First Public Pool Release
V0.3

Dirk Duellmann

Release Platform

- POOL V0.3 has been released on December 18th (today!)
  - the cvs release tag is "POOL_0_3_0"
  - Public release targeting expert developers expecting to use POOL directly (eg experiment framework developers)
- Upgraded to new supported platform (still only one so far)
  - RedHat 7.3 using gcc 3.2
- Require several external packages hosted in /afs/cern.ch/sw/lcg/external
  - MySQL (4.0.3-beta)
  - MySQL++ (1.7.9)
  - ROOT (3.04/01 – last week's release)
    - plan to upgrade asap to the 3.04/02 Root released today
  - Xerces-C (2.1.0)
- Support the LCG Apps build system
  - SCRAM – Many thanks to Torre!
    - now only final adjustments (eg #include policy) required

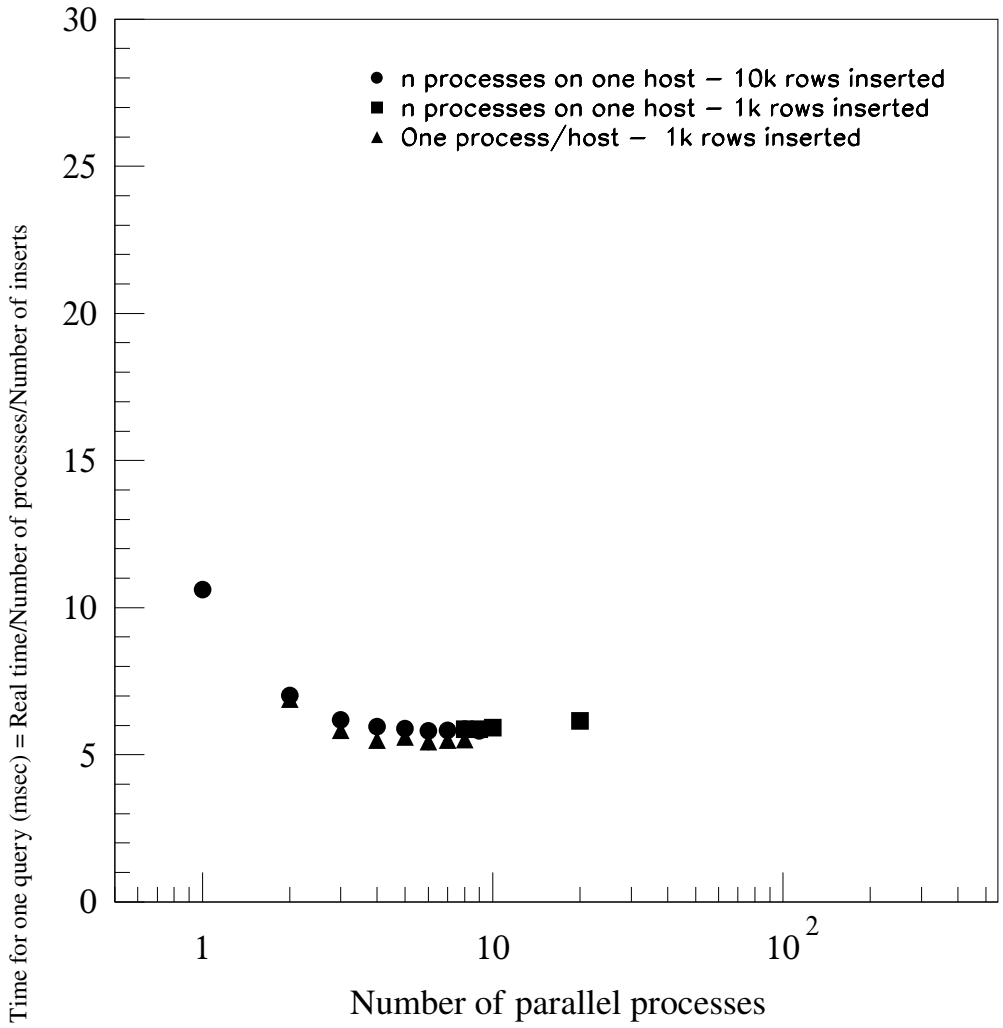
Release Content

- Collections
  - Implicit and explicit collections
    (based on containment in root files or list of object references)
  - Provides coherent iterator access
  - Component implementation in C++ based on MySQL
- Optional Indicum package provided in pool contrib
  - Alternative Meta Data implementation by Julius based on JDO
- Merge between two (very similar) approaches for the Meta Data interface still in progress
  - need to converge soon
- Type safe end user interface on top of the low level component interface needed

File Catalog

- Three alternative implementation to cover different use cases
  - XML (local file)
  - Native MySQL
  - EDG Replica Location Service (RLS) – new in this release
- IFileCatalog – abstract interface to all three
  - Basic registration & lookup
  - Catalog iteration (eg for browsing applications)
  - First GUI prototype based on python in the pool/contrib area
- Repeated performance tests against EDG catalog (Maria)
  - several implementation options for application server hosting the EDG RLS
  - conclusion: acceptable performance (~5 ms/catalog update)

EDG Catalog Performance Tests



Storage Manager & Cache

- Completed integration between smart pointer class Ref<T> and storage manager backend.
- Refs in persistent objects now work transparently without additional client code.
- Required coupling between Collections component and basic object persistency is minimal.
- New example code is much simpler and easier to understand than in earlier releases.

