

SOA Performance Testing

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Agenda

- What tools are available
- How do you use them?
- Which should you use?
- How do you crunch the performance test data into meaningful statistics?
- How do you manage that data over time to reveal trends or expose changes that impact performance?
- How do you test a web service to determine the type of SLA you should commit to?



OPTIMIZING YOUR
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Available Tools

Available Tools: Types

- **Web Performance Services**
 - **WWW**
- **Black Box**
 - **Request level**
- **Deep Diagnostics**
 - **Infrastructure**
- **Hybrids**

Available Tools

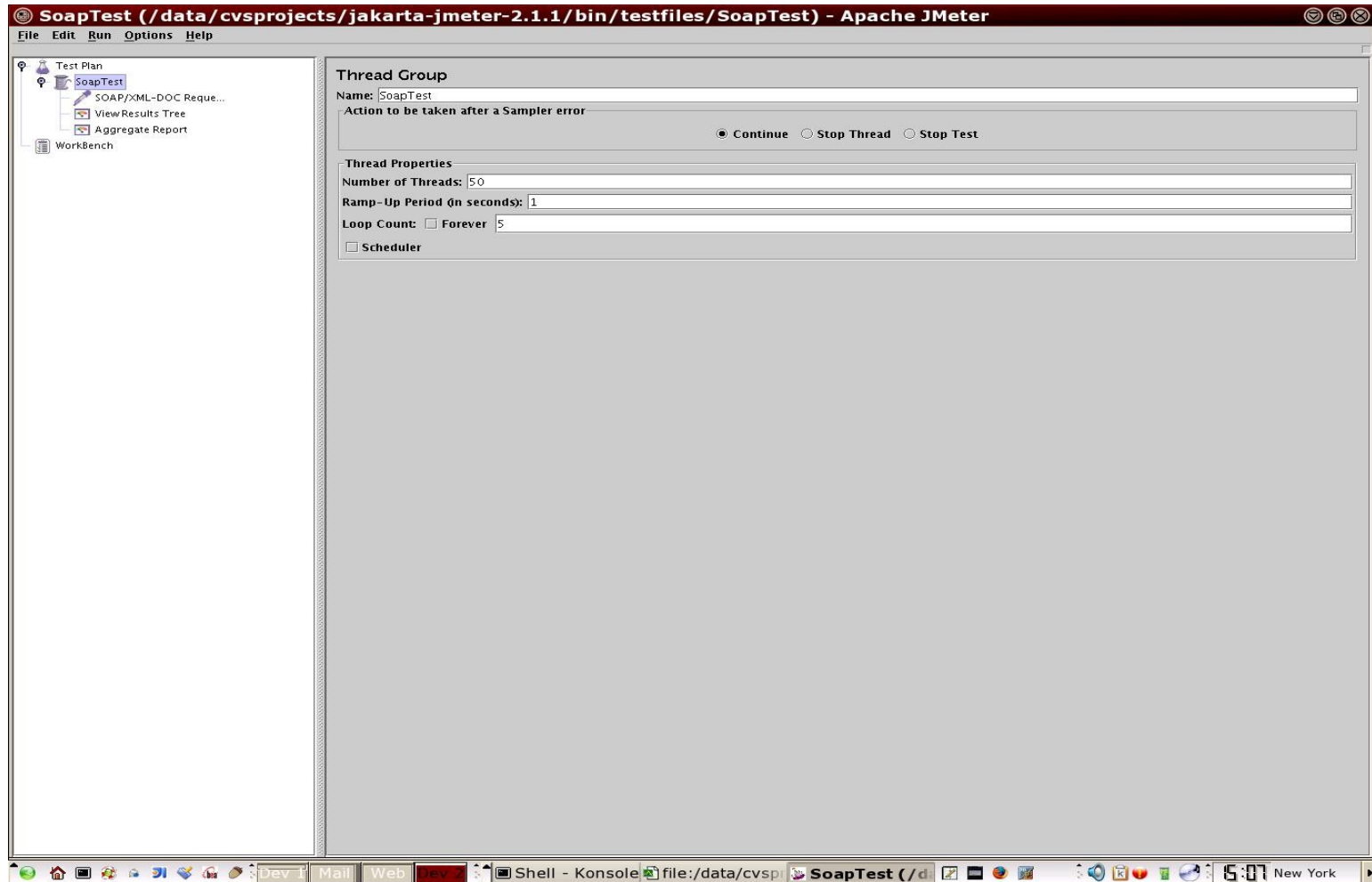
- **Mercury LoadRunner**
- **Jakarta JMeter**
- **PushToTest TestMaker**
- **Tigris MaxQ**
- **The Grinder**
- **OpenSTA**

