ILCDIRAC

A few words on future plans

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Outline

Whizard 2 support: process factory?

Idea:

- Propose a production service to users
- WHIZARD 2 can take a process definition and provide a binary
- Integrate this in the DIRAC production system (or interface to it)

W2: What would be needed?

- Web interface for fanciness, and CLI for gurus
- DIRAC service to listen to the queries
- Agent to run WHIZARD2 (submit jobs to dedicated resources?) and produce the binary
- Agent to monitor everything
- Agent to submit integration jobs (for the grid files) to dedicated resources w/o CPU time limit (ex. desktop grid)
- Notification to notify the user about completion (already in DIRAC)
- Interface to DIRAC Transformation service to produce the events
- Some state machine

W2: Proposed interface

What would be required from the user:

- Process definition (a la WHIZARD 2, in sindarin), also the Machine for lumi spectrum
- Generator level cuts (if any), either in whizard or using the StdHepCut framework
  - Will have to find a way to include user code easily (maybe include it in the whizard compilation procedure)
- Simulation parameters
  - Detector model (sidloi3, ILD_o1_01, CLIC_ILD_CDR, etc.),
  - Steering files
  - Software version (detector type should be enough to get the software type: Mokka, SLIC, etc.)
- Reco parameters
  - Steering files
  - Software version: again, Marlin/LCSIM chain can be determined from detector model
  - Adding overlay: need to add check of availability of background events for machine/detector/energy

W2: How would it work?

- The service stores the process request: what has to be done, how, etc.
- Submission Agent picks up any New request, checks if the process is already there (implies clever look up in DB)
  - If YES, then create transformation (or extend existing one, which needs storing also Transformation IDs), send notification to the user about the prod ID
  - if NO: compile the whizard binary (with whizard2), compile cuts (svn up, compile), add them as a software in the DIRAC CS, create the transformation, notify the user about TransformationID to monitor.
  - Notify the user in case of (compilation) failures
  - Could use submitter credentials for the jobs
  - Need a way to “guess” the time it takes to generate N events to maximize CPU efficiency

W2: How would it work?

- Monitoring Agent (on Running requests):
  - When number of events requested in given Request achieved, notify the user that the job is done, and give him the LFN directory or meta data query corresponding (by mail).
  - Extend remaining productions to reach desired number of events: needs knowledge of current state
  - Should be able to pick up cases when the CPU time per job is reached, and create splitting tasks as well as merging tasks
  - Check failure rate and stop if threshold reached (+ notify user/admin)
- Cleaning Agent (on Cleaning, deleted, etc):
  - Remove the whizard binary from the GRID
  - Issue the proper request to the Transformation System (Clean, Archive)
  - Clean tables accordingly.

Of course all those are ONLY ideas, most likely far from final product

File catalog(s)

