

Jmeter – Testing the IMWA (J2EE/8080) & IM Web Servers (SMWA/443) for CA Identity Manager Use-Cases

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References:

<http://jmeter.apache.org/>

https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf

Content

- Background
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- How to leverage Jmeter's ability to auto-build 95% of a test plan for HTTP(S)
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 - Useful if CA APM (Introscope) is not available
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Background

- Challenge:
 - Low cost, available performance testing tools for the IM solution are usually limited to the low end spectrum of functionality
 - CLI (Command Line)
 - Bulk Loader Client (blc) for top tier (Web Application) testing of create, modify, delete user objects only.
 - etautil / ldapsearch (imps version) for the mid-tier (Provisioning Server) testing of create, modify, reset passwords, delete, to the GU and endpoint accounts.
 - High cost performance testing tools for projects typically required customers to own or purchase HP Loadrunner or similar vendor tools.
 - Usually owned and executed by specialized business units at customer site
 - Required future scheduling to occur. Limited ad-hoc testing
 - No proactive testing available or limited.
 - Proposal: Apache Jmeter is an amazing testing suite that provide non-invasive benchmark & performance testing
 - Benefits:
 - Open Source License
 - No install required; just extract and run from workstation/desktop [zip or tar]
 - Low learning curve [less than 2 hours to learn & use]
 - No agents required to be deployed for majority of test plans
 - May use the included "PerfMon" Server Agent to view disk I/O CPU, Network utilization
 - Easy to share test plans.
 - May copy-n-paste sections. Note: Passwords are stored in clear-text
 - Use of a built-in HTTP proxy recorder to auto-build test plans. This can NOT be emphasized enough. Jmeter will auto-build 95% of your test plan for HTTP(S).

This deck focus on the use of Jmeter and HTTP(S) protocol used by the upper-tier component of IM.

- Upper-Tier: The Web Server (Apache + SSO Agent) & Web Application Server (JBOSS + IM Application)
- The SSO Auth Bind, IM Create User, IM Reset User Password, IM Delete User operations have been defined in the example labs. These operations were captured using the built-in HTTP proxy recorder; and adjusted for use with SSO (Siteminder) integration with cookies & IM Cross Site Request Forgery (OWASP_CSRFTOKEN) session token.

Acknowledgements

- **General Education.** Jump start knowledge with Apache Jmeter and use of HTTP protocol & test plans
 - [Performance Testing with Jmeter 2.9](#) by Bayo Erinle , Packt Publishing Open Source, 2013
 - Recommended: This is a quick read with excellent labs to follow along with. Includes PerfMon
 - <https://www.packtpub.com/application-development/performance-testing-jmeter-29> [\$5.00]
- **Excellent examples how to setup the Jmeter built-in HTTP(S) Recorder to auto-build a test plan:**
 - https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf [Peter Lin]
 - <https://www.digialocean.com/community/tutorials/how-to-use-jmeter-to-record-test-scenarios>
 - Recommend using the default exclusions to avoid non-useful “bloat” returned from standard HTTP GET operations.
 - These returned objects are NOT needed for a test plan; and can be deleted. To view: Leave off default exclusions and view the many objects returned to understand.
 - Suggest using FireFox as go-to browser to switch to proxy use for HTTP/HTTPS; however may use any browser from desktop to communicate to the Jmeter HTTP Proxy
- **CA Support Site Tech Note #TEC478754: Using Jmeter to test Siteminder performance, 11/28/2012**
 - <http://www.ca.com/us/support/ca-support-online/product-content/knowledgebase-articles/tec478754.aspx>
 - Excellent notes on using the HTTP(S) operations; use of select Jmeter functions to manage Siteminder Cookies
 - Includes a note that SM Authentication schema must NOT be BASIC, but HTML FORM to allow use of Jmeter with Siteminder Protected Apps.
 - Use SM UI (WAMUI or FSSUI) to update the default IM IMS Realm to use HTML FORM. May need to define the HTML FORM first.
 - Note: Jmeter Cookie Handler must use Cookie Policy: rfc2109 & Implementation: HC3CookieHandler [[IM:SM](#) uses IPv4 & FQDN]
- **Management of the Identity Manager Built-In Cross Site Request Forgery Token Process [OWASP_CSRFTOKEN]**
 - <http://hxtpoe.github.io/performanceTests/testing-login-using-jmeter.html> [CSS/Jquery example]
 - <https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites> [CSS/Jquery, RegEx, & Xpath Examples] by Dmitri Tikhanski
- **JMeter How to Run Performance tests - CA IG 1.1 by Ricky Gloden, CA Sr. Architect**
 - Excellent examples of HTTP Labs and use the Jmeter PerfMon tool to monitor disk I/O, CPU & Network Utilization
 - Important Note: Update the default HTTPS protocol from SSLv3 to TLSv1 in the Jmeter properties files to use HTTPS protocol.

High Level Example of Jmeter in Use

- The following two (2) slides display using IM VST & Jmeter, the ability of Jmeter to emulate an administrative user to:
 - Read a CSV files of 100 user objects
 - Userid, first_name, last_name, full_name, password, new password
 - Bind (authenticate) to the IM User Console protected via SSO (SiteMinder)
 - Create a new User [for all 100 user objects]
 - Find and then Reset the password for that new user [for all 100 user objects]
 - Find and delete that User [for all 100 user objects]
- Perform the above steps for the same 100 accounts, ten times.
 - With a ramp-up time of 100 accounts (threads) over one (1) minute.
 - Note: If the ramp time is “shorten”, then more memory must be allocated to the JVM of the application to hold the data, to avoid overwhelming a single server. Or ensure that Load Balancing is enabled that the data may switch between the peer servers.

Example of 100 Accounts Created, Updated, Deleted via Jmeter in IM

File Edit View

CA Identity Manager: Vie... Options

https://sandbox01.lab.dom/iam/im/cam/ui7/index.jsp?facesViewId=/app/page/special/submitted_tasks.jsp



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Delete User task, User bugsbunny040	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny049	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny024	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny028	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny053	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny056	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny033	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny063	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny071	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny035	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny057	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny046	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny050	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny051	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny058	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny060	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny021	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny034	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny039	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny098	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny013	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny019	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny029	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny032	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny043	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Reset User Password task, User bugsbunny054	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny026	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM
Delete User task, User bugsbunny048	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM

1-50 of 1,000 >>

Example of 100 Accounts Created, Updated, Deleted via Jmeter x10 times

Test Plan - IM

- CSV Data Set Config for IM Login
- Testing Loop for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - Gaussian Random Timer for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 01a - SM AUTH VIA LOGIN.FCC & PARAMETERS
 - 01b - IM LANDING PAGE
 - 02 - LAUNCH CREATE USER TASK
 - 02a-Launch Create User Task
 - 02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN
 - 02a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN
 - 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_c
 - 02b - Select NEW User to be Created
 - 02c - 1st Page Loaded
 - 02d - Search on OU Placement
 - 02e - Submit OU Placement for Default OU
 - 03 - CREATE USER
 - 03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN
 - 03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_c
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_c
 - 05-FIND USER
 - 05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
 - 05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 07a - Launch Delete User Task
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07c - Selected User to Delete
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
- 05-LAUNCH VIEW SUBMITTED TASKS
- 06-SUBMITTED VST
- 07-LOG OUT OF IM

- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph
- WorkBench
- HTTP(S) Test Script Recorder for IM
- View Results Tree

Aggregate Report

Name:

Comments:

Write results to file / Read from file

Filename: Log/Display Only: Errors Successes

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	KB/sec
01a - SM AUTH VIA LOGIN.FCC & PARAMETERS	1000	659	529	1340	1646	2154	44	2818	0.00%	2.1/sec	202.3
01b - IM LANDING PAGE	1000	158	128	313	396	618	17	1186	0.00%	2.1/sec	195.4
01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM	1000	817	698	1502	1805	2347	117	3207	0.00%	2.1/sec	397.2
02a-Launch Create User Task	1000	459	414	825	974	1298	24	2131	0.00%	2.1/sec	185.8
02b - Select NEW User to be Created	1000	1497	1388	2459	2769	3413	70	4346	0.00%	2.1/sec	273.5
02c - 1st Page Loaded	1000	530	476	860	1038	1370	144	1710	0.00%	2.1/sec	184.8
02d - Search on OU Placement	1000	995	923	1651	1960	2391	43	3770	0.00%	2.1/sec	190.3
02e - Submit OU Placement for Default OU	1000	302	254	552	728	1033	27	1467	0.00%	2.1/sec	274.1
02 - LAUNCH CREATE USER TASK	1000	3786	3691	5655	6248	7521	309	8510	0.00%	2.0/sec	1104.3
02a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	1000	1036	967	1642	1833	2491	150	3528	0.00%	2.1/sec	176.1
03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN PARAMETER	1000	8837	2166	17887	18372	19222	71	20769	0.00%	2.1/sec	226.7
03 - CREATE USER	1000	9873	3802	19104	19796	20907	256	22556	0.00%	2.1/sec	402.3
04a - Launch Reset User Password Task	1000	437	385	769	900	1468	23	2128	0.00%	2.1/sec	183.2
04-LAUNCH RESET USER PASSWORD TASK	1000	437	385	769	900	1468	23	2128	0.00%	2.1/sec	183.1
05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	1000	899	818	1580	1848	2396	38	4065	0.00%	2.1/sec	186.3
05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	1000	643	555	1405	1684	2299	17	2928	0.00%	2.1/sec	183.1
05-FIND USER	1000	1542	1427	2691	3088	3995	83	5849	0.00%	2.1/sec	369.0
06a - CHANGE TO NEW PASSWORD & UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	1000	414	322	907	1128	1571	16	2064	0.00%	2.1/sec	176.2
06b - Submit Password Change & UPDATE OWASP_CSRFTOKEN PARAMETER	1000	10746	16606	18483	18987	19655	44	20803	0.00%	2.1/sec	175.9
06-RESET PASSWORD FOR USER	1000	11161	16992	19221	19806	20942	99	21894	0.00%	2.1/sec	351.7
07a - Launch Delete User Task	1000	431	373	775	974	1360	24	1795	0.00%	2.1/sec	185.1
07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER	1000	821	763	1366	1618	2247	38	3055	0.00%	2.1/sec	187.8
07c - Selected User to Delete	1000	148	110	311	413	638	16	1014	0.00%	2.1/sec	183.8
07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	1000	279	206	642	797	1129	16	1680	0.00%	2.1/sec	181.2
07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	1000	9176	15506	17039	17365	18142	45	18667	0.00%	2.1/sec	177.2
07 - DELETE USER	1000	10857	16175	19364	19845	21248	232	22118	0.00%	2.1/sec	912.2
TOTAL	26000	2959	702	16511	17889	19413	16	22556	0.00%	52.8/sec	7347.0

users.csv - Excel

	A	B	C	D	E	F	G	H	I
1	bugsunny001	Bugs	Bunny001	Bugs	Bunny001	Password101	Password201		
2	bugsunny002	Bugs	Bunny002	Bugs	Bunny002	Password101	Password201		
3	bugsunny003	Bugs	Bunny003	Bugs	Bunny003	Password101	Password201		
4	bugsunny004	Bugs	Bunny004	Bugs	Bunny004	Password101	Password201		
5	bugsunny005	Bugs	Bunny005	Bugs	Bunny005	Password101	Password201		
6	bugsunny006	Bugs	Bunny006	Bugs	Bunny006	Password101	Password201		
7	bugsunny007	Bugs	Bunny007	Bugs	Bunny007	Password101	Password201		
8	bugsunny008	Bugs	Bunny008	Bugs	Bunny008	Password101	Password201		
9	bugsunny009	Bugs	Bunny009	Bugs	Bunny009	Password101	Password201		
10	bugsunny010	Bugs	Bunny010	Bugs	Bunny010	Password101	Password201		
11	bugsunny011	Bugs	Bunny011	Bugs	Bunny011	Password101	Password201		
12	bugsunny012	Bugs	Bunny012	Bugs	Bunny012	Password101	Password201		
13	bugsunny013	Bugs	Bunny013	Bugs	Bunny013	Password101	Password201		
14	bugsunny014	Bugs	Bunny014	Bugs	Bunny014	Password101	Password201		
15	bugsunny015	Bugs	Bunny015	Bugs	Bunny015	Password101	Password201		
16	bugsunny016	Bugs	Bunny016	Bugs	Bunny016	Password101	Password201		
17	bugsunny017	Bugs	Bunny017	Bugs	Bunny017	Password101	Password201		
18	bugsunny018	Bugs	Bunny018	Bugs	Bunny018	Password101	Password201		
19	bugsunny019	Bugs	Bunny019	Bugs	Bunny019	Password101	Password201		
20	bugsunny020	Bugs	Bunny020	Bugs	Bunny020	Password101	Password201		

include group name in label? Save Table Header

Outline of Slides

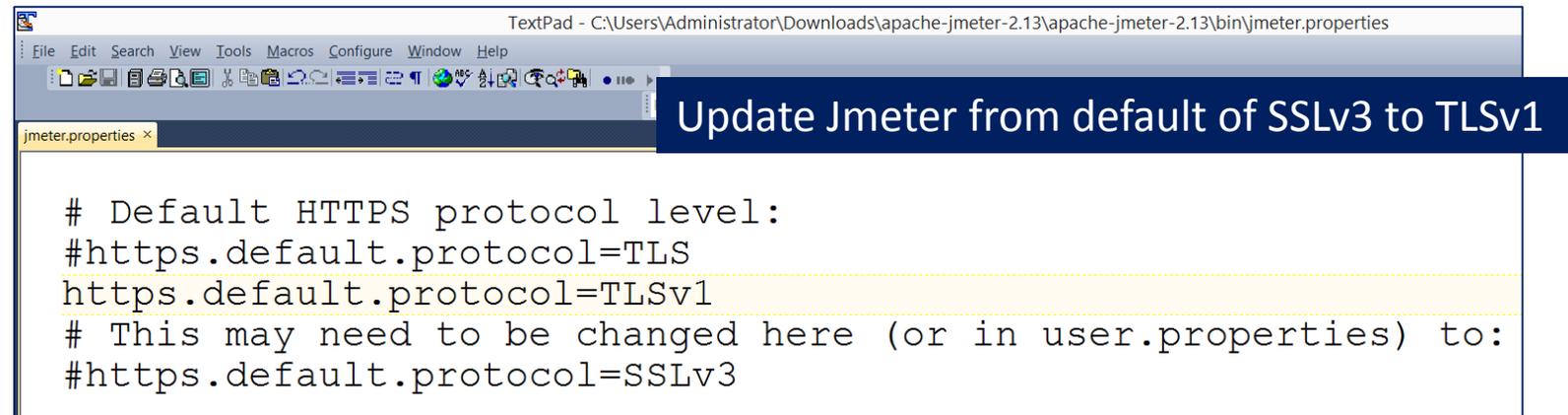
- The following slides will review the current test plan, to allow users to immediately jump into the use of the current plan, to use AS-IS or adjust as needed.
- Next, slides will review where to download Jmeter and any plugin option packages.
- Other slides will follow this section that outline how the initial test plan was built & how the IM Token was identified and corrected for.
- Lastly, a view of using the Jmeter Server Agent will be presented.
 - It has value to help identify disk I/O, CPU and Network utilization.
 - A preferred and robust alternative solution is the CA APM (Application Performance Management) if available.

Current Jmeter Test Plan for IMWA

- Use of the Jmeter HTTP Recorder was used to capture / record the steps perform manually via the IM User Console.
- After the steps / operations were recorded, selected POST operations were updated for any variable that would be pulled from the CSV file or needed to be managed as an extra Session token.
- This is a good starting point to use for testing with OOTB IM tasks.
- This or a new test plan can be created for your own IM tasks.
 - No limit on which tasks to use.
 - This process provide extended testing functionality over ALL possible IM tasks.

Pre-Step01: Jmeter Test Plan for IMWA: Properties Files

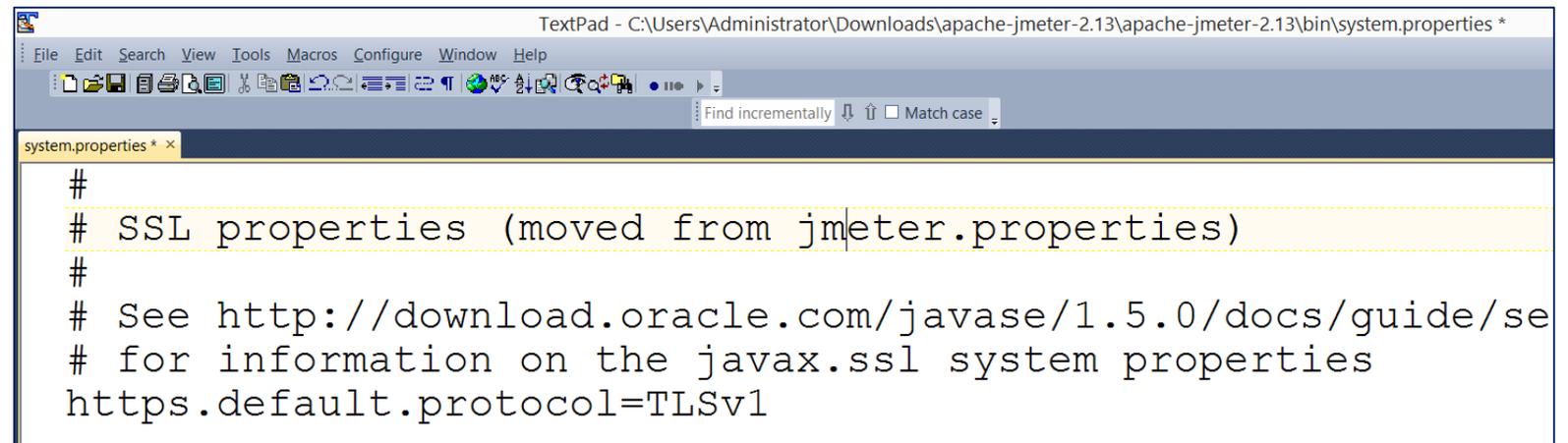
- After extracting Jmeter, navigate to the JMETER_HOME\bin folder & adjust one SSL/TLS setting in jmeter.properties & system.properties:



The screenshot shows a TextPad window titled "TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\jmeter.properties". The window contains the following text:

```
# Default HTTPS protocol level:  
#https.default.protocol=TLS  
https.default.protocol=TLSv1  
# This may need to be changed here (or in user.properties) to:  
#https.default.protocol=SSLv3
```

A dark blue callout box with white text is overlaid on the right side of the window, containing the text: "Update Jmeter from default of SSLv3 to TLSv1".



The screenshot shows a TextPad window titled "TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\system.properties *". The window contains the following text:

```
#  
# SSL properties (moved from jmeter.properties)  
#  
# See http://download.oracle.com/javase/1.5.0/docs/guide/se  
# for information on the javax.ssl system properties  
https.default.protocol=TLSv1
```

Pre-Step 02: Jmeter Test Plan for IMWA: Outline

TestPlan – Very top; Jmeter is hierarchal such that object defined above will be available for any line items below.

- Have defined & included common variables that will be used by other line items

- All fields will be clear text.

Notes – Hijacked use of this item “user defined variables” to “hold” useful notes.

CSV Data Set – For IM, used this item to query a predefined csv file with user object fields, e.g userID, FN, LN, etc.

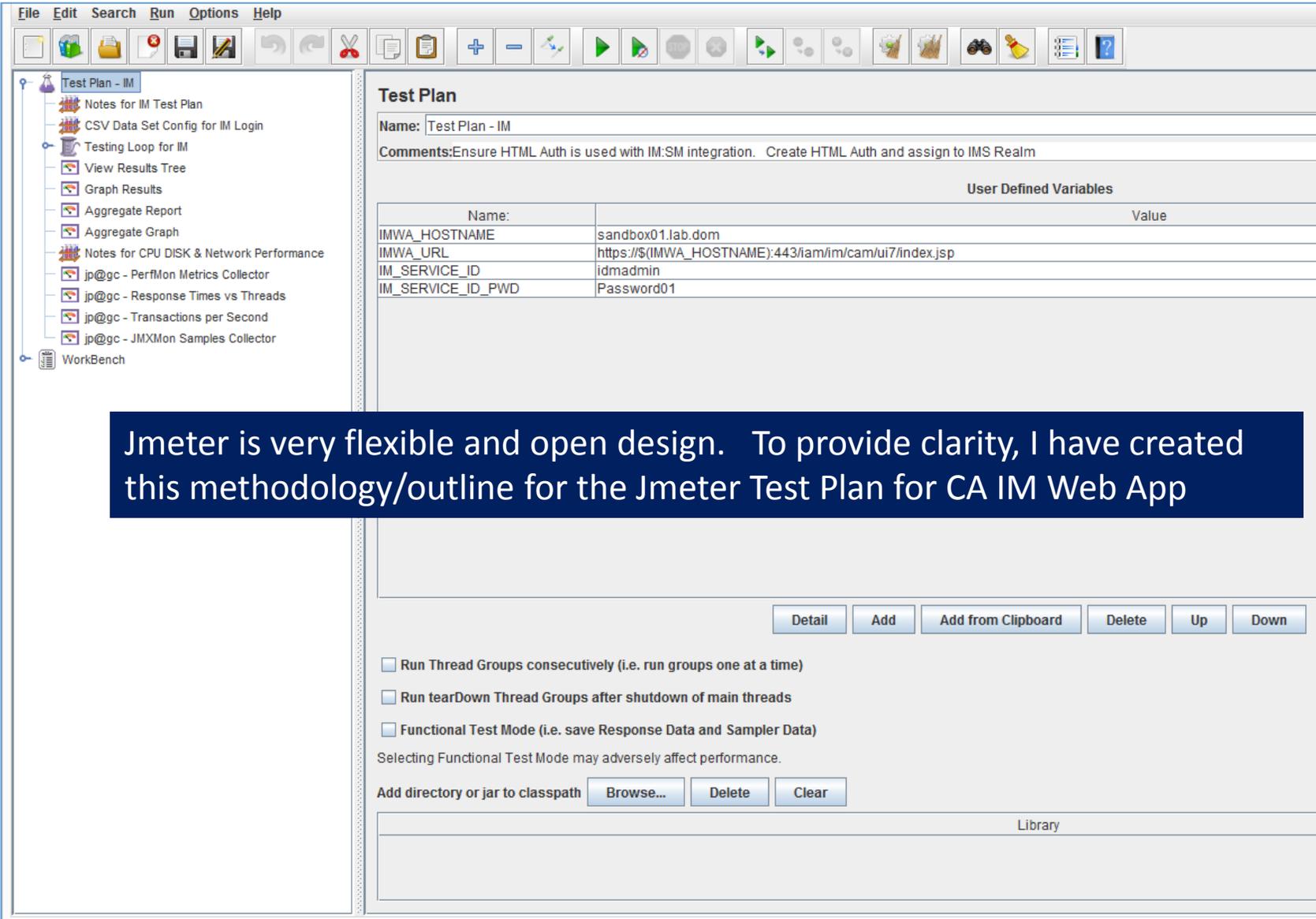
Testing Loop – The “container” of all testing objectives/lines.

Tree / Graph – Output Reports (aka Listeners) that will collect and report high value reports

Notes – Hijacked use of this item “user defined variables” to “hold” useful notes about PerfMon “Server Agent” for disk I/O, CPU & memory utilization.

jp@gc – PerfMon Collectors; PerfMon Metrics Collectors requires ServerAgent be deployed and updated with a service account. These reports are ONLY available with the extended Jmeter Plug-in packages. NOT Required for benchmark/performance testing.

WorkBench – The Jmeter section to allow a HTTP Proxy Server to be used + any other customization.



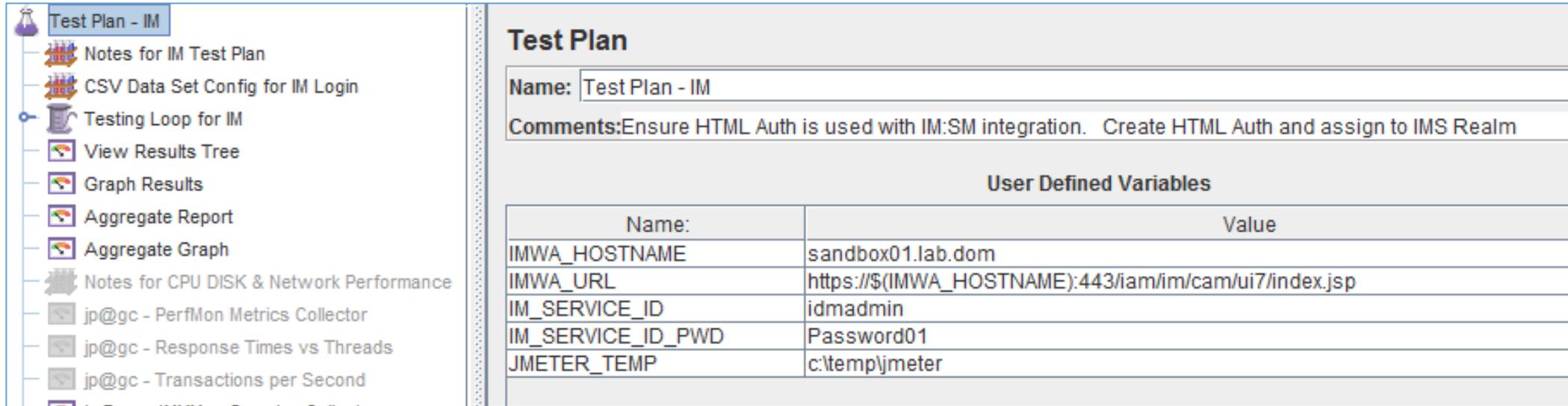
The screenshot displays the Apache JMeter GUI. The main window is titled 'Test Plan - IM'. The left sidebar shows a tree view of the test plan structure, including 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', 'View Results Tree', 'Graph Results', 'Aggregate Report', 'Aggregate Graph', 'Notes for CPU DISK & Network Performance', 'jp@gc - PerfMon Metrics Collector', 'jp@gc - Response Times vs Threads', 'jp@gc - Transactions per Second', and 'jp@gc - JMXMon Samples Collector'. The main panel shows the 'Test Plan' configuration. The 'Name' field is 'Test Plan - IM'. The 'Comments' field contains: 'Ensure HTML Auth is used with IM:SM integration. Create HTML Auth and assign to IMS Realm'. Below this is a table of 'User Defined Variables':

Name:	Value
IMWA_HOSTNAME	sandbox01.lab.dom
IMWA_URL	https://\$(IMWA_HOSTNAME):443/iam/im/cam/ui7/index.jsp
IM_SERVICE_ID	idmadmin
IM_SERVICE_ID_PWD	Password01

At the bottom of the main panel, there are several checkboxes and buttons. The checkboxes are: 'Run Thread Groups consecutively (i.e. run groups one at a time)', 'Run tearDown Thread Groups after shutdown of main threads', and 'Functional Test Mode (i.e. save Response Data and Sampler Data)'. Below these is a note: 'Selecting Functional Test Mode may adversely affect performance.' There are also buttons for 'Detail', 'Add', 'Add from Clipboard', 'Delete', 'Up', and 'Down'. At the bottom, there is a section for 'Add directory or jar to classpath' with 'Browse...', 'Delete', and 'Clear' buttons, and a 'Library' section.

Jmeter is very flexible and open design. To provide clarity, I have created this methodology/outline for the Jmeter Test Plan for CA IM Web App

Step 01: Jmeter Test Plan for IMWA: TestPlan



Test Plan

Name: Test Plan - IM

Comments: Ensure HTML Auth is used with IM:SM integration. Create HTML Auth and assign to IMS Realm

User Defined Variables

Name:	Value
IMWA_HOSTNAME	sandbox01.lab.dom
IMWA_URL	https://\$(IMWA_HOSTNAME):443/iam/im/cam/ui7/index.jsp
IM_SERVICE_ID	idmadmin
IM_SERVICE_ID_PWD	Password01
JMETER_TEMP	c:\temp\jmeter

The **top** level.

Define a name & variables to be used.

Jmeter Variables are referenced by `${NAME}`

Step 02: Jmeter Test Plan for IMWA: Notes

The screenshot shows the Jmeter Test Plan interface. On the left is a tree view of the test plan components. The main area displays the 'User Defined Variables' section for the 'Notes for IM Test Plan' element. It includes a table with 8 rows of notes and their corresponding URLs.

Name:	Value	Description
Note1: SM_JMETER_NOTES_URL	http://www.ca.com/us/support/ca-support-online/product-content/knowledgebase-articles/tec478754.aspx	
Note2: SM_JMETER_NOTES_URL2	https://bz.apache.org/bugzilla/show_bug.cgi?id=33796	
Note3: CSRF_ERROR_MESSAGE	Potential Cross Site Request Forgery Attack by performing task 'ResetUserPassword'. The required token is missing!	
Note4: 2nd_CSRF_ERROR MSG	Potential Cross Site Request Forgery Attack by performing task 'ResetUserPassword'. The token in the request does not match the one in the session!	
Note5: Useful Example of Jmeter Proxy	https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf	
Note6: Another Example of Jmeter Proxy	https://www.digitalocean.com/community/tutorials/how-to-use-jmeter-to-record-test-scenarios	
Note7: CSRF Management Notes	http://hxtpoe.github.io/performanceTests/testing-login-using-jmeter.html	
Note8: CSRF Management Notes	https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites	

This “User Defined Variables” item was “re-purposed” to hold useful notes. Has no other input or value to the test plan.

Included notes or URL examples that were found to have value

Step 03: Jmeter Test Plan for IMWA: CSV File

The screenshot shows the Jmeter GUI with the 'CSV Data Set Config' element selected in the left sidebar. The configuration details are as follows:

- Name:** CSV Data Set Config for IM Login
- Comments:** Create CSV File with userID, Password, accountID under JMETER_HOME\users.csv
- Configure the CSV Data Source:**
 - Filename:** users.csv
 - File encoding:** (empty)
 - Variable Names (comma-delimited):** Account_ID_Field,User_ID_Field,User_FN_Field,User_LN_Field,User_FullName_Field>Password_Field,New_Password_Field
 - Delimiter (use '\t' for tab):** ,
 - Allow quoted data?:** False
 - Recycle on EOF?:** True
 - Stop thread on EOF?:** False
 - Sharing mode:** All threads

This “CSV Data Set Config” is Jmeter method to introduce multiple inputs.

