SAM issues and future

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SAM Introduction

- SAM (Service Availability Monitor) monitors the status of each service on all the sites, and calculate availability and reliability (A/R).
- Monthly reports are generated from the A/R which is used to evaluate the sites.
- SAM tests the services with using “probes” (= Nagios plug-ins)
  - installed software (cvfms and ATLAS software)
  - DDM (SRM, PUT/GET/DEL)
  - Job-submission

ASAP (ATLAS Site Availability Performance)

- ASAP is a metric to measure the availability of sites for user analysis/production
- The metric is calculated from two inputs
  - Panda resource status
  - Switcher actions (= information about downtime)
- A site is evaluated as “good” when at least one of Panda resources is available.
- When any resources are not available, the site is evaluated as “grace” when the downtime is announced in advance (or misfortune events like earthquake), otherwise considered as “bad”.
- The results are reported in the SAM online interface as “ATLAS_AnalysisAvailability”

Current issues : DDM

- Current test, used for ATLAS_CRITICAL, is done only for SRM
  - We need to extend the test for XROOTD and HTTP
  - HTTP tests (written by HTTP Deployment TF) are running. But the results are not included in ATLAS_CRITICAL. The probe is using curl for the file transfer (instead of gfal2).
- Two site lists (VOfeed and AGIS API) are used for executing the tests and for visualize the results; that can cause a miss-match (e.g. a site in one is missing in another.)
  - We need to keep the two synchronized, or discard one of them.
  - This problem needs to be solved before increasing protocols.

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Current issues : DDM

- Current test is not efficient
  - Multiple operations are in each test (e.g. for DEL test, both PUT and DEL are done)
  - In case of CMS, an “active” result published from e.g. SRM_ALL, then three “passive” results (PUT, GET, DEL) are published from the single test
    - If we will also do like that, a modification of the probe is needed for the concurrent test procedure
  - CMS method is clean in the procedure. ATLAS tests are independent of each other. (e.g. GET test can be done even when PUT test fails)

Possible further improvements

- Currently the DDM test is done with gfal2.
  - We can run similar tests with using rucio or curl.
    - Which should be used for ATLAS_CRITICAL ?
  - The best way must be the same tool with the production
- We can published the measured performance of protocols (time for GET/PUT/DEL) with a small modification of the probes.
  - The modification of the source is small (publishing performance is a standard feature of Nagios)
  - Current test file is too small (~10 byte). For measuring the performance, we may need to increase the size (e.g. 100 kbyte)

Possible further improvements (2)

- Modification of ATLAS_CRITICAL profile to include other protocols after a careful comparison in PreProduction results.
- New monitor page to see all the sites/protocols at a glance (or publish in JSON)
- Any new test related to IPv6 ?
- More check about the installed software ?

Summary

- Two high-priority modifications for making SAM in a modern way
  - Removal of BDII
    - need to decide the selection of queue
  - Multiple protocol support
    - need to modify the source of information (either AGIS API or VOfeed)
- Some more ideas which is “better to do”
  - Less priorities than above
- Further analysis of the measurements
  - Correlation between multiple protocols, comparison with ASAP…
- The latest SAM results are reported. (ASAP results in backup)