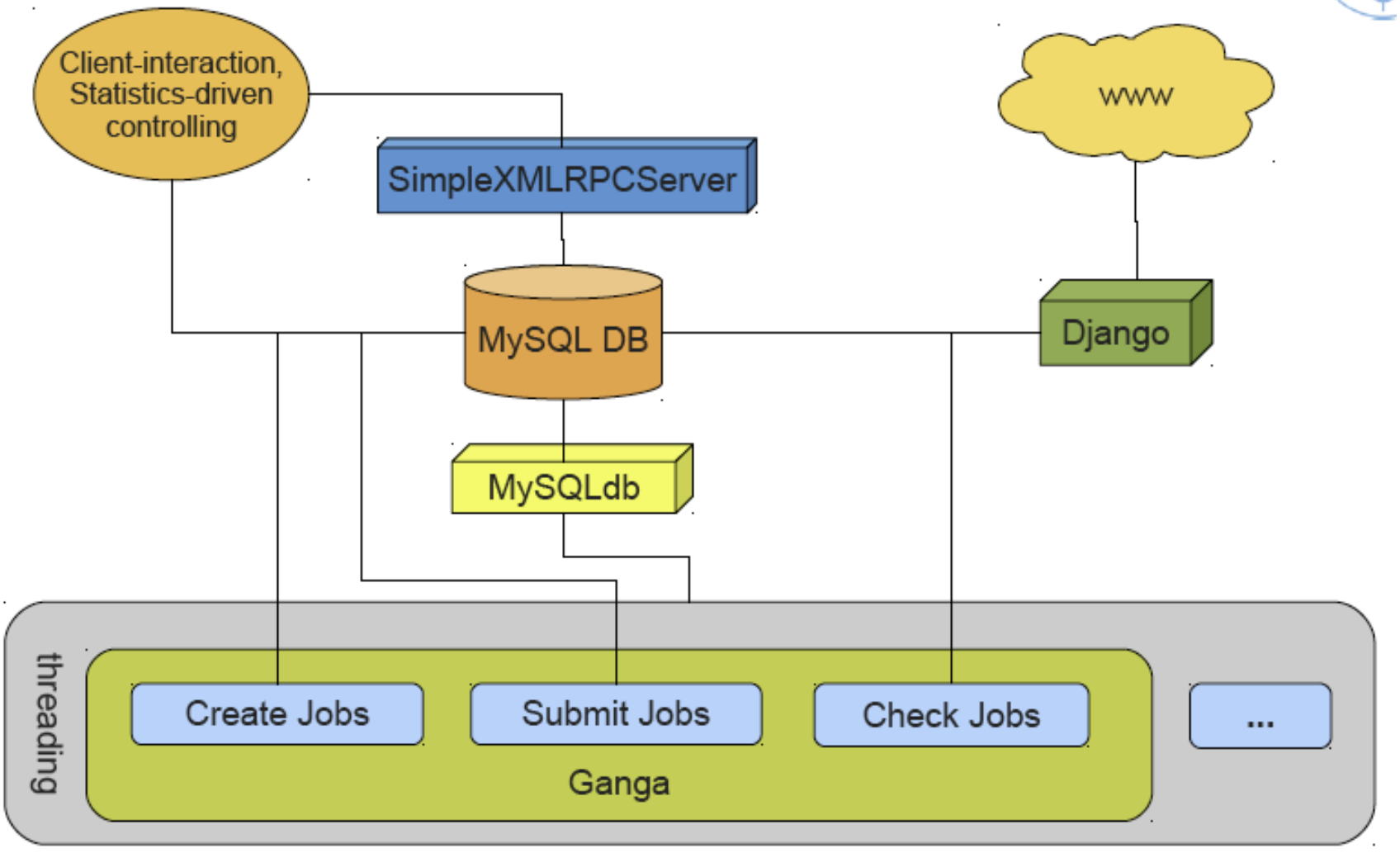
Currently for replica:

- Lcg File Catalog: used for ILD DBD studies, being more or less dropped by the LHC experiements (lead dev retired). Fairly slow as usually the server is shared between multiple VOs
- DIRAC File Catalog: Used for CLIC CDR and SID DBD, supported by the community. Quite fast as dedicated to only ILC (and CALICE)

