Optimized Access to Distributed Relational Database System

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(using widely available JDBC components)

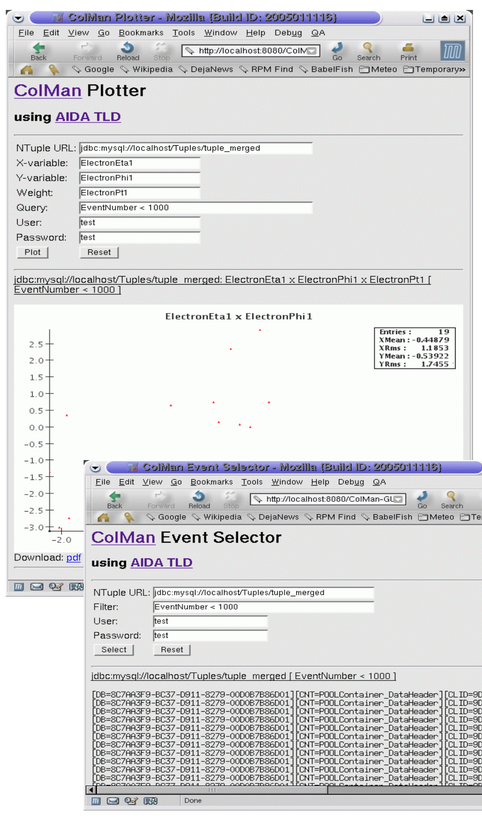
FreeHEP

AIDA

JAS

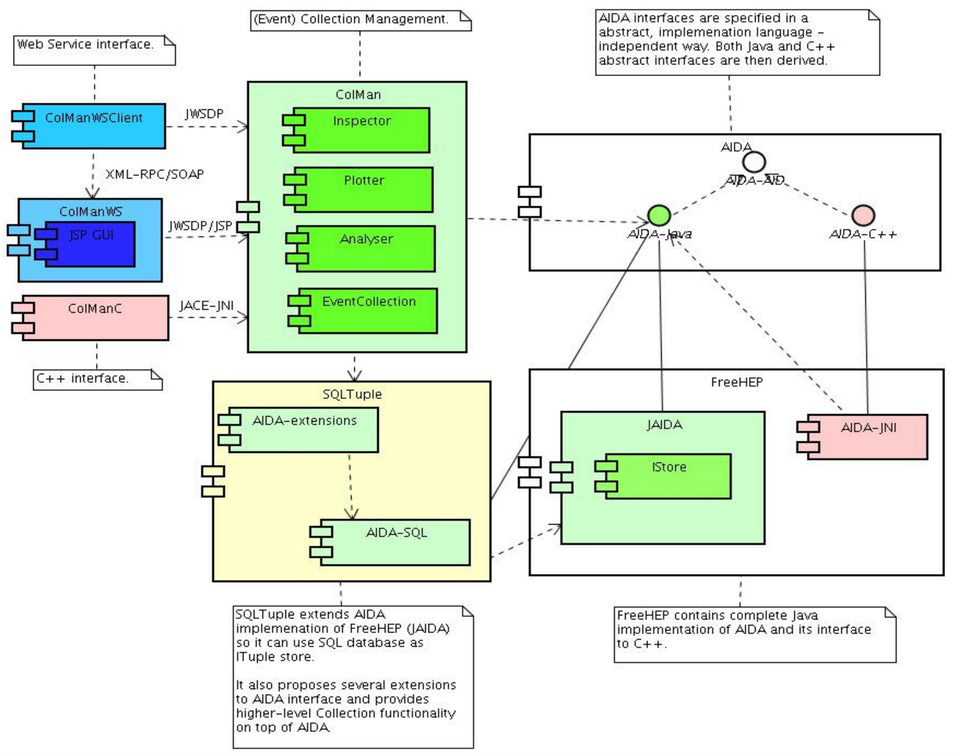
Web Service

- ColMan Event Selector is available via XML-RPC service. The service is generaly deployed as /ColMan/EventSelector Web Service application and can be accessed via ColMan Web Service Client.
- JSP (Java Server Pages) GUI for ColMan tools has been deploeyd as /ColMan-GUI Web Service application and and can be accessed directly from the standard Web Browsers.



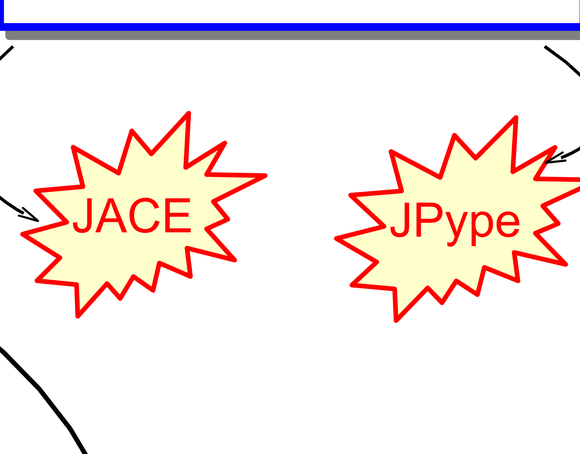
SQLTuple / ColMan

- SQLTuple extends FreeHEP implementation of ITuple AIDA interface so that ITuples can be stored in an SQL database.
- It supports any relational DB backend via JDBC standard interface.
- All AIDA operations (projections, filters, evaluators,...) are supported in a standard way.
- Some new functions have been included on top of standard AIDA Interface.
- SQLTuple can be used in any AIDA-complient tool.
- SQLTuple understands LCG Pool AttributeList data.
- ColMan provides higher level utilities for managing (Event) Collections.



