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eNOC status of network monitoring

Guillaume Cessieux (EGEE SA2, CNRS/CC-IN2P3)
<Guillaume.Cessieux @ cc.in2p3.fr>

Mathieu Goutelle (EGEE SA2, CNRS/UREC)
<Mathieu.Goutelle @ urec.cnrs.fr>

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Enabling Grids for E-sciencE

- **EGEE Network Operation Centre**
  - Unique contact point for network problems affecting the Grid
  - In charge of WAN networks issues

- **Receive information from networks**
  - Network Trouble tickets
    - Compulsory usage for maintenance
  - Some wheathermaps, mrtg etc. available
  - Monitoring: **DownCollector** and ASPDrawer for the LHCOPN

- **Interfaced with the Grid**
  - GGUS, GOCDB3
  - CIC (Ongoing Work), Nagios

- **Network Operational Database (NOD)**
  - Store logical network topology used by the Grid
  - Impact assessment

- **Home made tool to address sites connectivity monitoring**
  - Test each host of a site (TCP connect attempt) every 2 minutes
  - Site without host reached = site unreached
  - Results through web interface / xml
    - https://ccenoc.in2p3.fr/DownCollector/
  - Experimental location assessment using network 'headnode'
  - Per hostname results also available but not relevant for the ENOC

- **Interesting results but still some issues**
  - Scalability (270 sites, 1600 nodes)
  - Routing viewpoint issues due to central test point
    - Use of several test points raises new issues: time synchronisation, data merging and understanding…

- **For the ENOC**
  - Detect outages and manage network support for OFF-SITE outages
  - Assign ON-SITE problems to… sites

- **For sites**
  - Assess host reachability from an external viewpoint
    - Not like LAN monitoring
    - Detect filtering issues and be aware of OFF-SITE network outages

- **For central test systems (SAM for instance)**
  - Network alarms in top of hierarchy for remote probes
    - No higher level tests on unreached nodes
    - Reduce alarms number and be sure support units are addressing only root problems

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Enabling Grids for E-sciencE

- **Pure network monitoring really needed**
  - Accurately incrimate/exonerate networks
  - Do not rely upon reports from upper layer Grid services

- **Performance monitoring still under investigation**
  - Many performance issues raised by Grid's users
  - Regular passive monitoring without disturbing sites/networks
    - Mainly SNMP based: NPM, perfsonar etc.
    - Hard to put probes along each path
  - Heavy active monitoring only on demand?
    - 'Fill the pipe' approach using tools like Iperf

- **Think globally and share results**
  - Do not monitor several times the same thing for different entities