



News on the Conditions DB and related tools

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Outlines

- Python tools
 - COOL Expert tasks
 - COOL connection
 - AtlCoolIOVRunCheck.py tool
 - AtlCoolTime.py tool
 - Obsolete tags
 - Internal changes
- Condition DBRelease news
- CernVMfs

Expert task

- Expert tasks:
 - Creating a new folder in COOL DB
 - Modifying a folder description
 - Adding a payload column to a folder
 - Modifying a payload column
 - Modifying authentication in authentication.xml and dblookup.xml
- For all question about expert task, send e-mail to me and Mathieu.



COOL connection

- If you use short connection string `<logical_name>/<instance>` ("COOLONL_TRT/COMP200"):
- In both (release and builds) area:
 - Python tools (AtlCool*) read data from frontier
 - Reco jobs read condition data from frontier
 - MC jobs read condition data from DBRelease.
- In 'release' area (e.g. asetup 16.6.3.1):
 - AtlCoolCopy.exe and other user and groups tools try to read data from DBRelease (mc data SQLite replica)
 - For access to Oracle you need to use direct connection string ('oracle://ATLAS_COOLPROD;schema=ATLAS_COOLONL_TRT;dbname=COMP200') or use dblookup.xml (pointed to by the path variable CORAL_DBLOOKUP_PATH) from 'builds' area .



COOL connection (cont.)

- In 'builds' area (e.g. `asetup 16.6.3.1,builds`):
 - All tools read condition data from frontier
- If you want switch off frontier (for reading data from Oracle):
 - `unset FRONTIER_SERVER`
- You can force a flush of frontier data:
 - `export FRONTIER_FORCERELOAD=long`
 - This will only flush the particular set of proxies and servers that get selected for that run, not all of them.



Python tools

- AtlCoolCopy.exe
 - <https://twiki.cern.ch/twiki/bin/viewauth/Atlas/AtlCoolCopy>
- AtlCoolMerge, AtlCoolTransfer
 - <https://twiki.cern.ch/twiki/bin/viewauth/Atlas/CoolPublishing>
- AtlCoolIOVRunCheck, AtlCoolTime
 - <https://twiki.cern.ch/twiki/bin/view/Atlas/CoolTagTool>
- AtlCoolConsole:
 - <https://twiki.cern.ch/twiki/bin/viewauth/Atlas/AtlCoolConsole>
- AtlCoolTag:
 - <https://twiki.cern.ch/twiki/bin/viewauth/Atlas/CoolTagging>
- CondDSMgr
 - <https://twiki.cern.ch/twiki/bin/viewauth/Atlas/CondDSMgr>
- Nightly Tasks
 - <https://twiki.cern.ch/twiki/bin/viewauth/Atlas/CoolNightlyTasks>



AtlCoolIOVRunCheck.py tool

- This utility checks IOV completeness on the production COOL database instances to make sure that all data on place before HeadTags is closed.
- Twiki:
https://twiki.cern.ch/twiki/bin/view/Atlas/CoolTagTool#AtlCoolIOVRunCheck_utility
- AtlCoolIOVRunCheck.py was successfully used for HI and Muon reprocessing.



New AtlCoolTime.py tool

- New utility was developed for getting time information (creation, update, IOV) for folders on the production COOL database instances (requested by Paul and Mathieu)

Use Cases:

- Creation and update time, IOV for a single folder :

```
/afs/cern.ch/user/a/atlcond/utils/AtlCoolTagTime.py -f  
/LAR/ElecCalibOfI/Shape/RTM/5samples1phase -t LARElecCalibOfIShapeRTM5samples1phase-  
REPP-01 -c COOLOFL_LAR/COMP200
```

Folder,Tag:/LAR/ElecCalibOfI/Shape/RTM/5samples1phase,LARElecCalibOfIShapeRTM5samples1p
hase-REPP-01

Creation Time : 2010-09-22_18:08:39.971222000 GMT

Last Update Time : 2011-02-01_17:03:14.776457000 GMT

Objects number: 14511

IOV : [140370,0] to [170482,4294967295]

New AtlCoolTime.py tool (cont. 1)

- Check bulk processing and express stream head tags (check IOV for all folder):

```
~atlcond/Utils/AtlCoolTagTime.py -r COMCOND-BLKPST-004-05 -d COMP200
```

```
ATLAS_COOLOFL_GLOBAL
```

```
/GLOBAL/BTagCalib/SoftMu
```

```
C: 2010-02-04_17:19:49.653644000 GMT U: 2010-02-04_17:19:49.729897000 GMT IOV: [0,0] to  
[2147483647,4294967295]
```

```
...
```

```
ATLAS_COOLOFL_SCT
```

```
/SCT/Derived/Monitoring
```

```
C: 2010-06-07_09:04:30.703455000 GMT U: 2011-03-29_07:13:20.375669000 GMT IOV: [130319,0] to  
[2147483647,4294967295]
```

Problematic IOV:

```
/LAR/ElecCalibOfI/Shape/RTM/5samples1phase ['LARElecCalibOfIShapeRTM5samples1phase-REPP-01']
```

```
/LAR/ElecCalibOfI/OFC/PhysWave/RTM/5samples1phase ['LARElecCalibOfIOFCPhysWaveRTM5samples1phase-REPP-01']
```

IOV range for Time folder (maximum since - minimum until)

Wed Mar 2 13:25:47 2011 UTC to ValidityKeyMax

IOV range for Lumi folder (maximum since - minimum until)

```
[177900,0] to [170482,4294967295]
```



New AtlCoolTime.py tool (cont. 2)

