HammerCloud Automatic Exclusion for PanDA

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Overview

- The HammerCloud Auto-Exclusion (AE) service was activated for Panda DA sites on November 18th

- It follows a policy to set sites to brokeroff state after they fail test jobs
  - see detailed policy at
    https://twiki.cern.ch/twiki/bin/viewauth/IT/HammerCloud#10_HammerCloud_Automatic_Site_Ex

- It sends a mail when the site is working again, but does not set queues back online (in case sites have other plans)

- The HC auto-exclusion service can disabled on a site-by-site basis

- HC reports the AE results to Site-Status-Board

The Test Jobs

- Currently the service is using a single test job:
  - UserAnalysis in Athena 15.6.9
  - mc09_7TeV*merge.AOD*r1306*

- The same analysis in Athena 16.0.2 is already running at all sites. HC will soon use 15.6.9 and 16.0.2 to auto-exclude.

- Test jobs used for autoexclusion will always have *processingType=gangarobot*, so you can see the jobs at this link:
  - http://panda.cern.ch/server/pandamon/query?jobsummary=cloud&select=analysis&hours=12&processingType=gangarobot
  - **or just click "gangarobot" from the PandaMon analysis page**

- Other test jobs are sent with *processingType=gangarobot-**
  - These are not used for auto-exclusion.

Auto-Exclusion

When a site fails the jobs, it is set to "brokeroff" state and a mail is sent to the cloud support and DAST:

Dear atlas-support-cloud-xy@cern.ch,

ANALY_XYZ has been automatically excluded from PanDA distributed analysis because it has failed the 3 most recent test jobs. You can see the exclusion policy at [1].

Recent failing test jobs can be viewed here:

http://panda.cern.ch/server/pandamon/query?job=*&site=ANALY_XYZ&type=analysis&hours=12&processingType=gangarobot

The queue status of ANALY_XYZ is currently brokeroff.

Please coordinate the necessary fixes, and then reset the queue to the online status. You will also receive further mails when ANALY_XYZ is again passing the test jobs.

If you wish to disable this auto-exclusion service from changing ANALY_XYZ, then please follow the instructions at [1].

Cheers, ATLAS Distributed Analysis Operations

[1] https://twiki.cern.ch/twiki/bin/viewauth/IT/HammerCloud#10_HammerCloud_Automatic_Site_Ex

- Sites continues to be tested when in brokeroff state
- When jobs are again working, the site is sent a mail.
  - Link to succeeding jobs
  - Reminder that site can be set online
  - Instructions for how to set online
  - This mail is sent once per 24 hours

Disable AE for a Site

- In some cases, shifters/site admins may want HC to stop changing the status of a queue, i.e. to override HC

- It is possible to disable the HC auto-exclusion service on a site-by-site basis:

  `curl http://hammercloud.cern.ch/atlas/autoexclusion/disable/ANALY_XYZ`

  where ANALY_XYZ is the queue you wish to change.

- To re-enable the auto-exclusion service, use the command

  `curl http://hammercloud.cern.ch/atlas/autoexclusion/enable/ANALY_XYZ`

- A list of sites "disabled" for the auto-exclusion service is available at
  - http://hammercloud.cern.ch/atlas/autoexclusion

- HC auto-exclusion is currently disabled for the following sites:

ANALY_AGLT2	ANALY_INFN-T1
ANALY_ANLASC	ANALY_MWT2_X
ANALY_ARC	ANALY_NIKHEF-ELPROD
ANALY_BNL_ATLAS_1	ANALY_RAL_XROOTD
ANALY_BNL_GLEXEC	ANALY_SARA
ANALY_BRANDEIS	ANALY_SLAC
ANALY_DUKE	ANALY_SLAC_LMEM
ANALY_FZK	ANALY_TRIUMF
ANALY_FZK_CP	ANALY_Tufts_ATLAS_Tier3
ANALY_GLASGOW_GLEXEC	ANALY_UTA_T3
ANALY_HU_ATLAS_Tier2	

Experiences thus far

- HC has excluded sites ~35 times so far
  - More than 20 sites
  - Most outages are short (implying either a fast site reaction time or load related storage problems)
- Immediate feedback:
  - Sites appreciate the testing, but
  - Rate limit the mails
  - Rate limit the blacklisting
- Not aware of any false positives yet.

[HammerCloud] ANALY_IFIC Auto-Excluded at Tue Nov 30 0	1:01 am
[HammerCloud] ANALY_GRIF-LAL Auto-Excluded at Mon No	Nov 29
[HammerCloud] ANALY_ECDF Auto-Excluded at Sun Nov 28	Nov 29
[HammerCloud] ANALY_WEIZMANN Auto-Excluded at Sun N	Nov 28
[HammerCloud] ANALY_ALBERTA-WG1 Auto-Excluded at S	Nov 28
[HammerCloud] ANALY_IFIC Auto-Excluded at Sun Nov 28 0	Nov 28
[HammerCloud] ANALY_GOEGRID Auto-Excluded at Sat No	Nov 27
ANALY_TAIWAN Auto-Excluded at Sat Nov 27 08:00:09 2010	Nov 27
ANALY_INFN-NAPOLI Auto-Excluded at Sat Nov 27 05:00:13	Nov 27
ANALY_WEIZMANN Auto-Excluded at Sat Nov 27 01:00:02 2	Nov 27
ANALY_LANCS Auto-Excluded at Fri Nov 26 21:00:03 2010 (	Nov 26
ANALY_MPPMU Auto-Excluded at Fri Nov 26 21:00:02 2010	Nov 26
ANALY_IFAE Auto-Excluded at Fri Nov 26 19:00:09 2010 CE	Nov 26
ANALY_CYF Auto-Excluded at Thu Nov 25 16:00:02 2010 CE	Nov 25
ANALY_ROMANIA07 Auto-Excluded at Thu Nov 25 16:00:02	Nov 25
ANALY_QMUL Auto-Excluded at Thu Nov 25 08:00:05 2010 (	Nov 25
ANALY_MANC Auto-Excluded at Thu Nov 25 02:00:17 2010 (	Nov 25
AST Internal ANALY_MWT2 Auto-Excluded at Wed Nov 24 19	Nov 24
AST Internal ANALY_MWT2 Auto-Excluded at Wed Nov 24 18	Nov 24
ANALY_MWT2 Auto-Excluded at Wed Nov 24 20:00:03 2010	Nov 24

Summary

- HammerCloud Auto-Exclusion is active for Panda DA sites.

- We continue to watch it closely, and will evolve the exclusion policy as needed:
  - Imminent: tests from multiple releases
  - Possible: second-order exclusion for sites with low reliability over a longer period

- As always, feedback is welcome.