A “users.csv file was created (no header), with 100 rows.

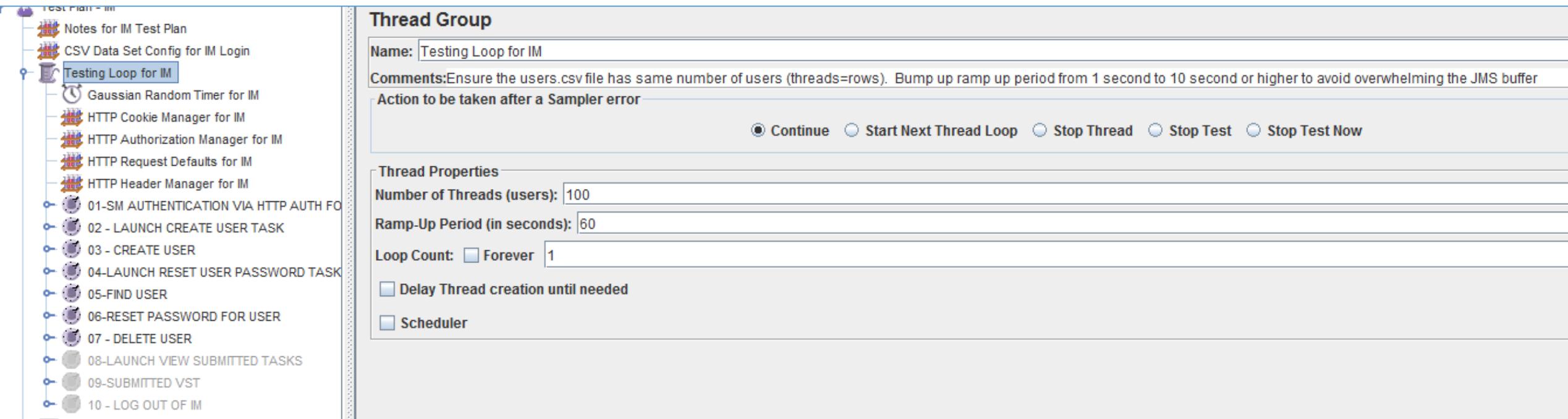
The headers are defined in the “Variable Names” Edit Field.

Accepted the defaults of “Allow quoted data, Recycle on EOF, Stop thread on EOF, Shared mode”

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I
1	1	bugsbunny001	Bugs	Bunny001	Bugs Bunny001	Password101	Password201		
2	2	bugsbunny002	Bugs	Bunny002	Bugs Bunny002	Password101	Password201		
3	3	bugsbunny003	Bugs	Bunny003	Bugs Bunny003	Password101	Password201		
4	4	bugsbunny004	Bugs	Bunny004	Bugs Bunny004	Password101	Password201		
5	5	bugsbunny005	Bugs	Bunny005	Bugs Bunny005	Password101	Password201		
6	6	bugsbunny006	Bugs	Bunny006	Bugs Bunny006	Password101	Password201		
7	7	bugsbunny007	Bugs	Bunny007	Bugs Bunny007	Password101	Password201		
8	8	bugsbunny008	Bugs	Bunny008	Bugs Bunny008	Password101	Password201		
9	9	bugsbunny009	Bugs	Bunny009	Bugs Bunny009	Password101	Password201		
10	10	bugsbunny010	Bugs	Bunny010	Bugs Bunny010	Password101	Password201		
11	11	bugsbunny011	Bugs	Bunny011	Bugs Bunny011	Password101	Password201		
12	12	bugsbunny012	Bugs	Bunny012	Bugs Bunny012	Password101	Password201		
13	13	bugsbunny013	Bugs	Bunny013	Bugs Bunny013	Password101	Password201		
14	14	bugsbunny014	Bugs	Bunny014	Bugs Bunny014	Password101	Password201		
15	15	bugsbunny015	Bugs	Bunny015	Bugs Bunny015	Password101	Password201		
16	16	bugsbunny016	Bugs	Bunny016	Bugs Bunny016	Password101	Password201		
17	17	bugsbunny017	Bugs	Bunny017	Bugs Bunny017	Password101	Password201		
18	18	bugsbunny018	Bugs	Bunny018	Bugs Bunny018	Password101	Password201		
19	19	bugsbunny019	Bugs	Bunny019	Bugs Bunny019	Password101	Password201		
20	20	bugsbunny020	Bugs	Bunny020	Bugs Bunny020	Password101	Password201		

Step 04: Jmeter Test Plan for IMWA: Thread Group (Loop)



The screenshot displays the JMeter GUI. On the left, a tree view shows the test plan structure, with 'Testing Loop for IM' selected. The main panel shows the configuration for the 'Thread Group'.

Thread Group

Name: Testing Loop for IM

Comments: Ensure the users.csv file has same number of users (threads=rows). Bump up ramp up period from 1 second to 10 second or higher to avoid overwhelming the JMS buffer

Action to be taken after a Sampler error:

- Continue
- Start Next Thread Loop
- Stop Thread
- Stop Test
- Stop Test Now

Thread Properties

Number of Threads (users): 100

Ramp-Up Period (in seconds): 60

Loop Count: Forever 1

Delay Thread creation until needed

Scheduler

A Jmeter Test Plan is managed by a Thread Group “container”.

The Thread Group will define how the test is executed and how many threads & loops.

This “Thread Group” for IM testing uses the following as a peak of the expected use-cases. 100 (threads=users), ramped up over 60 seconds, for 1 iteration.

Step 05: Jmeter Test Plan for IMWA: Timer



The screenshot displays the JMeter GUI. On the left, a tree view shows the test plan structure: 'Test Plan - IM' containing 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM' (expanded), 'Gaussian Random Timer for IM' (selected), 'HTTP Cookie Manager for IM', 'HTTP Authorization Manager for IM', 'HTTP Request Defaults for IM', 'HTTP Header Manager for IM', and '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM'. The right pane shows the configuration for the 'Gaussian Random Timer'. The 'Name' field is 'Gaussian Random Timer for IM'. The 'Comments' field is empty. Under 'Thread Delay Properties', the 'Deviation (in milliseconds)' is set to 100.0 and the 'Constant Delay Offset (in milliseconds)' is set to 200.

A Jmeter Test Plan will execute as RAPIDLY as possible.

To slow down this process & emulate what a user(s) may perform, Jmeter offers several different “Timer” operations.

Jmeter is managed hierarchal, such that objected defined prior, are available to all subsequent operations.

The Gaussian Random Timer was chosen with a constant delay of 200 milliseconds & attached immediately after the Jmeter Thread Group was defined.

This timer may be temporarily disabled by “right click” on the operation, and select DISABLE

Step 06: Jmeter Test Plan for IMWA: Cookie Manager

The screenshot displays the Jmeter GUI configuration for an HTTP Cookie Manager. The left pane shows a test plan tree with the following elements:

- Test Plan - IM
 - Notes for IM Test Plan
 - CSV Data Set Config for IM Login
 - Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM**
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER

The right pane shows the configuration for the selected 'HTTP Cookie Manager' element:

- Name:** HTTP Cookie Manager for IM
- Comments:** Use only one HTTP Cookie Manager, with SM ensure HTTP Auth Form is used and NOT BASIC AU
- Options:**
 - Clear cookies each iteration?
 - Cookie Policy:** rfc2109
 - Implementation:** HC3CookieHandler
- User-Defined Cookies:** A table with columns 'Name' and 'Value'.

To manage web session cookie for IM and SiteMinder, a Jmeter HTTP Cookie Manager is added to the Thread Group.

SiteMinder Session Cookies require use of the following:

Jmeter Cookie policy: **rfc2109** & Implementation of **HC3CookieHandler**.

SiteMinder follows RFC2109 standards for session cookies & uses IPv4.

HC3CookieHander = IPv4 HC4CookieHandler = IPv6

Step 07: Jmeter Test Plan for IMWA: Auth Manager

The screenshot shows the Jmeter Test Plan configuration for IMWA authentication. The left pane displays a tree view of the test plan components, including a 'Testing Loop for IM' containing a 'Gaussian Random Timer for IM', 'HTTP Cookie Manager for IM', 'HTTP Authorization Manager for IM' (highlighted), 'HTTP Request Defaults for IM', and 'HTTP Header Manager for IM'. Below this, a 'SiteMinder Realm Dialog' is shown with 'Realm Properties' for 'cam_ims_realm'. The 'Resource' tab is active, showing the 'Authentication Scheme' set to 'HTML Form' (highlighted with a red box). Other fields include '*Agent: idmembedded (Web Agent)', 'Resource Filter: /iam/im/cam/', and 'Effective Resource: idmembedded(imwa001.im.dom)/iam/im/cam/'.

NOT Default. Changed from Basic to HTML For better look and integration

HTTP Authorization Manager

Name: HTTP Authorization Manager for IM

Comments:

Options

Clear auth on each iteration?

Authorizations Stored in the Authorization Manager

Base URL	Username	Password	Domain	Realm	Mechanism
https://\${IMWA_HOSTNAME}/iam/im/cam	idmadmin	*****			BASIC_DIGEST
					BASIC_DIGEST
					KERBEROS

To manage HTTP authentication for IM and SiteMinder, a Jmeter HTTP Authorization Manager is added to the Thread Group.

Jmeter requires SiteMinder Authentication to be HTML Form based. Update the IM IMS Realm from default of BASIC to HTML Form using SSO UI (SM WAMUI or SM FSSUI)

Step 08: Jmeter Test Plan for IMWA: Request Defaults

The screenshot shows the Jmeter Test Plan configuration for 'HTTP Request Defaults for IM'. The left sidebar lists the test plan structure, including 'Testing Loop for IM' and various components like 'Gaussian Random Timer for IM', 'HTTP Cookie Manager for IM', 'HTTP Authorization Manager for IM', 'HTTP Request Defaults for IM', 'HTTP Header Manager for IM', and several test tasks (01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM, 02 - LAUNCH CREATE USER TASK, 03 - CREATE USER, 04-LAUNCH RESET USER PASSWORD TASK, 05-FIND USER, 06-RESET PASSWORD FOR USER, 07 - DELETE USER). The main configuration area is titled 'HTTP Request Defaults' and includes the following fields:

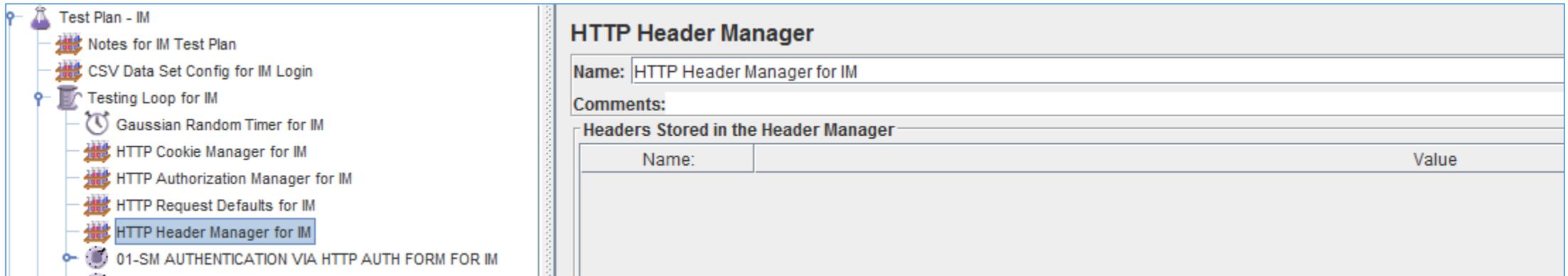
- Name: HTTP Request Defaults for IM
- Comments:
- Web Server: Server Name or IP: \${IMWA_HOSTNAME}, Port Number: 443
- Timeouts (milliseconds): Connect: [empty], Response: [empty]
- HTTP Request: Implementation: [empty], Protocol [http]: https, Content encoding: [empty]
- Path: /
- Parameters: Send Parameters With the Request: [empty table]

Name:	Value	Encode?	Include Equal

To manage any possible unique parameter for a test plan; a Jmeter HTTP Request Defaults operation is added to the Thread Group.

No changes other than definition of the Web Server's Server Name to a variable and the Port Number, were required or needed.

Step 09: Jmeter Test Plan for IMWA: Header Manager



The screenshot shows the Jmeter GUI with a test plan tree on the left and the configuration panel for an HTTP Header Manager on the right. The test plan tree includes:

- Test Plan - IM
 - Notes for IM Test Plan
 - CSV Data Set Config for IM Login
 - Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM**
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM

The configuration panel for the selected HTTP Header Manager is titled "HTTP Header Manager" and contains the following fields:

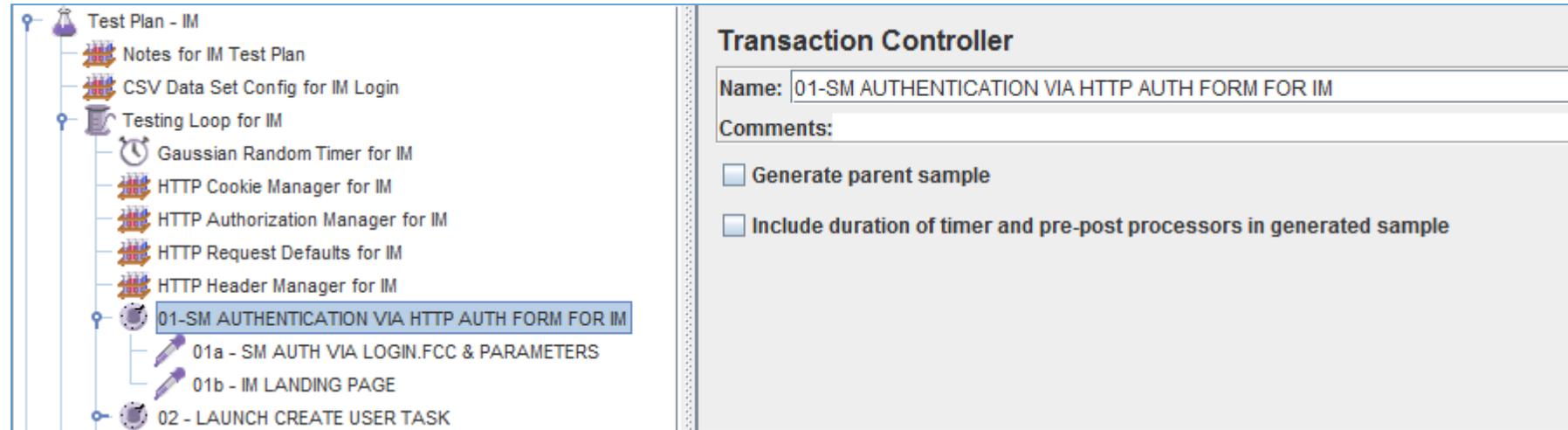
- Name: HTTP Header Manager for IM
- Comments:
- Headers Stored in the Header Manager

Name:	Value
-------	-------

To manage any possible unique header parameter for a test plan; a Jmeter HTTP Header Manager operation is added to the Thread Group.

No changes required to be defined.

Step 10: Jmeter Test Plan for IMWA: Transaction Controller



The screenshot shows the Jmeter Test Plan configuration for a Transaction Controller. The left pane displays a tree view of the test plan structure, with the Transaction Controller item selected. The right pane shows the configuration for the Transaction Controller, including its name and comments.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM**
 - 01a - SM AUTH VIA LOGIN.FCC & PARAMETERS
 - 01b - IM LANDING PAGE
 - 02 - LAUNCH CREATE USER TASK

Transaction Controller

Name: 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM

Comments:

Generate parent sample

Include duration of timer and pre-post processors in generated sample

The first of the HTTP operations to be managed.

A Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the initial BIND operation.

No changes to be defined on this item

Step 11: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 01a - SM AUTH VIA LOGIN.FCC & PARAMETERS
Comments: Detected the start of a redirect chain

Web Server
Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds)
Connect: Response:

HTTP Request
Implementation: **HttpClient4** Protocol [http]: Method: **POST** Content encoding:

Path: /siteminderagent/forms/login.fcc?

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
SMENC	UTF-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SMLOCALE	US-EN	<input type="checkbox"/>	<input checked="" type="checkbox"/>
USER	\${IM_SERVICE_ID}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PASSWORD	\${IM_SERVICE_ID_PWD}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
target	https://\${IMWA_HOSTNAME}/iam/im/cam/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
smquerydata		<input type="checkbox"/>	<input checked="" type="checkbox"/>
smauthreason	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
postpreservationdata		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

The first of the HTTP Request

This was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

Any static values related to session cookies were removed. The USER & PASSWORD fields were auto-populated by Jmeter with the Jmeter variables.

This item will manage the initial BIND operation.

No other changes to be defined on this item

Step 12: Jmeter Test Plan for IMWA: HTTP Request

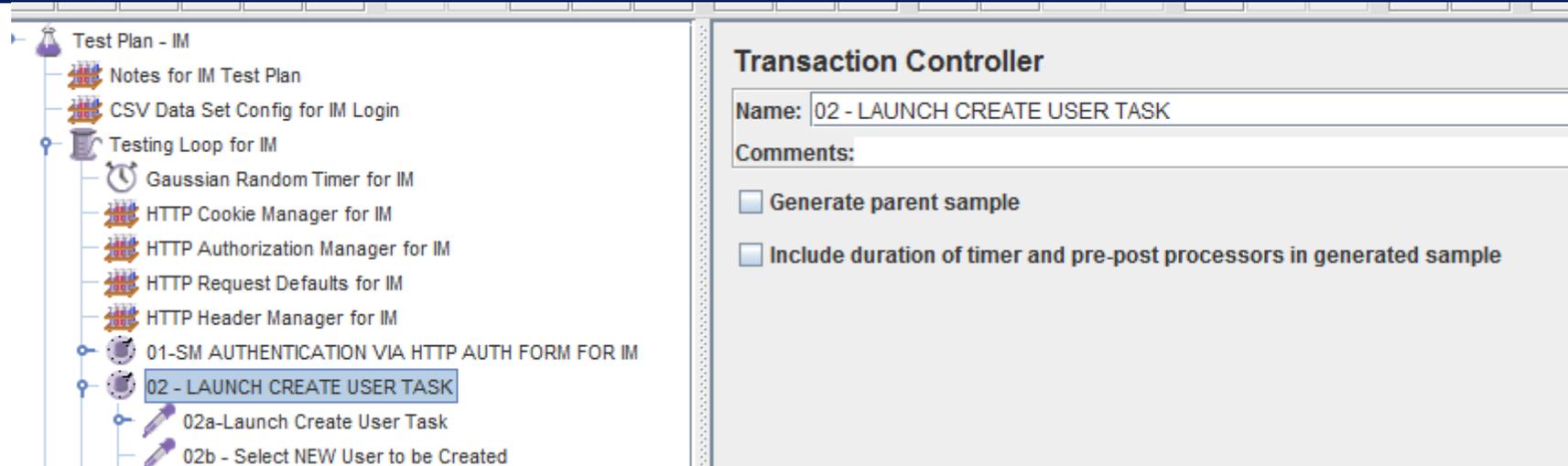
The screenshot displays the Jmeter Test Plan for IMWA: HTTP Request. The left sidebar shows the test plan structure, including a testing loop for IM with various components like Gaussian Random Timer, HTTP Cookie Manager, HTTP Authorization Manager, HTTP Request Defaults, and HTTP Header Manager. The main area shows the configuration for the selected HTTP Request item, '01b - IM LANDING PAGE'. The configuration includes fields for Name, Comments, Web Server (Server Name or IP, Port Number), Timeouts (Connect, Response), Implementation (Httpclient4), Protocol (http), Method (GET), Content encoding (UTF-8), Path (/iam/im/cam/ui7/index.jsp), and checkboxes for Redirect Automatically, Follow Redirects, Use KeepAlive, Use multipart/form-data for POST, and Browser-compatible headers. There are also tabs for Parameters and Body Data, and buttons for Detail, Add, Add from Clipboard, Delete, Up, and Down.

This was captured by the Jmeter HTTP Recorder, when executed via manually in a browser. The title was re-labeled to clarify the operation being performed.

This is a GET operation is likely is NOT required for the test plan. It was left for clarity where SiteMinder was referred from. ion.

No other changes to be defined on this item

Step 13: Jmeter Test Plan for IMWA: Transaction Controller



The 2nd of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the IM Create User Task operation.

No changes to be defined on this item

Step 14: Jmeter Test Plan for IMWA: HTTP Request

The screenshot displays the Jmeter Test Plan for IMWA. The left sidebar shows a tree view of the test plan, with the following items:

- Test Plan - IM
 - Notes for IM Test Plan
 - CSV Data Set Config for IM Login
 - Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 02a-Launch Create User Task** (selected)
 - 02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 02a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 02b - Select NEW User to be Created
 - 02c - 1st Page Loaded
 - 02d - Search on OU Placement
 - 02e - Submit OU Placement for Default OU
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER

The main panel shows the configuration for the selected HTTP Request:

- Name:** 02a-Launch Create User Task
- Comments:**
- Web Server:** Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []
- HTTP Request:** Implementation: HttpClient4 Protocol [http]: [] Method: GET Content encoding: []
- Path:** /iam/im/cam/ui7/index.jsp
- Redirect Automatically Follow Redirects Use KeepAlive Use multipartform-data for POST Browser-compatible headers
- Parameters:** Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
task.tag	CreateUser	<input type="checkbox"/>	<input checked="" type="checkbox"/>
console.cat3	Manage+Users	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Buttons: Detail, Add, Add from Clipboard, Delete, Up, Down

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser. The title was re-labeled to clarify the operation being performed.

This HTTP GET operation is NEEDED, as it will launch the IM CreateUser Task & execute the security process to protect the IM solution from Cross Site Request Forgery.

No changes required for this operation

Step 15a: Jmeter Test Plan for IMWA: CSS/Jquery

The screenshot shows the JMeter Test Plan interface. On the left, a tree view displays the test plan structure, including a 'Testing Loop for IM' containing several HTTP-related components and three '02a' tasks. The '02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication' task is highlighted. On the right, the configuration for this extractor is shown. The 'Name' field is filled with the task name. The 'Apply to' section has 'Main sample only' selected. The 'Reference Name' is 'CSS_OWASP_CSRF_TOKEN', the 'CSS/JQuery expression' is 'input[name=OWASP_CSRFTOKEN]', the 'Attribute' is 'value', the 'Match No. (0 for Random)' is '\$1\$', and the 'Default Value' is 'NOT_FOUND_VIA_JMETER_CSS_EXTRACTOR'.

This operation was NOT captured by the Jmeter HTTP Recorder.

During validation of the original test plan, it was observed that an error message would occur and state that a Cross Site Request Forgery was occurring, and needed to be addressed.

To ensure this CSRF Token is auto-generated and capture in a variable, one of three (3) methods may be used:

1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

The example LAB uses the CSS / JQuery Extractor

This process is copied to every IM task operation, to allow a test administrator to disable parts of the lab, but not lose this functionality, if this one section is disabled.

Every IM task that has a HTTP POST and this OWASP_CSRFTOKEN parameter defined, will be updated with the `${CSS_OWASP_CSRF_TOKEN}` variable.

Step 15b: Jmeter Test Plan for IMWA: RegEx

The screenshot shows the JMeter Test Plan on the left and the configuration for a Regular Expression Extractor on the right.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 02a-Launch Create User Task
 - 02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 02a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication**
 - 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 02b - Select NEW User to be Created

Regular Expression Extractor

Name: 02a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication

Comments:

Apply to:
 Main sample and sub-samples Main sample only Sub-samples only JMeter Variable

Field to check:
 Body Body (unescaped) Body as a Document Response Headers Request Headers URL Response Code Response

Reference Name: REGEX_OWASP_CSRF_TOKEN

Regular Expression: <input type='hidden' name='OWASP_CSRFTOKEN' value='(.+?)' />

Template: \$\$

Match No. (0 for Random):

Default Value: NOT_FOUND_VIA_JMETER_REGEX_EXTRACTOR

This operation was NOT captured by the Jmeter HTTP Recorder.

During validation of the original test plan, it was observed that an error message would occur and state that a Cross Site Request Forgery was occurring, and needed to be addressed.

To ensure this CSRF Token is auto-generated and capture in a variable, one of three (3) methods may be used:

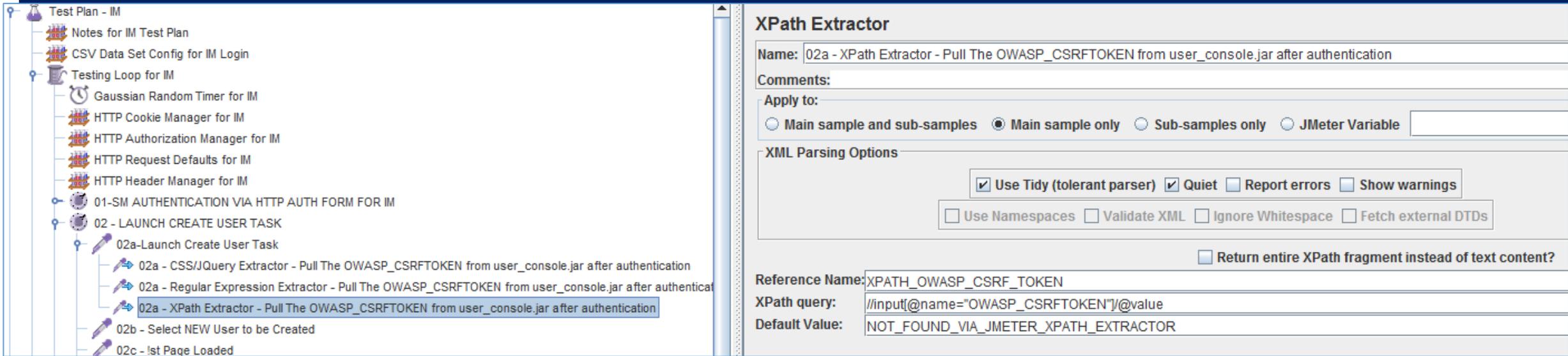
1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

The example LAB uses the CSS / JQuery Extractor

This process is copied to every IM task operation, to allow a test administrator to disable parts of the lab, but not lose this functionality, if this one section is disabled.

Every IM task that has a HTTP POST and this OWASP_CSRFTOKEN parameter defined, will be updated with the `${CSS_OWASP_CSRF_TOKEN}` variable.

Step 15c: Jmeter Test Plan for IMWA: Xpath Extractor



The screenshot displays the JMeter GUI. On the left, a tree view shows the test plan structure: 'Test Plan - IM' contains 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM' (which includes 'Gaussian Random Timer for IM', 'HTTP Cookie Manager for IM', 'HTTP Authorization Manager for IM', 'HTTP Request Defaults for IM', and 'HTTP Header Manager for IM'), '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM', and '02 - LAUNCH CREATE USER TASK'. Under '02 - LAUNCH CREATE USER TASK', there are three sub-tasks: '02a-Launch Create User Task', '02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication', and '02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication' (highlighted). Below these are '02b - Select NEW User to be Created' and '02c - 1st Page Loaded'.

The right pane shows the configuration for the selected 'XPath Extractor' element:

- Name:** 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
- Comments:**
- Apply to:** Main sample and sub-samples Main sample only Sub-samples only JMeter Variable
- XML Parsing Options:**
 - Use Tidy (tolerant parser) Quiet Report errors Show warnings
 - Use Namespaces Validate XML Ignore Whitespace Fetch external DTDs
 - Return entire XPath fragment instead of text content?
- Reference Name:** XPATH_OWASP_CSRF_TOKEN
- XPath query:** //input[@name="OWASP_CSRFTOKEN"]/@value
- Default Value:** NOT_FOUND_VIA_JMETER_XPATH_EXTRACTOR

This operation was NOT captured by the Jmeter HTTP Recorder.

During validation of the original test plan, it was observed that an error message would occur and state that a Cross Site Request Forgery was occurring, and needed to be addressed.

To ensure this CSRF Token is auto-generated and capture in a variable, one of three (3) methods may be used:

1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

The example LAB uses the CSS / JQuery Extractor

This process is copied to every IM task operation, to allow a test administrator to disable parts of the lab, but not lose this functionality, if this one section is disabled.

Every IM task that has a HTTP POST and this OWASP_CSRFTOKEN parameter defined, will be updated with the `${CSS_OWASP_CSRF_TOKEN}` variable.

Step 16: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 02b - Select NEW User to be Created

Comments:

Web Server
Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds)
Connect: Response:

Implementation: HttpClient4 Protocol [http]: Method: POST Content encoding: UTF-8

Path: /iam/iam/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ClientTimezone	-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>
createType	new	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_andLower		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	*	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action_standardsearch.select	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser. The title was re-labeled to clarify the operation being performed.

Note the “createType” = “new” parameter

Only the OWASP_CSRFTOKEN parameter was updated with the \${CSS_OWASP_CSRF_TOKEN}

Step 17: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 02c - 1st Page Loaded

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []

Implementation: HttpClient4 Protocol [http]: [] Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action_BrowseORG_MEMBERS...	Browse	<input type="checkbox"/>	<input checked="" type="checkbox"/>
USER_ID		<input type="checkbox"/>	<input checked="" type="checkbox"/>
PASSWORD		<input type="checkbox"/>	<input checked="" type="checkbox"/>
passwordConfirm		<input type="checkbox"/>	<input checked="" type="checkbox"/>
enable	true	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FIRST_NAME		<input type="checkbox"/>	<input checked="" type="checkbox"/>
LAST_NAME		<input type="checkbox"/>	<input checked="" type="checkbox"/>
FULL_NAME		<input type="checkbox"/>	<input checked="" type="checkbox"/>
EMAIL		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Buttons: Detail Add Add from Clipboard Delete Up Down

Send Files With the Request:

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser. The title was re-labeled to clarify the operation being performed.

