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# Tier-1 monitoring requirements from ATLAS

In this short note a list of monitoring requirements that CAF wishes to be implemented at the T1 are summarized. This list has been built from various inputs :

• presentations and discussion at various CAF meetings,

• discussions with ATLAS central operation team,

• experience from monitoring tools available at various ATLAS T1 (see References).

The list of requirements has been iterated within the French squad team.

Requirements are listed by domains. For shared services (production cluster, SRM,... ) monitoring should be available individually for groups (experiments) and globally. Time dependent views of monitored parameters are crucial for efficient operation and debugging. Variation of parameters with time and histogram of parameter values over a given period of time should be implemented when possible.

Some accounting information requirements have also been listed.

Most of monitoring pages should be visible from outside Lyon. In case of sensitive information, some mechanism should be implemented to allow connexion from outside.

## I. Production Cluster

### A. Number of running jobs for ATLAS and others groups

1. By activity (Production, Analysis, other)
2. By CEs
3. By queue

### B. Number of Queued jobs for ATLAS and others groups

1. By activity (Production, Analysis, other)
2. By CEs
3. By queue

### C. CPU consumption for ATLAS and others groups

1. Average by activity (Production, Analysis, other)
2. Average by Tier type (T1, T2, T3) and by queue
3. Distribution by job per activity
4. Compared to allocations for T1, T2 , T3

### D. Wall Time

1. Average by activity (Production, Analysis, other)
2. Average by Tier type (T1, T2, T3) and by queue
3. Distribution by job per activity

### E. CPU/WT (CPU efficiency)

1. Average by activity (Production, Analysis, other)
2. Average by Tier type (T1, T2, T3) and by queue
3. Distribution by job per activity

F. Fair Share

1. Attribute by experiment on the farm
2. for ATLAS by activity (Production, Analysis, other)

## II. Storage (dCache/SRM)

### A. SRM server

1. Number of queued requests
2. Time to resolve request

### B. GridFTP servers

1. A summary table of all servers current status and graphical historical display of :
2. Load on each server
3. Memory usage on each server
4. Input rate for each server
5. Output rate for each server

### C. dCache

1. Input :
   a) average Input rate averaged and historical view
   b) Nb of files treated
2. Output :
   a) average Output rate averaged and historical view
   b) Nb of files treated
   c) Token view :
      (1) Deployed and used space by tokens
      (2) Nb of files by token
      (3) Time evolution of space by token
   d) MSS :
      (1) Average Input rate and historical view
      (2) Average Output rate and historical viewAverage Output rate and historical view
         (a) Nb of files
         (b) Queued requests

## III. File Transfer (FTS)

### A. Global view (for some time interval)

1. Started transfers
2. Active transfers
3. Done transfers
4. Failed transfers
5. Bytes transfers In and Out
6. Ready files

7. Waiting files

B. Historical view by channel

1. Nb of files transferred
2. Nb of files queued
3. Time in the queue
4. Transfer rate

C. Configuration view by channel

1. Nb files, NB streams, VO share
2. administrators

## IV. LFC

A. Load by frontend

B. Memory usage by server

C. Transfer I/O by server

D. Time to serve requests

## V. References

1. http://ganglia.gridpp.rl.ac.uk/cgi-bin/ganglia-fts/fts-page.pl
2. http://ganglia.pic.es/
3. http://grid.fzk.de/monitoring/main.html
4. http://www.usatlas.bnl.gov/dq2/throughput/