Performance Testing with OW2 CLIF in Year 2023: A Guided Tour

Bruno Dillenseger, Orange Innovation
CLIF is a Load Injection framework

CLIF is OW2's performance/load testing tools suite:

- large-scale **distributed** load injection
- **arbitrary number** of virtual users
- **high-level description** of virtual users behavior
- load injectors for a **variety of protocols**
- **probes** to monitor resources usage
- **extensions** in Java (network protocols, data set providers, probes)
- also used for **integration testing** and live monitoring

https://clif.ow2.io/

**System/service under test**

**CLIF load injectors**
- send requests
- measure response times
- check response validity

**CLIF probes** measure resources usage

requests
CLIF grew through years of open research

→ CLIF was born open source in year 2003 in the ObjectWeb community
  - open research on performance benchmarking between Orange (France Télécom) and INRIA

→ CLIF development has always been associated to research topics
  - Orange internal research
  - French collaborative projects

→ component-based software engineering
  - use and contributions to ObjectWeb Fractal component model

→ autonomic computing
  - self-driven load test campaigns
  - automated performance optimization campaigns

→ cloud computing
  - performance tests in continuous integration with fully automated deployment
  - multi-cloud test deployment
CLIF "legacy" toolbox

➔ clif-server
  - Core runtime with command-line interface for deploying and executing distributed CLIF test plans (load injectors and probes)
  - Java library and companion scripts for Windows, MacOSX, Linux

➔ clif-eclipse-console
  - full-fledged CLIF GUI including advanced scenario editor and CLIF extensions development environment
  - Eclipse RCP runtime

➔ clif-swing-gui
  - clif-server enhanced with GUI for test execution and test results analysis

➔ clif-selfbench
  - clif-server enhanced with labs on self-regulated load injection and "autonomous benchmarking" features

➔ clif-docker
  - clif-server container available from Docker Hub
ProActive CLIF toolbox

➔ **clif-proactive**
  - clif-server based on OW2 ProActive distributed execution middleware for enhanced network features
  - Java library and companion scripts for Windows, MacOSX, Linux

➔ **clif-web-ui**
  - web user interface based on ProActive CLIF
  - on-line scenario and test plan edition with wizards
  - on-line test execution and monitoring
Other tools and utilities

➔ CLIF plugin for Jenkins
  ▪ automated performance test runs
  ▪ automated performance reporting
  ▪ automated performance trends reporting
  ▪ alerting based on test results

➔ robot-clif
  ▪ integrates CLIF tests to a Robot Framework test suite
  ▪ test validation based on performance metrics

➔ Ansible
  ▪ role for automated remote installation of CLIF

➔ bash scripts utilities
  ▪ start/stop of local or remote CLIF servers
  ▪ results analysis and alerting
  ▪ test plans and scenarios generation
Time for demo!

Performance testing with CLIF web UI
All about CLIF

➔ Open source…
  • LGPL v2/v3 license
  • no freemium model
  • no paying license
  • no paying documentation
  • every bit of CLIF is free and free

➔ Contributors welcome!
  • CLIF web-UI (Java Spring Boot, Thyme Leaf)
  • Eclipse console (Eclipse upgrade)

➔ Any Question?
  • clif@ow2.org
  • bruno.dillenseger@orange.com

https://clif.ow2.io/
https://gitlab.ow2.org/clif