Note the “enable” = “true” parameter. The entire IM Create User Screen was loaded but only this attribute was pre-define on this page

The OWASP_CSRFTOKEN parameter was updated with the \${CSS_OWASP_CSRF_TOKEN}

Step 18: Jmeter Test Plan for IMWA: HTTP Request

The screenshot displays the JMeter configuration for an HTTP Request. The test plan tree on the left includes various components like 'Notes for IM Test Plan', 'Testing Loop for IM', and several 'HTTP' related managers. The selected element is '02d - Search on OU Placement'. The main configuration area shows the following details:

- Name:** 02d - Search on OU Placement
- Comments:**
- Web Server:** Server Name or IP: \${IMWA_HOSTNAME}, Port Number: [empty], Timeouts (milliseconds): Connect: [empty], Response: [empty]
- HTTP Request:** Implementation: HttpClient4, Protocol [http]: [empty], Method: POST, Content encoding: UTF-8
- Path:** /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
- Options:** Redirect Automatically, Follow Redirects, Use KeepAlive, Use multipart/form-data for POST, Browser-compatible headers
- Parameters:** A table listing parameters to be sent with the request.

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_andLower		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%ORG_NAME%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	*	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearch.search	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser. The title was re-labeled to clarify the operation being performed.

The initial search on user's OU may NOT be necessary, but was retained to emulate the user's experience.

The OWASP_CSRFTOKEN parameter was updated with the \${CSS_OWASP_CSRF_TOKEN}

Step 19: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 02e - Submit OU Placement for Default OU

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds): Connect: Response:

Implementation: HttpClient4 Protocol [http]: Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_andLower		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%ORG_NAME%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	*	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DefaultOrganizationSearch__sel	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action_standardsearch.select	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

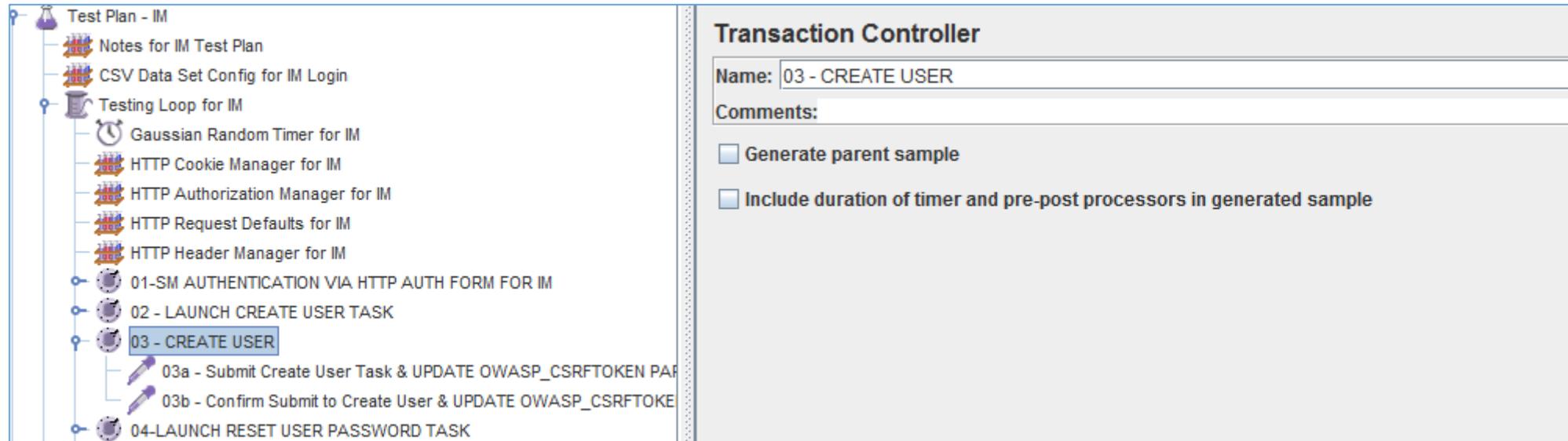
This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

Note “DefaultOrganizationSearch__sel” = “1”

The OWASP_CSRFTOKEN parameter was updated with the \${CSS_OWASP_CSRF_TOKEN} value.

Step 20: Jmeter Test Plan for IMWA: Transaction Controller



The screenshot displays the Jmeter Test Plan for IMWA. The left pane shows a tree view of the test plan components, including a Testing Loop for IM containing several HTTP managers and three tasks: 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM, 02 - LAUNCH CREATE USER TASK, and 03 - CREATE USER. The 03 - CREATE USER task is selected, and its configuration is shown in the right pane. The Transaction Controller configuration includes the name '03 - CREATE USER', a comments field, and two unchecked checkboxes: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample'.

The 3rd of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the submission of the IM Create User Task operation.

No changes to be defined on this item

Step 21: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter Test Plan on the left and the HTTP Request configuration on the right. The Test Plan tree includes a 'Testing Loop for IM' containing several components like 'Gaussian Random Timer for IM', 'HTTP Cookie Manager for IM', and 'HTTP Authorization Manager for IM'. The selected element is '03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN PARAMETER'. The HTTP Request configuration shows the following details:

- Name:** 03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
- Comments:**
- Web Server:** Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []
- HTTP Request:** Implementation: HttpClient4 Protocol [http] Method: POST Content encoding: UTF-8
- Path:** /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
- Options:** Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers
- Parameters:** Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
USER_ID	\${User_ID_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PASSWORD	\${Password_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
passwordConfirm	\${Password_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
enable	true	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FIRST_NAME	\${User_FN_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LAST_NAME	\${User_LN_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FULL_NAME	\${User_FullName_Field}	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EMAIL		<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following minimal required parameters were updated to use the CSV variables:

USER_ID = \${User_ID_Field}, PASSWORD = \${Password_Field}, passwordConfirm = \${Password_Field}, FIRST_NAME = \${User_FN_Field}, LAST_NAME = \${User_LN_Field}, FULL_NAME = \${User_FullName_Field}, & OWASP_CSRFTOKEN = \${CSS_OWASP_CSRF_TOKEN}

Step 22: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter Test Plan configuration for an HTTP Request. The left pane displays a tree view of the test plan, with the task '03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN PARAMETER' selected. The right pane shows the configuration for this task.

HTTP Request

Name: 03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN PARAMETER

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []

Implementation: HttpClient4 Protocol [http]: [] Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

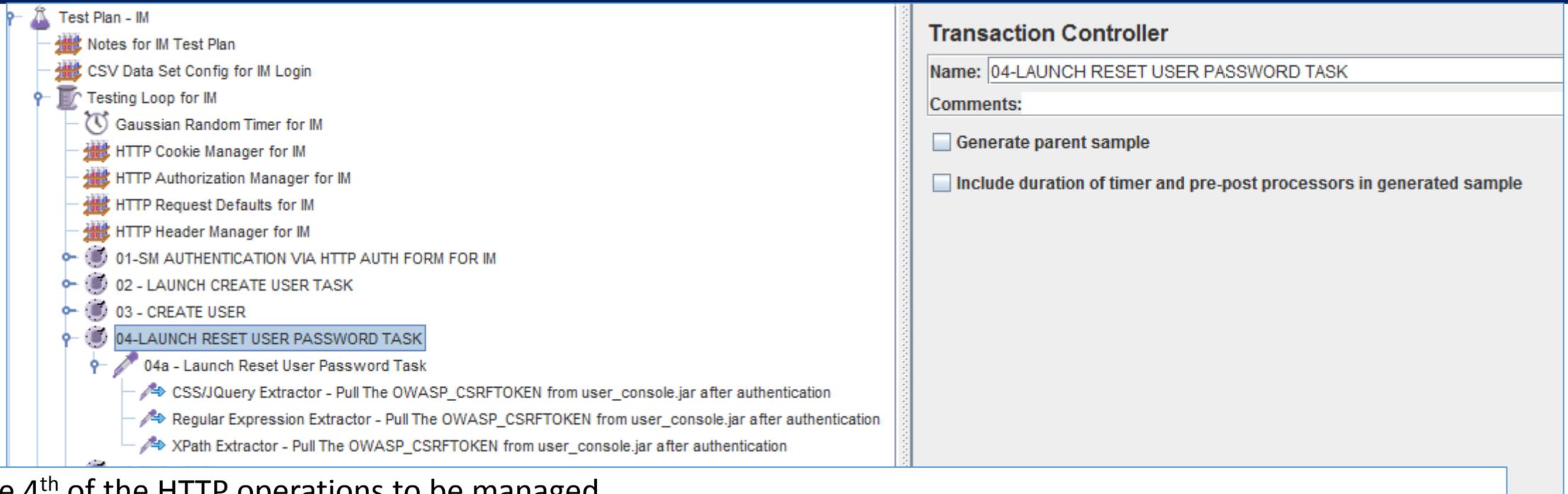
This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

Note “action.submit.confirm” = “yes”

The OWASP_CSRFTOKEN parameter was updated with the \${CSS_OWASP_CSRF_TOKEN} value.

Step 23: Jmeter Test Plan for IMWA: Transaction Controller



The screenshot displays the Jmeter Test Plan for IMWA. The left pane shows a tree view of the test plan components. The right pane shows the configuration for the selected Transaction Controller.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK**
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication

Transaction Controller

Name: 04-LAUNCH RESET USER PASSWORD TASK

Comments:

- Generate parent sample
- Include duration of timer and pre-post processors in generated sample

The 4th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the launch of the IM Reset a User Password operation. This section assumes the users' accounts exist or were created prior.

No changes to be defined on this item

Step 24: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter Test Plan on the left and the HTTP Request configuration on the right.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task**
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER

HTTP Request

Name: 04a - Launch Reset User Password Task

Comments:

Web Server

Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds) Connect: Response:

HTTP Request

Implementation: HttpClient4 Protocol [http]: Method: GET Content encoding: UTF-8

Path: /iam/iam/cam/ui7/index.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
task.tag	ResetUserPassword	<input type="checkbox"/>	<input checked="" type="checkbox"/>
console.cat3	Manage Users	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

This HTTP GET operation is **NEEDED**, as it will launch the IM ResetUserPassword Task & execute the security process to protect the IM solution from Cross Site Request Forgery (if it was NOT already performed)

No changes required for this operation

Step 25a: Jmeter Test Plan for IMWA: CSS/JQuery

The image shows a JMeter Test Plan on the left and the configuration for a CSS/JQuery Extractor on the right.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication**
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 05-FIND USER

CSS/JQuery Extractor

Name: CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication

Comments:

Apply to:
 Main sample and sub-samples Main sample only Sub-samples only JMeter Variable

CSS/JQuery Extractor Implementation

CSS/JQuery Extractor Implementation

Reference Name: CSS_OWASP_CSRF_TOKEN

CSS/JQuery expression: input[name=OWASP_CSRFTOKEN]

Attribute: value

Match No. (0 for Random): \$1\$

Default Value: NOT_FOUND_VIA_JMETER_CSS_EXTRACTOR

This operation was NOT captured by the Jmeter HTTP Recorder.

During validation of the original test plan, it was observed that an error message would occur and state that a Cross Site Request Forgery was occurring, and needed to be addressed.

To ensure this CSRF Token is auto-generated and capture in a variable, one of three (3) methods may be used:

1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

The example LAB uses the CSS / JQuery Extractor

This process is copied to every IM task operation, to allow a test administrator to disable parts of the lab, but not lose this functionality, if this one section is disabled.

Every IM task that has a HTTP POST and this OWASP_CSRFTOKEN parameter defined, will be updated with the `${CSS_OWASP_CSRF_TOKEN}` variable.

Step 25b: Jmeter Test Plan for IMWA: RegEx

The image shows a Jmeter Test Plan on the left and the configuration for a Regular Expression Extractor on the right.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication**
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 05-FIND USER

Regular Expression Extractor

Name: Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication

Comments:

Apply to:
 Main sample and sub-samples Main sample only Sub-samples only JMeter Variable

Field to check:
 Body Body (unescaped) Body as a Document Response Headers Request Headers URL

Reference Name: REGEX_OWASP_CSRF_TOKEN

Regular Expression: <input type='hidden' name='OWASP_CSRFTOKEN' value='{.+?}' />

Template: \$\$

Match No. (0 for Random):

Default Value: NOT_FOUND_VIA_JMETER_REGEX_EXTRACTOR

This operation was NOT captured by the Jmeter HTTP Recorder.

During validation of the original test plan, it was observed that an error message would occur and state that a Cross Site Request Forgery was occurring, and needed to be addressed.

To ensure this CSRF Token is auto-generated and capture in a variable, one of three (3) methods may be used:

1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

The example LAB uses the CSS / JQuery Extractor

This process is copied to every IM task operation, to allow a test administrator to disable parts of the lab, but not lose this functionality, if this one section is disabled.

Every IM task that has a HTTP POST and this OWASP_CSRFTOKEN parameter defined, will be updated with the `${CSS_OWASP_CSRF_TOKEN}` variable.

Step 25c: Jmeter Test Plan for IMWA: Xpath Extractor

The image shows a Jmeter Test Plan on the left and the configuration for an XPath Extractor on the right.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication**
 - 05-FIND USER

XPath Extractor

Name: XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication

Comments:

Apply to:
 Main sample and sub-samples Main sample only Sub-samples only JMeter Variable

XML Parsing Options

Use Tidy (tolerant parser) Quiet Report errors Show warnings

Use Namespaces Validate XML Ignore Whitespace Fetch external DTDs

Return entire XPath fragment instead of text content?

Reference Name: XPATH_OWASP_CSRF_TOKEN

XPath query: `//input[@name="OWASP_CSRFTOKEN"]/@value`

Default Value: NOT_FOUND_VIA_JMETER_XPATH_EXTRACTOR

This operation was NOT captured by the Jmeter HTTP Recorder.

During validation of the original test plan, it was observed that an error message would occur and state that a Cross Site Request Forgery was occurring, and needed to be addressed.

To ensure this CSRF Token is auto-generated and capture in a variable, one of three (3) methods may be used:

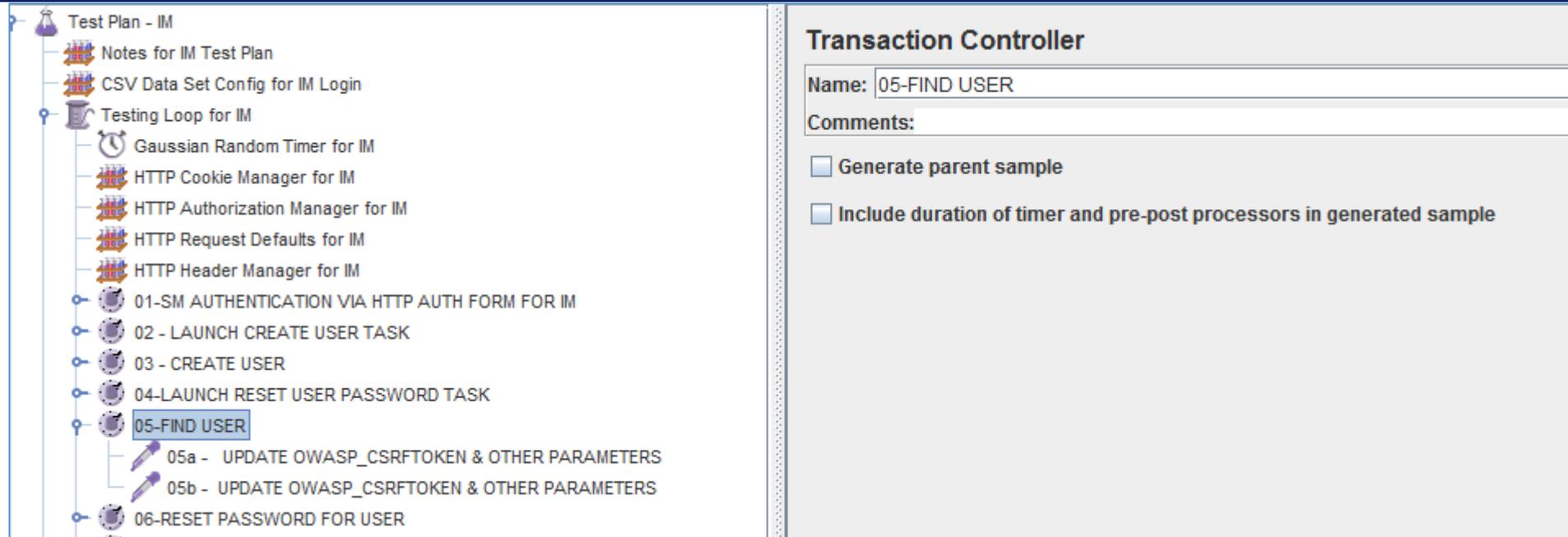
1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

The example LAB uses the CSS / JQuery Extractor

This process is copied to every IM task operation, to allow a test administrator to disable parts of the lab, but not lose this functionality, if this one section is disabled.

Every IM task that has a HTTP POST and this OWASP_CSRFTOKEN parameter defined, will be updated with the `${CSS_OWASP_CSRF_TOKEN}` variable.

Step 26: Jmeter Test Plan for IMWA: Transaction Controller



The screenshot displays the Jmeter Test Plan structure on the left and the configuration for a Transaction Controller on the right. The Test Plan is titled 'Test Plan - IM' and contains several elements: 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', 'Gaussian Random Timer for IM', 'HTTP Cookie Manager for IM', 'HTTP Authorization Manager for IM', 'HTTP Request Defaults for IM', 'HTTP Header Manager for IM', and a series of tasks: '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM', '02 - LAUNCH CREATE USER TASK', '03 - CREATE USER', '04-LAUNCH RESET USER PASSWORD TASK', '05-FIND USER', '05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS', '05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS', and '06-RESET PASSWORD FOR USER'. The '05-FIND USER' task is selected. The Transaction Controller configuration on the right shows the name '05-FIND USER' and two unchecked options: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample'.

The 5th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the search operation for IM Reset a User Password operation. This section assumes the users' accounts exist or were created prior.

No changes to be defined on this item

Step 27: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS

Comments:

Web Server
Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds)
Connect: Response:

HTTP Request
Implementation: HttpClient4 Protocol [http]: Method: POST Content encoding: UTF-8

Path: /iam/iam/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ClientTimezone	-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_andLower	Y	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	\${User_ID_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action_standardsearch_search	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_REGEX	\${REGEX_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_XPATH	\${XPATH_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following parameter values were updated:

“Filter.0.Value” = “\${User_ID_Field}, “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}.

The two (2) other CSRF tokens were added as a TEST ONLY Not required.

Step 28: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter Test Plan configuration for an HTTP Request. The left sidebar displays a tree view of the test plan, with the current step, '05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS', highlighted. The main configuration area is titled 'HTTP Request' and includes the following fields:

- Name:** 05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
- Comments:**
- Web Server:** Server Name or IP: \${IMWA_HOSTNAME}, Port Number: [], Timeouts (milliseconds): Connect: [], Response: []
- HTTP Request:** Implementation: HttpClient4, Protocol [http]: [], Method: POST, Content encoding: UTF-8
- Path:** /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
- Options:** Redirect Automatically, Follow Redirects, Use KeepAlive, Use multipart/form-data for POST, Browser-compatible headers
- Parameters:** A table with columns 'Name', 'Value', 'Encode?', and 'Include Equals?'. The table contains the following rows:

Name	Value	Encode?	Include Equals?
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_andLower	Y	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	\${User_ID_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DefaultUserSearch_sel	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearch.select	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_REGEX	\${REGEX_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_XPATH	\${XPATH_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following parameter values were updated:

“Filter.0.Value” = “\${User_ID_Field}”, “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}”.

The two (2) other CSRF tokens were added as a TEST ONLY Not required.

Step 29: Jmeter Test Plan for IMWA: Transaction Controller

The screenshot displays the Jmeter Test Plan for IMWA. The left pane shows a tree view of the test plan components, including a Testing Loop for IM containing several HTTP-related elements and a sequence of tasks from 01 to 06. The task '06-RESET PASSWORD FOR USER' is selected and highlighted. The right pane shows the configuration for this Transaction Controller, with the Name field set to '06-RESET PASSWORD FOR USER' and two unchecked options: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample'.

The 6th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the actual change operation for IM Reset a User Password task. This section assumes the users' accounts exist or were created prior.

No changes to be defined on this item

Step 30: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 06a - CHANGE TO NEW PASSWORD & UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS

Comments:

Web Server

Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds) Connect: Response:

HTTP Request

Implementation: HttpClient4 Protocol [http]: Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PASSWORD	\${New_Password_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
passwordConfirm	\${New_Password_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ORG_MEMBERSHIP	people	<input type="checkbox"/>	<input checked="" type="checkbox"/>
USER_ID	\${User_ID_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
forcePasswordReset	false	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_REGEX	\${REGEX_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_XPATH	\${XPATH_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following parameter values were updated:

“USER_ID” = “\${User_ID_Field}”, “PASSWORD” = “\${New_Password_Field}”, “passwordConfirm” = “\${New_Password_Field}”, “ORG_MEMBERSHIP” = “people”, “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}”.

The two (2) other CSRF tokens were added as a TEST ONLY Not required.

Step 31: Jmeter Test Plan for IMWA: HTTP Request

The screenshot displays the Jmeter GUI with a test plan on the left and the configuration for an HTTP Request on the right. The test plan includes a 'Testing Loop for IM' containing several HTTP-related components and a sequence of tasks from 01 to 10. The selected task is '06b - Submit Password Change & UPDATE OWASP_CSRFTOKEN PARAMETER'. The configuration panel shows the following details:

- Name:** 06b - Submit Password Change & UPDATE OWASP_CSRFTOKEN PARAMETER
- Web Server:** Server Name or IP: \${IMWA_HOSTNAME}, Port Number: [empty]
- Timeouts (milliseconds):** Connect: [empty], Response: [empty]
- Implementation:** HttpClient4
- Protocol [http]:** [empty]
- Method:** POST
- Content encoding:** UTF-8
- Path:** /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
- Options:** Redirect Automatically, Follow Redirects, Use KeepAlive, Use multipart/form-data for POST, Browser-compatible headers

The 'Parameters' tab is active, showing a table of parameters to be sent with the request:

Send Parameters With the Request:			
Name:	Value	Encode?	Include Equals?
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_REGEX	\${REGEX_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN_XPATH	\${XPATH_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

Note “action.submit.confirm” = “yes”

The following parameter values were updated: “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}”.

The two (2) other CSRF tokens were added as a TEST ONLY Not required.

Step 32: Jmeter Test Plan for IMWA: Transaction Controller

The screenshot displays the Jmeter Test Plan for IMWA. The left pane shows a tree view of the test plan components, including a 'Testing Loop for IM' containing various HTTP request defaults, managers, and a sequence of tasks. The task '07 - DELETE USER' is selected and highlighted. The right pane shows the configuration for this Transaction Controller, with the name '07 - DELETE USER' and two unchecked options: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample'.

The 7th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage IM Delete User task. This section assumes the users' accounts exist or were created prior.

No changes to be defined on this item

Step 33: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter Test Plan on the left and the HTTP Request configuration on the right.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 07a - Launch Delete User Task
 - 07a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_consol
 - 07a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_
 - 07a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar a
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07c - Selected User to Delete
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMET

HTTP Request

Name: 07a - Launch Delete User Task

Comments:

Web Server

Server Name or IP: \${IMWA_HOSTNAME} Port Number: []

Timeouts (milliseconds)

Connect: [] Response: []

HTTP Request

Implementation: HttpClient4 Protocol [http]: [] Method: GET Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
task.tag	DeleteUser	<input type="checkbox"/>	<input checked="" type="checkbox"/>
console.cat3	Manage Users	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

This HTTP GET operation is NEEDED, as it will launch the IM DeleteUser Task & execute the security process to protect the IM solution from Cross Site Request Forgery (if it was NOT already performed)

No changes required for this operation [See prior examples for 07a, 07b, 07c]

Step 34: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter GUI. On the left is a tree view of a test plan named 'Test Plan - IM'. The tree includes various components like 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', and several 'HTTP Request' elements. The element '07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER' is selected and highlighted in blue.

On the right, the configuration for the selected 'HTTP Request' is shown. The 'Name' field is '07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER'. The 'Path' field is '/iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp'. The 'Method' is set to 'POST' and 'Content encoding' is 'UTF-8'. The 'Implementation' is 'HttpClient4'. There are checkboxes for 'Redirect Automatically', 'Follow Redirects', 'Use KeepAlive', 'Use multipart/form-data for POST', and 'Browser-compatible headers'. Below this is a table for 'Send Parameters With the Request'.

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	`\${CSS_OWASP_CSRF_TOKEN}`	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_and...		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	`\${User_ID_Field}`	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearc...	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following parameter values were updated: "Filter.0.Value" = "\${User_ID_Field}", "OWASP_CSRFTOKEN" = "\${CSS_OWASP_CSRF_TOKEN}.

Step 35: Jmeter Test Plan for IMWA: HTTP Request

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 07a - Launch Delete User Task
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07c - Selected User to Delete**
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 08-LAUNCH VIEW SUBMITTED TASKS
 - 09-SUBMITTED VST
 - 10 - LOG OUT OF IM
- View Results Tree
- Graph Results
- Aggregate Report

HTTP Request

Name: 07c - Selected User to Delete

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []

Implementation: HttpClient4 Protocol [http]: [] Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardsearch_andLower		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	\${User_ID_Field}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DefaultUserSearchSelect_0	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearch.select	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

Note “DefaultUserSearchSelect_0” = “1”

The following parameter values were updated: “Filter.0.Value” = “\${User_ID_Field}”, “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}”.

Step 36: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter Test Plan configuration for an HTTP Request. The left pane displays the test plan hierarchy, with the selected element being '07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER'. The right pane shows the configuration for this HTTP Request.

HTTP Request

Name: 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []

Implementation: HttpClient4 Protocol [http]: [] Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearch.confirmYes	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following parameter values were updated: "OWASP_CSRFTOKEN" = "\${CSS_OWASP_CSRF_TOKEN}.

Step 37: Jmeter Test Plan for IMWA: HTTP Request

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 07a - Launch Delete User Task
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07c - Selected User to Delete
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER**
 - 08-LAUNCH VIEW SUBMITTED TASKS
 - 09-SUBMITTED VST

HTTP Request

Name: 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: Timeouts (milliseconds): Connect: Response:

Implementation: HttpClient4 Protocol [http]: Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

Note “action.submit.confirm” = “1”

The following parameter values were updated: “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}”.

Step 38: Jmeter Test Plan for IMWA: Transaction Controller

The screenshot displays the JMeter Test Plan for IMWA. The left pane shows a tree view of the test plan components, including a 'Testing Loop for IM' containing various HTTP managers and ten numbered tasks. The eighth task, '08-LAUNCH VIEW SUBMITTED TASKS', is highlighted. The right pane shows the configuration for this Transaction Controller, with the name field set to '08-LAUNCH VIEW SUBMITTED TASKS' and two unchecked options: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample'.

Transaction Controller	
Name:	08-LAUNCH VIEW SUBMITTED TASKS
Comments:	
<input type="checkbox"/>	Generate parent sample
<input type="checkbox"/>	Include duration of timer and pre-post processors in generated sample

The 8th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the launch of the IM View Submitted Task.

No changes to be defined on this item. It is currently DISABLED (right click).

Step 39: Jmeter Test Plan for IMWA: HTTP Request

The screenshot displays the Jmeter Test Plan for IMWA. The left sidebar shows a tree view of the test plan elements, including 'Test Plan - IM', 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', and various HTTP-related components. The '08a - Launch VST' element is selected and highlighted in blue.

The main configuration area for the 'HTTP Request' element is shown. The 'Name' field is '08a - Launch VST'. The 'Web Server' section includes 'Server Name or IP' set to '\${IMWA_HOSTNAME}', 'Port Number', 'Connect' timeout, and 'Response' timeout. The 'HTTP Request' section shows 'Implementation' as 'HttpClient4', 'Protocol' as 'http', 'Method' as 'GET', and 'Content encoding' as 'UTF-8'. The 'Path' is '/iam/im/cam/ui7/index.jsp'. Checkboxes for 'Redirect Automatically', 'Follow Redirects', 'Use KeepAlive', 'Use multipart/form-data for POST', and 'Browser-compatible headers' are visible.

The 'Parameters' tab is active, showing a table for 'Send Parameters With the Request':

Name	Value	Encode?	Include Equals?
task.tag	ViewSubmittedTasks	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

This HTTP GET operation is NEEDED, as it will launch the IM View Submitted Task & execute the security process to protect the IM solution from Cross Site Request Forgery (if it was NOT already performed)

No changes required for this operation [See prior examples for 07a, 07b, 07c]

Step 40: Jmeter Test Plan for IMWA: Transaction Controller

The screenshot displays the Jmeter Test Plan for IMWA. The left pane shows a tree view of the test plan components, including a Testing Loop for IM containing various HTTP managers and a sequence of tasks from 01 to 10. The 9th task, '09-SUBMITTED VST', is highlighted. The right pane shows the configuration for the selected Transaction Controller, with the Name field set to '09-SUBMITTED VST'. Two checkboxes are present: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample', both of which are currently unchecked.

The 9th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the submission of the IM View Submitted Task.

No changes to be defined on this item. It is currently DISABLED (right click).

Step 41: Jmeter Test Plan for IMWA: HTTP Request

HTTP Request

Name: 09a - Submit VST & UPDATE OWASP_CSRFTOKEN

Comments:

Web Server: Server Name or IP: \${IMWA_HOSTNAME} Port Number: [] Timeouts (milliseconds): Connect: [] Response: []

Implementation: HttpClient4 Protocol [http] Method: POST Content encoding: UTF-8

Path: /iam/iam/cam/ui7/index.jsp?facesViewId=/app/page/special/submitted_tasks.jsp

Redirect Automatically Follow Redirects Use KeepAlive Use multipartform-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchuserfilter		<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchapproverfilter		<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchtaskNameOperator	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchtasknamefilter		<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchtaskstatus		<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchtaskpriority	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
applysearchdaterangefilter	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchstartdatefilter	12/29/15	<input type="checkbox"/>	<input checked="" type="checkbox"/>
searchenddatefilter	12/30/15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
searchmaxrows	1000	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submittedtasks.search	Search	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OWASP_CSRFTOKEN	\${CSS_OWASP_CSRF_TOKEN}	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

The following parameter values were updated: “OWASP_CSRFTOKEN” = “\${CSS_OWASP_CSRF_TOKEN}”.

