

# Using Community Clouds for Load Testing: the ProActive CLIF solution



Vladimir Bodnartchouk (ActiveEon)

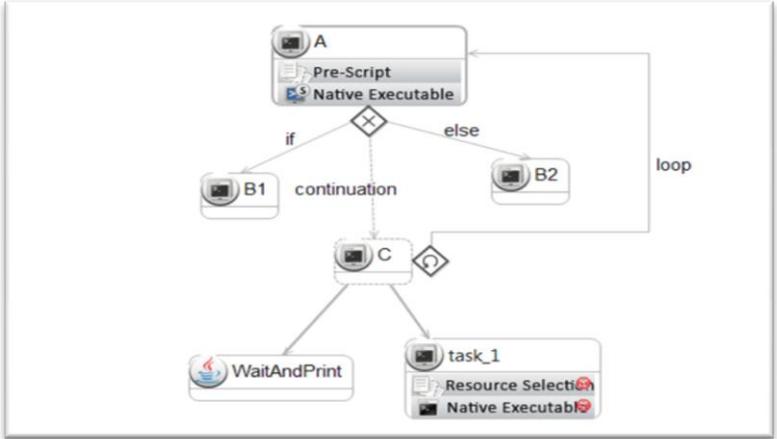
Denis Caromel (INRIA, ActiveEon)

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)

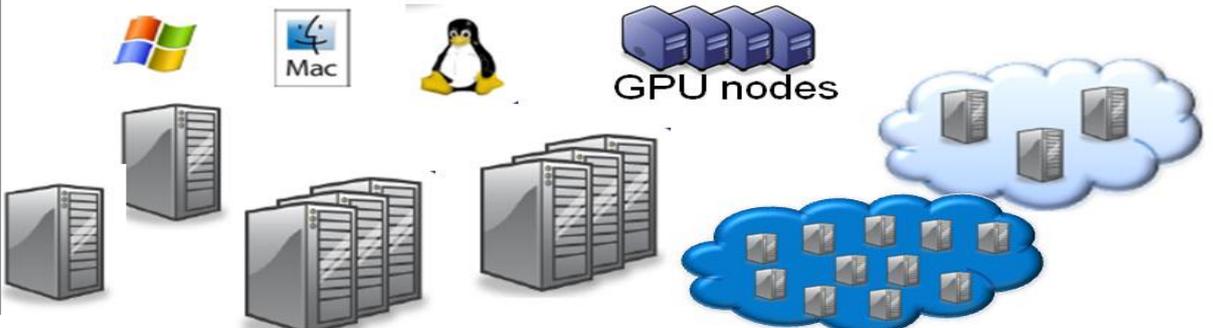
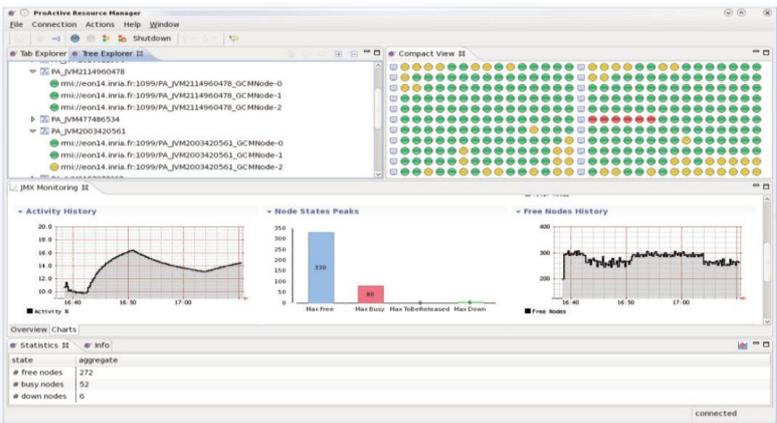
## HPC Workflow & Parallelization



