



Eclipse Test & Performance Tools Platform Project Overview for LinuxWorld



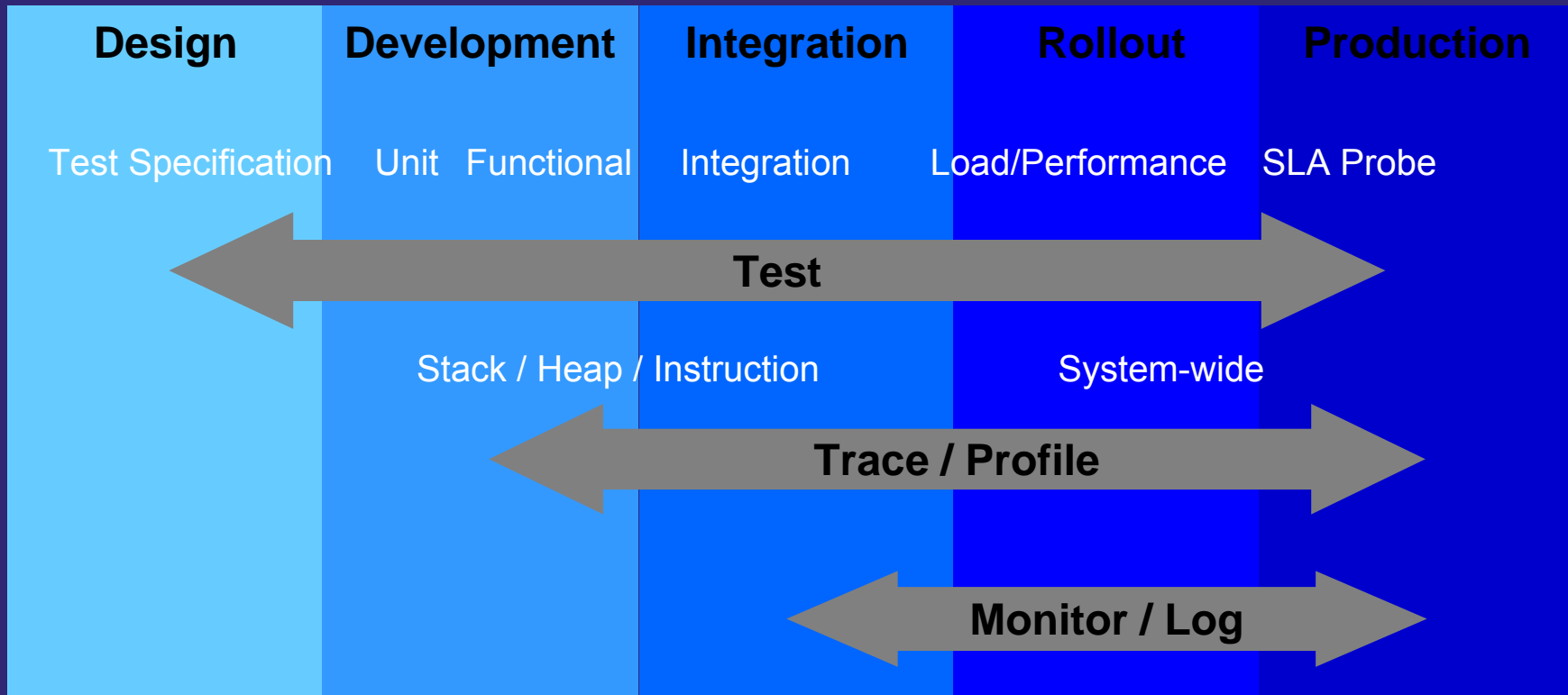
Mike Norman – CEO Scapa® Technologies
Eclipse Test Project Lead

Eclipse Test and Performance Project



- Open Source project for test and performance software
 - Covers testing, tracing/profiling, tuning, logging, monitoring, analysis, autonomics, administration, etc.
- Provides integration infrastructure and exemplary extensible tools which work out of the box
- Extends the Eclipse Open Source technologies
- Integrates with other Open Source software
- Supports a spectrum of standalone-through-distributed and embedded-through-enterprise systems
- Drives tool interoperability & leverages open standards
- Being adopted as a base by leading tools vendors
- Open contribution model – seeking additional participation

Hyades & the Lifecycle



- Consistent user interface
- Consistent Artefact management and re-use
- Fine-grained interoperability
- Enables new tool capabilities

