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PROOF on Demand

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PROOF on Demand (PoD) is a set of utilities, which allows starting a PROOF cluster at a user request, on any resource management system. It provides a plug-in based system, to use different job submission frontends, such as LSF or gLite WMS. PoD is fully automated, and no special knowledge is required to start to use it.

Impact

Since November 2009, ALICE users at GSI have switched completely to PoD, instead of a static PROOF cluster, which we had before. With the help of PoD, each user at any time can request a desired number of PROOF workers. And his/her private PROOF cluster is set up with just a few seconds of startup time.
The ALICE group uses LSF plug-in.
The ATLAS team on IN2P3-CPPM has successfully tested PoD as well, where the gLite plug-in was utilized. And a DPM node with xrootd door was used as a storage element.

Keywords

PROOF, gLite WMS, PoD, Distributed Analysis, Interactive analysis

URL for further information

http://pod.gsi.de

Detailed analysis

Main components of PoD are pod-agent and pod-console. pod-agent provides the communication layer between a PROOF master on a local machine and PROOF workers on remote resources, possibly behind a firewall. pod-console provides a user-friendly GUI, which is used to setup, manage, and shutdown the dynamic PROOF cluster. Installation is simple and doesn't require administrator privileges, and all the processes run in the user space. PoD gives users, who don't have a centrally-administrated static PROOF cluster at their institution, the possibility to enjoy the full power of interactive analysis with PROOF. It is also a very good alternative to static PROOF clusters.
PoD is a specially designed solution to provide a PROOF cluster on the fly.

Conclusions and Future Work

Currently a dynamic proxy machinery is in development. It will give athe possibility for PoD to automatically make a decision on whether to make a direct connection between PROOF workers and servers or to proxy it. In the actual version of PoD, it always proxies the connection.
Also PoD is going to be extended to cover more resource management systems. We therefore plan to develop AliEn Grid plug-in, SGE plug-in, Condor plug-in and SSH plug-in which will help to setup a dynamic PROOF cluster on any machine where SSH connection is available.

Author: Mr MANAFOV, Anar (GSI Helmholtzzentrum für Schwerionenforschung GmbH, Germany)

Co-author: Dr MALZACHER, Peter (GSI Helmholtzzentrum für Schwerionenforschung GmbH, Germany)

Presenter: Mr MANAFOV, Anar (GSI Helmholtzzentrum für Schwerionenforschung GmbH, Germany)

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