HTCondor-CE: Integration with EGI Middleware

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Outline

Introduction

Integrating HTCondor-CE with European Grid Middleware.

Puppet Sites

```
class{'::htcondor_ce'}
class{'::htcondor_ce::bdii'}
```

Plus some hiera.

```
https:
//github.com/cernops/puppet-htcondor_ce
```

Authorization & User Mapping

HTCondor-CE has the ability to call out to external services for a user mapping.

This is the **GSI (.*) GSS_ASSIST_GRIDMAP** line in the ce mapfile.

GSI Callout

We do a globus_mapping call out to our ARGUS.

LCMAPS works just as well.

ARGUS Example

```
globus_mapping /usr/lib64/libgsi_pep_callout.so argus_pep_callout
```

Listing 1: /etc/grid-security/gsi-authz.conf

```
pep_ssl_server_capath /etc/grid-security/certificates/
pep_ssl_client_cert /etc/grid-security/condorcert.pem
pep_ssl_client_key /etc/grid-security/condorkey.pem
pep_url https://site-argus.cern.ch:8154/authz
pep_timeout 30 # seconds
xacml_resourceid http://authz-interop.org/xacml/resource/resource-type/
```

Listing 2: /etc/grid-security/gsi-pep-callout-condor.conf

Cached Mappings

If your mapping end-point is slow or just to improve the submission through-put.

GSS_ASSIST_GRIDMAP_CACHE_EXPIRATION=1800

Dump the cache with a reconfig.

BDII Providers

In EGI, a valid BDII presence is needed for those VOs tied to it.

We wrote GLUE 1.3 and 2 providers which have been added to the core HTCondor-CE package

They natively support multi-CE deployments

BDII Support

The providers have only been run in CERN's environment, so it's not guaranteed they work straight away in your environment.

Happy to accept pull requests or bug reports though!

CE Collector

Each CE instance has it's own collector which advertises the CE and also any pilots that wish to make themselves known. CMS heavily use this feature.

The CE can be configured to forward its schedd adverts on to the *ce-collector*.

The CE Collector is just a very minimal HTCondor Collector that advertises known CEs.

Querying the Central Collector

```
~]# condor_status -pool cecollector1.cern.ch:9619 -schedds
Name                    Machine        TotalRunningJobs TotalIdleJobs  TotalHeldJobs

alicondorce01.cern.c alicondorc                    0            50             50
ce503.cern.ch           ce503.cern               8558          1388           2200
ce504.cern.ch           ce504.cern               2650           360              4
                                       TotalRunningJobs TotalIdleJobs  TotalHeldJobs

                Total                            11208          1798           2254
```

Listing 3: Querying the central CERN collector

APEL/Accounting

The existing APEL parser for HTCondor can be used on the inner Batch Schedd.

PER_JOB_HISTORY_DIR to keep per job history files. Don't forget a cron that cleans it regularly!

Yum repos

Original packaging and rpms available at
`http://koji-hub.batlab.org/koji/`
`packageinfo?packageID=310`

Hoping to add the master package to EPEL soonish.

Installation

If your site is htcondor based. Then install
htcondor_ce_condor.

It will pull in the other base packages and clients
automatically.

EGI Note: *empty-ca-certs* must be installed first as
OSG distributes ca certs as rpms.

Conclusion

I hope this has given you an idea of how minimal the set-up process is for HTCondor-CE.

If you want further directions on deploying HTCondor-CE, then myself and the OSG team are more than happy to help.

Credits

I'd like to thank the following people:

- Brian Bockelman - for getting us up and running with the CE.
- Brian Lin
- The rest of the OSG Software Team.
- Jaime Frey
- Todd Tannenbaum and the HTCondor Team.

Any questions?

www.cern.ch