Hyades Reference Tooling Examples



- Trace Java programs
 - Class, method, object, package, instance, heap stats
 - Execution flow
- Analyze and correlate various logs
 - 3.0 provides Apache and CBE
 - 3.1 will provide Linux syslogd & Microsoft® event
- Monitor system performance data from multiple sources
 - 3.0 provides Windows® Perfmon
 - 3.1 will provide Linux, various Unixes, and JMXes
- Create, manage and run tests
 - Junit, Simple http, Manual

Open Source Integration Points



- **Application Server: JBoss™**
 - Test execution via JUnit or http
 - Java trace, server log, JMX monitor (3.1)
- **Operating System: Linux**
 - System metrics, /proc and others (3.1)
 - Generic syslogd log adapter (3.1)
 - Test execution – JUnit, http, or manual
 - Java trace
 - User interface
- **Web server: Apache**
 - http test execution
 - Access and error log analysis
- **Database: MySQL®**
 - Logging and tracing (JDBC™) (3.1 planned)
- **Version Control: CVS**

Eclipse Contribution/Value-Add



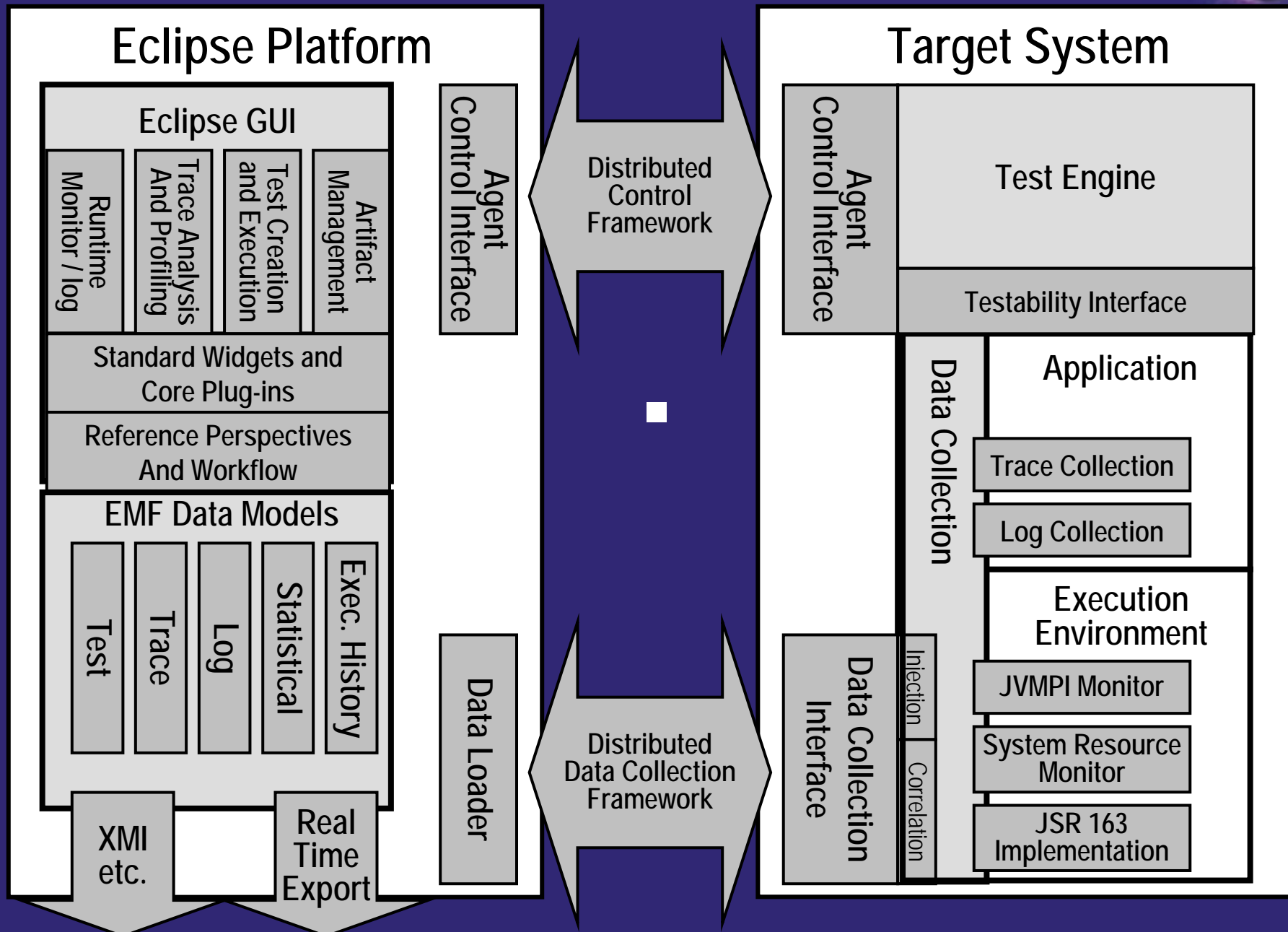
- EPL licensing model (non-infectious)
 - Vendor tooling extends/leverages framework
 - Vendor tooling can be paid-for
 - Contributors compete with each other in paid-for tools
- Hyades infrastructure is not monolithic
 - Phased adoption by existing vendors
 - Interoperability benefits accrue at various levels
- Roadmap set by community requirements and available contributions
 - Open process, publicly accountable
 - Commitments made to build, support, document & test
 - Integrated with overall Eclipse processes