Available Tools

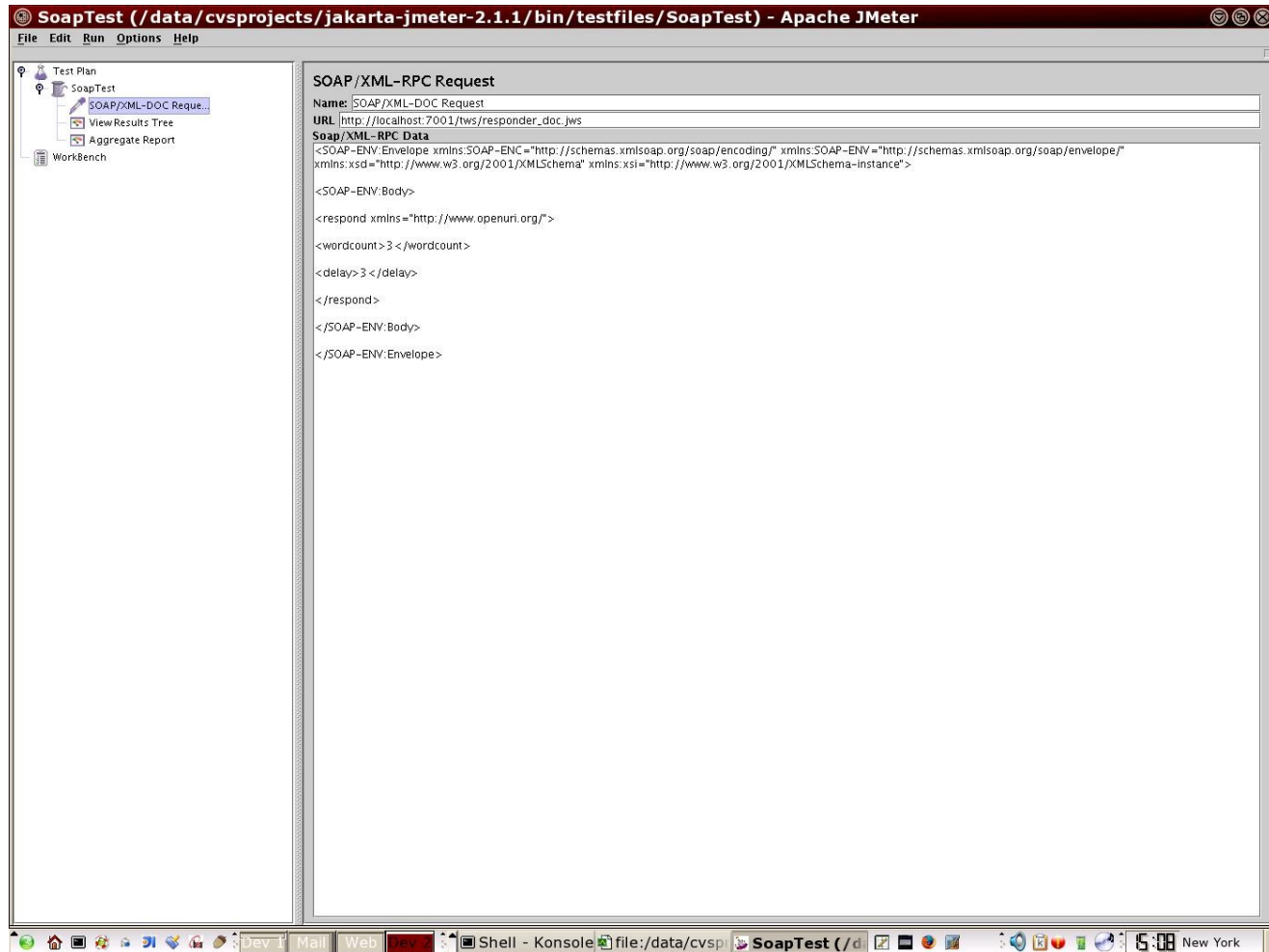
	LoadRunner	JMeter	TestMaker
Platform	Windows(*nix)	Java	Java
Protocols:			
HTTP	✓	✓	✓
HTTPS	✓	✓	✓
SOAP	✓	✓	✓
FTP	✓	✓	✓
LDAP	✓	✓	✓
SMTP, POP3	✓	No	✓
Messaging	✓ ✓	JMS	JMS
Database	✓ ✓	JDBC	JDBC
Multiple Clients	✓	✓	✓*
Recording	✓	✓(SSL: Bad Boy)	✓(SSL: No)
Scripting	Proprietary	XML, GUI, Java	Jython
Cost	\$\$,\$\$\$\$.00	OS	OS (*Proprietary Extensions)

How do you use them?