## Scheduling & Orchestration

| ID   | State    | User     | Progress | Priority |
|------|----------|----------|----------|----------|
| 2602 | Running  | border   | 1/3      | Normal   |
| 2601 | Running  | border   | 1/3      | Normal   |
| 2600 | Running  | border   | 1/3      | Normal   |
| 2599 | Running  | border   | 1/3      | Normal   |
| 2562 | Killed   | border   | 1/3      | Normal   |
| 2610 | Running  | madelain | 3/4      | Normal   |
| 2608 | Killed   | madelain | 3/4      | Normal   |
| 2595 | Finished | reneur   | 3/3      | Normal   |

## Cloud & Grid IaaS



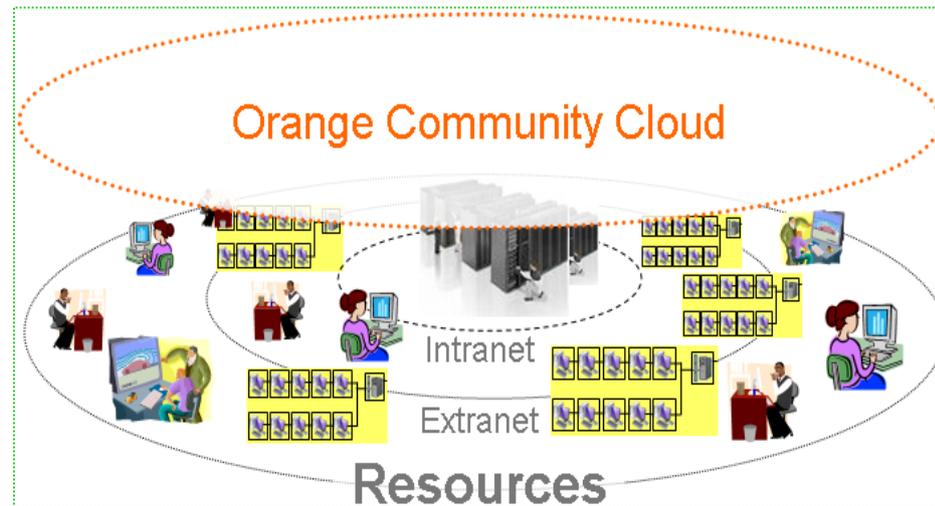
# Perspective

Multi-CLOUD Portal

ProActive Cloud  
Orchestration & Brokering



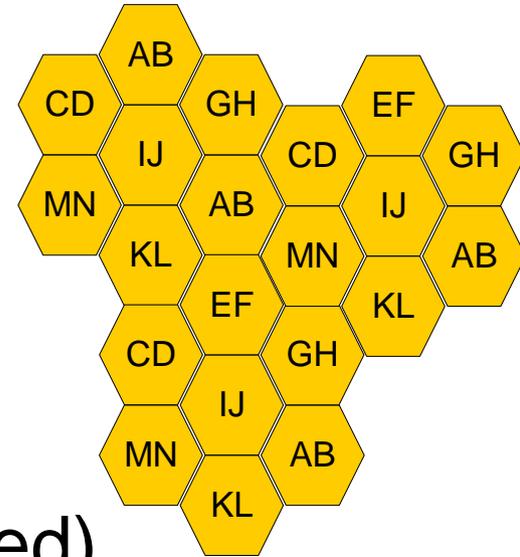
# Community Cloud: sharing is always economically innovative



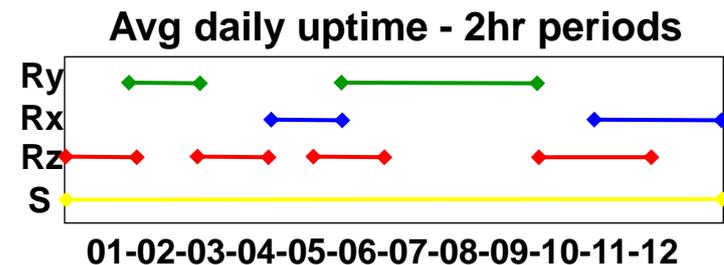
- Members of a Community (SMEs, NGOs, employees, individuals) share CPU, storage, network, and (delegate a manager to) manage the whole platform so as to run ready-to-use services on top of it
  - **a Community Cloud is born**
- Two business models
  - NIST-style community cloud: the services are used 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

