
# Access Tools for the LDAS Database

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# LDAS From a User's Perspective

LDAS provides an analysis framework with certain capabilities:

- Archive of raw data in frame format
- Data conditioning (e.g. down-sampling, line removal, regression)
- Batch system for parallel processing
- Metadata database

LDAS as a self-contained system is geared to the demands of "production" analysis tasks

The components of LDAS also should provide support for "external" analyses and the interpretation of analysis output

LDAS specifies only the basic elements of user interfaces: communication protocols, file formats

Additional "external" tools are needed to facilitate fast-turnaround exploration, visualization, and statistical analysis


# Planned Usage of the LIGO "Metadata" Database

Database table definitions have been established to store various types of information:

- Metadata about raw data (index of data files, detector state)
- Summary information for appropriate time intervals (named scalar values, statistical measures, spectra, comments)
- Diagnostic "triggers" (e.g. transients in environmental channels)
- Astrophysical event candidates of various types (inspiral, burst, ringdown, unmodeled)

Draft document with detailed definitions (LIGO-T990101-02) has been circulated within LIGO/LSC analysis groups

The existing table definitions are thought to fulfill most data storage needs, but more tables can be added as necessary

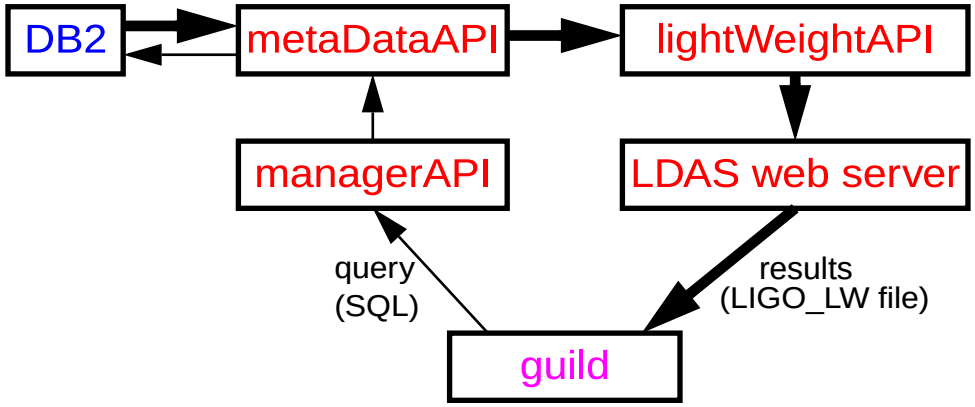
The LSC has the authority to determine the scope of the database


# Graphical User Interface to LIGO Database — “guild”

Written as a standalone Tcl/Tk script, for use anywhere

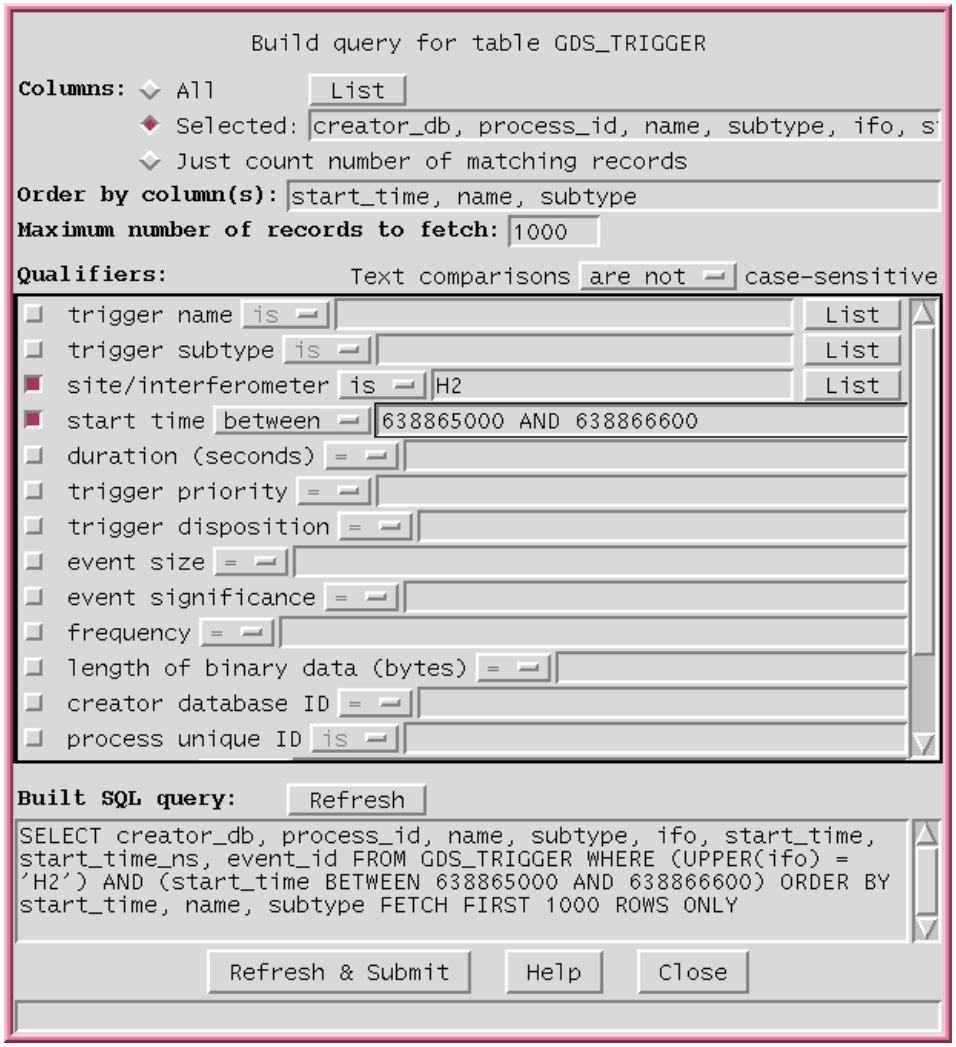
Provides a point-and-click method to build database queries (in DB2’s native SQL language), with various optional qualifiers

