HTCondor-CE

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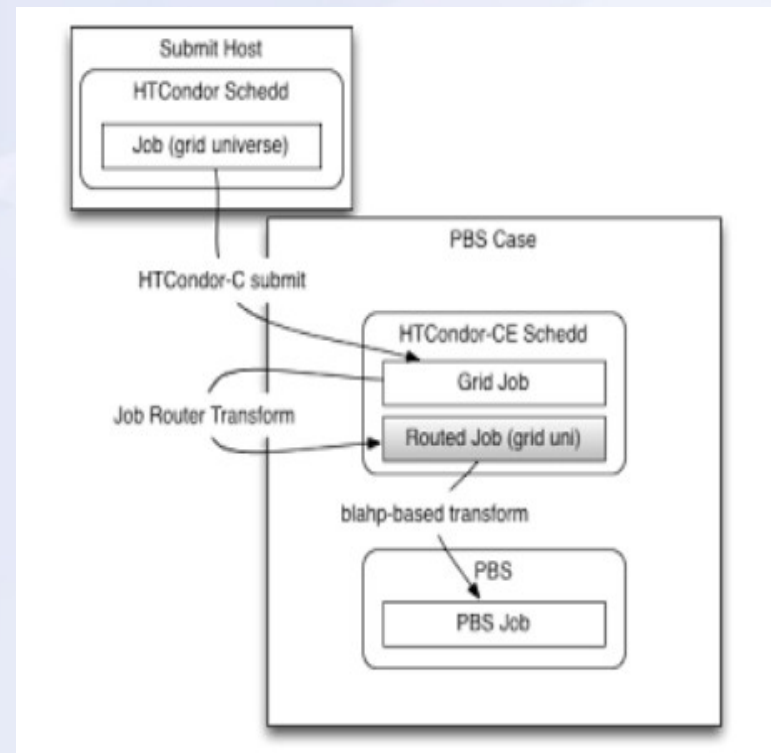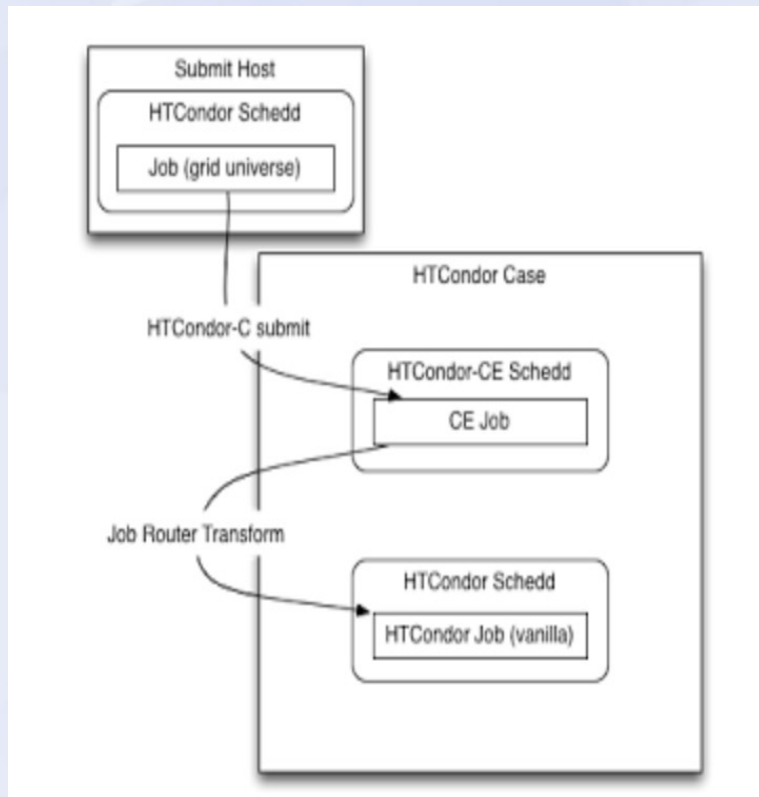
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Outline

- What's HTCondor-CE ?

- Transition plan

- Installation instructions

- JobRouter configuration

  - BNL example

- Experience and Lessons learned

- Known issues

What's HTCondor-CE

- An alternate implementation of gatekeeper, based on HTCondor

Transition Plan

- Time line
  - For USLHC sites, by the end of 2014
- OSG packaging
  - Current OSG release has both GRAM and HTCondor CE installed by default
  - GRAM CE rpms will be dropped later
  - Only in OSG 3.2 series repo
- Site migration
  - Recommend to use second CE for HTCondor-CE

Installation Instructions

- The official OSG documentation

- The following sections of this talk will focus on the part of JobRouter, with which people is most likely to have questions and problems.

