

Using Community Clouds for Load Testing: the ProActive CLIF solution



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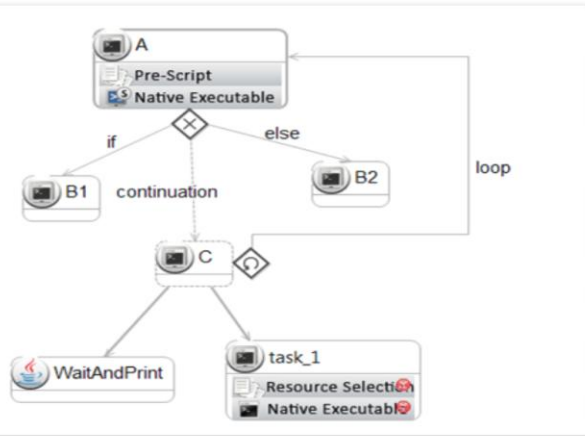
Denis Caromel (INRIA, ActiveEon)

Bruno Dillenseger, Marina Deslaugiers, Daniel Stern (Orange Labs)

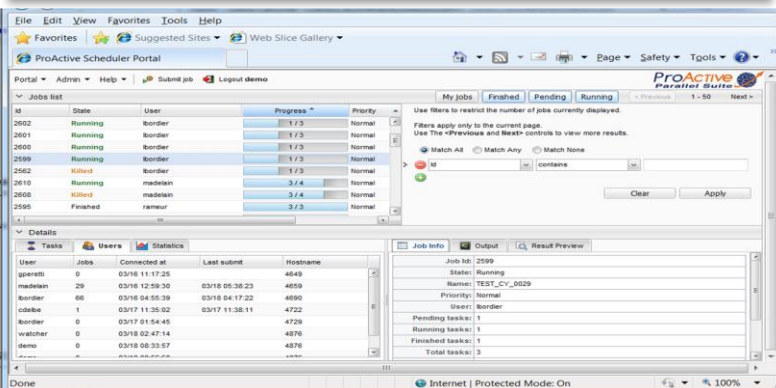
Agenda

1. Objectives, ProActive, Use Cases (Denis)
2. Community Cloud, Challenges (Daniel)
3. Load testing, ProActive CLIF, Architecture (Bruno)

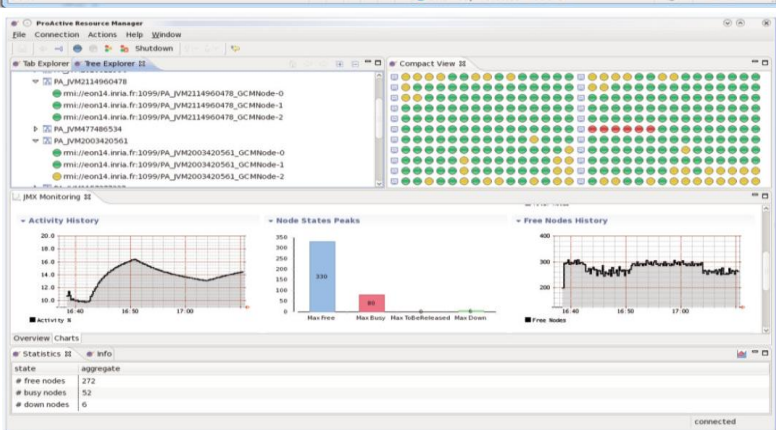
HPC Workflow & Parallelization



Scheduling & Orchestration



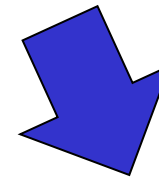
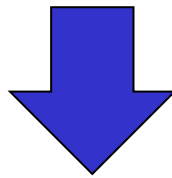
Cloud & Grid IaaS



