pSmall
Comparison of NTP stability

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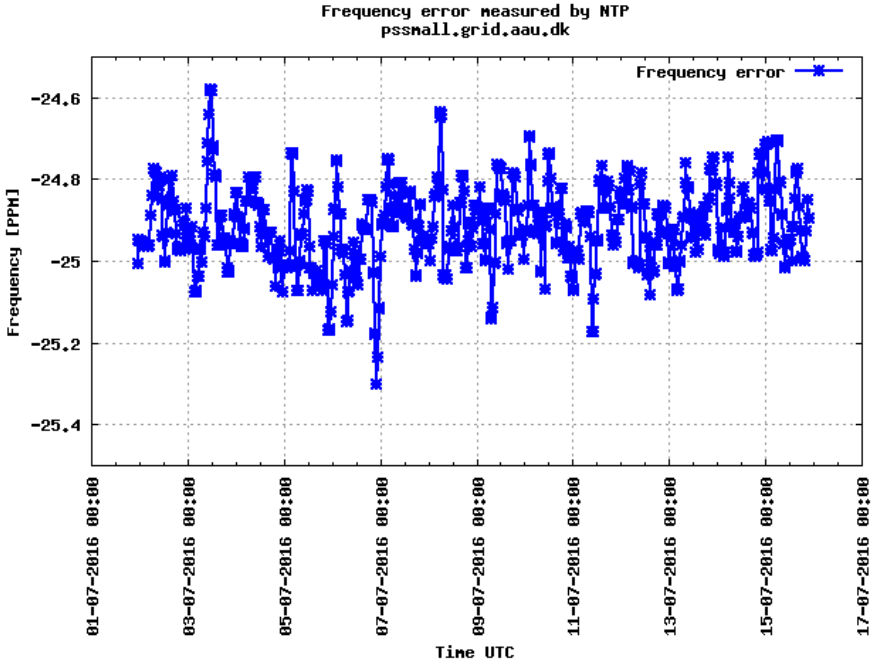
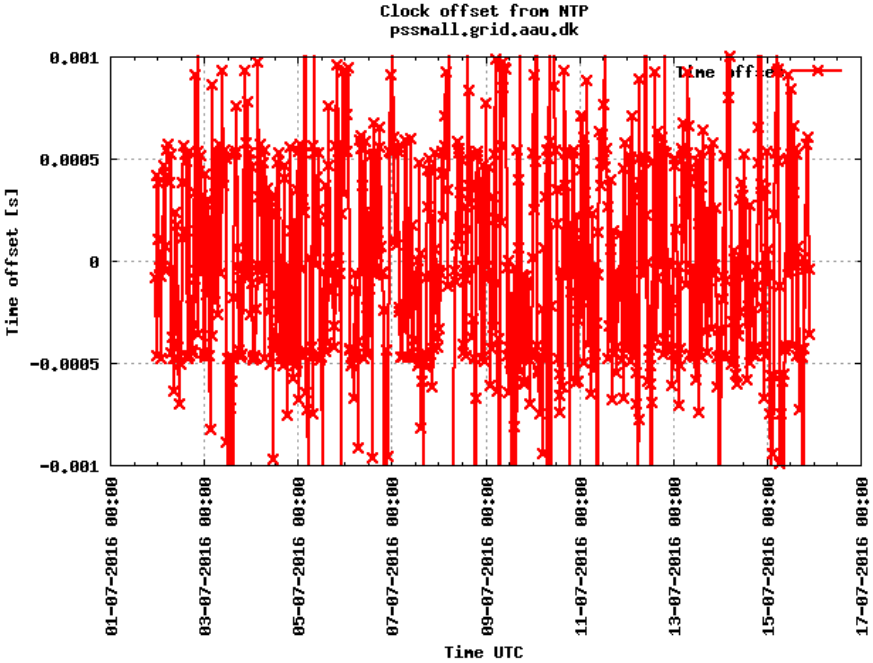
ESnet ENERGY SCIENCES NETWORK GÉANT INDIANA UNIVERSITY INTERNET2

Summary info

- Looking at time offset (seconds) and frequency offset (parts per million - PPM)
- Last 2 weeks
- Same Y scale range (1PPM; -0.001:0.001s)
- Custom scripts to process NTP log data; gnuplot to graph

psmall.grid.aau.dk





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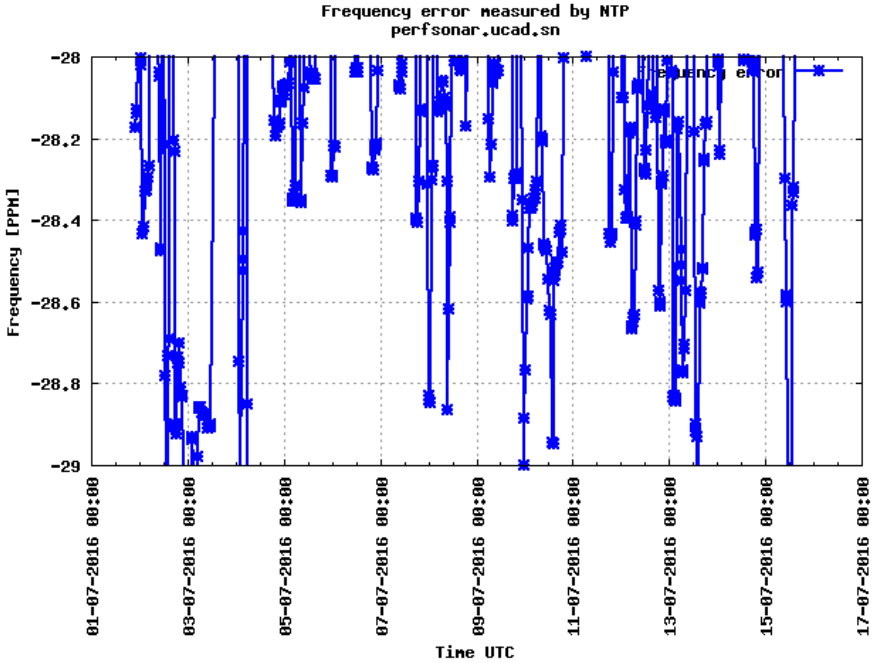

