What's New in LIGOtools

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```
pshawhan@sheratan> ligotools_list
LIGOTOOLS is /ligoapps/ligotools
  Package        Active       Other versions
  ---------      ---------    ----------------
  Fbe            v1r1
  Fr             v4r40        v4r31b, v4r31a, v4r31, v4r30, v4r22a, v4r11
  dataflow       3.0.1        3.0, 2.2.2, 2.2.1, 2.2, 2.1, 2.0, 1.4, 1.3, 1.2
  dataviewer     3.5          3.4, 3.3, 3.2
  dtt            1.0
  fftw           2.1.3
  guild          3.7.0        3.4.3, 3.3
  lal            0.8          0.7, 0.6, 0.5
  ltadmin        1.4          1.3, 1.2, 1.1, 1.0
  mininds        3.2          3.1
  root           2.25.03
  tclexe         8.3.2a       8.3.2
  wat            1.62
pshawhan@sheratan> ligotools_update
All of your LIGOtools packages are up-to-date.
pshawhan@sheratan> █
```

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Overview of LIGOtools

LIGOtools is ...

- A software distribution system

- A collection of software packages (consisting of scripts, command-line utilities, GUIs, libraries, Matlab MEX-files, ROOT macros,...)

- A web site with documentation, examples, Frequently Asked Questions, a list of LIGO datasets, and links to other resources:

    http://www.ldas-sw.ligo.caltech.edu/ligotools

Purposes:

- Share useful software tools among LIGO / LSC institutions
    - LSC members are welcome to contribute LIGOtools packages
- Make it as simple as possible to install and use the tools
    - No special permissions needed
    - Minimal software prerequisites
    - Semi-automatic updating (just type ligotools_update)

LIGOtools Packages with New Stuff

Fr — The "libFrame" C library for reading/writing data in frame format

Maintained by Benoit Mours; currently at version v4r40.
Besides the library, includes:

- Command-line utilities: FrCopy, FrDump, FrCheck, FrSplit (contrib. by Greg Mendell), FrameDataDump (contrib. by Chris Hawkins)

- Matlab MEX-files: frextract, frgetvect, mkframe (contrib. by Sam Finn)

- A shared-object library for use within ROOT, plus a few macros to plot histograms: FrVP, FrAP, FrCP

guild — Graphical user interface to LDAS metadata database, etc.

Currently at version 3.7.6. Changes include:

- Several improvements to "LDAS User Command" dialog

- Standalone executable available for Windows

- Support for execution (as Tk script) on MacOS

- Support for multiple LDAS databases at each site

LIGOtools Packages with New Stuff

dataflow — Data access utilities

Current version 3.0.1 includes:

- Data Flow Manager (dfm) background process
- Command-line utilities to get/put data: getFrames (now with optional job status window), getMeta, putMeta, SeqInsert
- C library: libdataflow.a to communicate with LDAS, parse metadata files in LIGO_LW format (contrib. by Philip Charlton)
- Command-line utilities for LIGO_LW files: lwtscan, lwtprint, lwtdiff
- Matlab MEX-file: readMeta
- Command-line utility to copy contents of a URL to a file: getURL
- Command-line utility to convert between UTC and GPS: tconvert (features robust leap-second handling using info from the web)

New Packages

wat — *"Wavelet Analysis Tool"*

Contributed by Sergey Klimenko and Andrei Sazonov

C library (libwavelet.a) for wavelet analysis, plus command-line utilities (WatFrComp, WatFrUnComp, WatFrStat) to compress/uncompress frame files using wavelets

Fbe — *"Frame builder emulation"*

Contributed by Andrea Viceré

C Library (libfbe.a) and command-line utilities (ascii2frame, table2frame) to create frame files from simpler formats

Other Packages

dtt (Diagnostic Test Tools) and **dataviewer** — The "online" tools

Still only available for Sun Solaris

There is a LIGOtools FAQ item which discusses how to look at data stored on disk

root — Object-oriented data analysis/display environment from CERN

Will be installed automatically only for Sun Solaris and Intel Linux

lal — The complete LIGO/LSC Algorithm Library — Now version 0.8

"Binary" distributions include source code and full documentation

fftw — Fast Fourier Transform library (used by LAL)

Summary

LIGOtools is designed to expand — and it has

But there is room for more!

Contributions may take many forms: command-line utilities, libraries, Matlab M-files or MEX-files, ROOT macros, usage examples, FAQ items

Examples of some things we need:

- An offline trend viewer
- A display package for spectra and other summary info stored in the database
- Event analysis tools / examples / whatever

Please share the software you develop!