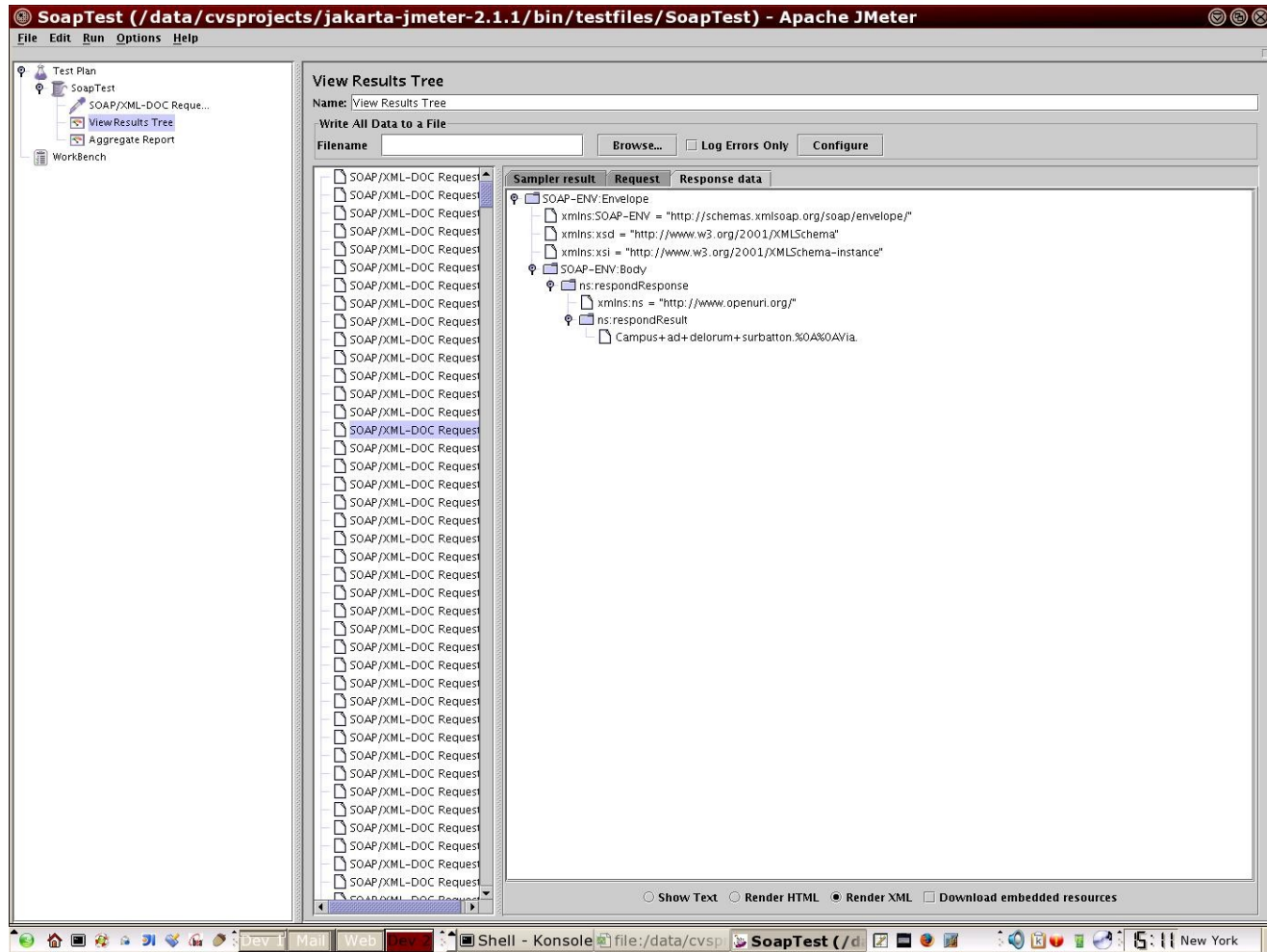
How: Jakarta JMeter The Thread Group



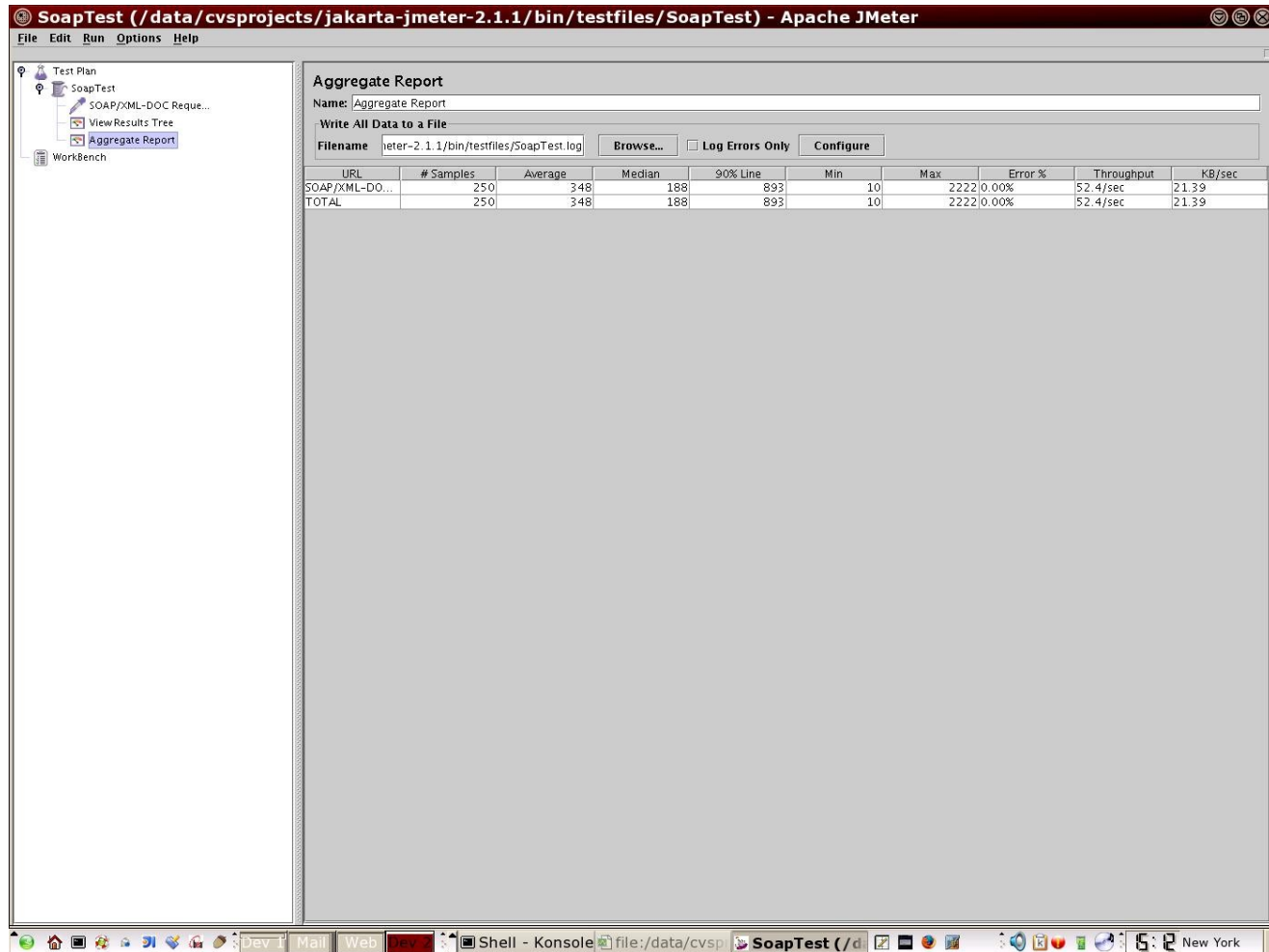
How: Jakarta JMeter A SOAP Request Sampler