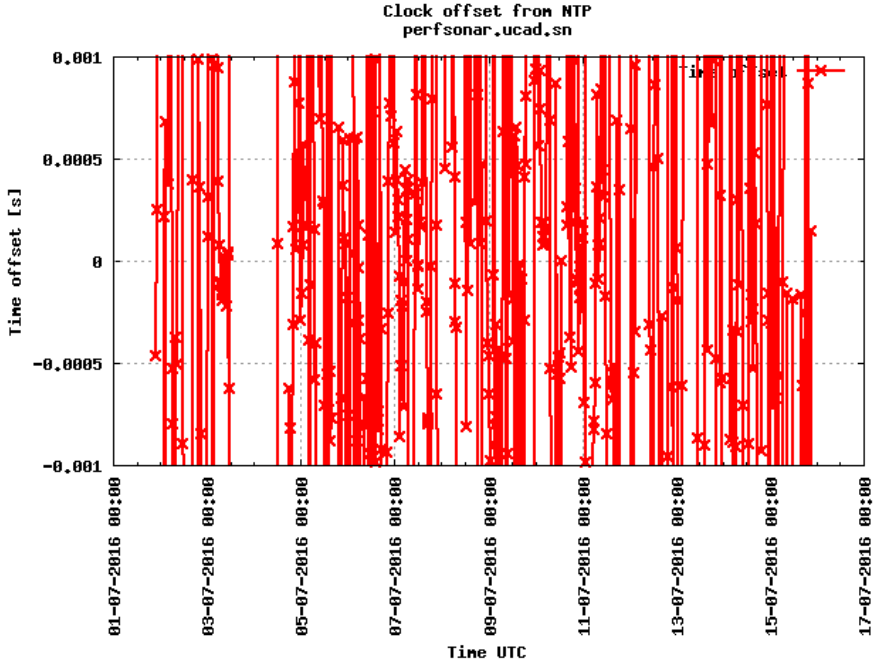

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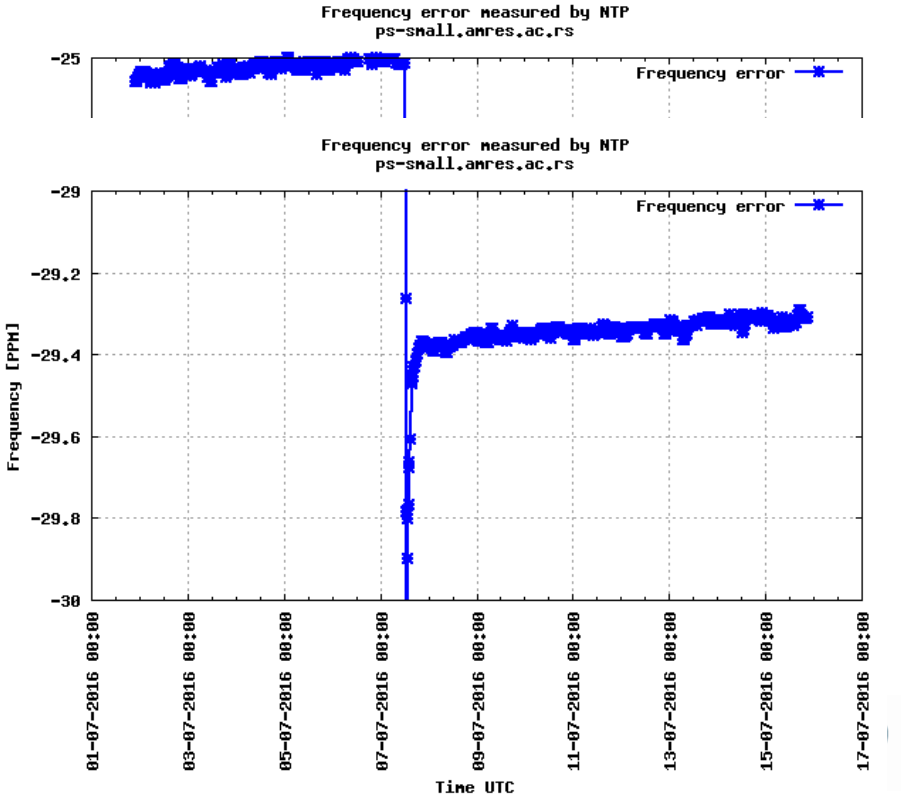

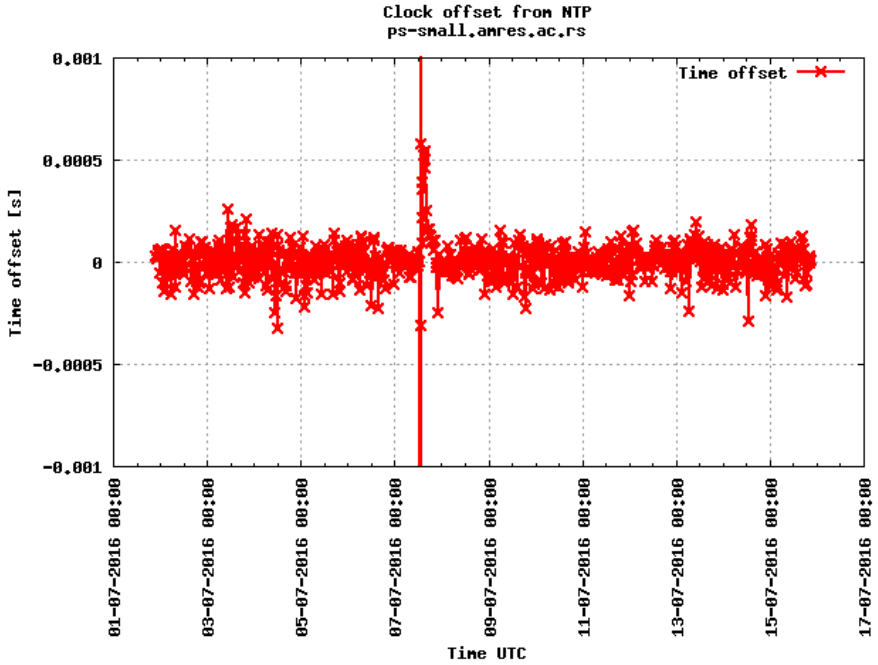

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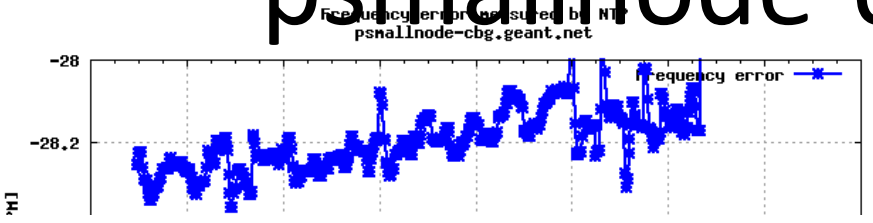