Other fields that may be updated: “searchstartdatefilter” = “\${__time(dd/MM/yyyy,)}”, searchenddatefilter = “\${__time(dd/MM/yyyy,)}”

Ref: http://jmeter.apache.org/usermanual/functions.html#__time

Step 42: Jmeter Test Plan for IMWA: Transaction Controller

The screenshot displays the Jmeter Test Plan for IMWA. The left pane shows a tree view of the test plan components. The right pane shows the configuration for the selected Transaction Controller.

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 08-LAUNCH VIEW SUBMITTED TASKS
 - 09-SUBMITTED VST
 - 10 - LOG OUT OF IM**
 - 10a - Launch Log Out Parameter
 - 10b - Launch Log Out URL for IME
- View Results Tree

Transaction Controller

Name: 10 - LOG OUT OF IM

Comments:

Generate parent sample

Include duration of timer and pre-post processors in generated sample

The 10th of the HTTP operations to be managed.

This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

This Transaction Controller was re-labeled to clarify the operation being performed.

This section will manage the submission of the IM Log Out Event.

No changes to be defined on this item. It is currently DISABLED (right click).

Step 43: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter configuration for an HTTP Request. The left sidebar displays a test plan tree with '10a - Launch Log Out Parameter' selected. The main configuration area is titled 'HTTP Request' and includes the following details:

- Name:** 10a - Launch Log Out Parameter
- Comments:** Detected the start of a redirect chain
- Web Server:** Server Name or IP: \${IMWA_HOSTNAME}, Port Number: [empty], Timeouts (milliseconds): Connect: [empty], Response: [empty]
- HTTP Request:** Implementation: HttpClient4, Protocol [http]: [empty], Method: GET, Content encoding: UTF-8
- Path:** /iam/im/cam/ui7/index.jsp
- Options:** Redirect Automatically, Follow Redirects, Use KeepAlive, Use multipart/form-data for POST, Browser-compatible headers
- Parameters:** A table with the following data:

Send Parameters With the Request:			
Name:	Value	Encode?	Include Equals?
logout	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

This HTTP GET operation is NEEDED, as it will launch the IM Log Out Event

No changes required for this operation

Step 44: Jmeter Test Plan for IMWA: HTTP Request

The screenshot shows the Jmeter configuration for an HTTP Request. The left sidebar displays a test plan tree with the following items: Test Plan - IM, Notes for IM Test Plan, CSV Data Set Config for IM Login, Testing Loop for IM, Gaussian Random Timer for IM, HTTP Cookie Manager for IM, HTTP Authorization Manager for IM, HTTP Request Defaults for IM, HTTP Header Manager for IM, 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM, 02 - LAUNCH CREATE USER TASK, 03 - CREATE USER, 04-LAUNCH RESET USER PASSWORD TASK, 05-FIND USER, 06-RESET PASSWORD FOR USER, 07 - DELETE USER, 08-LAUNCH VIEW SUBMITTED TASKS, 09-SUBMITTED VST, 10 - LOG OUT OF IM, 10a - Launch Log Out Parameter, and 10b - Launch Log Out URL for IME. The main configuration area is titled 'HTTP Request' and includes the following fields: Name: 10b - Launch Log Out URL for IME, Comments: Detected a redirect from the previous sample, Web Server: Server Name or IP: \${IMWA_HOSTNAME}, Port Number: (empty), Timeouts (milliseconds): Connect: (empty), Response: (empty), Implementation: HttpClient4, Protocol [http]: (empty), Method: GET, Content encoding: UTF-8, Path: /iam/im/logout.jsp, and checkboxes for Redirect Automatically (unchecked), Follow Redirects (checked), Use KeepAlive (checked), Use multipart/form-data for POST (unchecked), and Browser-compatible headers (unchecked). Below these are tabs for Parameters and Body Data. The Parameters tab is active, showing a table with the following data:

Send Parameters With the Request:			
Name:	Value	Encode?	Include Equals?
envAlias	cam	<input type="checkbox"/>	<input checked="" type="checkbox"/>

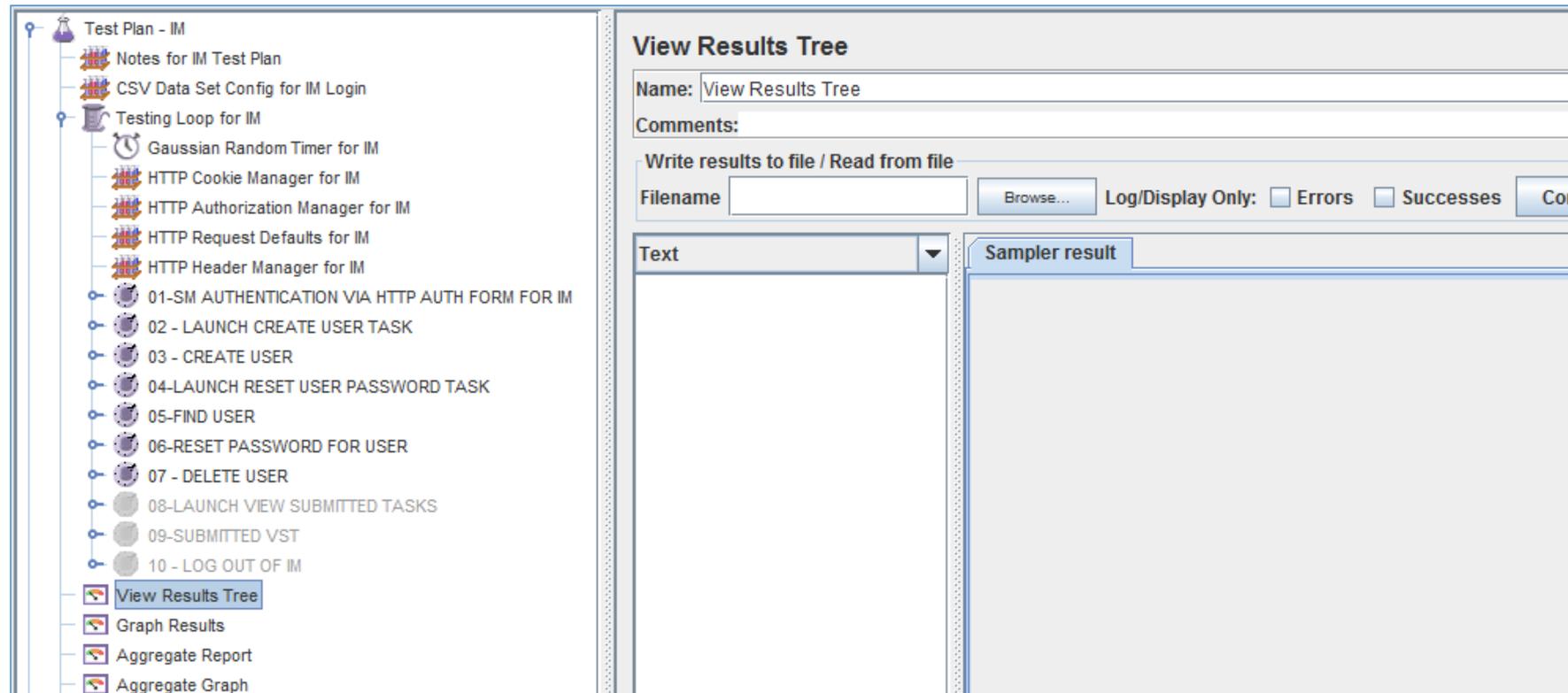
This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

The title was re-labeled to clarify the operation being performed.

This HTTP GET operation is NEEDED, as it will execute the IM Log Out Event for the selected IME

No changes required for this operation

Step 45: Jmeter Test Plan for IMWA: Listeners/Reports



Four (4) Listeners / Reports / Graphs were added to this test plan.

The View Results Tree is a very common report to add, and provide immediate view to the execution of the steps of the test plan.

If data is to be retained, a filename may be created to capture the data to a temporary folder.

Step 46: Jmeter Test Plan for IMWA: Listeners/Reports

The screenshot displays the JMeter interface. On the left, a tree view shows the test plan structure for 'Test Plan - IM'. The tree includes a 'Testing Loop for IM' containing ten steps: 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM, 02 - LAUNCH CREATE USER TASK, 03 - CREATE USER, 04-LAUNCH RESET USER PASSWORD TASK, 05-FIND USER, 06-RESET PASSWORD FOR USER, 07 - DELETE USER, 08-LAUNCH VIEW SUBMITTED TASKS, 09-SUBMITTED VST, and 10 - LOG OUT OF IM. Below the tree are options for 'View Results Tree', 'Graph Results', 'Aggregate Report', and 'Aggregate Graph'. The 'Graph Results' panel on the right is active, showing a name field set to 'Graph Results' and a comments field. It has options to 'Write results to file / Read from file' with a 'Filename' field and a 'Browse...' button. The 'Log/Display Only' section has checkboxes for 'Errors' and 'Successes', with a 'Configure' button. The 'Graphs to Display' section has checkboxes for 'Data', 'Average' (checked), 'Median', 'Deviation', and 'Throughput' (checked). The graph area is currently empty, with a vertical axis labeled 'ms'.

Four (4) Listeners / Reports / Graphs were added to this test plan.

The Graph Results provide an immediate view to the time aspect of the steps of the test plan. Suggest only “Average” and “Throughput” be used, to avoid excessive clutter of this graph. If data is to be retained, a filename may be created to capture the data to a temporary folder.

Step 47: Jmeter Test Plan for IMWA: Listeners/Reports

The screenshot displays the JMeter Test Plan configuration for 'Test Plan - IM'. The left sidebar shows a tree view of the test plan components, including various HTTP managers, a testing loop, and ten numbered steps. The right pane shows the configuration for the 'Aggregate Report' listener. The configuration includes a name field set to 'Aggregate Report', a comments field, and options to write results to a file or read from one. A table below the configuration shows the current test results.

Label	# Samp...	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throug...	KB/sec
TOTAL	0	0	0	0	0	0	922337...	-92233...	0.00%	.0/hour	.0

Four (4) Listeners / Reports / Graphs were added to this test plan.

The Aggregate Report provide an view to monitor the iteration of each step; allow a view to bottleneck of any operation and any errors.

Step 48: Jmeter Test Plan for IMWA: Listeners/Reports

The screenshot displays the JMeter GUI. On the left, the Test Plan tree is visible, showing a sequence of elements: Notes for IM Test Plan, CSV Data Set Config for IM Login, Testing Loop for IM, Gaussian Random Timer for IM, HTTP Cookie Manager for IM, HTTP Authorization Manager for IM, HTTP Request Defaults for IM, HTTP Header Manager for IM, and a series of numbered tasks (01-10) for authentication, user creation, password reset, and user deletion. Below these are View Results Tree, Graph Results, Aggregate Report, and Aggregate Graph. On the right, the configuration for the 'Aggregate Graph' listener is shown. It includes a 'Name' field set to 'Aggregate Graph', a 'Comments' field, and a 'Write results to file / Read from file' section with a 'Filename' input and a 'Browse...' button. Below this is a table with the following data:

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min
TOTAL	0	0	0	0	0	0	92233720

At the bottom of the configuration, there are tabs for 'Settings' and 'Graph'. The 'Settings' tab is active, showing a 'Display Graph' button and 'Column settings'. The 'Columns to display' section has checkboxes for 'Average' (checked), 'Median', '90% Line', '95% Line', and '99% Line'. The 'Value font' section has dropdowns for 'Sans Serif', 'Size: 10', and 'Style: Normal', along with checkboxes for 'Draw outlines bar?' and 'Show number grouping?' (both checked).

Four (4) Listeners / Reports / Graphs were added to this test plan.

The Aggregate Graph provide an visual view to monitor the iteration of each step; allow a view to bottleneck of any operation and any errors.

Other listeners may be added to the Test Plan

Step 49: OPTIONAL for IMWA: Notes for Expansion Kit

The screenshot shows the JMeter Test Plan interface. On the left is a tree view of the test plan, with 'Notes for CPU DISK & Network Performance' selected. The main area displays the 'User Defined Variables' for this test plan. The 'Name' is 'Notes for CPU DISK & Network Performance' and the 'Comments' are 'Must install ServerAgent on remote server; download and extra extra libraries for Jmeter'. Below this is a table of 11 user-defined variables, each with a name and a value.

Name:	Value
Note1	Disable any jp@gc Listners if ServerAgent.sh is not being used
Note2	/opt/CA/media/iso/3rd/jmeter/ServerAgent-2.2.1/startAgent.sh --loglevel debug --sysinfo
Note3	PerfMon example of JMX for JBOSS would fail with OOM PermGen error messages upon restart of Java for JBOSS
Note4	Use JMSMon Samples for JBOSS Management Port 9999 service:jmx:remoting-jmx://\${IMWA_HOSTNAME}:9999
Note5	JBOSS Management Port must be configured with userID & password via add-user.sh first & then bounced
Note6	IDM_OPTS="\$IDM_OPTS -Djboss.bind.address.management=0.0.0.0" added to standalone.sh
Note7	JMETER PLUGIN STANDARD SET: http://jmeter-plugins.org/wiki/StandardSet/
Note8	JMETER PLUGIN EXTRA SET: http://jmeter-plugins.org/wiki/ExtrasSet/
Note9	JMX Monitoring Examples with JBOSS: https://planet.jboss.org/post/jmx_connections_to_jboss_as
Note10	Jconsole JMX via JBOSS version: http://www.mastertheboss.com/jboss-server/jboss-monitoring/using-jconsole-to-monitor-a-remote-wildfly-server
Note11	Heap Memory Info: https://pubs.vmware.com/vfabric52/index.jsp?topic=/com.vmware.vfabric.em4i.1.2/em4i/conf-heap-management.html

To monitor disk I/O, CPU & Network utilization, Thread Counts, there are additional Jmeter Libraries that need to be added to the base Jmeter solution: <http://jmeter-plugins.org/>

STANDARD SET: <http://jmeter-plugins.org/wiki/StandardSet/> [Required for PerfMon]

EXTRA SET: <http://jmeter-plugins.org/wiki/ExtrasSet/> [Required for monitoring JBOSS JMX]

Step 50: OPTIONAL for IMWA: Notes for Expansion Kit

The screenshot shows the JMeter configuration for the 'jp@gc - PerfMon Metrics Collector' listener. The left sidebar shows a test plan with various components, including 'Testing Loop for IM' and '01-SM AUTHENTICATION VIA HTTP AUTH FOR IM'. The main window displays the configuration for the listener, which is set to monitor servers and collect performance metrics.

jp@gc - PerfMon Metrics Collector
Name: jp@gc - PerfMon Metrics Collector
Comments: [Help on this plugin](#) v1.3.1

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
\${IMWA_HOSTNAME}	4444	CPU	combined
\${IMWA_HOSTNAME}	4444	Memory	usedperc
\${IMWA_HOSTNAME}	4444	Disks I/O	queue:fs=/opt
\${IMWA_HOSTNAME}	4444	Network I/O	bytesrecv
\${IMWA_HOSTNAME}	4444	TCP	estab

Buttons: Add Row, Copy Row, Delete Row

Write results to file / Read from file
Filename: Browse... Log/Display Only: Errors Successes

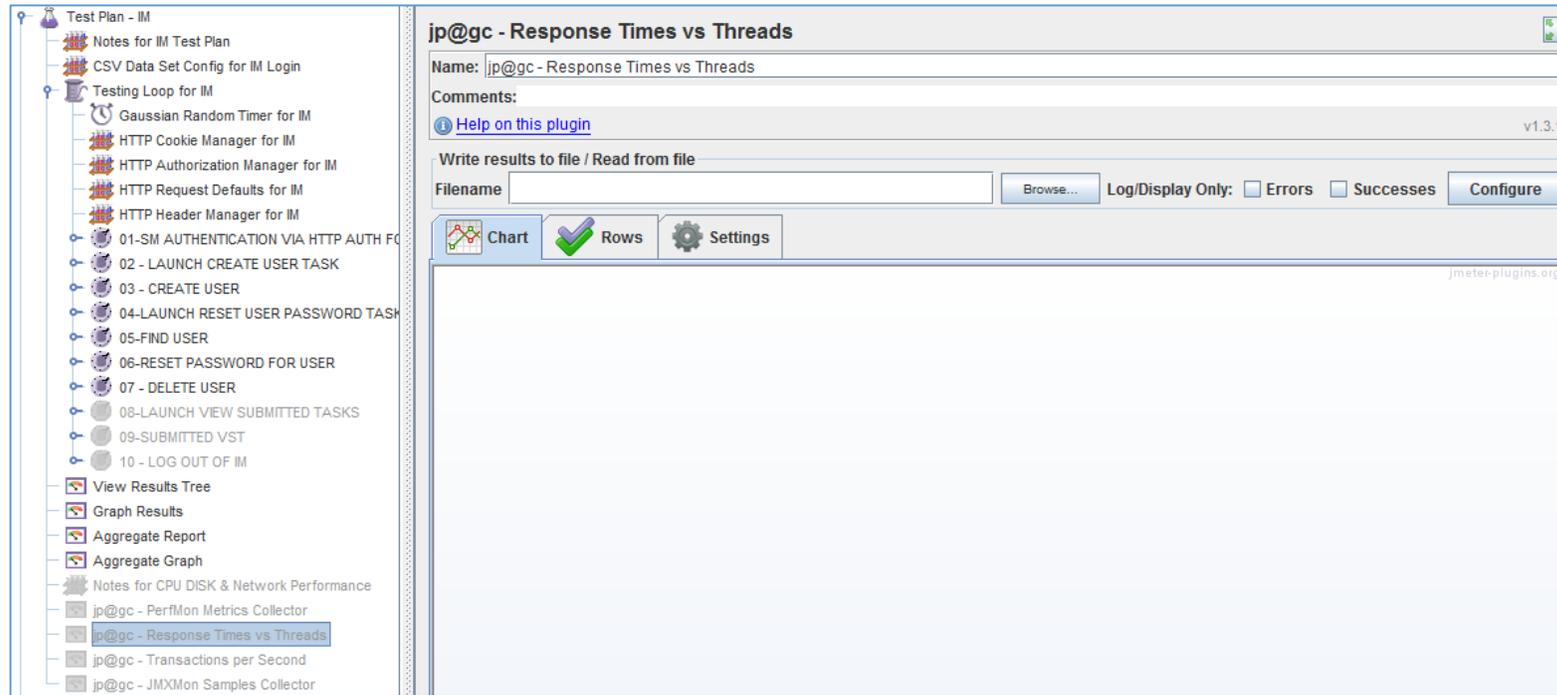
Buttons: Chart, Rows, Settings

To monitor disk I/O, CPU & Network utilization, requires three (3) steps:

- 1) Update existing Jmeter lib folder with the STANDARD SET PLUG-IN libraries
- 2) Download, copy, & run the standalone JMETER PERFMON SERVER on the Server to be monitored.
 - a. <http://jmeter-plugins.org/downloads/file/ServerAgent-2.2.1.zip>
- 3) Add & configure the “jp@gc - PerfMon Metric Collector” Listener to your test plan.
 - a. Use default TCP port of 4444; & add CPU, Memory, Disk I/O, Network I/O, TCP.

This report will populate during an execution of the test lab.

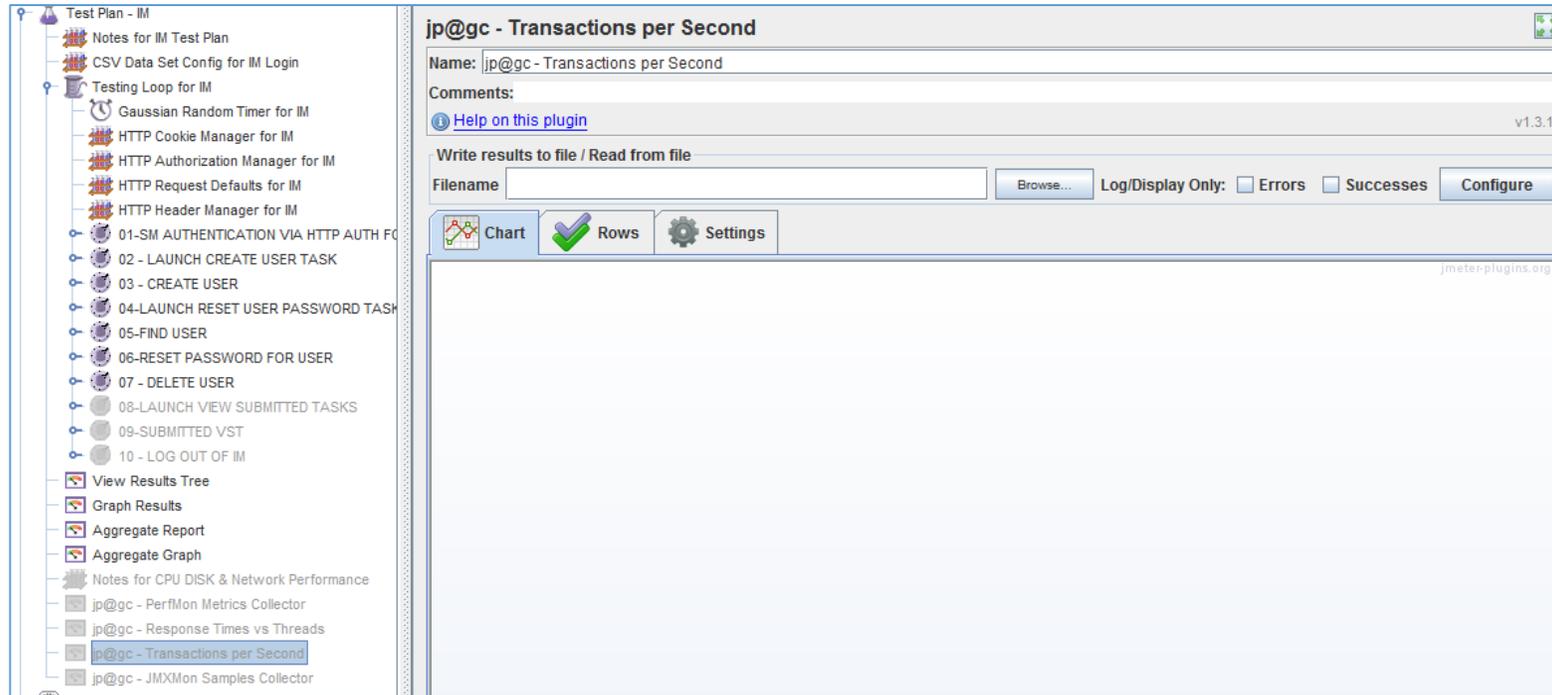
Step 51: OPTIONAL for IMWA: Notes for Expansion Kit



The “jp@gc - Response Time vs Threads” is an excellent report to identify when expansion of the solution should be adjusted, e.g. # of connection pools, horizontal scaling of the solution with load balancers, or increase of JVM memory.

This report will populate during an execution of the test lab.

Step 52: OPTIONAL for IMWA: Notes for Expansion Kit



The “jp@gc - Transactions per Second” is an report to identify how quickly the solution is managing various operations. This report will populate during an execution of the test lab.

Step 53: OPTIONAL for IMWA: Notes for Expansion Kit

The screenshot shows the JMeter GUI configuration for the 'jp@gc - JMXMon Samples Collector' plugin. The main configuration area includes a table of JMX Samplers with the following data:

Label	URL	Username	Password	Object Name	Attribute	Key	Delta
JBOSS	service:jmx:remoting-jmx://\${IMWA_HOSTNAME}:9999	jmeter	jmeter123!	java.lang:type=Me...	HeapMemoryUsage	used	<input type="checkbox"/>

Below the table are buttons for 'Add Row', 'Copy Row', and 'Delete Row'. The 'Write results to file / Read from file' section shows the filename as '\$(JMETER_TEMP)jboss_jmx_collector.log' and a 'Configure' button. The bottom toolbar contains 'Chart', 'Rows', and 'Settings' buttons.

The “jp@gc - JMXMon Samples Collector” is an report to pull J2EE data directly; using the J2EE Administrative Console.

Requires the following:

- 1) Ensure the current jboss-cli-client.jar is copied to Jmeter lib folder
- 2) JBOSS Administrative Console be accessible remotely; [Update standalone.sh/bat with `IDM_OPTS="$IDM_OPTS -Djboss.bind.address.management=0.0.0.0"`]
- 3) JBOSS userID/password is defined in the Admin Console for access to J2EE stats. [Execute `add-user.sh/bat` & create management user with password]

This report will populate during an execution of the test lab.

Label: JBOSS
URL: service:jmx:remoting-jmx://\${IMWA_HOSTNAME}:9999
Username: jmeter
Password: jmeter123!
Object Name: java.lang:type=Memory
Attribute: HeapMemoryUsage
Key (for composite JMX values): used

Ref: http://jmeter-plugins.org/wiki/JMXMon/?utm_source=jmeter&utm_medium=helplink&utm_campaign=JMXMon

https://planet.jboss.org/post/jmx_connections_to_jboss_as

<http://jmeter-plugins.org/wiki/JMXMon/>
<https://github.com/undera/jmeter-plugins/blob/master/extras/src/kg/apc/jmeter/jmxmon/JMXMonCollector.java>

Step 53b OPTIONAL for IMWA: Notes for Expansion Kit

The screenshot displays the Java Monitoring & Management Console interface. On the left, the 'New Connection' dialog is open, showing the 'Remote Process' configuration for JBoss. The URL is 'service:jmx:remoting-jmx://192.168.92.129:9999', the username is 'jmeter', and the password is masked. A table lists local processes: 'sun.tools.jconsole.JConsole' (PID 8709), 'jboss-modules.jar -mp /opt/CA/jboss/im_02...' (PID 3626), and 'jboss-modules.jar -mp /opt/CA/jboss/im_01...' (PID 3625).

The central 'JConsole: Output' window shows the following log output:

```
Jan 03, 2016 12:56:12 AM org.xnio.Xnio <clinit>  
INFO: XNIO Version 3.0.7.GA-redhat-1  
Jan 03, 2016 12:56:12 AM org.xnio.nio.NioXnio <clinit>  
INFO: XNIO NIO Implementation Version 3.0.7.GA-redhat-1  
Jan 03, 2016 12:56:12 AM org.jboss.remoting3.EndpointImpl <clinit>  
INFO: JBoss Remoting version 3.2.18.GA-redhat-1
```

The right-hand side of the console shows monitoring graphs for 'JBoss CLI / sandbox01'. The 'Heap Memory Usage' graph shows 535.8 Mb used and 1.6 Gb committed. The 'Threads' graph shows 276 live threads. The 'Classes' graph shows 23,553 loaded classes. The 'CPU Usage' graph shows 0.7% CPU usage.

Validate REMOTE JMX for JBOSS with JBOSS Java Jconsole

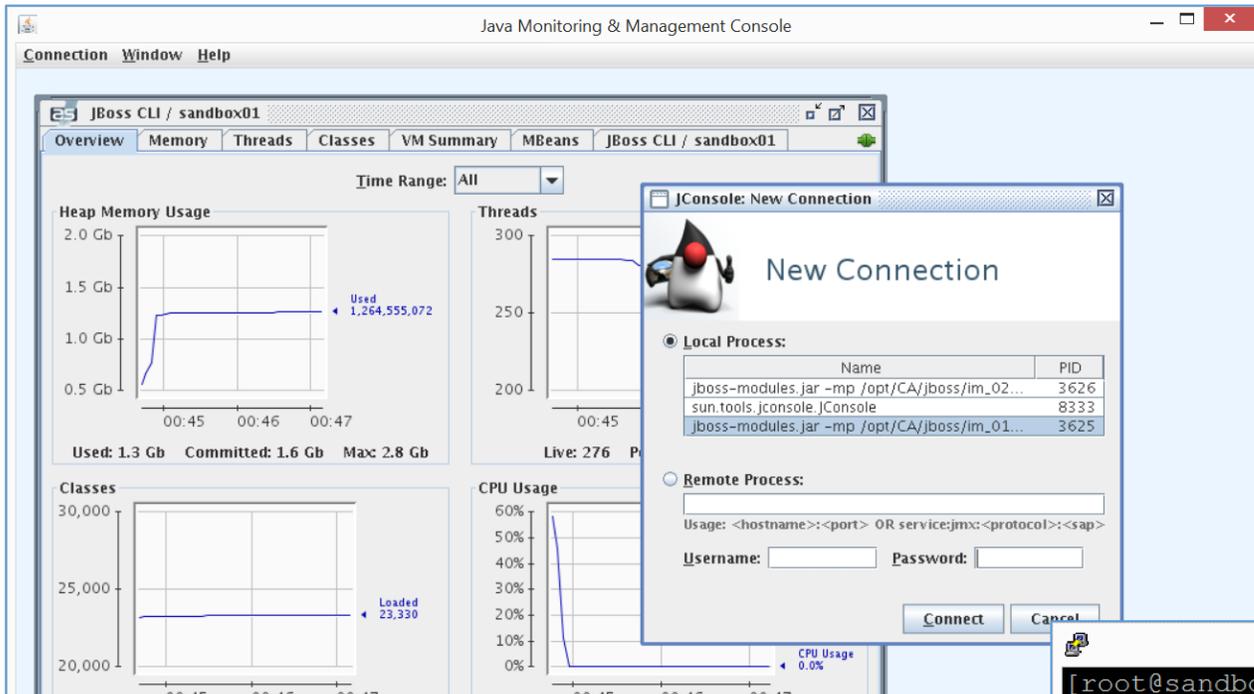
Requires the following:

- 1) X-Ming or similar X-Window on desktop for remote execution. Putty enabled with X11 Redirect & Linux environment variable DISPLAY=IP:0.0
- 2) Execute JBOSS_HOME\bin\jconsole.sh [Should appear in X-Window]
- 3) JBOSS userID/password is defined in the Admin Console for access to J2EE stats. [Execute add-user.sh/bat & create management user with password]

This report will populate during an execution of the test lab.

```
root@sandbox01:~  
[root@sandbox01 ~]# netstat -an | grep 999  
tcp        0      0 0.0.0.0:9999          0.0.0.0:*            LISTEN  
tcp        0      0 0.0.0.0:9990          0.0.0.0:*            LISTEN  
[root@sandbox01 ~]#
```

Step 53c OPTIONAL for IMWA: Notes for Expansion Kit



<http://docs.oracle.com/javase/7/docs/technotes/guides/management/agent.html>

Validate LOCAL JMX for JBOSS with JBOSS Java Jconsole

Requires the following:

- 1) X-Ming or similar X-Window on desktop for remote execution. Putty enabled with X11 Redirect & Linux environment variable DISPLAY=IP:0.0
- 2) Execute JBOSS_HOME\bin\jconsole.sh [Should appear in X-Window]
- 3) No authentication required.

