Monitoring a Region with Nagios

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Enabling Grids for E-sciencE

- **Running a NAGIOS for the region.**
  - Motivation
  - Method
- **Alerting the sites and the ROC.**
- **Escalation of detected alarms.**
- **Considerations and Missing Parts.**

Enabling Grids for E-sciencE

- **The ROC wants:**
  - An overview of all the sites in its regions.
  - Collect problems discovered at sites.
  - Inform sites of problems found at sites.
  - Verify problems being found are being fixed.

- **Cover its sites despite sites ranging from:**
  - A tier1 with an established monitoring and problem solving process.
  - A site with just about nothing except an email address.

- **Remove the need for the COD operators to generate tickets on sites.**

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- **The ROC needs to provide hardware for NAGIOS.**
  - Something midrange is just fine at the moment.
- **Use of a new NAGIOS instance.**
  - It is considerably easier for the ROC to use a fresh instance of NAGIOS.
  - NCG can own all the configuration and not integrate with any existing schema.
    - If not possible or desirable then NCG must merge with existing NAGIOS infrastructures.
    - NCG must cope with this anyway for sites.
- **Access to MyProxy server that can be configured correctly.**

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- **The Central Europe ROC has working regional monitoring now.**
  - A nagios service reads SAM alarms and alerts sites.
  - The COD is no longer needed and in fact does not see these alarms for the CE region.
  - This has been working well apparently.
    - No news is good news.
- **The WLCG provided NCG system is a released generalization of their methods.**
  - NCG = NAGIOS Configuration Generator

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- **NCG framework creates a NAGIOS configuration.**
  - ROC provides a list of sites to the framework.
  - NCG collects service topology information currently from:
    - SAM Database - this is the default.
    - BDII Information System
    - Local configuration files.
      - *Needed to fine tune service details that are not published.*
  - The GOCDB may be used in the future.
    - List of sites by ROC is easy to obtain.
    - Importing scheduled downtime.
- **Other configuration is much like that of a site NAGIOS**
  - MyProxy certificate storage and renewal.
  - Webserver with X509 based access.
  - Instructions exist for all this.

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- **The NAGIOS configuration contains**
  - Hosts as the Service Host Names,
    - srm.cern.ch
    - ce101.cern.ch
    - lcg-bdii.cern.ch
    - nagioshost.yourroc.example.org
      - *Alerts with the monitoring itself are raised here for the ROC.*
        - o *e.g. Unable to collect SAM results.*
  - Nagios "Services" attached to nodes are created for each of the possible tests results.
    - BDII Service on lcg-bdii.cern.ch
    - GridFTP Service on ce101.cern.ch
    - Services for results collected from SAM.
      - *JobSubmission test result on ce101.cern.ch*
      - *lcg-cr test results on srm.cern.ch*
- **This is a very standard NAGIOS configuration.**

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- **Detection**
  - The ROC does run its own basic Grid Service tests.
    - globus-url-copy can fail only outside a site.
    - The ROC may want to test things for its region.
      - *e.g Are my sites running SL4?*

- **Collection**
  - Results are now collected for the ROC's sites from:
    - SAM Database... gather_sam
    - Network Uptime Collector ... gather_npm
  - Results will be collected in the future for the ROC's sites:
    - From gstat via nagios and messaging service.
    - From site nagios or ? and messaging service.
    - GGUS assignment via RSS feed or messaging service?
      - *Messaging service not in place in yet.*

- **Problems whether detected or collected are identically handled from then on.**

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- **Different sites want different methods of notification.**
  - Email.
  - RSS.
  - Nothing
    - Site's NAGIOS or similar will collect from messaging system.
- **Give problems as fast as possible to those who can solve it.**
  - Don't bother telling those who can't fix it.
  - The ROC is only interested if the problem is not fixed in say 3 working hours of the site...
    - Site working hours information in NAGIOS are important for this.
- **Take care not to enter a loop:**
  - ROC detects problem
  - Site collects problem from ROC.
  - ROC collects problem from site........

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- **Currently each NAGIOS at ROC or site has to have:**
  - Complete knowledge of all hosts it is interested in.
  - Complete knowledge of all alarms that could be raised.
  - e.g. ROC might introduce test to require lcg-utils > X.Y.Z.
    - The site won't know to collect the test results.
- **New HOSTS and Services are added by an NCG rerun.**
- **NAGIOS needs to monitor NCG configuration to check if a rerun is needed.**
  - Moreover the automatic addition of nodes and services must come eventually.
- **Nagios 2 Nagios alarms not possible yet.**
  - Messaging service needs to be there.

Enabling Grids for E-sciencE

- **CERN-ROC will take a lead.**
  - Once NCG supports multiple sites better the CERN-ROC sites will be invited to take alarms from the CERN NAGIOS.
    - In the manner of their choice.
  - Deployment instructions will be created for a ROC rollout.
    - Initially one other ROC will volunteer.

- **NCG Deployment.**
  https://twiki.cern.ch/twiki/bin/view/LCG/GridMonitoringNcg

- **CERNROC Deployment of NCG enabled NAGIOS.**
  https://twiki.cern.ch/twiki/bin/view/LCG/CERNROCNagiosNCGInstall

- **CERNROC NAGIOS instance.**
  https://lxb1931.cern.ch/nagios
  - Certificate and dteam or atlas VO membership.