Sends query to the LDAS managerAPI, retrieves file of matching database records via http, and displays as a scrollable table

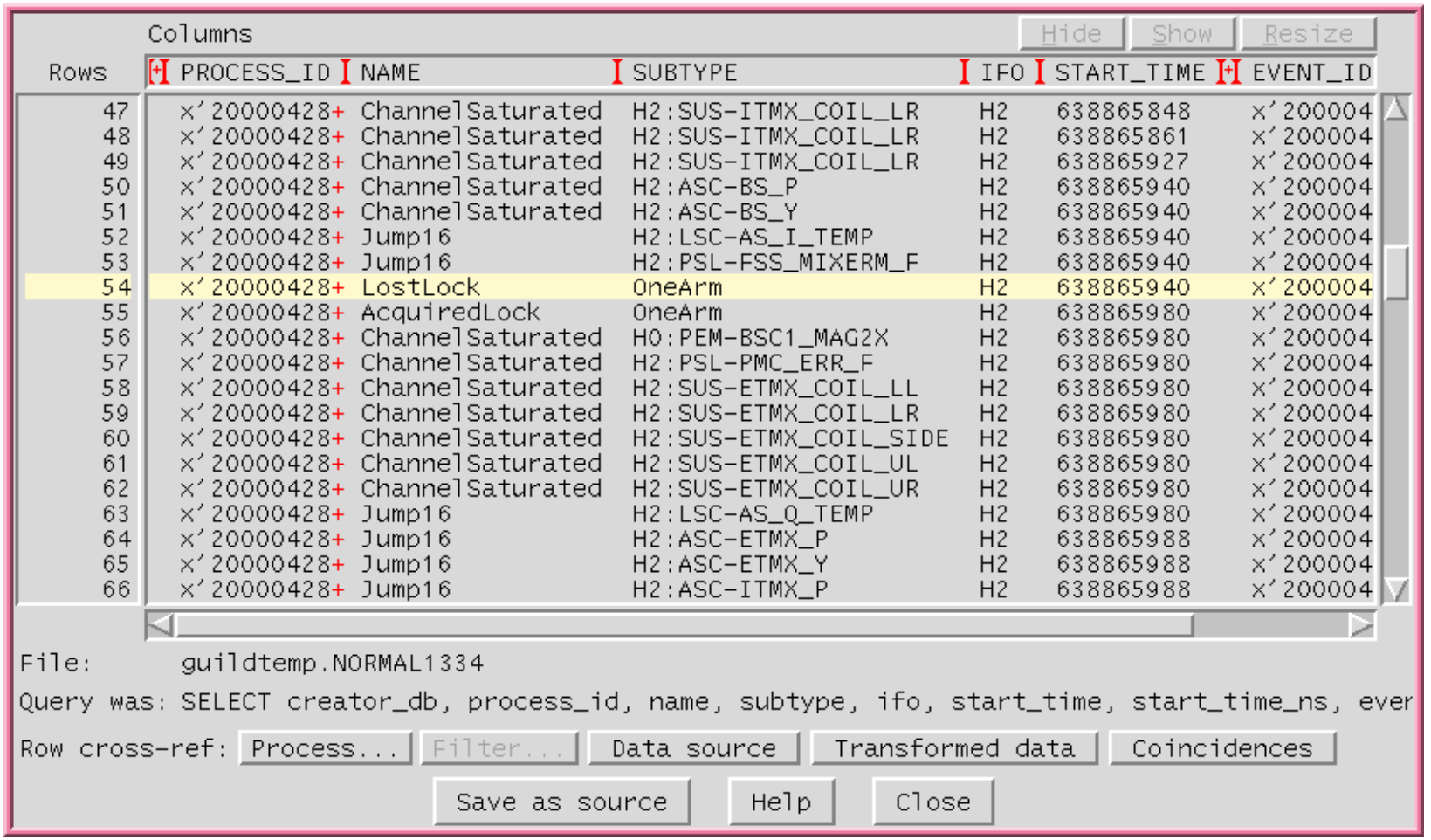



Knows about the relationships between tables, and provides cross-reference links

# guild Query-Building Screens

# guild Table Display



Columns | Hide | Show | Resize

| Rows | PROCESS_ID | NAME | SUBTYPE | IFO | START_TIME | EVENT_ID |
|---|---|---|---|---|---|---|
| 47 | x'20000428+ | ChannelSaturated | H2:SUS-ITMX_COIL_LR | H2 | 638865848 | x'200004 |
| 48 | x'20000428+ | ChannelSaturated | H2:SUS-ITMX_COIL_LR | H2 | 638865861 | x'200004 |
| 49 | x'20000428+ | ChannelSaturated | H2:SUS-ITMX_COIL_LR | H2 | 638865927 | x'200004 |
| 50 | x'20000428+ | ChannelSaturated | H2:ASC-BS_P | H2 | 638865940 | x'200004 |
| 51 | x'20000428+ | ChannelSaturated | H2:ASC-BS_Y | H2 | 638865940 | x'200004 |
| 52 | x'20000428+ | Jump16 | H2:LSC-AS_I_TEMP | H2 | 638865940 | x'200004 |
| 53 | x'20000428+ | Jump16 | H2:PSL-FSS_MIXERM_F | H2 | 638865940 | x'200004 |
| 54 | x'20000428+ | LostLock | OneArm | H2 | 638865940 | x'200004 |
| 55 | x'20000428+ | AcquiredLock | OneArm | H2 | 638865980 | x'200004 |
| 56 | x'20000428+ | ChannelSaturated | H0:PEM-BSC1_MAG2X | H2 | 638865980 | x'200004 |
| 57 | x'20000428+ | ChannelSaturated | H2:PSL-PMC_ERR_F | H2 | 638865980 | x'200004 |