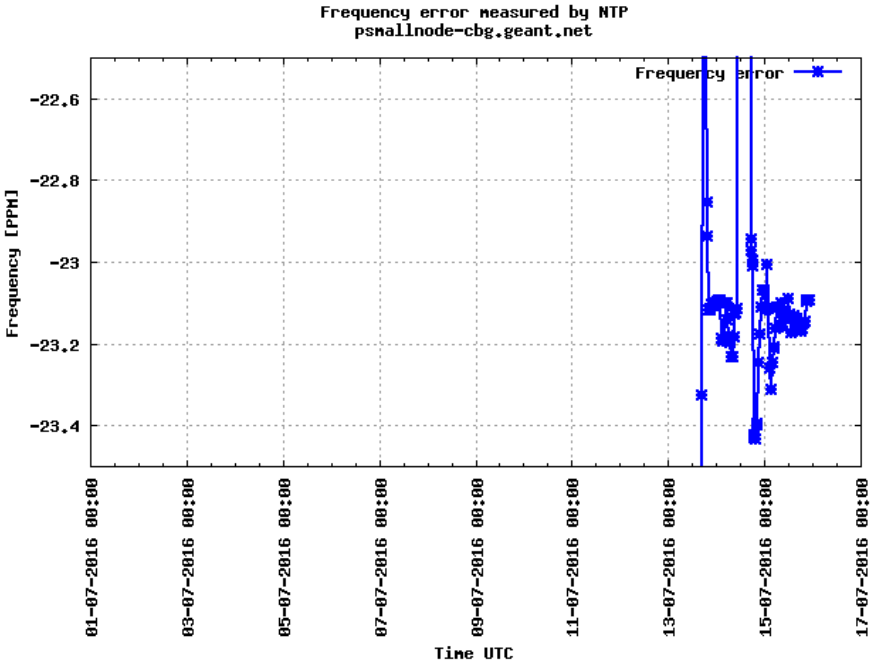

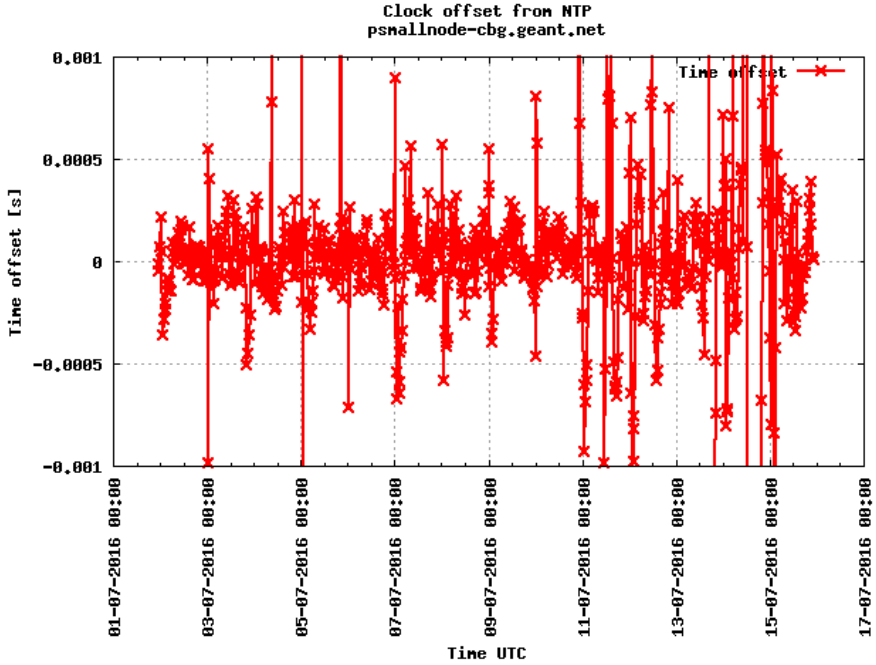

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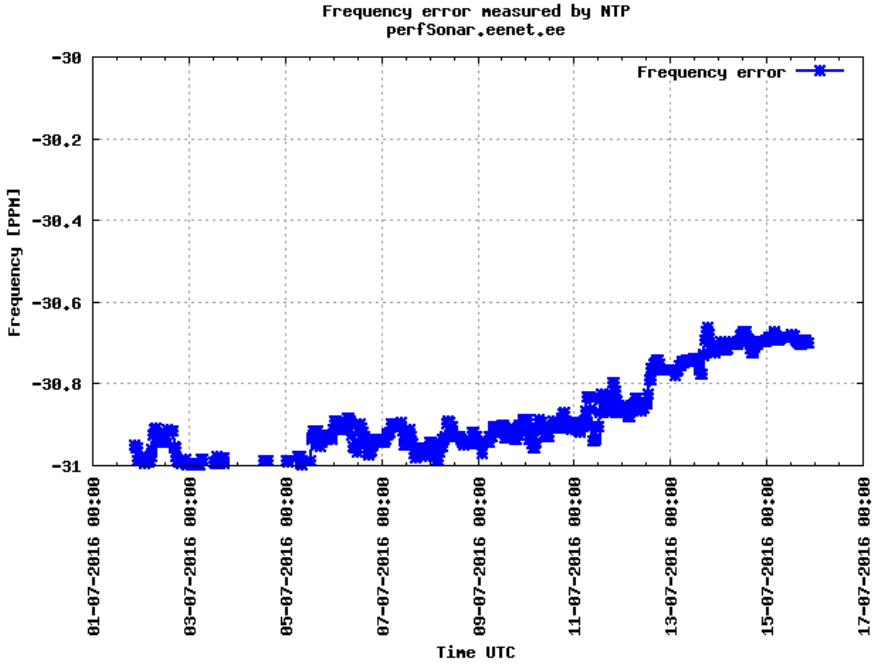