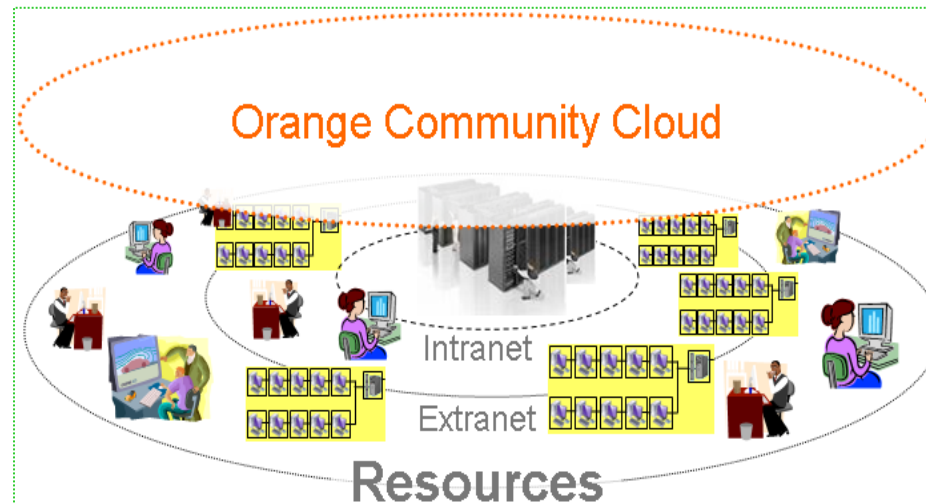
Perspective

Multi-CLOUD Portal

ProActive Cloud
Orchestration & Brokering



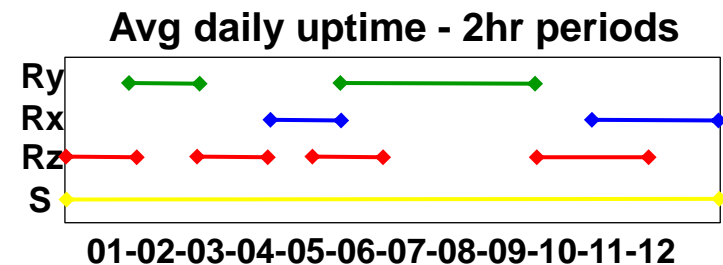
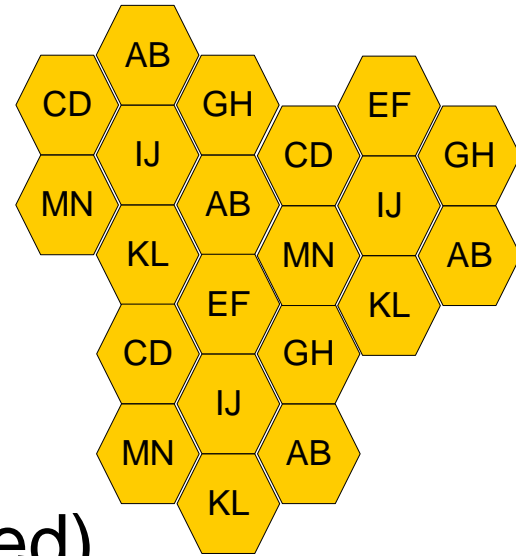
Community Cloud: sharing is always economically innovative



- Members of a Community (SMEs, NGOs, employees, individuals) share CPU, storage, network, and (delegate a manager to) manage the whole platform so as to run ready-to-use services on top of it
→ **a Community Cloud is born**
- Two business models
 - NIST-style community cloud: the services are used only by community members
 - extended: the community want to make profit and sell services in a "public" fashion

