Site Manageability
& Monitoring Issues for LCG

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Introduction

- Gathered input from many sources – existing work, tools, discussions of what people see as missing, etc.

- 3 main areas to be addressed:
  - Fabric & Site management
  - Monitoring
  - System analysis

- Follow up from HEPiX discussion
  - General presentation of SFT/SAM and reliability problems
  - Discussion on how HEPiX could help improve site management as one aspect of the problem
  - … plus of course many comments on the problems with SAM …

- General monitoring/reliability issues
  - Some proposals

HEPiX – site management

- HEPiX discussion: can HEPiX help and how? :
  - It should but should act soon and not wait for next HEPiX meeting
  - All agreed that it could not be limited to one grid community which is why HEPiX appears a more appropriate forum
  - Should be coupled with other activities on improving tests and their reporting

- Proposal for Training/workshop/site management
  - Find coordinator - immediately
  - Send mail to HEPiX board inviting participation
    - Response by end October
    - Some people already expressed interest in participation (but not leading/coordinating)
  - Goal would be to have a session at January Tier 2 workshop
  - Re-establish cookbook/best practices document that was discussed at earlier ops workshop
  - Take top 5 (or 10) issues seen by operations and ask labs to document how they manage them

Monitoring/reliability

- **Site & Fabric Management**
  - Basic fabric/security tools and best practices → HEPiX

- **Monitoring**
  - Local Fabric and grid service monitoring
  - SFT / SAM
  - Job wrapper monitoring
  - ➢ Needs correlation/display at a site for site admins
  - ➢ Needs overview at high level for grid operations

- **System Analysis**
  - Work started by ARDA team on analysis/correlation of logs
  - Debugging of RBs (and CEs)
  - Instrument better existing services (L&B, …)
  - Job wrapper monitoring
  - ➢ Understand underlying problems
  - ➢ Improve error handling
  - ➢ Provide dashboard views of overall service (for VO, for site, for service)

Comments

- **Many monitoring tools exist**
  - No single one answers all needs – nor should it
  - Do not need monitoring tool development – need to gather and interpret the data we have, and fill in the holes

- **Need:**
  - Help for site admins to get an overall view of their site
    - Management tools ? E.g. View processes of a service
  - View of the overall state of the service and its use
    - By VO, or customised per VO
  - Sufficient and appropriate information to debug problems

- **Other points to consider**
  - Remote management of Tier 2 sites – by a Tier 1 or as a shared operation for a federated Tier 2

Fabric & Grid Service Monitoring

- Separation between: sensors, transport, visualization
- Use common interfaces to enable interoperability between different monitoring systems
  - E.g. GIP allows different sensors to be "plugged-in" and gives a common interface to transport layers
  - Lemon sensors re-used in GridIce etc.
- Propose a "sensors developer guide" to explain how to create standardized sensors.
  - Adapters can then be used to take this information and publish it into any transport mechanism which is available

- Provide a repository of sensors
- Coordinate work done by sites to integrate these sensors into various monitoring tools
  - Nagios, Lemon, GridIce, etc.
- Develop dashboards for views :
  - By site, VO, overall service etc.

Propose

- **HEPiX group**
  - Can we find a coordinator to start immediately?
  - HEPiX suggested he come from GD, but I would expand to LCG
- **2 RTAG-like groups**
  1. Monitoring
  2. System analysis

  Map out plan of development, priorities, participants
     - respond to the needs of site management etc
     - provide relevant views for each community

- **Who needs to be involved:**
  - Monitoring
    - Site managers, SAM team, monitoring tool developers
  - System analysis
    - ARDA team, IC (RTM) people, L&B team, etc.

Tying together existing tools

- **Fabric Management**
  - Batch systems, file systems, etc.
  - Security (IDS, etc)
  - Training
  - Cookbook/best practices

- **Fabric Monitoring**
  - Local monitors
  - Remote monitors (of Tier 2?)
    - GridIce, IN2P3
  - Share sensors
  - Share tools
  - Job wrapper monitoring

- **Grid Service Management**
  - Standard service interface?
    - (processes, status, start/stop)
    - Std framework?
  - Missing SAM tools?
  - Relate to local issues (e.g. is FTS pushing to a site?)

- **Grid Service Monitoring**
  - SFT/SAM for a site
  - Job wrapper monitors

Tools
- GridView
- GridIce
- SAM/SFT
- L&B stats
- RTM
- R-GMA
- MonaLisa
- Lemon/SLS
- Nagios
- Ganglia
- RSS
- …

- **Standard dashboards (for site) (for VO) (for services)**
  - Basic services monitoring
  - Accounting (CPU + Storage)
  - Metrics