

Requirements for Monte Carlo Farm Certification

Todd Adams
Florida State University

Joel Snow
Langston University

DØ Note ????

Version 0.1

October 9, 2006

Abstract

We describe the conditions under which a farm needs to perform certification tests.

Each remote farm which produces Monte Carlo for DØ needs to be certified. A significant change in the farm or DØ software requires the farm to be certified again. The purpose of the certification is to provide an additional check to ensure quality production of MC events. The software should be independently certified by the simulation group before deployment on the farms. This document describes the certification procedure and under what conditions a farm needs to be re-certified.

1 Certification Procedure

The certification procedure involves the following steps. Those to be performed by the farm are in boldface:

1. The Monte Carlo Request Coordination (MCRC) team (e.g. the MCMeisters) will submit a set of certification requests. This currently consists of 5 requests ($Z \rightarrow ee$, $Z \rightarrow ee$ without zerobias overlay, $Z \rightarrow \mu\mu$, $Z \rightarrow b\bar{b}$ and $t\bar{t}$). The requests are left in the "new" state.
2. **Each farm will run each of the five requests. The requests should be left in the "new" state so that other farms can run them concurrently.**
3. **After completion, the merged thumbnails should be stored in SAM, being careful to merge only those files produced on the farm to be certified.**

4. **After the files are stored, an email should be sent to the MCRC team consisting of the MC Request Coordinator and the MCMeisters. The current members of the team can be found on the MCRC webpage (<http://www-d0.fnal.gov/docs/computing/mcprod/mcrc/>). The email should identify which farm the requests are for and include the list of the merged thumbnails.**
5. The MCRC team will run *recocert* on these thumbnails and compare the output to a standard "golden" sample. This will hopefully only take a few days. **In the meantime, the farm is authorized to begin production, unless the site and operator have not produced MC before.**
6. If the requests are deemed OK, the farm will be informed they are certified. If a problem is identified, the MCRC team, the farm and MC production coordinator will work together to solve the issue. A webpage is available to document the certification status of each farm (<http://www-d0.fnal.gov/docs/computing/mcprod/mcrc/farmcert.html>).

2 Conditions Requiring Re-certification

Several conditions require one or all farms to be re-certified. These include:

- A major change in the DØ software. For example, changing software releases requires recertification of all farms running the new release.
- A major change to `mc_runjob/d0runjob` will require re-certification of all farms.
- A major change in the hardware of a farm may require re-certification of that farm. Check with the MC production coordinator.
- A major change in the operating system may require re-certification of that farm. Check with the MC production coordinator.
- A major change in JIM/SAMGrid will require re-certification of SAMGrid sites.
- A major change in SAM will require re-certification of all farms.
- If there is a question about whether a change in the farm or software requires re-certification, the farm should check with the MC production coordinator.

3 Grid Certification

Certification of grid sites is a little more complicated than the simple farms we started with. Native SAMGrid installations follow the procedure outlined above. All potential clusters used with SAMGrid forwarding to OSG and LCG sites must be certified according to the guidelines above. These clusters also require re-certification if a major change in OSG or LCG software (as appropriate) occurs related to grid middleware affecting job execution. Note that job submission to OSG and LCG must be constrained to the set of certified sites either by the submitter or resource broker used during job submission.

4 Conclusions

Farm certification is not supposed to be a major drain on the computer or personnel resources, but experience has shown that some simple checks can reveal problems long before they are discovered by end users.

These policies will be reviewed and updated as needed. Suggestions should be made through the regular MC production meetings which are announced on the MC Production listserv (d0-mcc@fnal.gov).