How: Jakarta JMeter View Results Tree Listener



How: Jakarta JMeter Aggregate Report Listener



The screenshot shows the Apache JMeter interface with the 'Aggregate Report' listener selected. The window title is 'SoapTest (/data/cvsprojects/jakarta-jmeter-2.1.1/bin/testfiles/SoapTest) - Apache JMeter'. The left sidebar shows a tree view with 'Test Plan', 'SoapTest', 'SOAP/XML-DOC Reque...', 'View Results Tree', 'Aggregate Report', and 'WorkBench'. The main area displays the 'Aggregate Report' configuration and a table of results.

Aggregate Report

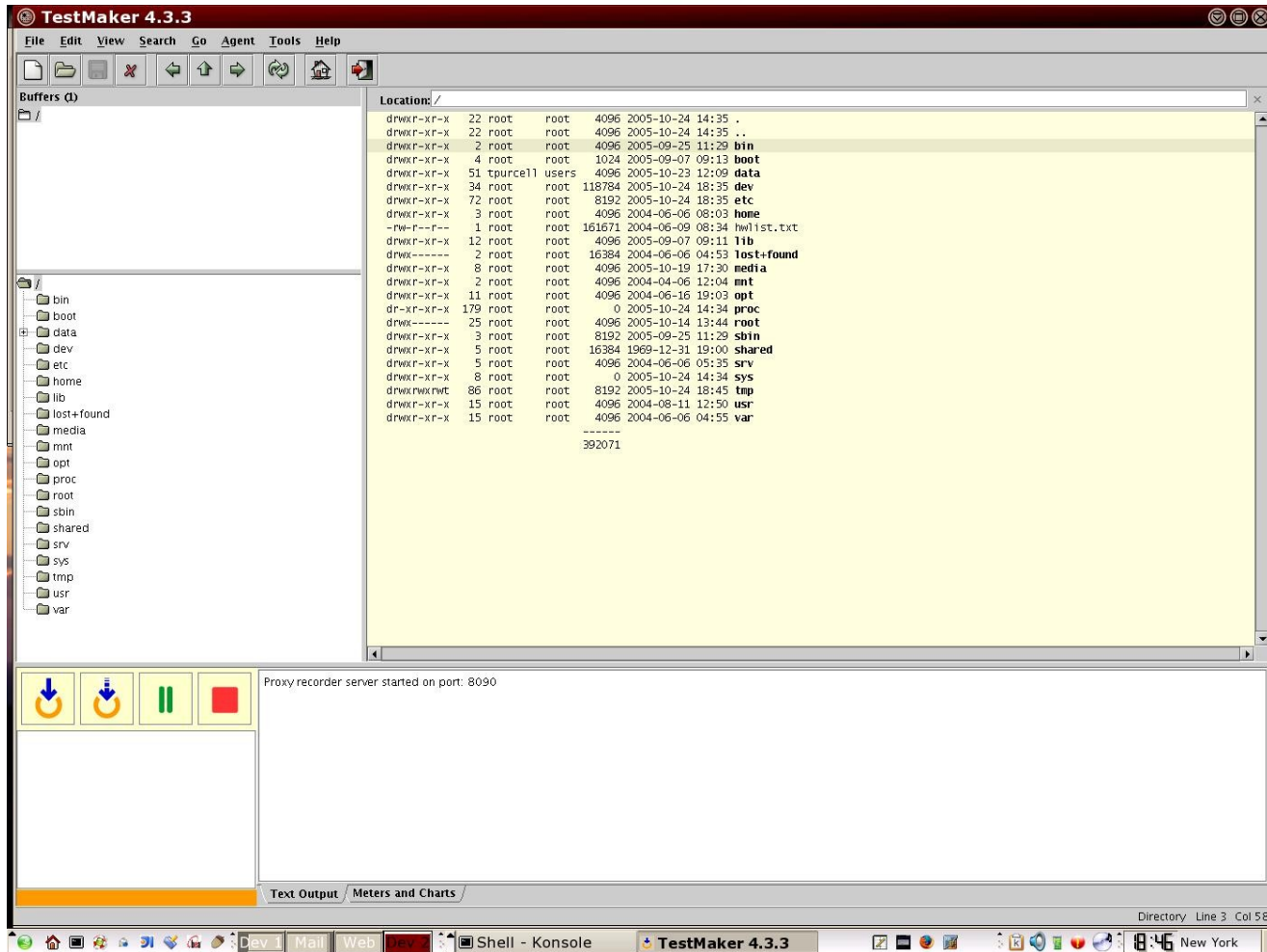
Name: Aggregate Report

Write All Data to a File

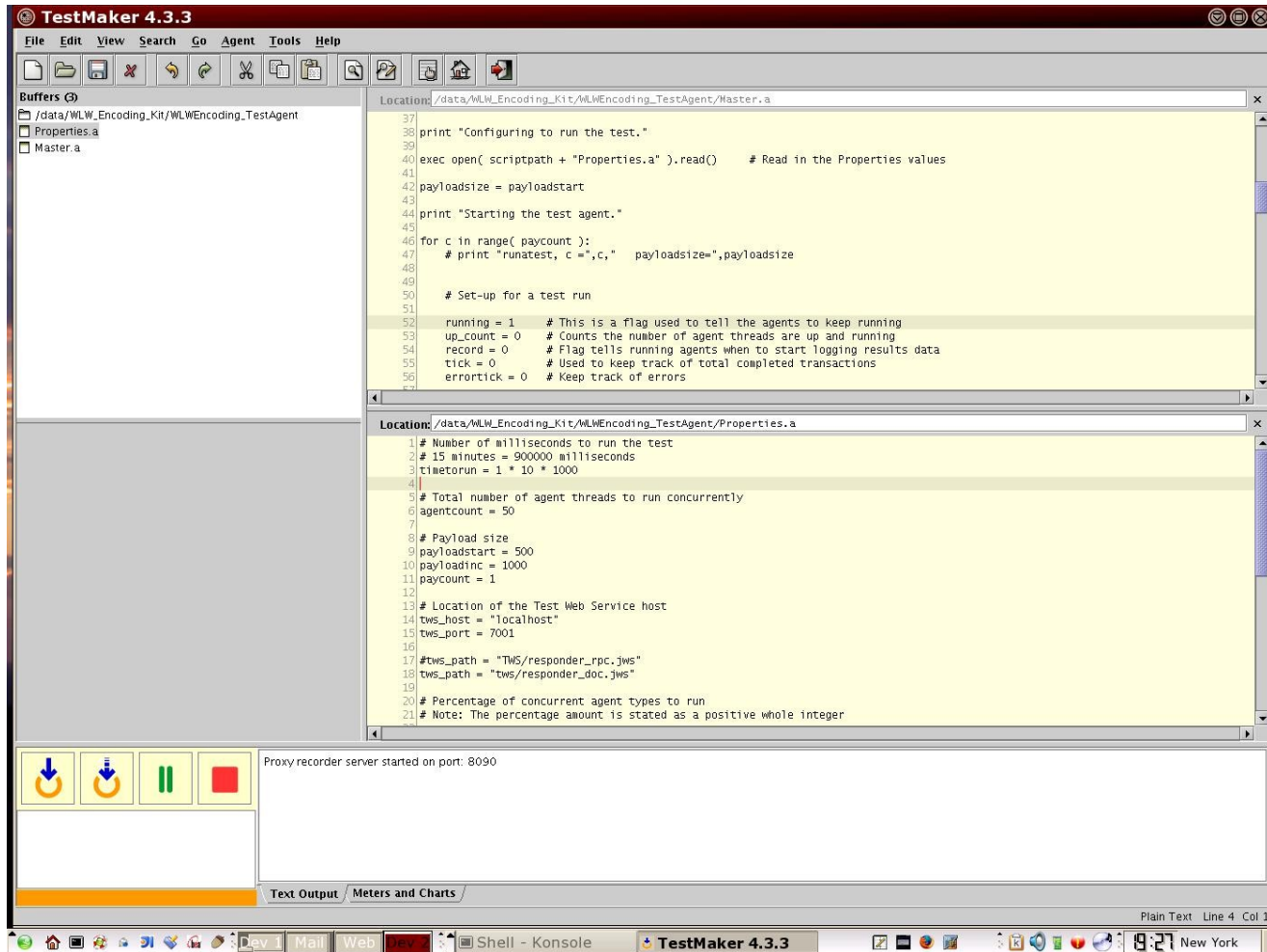
Filename: jeter-2.1.1/bin/testfiles/SoapTest.log ☐ Log Errors Only

URL	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
SOAP/XML-DO...	250	348	188	893	10	2222	0.00%	52.4/sec	21.39
TOTAL	250	348	188	893	10	2222	0.00%	52.4/sec	21.39