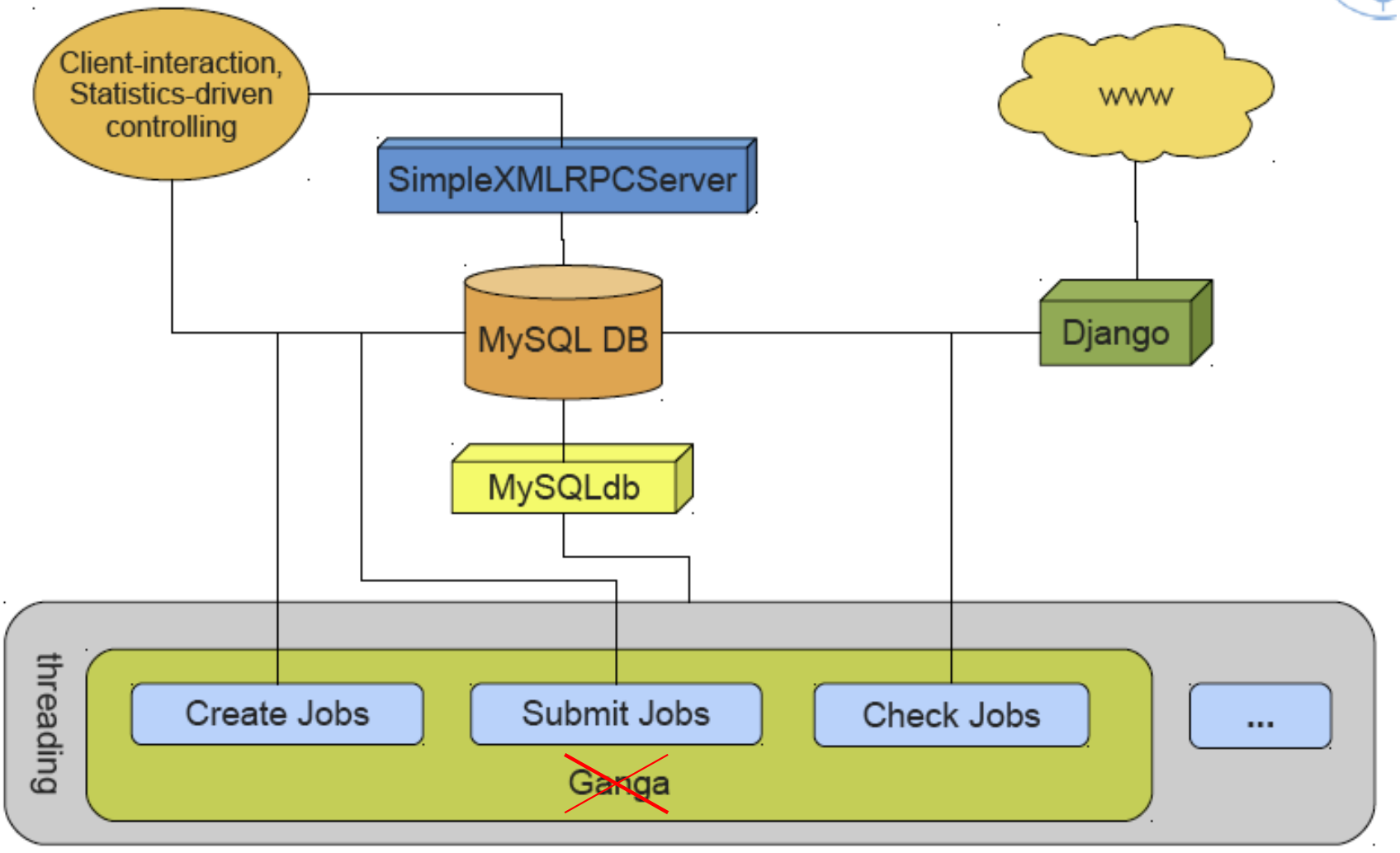
For meta data:

- FC from DESY: used for ILD DBD, access with DJANGO interface, file level meta data
- DFC again: used for CLIC CDR and SID DBD, file and directory meta data

What can we do?



What can we do?