| 58 | x'20000428+ | ChannelSaturated | H2:SUS-ETMX_COIL_LL | H2 | 638865980 | x'200004 |
| 59 | x'20000428+ | ChannelSaturated | H2:SUS-ETMX_COIL_LR | H2 | 638865980 | x'200004 |
| 60 | x'20000428+ | ChannelSaturated | H2:SUS-ETMX_COIL_SIDE | H2 | 638865980 | x'200004 |
| 61 | x'20000428+ | ChannelSaturated | H2:SUS-ETMX_COIL_UL | H2 | 638865980 | x'200004 |
| 62 | x'20000428+ | ChannelSaturated | H2:SUS-ETMX_COIL_UR | H2 | 638865980 | x'200004 |
| 63 | x'20000428+ | Jump16 | H2:LSC-AS_Q_TEMP | H2 | 638865980 | x'200004 |
| 64 | x'20000428+ | Jump16 | H2:ASC-ETMX_P | H2 | 638865988 | x'200004 |
| 65 | x'20000428+ | Jump16 | H2:ASC-ETMX_Y | H2 | 638865988 | x'200004 |
| 66 | x'20000428+ | Jump16 | H2:ASC-ITMX_P | H2 | 638865988 | x'200004 |

File: guildtemp.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 source | Help | Close


# Summary and Plans

guild is very mature, and will be distributed soon

guild has already been useful in shaking down the LDAS system

Now starting to put database tables into active use;
will revise table definitions based on early experience

Still need a program interface tool to read and write table data,
e.g. for statistical analysis of event candidates;
will be a part of the LIGO/LSC Algorithm Library

Also need a user interface tool for data in the frame archive
(front end to frameAPI and dataConditionAPI (?))