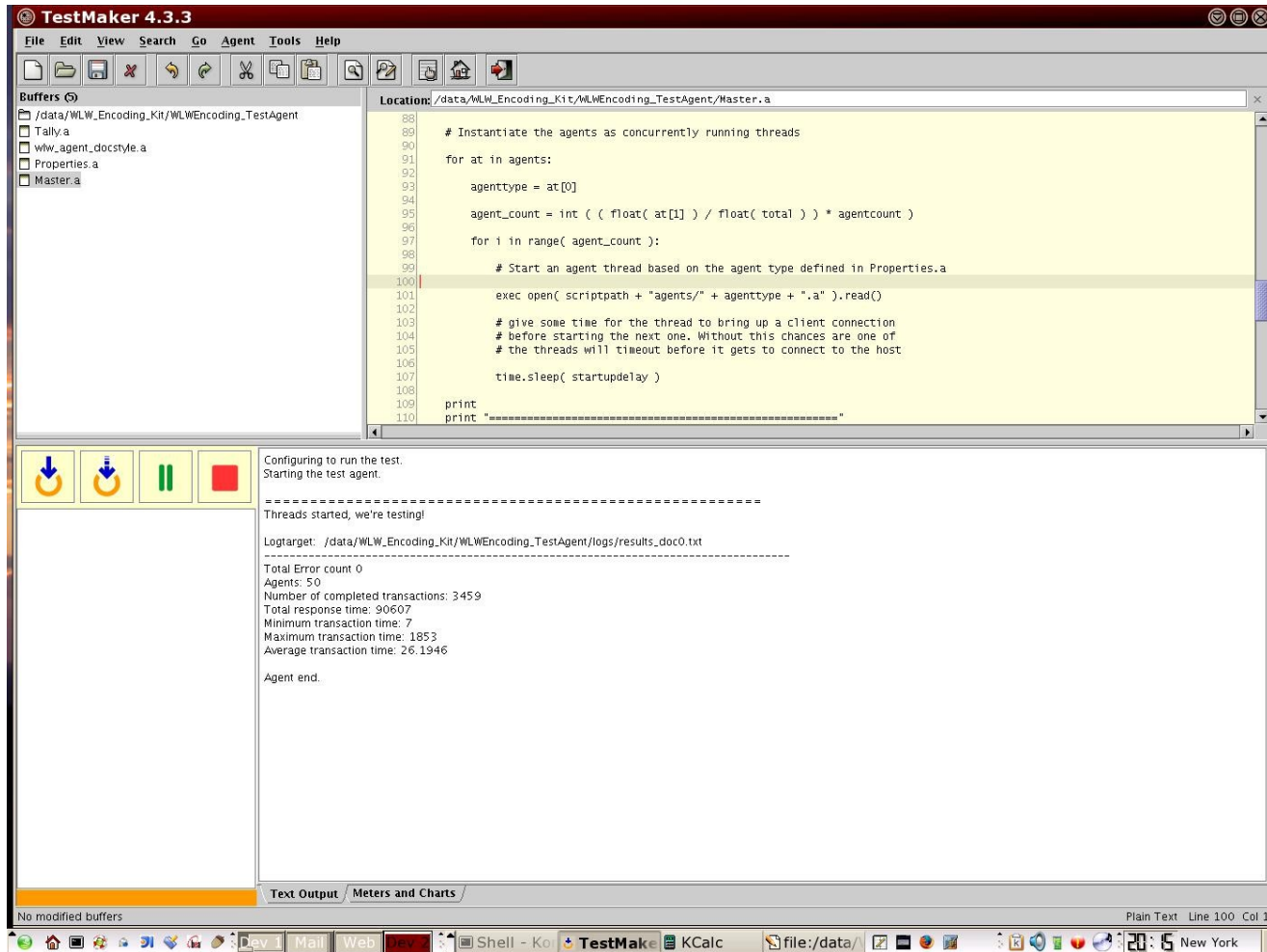
How: PushToTest TestMaker The GUI



How: PushToTest TestMaker The Code



How: PushToTest TestMaker The Results



Which Tool

- **Mercury LoadRunner**
 - Money
- **Jakarta JMeter**
 - Ease
- **PushToTest TestMaker**
 - Power

The Data: What's it all mean?

The Data

- **Generate it**
- **Store it**
- **Analyze it**

The Data: Generate It

Jakarta JMeter

1130093561126,18,SOAP/XML-DOC Request,200,OK,SoapTest 1-2
1130093561165,57,SOAP/XML-DOC Request,200,OK,SoapTest 1-4
1130093561182,28,SOAP/XML-DOC Request,200,OK,SoapTest 1-2
1130093561222,12,SOAP/XML-DOC Request,200,OK,SoapTest 1-4

PushToTest TestMaker

3,ok,1130011671436,doclit,15
3,ok,1130011671457,doclit,33
3,ok,1130011671551,doclit,25
3,ok,1130011671575,doclit,34

