AUTOMATED GUI TESTING OF SALOME WITH SQUISH

SALOME USERS’ DAY 2019

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ASTEK : OVERVIEW

- 3200 employees
  in November 2018
  + 14% since 2017

- 182M€ sales
  in 2017

- 9 sectors
- 4 assets
- 16 offers

- 12 countries
  worldwide

- 182M€ sales
  in 2017

+ 14% since 2017

- 12 countries
  worldwide

- 7 global delivery centers
  including 3 Offshore

182M€ sales
in 2017

+ 14% since 2017

12 countries
worldwide

7 global delivery centers
including 3 Offshore
- We work with 500 companies all over the world.
- We work in many fields of industry and we are able to:
  - Help our clients to improve their products with top-of-the-art technologies
  - Grow with confidence regardless sectoral crisis
SQUISH : SALOME GUI TESTING

SALOME expertise

User Support ( ~ 6 years )
- SQUISH

Tools
- SAT
- MedCoupling
- ICoCo

Code Coupling
- CORPUS/SALOME
- APOLLO3, CATHARE
  + MED
SQUISH : SALOME GUI TESTING

Context

- Continuous Integration: daily tests
  - « Immediate » testing of recent development
  - Fast detection of anomalies
  - Maintain operational versions on various platforms
    → Improving code development
    → Quick patch releasing

- SALOME 9.2.0
  - Continuous Integration with Jenkins
  - Everyday: 8000 tests, 10 OS : CentOS, Ubuntu, Windows...
  - 200 GUI tests : automation impossible with usual scripting tools

User : 2 weeks !
SQUISH : SALOME GUI TESTING

QtTesting

=> No user documentation & no user support

Squish (2003)
SQUISH : SALOME GUI TESTING

Squish overview

- Why Squish?
  - Efficient for Qt objects parsing
  - Ability to access Qt objects properties and to take screenshots
  - Produces Python / Javascript / Perl scripts
  - Operating on many platforms: Windows, Linux, MacOS, Android...
  - SquishIDE: Graphical Interface
  - SquishServer+SquishRunner: Compatibility with scripts (shell, batch), crontabs, task scheduler and Jenkins

https://www.froglogic.com/fr/squish/
SQUISH : SALOME GUI TESTING

Operating with SALOME

- **Linux (CentOS7)**
  - Nothing to do
  - Ready in 2 MouseClicks
  - Tests developments for Salome 8.3.0, 8.5.0 & 9.2.0

- **Windows (W7 / W10)**
  - Windows : need to use a special SQUISH library (dllpreload.exe)
  - SALOME : need to modify the batch/python interface to take into account the dllpreload.exe library.
  - Tests available for 8.3.0
  - Currently working on 9.2.0
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SQUISH tests for SALOME

- SALOME Modules Testing
  
  Modules:
  - GEOM
  - SMESH
  - YACS
  - PARAVIS
  - MED (FIELDS)
  - SHAPER

  ± 150 specific tests on a particular behaviour

- Formations
  
  PARAVIS Formation
  30 exercises:
  - Structural Analysis
  - CFD
  - Neutronics
  - ...

  SHAPER Formation
  - Online Tutorial
  - 3 exercises

- Future: Help for User Modules?

  Module integration for code coupling with SALOME

  GUI testing and Integration testing with SQUISH
Examples

- Movie: SHAPER Tutorial automation
SQUISH : SALOME GUI TESTING
Continuous Integration with Jenkins

- Plugin from Froglogic
  - Intuitive HTML reports directly from Jenkins
  - Use of SALOME MESA
**SQUISH : SALOME GUI TESTING**

**Results**

- **BEFORE**
  - 2 weeks of GUI testing...
  - ... once in a while...
  - Infrequent test updates
  - New functions not covered
  - « Not-that-useful » tests

- **WITH SQUISH**
  - Every SALOME release :
    - test updating (screenshots !)
    - ± 2/3 weeks for each platforms
  - 200 tests, 3 hours everyday, on Linux & Windows
  - Reliability ++
  - Quality ++
Conclusion

- SQUISH: powerful software for GUI automated tests
- Cross-Platforms: Linux, Windows, MacOS
- Efficient Qt parsing and provides Python scripts
- Used with SALOME for GUI testing + formations checking
- 200 tests: manually 2 weeks... => 3 hours with SQUISH
- Naturally compatible with Jenkins (with MESA)
- Reactive support

Downside?
First price license for 2 users 2 OS => ... 7000€ ...
THANK YOU FOR YOUR ATTENTION