Technological problems specific to Community Clouds

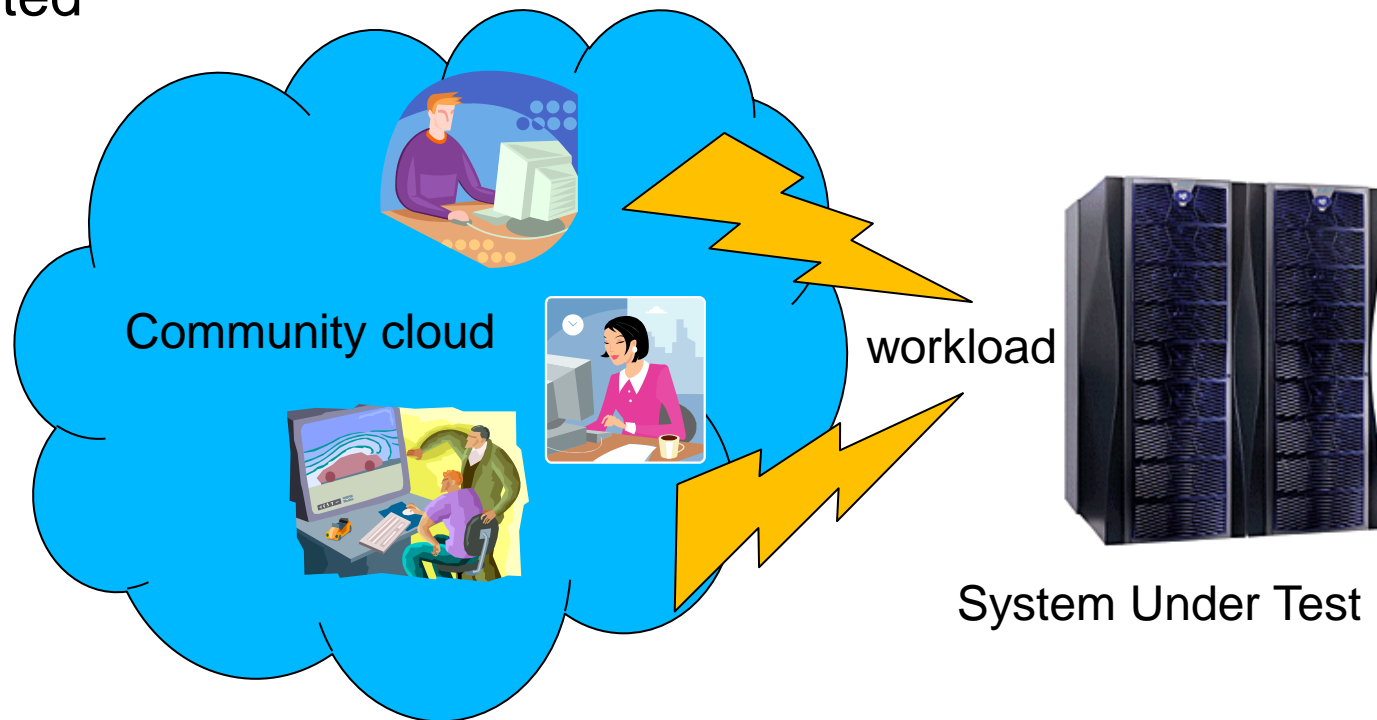
1. Storage optimization for load balancing and data availability
 - sharing: data division (key-based)
 - replication: several copies of same data
2. Security (many resources are not dedicated)
 - data and computation integrity



3. Performance, reliability and profitability
 - predict what resources will be up in next periods
 - count the resource contributions for a fair payment

Using a Community Cloud for Load Testing

- Computing and networking resources are used to generate traffic (load injectors) and measure the SUT performance.
- Thanks to the community cloud these resources are widely distributed



CLIF goes ProActive



CLIF is OW2's Load Testing framework

- high power distributed load injection
- measures response times and resources usage
- adaptable, extendible, embeddable
 - multiple UI (Java GUI, Eclipse, command-line, Jenkins)
 - multiple protocols (HTTP, FTP, DNS, IMAP, SIP... any of your own)
- architecture based on the Fractal component model