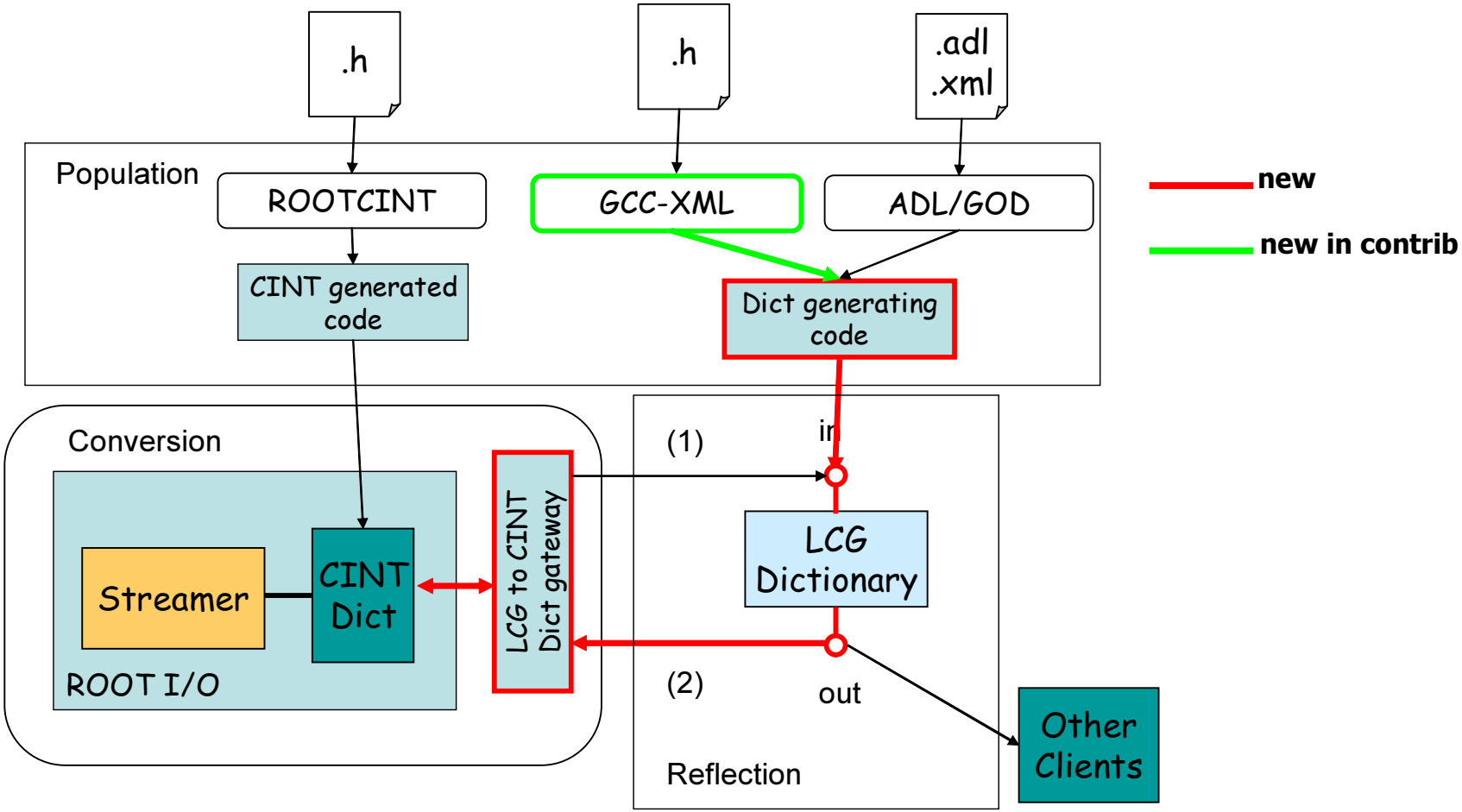
Reflection & Conversion

- Reflection package (aka LCG Dictionary) basically unchanged
  - will move to SEAL project after this release
- Dictionary Gateway to Root Dictionary
  - Proposal of Markus, Stefan & Rene defined and first implemented during this short release cycle!
  - Gateway is uni-directional in this release
    - LCG Dict -> Root Dict
  - Still quite a few limitations
    - only supports conversion of classes with elementary types as attributes, no arrays, no vectors, no strings, no namespaces
    - just populating the LCG dictionary is not the end of the story!
  - But enabling direct object persistency without any base class or need to create a technology dependent (aka Root) dictionary
- This is significant progress in very short time!

GCC-XML based Generator for LCG Dictionaries

- Proof of concept prototype in the pool contrib area developed by Zhen Xie
  - Takes xml output from a modified gcc front-end and generates the necessary stub code and calls to the LCG dictionary
  - Allows to parse the well known CMS class PSimHit
    - several templates, non-trivial inheritance hierarchy
- More work required in conversion work package to make sure that a generated dictionary actually works
  - Dictionary generation and dictionary use for conversion are now in two LCG projects
  - Need to keep good communication between the developers involved
- Need to define further how a valid LCG Dictionary should look like: remove ambiguities and limitations throughout the complete chain
  - extraction, generated code, pool gateway, root back-end

