Some Questions from Belle II

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Setup

- lcgBundles
  - Unclear which version is recommended to use
  - "lcg-cp" doesn't work on the latest tarballs
  - Why don't you specify it like Externals?

- CVMFS
  - Can refer VO repository as well as vanilla's?

- Resource decommission
  - Unclear how we can remove old resources
  - Sometimes DB remembers old ones and complains "not defined"…

Payload encapsulation

- Payload job may conflict with DIRAC environment
- Indeed we need to apply following treatment

```
export PATH=`echo $PATH | sed -e 's%'${DIRACPYTHON}'%%g;s%::%%g;'`
export PATH=`echo $PATH | sed -e 's%'${DIRACSCRIPTS}'%%g;s%'${DIRACBIN}'%%g;s%::%%g;'`
export LD_LIBRARY_PATH=''
export PYTHONPATH=''
```

- Can DIRAC provide "clean" environment for payload?
  - One suggestion from my colleague is to record environment variables by 'shelve' before pilot execution

Our contribution

- Bug report
  - Not easy work to issue a PR (especially for beginners)
  - Or sometimes we know problematic part but have no good idea/knowledge how to handle the issue
    - Should be familiar with DIRAC code and rule
  - Is acceptable for you to report only issue, as a bottom line?
  - Where? GRID forum or github issue?

DMS

GFAL2HTTP

- "Major to come" in the DMS presentation last year (C. Haen)
- Some on-going activities in Belle II on HTTP/DaviX data access (currently w/o DIRAC)
- We would be happy to try out GFAL2HTTP in DIRAC (when?)

Different protocols for different aspects?

- Following WLCG, Belle II will get rid of SRM, but there will be a transition period with multiple protocols to use (even for a singe SE)
- SRM for write
  - Currently we rely on SRM for space accounting (space token)
- non-SRM for read (http/davix, root/xrootd)
  - We will need direct read by ROOT in some use cases (jobs read files on SE without downloading to WNs)
- Protocol to use in FTS transfers depends on the other SE
- Will this be possible in DIRAC?

Revisiting some issues from last year…

DIRAC config retrieval with http

- so that we can make use of http proxy cache

MatchingDelay with Site=ANY

- Pilot submission get affected
  - idle cycles without pilot submission even when there are available slots
- Pilots get wasted
  - increases the loads on the CE and the DIRAC server

PFN definition of DIRAC-SE (dips)

- used to be PFN = LFN, now PFN = hostname + LFN, solved?
- Should be solved now that PFN is "abandoned"?

backup

Minor issues (or items should be discussed on grid forum)

- Naming convention for derived components?
  - SiteDirector → CS overwritten?
  - SiteDirectorA
  - SiteDirectorB

- Web portal optimization
  - Performance is improved by nginx + multi VMs?