Contributing Organizations



- Substantial, and growing, multi-vendor support
- The following organizations are leveraging and/or contributing to the Hyades Platform
 - IBM®
 - Intel®
 - Compuware®
 - Scapa® Technologies
 - SAP®
 - FOKUS
- Rising community interest continues toward contributing to and/or leveraging Hyades Platform
 - Recruiting of additional organizations underway
 - All interested parties welcome to engage

Hyades Platform Architecture Overview



Tentative Roadmap



Release	Date	Key Features
Hyades 3.0	6/30/04	Enhanced/extended data models, Java performance profiling, trace agents, and probe insertion kits, test execution samples, statistics performance data collection, Apache log collection agents, data model editors and viewers
Hyades 3.0.1	9/16/04	Bug fixes
<i>Hyades 3.1*</i>	<i>9/30/04</i>	<i>Additional data collectors, documentation, tutorials, bug fixes, future feature specifications</i>
<i>Hyades 3.2*</i>	<i>12/30/04</i>	<i>Extensive data collection and communication enhancements, trace model enhancements, 64-bit support, Java 1.5, RCP, additional data collectors</i>
<i>Hyades 3.3*</i>	<i>3/30/05</i>	<i>JUnit derivatives support, test management enhancements, static code analysis, cross-model associations, additional data collectors, reliable data transport, C++/.Net trace model support</i>
<i>Hyades 4.0*</i>	<i>6/30/05</i>	<i>U2TP/UML2 adoption, additional data collectors, JVMTI, improved sample tools, UI interface, dynamic deployment/config, team support, generic test execution</i>

* Final features and dates for releases 3.1+ pending resource confirmations and planning finalization.

Hyades 3.0 Release – June 2004



■ Description

- An integration framework and extensible core tools for testing, tracing, profiling, logging, and monitoring application systems
- Support for the entire project lifecycle from development and deployment through production

■ Key Capabilities Delivered

- Eclipse Modeling Framework based implementations of data models for trace, log, statistical data, test execution history and tests (including early implementation of OMG U2TP Test Profile standard)
- Extensive Java performance profiling support for local and distributed applications
- Sample test execution engines for JUnit, http URL, and manual testing environments
- Statistical performance data collection agents for Microsoft environments
- Apache log collection agents
- Java trace agents and Java probe insertion kits
- An integrated extensible framework of generic interoperable data model editors and viewers

Log View



The screenshot shows the Eclipse IDE interface with the 'Log View' window open. The window title is 'Log View - Apache HTTP Server access log /var/log/httpd/access_log'. The main area displays a list of log records, with the selected record expanded to show its properties.

Log View - Apache HTTP Server access log /var/log/httpd/access_log
Log Records (Page 1 of...hed 65 of 65 records)

Property	Value
analyzed	false
creationTime	2004-08-02 00:30:25.000000+01:00
elapsedTime	0
extensionName	CBCommonBaseEvent
globalInstanceId	D426ED8897EC643DEA302E40E41211D8
localInstanceId	
msg	"GET /manual/faq/algn_one.html HTTP/1.1"
priority	0
repeatCount	0
sequenceNumber	0
severity	40

Details msg Analysis Result
"GET /manual/faq/algn_one.html HTTP/1.1" 403 298

Log Correlation



Profiling and Logging - Eclipse Platform

File Edit Navigate Search Project Run Window Help

Profiling ... Navigator Log Naviga... Log View UML2 Sequence Diagram

Sequence Diagram: Log interactions <Default Time>

The diagram shows two lifelines, both labeled 'Apache HTTP Se...'. The left lifeline is yellow, and the right is red. Messages are shown as blue arrows between them. There are several self-calls on the left lifeline, represented by blue arrows looping back to itself. The diagram illustrates the temporal relationship between log events from different sources.