This report will populate during an execution of the test lab.

```
root@sandbox01:/opt/CA/jdk/jdk1.7.0_71_x64/bin
[root@sandbox01 bin]# netstat -an | grep 3625
unix 2      [ ACC ]     STREAM  LISTENING   79653      /tmp/.java_pid3625.tmp
[root@sandbox01 bin]#
```

Step 53d OPTIONAL for IMWA: Notes for Expansion Kit

The screenshot shows the JMeter interface with the JMXMLon Samples Collector plugin configured. The configuration includes a Name, Comments, and a table of JMXMLon Samplers. Below the table are buttons for 'Add Row', 'Copy Row', and 'Delete Row'. There is also a section for 'Write results to file / Read from file' with a filename field and checkboxes for 'Log/Display Only: Errors' and 'Successes'. At the bottom, there are tabs for 'Chart', 'Rows', and 'Settings'. The 'Chart' tab is active, displaying a line graph of 'Query results' over 'Elapsed time (granularity: 1 sec)'. The graph shows a red line fluctuating between approximately 400,000,000 and 1,400,000,000 query results over a period of 1 minute.

http_recorder_example_v505_Working.jmx (C:\Users\Administrator\Desktop\References\jmeter\apache-jmeter-2.13\apache-jmeter-2.13\http_recorder_example_v...

File Edit Search Run Options Help

1 0 / 100

Test Plan - IM

- Notes for IM Test Plan
- CSV Data Set Config for IM Login
- Testing Loop for IM
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph
- Notes for CPU DISK & Network Performance
- jp@gc - PerfMon Metrics Collector
- jp@gc - Response Times vs Threads
- jp@gc - Transactions per Second
- jp@gc - JMXMLon Samples Collector

WorkBench

jp@gc - JMXMLon Samples Collector

Name: jp@gc - JMXMLon Samples Collector

Comments: Ensure Firewall Port on Server is open; otherwise test plan will fail to run with error msg: Operation failed with status WAITING; Ignore false error msg: Service URL must start with service:jmx: [Help on this plugin](#) v1.3.1

JMXMLon Samplers

Label	URL	Username	Password	Object Name	Attribute	Key	Delta
JBOSS	service:jmx:remoting-jmx://\${IMWA_HOSTNAME}:9999	jmeter	jmeter123!	java.lang:type=Memory	HeapMemoryUsage	used	<input type="checkbox"/>
							<input type="checkbox"/>

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename: \${JMETER_TEMP}\jboss_jmx_collector.log Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

JBOSS

Query results

Elapsed time (granularity: 1 sec)

2 000 000 000
1 800 000 000
1 600 000 000
1 400 000 000
1 200 000 000
1 000 000 000
800 000 000
600 000 000
400 000 000
200 000 000
0

00:00:00 00:00:06 00:00:12 00:00:19 00:00:25 00:00:32 00:00:38 00:00:44 00:00:51 00:00:57 00:01:04

jmeters-plugins.org

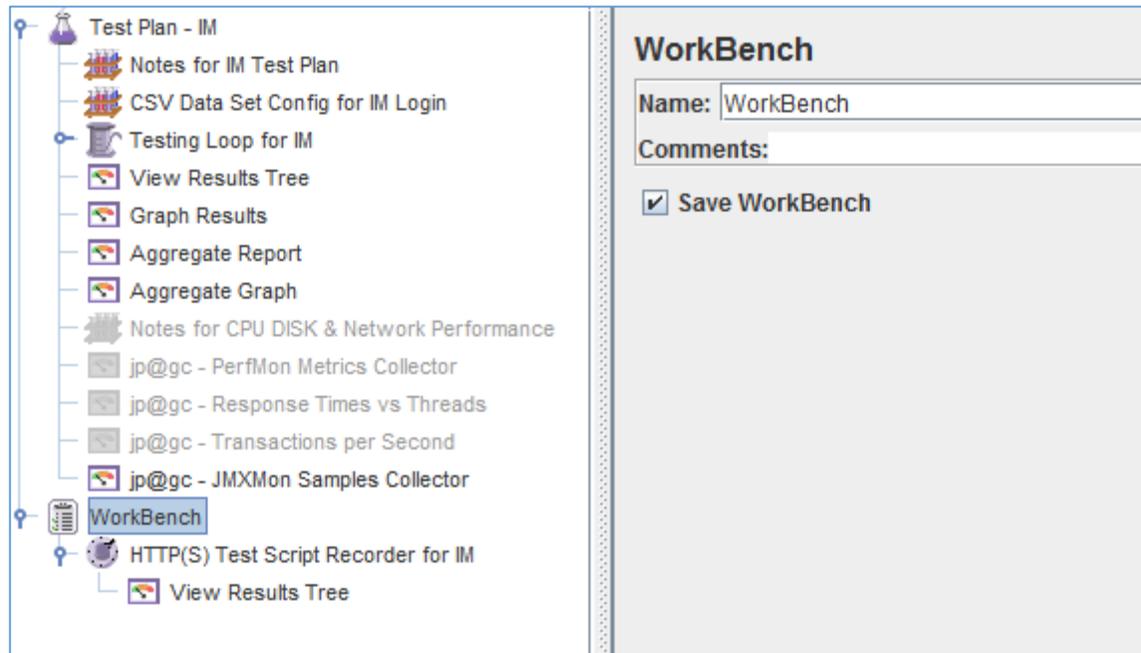
Ignore false error message: MalformedURLException: Service URL must start with service:jmx:

Step 53e OPTIONAL for IMWA: Notes for Expansion Kit

Example of CA APM (Introscope) – Robust Monitoring



Step 54: Jmeter Test Plan for IMWA: Workbench



The JMETER WORKBENCH allows temporary components / steps to be used.

This section is where the JMETER HTTP Recorder will be attached for later use.

This is STANDARD with JMETER

No changes required for this operation

Step 55: Jmeter Test Plan for IMWA: HTTP Test Recorder

The screenshot shows the JMeter configuration for the HTTP(S) Test Script Recorder. The Name is "HTTP(S) Test Script Recorder for IM". The Port is set to 8888 and the HTTPS Domains is lab.dom. The Target Controller is "Test Plan - IM > Testing Loop for IM". The Grouping is "Put each group in a new transaction controller". The HTTP Sampler settings are Type: HttpClient4, with checkboxes for Follow Redirects and Use KeepAlive. The Content-type filter is empty. The URL Patterns to Exclude list contains *.\\(bmp|css|js|gif|ico|jpe?g|png|swf|woff). The Notify Child Listeners of filtered samplers checkbox is checked. The Start, Stop, and Restart buttons are visible at the bottom.

Root CA certificate: ApacheJMeterTemporaryRootCA created in JMeter bin directory. The dialog provides instructions for installing the certificate in the browser and includes a warning not to install it unless it is the user's certificate. It also displays the certificate's fingerprint and creation date.

The Connection Settings dialog is configured for manual proxy configuration. The HTTP Proxy is localhost on port 8888, and the "Use this proxy server for all protocols" checkbox is checked. The SSL, ETP, and SOCKS Hosts are also set to localhost on port 8888. The SOCKS version is set to v5. The No Proxy for list contains localhost, 127.0.0.1. The "Do not prompt for authentication if password is saved" checkbox is unchecked.

The HTTP Test Script Recorder was added manually to capture ALL web traffic to the IM User Console.

The Proxy Port was defined as 8888. And the HTTPS SSL Domain was defined as lab.dom

The Test Plan Content was setup to use a Targeted Controller. This is where ALL operations will be placed, under this "folder"

Added URL Patterns to Exclude. These "images" and other static information will not be displayed to avoid clutter.

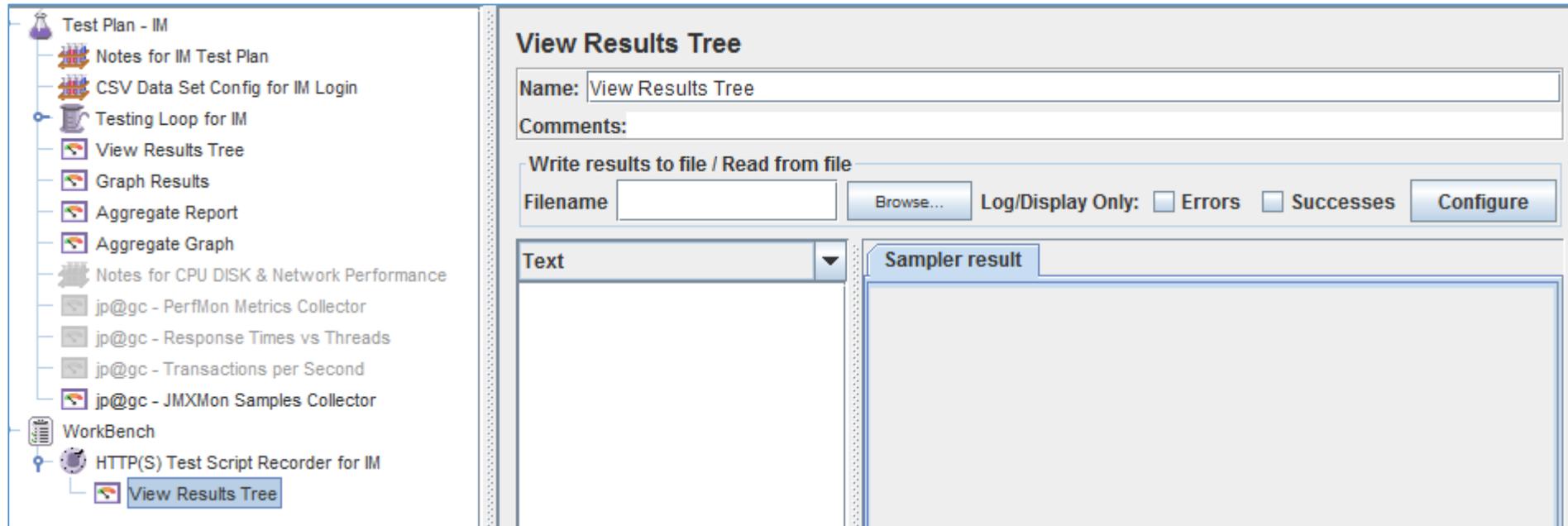
When READY, click START. This will cause the JMETER to monitor ALL HTTP(S) Traffic.

- A temporary SSL CA Cert will be created for use with any HTTPS URLs. Update the browser Network configurations for a Proxy, to localhost port 8888.

The command prompt shows the execution of the command netstat -an | findstr 8888. The output shows that both TCP and UDP are listening on localhost:8888.

```
C:\>netstat -an | findstr 8888
TCP    0.0.0.0:8888          0.0.0.0:0          LISTENING
TCP    [::]:8888          [::]:0             LISTENING
```

Step 56: Jmeter Test Plan for IMWA: HTTP Test Recorder



The View Results Tree Listener was added to view data as is was being collected.

This is the END of the current TEST PLAN.

Examples of Using Jmeter HTTP Recorder

Jmeter Configurations – HTTP Recorder

WHY? HIGH VALUE METHOD TO CREATE IM USE-CASE AUTOMATED TEST PLANS FOR EXECUTE

USE a HTTP Recorder Proxy to build the test plans to 90-95% completion.

HOW? Simple Steps

- 1) Configure Jmeter to run as a local proxy on port 8888
- 2) Configure local browser (IE/FF/Chrome) to use local proxy on port 8888
- 3) Launch browser and execute IM use-cases, e.g. authentication, change a user's password, create a user.
- 4) Monitor Jmeter for its information that it captured.
- 5) Add in SSL Certificates with TLSv1 support to allow use of HTTPS, to Jmeter

Jmeter Configurations – HTTP Recorder

1. Create “Test Plan” for HTTP
2. Right click on the “Test Plan” and add a new thread group: Add > Threads (Users) > Thread Group
3. Select the Thread Group
4. Right click on Thread Group: “Add -> Config Element -> HTTP Request Defaults”
5. In the new HTTP Request Defaults element set the variables for:
Server name: \${IMWA001}
Port: 8888

Jmeter Configurations – HTTP Recorder

1. WorkBench. Click checkbox, “Save WorkBench”
 2. Right click on WorkBench and add the recorder: Add -> Non-Test Elements -> HTTP(S) Test Script Recorder
 3. On HTTP(S) Test Script Recorder configuration pane, click the “Add” button in “URL Patterns to Include”. Enter “.*\.html” or “.*”.
 4. Right click on “HTTP(S) Test Script Recorder” and add a listener: Add -> Listener -> View Results Tree [See results].
 5. Return to HTTP(S) Test Script Recorder, and click the “**Start**” button at the bottom. [JMeter proxy server proxies to port 8888.]
- A file called ApacheJMeterTemporaryRootCA.crt will be generated in jmeter/bin folder. Install this certificate in your browser if you are using https. http://jmeter.apache.org/usermanual/component_reference.html#HTTP%28S%29_Test_Script_Recorder

Configure your browser to use the JMeter Proxy, at this point, JMeter's proxy is running.

13. Start IE 11, but do not close JMeter.
14. Open the browser options.

IE11: Tools > Internet Options > Connections > Lan Settings

FireFox: Edit -> Preferences -> Advanced -> Network -> Settings On the new pop-up, FireFox: check “Manual proxy configuration”.

IE11: check “Use a proxy server ...” The address and port fields should be enabled now.

18. Address – enter “localhost” or the IP address of your system
19. Port – enter “8888”.

20. Check “Use this proxy server for all protocols”, Click “OK” button to save the settings & Click “OK” button again. This should return you to the browser

Jmeter HTTP Traffic Recorder

- High Value
- Don't Guess. Let Jmeter capture your browsing & execution of use-cases.

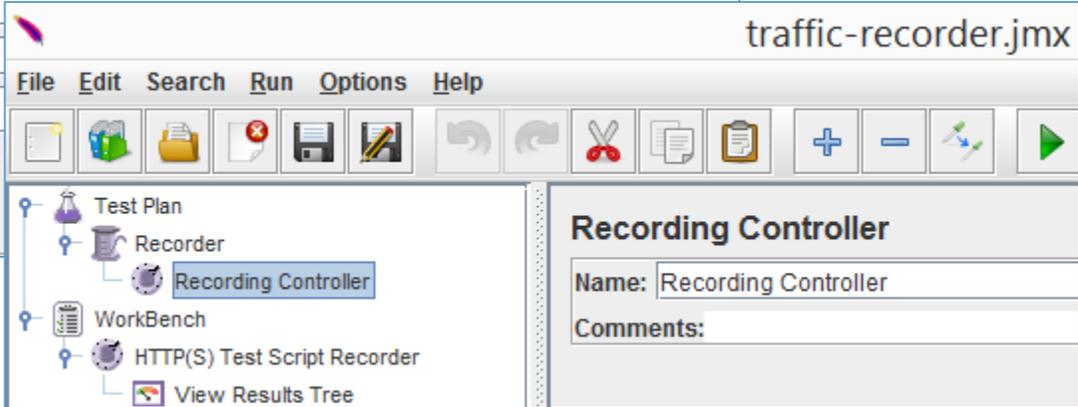
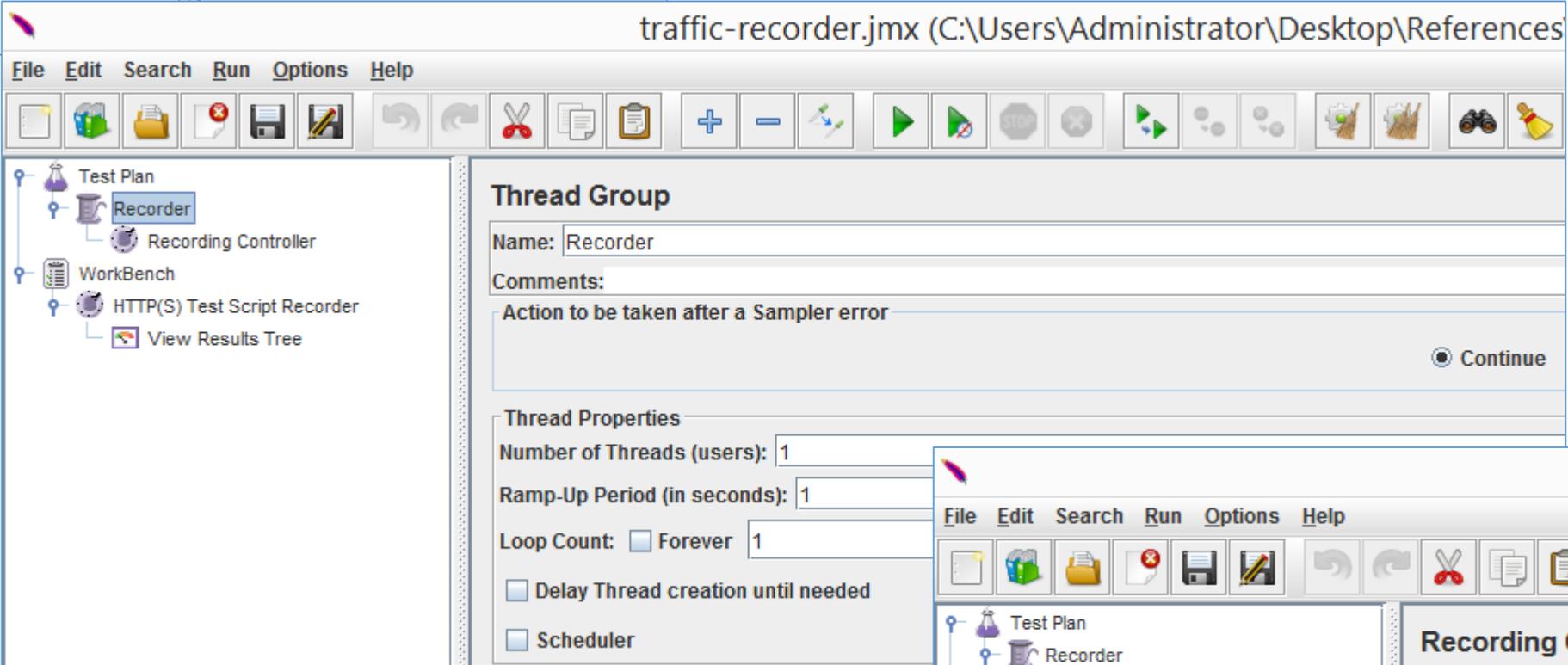
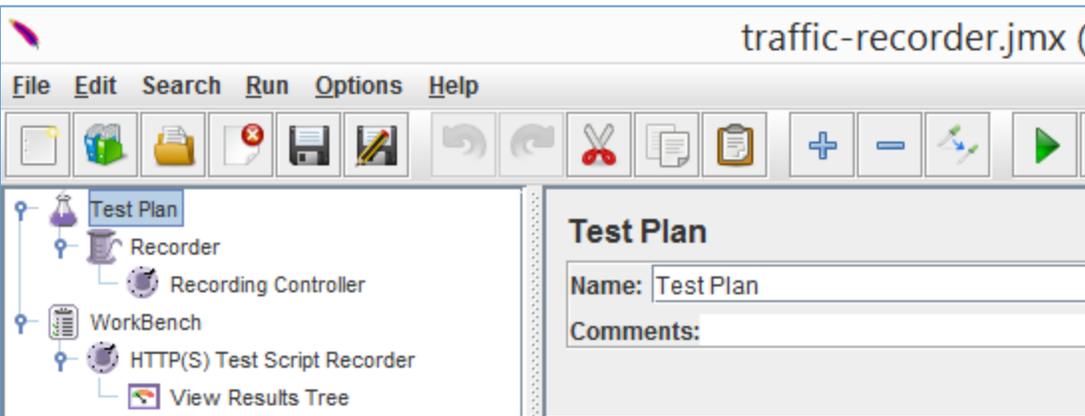
Quick Example by Peter Lin



Adobe Acrobat
Document

https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf

Create a Jmeter Test Plan that will record all web traffic over HTTP/S





- Test Plan
 - Recorder
 - Recording Controller
 - WorkBench
 - HTTP(S) Test Script Recorder
 - View Results Tree

HTTP(S) Test Script Recorder

Name: HTTP(S) Test Script Recorder

Comments:

Global Settings

Port: 8888 HTTPS Domains :

Test plan content

Target Controller: Use Recording Controller

Grouping: Put each group in a new transaction controller

Capture HTTP Headers Add Assertions Regex matching

HTTP Sampler settings

Type:

Redirect Automatically Follow Redirects Use KeepAlive Retrieve All Embedded Resources

Content-type filter

Include:

Exclude:

URL Patterns to Include

URL Patterns to Include

Add Delete Add f

URL Patterns to Exclude

URL Patterns to Excl

(?!.*(bmp|css|js|gif|ico|jpe?g|png|swf|woff))
(?!.*(bmp|css|js|gif|ico|jpe?g|png|swf|woff))/?.*

Add Delete Add from Clipboard Add suggested Excludes

Notify Child Listeners of filtered samplers

Notify Child Listeners of filtered samplers

Start Stop Restart



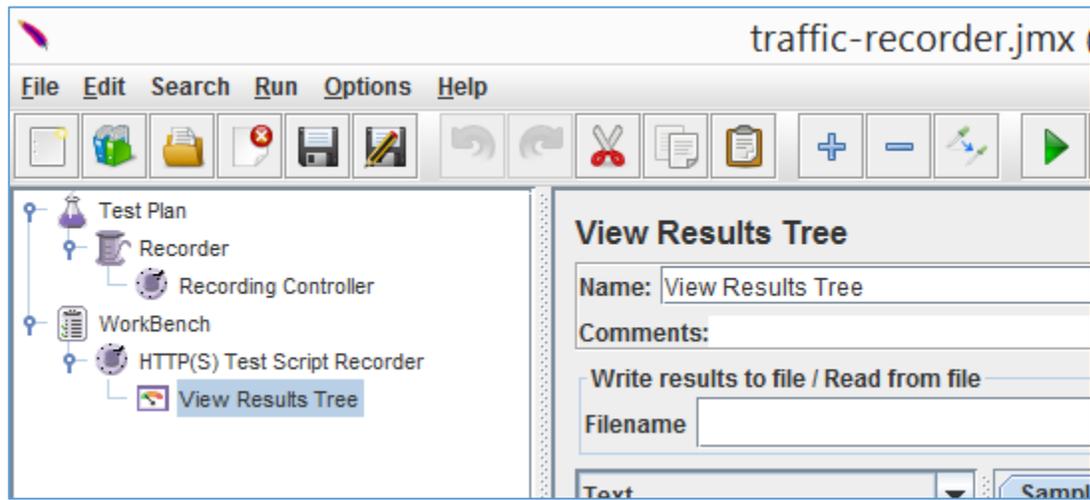
- Test Plan
 - Recorder
 - Recording Controller
 - WorkBench
 - HTTP(S) Test Script Recorder
 - View Results Tree

WorkBench

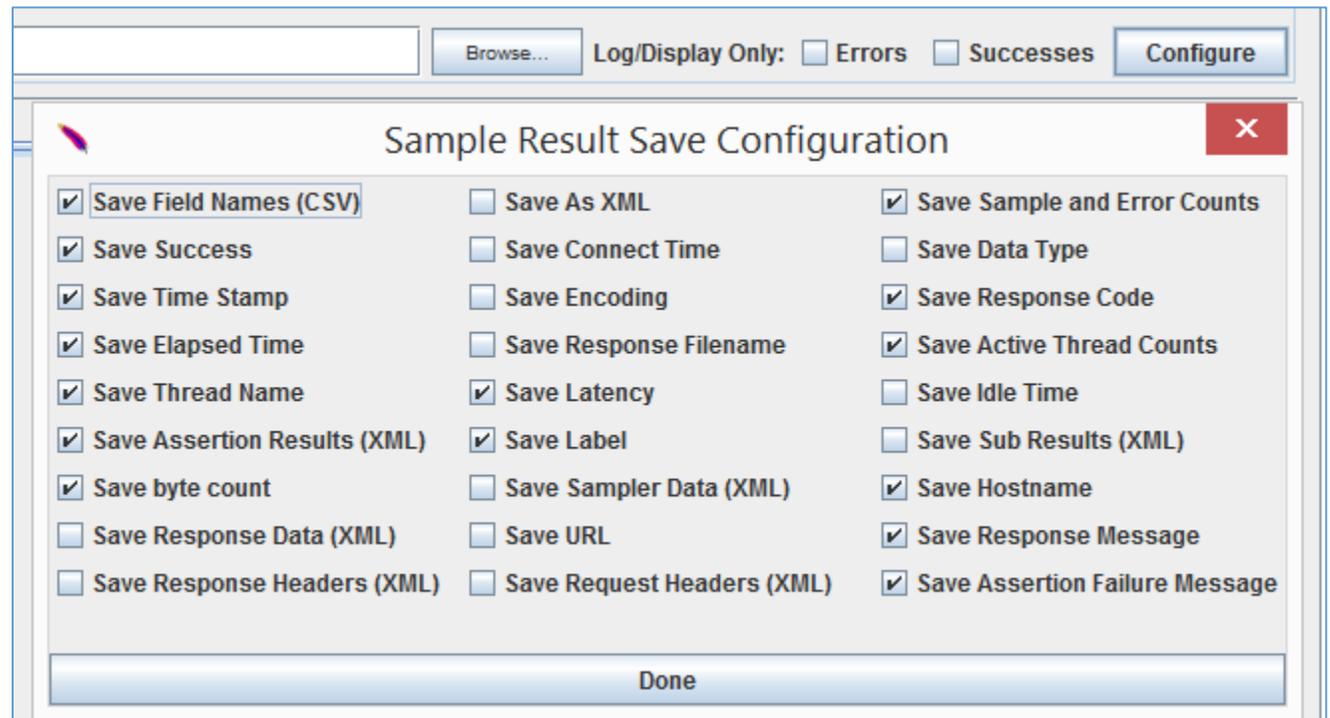
Name: WorkBench

Comments:

Save WorkBench



View Results Tree



im-traffic-recorder.jmx (C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\im-traffic-recorder.jmx) - Apache JMeter (2.13 r1665067)

Test Plan - IM
 Recorder
 Recording Controller
 WorkBench
 HTTPS Test Script Recorder
 View Results Tree

HTTP(S) Test Script Recorder
 Name: HTTP(S) Test Script Recorder
 Comments:
 Global Settings
 Port: 8888 HTTPS Domains:
 Test plan content
 Target Controller: Use Recording Controller
 Grouping: Put each group in a new transaction controller
 Capture HTTP Headers Add Assertions Regex matching
 HTTP Sampler settings
 Type: Redirect Automatically Follow Redirects Use KeepAlive Retrieve All Embedded Resources
 Content-type filter
 Include: Exclude:
 URL Patterns to Include
 URL Patterns to Include

 URL Patterns to Exclude
 URL Patterns to Exclude

 Notify Child Listeners of filtered samplers
 Notify Child Listeners of filtered samplers

Click "START" on the Listener, to have Jmeter listen for web traffic on port 8888. & Update Proxy in Browser (FF)

Administrator: Command Prompt

```

Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>netstat -an | findstr 8888
TCP    0.0.0.0:8888      0.0.0.0:0        LISTENING
TCP    [::]:8888       [::]:0           LISTENING
  
```

Connection Settings

Configure Proxies to Access the Internet

No proxy

Auto-detect proxy settings for this network

Use system proxy settings

Manual proxy configuration:

HTTP Proxy: localhost Port: 8888

Use this proxy server for all protocols

SSL Proxy: localhost Port: 8888

FTP Proxy: Port: 0

SOCKS Host: Port: 0

SOCKS v4 SOCKS v5 Remote DNS

No Proxy for:
 localhost, 127.0.0.1

Example: .mozilla.org, .net.nz, 192.168.1.0/24

Automatic proxy configuration URL:

Do not prompt for authentication if password is saved

Root CA certificate: ApacheJMeterTemporaryRootCA created in JMeter bin directory

Root CA certificate: ApacheJMeterTemporaryRootCA created in JMeter bin directory
 You can install it following instructions in Component Reference documentation (see Installing the JMeter CA certificate for HTTPS recording paragraph)
 Please check the details below when installing the certificate in the browser

CN=_ DO NOT INSTALL unless this is your certificate (JMeter root CA), OU=Username: me, C=US
 Fingerprint(SHA1): a2 c0 3a 20 9e 57 16 04 6f a7 57 32 55 7b 00 9e 76 ba 47 61
 Created: Tue Dec 22 01:28:28 CST 2015

General

Search

Content

Applications

Privacy

Security

Sync

Advanced

Advanced

General

Data Choices

Network

Update

Certificates

Connection

Configure how Firefox connects to the Internet

Cached Web Content

Your web content cache is currently using 40.9 MB of disk space

Override automatic cache management

Limit cache to MB of space

Offline Web Content and User Data

Your application cache is currently using 0 bytes of disk space

Tell me when a website asks to store data for offline use

The following websites are allowed to store data for offline use

Connection Settings

Configure Proxies to Access the Internet

No proxy

Auto-detect proxy settings for this network

Use system proxy settings

Manual proxy configuration:

HTTP Proxy: Port:

Use this proxy server for all protocols

SSL Proxy: Port:

ETP Proxy: Port:

SOCKS Host: Port:

SOCKS v4 SOCKS v5 Remote DNS

No Proxy for:

Example: .mozilla.org, .net.nz, 192.168.1.0/24

Automatic proxy configuration URL:

Do not prompt for authentication if password is saved

Settings...

Clear Now

Clear Now

Exceptions...