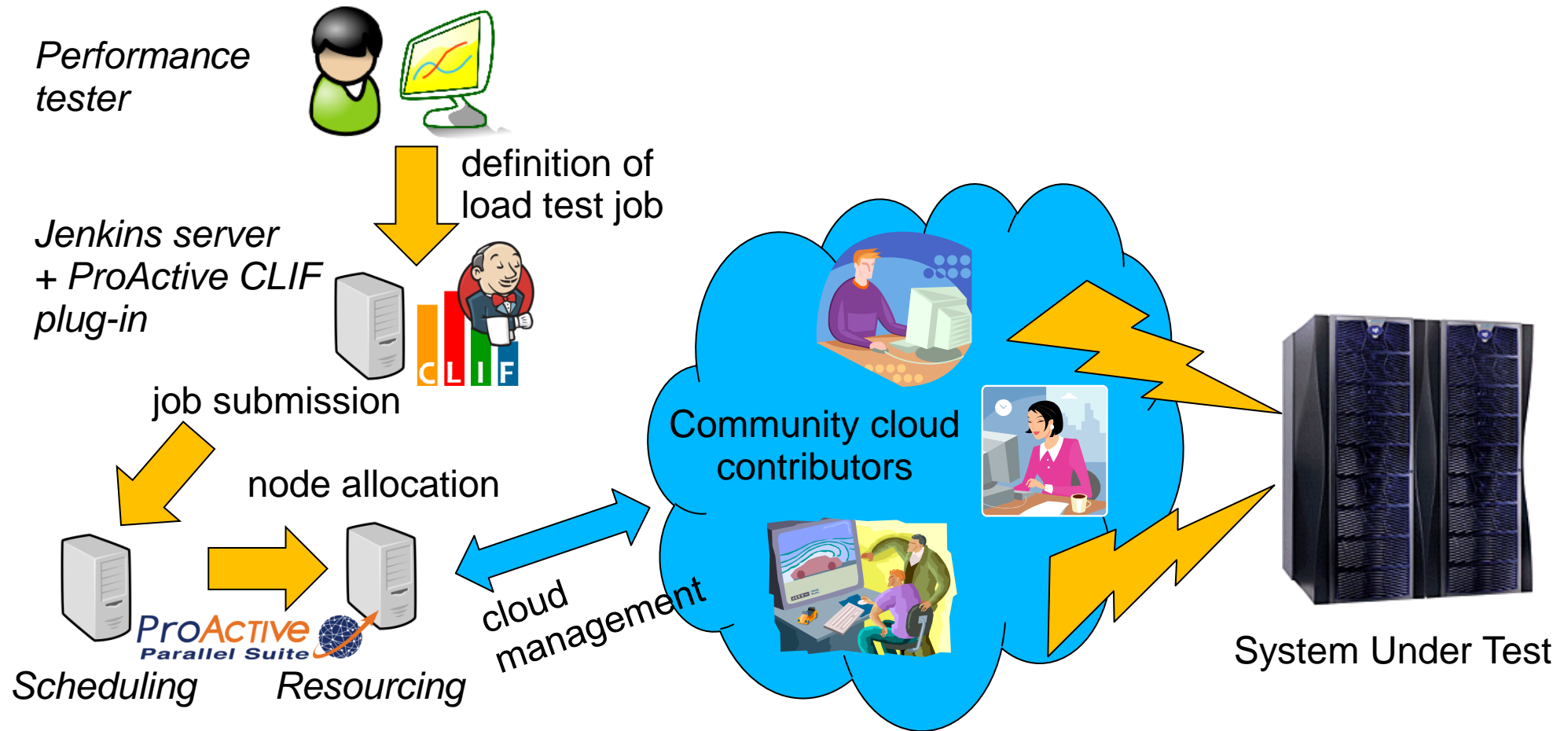


Lutèce d'Or 2007 award
*best open source project lead
by a big company*

Distribution support

- historically based on FractalRMI (► current SVN trunk)
- wide distribution across several networks may cause reliability and routing troubles
- move towards ProActive (► ProActive SVN branch)

ProActive CLIF on Community Cloud: Testbed Architecture



Perspectives

- Upcoming Friendly User Test of ProActive CLIF on community cloud at Orange Labs
 - collaboration with ActiveEon
- CLIF work plan: go further into ProActive adoption
 - upgrading CLIF's architecture to better benefit from GCM (Grid Component Model – standard from ETSI)
 - make ProActive CLIF the default CLIF (SVN trunk)
 - collaboration within the OpenCloudware project
- Local Resources (Desktops, Cluster, Servers) + Various Clouds (OpenStack, VMware vSphere, ...)

clif.ow2.org
proactive.ow2.org