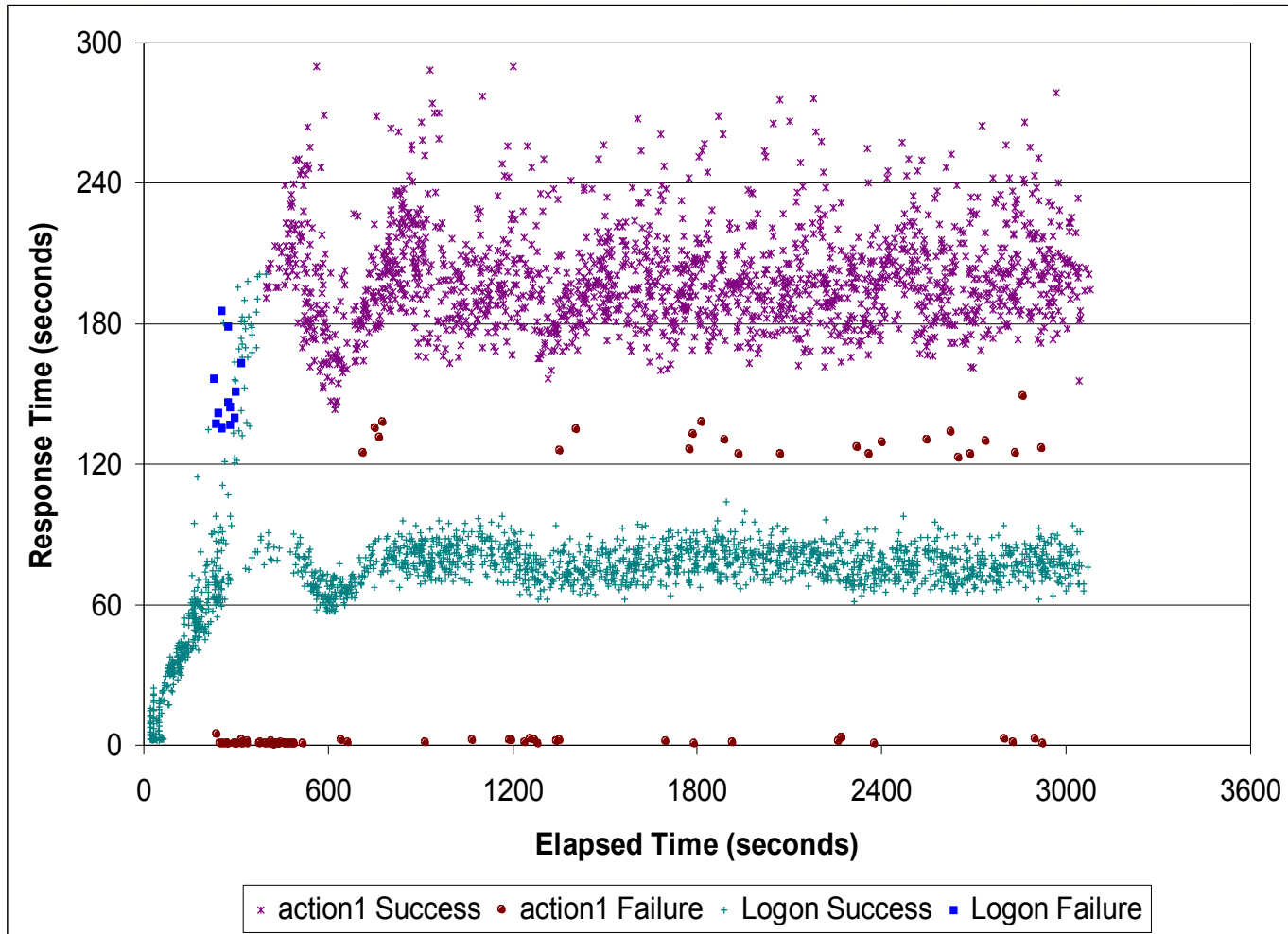
The Data: Store It

TEST_DESCRIPTION		
<u>TEST_DESCRIPTION_ID</u>	INT	<pk>
NAME	VARCHAR(20)	
CLIENT_DESCRIPTION	VARCHAR(250)	
THREADS	INT	
LOOPS	INT	
RAMP_UP	NUMBER	
TIME	DATE	

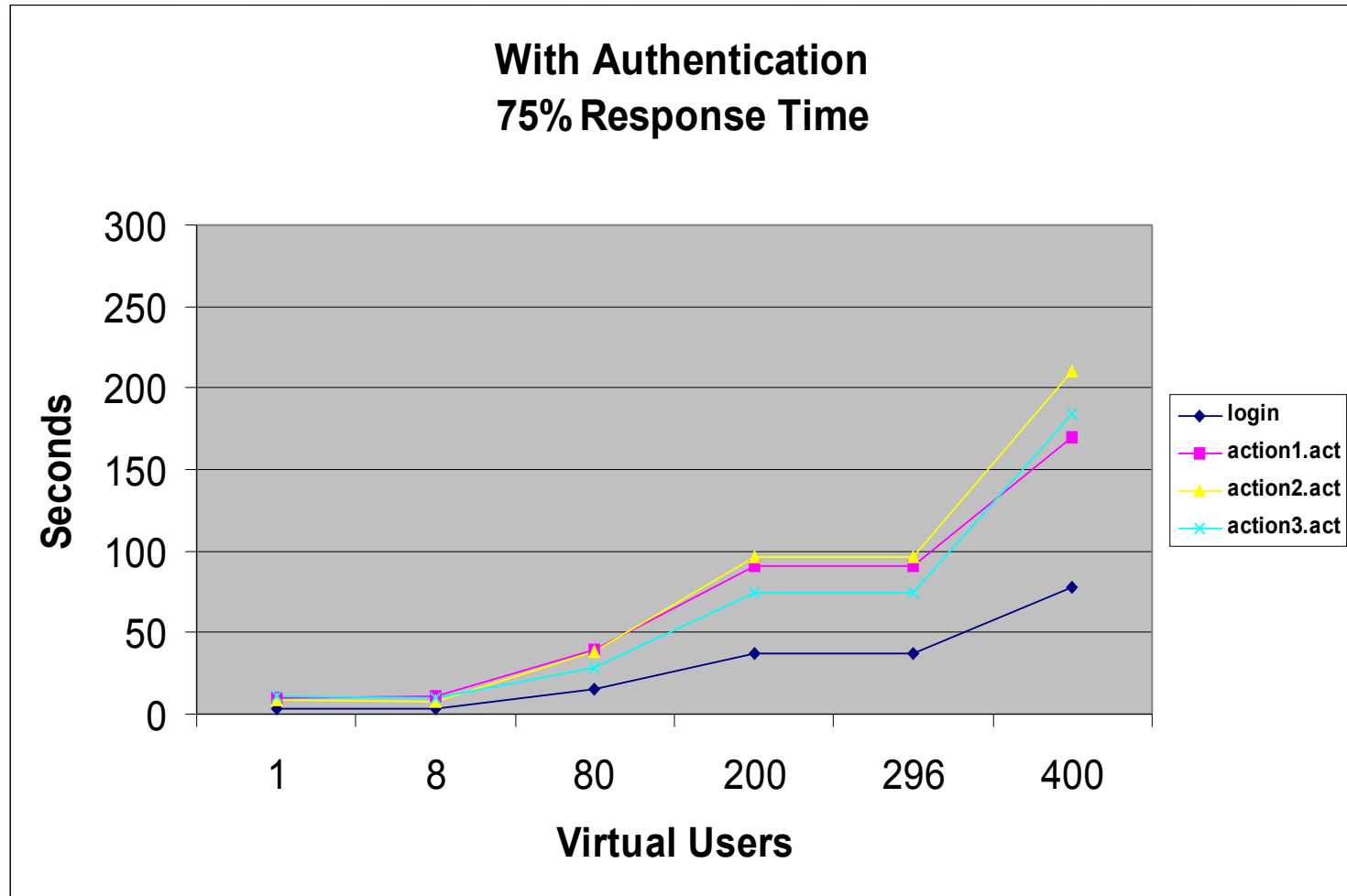
FK_TEST_DAT_REFERENCE_TEST_DES

TEST_DATA		
<u>TEST_DATA_ID</u>	INT	<pk>
TEST_DESCRIPTION_ID	INT	<fk>
ACTION	VARCHAR(20)	
RESPONSE_CODE	VARCHAR(8)	
TIME	DATE	
RESPONSE_TIME	NUMBER	
THREAD_DESCRIPTOR	VARCHAR(10)	

