk	Upload
LOG1	lpn1	RINEX, SBF, CGGTTS	Continuous	After 30 days	Internal	<input checked="" type="checkbox"/>
LOG2	lpnhe_1h	RINEX, CGGTTS	Continuous	After 7 days	Internal	<input type="checkbox"/>
LOG3	rinex_gps	RINEX	Continuous	Never	Internal	<input checked="" type="checkbox"/>
LOG4	log_cggts	CGGTTS	Continuous	Never	Internal	<input checked="" type="checkbox"/>
LOG5	Unused	Create				
LOG6	Unused	Create				
LOG7	Unused	Create				
LOG8	Unused	Create				

Logging > Global Log Settings

Internal Disk External Disk

Disk Full Action

When disk is full:

- Stop logging in all sessions
- Delete oldest files by session priority

Session Priority

High priority - will be deleted last

No sessions

Medium priority

LOG1 — lpn1 ▲▼

LOG2 — lpnhe_1h ▲▼

LOG3 — rinex_gps ▲▼

LOG4 — log_cggts ▲▼

Low priority - will be deleted first

No sessions

Global File Naming Options

Add .A suffix to current file names off on

Prefix all file names with log session ID off on

GNSS FTP push

Implemented as LOG4: see elog <http://lppnp387:8080/LPNHEGNSS/153>

Issue is only the complete file is copied on the local machine disk

- Good for backup
- Bad for continuous readout

On-going discussion with Septentrio support

- Un-expected behaviour
- Suggested a firmware update (5.3 to 5.5)
- Can I make it in the coming days?

Midas in Docker

Made Dockerfile with the dependencies needed for running the clock slow control

- midas
- root
- boost (for ToolDAQ)

<https://gitlab.in2p3.fr/hk/clocks/applecrate>

- Continuous Integration doesn't work as Gitlab IN2P3 doesn't allow privileged dind builds...
- Need to build locally the image (takes around 20 minutes... once!)

Use docker-compose to

- setup the ports for outside communication (mhttpd, mserver etc)
- load the image build in applecrate
- run the ODB creation and initial parameters setup
- start mhttpd, mserver and mlogger
- mount the side panels

<https://gitlab.in2p3.fr/hk/clocks/dockermidas>

DEMO?