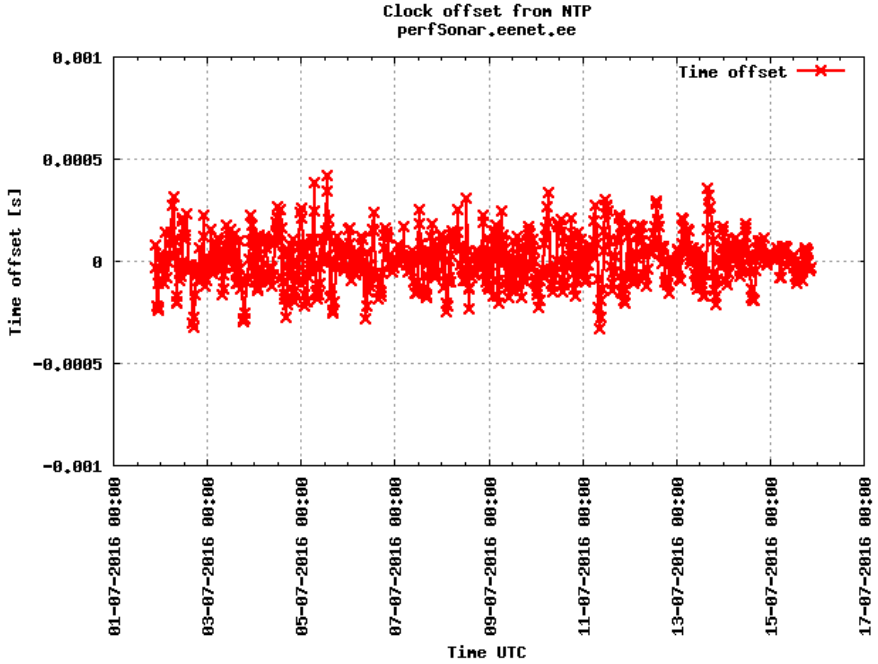

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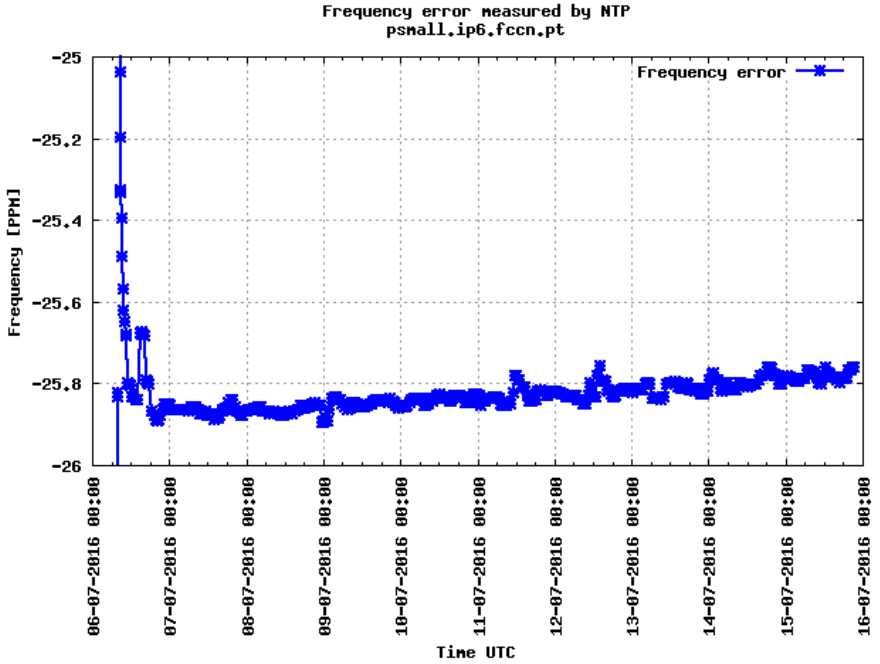

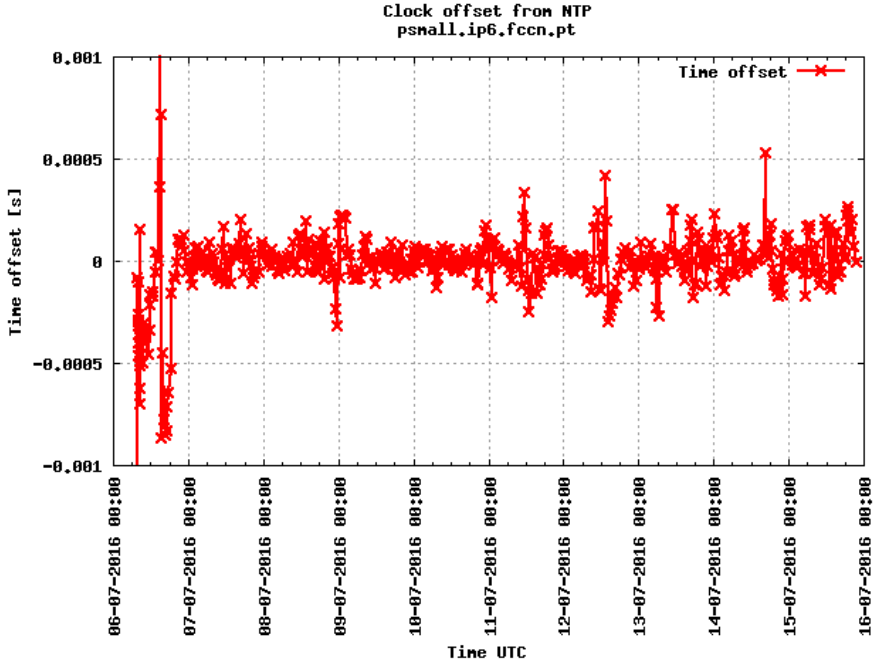

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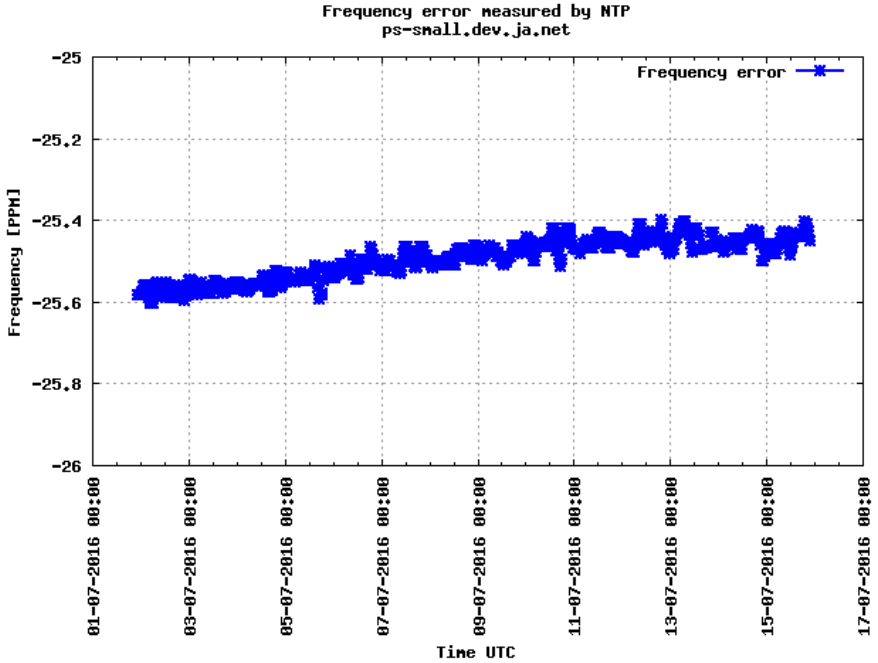