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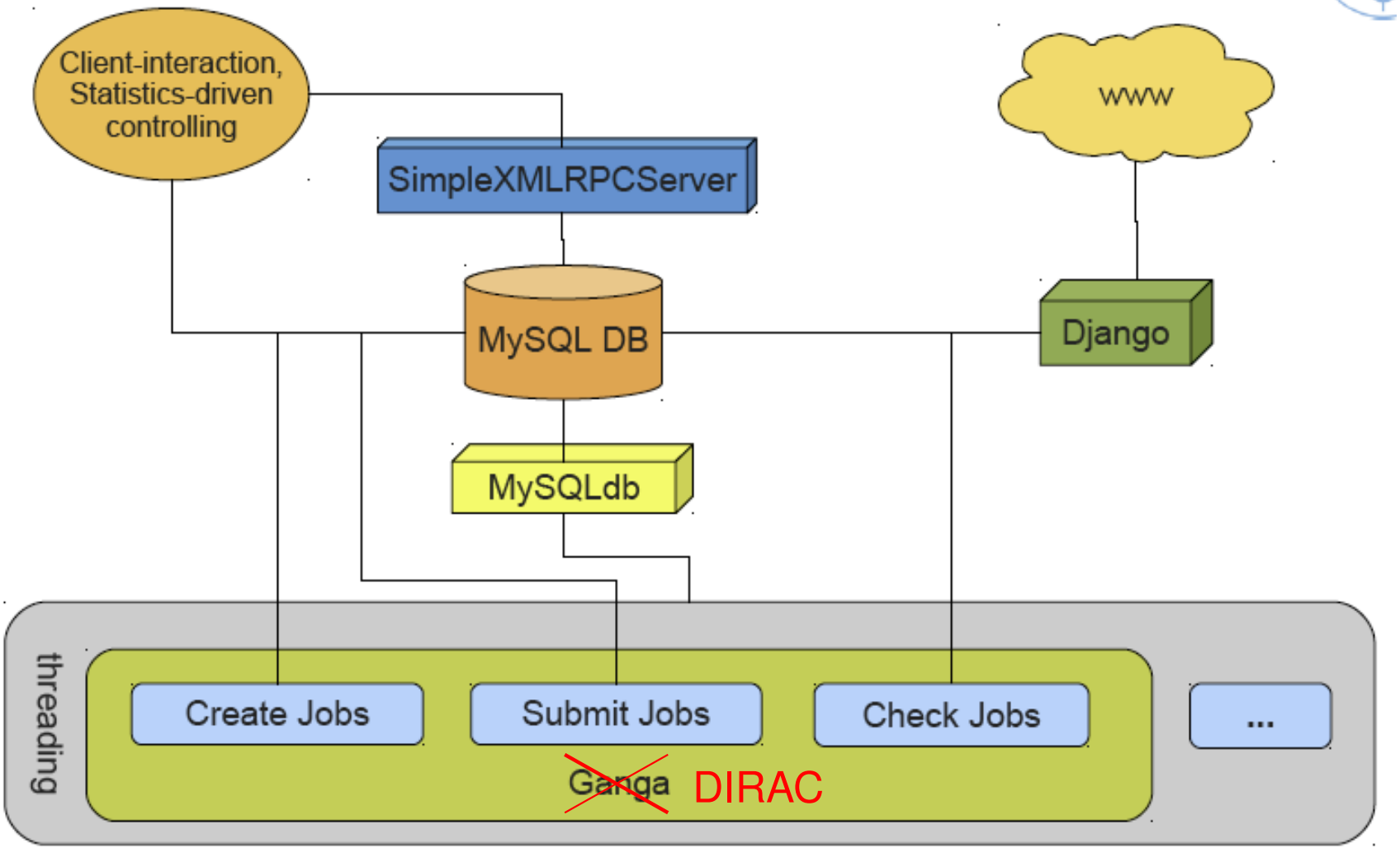

Then use DIRAC utilities to get the files, register the outputs, etc. No other changes needed.

Using OSG resources

- US part of the ILC VO relies on Open Science Grid
- Status information of sites not “properly” published in the Status service (BDII) according to gLite
- Faced many complains by sites because the info was not respected by gLite
- Solution: get rid of gLite, use OSG client. Implies coding pilot submission tool specific to OSG.
- Testing would be done by Belle2 people

Conclusion

Some long term ideas, some short term ideas.
Unifying the ILDGridProd with DIRAC can be done in a relatively short term.
Using properly OSG resources will be possible soon.

Backup Slides

Resource sharing

Groups:

- All ILC members do not share the same activities (ex. ILD, SID, TPC, etc.)
- Many groups in the VO to match those activities
- Users are not aware!

Roles:

- Several Roles for every group (Production, lcgadmin, etc.)
- Users do not know what they mean. . .

Resources:

- Should be used properly
- Should be shared between groups

DIRAC/ILCDIRAC can allow that!

- Create different JobTypes and assign them to different groups, then set site priorities per JobTypes.
- Define JobType automatically given a user proxy.

What about /ilc/Role=Production?