

European HTCondor Workshop

December 2014

summary

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Tannenbaum)

GDB 10th December 2014



HTCondor

High Throughput Computing

Background

- European HTCondor Admins Workshop
 - At CERN, December 8th-9th 2014
 - Idea at HEPiX in Nebraska
 - Several years since last European Condor Week
 - 30-40 people in the room
 - 5-10 remote
 - Followed by individual meetings today & tomorrow
- Agenda & slides:
<https://indico.cern.ch/event/272794/>
- Notes:
<https://twiki.cern.ch/twiki/bin/view/LCG/GDBMeetingNotes20141208>

European HTCondor Meeting 8/9 December

- Agenda included:
 - Introduction to HT Computing & HTCondor
 - Essentials of setting up and running HTCondor
 - Site experiences
 - Monitoring
 - Advanced management of HTCondor
 - Condor Scripting, Job Scheduling, Security, Putting your users in a box
 - HTCondor & European grid
 - Integrating HTCondor & private clouds
 - Ask/Stump the experts panel discussions

Introductory Sessions

- Talks by Greg Thain & Todd Tannenbaum – see slides
- HTComputing – emphasis on getting work done by ensuring job slots are utilised as opposed to the fastest machines possible

Introductory Sessions



High performance

Introductory Sessions



High throughput

Introductory Sessions

- Talks by Greg Thain & Todd Tannenbaum – see slides
- HTComputing – emphasis on getting work done by ensuring job slots are utilised as opposed to the fastest machines possible
- Tension maximum number of machines (by minimizing constraints on them) and number of job run (jobs everywhere)

Introductory Sessions – Using HTCondor

Jobs state their requirements and preferences, and attributes about themselves:

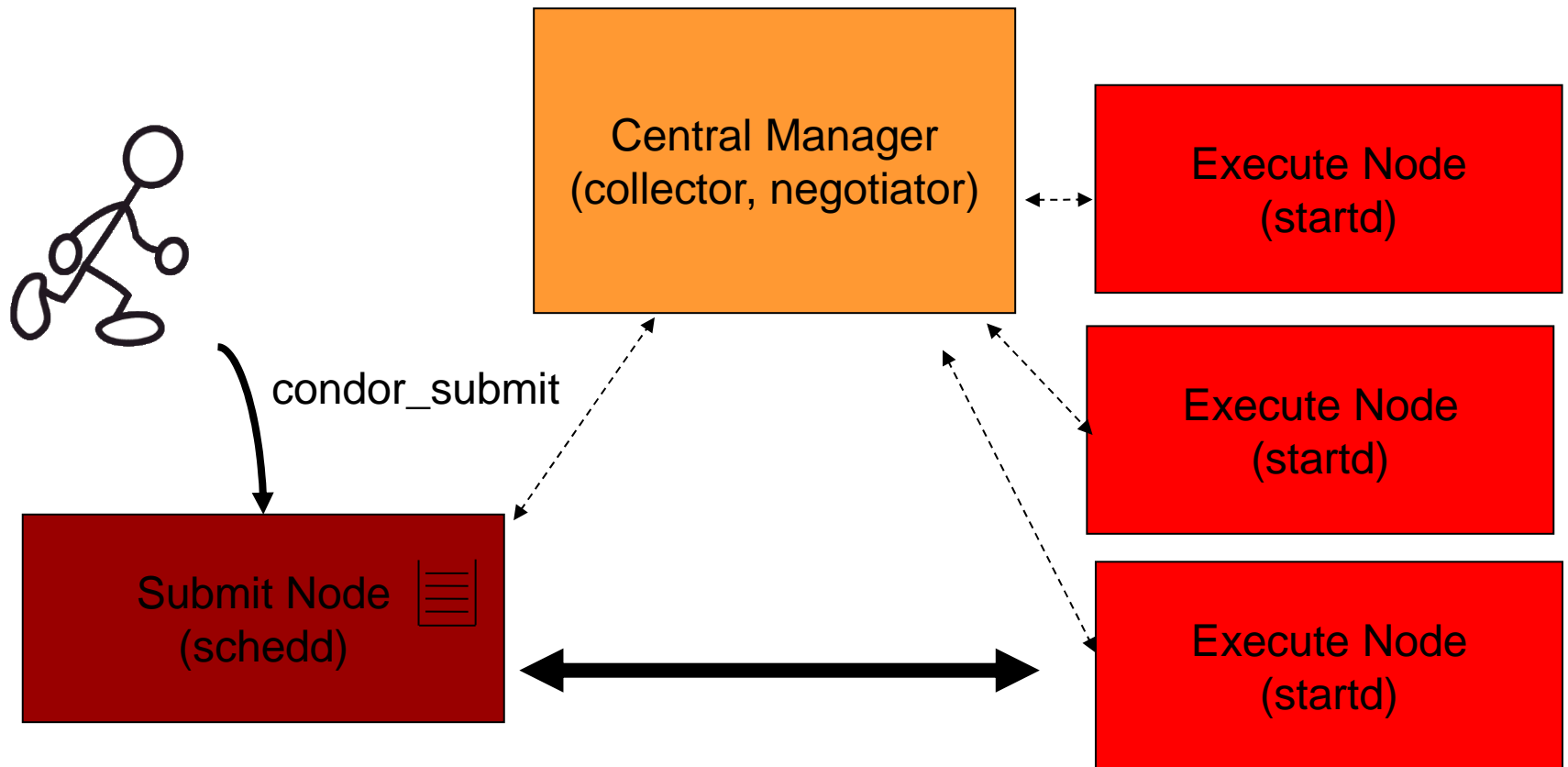
- Requirements:
 - I **require** a Linux/x86 platform
 - I **require** 500MB RAM
- Preferences ("Rank"):
 - I **prefer** a machine in the chemistry department
 - I **prefer** a machine with the fastest floating point
- Custom Attributes
 - I am a job of type "analysis"

Introductory Sessions – Using HTCondor

- Machines specify:
- Requirements:
 - **Require** that jobs run only when there is no keyboard activity
 - **Never** run jobs labeled as “production”
- Preferences (“**Rank**”):
 - I **prefer** to run Todd’s jobs
- Custom attributes
- I am a machine in the chemistry department

Introductory Sessions – Using HTCondor

HTCondor brings them together



Site Experiences

- Fermilab, INFN Milan, Instituto de Astrofísica de Canarias (IAC) & RAL presented:
 - Their experience deploying & running HTCondor – FNAL started ~20 years ago, RAL last year
 - Approaches to monitoring & ‘care and feeding’
 - Integrating with the European Grid
 - Issues with Creame & ARC Ces
 - Integrating with virtualisation & clouds

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Advanced Topics

See slides. Topics included:

- Scripting Condor – APIs etc
- Job/Startd Policy and Config
- User and Group scheduling
- Security
- Putting your users in a box :
 - Protecting
 - the machine from the job
 - the job from the machine
 - one job (and user) from another
 - Containers, CPU Affinity PID Namespaces, mount under scratch, named chroots, Control Groups (cgroups), Docker

Panels

- See linked notes. Questions discussed include:
 - What alternative to queues to organize host groups and job priorities?
 - Any way to throttle job submission from a misbehaving user submitting a large number of jobs that are failing immediately?
 - Status of AFS integration
 - How to control/restrict the WN admission to a white list without introducing inefficiencies, management nightmares...?

Links ets

- HTCondor Home:
 - <http://research.cs.wisc.edu/htcondor/>
- Agenda & notes again
 - <https://indico.cern.ch/event/272794/>
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GDBMeetingNotes20141208>



Questions