Dictionary: Reflection / Population / Conversion



Release Target

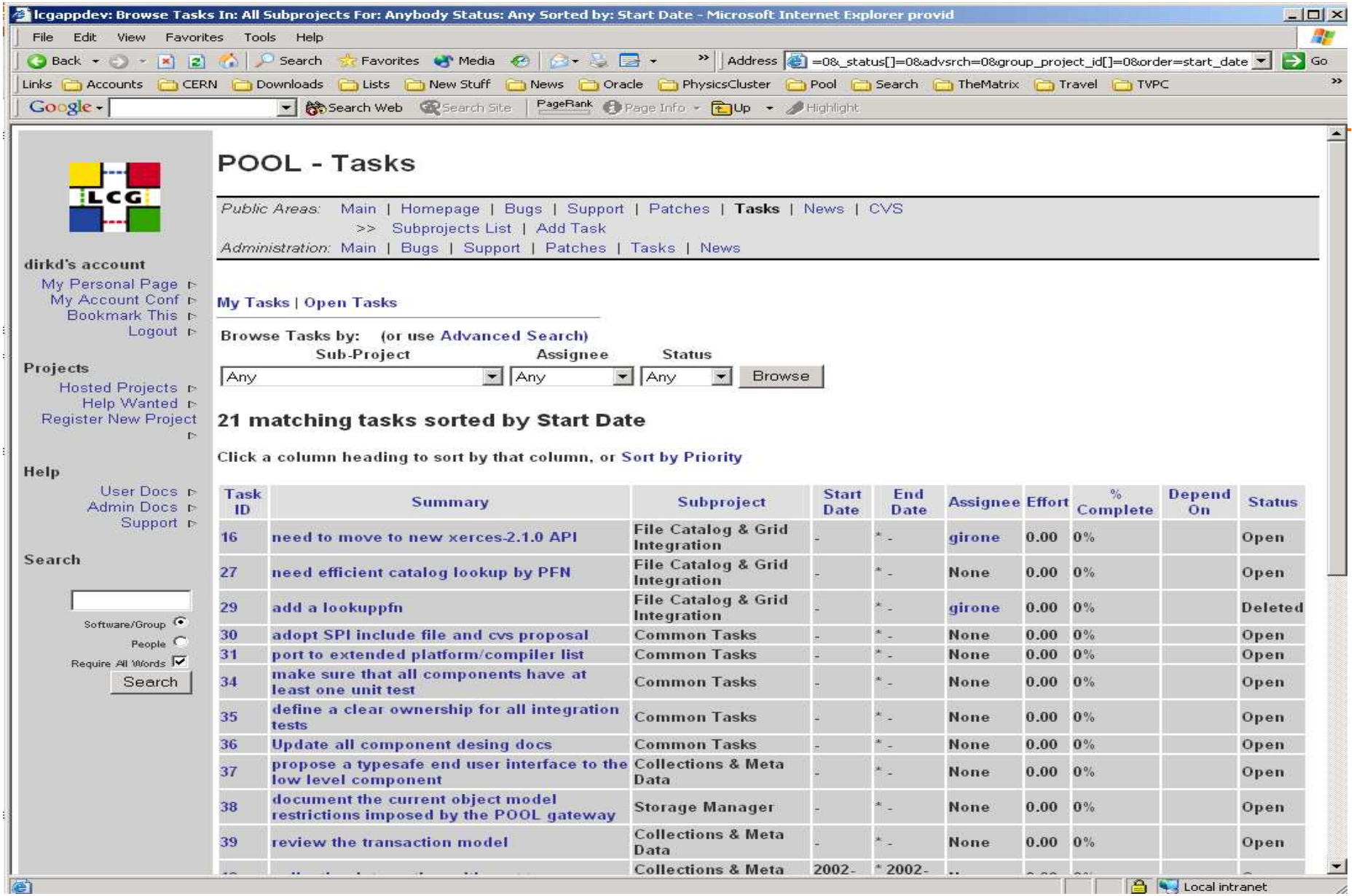
- Main Release Target:
  - Add meta data (key/value pairs for now) to already existing collections
  - Connect LCG Dictionary with the Root Dictionary
- POOL functionality as of V0.3
  - Provide persistency for classes not deriving from TObject (but also for Root classes), navigation between persistent objects, provide collections for them and allow to attach meta data to these collections
- Example Programs – eg /pool/examples/Collection
  - register a new file with a file catalog
  - write a few interrelated objects into root files
  - keep track of object references in a collection
  - attach simple meta data to each collection entry
  - read objects back based on collection iterators
  - allow for selection based on collection meta data

Other developments

- Much better defined release procedure as the pool developers got familiar with CVS
  - Ioannis defined the procedure and acted as Release Coordinator during this release cycle
  - Tagged component release are now happening
  - Testing before a component release is still poor (also because of still incomplete adaptation to new build system)
- Oval and CppUnits based testing has been introduced in some work packages
  - but are not yet widely used
- Savannah portal is used – very positive feedback so far!
  - Propose to use at least bug request, support request and task list for this POOL release