JobRouter Configuration

- JobRouter transforms grid jobs to local batch jobs

- Its configuration file defines "Routing Table"

    - Standardized mechanism for site admins to do local customization. Improvement over GRAM CE, where one has to edit jobmanager scripts, eg. condor.pm for any complex customization

    - Speaks the HTCondor language --- "ClassAd"

JobRouter Configuration

```
JOB_ROUTER_ENTRIES = \
   [ \
     GridResource = "condor localhost localhost"; \
     eval_set_GridResource = strcat("condor ", $(FULL_HOSTNAME), $(FULL_HOSTNAME)); \
     TargetUniverse = 5; \
     name = "Condor_hcc"; \
     Requirements = regexp("^/hcc/", x509UserProxyFirstFQAN); \
     eval_set_AccountingGroup = strcat("hcc.", Owner); \
   ] \
   [ \
     GridResource = "condor localhost localhost"; \
     eval_set_GridResource = strcat("condor ", $(FULL_HOSTNAME), $(FULL_HOSTNAME)); \
     TargetUniverse = 5; \
     name = "Condor_other"; \
     Requirements = regexp("^/hcc/", x509UserProxyFirstFQAN) =!= TRUE; \
     eval_set_AccountingGroup = strcat("other.", Owner); \
   ]
```

Sample JobRouter Configuration

JobRouter Example – BNL

- Condor-G submit file to BNL short analysis queue

```
universe = grid
grid_resource = condor gridgk07.racf.bnl.gov gridgk07.racf.bnl.gov:9619

executable = test5.sh
output = test5short.out.$(Process)
error = test5short.err.$(Process)
log = test5short.log.$(Process)

ShouldTransferFiles = YES
WhenToTransferOutput = ON_EXIT

use_x509userproxy = true

+remote_queue="analy.short"

queue 1
```

JobRouter Example – BNL

- JobRouter entry on HTCondor-CE

```
# Submit the job to the site Condor

JOB_ROUTER_ENTRIES = \
  [ \
    GridResource = "condor localhost localhost"; \
    eval_set_GridResource = strcat("condor ", "$(FULL_HOSTNAME)", "$(FULL_HOSTNAME)"); \
    TargetUniverse = 5; \
    name = "BNL_Condor_Pool_short"; \
    Requirements = target.queue=="analy.short"; \
    eval_set_AccountingGroup = strcat("group_atlas.analysis.short.", Owner); \
    eval_set_RACF_Group = "short"; \
    set_Experiment = "atlas"; \
    set_Job_Type = "cas"; \
    set_JobLeaseDuration = 3600; \
    set_PeriodicHold = (NumJobStarts >= 1 && JobStatus == 1) || NumJobStarts > 1; \
    eval_set_VO = x509UserProxyVOName; \
  ] \
```

JobRouter Example – BNL

- JobRouter entry on HTCondor-CE

```
# Submit the job to the site Condor

JOB_ROUTER_ENTRIES = \
  [ \
    GridResource = "condor localhost localhost"; \
    eval_set_GridResource = strcat("condor ", "$(FULL_HOSTNAME)", "$(FULL_HOSTNAME)"); \
    TargetUniverse = 5; \
    name = "BNL_Condor_Pool_short"; \
    Requirements = target.queue=="analy.short"; \
    eval_set_AccountingGroup = strcat("group_atlas.analysis.short.", Owner); \
    eval_set_RACF_Group = "short"; \
    set_Experiment = "atlas"; \
    set_Job_Type = "cas"; \
    set_JobLeaseDuration = 3600; \
    set_PeriodicHold = (NumJobStarts >= 1 && JobStatus == 1) || NumJobStarts > 1; \
    eval_set_VO = x509UserProxyVOName; \
  ] \
```

Experience
and
Lessons learned

Multiple Routes Matched

- It's possible that a job could meet requirements of several routes

- JobRouter will route the job in a round-robin way.This may not be what you want

- Make sure all the ENTRIES are completely exclusive from each other, no "default" option.

```
JOB_ROUTE_ENTRIES =
        [
                ......
                Requirements = target.queue=="analysis.long";
                ......
        ]
        [
                ......
                Requirements = target.queue=="analysis.short";
                ......
        ]
        [
                ......
                Requirements = target.queue is undefined;
                ......
        ]
```

JOB_ROUTER_DEFAULTS

- HTCondor manual mentions the JOB_ROUTER_DEFAULTS macro, where one can define some ClassAd attributes that are common to all routing entries.

- It doesn't work in the case of HTCondor-CE, as it's overwritten by a script.

- Common customizations, for example, "Experiment = \"atlas\"",will have to be put into every entry's sections.

No Match Jobs

- If a job doesn't match criteria of any of the JOB_ROUTER_ENTRIES, it will get held in the condor-ce queue after 30minutes, and eventually get removed in 24hours.

- HoldReason will be sent back to Site admins/end users

Known Issues as of *today*

- SAM test doesn't work with HTCondor-CE

  - SAM tests need to evolve to cover HTCondor-CE

    - Last update heard on timeline was "late August release"

  - For now, sites need to run at least one GRAM CE to keep the SAM tests going

HTCondor-CE Twiki