CDF Distributed Computing

• Moving from dedicated resources to the Grid world
• Supporting existing applications
• Minimizing the impact on the users
CDF CAF model

Develop, debug AND submit from personal PC

No need to stay connected

Submit and forget until receiving a mail

Feels like local for debugging

Output to any place
CDF dCAF model

Still develop, debug AND submit from personal PC

User decides where to run

Output to any place

Japan

Canada

Chicago

Italy

San Diego
CAF internals

The CAF is just a portal

Most monitoring via regular Web interface

HTTPd

cgi-bin

fetch

Mailer

Monitor

Submitter

Condor

Worker nodes

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CAF evolution was needed\(^{(1)}\)

Dedicated resources not viable anymore
CAF evolution was needed\(^{(2)}\)

Why not put them into a Grid pool and get them back as needed?
GlideCAF was born

A simple extension of the CAF

Use condor glide-ins
Condor system - Dedicated

Negotiator assigns nodes to jobs
Condor system - Grid

Globus assigns nodes to jobs

All control on Grid site
Condor system - Glide-Ins

Globus assigns nodes to VOs

Negotiator assigns nodes to jobs

Schedd
User jobs

Collector
User priorities

Starter

Globus

Grid nodes

User Job

User Job

User Job

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Advantages of Glide-Ins

- Two level negotiation
  - VO level at Grid site
  - Fine grained user level in Condor for each VO

- Late binding of resources
  - Better matching of resources to jobs
  - Black holes don't kill user jobs (just the glide-ins)

- Full Condor environment
GlideCAF

Glidekeeper fills the Condor queue with glide-ins as needed.
Several dCAF, some Glide-based
GlideCAF size changes with time

Using more than owning

Giving back when others need it
All CAF monitoring preserved

CondorCNAF Section 538969/1082

User: bab  Length: long
Accounting User: common.bab
Input Source: MGen
Status: Running  Load: 1.22
Submitted: Nov 03 17:13  Ready: Nov 03 17:22
Started: Nov 03 17:31
Used time: 6h  Limit: 72h
VM: vm2@wn-03-06-34-a.cr.cnaf.infn.it
Condor ID: 539004  Schedd: cdfhead.cnaf.infn.it

Processes [Hide]

PID STARTED %CPU VSZ CMD
31727 17:31:17 0.0 2956 /bin/csh ./submit BMC mc101/mc101.jobs 1082 signal.lbl
32974 17:31:20 99.8 685400 cdfsIm mc101/Simulation_mc101.tcl
10513 23:35:13 1.0 2136 bash -c /bin/ps -u id -u -n -o pid,start,pcpu,vsz,cmd
10520 23:35:14 0.0 2698 /bin/ps -u cafuser2 -o pid,start,pcpu,vsz,cmd

Including CoD based interactive monitoring
A production system

Ask for a real-life presentation

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