

Belle 2 Data Handling with AMGA

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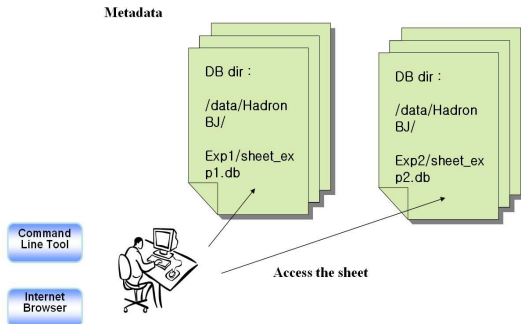
Overview

- 1 The Data Handling Scenario with AMGA
- 2 The definition of the attributes
- 3 The architecture of the DB in AMGA
- 4 The usage in command line
- 5 Summary and next plan

The architecture in AMGA

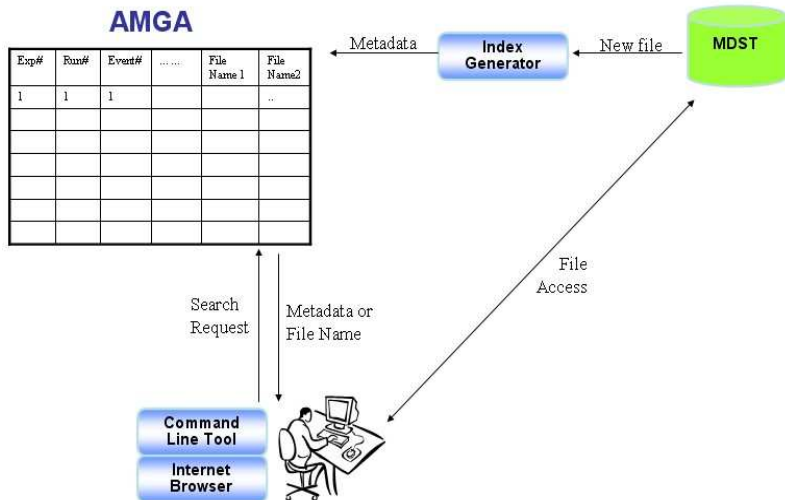
- AMGA support the directory structure.
- The metadata sheets can be separated for each exp in directory structure.
- Scalability will be improved in AMGA

AMGA: support directory structure tree in DB



The Data Handling Scenario with AMGA

- sheet_exp1.db



- ex) sheet_exp1.db
- Logical file location :
- stream : 0 - 9
- exp number : 07 - 65
- event number : 0 - 9999999
- start run
- end run
- data type: on_resonance, off_resonance
- type: evtgen-uds, evtgen-charm, evtgen-charged, evtgen-mixed
- lib version

The definition of the attributes: Data

- ex) sheet_exp1.db
- Logical file location :
- skim type : HardronBJ, fullrec, and so on
- exp number : 07 - 65
- event number : 0 - 9999999
- start run
- end run
- data type: on_resonance, off_resonance
- lib version

The definition of the attributes : considering additional attributes

- R2 : 0.0 - 1.0
- number of + charged tracks
- number of - charged tracks
- number of K_S^0 s
- number of K_L^0 s

- Data

- The biggest skimming data contain all information for events.
- The others skimming data is a subset of the biggest one.
- We don't need to make additional sheets for all skimming.
- To get the additional information, the meta-data size will be increased a little bit.

- MC

- We expect the massive size for MC, but we can improve the scalability with AMGA directory structure.

- **Command Line Interface**

- `belle_amga_search` MC expnum start_run end_run data_type type lib_version stream logical_file_name
- `belle_amga_search` real expnum start_run end_run data_type lib_version skim_type logical_file_name

- **Command Line Interface:optional**

- `belle_amga_search` MC expnum start_run end_run data_type type lib_version stream logical_file_name `max_r2` `min_ptrk` `min_mtrk` `min_nks` `min_nkl`
- `belle_amga_search` real expnum start_run end_run data_type lib_version skim_type logical_file_name `max_r2` `min_ptrk` `min_mtrk` `min_nks` `min_nkl`

- 1 Defined the attributes
- 2 constructed the architecture in AMGA
- 3 Is there any missing for the usage?
- 4 We will make the meta-data based on belle.

Acknowledgement

- e-Science Grid technology Development Team:
 - AMGA software development
 - Technical Support
 - Tutorial
 - Soonwook Hwang, sun-Il Ahn, Namkyu Kim

- Data

- If we can arrange the event number in the real data as corresponding the event number for each skim sheets, we can reduce the metadata size dramatically considering the event characters.
- We can use a sheet for the event characters when we construct the architecture for all skim sheets.
- Ex.) skim type: HadronBJ, fullrec → same exp, same run, same evt have same property of a event.

- MC : We expect the massive size for MC, but we can improve the scalability.