- Check head tags for the mc data (for search obsolete tags):

```
AtlCoolTagTime.py -r OFLCOND-SDR-BS2T-00-00-d OFLP200
```

```
...
```

```
ATLAS_COOLOFL_PIXEL  
/PIXEL/PixCalib
```

```
C: 2011-03-07_14:40:24.983039000 GMT U: 2011-03-07_14:40:52.723933000 GMT IOV: [175419,0] to  
[2147483647,4294967295]
```

```
...
```

```
Problematic IOV:
```

```
/TRT/Align ['TRTAlign_Nominal']
```

```
IOV range for Time folder (maximum since - minimum until)
```

```
ValidityKeyMin to ValidityKeyMax
```

```
IOV range for Lumi folder (maximum since - minimum until)
```

```
[175419,0] to [9999999,9999999]
```

1) New Features in **AtlCoolConsole clonetag()**:

([Database/CoolConvUtilities/trunk/python/AtlCoolTool.py](#), from [CoolConvUtilities-00-05-01](#))

added possibility to use cloneTag() also on folderset, reproducing all the tag hierarchy

-e.x:

```
Welcome to AtlCoolConsole. Type 'help' for instructions.
```

```
>>> tracetags /Indet Indet-Cosmic-nominal (I want to clone this tag, with it' s hierarchy)
```

```
Searching under /Indet for tags referenced by Indet-Cosmic-nominal
```

```
Folder /Indet : tag Indet-Cosmic-nominal
```

```
Folder /Indet/Beampos : tag IndetBeampos_cosmic_loose
```

```
Folder /Indet/PixelDist : tag InDetPixelDist-nominal
```

```
>>> clonetag Usage: clonetag <folder> <sourcetag> <desttag> (same syntax as before, now on Folderset)
```

```
>>> clonetag Indet Indet-Cosmic-nominal TestTag
```

```
Cloning tag Indet-Cosmic-nominal for folder /Indet to dest tag TestTag
```

```
All done
```

```
>>> tracetags Indet TestTag (full hierarchy is cloned)
```

```
Searching under /Indet for tags referenced by TestTag
```

```
Folder /Indet : tag TestTag
```

```
Folder /Indet/Beampos : tag IndetBeampos_cosmic_loose
```

```
Folder /Indet/PixelDist : tag InDetPixelDist-nominal
```

2) New Features in **Database/CondDBTools AtlCoolMerge.py** :

when updating an existing tag, a local backup of the tag is automatically done in

`/afs/cern.ch/atlas/conditions/poolcond/buffer/AtlCoolMergeLocalBackup/BackUp_<time>_<oracleAccount>.db`

unless the tag is too big to be reasonably backed up (max 100Mb) or the option `--nobackup` is used.

This is intended for faster recover of last working version of the tag in the case of update error and/or problem

By Danilo Banfi



Obsolete tags

- There are now 206 Head tags for the real data and 214 Head tags for the MC data
 - Difficult to manage
 - Some tags are never used
 - Some tags are corresponding to obsolete software release
- Obsolete tags are marked by 'OBSOLETE' in their description string
- Obsolete Head tags do not show by COOL tools:
 - AtlCoolConsole.py - in new CoolConvUtilities release
 - AtlCoolTag.py (backtrace) - done
 - COOL tag browser
 -



Internal Changes

- Added new schemas for FWD Detector to COOL db (ATLAS_COOLONL_FWD, ATLAS_COOLOFL_FWD)
 - Added connection and authentication information to dblookup.xml and authentication.xml
(Database/ConnectionManagement/AtlasAuthentication/AtlasAuthentication-00-04-10)
 - Updated Database/CoolConvUtilities (CoolConvUtilities-00-05-03) and ~atlcond/utills/
- Authentication for PANDA database was added to dblookup.xml and authentication.xml (e.g. for GetCommand.py)
 - Database/ConnectionManagement/AtlasAuthentication/AtlasAuthentication-00-04-09



Routine changes

- Fixed AtlCoolMerge.py for UPD4 update (by Richard, December)
- New cond11 datasets family:
 - For real data - cond11_data.gen.COND and cond11_data.lar.COND
 - For mc data - cond09_mc.gen.COND
 - For testing - cond09_test.gen.COND
- SLC4->SLC5 migration (end of November 2010)
- setup.sh -> asetup migration (done for Nightly, in progress for other tools)
- Tested and updated CondDsMgr for using new dq2 client v. 0.1.36
- Several changes for Nightly task output
- Bug fix [#78999](#)



Condition DB Release news

- HI reprocessing statistics:
 - 44 runs, 171 Folders
 - Dataset size: 31 GB
- Muon Reprocessing statistics:
 - 67 runs, 179 folders
 - Dataset size: 3 GB
 - The first reprocessing there all Condition data was read from DB Release
- DB Release assures robust Conditions DB access on the Grid
 - Further Conditions DB Release improvements are in progress



Condition data through CERN-VM FS

All pool files and DBReleases (MC) should be accessible using CVMFS

- Very beginning plans:
- Short term:
 - Download to CVMFS server existing pool files datasets
 - Create appropriate PoolCat_comcond.xml and PoolCat_oflcond.xml
 - Run test job
- Some changes in CondDsMgr for upload new coming files to CMVFS server is needed
- Develop checking procedure

Conclusion

- For work with ATLAS Condition DB we have several very robust utilities.
- Creating new tools for new use cases (specially for web), improvement of usability and efficient existing one is ongoing.
- Full testing Condition DBRelease technology for the summer reprocessing in progress.