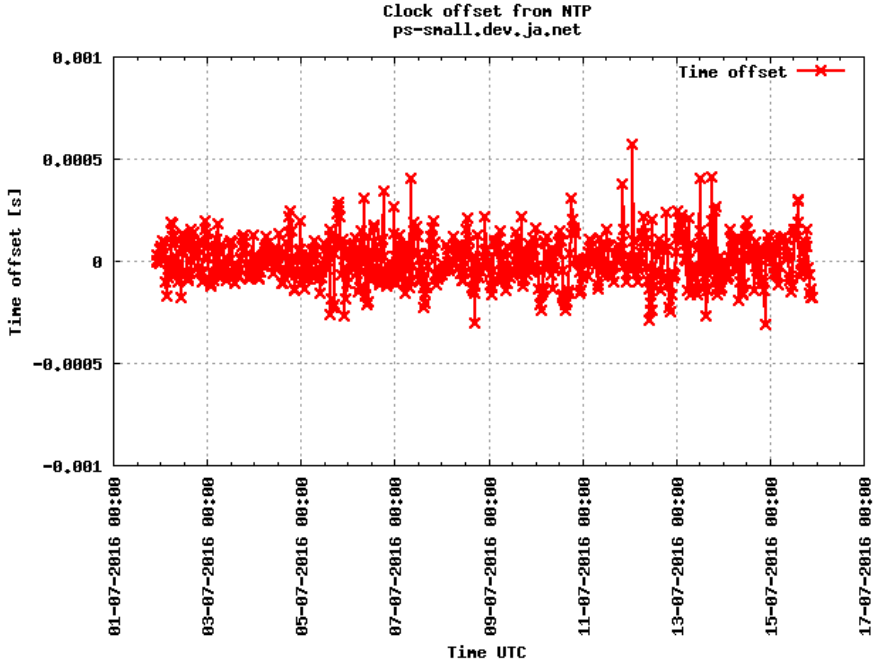

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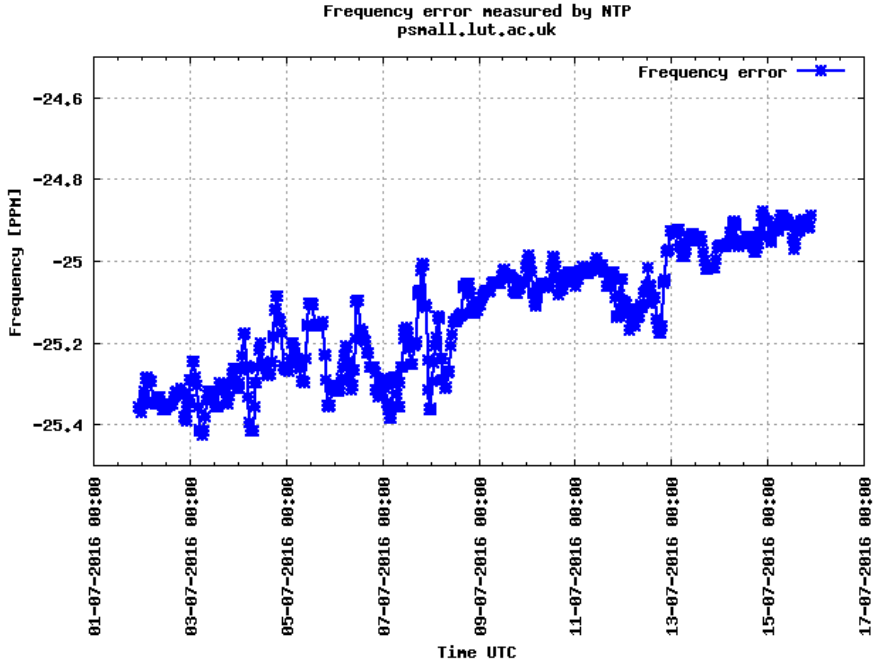

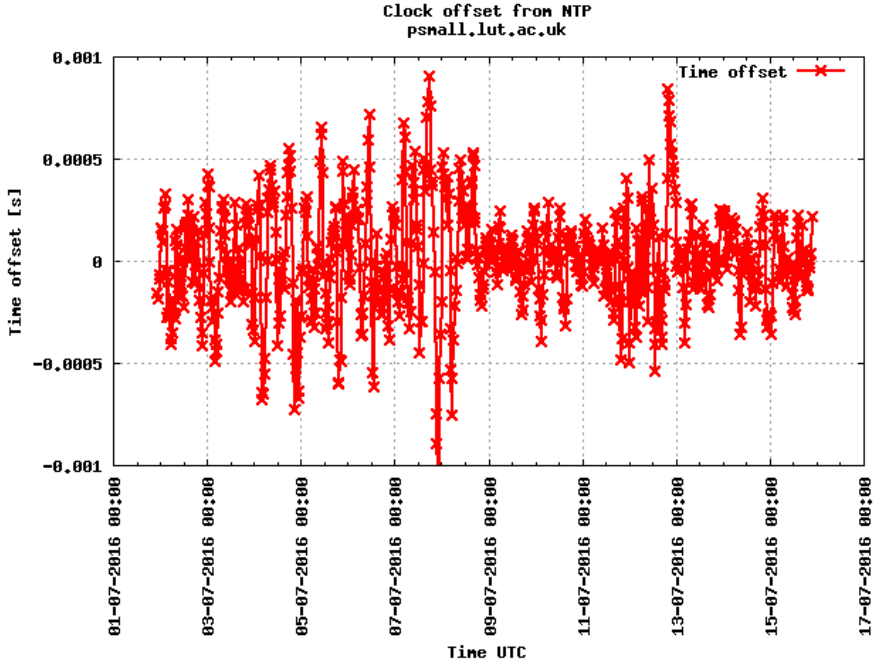

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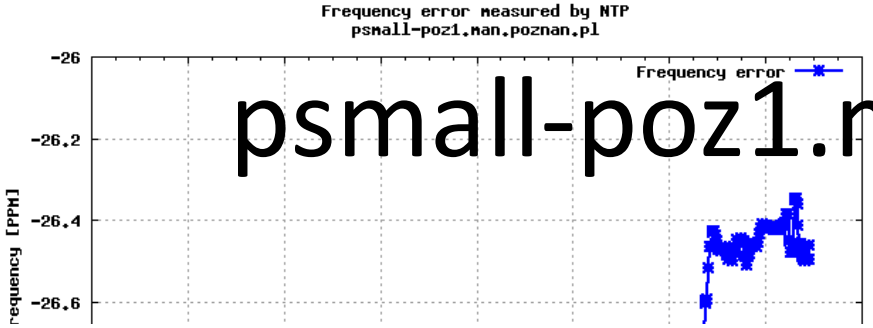

