

# Database Tools Discussion

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Columns: Hide Show Resize

Rows	PROCESS_ID	NAME	SUBTYPE	IFO	START_TIME	EVENT_ID
87	x'20000428+	ChannelSaturated	H2:SUS-ITMX_COIL_LR	H2	638866191	x'200004
88	x'20000428+	Jump16	H2:PSL-FSS_MIXERM_F	H2	638866192	x'200004
89	x'20000428+	Jump16	H2:PSL-FSS_MIXERM_F	H2	638866192	x'200004
90	x'20000428+	ChannelSaturated	H2:SUS-ITMX_COIL_LR	H2	638866196	x'200004
91	x'20000428+	LostLock	OneArm	H2	638866393	x'200004
92	x'20000428+	AcquiredLock	OneArm	H2	638866424	x'200004
93	x'20000428+	ChannelSaturated	H0:PEM-BSC1_MAG2X	H2	638866424	x'200004
94	x'20000428+	ChannelSaturated	H2:PSL-PMC_ERR_F	H2	638866424	x'200004
95	x'20000428+	ChannelSaturated	H2:SUS-ETMX_COIL_LL	H2	638866424	x'200004
96	x'20000428+	ChannelSaturated	H2:SUS-ETMX_COIL_LR	H2	638866424	x'200004
97	x'20000428+	ChannelSaturated	H2:SUS-ETMX_COIL_SIDE	H2	638866424	x'200004
98	x'20000428+	ChannelSaturated	H2:SUS-ETMX_COIL_UL	H2	638866424	x'200004
99	x'20000428+	ChannelSaturated	H2:SUS-ETMX_COIL_UR	H2	638866424	x'200004
100	x'20000428+	Jump16	H2:LSC-AS_DC_TEMP	H2	638866424	x'200004
101	x'20000428+	Jump16	H2:LSC-AS_Q_TEMP	H2	638866424	x'200004

File: /home/pshawhan/tcl/guild.NORMAL1334

Query was: SELECT creator\_db, process\_id, name, subtype, ifo, start\_time, start\_time\_ns, ever

Row cross-ref: Process... Filter... Data source Transformed data Coincidences

Save as... Help Close

LIGO Scientific Collaboration Meeting  
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## Pop Quiz

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True/False: “Database tools” deal with:

- ( T / F ) Events (astrophysical & environmental)
- ( T / F ) Lists of “segments” (intervals when interferometer is locked, etc.)
- ( T / F ) Summary info for time periods (scalars, spectra, CSD’s, ...)
- ( T / F ) Trend data (from DAQ system, or from DMT monitors, etc.)
- ( T / F ) High-rate time-series data

What kind of interface do you want? (Check all that apply)

- Purely graphical (guild, DTT, Data Viewer, Triana, ... )
- Command-line (Matlab, ROOT, Mathematica, R, ... )
- Program (C, C++, ... )

On a scale from 1 to 5, indicate the desired level of sophistication:

- 1 View precomputed data objects
- 2 Do basic transformations / summaries
- 3 Use certain object types together in predetermined ways
- 4 Full set of operations for one or two object types; scripting support
- 5 Allow arbitrary processing of data objects in any combination



## Pop Quiz (2)

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Essay question: What do you want to be able to do?



## Existing Database Tools

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### Guild

- Displays tables (events, etc.) in tabular form
- Allows “cuts” on data (in the database query)
- Can do crude histogramming (in tabular form)

“Metaio” C library for parsing LIGO\_LW xml table files

- Stable prototype version is in LIGOtools “dataflow” package

### Data Viewer

- The standard way to display trend data generated by DAQ
- **But** can’t get trend data from archive, or generated by DMT monitors

### Diagnostic Test Tools

- Could be used as a viewer for spectra, trend data ?

(Other pieces: lwtprint; Matlab MEX-files to read/write frame data )

Anything is possible, but everything requires work!

Genuinely useful tools won't magically appear

We should focus on a few essential tools

My priority list:

- Event analysis (cuts, histogramming, coincidence search, ... )
- Display package for summary spectra, etc.
- Offline trend viewer

In my opinion,

- Building on top of a flexible environment will allow us to add capabilities as the need / opportunity arises
- Scripting capability is essential for serious analysis