Payload stdout

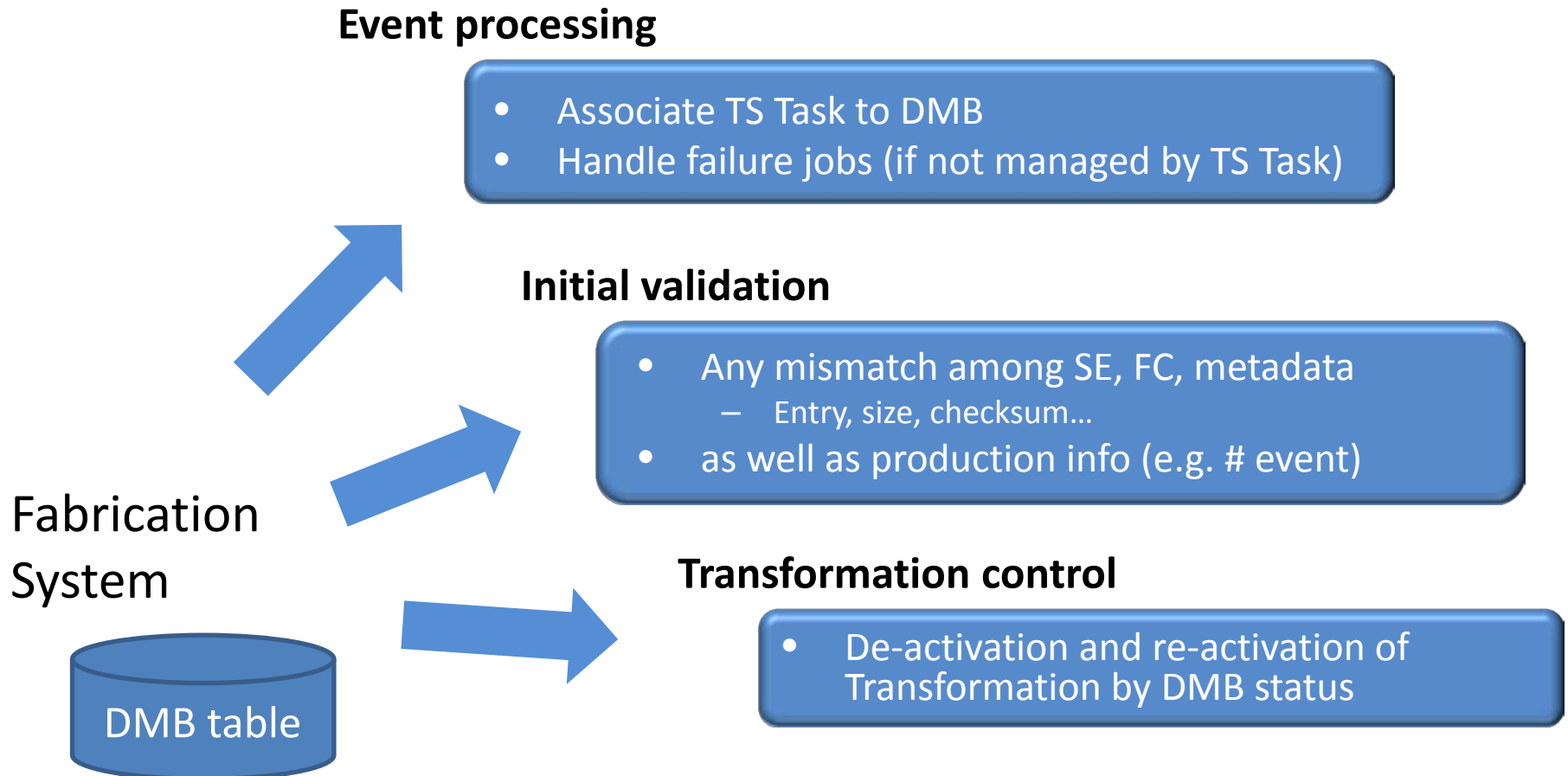- DIRAC/Workflow/Modules/Script.py

```
def _executeCommand( self ):
  """ execute the self.command (uses shellCall)
  """

  failed = False

  outputDict = shellCall( 0, self.command,
                env = self.environment,
                callbackFunction = self.callbackFunction,
                bufferLimit = self.bufferLimit )
```

 Can we peek stdout during command execution?

Fabrication system

- A part of Belle II production system
- manage event processing and initial validation
- Based on Transformation System (TS)

Event processing

- Associate TS Task to DMB
- Handle failure jobs (if not managed by TS Task)

Initial validation

- Any mismatch among SE, FC, metadata
  - Entry, size, checksum…
- as well as production info (e.g. # event)

Fabrication
System

Transformation control

- De-activation and re-activation of Transformation by DMB status

DMB table

Fabrication workflow

Task
FabID

Created →

Task
FabID
RunInfo

Submitted →

Task
FabID
RunInfo
JobID

Task status — **output**

FabID

RunInfo, LFN

SE entry
FC entry
Checksum

TS Plugin "Fabrication"

OutputData Policy

Fabrication Agent

Throttle task generation

Add prod info to jobs

Validate
Handle failure jobs
Control TS

Production Management

Register Fab
Control Fab

Fabrication Manager

DDM

DB hierarchy

Transfer files to final location

Issue: slow task creation (O(1sec))

Fabrication
DataBlock
OutputFile