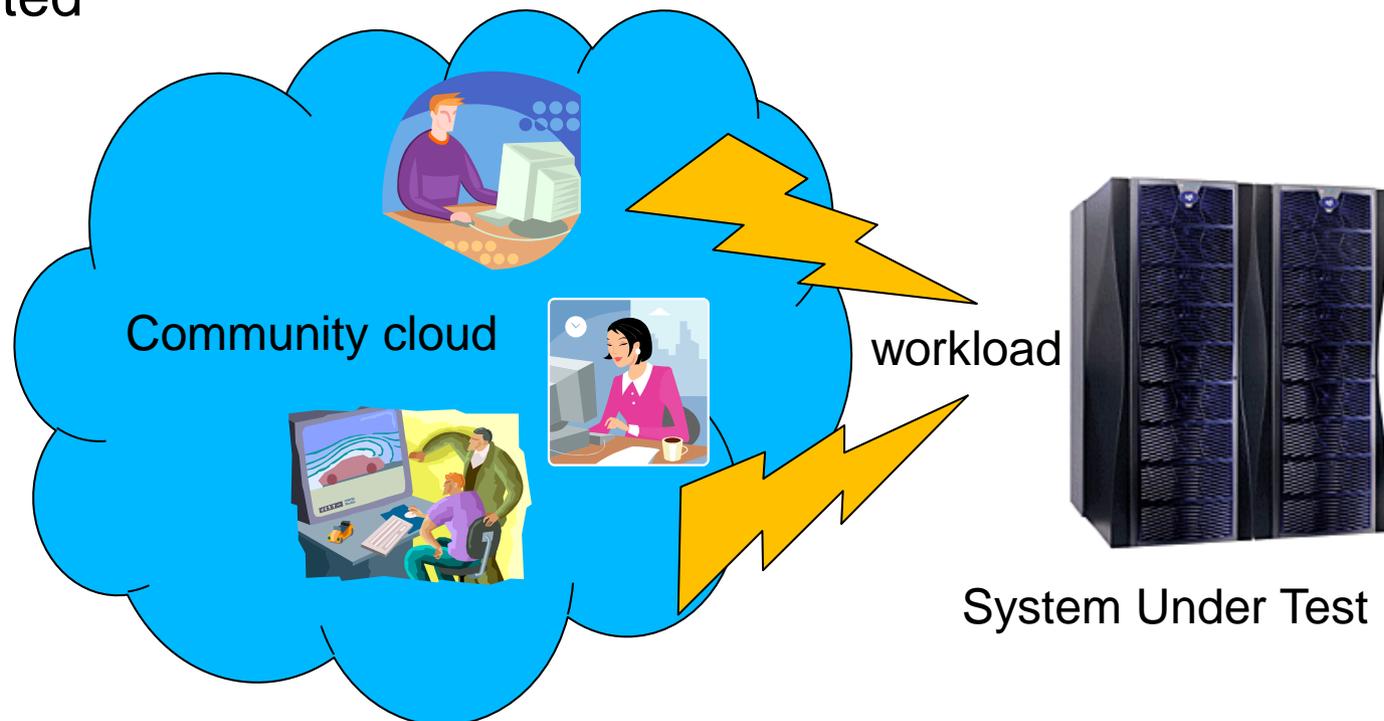


3. Performance, reliability and profitability
  - predict what resources will be up in next periods
  - count the resource contributions for a fair payment