Logs

- demo : Apache HTTP Server access log
- demo : Apache HTTP Server error log /va

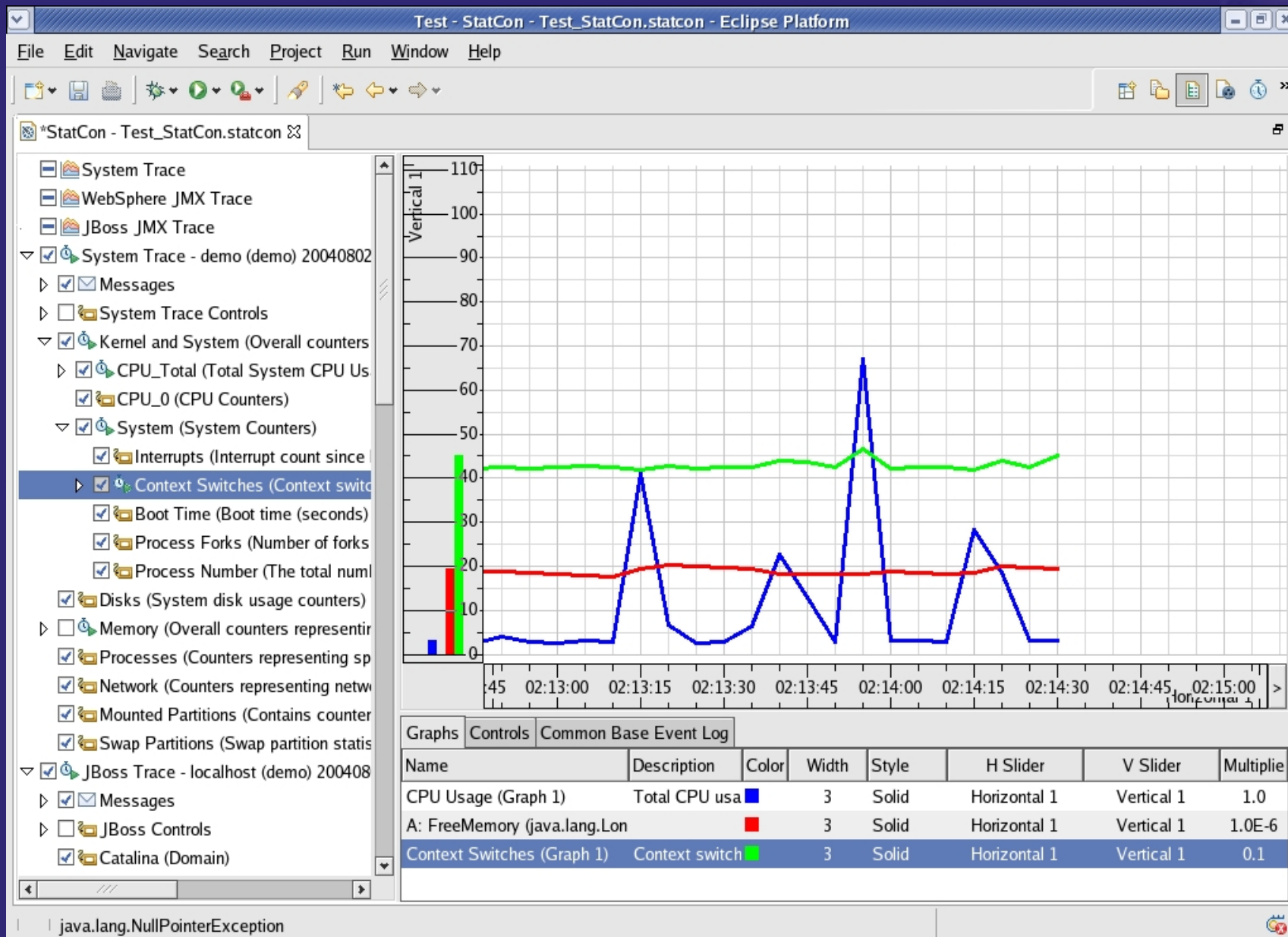
Symptom Databases

Correlations

- Time Log Correlation
 - demo : Apache HTTP Server access lc
 - demo : Apache HTTP Server error log /