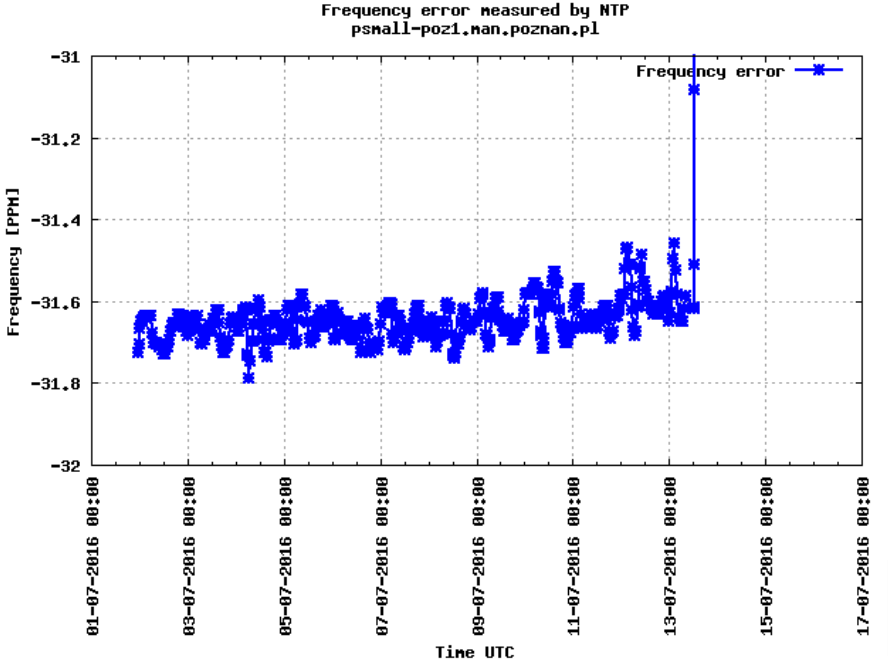

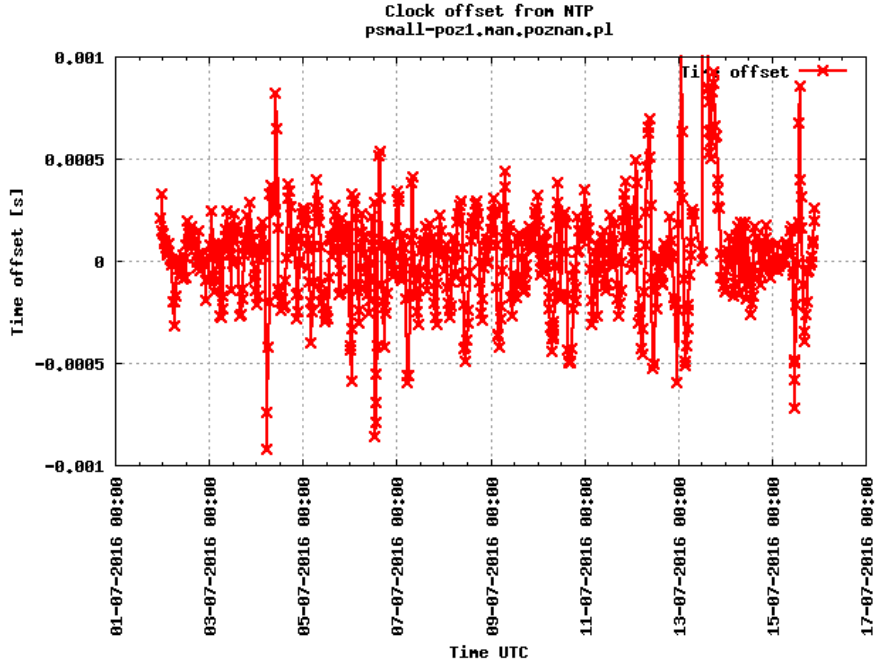

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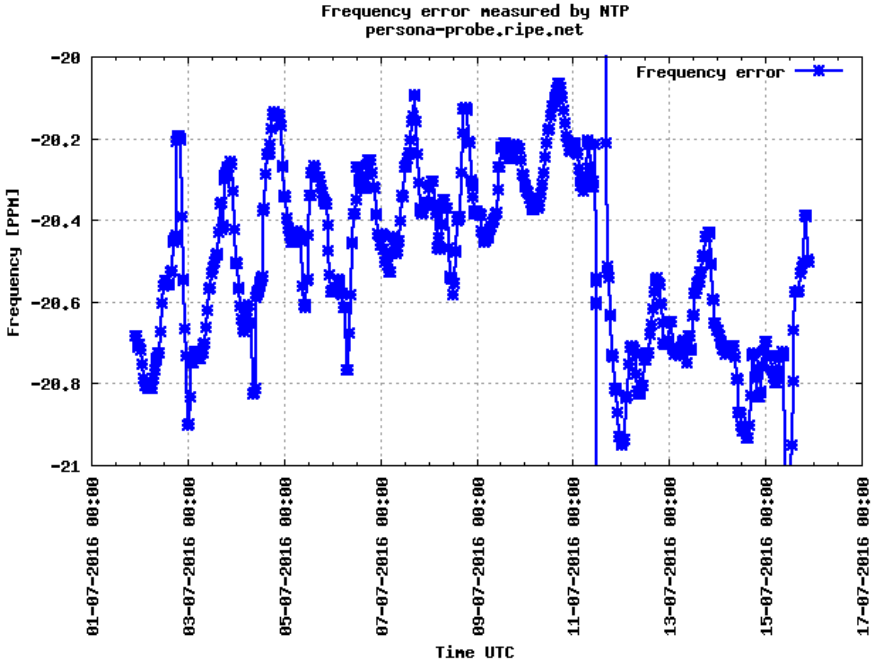

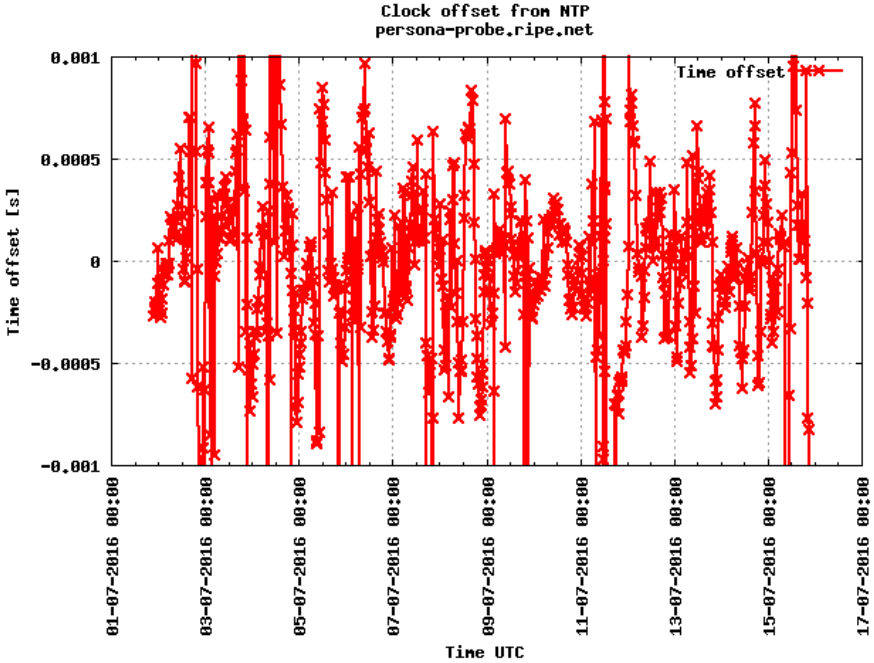

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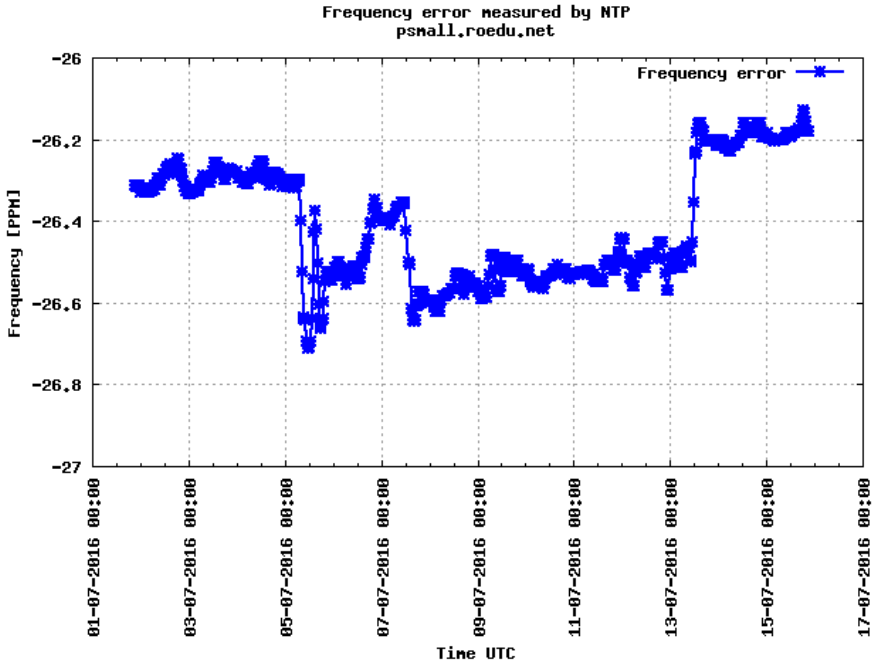

