Issues with the Grid

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DESY

Outline:

- **Introduction** *What are we trying to do?*
- **Problems** *What are the biggest problems?*
- **Conclusions** *Does it work?*

Introduction

Trying to produce common physics ntuples from the AOD:

- **Going to be used by the SUSY Germany group (and others, if wanted).**
- **Benefit from a common ntuple basis, i.e. comparable amongst groups.**

Requirements:

- **Fast and easy large scale production -> GRID!**
- **Reliability!**
- **Easy to use tools for the grid:**
  - GANGA

Additional benefits:

- **Test and use the grid and local computing environment.**
- **Try to identify problems with the setup now instead of when the real data comes in.**
  - **PROBLEMS NEED TO BE SOLVED NOW, not only when the real data comes!!!**

Main problems with the grid (I):

- **It was difficult to get ganga to work. During the last two months, three new releases appeared to get bugs fixed.**

- **Now, that ganga is working, there are problems with the grid itself:**
- High job failure rate! Some sites ~100% (NIKHEF), at the best ones about ~15% (gridka)
- DESY-HH unknown (see next slide)

- **Sometimes, jobs get "stuck" -> No solution but to kill and restart! Unknown problem!**

- **Job completes successfully, but no output data is written! Why? Solution: retry…**

- **TOO MANY THINGS GET CHANGED BEHIND THE SCENES:**
- What the user sees: Script does not work anymore, it used to work last week???

Main problems with the grid (II):

- **The Resource Broker:**
  - The newer software gLite has issues:
  - It doesn't allow multiple space separated job-option inputs!

    workaround: submit one python script which includes all others…

    the gLite people are now aware of this problem.
  - Re-submission of individual subjobs is not supported!!!

    -> currently gLite is useless for our purposes!

- **Solution: Use older (slower) middleware EDG!**

Problems

Need:

- **Fix of gLite middleware!**
- **Tools that access/monitor the running jobs directly!**
- Usable by user to make fast problem diagnostics to actually know what went wrong
- **There are some in beta status, i.e. this problem has been recognized:**
  - Octopus for a future Ganga release
  - RMOST aus Siegen (http://www.hep.physik.uni-siegen.de/grid/rmost/)
  - JEM aus Wuppertal (http://www.atlas.uni-wuppertal.de/grid/jms/)
- **User needs to be able to make first diagnosis him/herself!!!**

Main problems with the grid (III):

- **About two weeks ago: ALL AODs at DESY-HH DISAPEARED WITHOUT NOTICE!!!**
- Why? -> Is this going to happen more often??
- Workaround: Use computing element at other sites and storage element at DESY-HH...
- Current importing of AODs is TOO SLOW!!!
- Need someone to **monitor the importing progress of AODs to DESY-HH**!!!

- **DQ2 uploads/downloads:**
- Downloading from the local Storage Element does not work! (Stefan has a workaround!?)
- How do we upload files to the SE and publish them in DQ2???
- Is there a tool to copy a file from one DQ2 dataset to another?
- Is there a tool to rename a DQ2 dataset?

Problems

THE MAIN PROBLEM:

- ***NO UNIFIED CONTACT!!!***
- It is difficult for the user to identify what part of the grid failed when a job is not working!

  •Resource Broker, computing element, middleware, input file corrupt, DQ2 database, LCG database, ganga….

Conclusions

- **NOTHING WORKS RELIABLY!!!**
- **The grid is a great idea, but:**
  - since things are very spread out, difficult to track down and solve problems.
- **Things need to be in a stable operational mode SOON!**