LHCb Grid Shifters NEWSLETTER

Fall '13 Incremental Stripping

In this Volume
- Fall '13 Stripping Status
- How to debug pilots

All files for the campaign have been submitted to the system. And all files on all storage areas have been processed, except GRIDKA, IN2P3 and SARA, where we are still staging in files. Another issue is that a (derived) merging production (prod 31214) was not able to start for some days. After this was now successfully launched we'll shall see a steep rampup in merged luminosity. The whole campaign is expected to finish in ~ 2 weeks. The status of the campaign can be seen at

http://lhcbproject.web.cern.ch/lhcbproject/Reprocessing/stats-inc-stripping-fall13.html

How to debug a pilot

Pilots are a fundamental pre-requisite for running jobs on the grid. A pilot is a small piece of code that gets dispatched on the worker node and only if successfully deployed will contact the LHCbDIRAC central task queue to download the "payload", i.e. the user or production job to be executed.

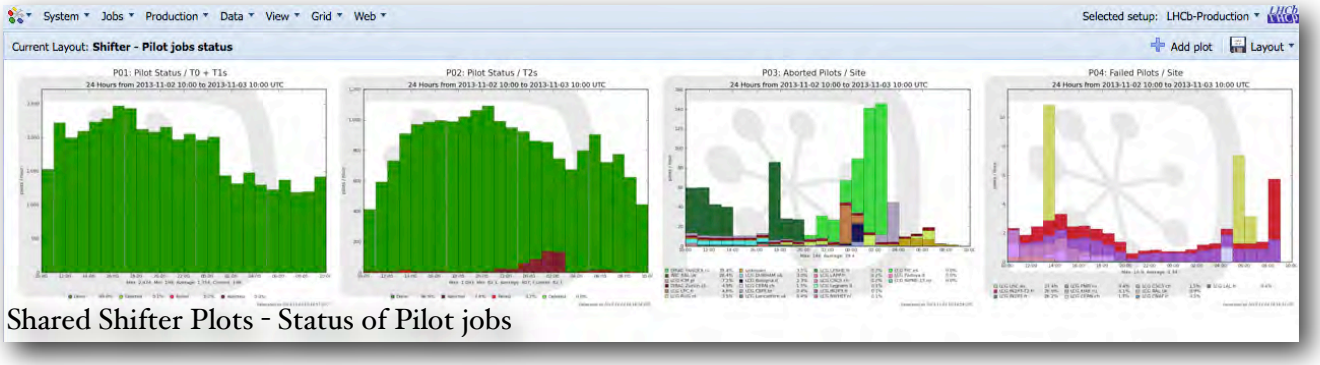
Therefore the success rate of pilots is crucial for successfully executing jobs on the grid. As a shifter you can see the success rate of pilots on the "common shifter plots" page "Shifter - Pilot jobs status" (http://lhcb-web-dirac.cern.ch/DIRAC/LHCb-Production/visitor/View/Presenter/display#group=hosts&name=Shifter - Pilot jobs status&user=host-volhcb17)

What to look for?

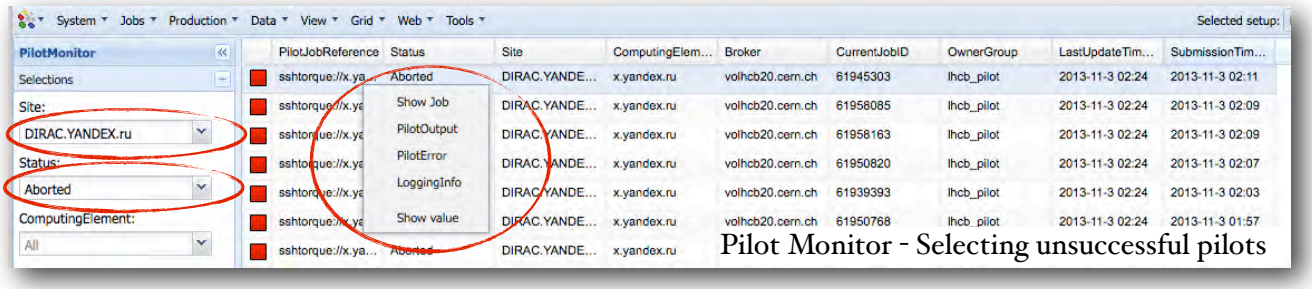
On the shared shifter plot (see below) you can see 4 different plots, the left two are showing the overall success rate for To/T1 and T2 sites. If either of those two plots doesn't show all green then there is an issue to debug.

