Integration of OCM-G into the MonALISA infrastructure

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Objectives

Grid monitoring is difficult task due to great dynamicity of changes on the Grid and huge number of jobs and infrastructure components. OCM-G addresses these issues quite well but it lacks scalable presentation layer. This motivated integrating OCM-G into MonALISA to provide users with comprehensive visualisation means.

OCM-G

OCM-G [1] is a OMIS-compliant system coming from the CrossGrid project, which provides information about interactive, parallel, and distributed applications. It provides a wide range of pre-defined performance metrics which can extended by these defined by user. Its key features:

- On-line, interactive monitoring of grid application
- Performance metrics for MPI programs
- Fine-grained monitoring capabilities.
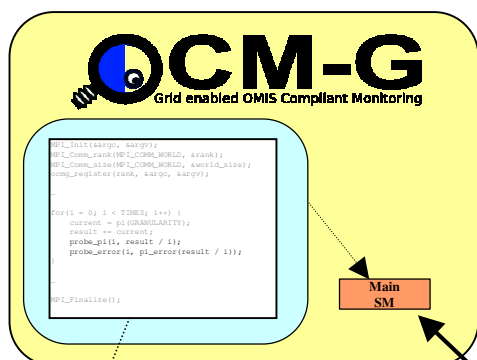
Sample application with two probes

MonALISA

MonALISA [2] is an abbreviation for Monitoring Agents using a Large Integrated Services Architecture. The services, spread all-over the world, can be fed with data which is then visible for every other service and repository, a place for storage and publication. There is also a client software which is able to acquire data from services, make real-time plotting and statistics. Key features:
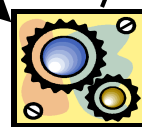
- Plenty of tools for presenting and analysing data
- Human-friendly presentation layer
- On-line graphs plotting from oncoming parameters
- Data available in Internet through common protocols.
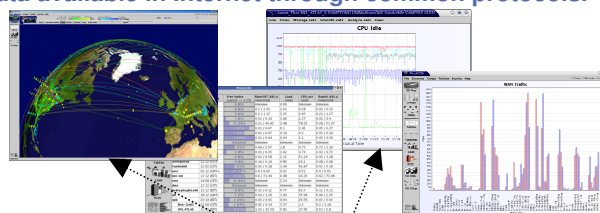
Integration

To integrate these two systems we developed an application which is acting as an interconnector. It communicates with OCM-G through the OMIS [3] interface. The application registers itself as a listener for probe events and requests standard parameters from the MainSM component with a defined frequency. The communication is implemented with OCM-G Java API service(s), which specify some helper classes for OMIS messages. Each parameter needs a special parser to extract a single value which is sent to the MonAlisa service using the ApMon library. Benefits:

- No need to change the application to be monitored.
- *Drop-in* solution.
- Works as an OCM-G tool. Can cooperate with other OCM-G tools.

```xml
<?xml version="1.0"?>

<configuration>
    <cluster name="BladeCluster" />
    <monalisa>
        <service address="ernie.icslab.agh.edu.pl" />
    </monalisa>
    <parameters>
        <monitored name="load" frequency="2" />
        <probe app="pi" name="probe_pi" arg="1" />
        <probe app="pi" name="probe_error" arg="1" />
    </parameters>
</configuration>
```

Sample configuration. Defines regular checks of nodes' load and passing of two probes

References

[1] Balis, B., Bubak, M., Funika, W., Wismueller, R., Radecki, M., Szepieniec, T., Arodz, T., Kurdziel, M., Grid Environment for On-line Application Monitoring and Performance Analysis, Scientific Pogramming, vol. **12**, no. **4**, 2004, pp. 239-251

[2] H.B. Newman, I.C. Legrand, P.Galvez, R. Voicu, C. Cirstoiu MonALISA: A Distributed Monitoring Service Architecture, in: CHEP 2003, La Jola, California, March 2003

[3] Ludwig, T., Wismüller, R.: OMIS 2.0 — a universal interface for monitoring systems. In Recent Advances in Parallel Virtual Machine and Message Passing Interface, pp. 267-276, LNCS1332, Springer, 1997

http://grid.cyfronet.pl/ocmg

http://monalisa.caltech.edu