Next release

- Aiming for a V0.4 release at the end of February
- Need a longer cycle to get the component documentation up-to date and checked during the code review
  - this step was skipped because of lack of time during the last cycle
- Converge on the CVS structure and include policy which is currently being defined.
- Many more tasks listed on the POOL Savannah page waiting to be prioritised and scheduled for one of the next releases.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Browse Tasks by: (or use Advanced Search)
Sub-Project Assignee Status
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21 matching tasks sorted by Start Date
Click a column heading to sort by that column, or Sort by Priority
Task ID | Summary | Subproject | Start Date | End Date | Assignee | Effort | % Complete | Depend On | Status
16 | need to move to new xerces-2.1.0 API | File Catalog & Grid Integration | - | * - | girone | 0.00 | 0% | | Open
27 | need efficient catalog lookup by PFN | File Catalog & Grid Integration | - | * - | None | 0.00 | 0% | | Open
29 | add a lookuppfn | File Catalog & Grid Integration | - | * - | girone | 0.00 | 0% | | Deleted
30 | adopt SPI include file and cvs proposal | Common Tasks | - | * - | None | 0.00 | 0% | | Open
31 | port to extended platform/compiler list | Common Tasks | - | * - | None | 0.00 | 0% | | Open
34 | make sure that all components have at least one unit test | Common Tasks | - | * - | None | 0.00 | 0% | | Open
35 | define a clear ownership for all integration tests | Common Tasks | - | * - | None | 0.00 | 0% | | Open
36 | Update all component desing docs | Common Tasks | - | * - | None | 0.00 | 0% | | Open
37 | propose a typesafe end user interface to the low level component | Collections & Meta Data | - | * - | None | 0.00 | 0% | | Open
38 | document the current object model restrictions imposed by the POOL gateway | Storage Manager | - | * - | None | 0.00 | 0% | | Open
39 | review the transaction model | Collections & Meta Data | - | * - | None | 0.00 | 0% | | Open
Collections & Meta 2002- * 2002-
Local intranet

SCRAM release area created in AFS for POOL (and later other Projects)

- No need to recompile POOL component libraries as in the developer releases so far

```
$ scram project POOL POOL_0_3_0
$ cd POOL_0_3_0/src
$ cvs co -d examples -r examples-3-0-1 pool/examples
$ cd examples
$ scram b
$ cd Simple
$ eval `scram runtime -sh`
$ PopulateSimple
$ ReadSimple
```

- Detailed example description will soon appear on the POOL web

Documentation

- Juerg is working on a work book style document which will serve as "Getting Started with POOL"
  - Collection of several individual HowTo docs produced by the work packages
  - How to setup POOL against the shared SCRAM release area
  - How to run the example code
  - How to setup MySQL backend databases
  - Assemble FAQ listing common pitfalls
- First release expected before Christmas

Summary

- This was our shortest (and most painful) release cycle so far
  - because of Christmas/CHEP'03 constraints
  - Currently we can't sustain short (~1 month) cycles without impacting the development of larger features and the quality of design document documentation, testing and code
- The first public POOL release took place with 3 days delay
  - Planned functionality is provided
    - Still many limitations and probably instabilities throughout the all components
    - After only 3 releases this is unavoidable
  - Still, sufficient to ask for feedback from potential users
- Please use our savannah page http://lcgappdev.cern.ch/savannah/projects/pool/
  - For support requests and bug reports
    - make sure your question/report is new
  - Please check our task list to see where and when your requests could fit in
- POOL project has met it's 2003 work plan with only minor delay
  - Many thanks to all POOL developers …
    …and SPI infrastructure supporters and the ROOT team …!
  - We are looking forward to profit from SEAL developments in our next release.

Next Steps