Install Jmeter Temporary Root CA Cert

This PC ▸ Downloads ▸ apache-jmeter-2.13 ▸ apache-jmeter-2.13 ▸ bin

Name	Date modified	Type
ApacheJMeterTemporaryRootCA.crt	12/22/2015 1:28 A...	Secu
ApacheJMeterTemporaryRootCA.usr	12/22/2015 1:28 A...	USR

Certificate

General Details Certification Path

Certificate Information

This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.

Issued to: _DO NOT INSTALL unless this is your certificate (JMeter root CA)

Issued by: _DO NOT INSTALL unless this is your certificate (JMeter root CA)

Valid from 12/22/2015 to 12/29/2015

Install Certificate... Issuer Statement

OK

jmeter-server.bat 12/2/2015 1:49 PM Wind

Certificate Import Wizard

Welcome to the Certificate Import Wizard

This wizard helps you copy certificates, certificates lists from your disk to a certificate store.

A certificate, which is issued by a certificate authority and contains information used to protect data in network connections. A certificate store is the system area where certificates are kept.

Store Location

Current User

Local Machine

To continue, click Next.

Certificate Import Wizard

Certificate Store

Certificate stores are system areas where certificates are kept.

Windows can automatically select a certificate store, or you can specify a location for the certificate.

Automatically select the certificate store based on the type of certificate

Place all certificates in the following store

Certificate store:

Trusted Root Certification Authorities

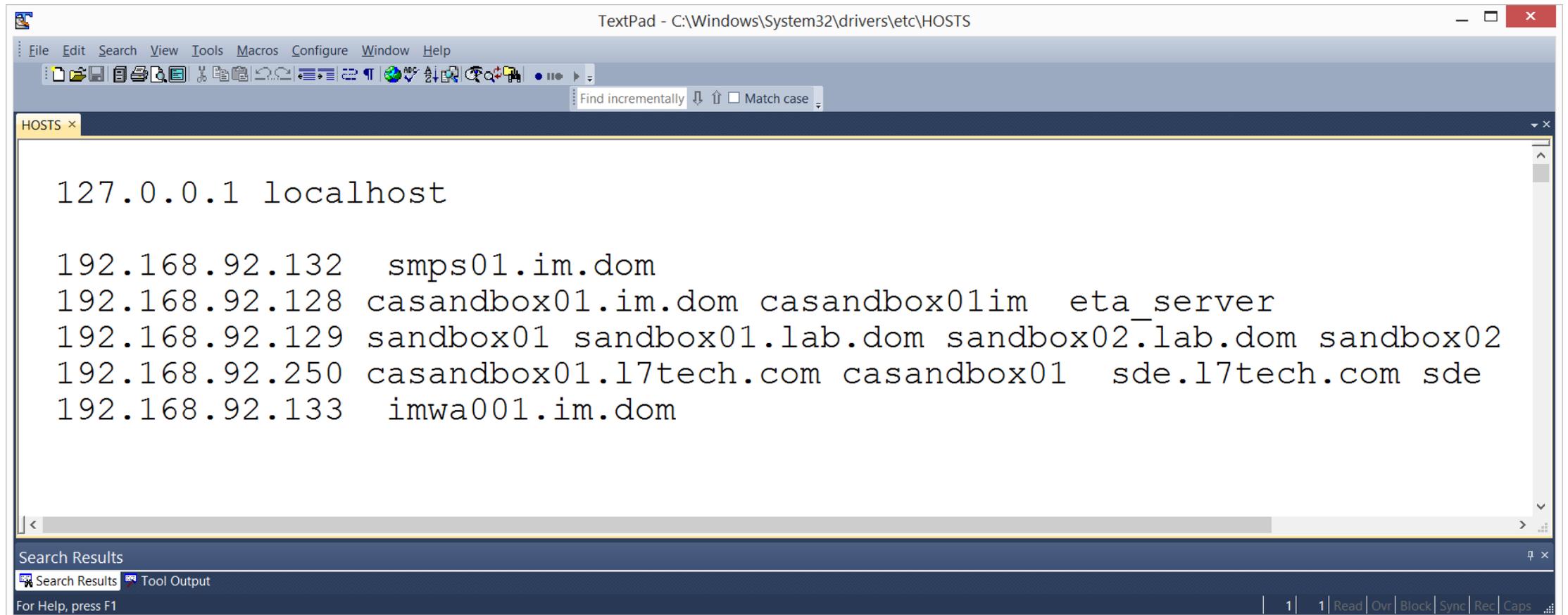
Next Cancel

Certificate Import Wizard

i The import was successful.

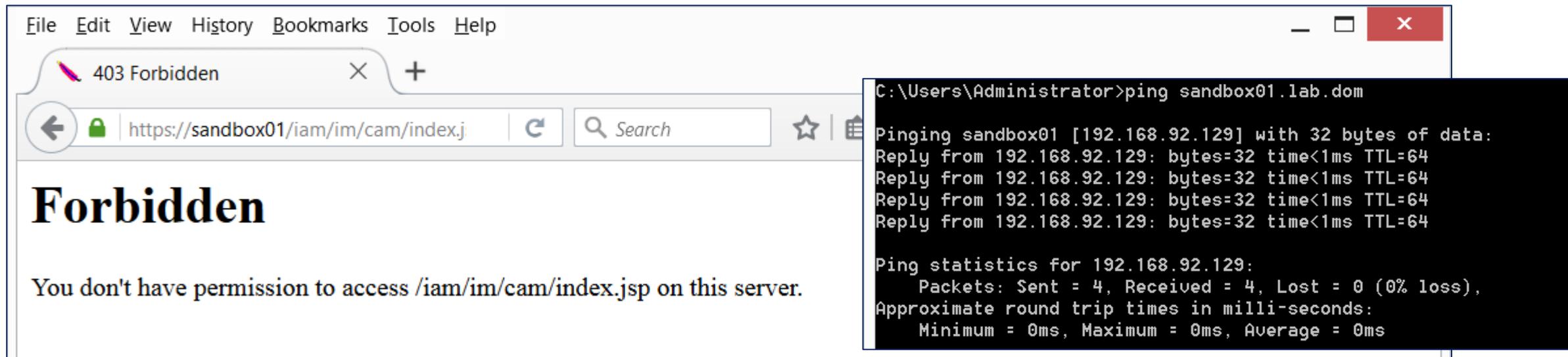
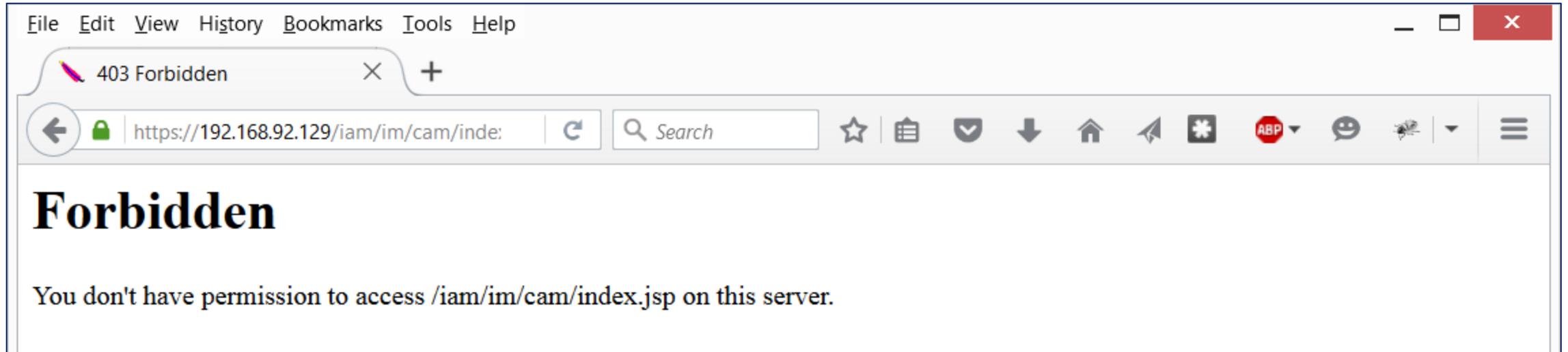
OK

Ensure hostname is in DNS or host files



```
TextPad - C:\Windows\System32\drivers\etc\HOSTS
File Edit Search View Tools Macros Configure Window Help
Find incrementally Match case
HOSTS x
127.0.0.1 localhost
192.168.92.132 smps01.im.dom
192.168.92.128 casandbox01.im.dom casandbox01im eta_server
192.168.92.129 sandbox01 sandbox01.lab.dom sandbox02.lab.dom sandbox02
192.168.92.250 casandbox01.l7tech.com casandbox01 sde.l7tech.com sde
192.168.92.133 imwa001.im.dom
Search Results
Search Results Tool Output
For Help, press F1
```

Must use FQDN with SSL for proper redirect from Web Servers to J2EE Servers



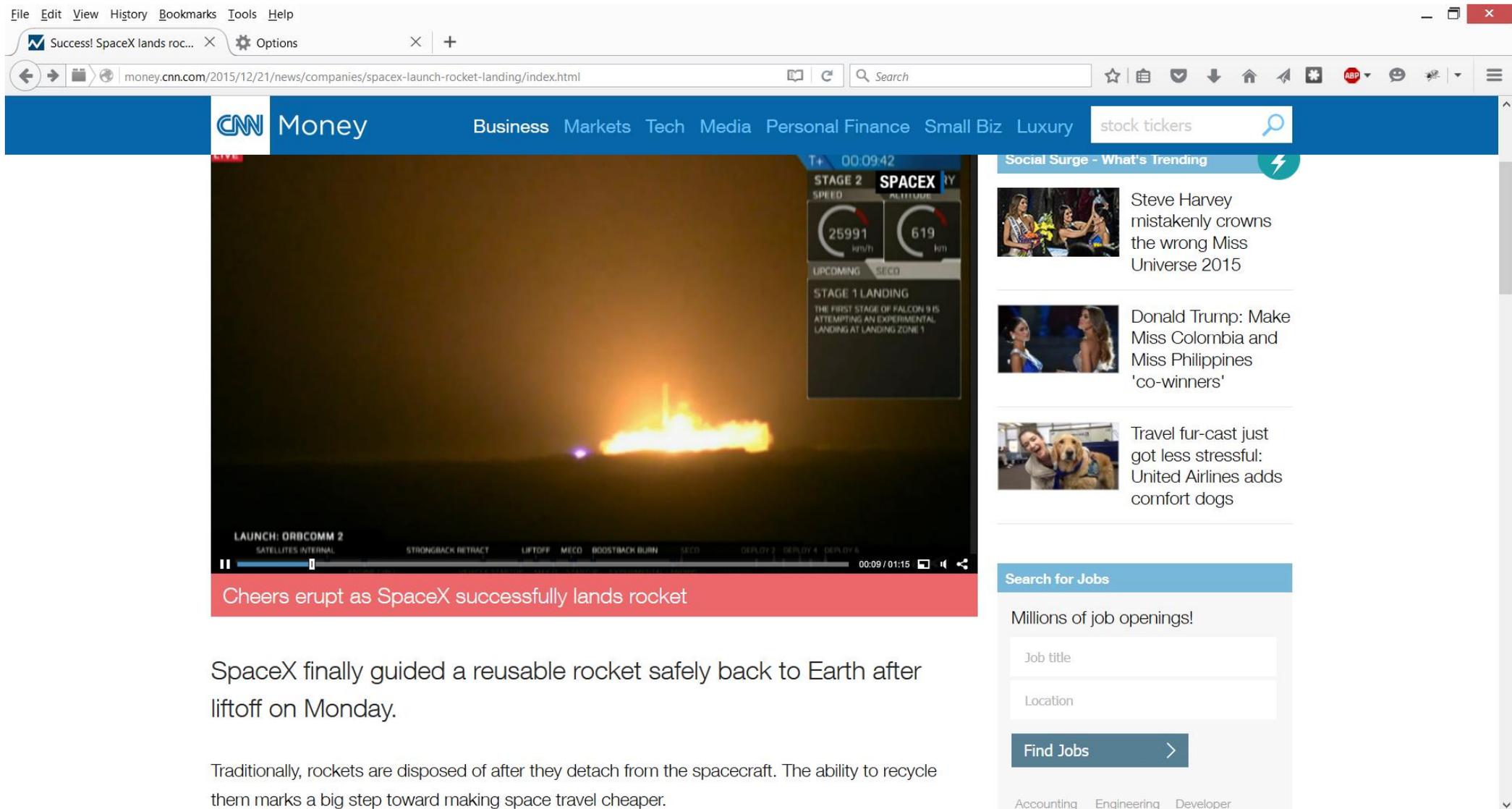
```
C:\Users\Administrator>ping sandbox01.lab.dom
Pinging sandbox01 [192.168.92.129] with 32 bytes of data:
Reply from 192.168.92.129: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.92.129:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\jmeter.properties
File Edit Search View Tools Macros Configure Window Help
Find incrementally Match case
jmeter.properties x
# Default HTTPS protocol level:      Update Jmeter from default of SSLv3 to TLSv1
#https.default.protocol=TLS
https.default.protocol=TLSv1
# This may need to be changed here (or in user.properties) to:
#https.default.protocol=SSLv3
```

```
TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\system.properties *
File Edit Search View Tools Macros Configure Window Help
Find incrementally Match case
system.properties * x
#
# SSL properties (moved from jmeter.properties)
#
# See http://download.oracle.com/javase/1.5.0/docs/guide/se
# for information on the javax.ssl system properties
https.default.protocol=TLSv1
```


Test Jmeter Capture with sample web site



The screenshot shows a web browser window displaying a CNN Money article. The address bar shows the URL: `money.cnn.com/2015/12/21/news/companies/spacex-launch-rocket-landing/index.html`. The page features a video player with a progress bar and a 'Social Surge' section with trending news items.

Video Player:

- Time: 00:09:42
- STAGE 2 SPEED: 25991 km/h
- STAGE 2 ALTITUDE: 619 km
- UPCOMING SECO
- STAGE 1 LANDING: THE FIRST STAGE OF FALCON 9 IS ATTEMPTING AN EXPERIMENTAL LANDING AT LANDING ZONE 1
- LAUNCH: ORBCOMM 2
- Progress: 00:09 / 01:15

Social Surge - What's Trending:

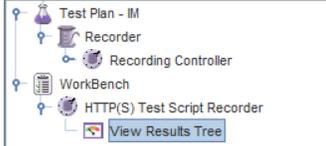
- Steve Harvey mistakenly crowns the wrong Miss Universe 2015
- Donald Trump: Make Miss Colombia and Miss Philippines 'co-winners'
- Travel fur-cast just got less stressful: United Airlines adds comfort dogs

Search for Jobs:

- Millions of job openings!
- Job title
- Location
- Find Jobs
- Accounting Engineering Developer

SpaceX finally guided a reusable rocket safely back to Earth after liftoff on Monday.

Traditionally, rockets are disposed of after they detach from the spacecraft. The ability to recycle them marks a big step toward making space travel cheaper.



View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only:

Errors

Successes

Configure

- Text
- 1 /
 - 2 /
 - [7 /#1.css]
 - [10 /a/1.229.0/js/cnn-video-api.min.js]
 - [15 /favicon.ie9.ico]
 - [6 /a/1.229.0/css/pages/page.css]
 - [5 /a/1.229.0/css/pages/page-blessed1.css]
 - [3 /a/1.229.0/css/global.css]
 - [8 /a/1.229.0/js/cnn-header-first.min.js]
 - [13 /a/1.229.0/js/vendor/usabilla.min.js]
 - [14 /a/1.229.0/js/cnn-analytics.min.js]
 - [4 /a/1.229.0/css/pages/page-blessed2.css]
 - [11 /analytics/cnnexpan/jsmd.min.js]
 - [9 /a/1.229.0/js/cnn-header-second.min.js]
 - [12 /a/1.229.0/js/cnn-footer-lib.min.js]
 - [18 /a/1.229.0/assets/logo_cnn_nav_bottom.png]
 - [24 /tag/js/gpt.js]
 - [22 /a/1.229.0/assets/logo_cnn_arabic.png]
 - [17 /a/1.229.0/assets/logo_cnn_espaniol.png]
 - [16 /cnn/element/img/4.0/logos/menu_politics.png]
 - [21 /cnn/element/img/4.0/logos/menu_bleacher.png]
 - [20 /cnn/element/img/4.0/logos/menu_money.png]
 - [19 /cnn/element/img/4.0/logos/menu_style.png]
 - [23 /a/fonts/cnn/2.3.0/990dea59-fcdd-461d-863d-3517e48e8ed0.wof]
 - [25 /a/1.229.0/assets/logo_cnn_badge_2up.png]
 - [26 /a/1.229.0/assets/sprite-s1dced3ff2b.png]
 - [32 /data/ocs/section/index.html:homepage2-zone-1/Views/zones/co]
 - [38 /data/ocs/section/index.html:homepage4-zone-5/Views/zones/co]
 - [39 /data/ocs/section/index.html:homepage4-zone-6/Views/zones/co]
 - [33 /data/ocs/section/index.html:homepage3-zone-1/Views/zones/co]
 - [36 /data/ocs/section/index.html:homepage4-zone-3/Views/zones/co]
 - [30 /a/fonts/cnn/2.3.0/14ff6081-326d-4dae-b778-d7afa66166fc.wof]
 - [27 /a/fonts/cons/2.0.12/cnn-icons.woff]
 - [35 /data/ocs/section/index.html:homepage4-zone-2/Views/zones/co]
 - [40 /data/ocs/section/index.html:homepage4-zone-7/Views/zones/co]
 - [37 /data/ocs/section/index.html:homepage4-zone-4/Views/zones/co]
 - [34 /data/ocs/section/index.html:homepage4-zone-1/Views/zones/co]
 - [43 /1m/sp/imm.dat]
 - [41 /cnnnext/dam/assets/151221213052-heroin-in-america-new-ha]
 - [31 /a/fonts/cnn/2.3.0/2c056da8-4920-4e20-8c69-8a6b315458a9.v]
 - [28 /a/fonts/cnn/2.3.0/60be5c39-863e-40cb-9434-6ebaf62ab2b.w]
 - [29 /a/fonts/cnn/2.3.0/530dee22-e3c1-4e9f-bf62-c31d510d9656.wc]
 - [45 /cnnnext/dam/assets/151218062231-cnnmoney-george-zimme]
 - [46 /cnnnext/dam/assets/151221213052-heroin-in-america-new-ha]
 - [42 /cnnnext/dam/assets/151221180421-isis-marching-overlay-tea

Sampler result

Scroll automatically?

Raw Parsed



- Test Plan - IM
 - Recorder
 - Recording Controller
 - WorkBench
 - HTTP(S) Test Script Recorder
 - View Results Tree

View Results Tree

Name:

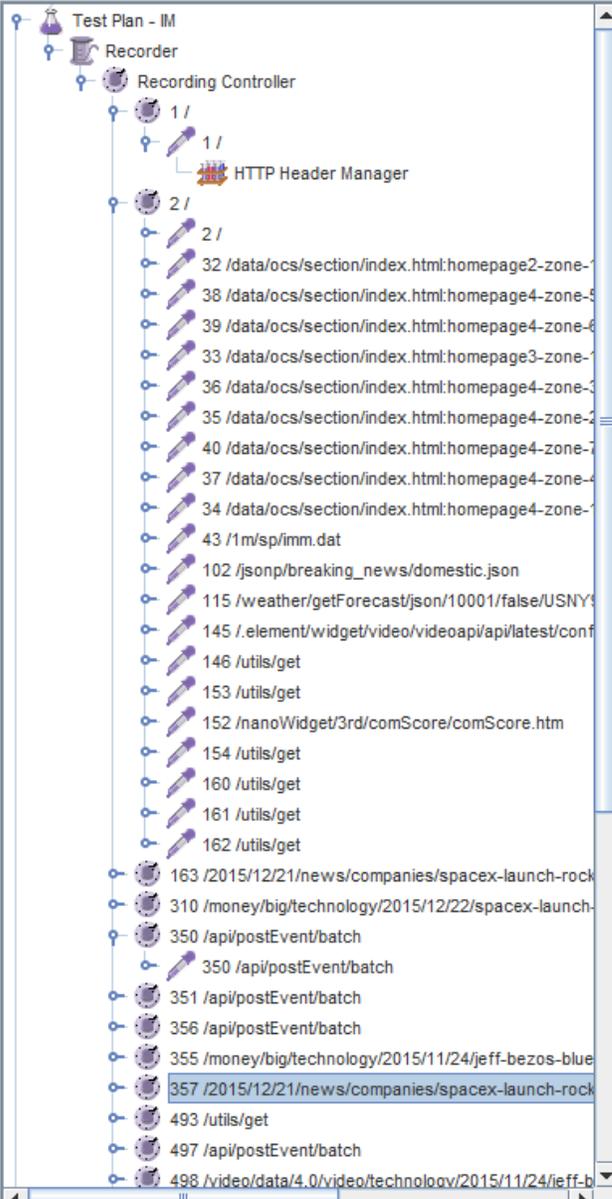
Comments:

Write results to file / Read from file

Filename: Log/Display Only: Errors Successes

- Text
- [22 /a/1.229.0/assets/logo_cnn_arabic.png]
 - [17 /a/1.229.0/assets/logo_cnn_espaniol.png]
 - [16 /cnn/element/img/4.0/logos/menu_politics.png]
 - [21 /cnn/element/img/4.0/logos/menu_bleacher.png]
 - [20 /cnn/element/img/4.0/logos/menu_money.png]
 - [19 /cnn/element/img/4.0/logos/menu_style.png]
 - [23 /a/fonts/cnn/2.3.0/990dea59-fcdd-461d-863d-3517e48e8ed0.w]
 - [25 /a/1.229.0/assets/logo_cnn_badge_2up.png]
 - [26 /a/1.229.0/assets/sprite-s1dced3ff2b.png]
 - [32 /data/ocs/section/index.html:homepage2-zone-1/Views/zones/co
 - [38 /data/ocs/section/index.html:homepage4-zone-5/Views/zones/co
 - [39 /data/ocs/section/index.html:homepage4-zone-6/Views/zones/co
 - [33 /data/ocs/section/index.html:homepage3-zone-1/Views/zones/co
 - [36 /data/ocs/section/index.html:homepage4-zone-3/Views/zones/co
 - [30 /a/fonts/cnn/2.3.0/14ff6081-326d-4dae-b778-d7afa66166fc.wof
 - [27 /a/fonts/icons/2.0.12/cnn-icons.woff]
 - [35 /data/ocs/section/index.html:homepage4-zone-2/Views/zones/co
 - [40 /data/ocs/section/index.html:homepage4-zone-7/Views/zones/co
 - [37 /data/ocs/section/index.html:homepage4-zone-4/Views/zones/co
 - [34 /data/ocs/section/index.html:homepage4-zone-1/Views/zones/co
 - [43 /1m/sp/imm.dat
 - [41 /cnnnext/dam/assets/151221213052-heroin-in-america-new-ha
 - [31 /a/fonts/cnn/2.3.0/2c056da8-4920-4e20-8c69-8a6b315458a9.v
 - [28 /a/fonts/cnn/2.3.0/60be5c39-863e-40cb-9434-6ebaf62ab2b.w
 - [29 /a/fonts/cnn/2.3.0/530dee22-e3c1-4e9f-bf62-c31d510d9656.w
 - [45 /cnnnext/dam/assets/151218062231-cnnmoney-george-zimme
 - [46 /cnnnext/dam/assets/151221213052-heroin-in-america-new-ha
 - [42 /cnnnext/dam/assets/151221180421-isis-marching-overlay-tea
 - [44 /a/fonts/cnn/2.3.0/8e9ee02b-f337-4f13-ad6c-969d6d6536c8.w
 - [47 /cnnnext/dam/assets/151218152240-10-emerging-destinations
 - [48 /cnnnext/dam/assets/15111165556-symmetry-1-large-tease.jp
 - [50 /cnnnext/dam/assets/151221125702-slow-mo-guys-fire-breathin
 - [49 /cnnnext/dam/assets/150707065823-restricted-amanda-peters
 - [51 /cnnnext/dam/assets/151218152240-10-emerging-destinations
 - [52 /cnnnext/dam/assets/15111165556-symmetry-1-medium-teas
 - [53 /cnnnext/dam/assets/150707065823-restricted-amanda-peters
 - [54 /cnnnext/dam/assets/151221125702-slow-mo-guys-fire-breathin
 - [57 /cnnnext/dam/assets/150227093938-amy-schumer-fat-shamin
 - [55 /cnnnext/dam/assets/151017162331-sea-snake-washes-asho
 - [56 /cnnnext/dam/assets/151218014423-32000-accidentally-left-ap
 - [58 /cnnnext/dam/assets/150310171255-future-of-airliners-4-small
 - [59 /cnnnext/dam/assets/150423212044-maglev-train-2-large-169
 - [60 /cnnnext/dam/assets/151220193858-indonesian-prodigy-gram
 - [61 /cnnnext/dam/assets/151221215453-space-x-rocket-launch-lar
 - [63 /cnnnext/dam/assets/151220073641-snl-republican-debate-ori

Sampler result Request Response data



Transaction Controller

Name: 357 /2015/12/21/news/companies/spacex-launch-rocket-landing/index.html

Comments:

- Generate parent sample
- Include duration of timer and pre-post processors in generated sample

WHEN JMETER HTTP RECORDER IS STOPPED, OBJECTS WILL BE CREATED UNDER THE RECORDING CONTROLLER UNDER THE TEST PLAN

Test Jmeter Capture with CA IM

File

CA Identity Manager Options

https://sandbox01.lab.dom/iam/im/cam/ui7/index.jsp Search

Skip to main content

idmadmin | Sign out | Help

ca CA Identity Manager technologies

Tasks

- Home
 - Change My Account
 - Change My Password
 - Modify My Groups
 - Modify My Profile
 - View My Bulk Loader Notificatio
 - View My Roles
 - View My Submitted Tasks
 - View My Work List
- My Access +
- Services +
- Users +
- Organizations +
- Groups +
- Roles and Tasks +
- Policies +
- Reports +
- Environment +

Home

 **Change My Account**

 **Change My Password**

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[About CA Identity Manager](#)



Test Plan - IM

- Recorder
 - Recording Controller
 - 511 /iam/im/cam/index.jsp
 - 511 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 512 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 513 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 514 /iam/im/cam/index.jsp
 - 514 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - HTTP Authorization Manager
 - 1 /iam/im/cam/index.jsp
 - 1 /iam/im/cam/index.jsp
 - 2 /iam/im/cam/index.jsp
 - 3 /iam/im/cam/index.jsp
 - 4 /iam/im/cam/index.jsp
 - 5 /iam/im/cam/index.jsp
 - 6 /iam/im/cam/index.jsp
 - 10 /iam/im/cam/index.jsp
 - 12 /iam/im/cam/index.jsp
 - 16 /iam/im/cam/index.jsp
 - 21 /iam/im/cam/index.jsp
 - 24 /iam/im/cam/ui7/index.jsp
 - 24 /iam/im/cam/ui7/index.jsp
 - 25 /iam/im/ui/skin/idm/stylessheet/castyles-override
 - 26 /iam/im/ui/skin/idm/stylessheet/task.css
 - 29 /iam/im/ui/scripts/global.js
 - 28 /castylesr5.1.1/css/castyles.css
 - 31 /iam/im/ui/ext-js/resources/css/ext-all.css
 - 30 /iam/im/ui/scripts/tooltips.js
 - 34 /iam/im/ui/ext-ca/css/ca-all.css
 - 36 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 32 /iam/im/ui/ca-css/css/ca-all.css
 - 35 /iam/im/ui/ext-js/ext-all.js
 - 33 /iam/im/ui/ext-js/adapter/ext/ext-base.js
 - 39 /iam/im/ui/ext-js/examples/ux/css/ux-all.css

HTTP Authorization Manager

Name: HTTP Authorization Manager

Comments:

Options

Clear auth on each iteration?

Authorizations Stored in the Authorization Manager

Base URL	Username	Password	Domain	Realm	Mechanism
https://192.168.92.129/iam/im/cam/index.jsp	idmadmin	.....			BASIC_DIGEST
https://sandbox01/iam/im/cam/index.jsp	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/index.jsp	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/css/ca.css	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/images/calogo.png	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/images/helpicon.gif	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/images/head_icon.gif	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/images/arrow_normal.gif	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/images/arrow.png	idmadmin	.....			BASIC_DIGEST
https://{IMWA_HOSTNAME}/iam/im/cam/ui7/ca/images/Gradient.gif	idmadmin	.....			BASIC_DIGEST

Add Delete Load Save



Test Plan - IM

- Recorder
 - Recording Controller
 - 511 /iam/im/cam/index.jsp
 - 511 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 512 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 513 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 514 /iam/im/cam/index.jsp
 - 514 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - HTTP Authorization Manager
 - 1 /iam/im/cam/index.jsp
 - 1 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 2 /iam/im/cam/index.jsp
 - 3 /iam/im/cam/index.jsp
 - 4 /iam/im/cam/index.jsp
 - 5 /iam/im/cam/index.jsp
 - 6 /iam/im/cam/index.jsp
 - 10 /iam/im/cam/index.jsp
 - 12 /iam/im/cam/index.jsp
 - 16 /iam/im/cam/index.jsp
 - 21 /iam/im/cam/index.jsp
 - 24 /iam/im/cam/ui7/index.jsp
 - 24 /iam/im/cam/ui7/index.jsp
 - 25 /iam/im/ui/skin/idm/stylesheets/castyles-override.
 - 26 /iam/im/ui/skin/idm/stylesheets/task.css
 - 29 /iam/im/ui/scripts/global.js
 - 28 /castyles5.1.1/css/castyles.css
 - 31 /iam/im/ui/ext-js/resources/css/ext-all.css
 - 30 /iam/im/ui/scripts/tooltips.js
 - 34 /iam/im/ui/ext-ca/css/ca-all.css
 - 36 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 32 /iam/im/ui/ca-css/css/ca-all.css
 - 35 /iam/im/ui/ext-js/ext-all.js
 - 33 /iam/im/ui/ext-is/adapter/ext/ext-base.js

HTTP Request

Name:
Comments:

Web Server
Server Name or IP: Port Number:
Timeouts (milliseconds)
Connect: Response:

HTTP Request
Implementation: Protocol [http]: Method: Content encoding:

Path:
 Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?