JAS Plugins

- Both SQLTuple and ColMan are available as JAS plugins.
- All functionality is available via standard JAS GUI.
- Specific functionality (like SQL queries) is added to the JAS GUI.
- Interoparability with other JAS plugins is assured.



MultiLanguage interfaces

- Selected SQLTuple/ColMan functionality is available to legacy C++ applications via proxies created by JACE.
- All SQLTuple/ColMan functionality is available to Python applications using Jython or Jpype (when access to C++ is needed too).
- Access from other languages (Ruby, Groovy,...) is directly possible.

JDBC

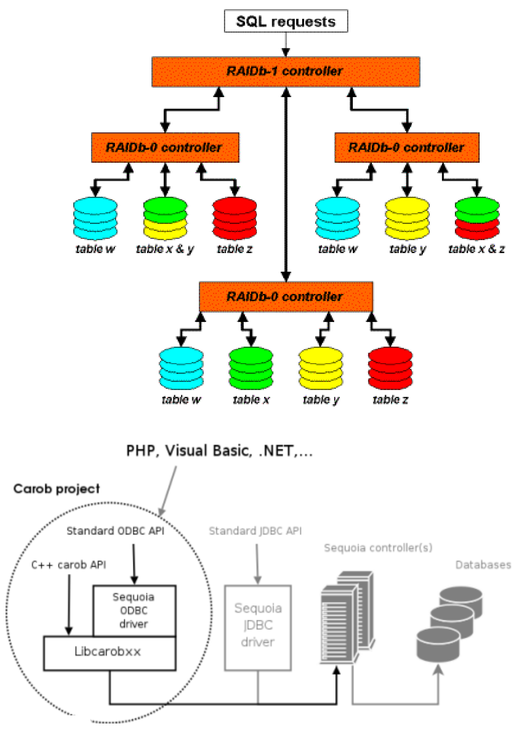
JACE

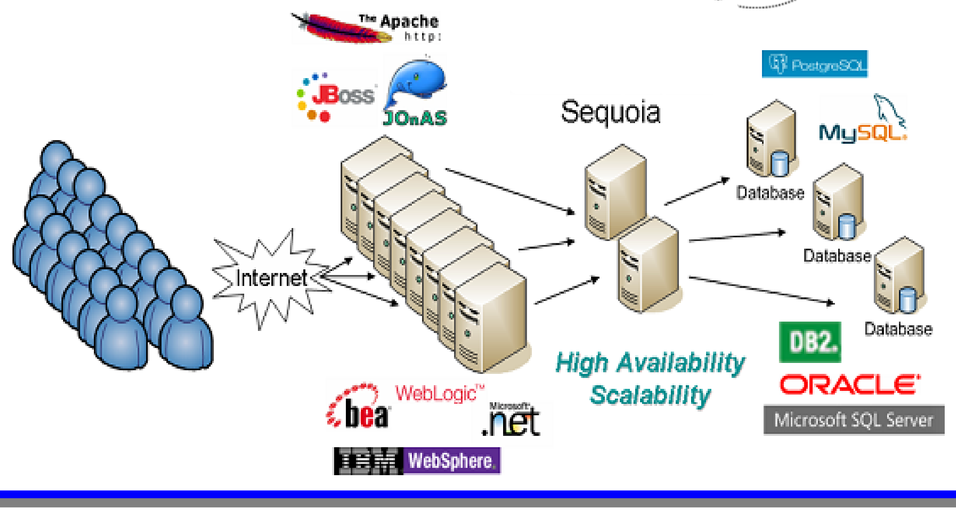
JPype

continuent

Sequoia

- SQL tables can be spread over several database Servers, some tables may be replicated. User wants a single front-end.
- Sequoia acts as a (Proxy) Virtual SQL Server forwarding all requests to appropriate databases (real or another virtual). Replicated and/or complementary tables are supported (even on heterogeneous Servers), similar do RAID disks.
- Sequoia is used via its JDBC driver, so any application using JDBC API can directly use Sequoia. No application modification is required to use Sequoia.
- Sequoia directly handles any SQL query. No pre-knowledge is needed. No specialized interface is required.
- Sequoia handles both query (read access) and update (write access).
- JDBC interface can be transparently accessed from other languages (Python, Ruby, Groovy, C++,...).





Octopus

Enhydra

- Octopus is a Java-based Extraction, Transformation, and Loading tool. It may connect to any JDBC data sources and perform transformations defined in an XML file.
- Octopus has been customised to support non-standard SQL features used in LCG and to overcome LCG-specific bugs.
- Octopus is routinely used to replicate Atlas Detector Description database. It has been successfully tested with other Atlas databases.