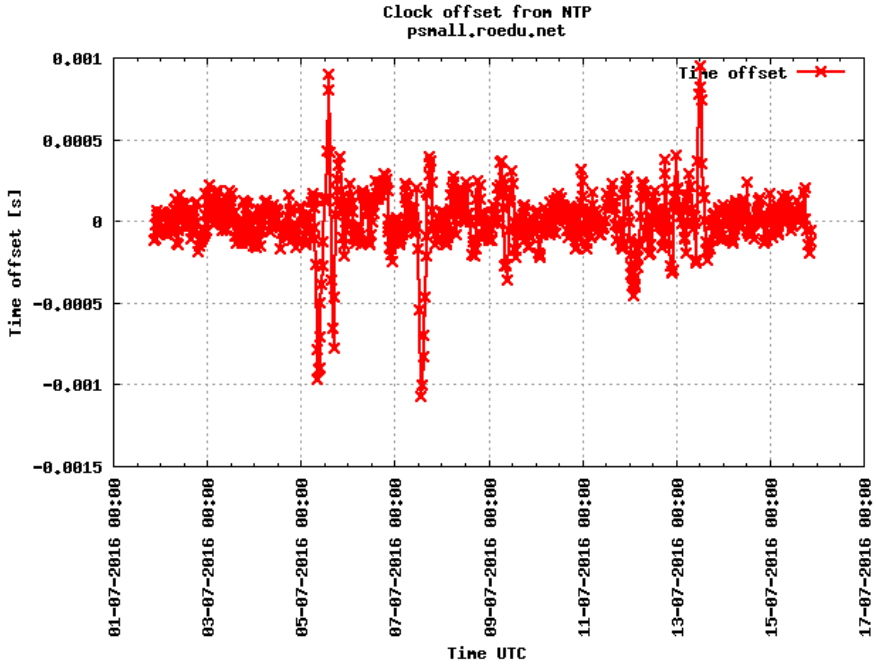

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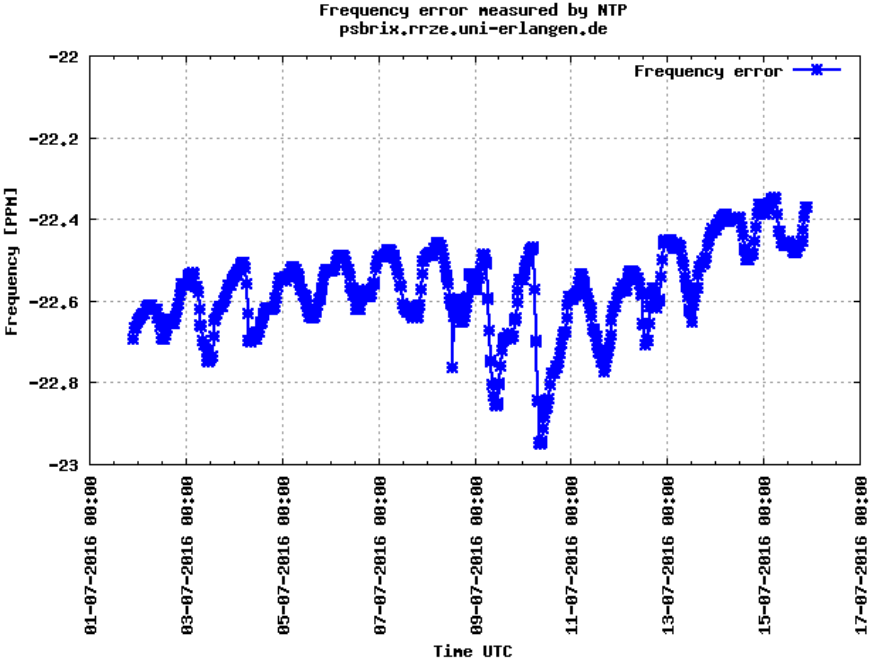

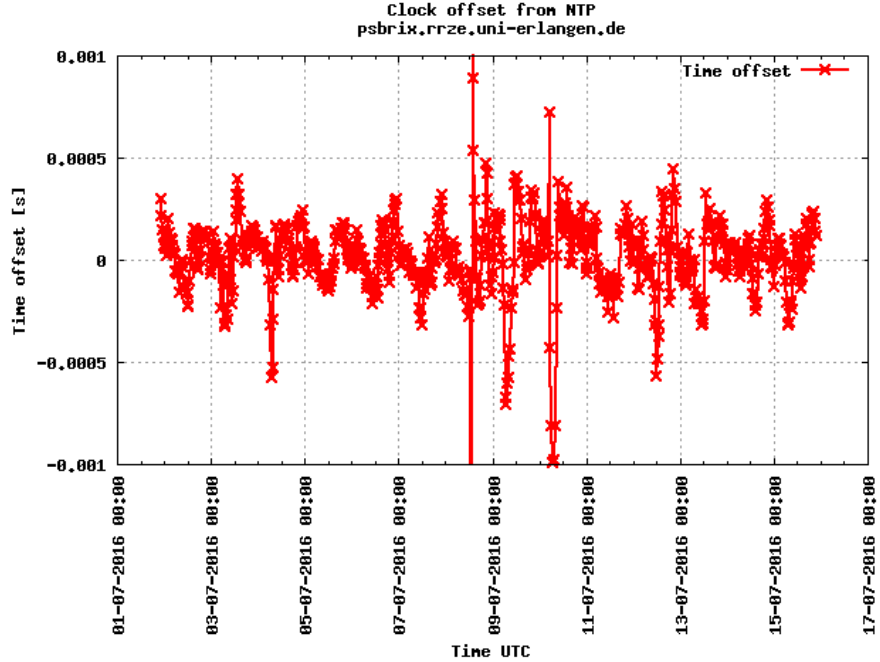

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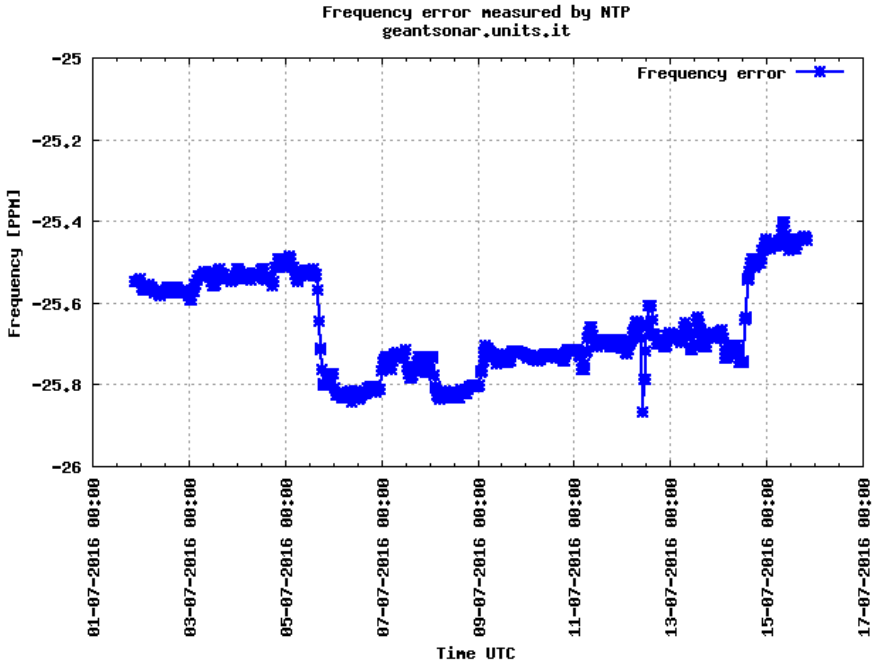

