Field System
Status and New Features

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FS Linux Distributions

- FSL11
  - Current standard
  - Based on Debian *Bullseye*
    - LTS expected until June 2026
  - 32- and 64-bit support
  - Improved RAID support
  - *gfortran* is stricter
  - *python2* support is weak (no *numpy*)
  - Expanded hardening for IT support
  - Requires FS *10.2*, which should be available soon
    - *10.2.0-rc2* is available now
- FSL12
  - TBD
  - No *python2*

FS *10.2* – About to be released

- Expected to be released this month as *10.2.0*
  - *10.2.0-rc2* is available now
- Support for FSL11
  - FORTRAN typographic changes
    - Handling of hex/octal/binary constants, etc.
  - All *python* scripts are converted to *python3*
    - *python2* versions are still available
- Support up to 16-character experiment names
- DBBC3 support is now roughly complete
- Display server shuts down on FS `terminate`
- *plotlog* handles RDBE and DBBC3 log data
- *streamlog* utility to stream log and display data
- See the final update notice for all the changes:
  - Uses “collapsible boxes” to simplify listing of changes
  - https://nvi-inc.github.io/fs/releases/10/2/10.2.html
- You must install FS 10.1 before upgrading

FS *10.2* – Major changes for DBBC3

- DDC_E firmware
- Firmware versions:
  - Up to v126 for DDC_E & DDC_U
  - Up to v125 for DDC_V
- USB/LSB TPI values are now reported “unswapped”
  - Environment variables are available to disable
    - Needed for older firmware versions, particularly for DDC_V
- Legacy T_{sys} is now supported
- Averaging and filtering continuous T_{sys} is supported
  - Filtering uses colors in the *monit7* display
- Multicast time-out detection improvements
  - Time-out increased to 1.45 seconds
  - After the first time-out
    - Shorten time-out to 1.00 seconds
    - Report in a 60 second summary format
- Environment variable to set interval for incorrect firmware error
- A total of 15 different changes are covered in the update notes

Near-term future versions

- 10.3
  - Coming early in 2024
  - Support for R2DBE
  - …
- 10.4
  - Coming later in 2024
  - Support for chopper wheel T_{sys}
  - Inclusion of `atm`
  - Possible DDC_U (and other) v130
  - …
- VEX2 support
  - ???

plotlog – plot log data utility

- Plots many types of ancillary data found in logs:
  - weather, clocks, Tsys, Recorder performance
  - Phase-cal, Cable, CDMS, Receiver
  - More can be added
- Using it is simple, e.g., to plot to X11 display:

```
cd /usr2/log
plotlog vo2230oe.log
```

- Command line options available for:
  - File output
  - Selecting which items to include
  - Different slices of:
    - DBBC3/RDBE Tsys
    - RDBE Phase-cal
  - Control scaling of some plots
- Command line options can be placed in script or alias
  - Easy reuse

plotlog - improvements in FS *10.2*

- DBBC3 and RDBE data
- Wind speed and direction
- Expand clock coverage:
  - `maser`, `fmout`, `gps`, `dot2gps`, `dot2pps`, `pps2dot`, `setcl`
  - Multicast and command output for DBBC3, RDBE
- Recorder performance
  - Late start, recording short, missing bytes
- CDMS
- Support *giza* for FSL11
- *plotlog* with no log specified
  - Current FS log, plotted on display
- More command line options to control features
- Other improvements …, see **`plotlog -h`**

plotlog - possible future improvements

- Hardcoded
  - Late `preob` - schedule is running late
  - `preob` running long
  - Late onsource
  - Onsource time lost in scans
  - Station specific data – contact Ed
  - Limited syntax for user extensions
  - Other suggestions …
- A different option: *logpl*
  - Offers user extensible selections
  - Plot data versus time or versus other data
  - Can be run interactively or from a script