Automating Performance Testing over the Cloud with CLIF and ProActive Workflows & Scheduling

Bruno Dillenseger - Orange Labs
Brian Amedro, Denis Caromel, Laurent Pellegrino – ActiveEon SAS
Member since … its creation

Products:
- ProActive Parallel Suite
- Data Processing Workflows & Parallelization
- Scheduling & Orchestration
- Deployment & Resource Management

Locations
- Sophia-Antipolis, France
- San José, USA
- Sofia, Bulgaria
- London, UK
- Paris, France
- Lyon, France

Some Customers
- IT Engineering
- BioTech, Health
- Finance, Media, IoT...

Some Customers Logos
- Orange
- Sea Engineering
- INRA
- Legal & General
- AMADEUS
- CEA
- AXISPOINT HEALTH
- LA FRANCAISE
- Mediametrie
- L'ORÉAL
- HUAWEI
- CNES
- MCKESSON
- CHUV
- ENERGIES NOUVEAUV
- AIRBUS
- ENTEROME
- JOYGLOBAL
Fully automated performance testing

→ What for?
   ▪ Performance testing in Continuous Integration
   ▪ Continuous testing of User Quality of Experience

→ With which computing resources?
   ▪ preferably on-demand resources allocation for cost issues
   ▪ from the cloud (dedicated or shared)
   ▪ from the team workstations (community cloud)

→ With which features?
   ▪ Workload generation and performance measurements
   ▪ Resources management
   ▪ Test deployment orchestration
   ▪ Testing, reporting and alerting automation
An OW2-powered solution

→ OW2 technologies
  ▪ CLIF
    • Workload generation and performance measurements
  ▪ ProActive Workflows & Sheduling
    • Computing resources management
    • Test deployment orchestration

→ Jenkins
  ▪ Testing, reporting and alerting automation
  ▪ Performance report including trends with CLIF plug-in
Overall process

1. tester

2. submit workflow

3. ProActive Scheduler
   Selection and allocation of execution nodes

4. workflow: test deployment, execution, cleaning

ProActive workflow (test deployment)
CLIF scenario (workload definition)

ProActive Resource Manager

load injectors
application
Test deployment workflow

- generic deployment of CLIF test plans
- set the target IP address in the test scenarios

ProActive Workflow Studio

- deployment of the application under test
- synchronization + data exchange service
It's time for conclusion...

» Benefits
  ▪ integrated solution for automated performance testing and monitoring
    • computing resources management
    • deployment-configuration-execution workflow
  ▪ write configuration scripts with your favorite languages
    • Ruby, Python, Goovy, javascript, bash...
  ▪ while benefitting from a user-friendly workflow editor

» Limitation and achieved solution
  ▪ workflow tasks need to synchronize and exchange configuration data
    => we enriched the Scheduler with a synchronization service (https://github.com/ow2-proactive/)

» References
  ▪ CLIF http://clif.ow2.org, ProActive http://proactive.ow2.org
  ▪ Jenkins http://jenkins.io