The most common failure modes of pilots are "Aborted" or "Failed" which are the two plots on the right where the categorization is done by site. In the example below one can see a spike of "Aborted" pilots in the T2 sites plot (second from left). Looking at the "Aborted" pilots plot (3rd plot) one can see by pattern matching that those aborted pilots stem from site Dirac.YANDEX.ru.

Any such spike of either Failed or Aborted pilots is worth reporting to the GEOC.



Shared Shifter Plots - Status of Pilot jobs



Pilot Monitor - Selecting unsuccessful pilots

What are Aborted or Failed pilots?

The failure modes most often observed are Aborted or Failed. Aborted means that the pilot job did not successfully arrive at the worker node, i.e. its deployment went wrong. Failed means that the pilot started working but afterword, even with the payload being executed, something went wrong.

How to debug pilots further?

As a shifter you are invited also to debug pilots further. Once a site with pilot issues has been detected one can further look into the "Dirac Pilot Monitor" (entry in the "Jobs" menu of the web portal) to look for more details on why the pilot was not successful. Once you have selected the list of unsucessful pilots (see above) you may click on any of the pilots and check the "PilotOutput" (information of the execution of the pilot on the worker node) or "LoggingInfo" (information on the different states of the pilot from its initial submission, reaching the worker node and finishing up) which may provide more information on what the error was. I propose to do this for a couple of pilots to check if you can find a pattern.

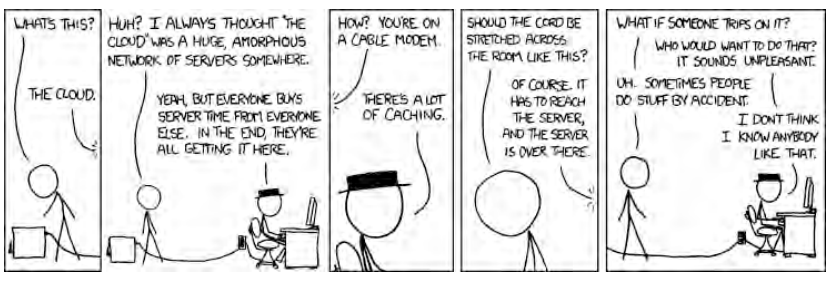
Sometimes the PilotOutput or LoggingInfo from the selection above will not return any info. In this case you may follow the command line recipe explained blow.

How to debug a pilot with command line tools

In case debugging via the web portal is not successful one can also use Dirac command line tools to retrieve further info about the pilot.

As usual you need to "**SetupProject LHCbDirac**" and IMPORTANTly you need to have at least "lhcb_shifter" privilges (**lhcb-proxy-init -g lhcb_shifter**) to use the tools below.

`dirac-admin-get-pilot-logging-info PilotID` (where e.g. PilotID="https://ce202.cern.ch:8443/CREAM437625775") will return you the states of the pilot. The pilot execution logging info itself can be retrieved via `dirac-admin-get-pilot-output PilotID`. This will return you a directory with the name of the PilotID and inside you find the std.out and std.err output of the pilot. Usually all info is contained in std.out. Remember, this makes only sense for pilots which have been deployed on the worker nodes.



http://xkcd.com

In case you have any comments or suggestions for improvements please let me know.
Also if you have any issues during your shifts please don't hesitate to contact me.

Cheers and happy shifting

LHCb Computing Operations Meeting at 11:30 (CEST) on Monday, Wednesday, Friday in Room 2-R-14