

Tier 3 monitoring

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- Joined effort of ATLAS, JINR and CERN IT (ES group)
- Hopefully outcome of this work can be in future shared with CMS
- Danila Oleynik and Artem Petrosyan (JINR) started to work on the project. Will prepare the draft of the plan by the end of this year

Why

- Tier-3 operations can affect central services
 - File transfers from T1/T2
 - Jobs can reduce the pledged resources
- Tier-3 sites wish to have information on the jobs:
 - Local interest
 - Funding authorities
- Need an information on dataset access
 - Popularity
- Information on the site quality of service

From the talk of
Andrej Filipcic at the
yesterday monitoring
session

Requirements to T3 monitoring see talk

<http://indico.cern.ch/getFile.py/access?contribId=74&sessionId=14&resId=0&materialId=slides&confId=76896>

- Atlas activities at the T3 sites (data transfer, job processing)
- Quality of the services provided by the site



General Guidelines

- T3s do not have to spend additional resources on the monitoring
- Monitoring must be automatically enabled for all transfers and all jobs
- Non-intrusive: must not create additional support requirements on sites or central services/operations

From the talk of
Andrej Filipcic at the
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- Local Tier3 monitoring
- Collector of the aggregated metrics on the global VO-level (Which metrics and with what granularity have to be defined in the ATLAS requirements)
- Visualization of the activities of Tier3 sites on the global VO level
- Combination of last two components should enable central view of ATLAS activities at Tier3 sites

- Provides low level monitoring of site resources: status and performance monitoring of the hardware components and services at the site
- Status monitoring focuses on detecting failures of resources and hardware problems
- Performance monitoring focuses on tracking and archiving of the performance metrics of site resources and their usability
- Most of those tasks are covered by the local fabric monitoring. Though according to the survey, not all of T3 sites do run any fabric monitoring system
- Those which do run fabric monitoring system use as a rule Ganglia or Nagios, or combination of those two.
- For those who do not have anything in place need to provide a simple toolkit with basic functionality. Easy to install and support, based on the existing solutions (Ganglia, Nagios or MonAlisa)

- There are at least two conditions which have to be satisfied in order to provide monitoring of ATLAS activities at Tier3 sites:
 - Tier3 sites have to be described in a consistent way in the ATLAS topology (AGIS)
 - Tools used for job processing and data transfer have to be instrumented for reporting basic monitoring information. This is already the case for ATLAS 'standard' systems: Pathena, Ganga, dq2get, proof, xrootd...

- Example of Tier 3 comment at the yesterday monitoring session:

I need to handle space at the SE at my site, I need to know which datasets are accessed which are not, etc...

Information which data samples are accessed at the site can be obtained either through ATLAS data management (dataset popularity) or through job monitoring in case jobs report which data samples they are using, or through proof/xrootd monitoring. If there are no monitoring hooks in the tools used by users at the site in order to resolve this issue the siteadmin can rely only on the low level monitoring systems, which not necessary provide this information

- Strongly encourage users to submit jobs and/or transfer data using tools recommended by ATLAS
- Taking as an example CMS where there is only a single official system for running analysis – CRAB, people still create by themselves their own job submission systems. However, these people wanted to see their jobs in Dashboard, use Task monitoring for analysis users, etc... The standard lightweight library and instruction for job instrumentation was provided for this purpose and was successfully used for instrumentation of non-standard job submission systems. Will provide similar recipe for ATLAS users

- Need to integrate xrootd and proof monitoring data flow into the existing ATLAS monitoring infrastructure
- Not all Tier 3 sites can afford to monitor their proof farm or to follow detailed data flow from xrootd locally
- But might be important to provide some aggregated picture on the global ATLAS level
- A lot of development work on monitoring of proof and xrootd is already done, should be able to reuse most of it

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- Collect information about tools and technology used at Tier3 sites (Tier3 survey)
- Rely where possible on the existing solutions (fabric monitoring, messaging mechanism, proof and xrood monitoring, existing ATLAS global monitoring systems for aggregated data)
- Minimal installation at the sites
- Estimate data flow in order to understand the implementation for data aggregation for information which needs to be collected at the global ATLAS level. Aggregation will be done centrally (no at site aggregation), so amount of information reported per site should be reasonable.