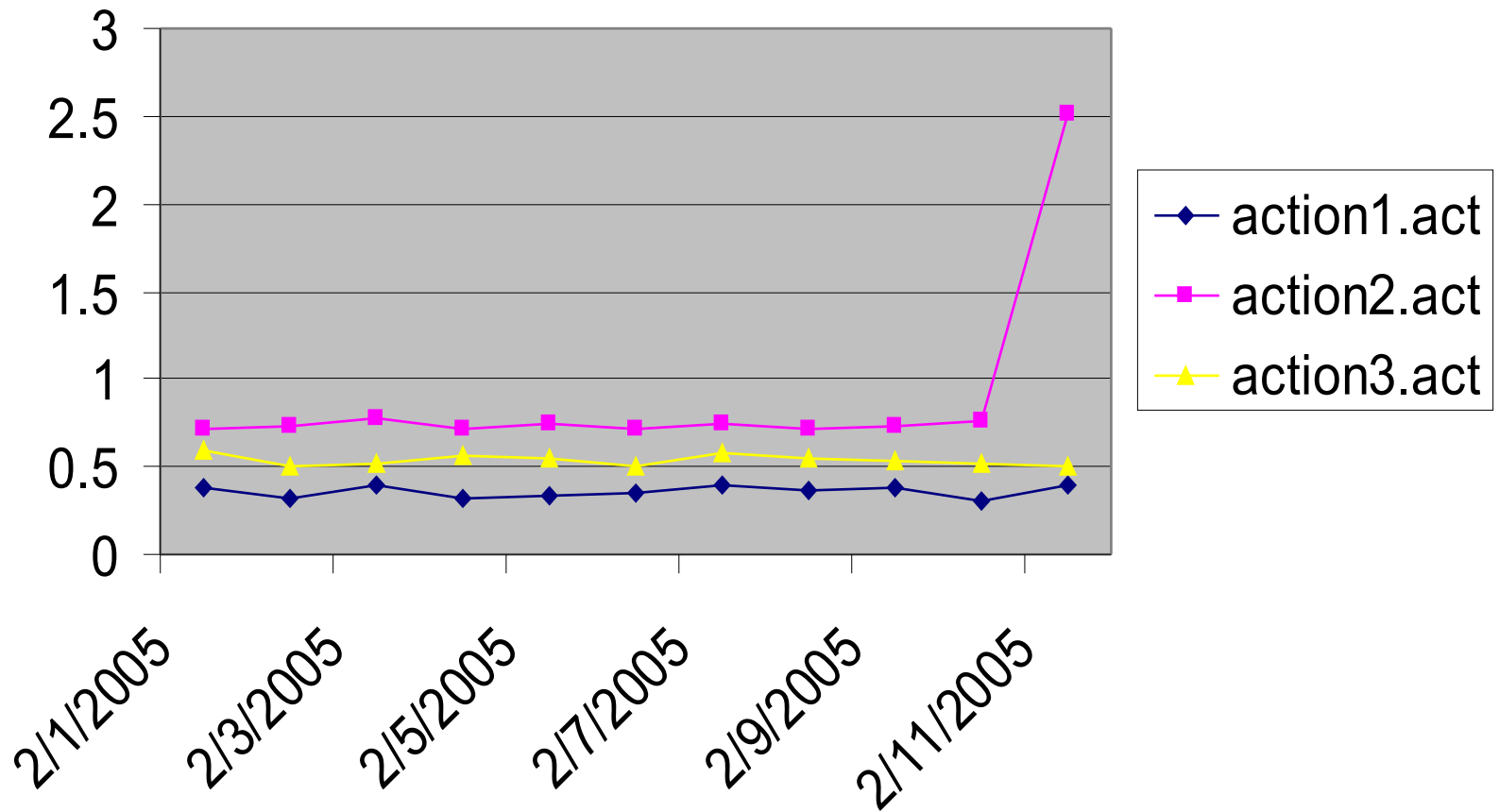
The Data: Analyze It Behavior Over Time



The Data: Analyze It Break Point



The Data: Analyze It What Happened?



SLA Commitment

SLA Commitment

- **Continuous Test**
 - **Development**
 - **Standard Part of Development Cycle**
 - **Standard part of the nightly build**
 - **Production**
 - **Post deploy at minimum**
 - **DRA**
 - **Alternative to production**



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Links

Links

- **Chariot Solutions, LLC**
 - www.chariotsolutions.com
- **Mercury LoadRunner**
 - www.mercury.com/us/products/performance-center/loadrunner/
- **Jakarta JMeter**
 - jakarta.apache.org/jmeter/index.html
- **PushToTest TestMaker**
 - www.pushtotest.com
- **Tigris MaxQ**
 - maxq.tigris.org
- **The Grinder**
 - grinder.sourceforge.net
- **OpenSTA**
 - www.opensta.org
- **Bad Boy**
 - www.badboy.com.au
- **Comparison of Web Performance Services**
 - www.ibg.networkcomputing.com/chart.jhtml?guide_id=3604