quattor

Monitoring templates in QWG

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Monitoring tools status

- **LEMON**
  - **Components:** ncm-fmonagent, ncm-oramonserver
  - **Templates:** standard/monitoring/lemon
  - **Configuration:**
    - client, server, metrics, etc. via component
    - Web front-end via filecopy
- **Nagios**
  - **Components:** ncm-nagios, ncm-ncg
  - **Templates:** standard/monitoring/nagios, standard/monitoring/nagios3 **(!)**
  - **Configuration:** client?, server via component
- **Ganglia**
  - **Components: N/A**
  - **Templates:** standard/monitoring/ganglia
  - **Configuration:** client via filecopy, server & web front-end manual
- **MonAMI**
  - **Components:**
  - **Templates:** standard/monitoring/monami
  - **Configuration:** client via filecopy

Ideal model

- **Hierarchical site model should be defined once**
  - Host: Machine and associated personality (could be multiple)
    - e.g. wn001.example.org is a cluster node
    - e.g. server.example.org is an NFS server and a web server
  - Cluster: List of hosts (e.g. “cluster nodes”, “NFS servers”
    - Combination of automatic generation (from “personality”) and explicit config
    - e.g. CLUSTERS[“SE”] = find_se_nodes()
    - e.g. CLUSTERS[“bad_nodes”] = list(“wn05.example.org”,”mon.example.org”)
  - Super-cluster: List of clusters (e.g. Grid machines, support services)
    - e.g. SUPERCLUSTER[“SUPPORT”]=list(“NFS”,”WEB”)
- **All monitoring tools’ config should be generated from site model**
  - Which sensors are on machine X?
  - Which machines’ data should I aggregate in cluster Y?

How far are we from the ideal?

- **Hierarchical site model should be defined once**
  - Host: Hosts assigned node type by *reg exp match* on hostname (DB_MACHINE)
    - e.g., CE, WN, SE_DISK
  - Cluster: Lists of hosts referenced by cluster based on node type
    - e.g., NODES_WN, NODES_GATEWAY, NODES_CE
  - Super-cluster: Lists of clusters referenced by super-clusters
    - e.g., GRID_GATEWAY = nlist("GRID_GATEWAY",list("GATEWAY","CE","SE_DISK","MON"));

- **All monitoring tools' config should be generated from site model**
  - Lemon variables re-used to create Nagios hostgroups:

    e.g., "gridservers/alias" = "TCD Grid Servers";

    "gridservers/members" = {

    lis = LEMON_CLUSTERS['GRID_SERVERS'];…
    - Services then assigned to hostgroups
  - Could be used for Ganglia data_source, but TBD

LEMON

- **Current status in Grid-Ireland**
  - Client
    - ncm-fmonagent
      - *Client still edg-fmon-agent, need to alter client configuration templates*
  - Server
    - ncm-oramonserver
      - *Only used to generate database metadata*
      - *Lemon database creation done by hand using lemon-admin*
    - Some oracle XE environment setup included in templates
- **Issues**
  - Server profiles only for sl4 i386
    - Installing on SL5 x86_64
  - Documentation not up to date with latest release
    - In particular for lemon-web, still lrf
  - Oracle XE very unstable, had to install Enterprise Edition
  - Nearly all of server configuration done by filecopy
    - Some variables, mainly for Oracle connection: username, password etc.
    - Mostly had to remove sections of templates
      - *e.g., oramon service no longer used (lemon-server)*

Nagios

- **Current status in Grid-Ireland**
  - Using ncm-nagios to configure server
    - Had to make some local changes after upgrade to nagios v3
      - *Removing some lines from configuration file*
    - Hosts created from hardware db
    - Services defined as separate templates in standard/monitoring/nagios/services
      - *Added to NAGIOS_SERVICE_TEMPLATES variable*
    - Variables for other config files, e.g., servicegroups, hostgroups

- **Issues**
  - Wanted to deploy WLCG nagios service checks
    - Initially creating service definitions in ncg_services.tpl
      - *Lists defined services to create, VOs, host lists etc.,*
        - e.g., SAM_TESTS, SAM_VOS
      - *added to NAGIOS_EXPLICIT_SERVICES*
    - Difficult to maintain, lots of services created
      - *Nagios3 templates (new?)*
        - Services defined in template ncgservices.tpl (1742 lines!)

