



		<h1>SIEMENS</h1> <p>Program and System Engineering PSE</p>
		<p>February 2004</p> <p>PSE Support Center Test, Armin Beer</p>

<p>Program and System Engineering PSE</p>		<p>SIEMENS</p>
<ul style="list-style-type: none"> ▪ Motivation ▪ Freeware test tools survey ▪ Demonstration 1 Cactus / JUnit ▪ Demonstration 2 OpenSTA ▪ Conclusion 	<h2>Overview</h2> <ul style="list-style-type: none"> ▪ Motivation ▪ Freeware test tools survey ▪ Demonstration 1: Testing of Servlets, JSPs and EJBs with Cactus/JUnit ▪ Demonstration 2: Web-load testing with OpenSTA ▪ Conclusion <p>February 2004</p> <p>PSE Support Center Test, Armin Beer</p> <p>2</p>	

▪ Motivation

▪ Freeware test tools
survey

▪ Demonstration 1
Cactus / JUnit

▪ Demonstration 2
OpenSTA

▪ Conclusion

Motivation

- Extent of use of testing tools still low
- Small projects cannot afford expensive tools
- The use of tools is a precondition for a mature test process



February 2004

PSE Support Center Test. Armin Beer

3

▪ Motivation

▪ Freeware test tools
survey

▪ Demonstration 1
Cactus / JUnit

▪ Demonstration 2
OpenSTA

▪ Conclusion

Freeware test tools survey

Platforms: Linux, MS Windows (NT, 2000, XP)

Tool category	Tools (examples with GNU license)		
	Tool name	Notes	
Non-GUI drivers and test suite managers (black-box testing)	QMTTest	Web, CLI (command line interface)	
	Software testing automation framework (STAF)	CLI, GUI	
Unit test tools (for test automation)	Tool name	Language	Notes
	JUnit	Java	CLI, GUI
	NUnit	C#	
	cppUnit	C/C++	



February 2004

PSE Support Center Test. Armin Beer

4

Freeware test tools survey

Platforms: Linux, MS Windows (NT, 2000, XP)

- Motivation
- Freeware test tools survey
- Demonstration 1
Cactus / JUnit
- Demonstration 2
OpenSTA
- Conclusion



Tool category	Tools	
	Tool name	Notes
GUI test drivers (with mechanisms for faking mouse and keyboard input, similar to WinRunner)	jemmy	GUI test library for Java Swing/AWT (http://jemmy.netbeans.org)
	marathon	Python library for testing Java Swing applications (http://marathonman.sf.net)

February 2004

PSE Support Center Test. Armin Beer

5

Freeware test tools survey

Platforms: Linux, MS Windows (NT, 2000, XP)

- Motivation
- Freeware test tools survey
- Demonstration 1
Cactus / JUnit
- Demonstration 2
OpenSTA
- Conclusion

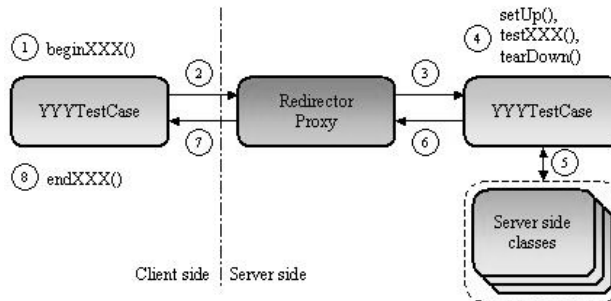


Tool category	Tools (examples with GNU License)	
	Tool name	Notes
Load testing	OpenSTA (Open System Testing Architecture)	Load-generation engine also used to collect performance data (not as convenient as with LoadRunner) http://opensta.org/
Scripting languages (for test harnesses, test-data generators, and test scripts)	Language	Notes
	tcl, Expect	Python is a newcomer designed for writing more understandable code (in comparison to Perl)
	Python, Perl	
	Javascript	

6

Demonstration 1: Testing of Servlets with Cactus/JUnit

Kent Beck: "eXtreme testing is the only way to survive in the eXtreme world" <http://www.geocities.com/xtremetesting/>



Automatic test runs before delivering components (Servlets, JSP, EJBs) to integration

February 2004

PSE Support Center Test. Armin Beer

7

Conclusion

- Motivation
- Freeware test tools survey
- Demonstration 1 Cactus / JUnit
- Demonstration 2 OpenSTA
- Conclusion

- Freeware test tools are useful for supporting testing activities
- Automated unit testing without a testing framework like JUnit, cppUNIT, NUnit or Cactus is not feasible
- Scripting languages are very flexible for implementing test frames for various purposes
- Commercial tools offer better usability and support for GUI test automation, test management and load testing

February 2004

PSE Support Center Test. Armin Beer

8