Detail Add Add from Clipboard Delete Up Down

Send Files With the Request:

File Path:	Parameter Name:	MIME Type:

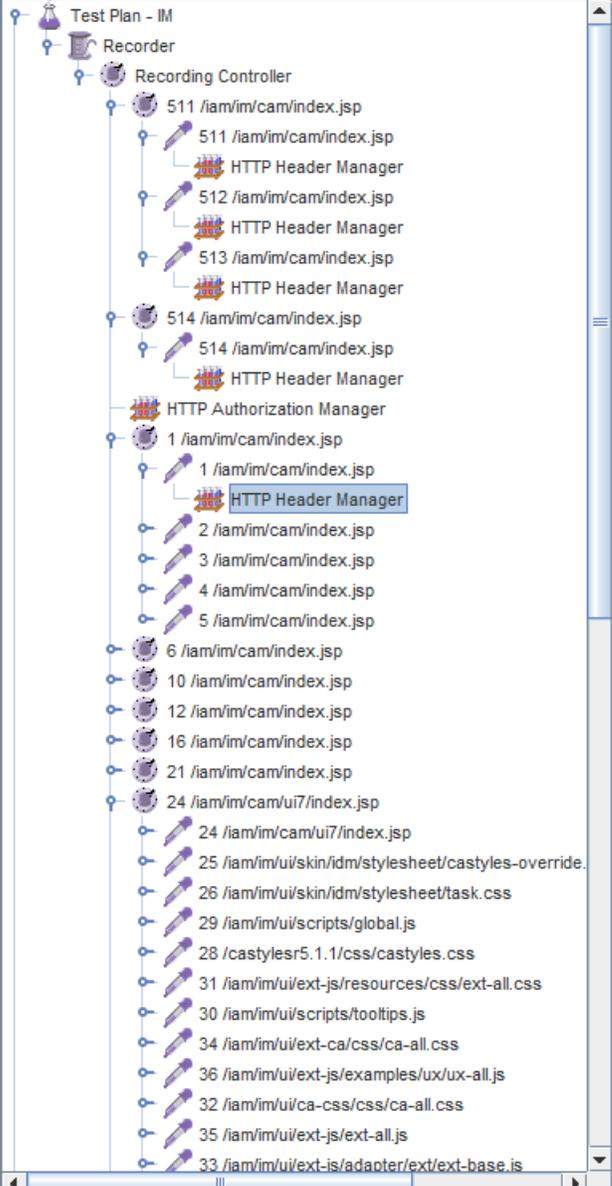
Add Browse... Delete

Proxy Server
Server Name or IP: Port Number: Username Password

Embedded Resources from HTML Files
 Retrieve All Embedded Resources Use concurrent pool. Size: URLs must match:

Source address
IP/Hostname

Optional Tasks
 Use as Monitor Save response as MD5 hash?



HTTP Header Manager

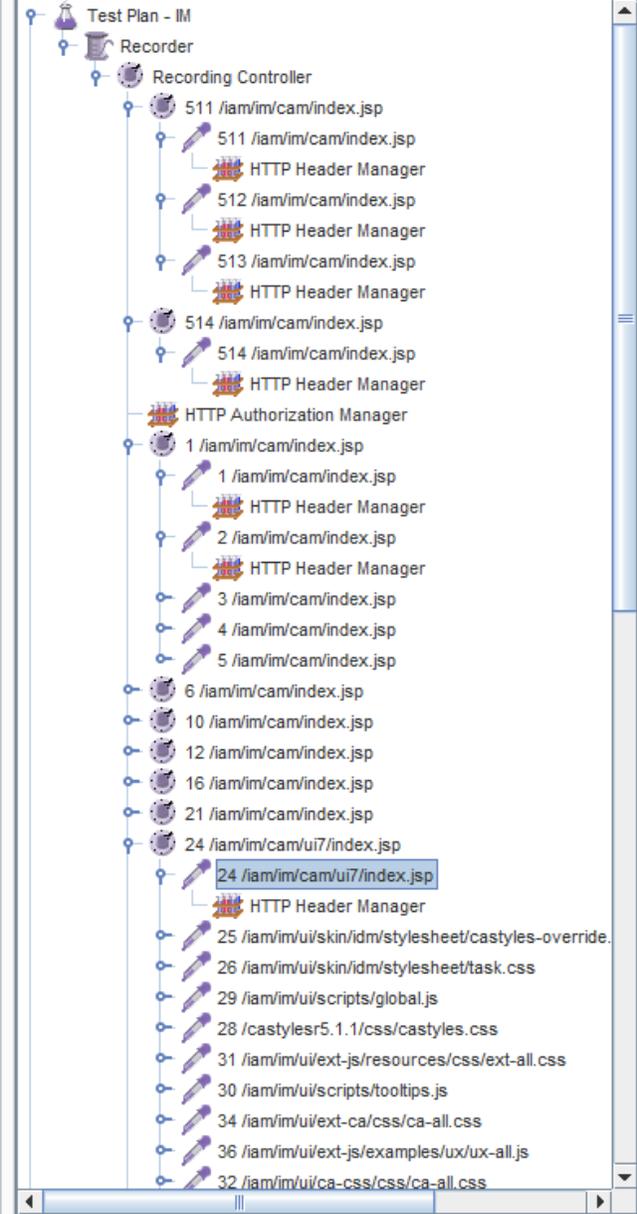
Name: HTTP Header Manager

Comments:

Headers Stored in the Header Manager

Name:	Value
Accept-Language	en-US,en;q=0.5
Cache-Control	max-age=0
Accept-Encoding	gzip, deflate
User-Agent	Mozilla/5.0 (Windows NT 6.3; WOW64; rv:43.0) Gecko/20100101 Firefox/43.0
Accept	text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Add Add from Clipboard Delete Load Save



HTTP Request

Name:

Comments:

Web Server

Server Name or IP: Port Number:

Timeouts (milliseconds)

Connect: Response:

HTTP Request

Implementation: Protocol [http]: Method: Content encoding:

Path:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
-------	-------	---------	-----------------

Send Files With the Request:

File Path:	Parameter Name:	MIME Type:
------------	-----------------	------------

Proxy Server

Server Name or IP: Port Number: Username Password

Embedded Resources from HTML Files

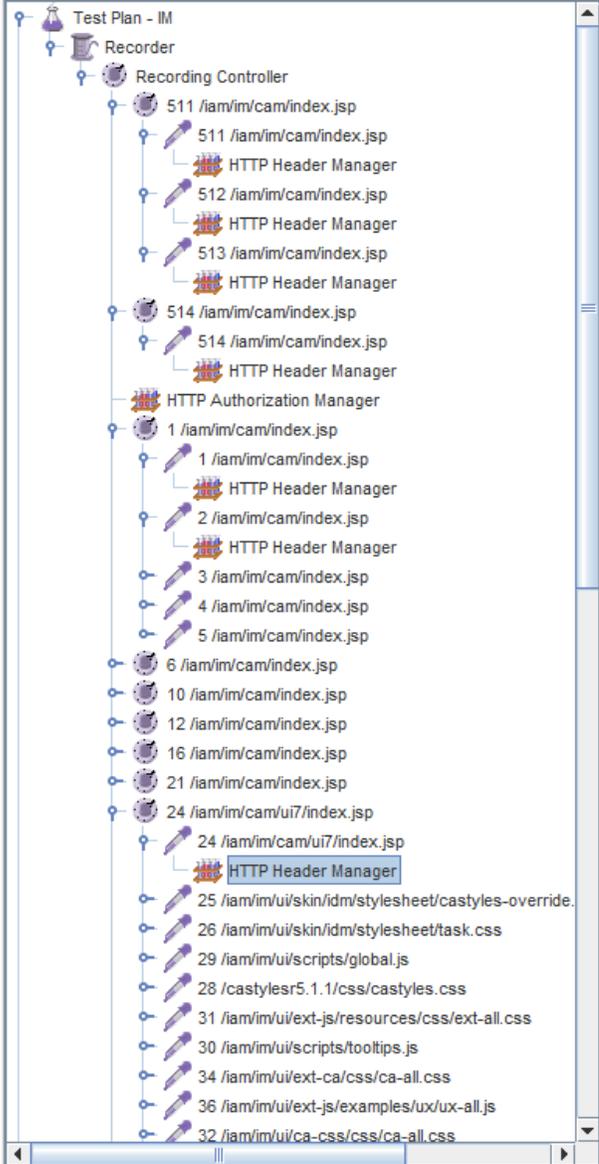
Retrieve All Embedded Resources Use concurrent pool. Size: URLs must match:

Source address

IP/Hostname

Optional Tasks

Use as Monitor Save response as MD5 hash?



HTTP Header Manager

Name: HTTP Header Manager

Comments:

Headers Stored in the Header Manager

Name:	Value
Accept-Language	en-US,en;q=0.5
Cache-Control	max-age=0
Accept-Encoding	gzip, deflate
User-Agent	Mozilla/5.0 (Windows NT 6.3; WOW64; rv:43.0) Gecko/20100101 Firefox/43.0
Accept	text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Add Add from Clipboard Delete Load Save



- 71 /iam/im/ui/scripts/page.js
- 72 /iam/im/ui/images/favicon.ico
 - HTTP Header Manager
- 73 /iam/im/cam/ui7/ca/images/arrow_asc_bk.png
 - 73 /iam/im/cam/ui7/ca/images/arrow_asc_bk.png
 - HTTP Header Manager
- 74 /iam/im/cam/ui7/index.jsp
 - HTTP Header Manager
- 75 /castylesr5.1.1/javascript/all.js
- 77 /iam/im/ui/scripts/tooltips.js
- 79 /iam/im/ui/ext-js/ext-all.js
- 78 /iam/im/ui/ext-js/adaptor/ext/ext-base.js
- 76 /iam/im/ui/scripts/global.js
- 80 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 81 /iam/im/ui/ext-ca/ca-all.js
- 82 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- 83 /iam/im/ui/images/favicon.ico
- 84 /iam/im/ui/skin/idm/image/tasks/add.png
- 85 /iam/im/ui/skin/idm/image/tasks/subtract.png
- 86 /iam/im/ui/ca-css/images/window/left-corners.png
- 88 /iam/im/ui/ca-css/images/window/top-bottom.png
- 87 /iam/im/ui/ca-css/images/window/right-corners.png
- 89 /iam/im/ui/ca-css/images/window/left-right.png
- 90 /iam/im/ui/ext-js/resources/images/default/qtip/b...
- 91 /iam/im/ui/ext-js/resources/images/default/progr...
- 92 /iam/im/ui/ext-js/resources/images/default/share...
- 93 /iam/im/ui/ext-js/resources/images/default/shad...
- 94 /iam/im/ui/ext-js/resources/images/default/shad...
- 95 /iam/im/ui/ext-js/resources/images/default/shad...
- 96 /iam/im/cam/ui7/index.jsp?facesViewId=/app/pa...
- 98 /iam/im/ui/scripts/global.js
- 99 /iam/im/ui/scripts/tooltips.js
- 101 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 97 /castylesr5.1.1/javascript/all.js
- 100 /iam/im/ui/ext-js/adaptor/ext/ext-base.js
- 102 /iam/im/ui/ext-ca/ca-all.js
- 103 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- 104 /iam/im/ui/ext-js/ext-all.js
- 105 /iam/im/cam/ui7/ca/images/ascending.png

HTTP Request

Name: 74 /iam/im/cam/ui7/index.jsp
 Comments:

Web Server
 Server Name or IP: \${IMWA_HOSTNAME} Port Number: 443
 Timeouts (milliseconds)
 Connect: Response:

HTTP Request
 Implementation: Protocol [http]: https Method: GET Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp
 Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
task.tag	ResetUserPassword	<input type="checkbox"/>	<input checked="" type="checkbox"/>
console.cat3	Manage Users	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

Send Files With the Request:

File Path:	Parameter Name:	MIME Type:

Add Browse... Delete

Proxy Server
 Server Name or IP: Port Number: Username Password

Embedded Resources from HTML Files
 Retrieve All Embedded Resources Use concurrent pool. Size: 4 URLs must match:

Source address
 IP/Hostname

Optional Tasks
 Use as Monitor Save response as MD5 hash?



- 78 /iam/im/ui/ext-js/adaptor/ext-base.js
- HTTP Header Manager
- 76 /iam/im/ui/scripts/global.js
- HTTP Header Manager
- 80 /iam/im/ui/ext-js/examples/ux-ux-all.js
- HTTP Header Manager
- 81 /iam/im/ui/ext-ca/ca-all.js
- HTTP Header Manager
- 82 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- HTTP Header Manager
- 83 /iam/im/ui/images/favicon.ico
- HTTP Header Manager
- 84 /iam/im/ui/skin/idm/image/tasks/add.png
- HTTP Header Manager
- 85 /iam/im/ui/skin/idm/image/tasks/subtract.png
- HTTP Header Manager
- 86 /iam/im/ui/ca-css/images/window/left-corners.png
- HTTP Header Manager
- 88 /iam/im/ui/ca-css/images/window/top-bottom.png
- HTTP Header Manager
- 87 /iam/im/ui/ca-css/images/window/right-corners.png
- HTTP Header Manager
- 89 /iam/im/ui/ca-css/images/window/left-right.png
- HTTP Header Manager
- 90 /iam/im/ui/ext-js/resources/images/default/qltip/b
- HTTP Header Manager
- 91 /iam/im/ui/ext-js/resources/images/default/progr
- HTTP Header Manager
- 92 /iam/im/ui/ext-js/resources/images/default/share
- HTTP Header Manager
- 93 /iam/im/ui/ext-js/resources/images/default/shad
- HTTP Header Manager
- 94 /iam/im/ui/ext-js/resources/images/default/shad
- HTTP Header Manager
- 95 /iam/im/ui/ext-js/resources/images/default/shad
- HTTP Header Manager
- 96 /iam/im/cam/ui7/index.jsp?facesViewId=/app/pa
- HTTP Header Manager
- 98 /iam/im/ui/scripts/global.js
- 99 /iam/im/ui/scripts/tooltips.js
- 101 /iam/im/ui/ext-js/examples/ux-ux-all.js
- 97 /castylesr5.1.1/javascript/all.js
- 100 /iam/im/ui/ext-js/adaptor/ext-base.js
- 102 /iam/im/ui/ext-ca/ca-all.js

HTTP Request

Name:

Comments:

Web Server
 Server Name or IP: Port Number: Timeouts (milliseconds)
 Connect: Response:

HTTP Request
 Implementation: Protocol [http]: Method: Content encoding:

Path:

Redirect Automatically Follow Redirects Use KeepAlive Use multipartform-data for POST Browser-compatible headers

Send Parameters With the Request:			
Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	7CIA-P7IO-2IDA-SV5V-C6Z0-F194-13KA-8H7U	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ClientTimezone	-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>
standardssearch_andLower		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.0.Value	*	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearch.search	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Send Files With the Request:		
File Path:	Parameter Name:	MIME Type:

Proxy Server
 Server Name or IP: Port Number: Username: Password:

Embedded Resources from HTML Files
 Retrieve All Embedded Resources Use concurrent pool. Size: URLs must match:

Source address
 IP/Hostname:

Optional Tasks
 Use as Monitor Save response as MD5 hash?



- 92 /iam/im/ui/ext-js/resources/images/default/shad... HTTP Header Manager
- 93 /iam/im/ui/ext-js/resources/images/default/shad... HTTP Header Manager
- 94 /iam/im/ui/ext-js/resources/images/default/shad... HTTP Header Manager
- 95 /iam/im/ui/ext-js/resources/images/default/shad... HTTP Header Manager
- 96 /iam/im/cam/ui7/index.jsp?facesViewId=/app/pa... HTTP Header Manager
- 98 /iam/im/ui/scripts/global.js HTTP Header Manager
- 99 /iam/im/ui/scripts/tooltips.js HTTP Header Manager
- 101 /iam/im/ui/ext-js/examples/ux/ux-all.js HTTP Header Manager
- 97 /castyles5.1.1/javascript/all.js HTTP Header Manager
- 100 /iam/im/ui/ext-js/adapter/ext/ext-base.js HTTP Header Manager
- 102 /iam/im/ui/ext-ca/ca-all.js HTTP Header Manager
- 103 /iam/im/ui/ext-js/src/locale/ext-lang-en.js HTTP Header Manager
- 104 /iam/im/ui/ext-js/ext-all.js HTTP Header Manager
- 105 /iam/im/cam/ui7/ca/images/ascending.png HTTP Header Manager
- 106 /iam/im/cam/ui7/ca/images/unordered.png HTTP Header Manager
- 107 /iam/im/ui/images/favicon.ico HTTP Header Manager
- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/pa... **108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...**
- 109 /castyles5.1.1/javascript/all.js
- 110 /iam/im/ui/scripts/global.js
- 111 /iam/im/ui/scripts/tooltips.js
- 113 /iam/im/ui/ext-js/adapter/ext/ext-base.js
- 112 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 114 /iam/im/ui/ext-js/ext-all.js
- 115 /iam/im/ui/ext-ca/ca-all.js
- 116 /iam/im/ui/ext-js/src/locale/ext-lang-en.js

HTTP Request

Name:
Comments:

Web Server
Server Name or IP: Port Number:
Timeouts (milliseconds)
Connect: Response:

HTTP Request
Implementation: Protocol (http): Method: Content encoding:
Path:
 Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:				
Name:	Value	Encode?	Include Equals?	
OWASP_CSRFTOKEN	7CIA-P7IO-2IDA-SV5V-C6Z0-F194-13KA-8H7U	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
standardsearch_andLower		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Filter.0.Field	%USER_ID%	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Filter.0.Op	EQUALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Filter.0.Value	*	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Filter.qfrows	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
DefaultUserSearch__sel	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
action_standardsearch.select	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Send Files With the Request:
File Path: Parameter Name: MIME Type:

Proxy Server
Server Name or IP: Port Number: Username: Password:

Embedded Resources from HTML Files
 Retrieve All Embedded Resources Use concurrent pool. Size: URLs must match:

Source address:
Optional Tasks
 Use as Monitor Save response as MD5 hash?



- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/...
- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...
- HTTP Header Manager
- 109 /castylesr5.1.1/javascript/all.js
- HTTP Header Manager
- 110 /iam/im/ui/scripts/global.js
- HTTP Header Manager
- 111 /iam/im/ui/scripts/tooltips.js
- HTTP Header Manager
- 113 /iam/im/ui/ext-js/adapter/ext/ext-base.js
- HTTP Header Manager
- 112 /iam/im/ui/ext-js/examples/ux/ux-all.js
- HTTP Header Manager
- 114 /iam/im/ui/ext-js/ext-all.js
- HTTP Header Manager
- 115 /iam/im/ui/ext-ca/ca-all.js
- HTTP Header Manager
- 116 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- HTTP Header Manager
- 117 /iam/im/ui/images/favicon.ico
- HTTP Header Manager
- 118 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/...
- 118 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...
- HTTP Header Manager
- 120 /castylesr5.1.1/javascript/all.js
- 122 /iam/im/ui/scripts/global.js
- 121 /iam/im/ui/scripts/tooltips.js
- 124 /iam/im/ui/ext-js/ext-all.js
- 123 /iam/im/ui/ext-js/adapter/ext/ext-base.js
- 125 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 126 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- 119 /iam/im/ui/ext-ca/ca-all.js
- 127 /iam/im/ui/images/favicon.ico
- 128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...
- 130 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- 129 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 131 /castylesr5.1.1/javascript/all.js
- 133 /iam/im/ui/scripts/global.js
- 134 /iam/im/ui/ext-js/adapter/ext/ext-base.js
- 132 /iam/im/ui/scripts/tooltips.js
- 136 /iam/im/ui/ext-ca/ca-all.js
- 135 /iam/im/ui/ext-js/ext-all.js
- 137 /iam/im/ui/skin/idm/image/tasks/confirmation_16...

HTTP Request

Name: 118 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp

Comments:

Web Server
 Server Name or IP: \${IMWA_HOSTNAME} Port Number: 443
 Timeouts (milliseconds)
 Connect: Response:

HTTP Request
 Implementation: Protocol [http]: https Method: POST Content encoding: UTF-8
 Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
 Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	7CIA-P7IO-2IDA-SV5V-C6Z0-F194-13KA-8H7U	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
activetab.index	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PASSWORD	\${IM_SERVICE_ID_PWD}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
passwordConfirm	\${IM_SERVICE_ID_PWD}	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

Send Files With the Request:

File Path: Parameter Name: MIME Type:

Add Browse... Delete

Proxy Server
 Server Name or IP: Port Number: Username Password

Embedded Resources from HTML Files
 Retrieve All Embedded Resources Use concurrent pool. Size: 4 URLs must match:

Source address
 IP/Hostname

Optional Tasks
 Use as Monitor Save response as MD5 hash?



- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/...
- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...
 - HTTP Header Manager
- 109 /castylesr5.1.1/javascript/all.js
 - HTTP Header Manager
- 110 /iam/im/ui/scripts/global.js
 - HTTP Header Manager
- 111 /iam/im/ui/scripts/tooltips.js
 - HTTP Header Manager
- 113 /iam/im/ui/ext-js/adapter/ext/ext-base.js
 - HTTP Header Manager
- 112 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - HTTP Header Manager
- 114 /iam/im/ui/ext-js/ext-all.js
 - HTTP Header Manager
- 115 /iam/im/ui/ext-ca/ca-all.js
 - HTTP Header Manager
- 116 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - HTTP Header Manager
- 117 /iam/im/ui/images/favicon.ico
 - HTTP Header Manager
- 118 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/...
 - 118 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...
 - HTTP Header Manager
 - 120 /castylesr5.1.1/javascript/all.js
 - HTTP Header Manager
 - 122 /iam/im/ui/scripts/global.js
 - HTTP Header Manager
 - 121 /iam/im/ui/scripts/tooltips.js
 - HTTP Header Manager
 - 124 /iam/im/ui/ext-js/ext-all.js
 - HTTP Header Manager
 - 123 /iam/im/ui/ext-js/adapter/ext/ext-base.js
 - HTTP Header Manager
 - 125 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - HTTP Header Manager
 - 126 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - HTTP Header Manager
 - 119 /iam/im/ui/ext-ca/ca-all.js
 - HTTP Header Manager
 - 127 /iam/im/ui/images/favicon.ico
 - HTTP Header Manager
 - 128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/p...
 - HTTP Header Manager

HTTP Request

Name:

Comments:

Web Server

Server Name or IP: Port Number:

Timeouts (milliseconds)

Connect: Response:

HTTP Request

Implementation: Protocol [http]: Method: Content encoding:

Path:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters **Body Data**

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
OWASP_CSRFTOKEN	7CIA-P7IO-2IDA-SV5V-C6Z0-F194-13KA-8H7U	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosX	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ScrollPosY	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	yes	<input type="checkbox"/>	<input checked="" type="checkbox"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.submit.confirm	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

Send Files With the Request:

File Path:	Parameter Name:	MIME Type:

Add Browse... Delete

Proxy Server

Server Name or IP: Port Number: Username: Password:

Embedded Resources from HTML Files

Retrieve All Embedded Resources Use concurrent pool. Size: URLs must match:

Source address

IP/Hostname:

Optional Tasks

Use as Monitor Save response as MD5 hash?



- 123 /iam/im/ui/ext-js/adapters/ext-base.js
- HTTP Header Manager
- 125 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 126 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- HTTP Header Manager
- 119 /iam/im/ui/ext-ca/ca-all.js
- HTTP Header Manager
- 127 /iam/im/ui/images/favicon.ico
- HTTP Header Manager
- 128 /iam/im/cam/ui7/index.jsp?facesViewId=app/p
- HTTP Header Manager
- 130 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
- HTTP Header Manager
- 129 /iam/im/ui/ext-js/examples/ux/ux-all.js
- HTTP Header Manager
- 131 /castylesr5.1.1/javascript/all.js
- HTTP Header Manager
- 133 /iam/im/ui/scripts/global.js
- HTTP Header Manager
- 134 /iam/im/ui/ext-js/adapters/ext-base.js
- HTTP Header Manager
- 132 /iam/im/ui/scripts/tooltips.js
- HTTP Header Manager
- 136 /iam/im/ui/ext-ca/ca-all.js
- HTTP Header Manager
- 135 /iam/im/ui/ext-js/ext-all.js
- HTTP Header Manager
- 137 /iam/im/ui/skin/idm/image/tasks/confirmation_16
- HTTP Header Manager
- 138 /iam/im/ui/images/favicon.ico
- HTTP Header Manager
- 139 /iam/im/cam/ui7/index.jsp?
- 139 /iam/im/cam/ui7/index.jsp?
- HTTP Header Manager
- 140 /castylesr5.1.1/javascript/all.js
- HTTP Header Manager
- 141 /iam/im/ui/scripts/global.js
- 141 /iam/im/ui/scripts/tooltips.js
- 142 /iam/im/ui/ext-js/adapters/ext-base.js
- 143 /iam/im/ui/ext-js/ext-all.js
- 144 /iam/im/ui/ext-js/examples/ux/ux-all.js
- 145 /iam/im/ui/ext-ca/ca-all.js
- 146 /iam/im/ui/ext-js/src/locale/ext-lang-en.js

HTTP Request

Name: 139 /iam/im/cam/ui7/index.jsp?

Comments:

Web Server

Server Name or IP: \${IMWA_HOSTNAME} Port Number: 443

Timeouts (milliseconds)
Connect: Response:

HTTP Request

Implementation: Protocol [http]: https Method: POST Content encoding: UTF-8

Path: /iam/im/cam/ui7/index.jsp?

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for POST Browser-compatible headers

Parameters Body Data

Send Parameters With the Request:

Name:	Value	Encode?	Include Equals?
action.ackmsg	OK	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Detail Add Add from Clipboard Delete Up Down

Send Files With the Request:

File Path: Parameter Name: MIME Type:

Add Browse... Delete

Proxy Server

Server Name or IP: Port Number: Username Password

Embedded Resources from HTML Files

Retrieve All Embedded Resources Use concurrent pool. Size: 4 URLs must match:

Source address

IP/Hostname

Optional Tasks

Use as Monitor Save response as MD5 hash?

IDENTIFY JMETER CHALLENGE WITH CA IM'S OWASP_CSRFTOKEN

CA IM J2EE Logs display the following information about CSRF Token:

INFO [ims.ui] (http-/0.0.0.0:8080-43) Security provider 'SUN' is being used to generate the random token.

INFO [ims.ui] (http-/0.0.0.0:8080-43) CSRF Token is generated and inserted into the new created session.