Nagios

- **NCG component**
  - WLCG already have nagios configuration generator (NCG)
    - Controlled by configuration file
  - Create configuration file using Quattor
    - Component calls ncg.pl to create service definitions
  - Easy to maintain
  - Multisite configuration possible
  - Always up to date service definitions
- **Schema**
  - Work in progress
  - Need full description of NCG configuration file
  - Example:

    “/software/components/ncg/configGen/nagios/PROBES_TYPE” = “all”;

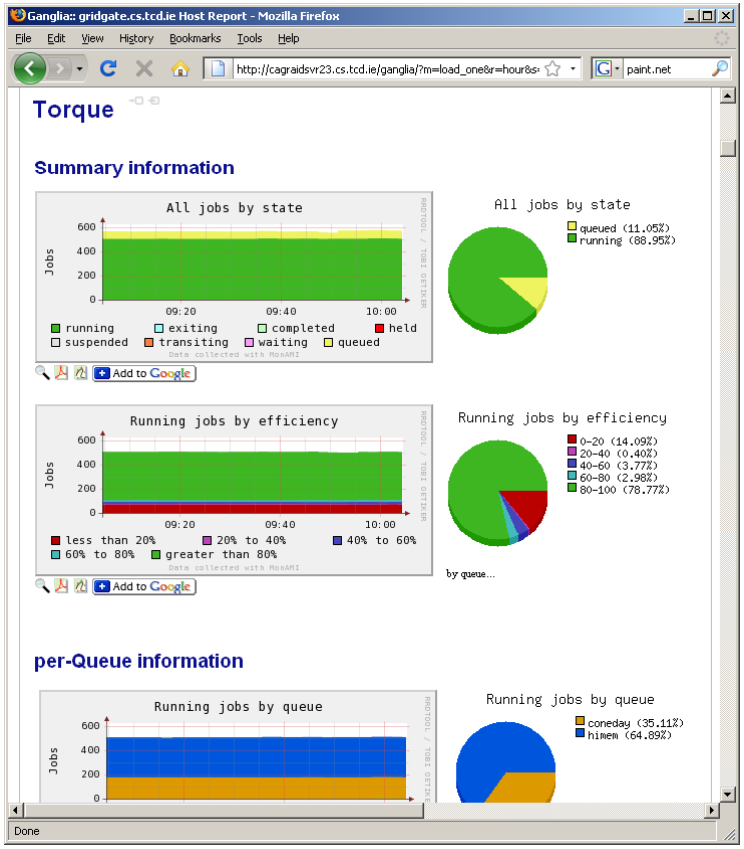
    “/software/components/ncg/configGen/nagios/NRPE_UI” = “gridui.cs.tcd.ie”;
  - Created output files included in NAGIOS_EXTERNAL_FILES
    - /etc/nagios/wlcg.d/commands.cfg, /etc/nagios/wlcg.d/csTCDie/services.cfg, /etc/nagios/wlcg.d/cpDIASie/services.cfg….

ganglia

- **Client (gmond)**
  - Well-defined config file format
  - Should be generated based on “site model” and machine type (i.e. “Which cluster am I in?”)
- **Server (gmetad)**
  - Well-defined config file format
  - Should be generated from QWG “site model” (i.e. which machines in which clusters)
- **Web front-end**
  - Config in PHP file

MonAMI

- Tool is of minority interest?
- Main use is nice Torque/Maui/DPM graphs in ganglia
- Probably OK to stick with filecopy for now
- Configuration also needed on ganglia web front-end



Client config

```
# Monitor torque and maui
[torque]
cache = 60

[maui]
cache = 60

# write to ganglia
[sample]
 read = maui,torque
 write = ganglia
 interval = 1m

[ganglia]
```

Grid-Ireland Monitoring