# 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

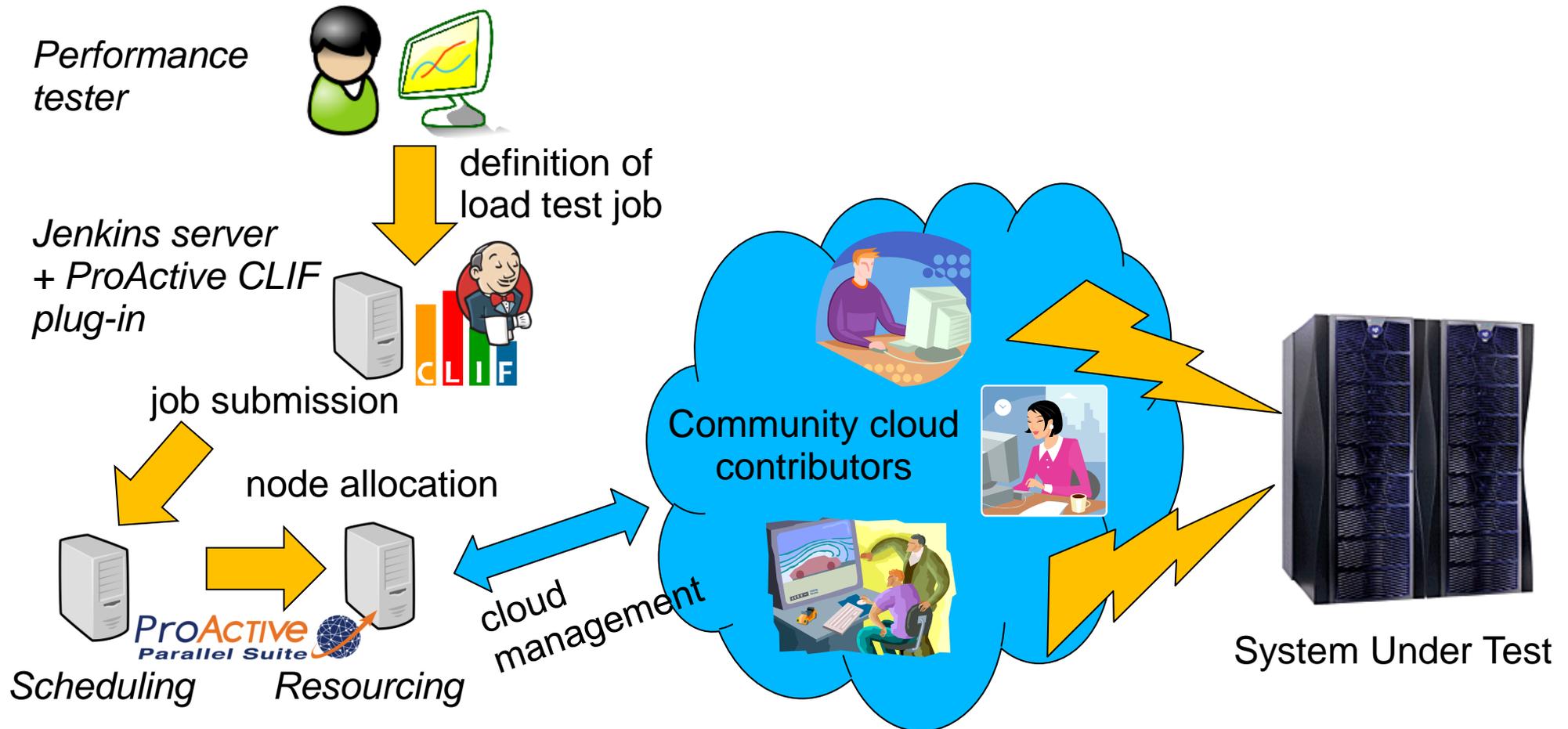


Lutèce d'Or 2007 award  
*best open source project lead  
by a big company*

## 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*