- Site Status Board is a good candidate for providing an overview of the ATLAS activities at Tier3 sites

Site Status Board - Mozilla Firefox

Site Status for the ATLAS sites v0.10.0_rc27 [Login](#) [Found a bug?](#) [HELP](#)

Index Expanded Table Gridmap Alternative views Admin

Put the mouse over any column header to get the description of the column
Clicking on a column header will display the evolution of that column over the last 24 hours

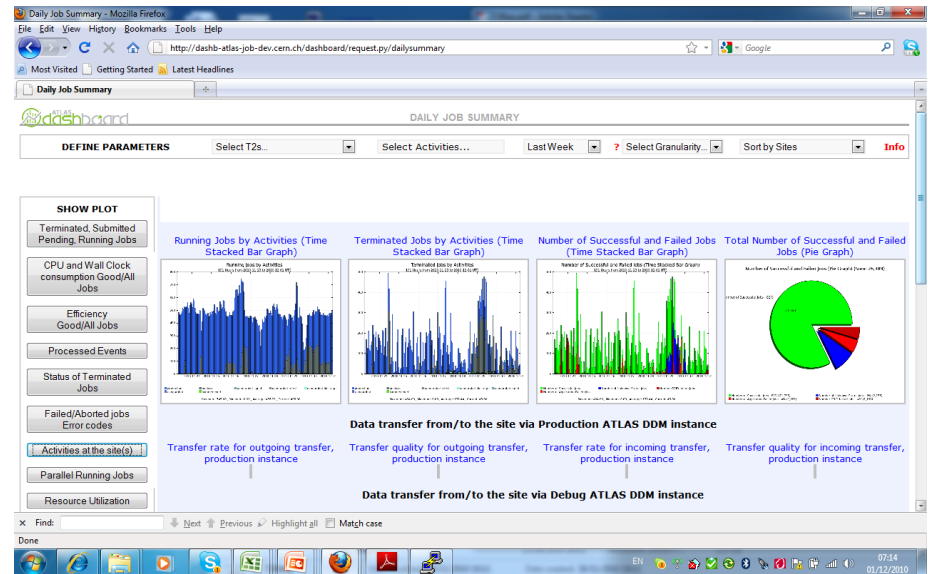
Site Name	SRM_SAM_12	DataProc	panda exclusion	DDM status	DDM_4h	Scheduled Downtime	panda production site_name	Central LFC
AGLT2	100	n/a	online	blacklisted	100	ACTIVE	AGLT2	n/a
Australia-ATLAS	100	n/a	online	online	100	ACTIVE	Australia-ATLAS	n/a
BEUNG-LCG2	73	n/a	online	online	100	ACTIVE	BEUNG	ok
BNL-ATLAS	100	n/a	online	online	100	ACTIVE	BNL-ATLAS_1	n/a
BU-ATLAS-Tier2	100	n/a	online	online	100	ACTIVE	BU-ATLAS-Tier2q	n/a
CA-ALBERTA-WESTGRID-T2	100	n/a	broker off	online	100	ACTIVE	CA-ALBERTA-WESTGRID-T2	n/a
CA-SCINET-T2	100	n/a	online	online	100	ACTIVE	CA-SCINET-T2	n/a
CA-VICTORIA-WESTGRID-T2	n/a	n/a	test	online	100	ACTIVE	CA-VICTORIA-WESTGRID-T2	n/a
CERN-PROD	100	n/a	online	blacklisted	100	ACTIVE	CERN-PROD	n/a
CSCS-LCG2	88	n/a	online	online	100	ACTIVE	CSCS-LCG2	n/a
CYFRONET-LCG2	94	n/a	online	online	100	ACTIVE	CYFRONET-LCG2	n/a
DESY-HH	100	n/a	online	online	97	ACTIVE	DESY-HH	n/a
DESY-ZN	51	n/a	online	online	98	ACTIVE	DESY-ZN	n/a
FZK-LCG2	100	n/a	online	online	99	ACTIVE	FZK-LCG2	n/a
GRIF-RFU	n/a	n/a	online	online	n/a	ACTIVE	GRIF-RFU	n/a
GRIF-LAL	n/a	n/a	online	online	n/a	ACTIVE	GRIF-LAL	n/a

Find: Next Previous Highlight all Match case

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- In the historical view Dashboard provides per site picture of the ATLAS activities at the site. Currently covers only job processing, but data transfer distributions are coming soon.



- Tier 3 monitoring project started as a joined effort of ATLAS, JINR and CERN IT
- Currently we are collecting requirements, investigating which ATLAS activities are performed at Tier3s and how it is done, what Tier3s are using at their local fabrics, etc... Thanks a lot to Andrej Filipcic and Doug Benjamin for their help and guidance
- By the end of this year will provide the draft of the working plan