DEPARTMENT OF COMPUTER SCIENCE
AGH/UST, www.ics.agh.edu.pl
(Projects/JIMS)

JIMS Case Study

Discovery Service for JMX-enabled Monitoring System

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1. What is JIMS? JIMS is the JMX*)-based Infrastructure Monitoring System

2. JIMS provides:

- Worker Nodes, Computing Elements and any other **Linux** or **Unix** (Solaris) **systems monitoring**, using pluggable modules (SystemInformation, SNMP, NetworkMetrics, SGEMonitoring)
- **monitoring of applications** running within **JVM 5.0**
- support for any Java management application with **JMX JSR-003/160 management** interface
- **WS interface** - interoperability required by clients written in other programming languages like C, C++, Perl
- application monitoring in grid systems allowing **automatic application discovery after job execution**

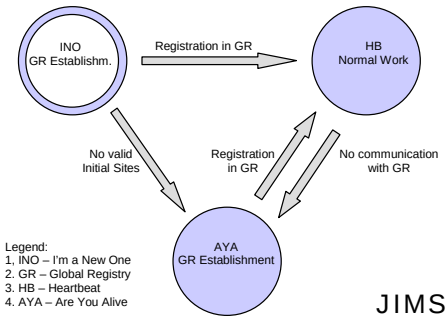
3. Discovery Service for JMX-enabled Monitoring System:

- gathers information about all accessible clusters in the Grid
- performs dynamic election of Global Registry
- designed to run in global network (WAN)
- doesn't require additional administration

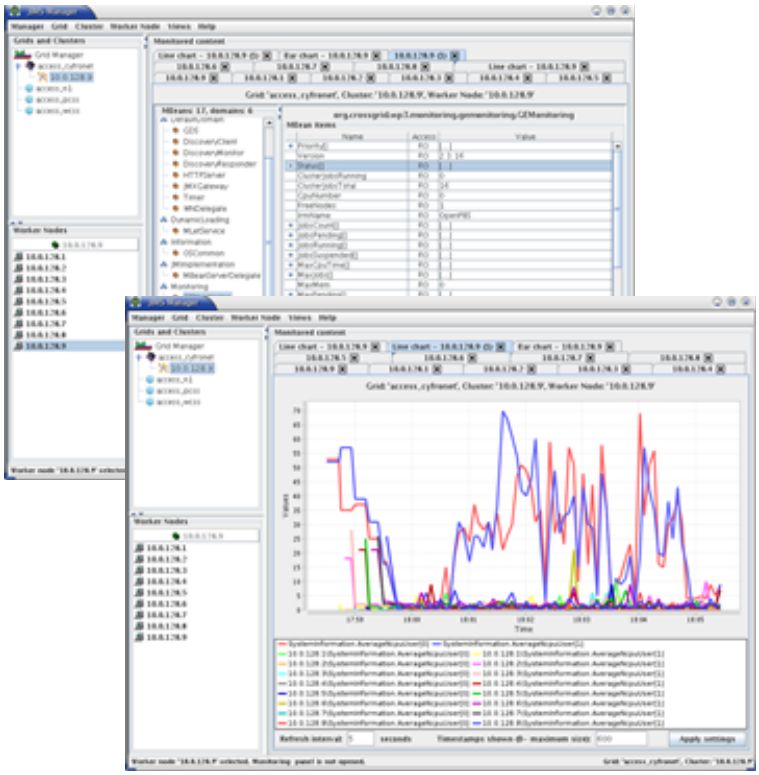
4. JIMS makes use of:

- automatic configuration in clusters, enabling discovery of monitored stations and applications
- automatic adaptation to the specified role: SOAP Gateway, Global Registry, Monitoring Station
- one agent with hot-pluggable modules

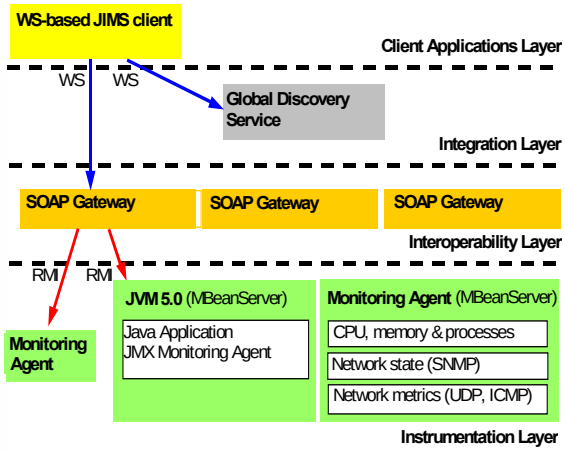
DS Operation



JIMS Client



JIMS Architecture



*) References:

1. Sun Microsystems: Java™ Management Extension, Reference Implementation, http://java.sun.com/products/JavaManagement/
2. Sun Microsystems, Java™ Management Extensions Remote API 1.0 Early Access 2, http://developer.java.sun.com/developer/earlyAccess/jmx/
3. K. Wojtas, L. Wasilewski: Global system for monitoring of computer clusters with dynamically changing configuration, M.A. thesis, Kraków (2005, in polish)

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