Property	Value
[2004-08-02 00:5 severity = 50	

Statistical Performance Data



Test Editor



The screenshot displays the Eclipse Test Editor interface for a Hyades URL Test Suite. The main window is titled "Test - JBoss_TestSuite - Eclipse Platform". The menu bar includes File, Edit, Navigate, Search, Project, Run, Window, and Help. The toolbar contains various icons for file operations and testing.

The Test Navigator on the left shows a tree view with the following structure:

- Reports
 - JBoss_TestSuite_109139
 - JBoss_TestSuite
- Test Artifacts
- Test Suite
 - JBoss_TestSuite
- HTTP Test Java
 - bin
 - src
 - LogAdapter
 - org.eclipse.hyades.models.co

The Properties view at the bottom left shows the following information:

Property	Value
Info	
description	
name	1 GET demo - in

The main editor area displays the "Hyades URL Test Suite" configuration. The "Behavior" tab is active, showing a list of test cases:

- Loop 1
 - Page demo/customer/searchSubscription.js
 - 1 GET demo - invocation
 - Page demo/customer/editCustomer.jsp?cid:
 - 3 GET demo - invocation
 - 4 GET demo - invocation
 - Page demo/customer/searchCustomer.jsp
 - 6 GET demo - invocation
 - Page demo/customer/editCustomer.jsp?cid:

The "Common Properties" section includes:

- Name: 1 GET demo - invocation
- Description: (empty text area)

The "Detailed Properties" section includes:

- Synchronous
- 1 GET demo (with Edit... button)
- Type: Http Request
- File: /HTTP Test/Test Suite/JBoss_TestSuite.test

The bottom of the interface shows the "Tasks" view with the following structure:

- :pserver:anonymous@dev.demo.org:/home/tools
 - HEAD
 - Branches
 - Versions
 - Dates

Trace View



Profiling and Logging - Eclipse Platform

File Edit Navigate Search Project Run Window Help

Profiling ... Navigator Log Navigator

Package Statistics Class Statistics Method Statistics Coverage Statistics Object References

Coverage Statistics - unknown at demo [PID:4148]

Filter: Case-sensitive

Item names	Class Names	Package	<Calls	Methods miss	Methods hit	%
--Summary--			46599	0	517	
jj_scan_token(int) boolean	Parser	bsh	12040		hit	
hash(java.lang.Object) int	ConcurrentReader	EDU.oswego	1753		hit	
get(java.lang.Object) java.lang	ConcurrentReader	EDU.oswego	1412		hit	
readChar() char	JavaCharStream	bsh	1235		hit	
ReadByte() char	JavaCharStream	bsh	1235		hit	
UpdateLineColumn(char) void	JavaCharStream	bsh	1231		hit	
jjCheckNAdd(int) void	ParserTokenMan	bsh	1142		hit	
getTableForReading() EDU.os	ConcurrentReader	EDU.oswego	838		hit	
holds() long	ReentrantLock	EDU.oswego	746		hit	
ConcurrentReaderHashMap\$E	ConcurrentReader	EDU.oswego	607		hit	
eq(java.lang.Object, java.lang	ConcurrentReader	EDU.oswego	574		hit	
attempt(long) boolean	ReentrantLock	EDU.oswego	420		hit	
release() void	ReentrantLock	EDU.oswego	420		hit	
jj_3R_29() boolean	Parser	bsh	374		hit	
jj_3R_32() boolean	Parser	bsh	355		hit	
jj_3R_52() boolean	Parser	bsh	355		hit	
jj_3R_90() boolean	Parser	bsh	355		hit	
jj_3R_120() boolean	Parser	bsh	355		hit	

Eclipse Test and Performance Project



- Eclipse Test and Performance
 - Key facilitator for Open Source enterprise readiness
 - Significant initiative – significant backing
 - Hyades Infrastructure – Driving tools integration, driving standards, driving the state of the art
- Hyades 3.0 delivered June 2004
 - Provides significant capability today
 - Download it from Eclipse.org, go test-drive
- More coming – particularly for the Open Source community
 - And we welcome your feedback and contribution...