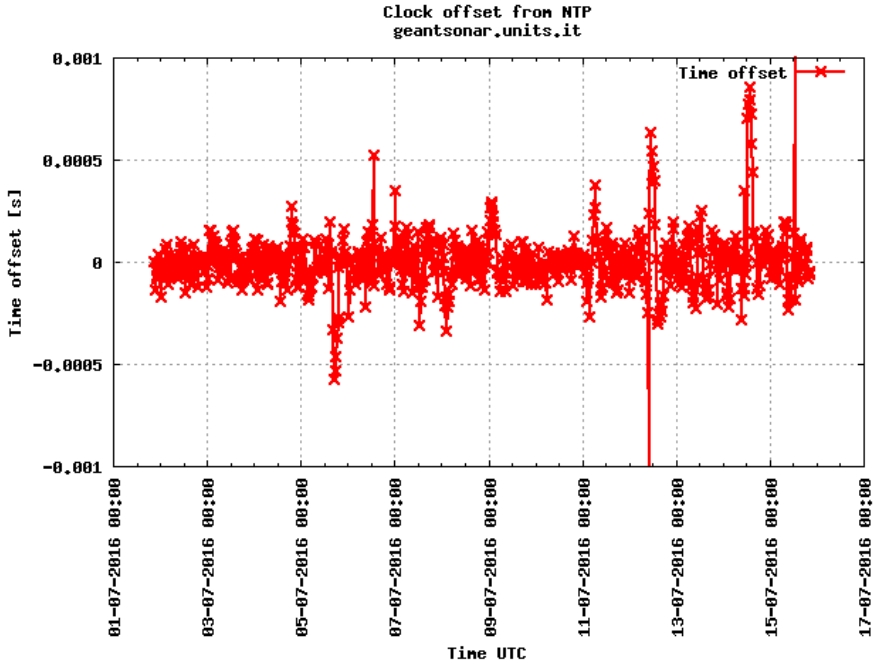

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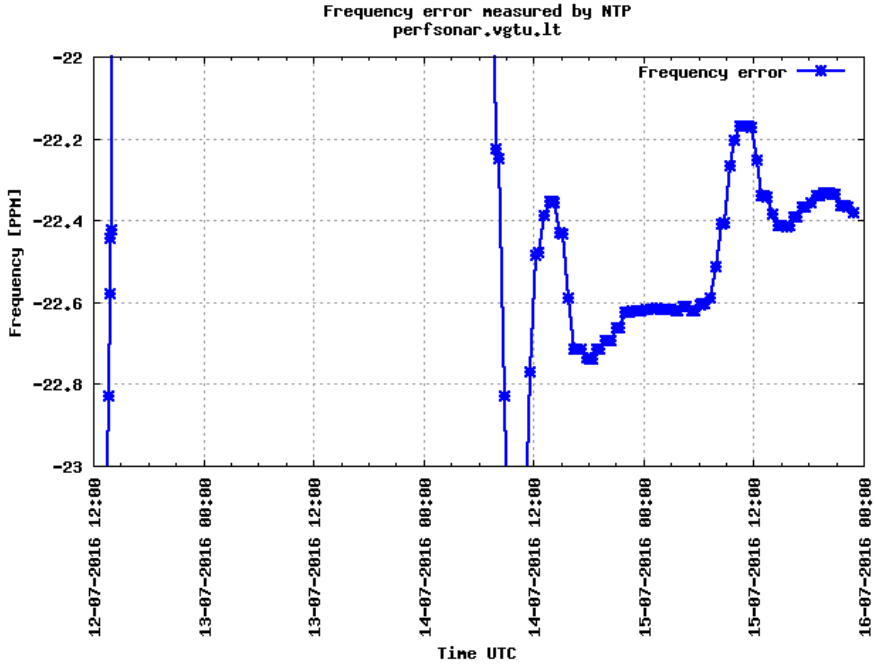

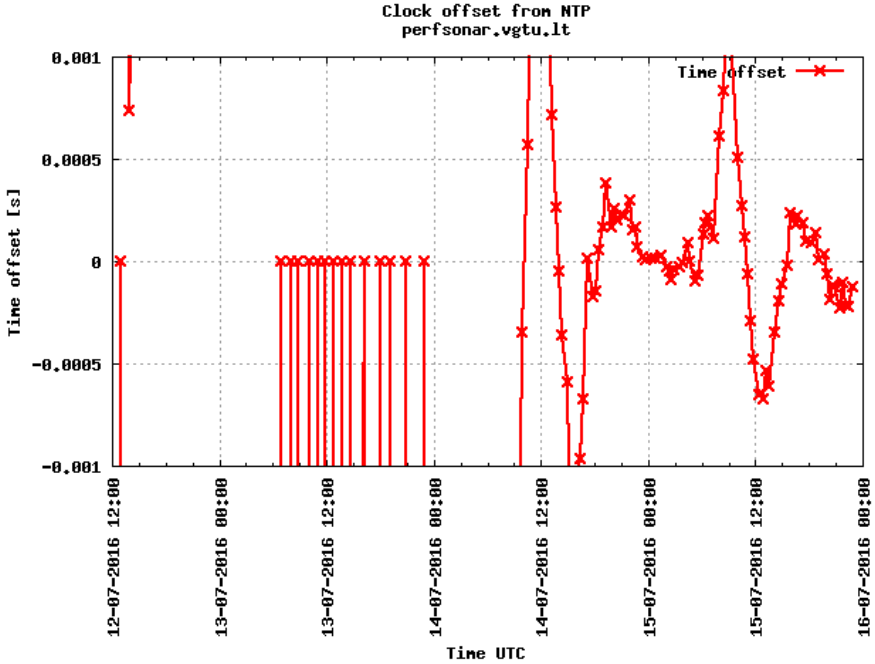

Observations

- Some nodes perform very well
- Some worse e.g.
  - psmall.grid.aau.dk – synch to only one NTP server
  - perfsonar.ucad.sn – synch to very remote servers
  - psbrix.rrze.uni-erlangen.de, perfsonar-probe.ripe.net – regular pattern, posibly room temperature daily change

What to do

- Use `ntpq -p` to verify which NTP servers are used for your node
- Login to toolkit to modify the dafult list of NTP servers to use closer/better ones
- Allow more NTP servers in firewall (at least 3)
- Move the node to controlled temperature room

Custom scripts

- Located in `/var/lib/ntp`
  - `./ntplooplogtodat [number_of_days_back_from_today]` – processes loopstats logs for plotting. Days counted as 24hrs from now. So for data between now 12:00 and yesterday 11:59 give „1”
  - `./plotfrequency` – plots frequency error
  - `./plottimeoffset` – plots clock offset
- .png graphs generated
- Need priviledged access (use sudo)
- Feel free to customize scripts (e.g. set Y ranges) and make own analysis