ERROR [ims.ui] (http-/0.0.0.0:8080-43) Potential Cross Site Request Forgery Attack by performing task 'ResetUserPassword'. The token in the request does not match the one in the session!



user_console.jar

- META-INF
- com.netegrity
 - imsui.bean
 - taglib
 - webapp
 - authentication
 - bean
 - exception
 - filter
 - homepage
 - managedobject.rptinstance
 - page
 - selfreg
 - servlet
 - util
 - widget
 - worklist
 - CsrfPreventionHttpSessionListener.class
 - SystemInitializer.class
 - UIContext.class

OWASP_CSRFTOKEN IN CA IM user_console.jar

CsrfPreventionHttpSessionListener.class

```
    }  
    }  
  
    public void updateToken(HttpSession session)  
    {  
        String tokenValue = (String)session.getAttribute("OWASP_CSRFTOKEN");  
        if (tokenValue == null)  
        {  
            Provider provider = Security.getProvider("SUN");  
            String prngProvider;  
            String prngProvider;  
            if (provider != null)  
            {  
                prngProvider = "SUN";  
            }  
            else  
            {  
                Provider[] providers = Security.getProviders();  
                if (providers.length == 0) {  
                    throw new RuntimeException("No security provider is found for generating random token!");  
                }  
                int index = 0;  
                prngProvider = providers[0].getName();  
            }  
            try  
            {  
                UIContext.getLogger().info("Security provider '" + prngProvider + "' is being used to generate the random token.");  
                tokenValue = RandomGenerator.generateRandomId(SecureRandom.getInstance("SHA1PRNG", prngProvider), 32);  
            }  
            catch (Exception e)  
            {  
                throw new RuntimeException(String.format("unable to generate the random token - %s", new Object[] { e.getLocalizedMessage() }));  
            }  
            session.setAttribute("OWASP_CSRFTOKEN", tokenValue);  
            UIContext.getLogger().info("CSRF Token is generated and inserted into the new created session.");  
        }  
    }  
}
```



user_console.jar

- AbstractPage.class
- AbstractParentPage.class
- AbstractProfilePage.class
- AbstractScreenConfigPage.class
- AbstractSearchPage.class
- AbstractTabPage.class
- AbstractTabConfigPage.class
- ControllerAnalyticsHelper.class
- IAdminsTab.class
- IConfigPage.class
- IListPage.class
- INestingCallback.class
- IPage.class
- IParentPage.class
- IProfilePage.class
- IScreenConfigPage.class
- IScreenPage.class
- ISearchPage.class
- ITabConfigPage.class
- ITabPage.class
- NestingManager.class
- NestingWrapper.class
- RequestContext.class
- SearchPageContext.class
- SimpleCopyTabConfigPage.class
- SimpleNonvisualTabConfigPage.class
- SimpleVisualTabConfigPage.class
- StandardTabControllerConfigPage.class
- SubmitConfirmPage.class
- SubmitTaskPage.class
- SubmittedTasksTabConfigPage.class
- TabController.class
- TabPageContext.class
- TabSequenceTabController.class
- TabSequenceTabControllerConfigPage.class
- TaskController.class**
- TaskController
- TaskStatusPage.class
- WizardTabController.class
- selfreg
- servlet
- util
- widget
- worklist
- CsrfPreventionHttpSessionListener.class
- CsrfPreventionHttpSessionListener
 - PRNG : String
 - SUN_PRNG_PROVIDER : String
 - TOKEN_LENGTH : int
 - TOKEN_NAME : String
 - CsrfPreventionHttpSessionListener()
 - sessionCreated(HttpSessionEvent) : void
 - sessionDestroyed(HttpSessionEvent) : void
 - updateToken(HttpSession) : void
- SystemInitializer.class
- UIContext.class

```

private boolean isValidToken(HttpServletRequest request)
    throws Exception
{
    1041 if (UIContext.getUser(request) == null) {
    1042     return true;
    }
    1046 if (getTaskSession().getAttribute("ExternalTask") != null) {
    1047     return true;
    }
    1050 String[] tokenParameterValues = request.getParameterValues("OWASP_CSRFTOKEN");
    1051 String taskName = getTaskSession().getTask().getTaskTag();
    1052 if ((tokenParameterValues == null) || (tokenParameterValues.length == 0))
    1055 {
        String errorMsg = "The required token is missing!";

    1057     getTaskSession().addErrorObject(new TaskErrorObject(errorMsg, "", ProcessStep.DATAVALIDATE, ErrorLevel.ERROR, taskName));
    1058     UIContext.getLogger().error("Potential Cross Site Request Forgery Attack by performing task " + taskName + ". " + errorMsg);
    1059     return false;
    }
    1062 String requestTokenValue = tokenParameterValues[0];

    1064 String sessionTokenValue = (String)request.getSession().getAttribute("OWASP_CSRFTOKEN");
    1066 if (!requestTokenValue.equals(sessionTokenValue))
    1069 {
        String errorMsg = "The token in the request does not match the one in the session!";

    1071     getTaskSession().addErrorObject(new TaskErrorObject(errorMsg, "", ProcessStep.DATAVALIDATE, ErrorLevel.ERROR, taskName));
    1072     UIContext.getLogger().error("Potential Cross Site Request Forgery Attack by performing task " + taskName + ". " + errorMsg);
    1073     return false;
    }
    1076 return true;
}

public void taskSubmit(HttpServletRequest request)
    throws Exception

```

OWASP_CSRFTOKEN
IN CA IM user_console.jar

- 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - SM AUTH VIA LOGIN.FCC
 - Response Assertion
 - HTTP Header Manager
 - 210 /iam/im/cam/
 - HTTP Header Manager
 - 211 /iam/im/cam/index.jsp
 - HTTP Header Manager
 - 212 /iam/im/cam/ui7/index.jsp
 - HTTP Header Manager
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTO
 - 213 /iam/im/ui/scripts/tooltips.js
 - 214 /iam/im/ui/ext-ca/ca-all.js
 - 215 /castylesr5.1.1/javascript/all.js
 - 216 /iam/im/ui/scripts/global.js
 - 217 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 220 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - 218 /iam/im/ui/ext-js/adapters/ext/ext-base.js
 - 219 /iam/im/ui/ext-js/ext-all.js
 - 221 /iam/im/ui/images/favicon.ico
 - 223 /iam/im/ui/scripts/global.js
 - 224 /iam/im/ui/scripts/tooltips.js
 - 225 /iam/im/ui/ext-js/adapters/ext/ext-base.js
 - 222 /castylesr5.1.1/javascript/all.js
 - 228 /iam/im/ui/ext-ca/ca-all.js
 - 229 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - 227 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 226 /iam/im/ui/ext-js/ext-all.js
 - 231 /iam/im/cam/ui7/index.jsp
 - 230 /iam/im/ui/images/favicon.ico
 - 02-LAUNCH RESET USER PASSWORD TASK
 - 232 /iam/im/cam/ui7/index.jsp
 - Response Assertion
 - HTTP Header Manager
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTO
 - 233 /castylesr5.1.1/javascript/all.js

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

- Text
- SM AUTH VIA LOGIN.FCC
 - 212 /iam/im/cam/ui7/index.jsp
 - 213 /iam/im/ui/scripts/tooltips.js
 - 214 /iam/im/ui/ext-ca/ca-all.js
 - 215 /castylesr5.1.1/javascript/all.js
 - 216 /iam/im/ui/scripts/global.js
 - 217 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 220 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - 218 /iam/im/ui/ext-js/adapters/ext/ext-base.js
 - 219 /iam/im/ui/ext-js/ext-all.js
 - 221 /iam/im/ui/images/favicon.ico
 - 223 /iam/im/ui/scripts/global.js
 - 224 /iam/im/ui/scripts/tooltips.js
 - 225 /iam/im/ui/ext-js/adapters/ext/ext-base.js
 - 222 /castylesr5.1.1/javascript/all.js
 - 228 /iam/im/ui/ext-ca/ca-all.js
 - 229 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - 227 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 226 /iam/im/ui/ext-js/ext-all.js
 - 231 /iam/im/cam/ui7/index.jsp
 - 230 /iam/im/ui/images/favicon.ico
 - 01-SM AUTHENTICATION VIA HTTP AUTH
 - 232 /iam/im/cam/ui7/index.jsp
 - 233 /castylesr5.1.1/javascript/all.js
 - 234 /iam/im/ui/scripts/global.js
 - 236 /iam/im/ui/ext-js/adapters/ext/ext-base.js
 - 237 /iam/im/ui/ext-js/ext-all.js
 - 238 /iam/im/ui/ext-js/examples/ux/ux-all.js
 - 235 /iam/im/ui/scripts/tooltips.js
 - 241 /iam/im/ui/scripts/task.js
 - 240 /iam/im/ui/ext-js/src/locale/ext-lang-en.js
 - 239 /iam/im/ui/ext-ca/ca-all.js
 - 242 /iam/im/ui/images/favicon.ico
 - 244 /iam/im/ui/scripts/global.js
 - 243 /castylesr5.1.1/javascript/all.js
- Scroll automatically?

Sampler result Request Response data

OWASP_CSRFTOKEN

Generated & Defined in the IM JSP

```

<input type="hidden" name="OWASP_CSRFTOKEN" value="HHXU-H4EP-3KFU-MXEP-YO80-9CNP-UKA9-ADV0"/>

```

Search: csrf Case sensitive Regular exp.

https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites

https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites



FEATURES PRICING WHY WE BLAZE **BLOG** SUPPORT SIGN IN

STA

So let's add the View Results Tree listener to our recorded test plan and see the response details of the request before login.

Run the Recorded Scenario

Examples to pull the OWASP_CSRFTOKEN From pages returned by the IM JSP

1. Select the request before the actual login attempt (the failed one) in the View Results Tree listener
2. Switch to the "Response Data" tab - as this holds the actual server response
3. Type "csrf" into the "Search" input and click the "Find" button

Voila! We have a hidden input named "csrfmiddlewaretoken" and it looks like its value attribute is holding the dynamic CSRF token needed for a successful login.

```
<input type='hidden' name='csrfmiddlewaretoken' value='sTrKh7qgnuKtuNTkbwlyCv45W2sqOaiY' />
```



Now, based on the response nature, you can use the:

1. [Regular Expression Extractor](#)
2. [XPath Extractor](#)
3. [CSS/JQuery Extractor](#)
4. [JSON Path Extractor](#) (available via [JMeter Plugins](#)). Our [article](#) on the XPath Extractor covers the JSON Path as well.

I've listed below examples of the configurations of each of these PostProcessors.

Please note: in all cases, the 'Reference Name' is the name of the JMeter Variable where the extractor result will be stored. This name can be anything as long as it's meaningful. For example: if you set 'TOKEN' as the Reference Name, you'll be able to access this variable as `${TOKEN}` later on in the script.

1. Regular Expression Extractor:
2. Apply to and Field to check: depends on where you expect the value to appear. In my case it's "Main Sample Only" and "Body"
3. Reference Name: REGEX_TOKEN
4. Regular Expression:

```
<input type='hidden' name='csrfmiddlewaretoken' value='(.+?)' />
```



CSRF stands for [Cross-site request forgery](#) and you're getting CSRF Validation error due to missing mandatory dynamic request parameter, usually a Cookie or a Header.

I would suggest executing your scenario in i.e. [Firefox Browser](#) with [HttpFox](#) or [FireBug](#) extension enabled and inspect request details. CSRF token usually comes as a cookie in server's response and needs to be passed as a header or request parameter. So it is similar to usual correlation. So the flow should look as follows:

1. First HTTP Request: open first page
2. Extract CSRF token from response via one of the following Post Processors
 - [Regular Expression Extractor](#)
 - [XPath Extractor](#)
 - [CSS/JQuery Extractor](#)
3. Second HTTP Request: open second page (CSRF-protected). Add the token, extracted in step 2 to one of the following:
 - [HTTP Request Parameter](#)
 - [HTTP Header Manager](#)
 - [HTTP Cookie Manager](#)

Dmitri's Examples to pull the CSRF TOKEN

Depending on where your server expects the token to live.

For the future, looking at your "localhost" server name - don't run JMeter performance tests on the same machine where application lives.

[share](#) [improve this answer](#)

answered Nov 19 '14 at 7:46

 [Dmitri T](#)
13.8k ● 1 ● 7 ● 15

Three (3) ways to extract data

Regular Expression Extractor:

- Apply to and Field to check: depends on where you expect the value to appear.
 - Select “Main Sample Only” and “Body”
 - Reference Name: REGEX_OWASP_CSRF_TOKEN
 - Regular Expression:
 - `<input type='hidden' name='OWASP_CSRFTOKEN' value='(.+?)' />`
 - Template: \$1\$
- XPath Extractor
 - If your response is not XML/XHTML compliant, check Use Tidy box
 - Reference Name: XPATH_OWASP_CSRF_TOKEN
 - XPath Query:
 - `//input[@name='OWASP_CSRFTOKEN']/@value`
- CSS/JQuery Extractor
 - Reference Name: CSS_OWASP_CSRF_TOKEN
 - CSS/JQuery Expression:
 - `input[name=OWASP_CSRFTOKEN]`
 - Attribute: value

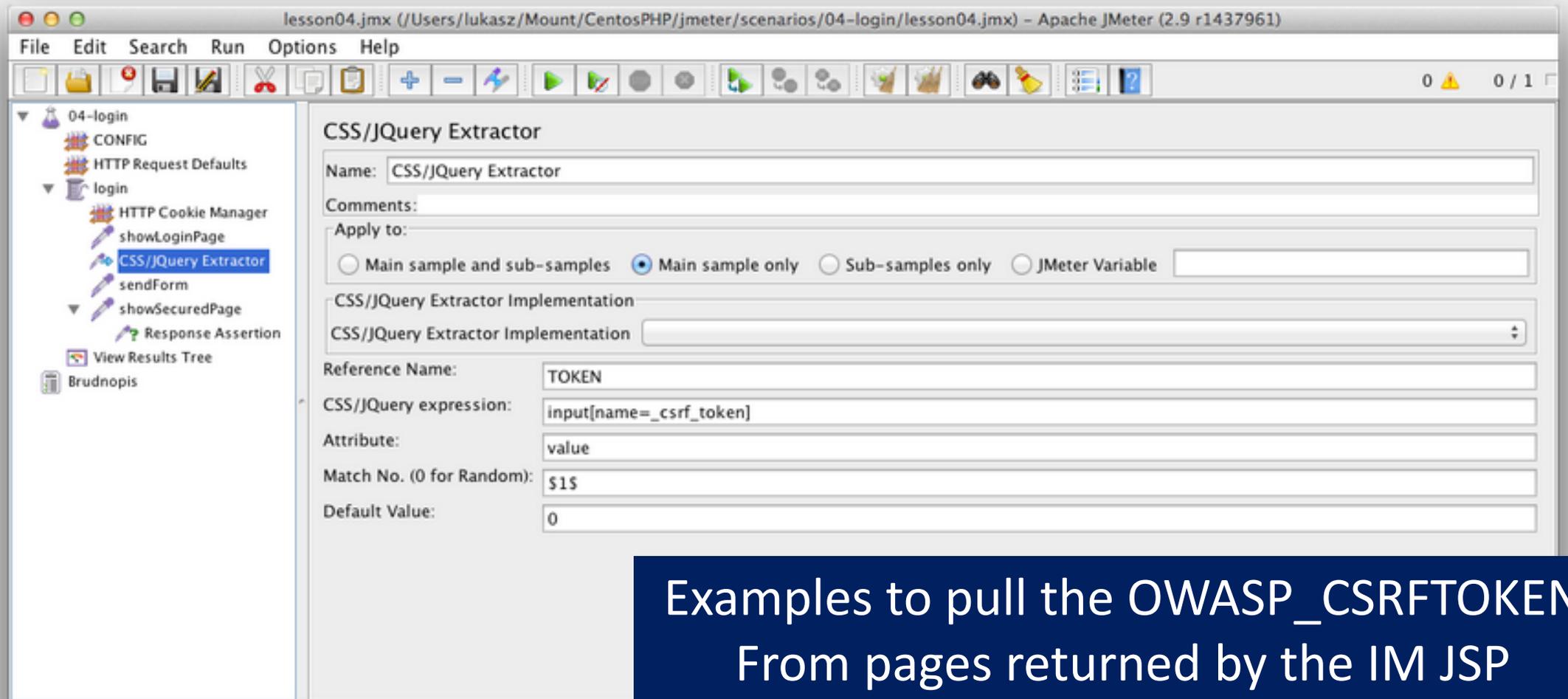
http://jmeter.apache.org/usermanual/component_reference.html#Regular_Expression_Extractor

<https://blazemeter.com/blog/using-xpath-extractor-jmeter-0>

http://jmeter.apache.org/usermanual/component_reference.html#CSS/JQuery_Extractor

<http://hxtpo.e.github.io/performanceTests/testing-login-using-jmeter.html>

The value will be available in variable TOKEN (use \${TOKEN})



The screenshot shows the Apache JMeter 2.9 interface. The left sidebar displays a tree view of the test plan, with the 'login' folder expanded to show the 'CSS/JQuery Extractor' element selected. The main panel shows the configuration for this extractor:

- Name: CSS/JQuery Extractor
- Comments:
- Apply to: Main sample and sub-samples Main sample only Sub-samples only JMeter Variable
- CSS/JQuery Extractor Implementation: (dropdown menu)
- Reference Name: TOKEN
- CSS/JQuery expression: input[name=_csrf_token]
- Attribute: value
- Match No. (0 for Random): \$1\$
- Default Value: 0

Examples to pull the OWASP_CSRFTOKEN
From pages returned by the IM JSP



Test Plan - IM

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 - HTTP Header Manager for IM
 - Gaussian Random Timer for IM
- AUTHENTICATED AND LAUNCH RESET USER PASSWORD
- FIND USER
- RESET USER PASSWORD
- VIEW SUBMITTED TASKS
- LOGOUT
- 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
- 02-LAUNCH RESET USER PASSWORD TASK
 - 232 /iam/im/cam/ui7/index.jsp - PARAMETERS
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication**
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authenti
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
- 03-FIND USER
 - 253 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp - PARAMETERS U
 - 274 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp - PARAMETERS U
- 04-RESET PASSWORD FOR USER

CSS/JQuery Extractor

Name:

Comments:

Apply to:

Main sample and sub-samples Main sample only Sub-samples only JMeter Variable

CSS/JQuery Extractor Implementation

CSS/JQuery Extractor Implementation

Reference Name:

CSS/JQuery expression:

Attribute:

Match No. (0 for Random):

Default Value:

```
<input type="hidden" name="OWASP_CSRFTOKEN" value="HHXU-H4EP-3KFU-MXEP-YO80-9CNP-UKA9-ADV0"/>
```

- 07-LOG OUT OF IM
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph
- WorkBench

Supporting Information on Jmeter

- <http://jmeter.apache.org/usermanual/functions.html>
- <http://hxtpoe.github.io/performanceTests/extract-information-from-response.html>
- <http://blog.wedoqa.com/2015/02/handling-csrf-prevention-tokens-dynamic-data-in-jmeter/>
- <https://blazemeter.com/blog/using-xpath-extractor-jmeter-0>
- <https://lincolnloop.com/blog/load-testing-jmeter-part-1-getting-started/>
- <https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites>

Supporting Slides for CA IM's Jmeter Test Plan

The following slides are not in any particular order, but were retained due to useful examples.

Use HC3CookieHandler for IPv4 (IM:SM)

HTTP Cookie Manager (IPv6 support)

Add HTTPClient 4 cookie implementation in JMeter.
Cookie Manager has now the default HC3.1 implementation and a new choice HC4 implementation (compliant with IPv6 address)

HTTP Cookie Manager

Name: HTTP Cookie Manager

Comments:

Options

Clear cookies each iteration?

Cookie Policy: compatibility

Implementation: HC4CookieHandler

HC3CookieHandler

HC4CookieHandler

User-Defined Cookies

Name:	Value	Domain
-------	-------	--------

Use new default of HttpClient4 for IM:SM

HTTP Request: HttpClient 4 is now the default implementation

HttpClient 4 is now the default HTTP Request implementation (and for Proxy element when generating HTTP requests).

Previously the default was the HTTP Java implementation (i.e. the implementation provided by the JVM)

The screenshot shows the 'HTTP Request' configuration dialog in JMeter. The 'Implementation' dropdown menu is open, highlighting 'HttpClient4'. Other options visible are 'HttpClient3.1' and 'Java'. The 'Path' field is set to '/changes.htm', 'Method' is 'GET', and the 'Use KeepAlive' checkbox is checked. The 'Send Parameters' button is visible at the bottom right.

- Tasks <<
- Home +
- My Access +
- Services +
- Users +
- Organizations +
- Groups +
- Roles and Tasks +
- Policies +
- Reports +
- Environment Administration +
- System -
 - ▶ Bulk Tasks
 - ▶ Email
 - ▶ JDBC Connection Management
 - ▶ Logical Attributes
 - ▶ Select Box Data
 - ▶ Web Services
 - ▶ Bulk Loader
 - ▶ Cleanup Submitted Tasks
 - ▶ Configure Global Policy Based Wor
 - ▶ Delete Recurring Tasks
 - ▶ Secret Keys
 - ▶ View Submitted Tasks
 - ▶ Reporting

View Submitted Tasks

	Description	Status	Priority	Initiated by	Submitted	Last Updated	Last Operation
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:40 AM	12/30/2015 4:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:39 AM	12/30/2015 4:39 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:38 AM	12/30/2015 4:38 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:35 AM	12/30/2015 4:35 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:27 AM	12/30/2015 4:27 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 12:35 AM	12/30/2015 12:35 AM	

Search Tasks Refresh

Close



Test Plan - IM

- CSV Data Set Config for IM Login
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 - HTTP Header Manager for IM
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 - 02-LAUNCH RESET USER PASSWORD TASK
 - 03-FIND USER
 - 04-RESET PASSWORD FOR USER
 - 05-LAUNCH VIEW SUBMITTED TASKS
 - 06-SUBMITTED VST
 - 07-LOG OUT OF IM
 - 1 /iam/im/cam/ui7/index.jsp
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph

WorkBench

- HTTP(S) Test Script Recorder for IM
 - View Results Tree

HTTP(S) Test Script Recorder

Name:

Comments:

Global Settings

Port: HTTPS Domains:

Test plan content

Target Controller:

Grouping: Capture HTTP Headers Add Assertions Regex matching

HTTP Sampler settings

Type: Redirect Automatically Follow Redirects Use KeepAlive Retrieve All Embedded Resources

Content-type filter

Include: Exclude:

URL Patterns to Include

URL Patterns to Include

URL Patterns to Exclude

URL Patterns to Exclude

Notify Child Listeners of filtered samplers

Notify Child Listeners of filtered samplers



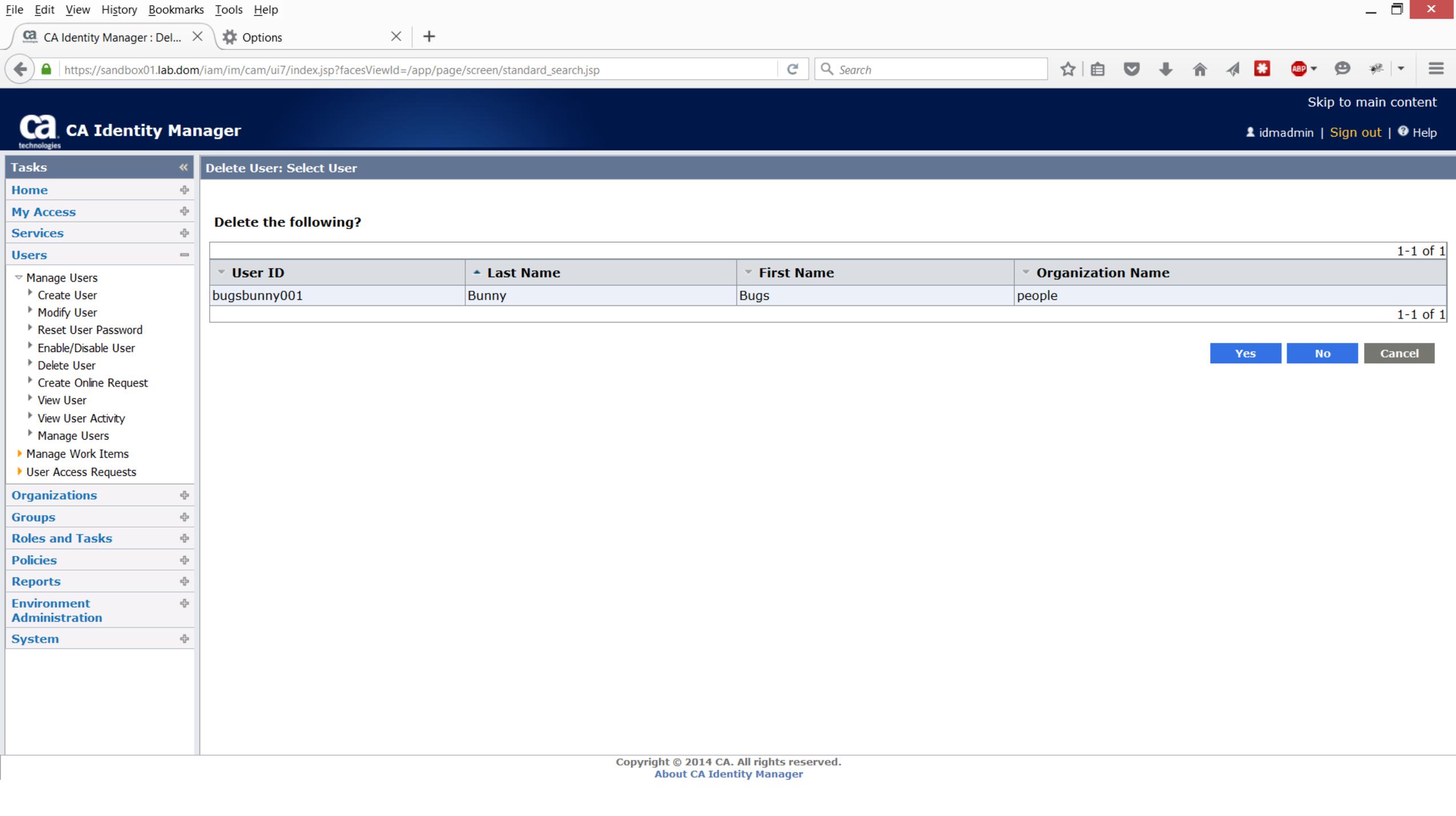
- Tasks <<
- Home +
- My Access +
- Services +
- Users -
 - Manage Users
 - Create User
 - Modify User
 - Reset User Password
 - Enable/Disable User
 - Delete User
 - Create Online Request
 - View User
 - View User Activity
 - Manage Users
 - Manage Work Items
 - User Access Requests
- Organizations +
- Groups +
- Roles and Tasks +
- Policies +
- Reports +
- Environment Administration +
- System +

Create User

- Profile
- Access Roles
- Admin Roles
- Groups

• = Required

• Organization	people	Browse
• User ID	bugsbunny001	
Password	●●●●●●●●	
Confirm Password	●●●●●●●●	
Password Must Change	<input type="checkbox"/>	
Enabled	<input checked="" type="checkbox"/>	
• First Name	Bugs	
• Last Name	Bunny	
• Full Name	Bugs Bunny	
Email		
camInteger04		
camInteger03		
camInteger02		
camInteger01		
camInteger00		
camIdp		
Identity Policy		



Delete User: Select User

Delete the following?

User ID	Last Name	First Name	Organization Name
bugsbunny001	Bunny	Bugs	people

Yes No Cancel

Book1 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER

From Access From Web From Text From Other Sources Existing Connections Refresh All Properties Edit Links Connections

Sort Filter Clear Reapply Advanced Text to Columns Flash Fill Remove Duplicates Data Validation

J7

fx

	A	B	C	D	E	F	G
1	1	bugsbunny001	Bugs	Bunny001	Bugs Bunny001	Password101	Password201
2	2	bugsbunny002	Bugs	Bunny002	Bugs Bunny002	Password101	Password201
3	3	bugsbunny003	Bugs	Bunny003	Bugs Bunny003	Password101	Password201
4	4	bugsbunny004	Bugs	Bunny004	Bugs Bunny004	Password101	Password201
5	5	bugsbunny005	Bugs	Bunny005	Bugs Bunny005	Password101	Password201
6	6	bugsbunny006	Bugs	Bunny006	Bugs Bunny006	Password101	Password201
7	7	bugsbunny007	Bugs	Bunny007	Bugs Bunny007	Password101	Password201
8	8	bugsbunny008	Bugs	Bunny008	Bugs Bunny008	Password101	Password201
9	9	bugsbunny009	Bugs	Bunny009	Bugs Bunny009	Password101	Password201
10	10	bugsbunny010	Bugs	Bunny010	Bugs Bunny010	Password101	Password201
11	11	bugsbunny011	Bugs	Bunny011	Bugs Bunny011	Password101	Password201
12	12	bugsbunny012	Bugs	Bunny012	Bugs Bunny012	Password101	Password201
13	13	bugsbunny013	Bugs	Bunny013	Bugs Bunny013	Password101	Password201
14	14	bugsbunny014	Bugs	Bunny014	Bugs Bunny014	Password101	Password201
15	15	bugsbunny015	Bugs	Bunny015	Bugs Bunny015	Password101	Password201
16	16	bugsbunny016	Bugs	Bunny016	Bugs Bunny016	Password101	Password201
17	17	bugsbunny017	Bugs	Bunny017	Bugs Bunny017	Password101	Password201
18	18	bugsbunny018	Bugs	Bunny018	Bugs Bunny018	Password101	Password201
19	19	bugsbunny019	Bugs	Bunny019	Bugs Bunny019	Password101	Password201
20	20	bugsbunny020	Bugs	Bunny020	Bugs Bunny020	Password101	Password201
21							

Save As

« Downloads » apache-jmeter-2.13 » apache-jmeter-2.13 »

Search apache-jmeter-2.13

Organize New folder

Name	Date modified	Type	Size
bin	12/30/2015 1:10 A...	File folder	
docs	12/2/2015 1:49 PM	File folder	
extras	12/2/2015 1:49 PM	File folder	
lib	12/2/2015 1:49 PM	File folder	
licenses	12/2/2015 1:49 PM	File folder	
printable_docs	12/2/2015 1:49 PM	File folder	
users.csv	12/31/2015 2:20 PM	Microsoft Excel Co...	2 KB

File name: users.csv

Save as type: CSV (MS-DOS) (*.csv)

Authors: Windows User Tags: Add a tag Title: Add a title

Hide Folders Save Cancel



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 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 36 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 51 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
 - 63 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 73 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 03 - CREATE USER
 - 84 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 95 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 232 /iam/im/cam/ui7/index.jsp - PARAMETERS
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 05-FIND USER
 - 253 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp - PARAMETERS
 - 274 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp - PARAMETERS
 - 06-RESET PASSWORD FOR USER
 - 297 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp - PARAMETERS UPD.
 - 318 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp - PARAMETERS UPD.
 - 07 - DELETE USER
 - 106 /iam/im/cam/ui7/index.jsp
 - 117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 05-LAUNCH VIEW SUBMITTED TASKS
 - 06-SUBMITTED VST
 - 07-LOG OUT OF IM
 - View Results Tree
 - Graph Results
 - Aggregate Report
 - Aggregate Graph
 - WorkBench
 - HTTP(S) Test Script Recorder for IM
 - View Results Tree

CSV Data Set Config

Name:

Comments:

Configure the CSV Data Source

Filename:	<input type="text" value="users.csv"/>
File encoding:	<input type="text"/>
Variable Names (comma-delimited):	<input type="text" value="Account_ID_Field,User_ID_Field,User_FN_Field,User_LN_Field, User_FullName_Field,Password_Field,New_Password_Field"/>
Delimiter (use '\t' for tab):	<input type="text"/>
Allow quoted data?:	<input type="checkbox"/> False
Recycle on EOF?:	<input checked="" type="checkbox"/> True
Stop thread on EOF?:	<input type="checkbox"/> False
Sharing mode:	<input type="text" value="All threads"/>

View Submitted Tasks

	▼ Description	▼ Status	▼ Priority	▼ Initiated by	▼ Submitted	▼ Last Updated	
	Delete User task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 6:09 AM	12/30/2015 6:09 AM	
	Reset User Password task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 6:09 AM	12/30/2015 6:09 AM	
	Create User task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 6:09 AM	12/30/2015 6:09 AM	

Tasks	Description	Status	Priority	Owner	Created	Completed
	Reset User Password task, User bugsbunny016	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Delete User task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Delete User task, User bugsbunny004	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Delete User task, User bugsbunny006	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny017	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Delete User task, User bugsbunny002	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny019	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny020	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Delete User task, User bugsbunny007	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny012	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny018	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny010	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny013	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny014	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny009	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny015	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny003	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny005	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny008	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny006	Completed	Medium	idmadmin	12/30/2015 6:11 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny002	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny007	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Reset User Password task, User bugsbunny004	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Create User task, User bugsbunny011	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Create User task, User bugsbunny016	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Create User task, User bugsbunny018	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Create User task, User bugsbunny020	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM
	Create User task, User bugsbunny017	Completed	Medium	idmadmin	12/30/2015 6:10 AM	12/30/2015 6:11 AM



Test Plan - IM

- CSV Data Set Config for IM Login
- Recorder for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - Gaussian Random Timer for IM
- 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
- 02 - LAUNCH CREATE USER TASK
 - 1 /iam/im/cam/ui7/index.jsp
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - 36 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 51 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
 - 63 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 73 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
- 03 - CREATE USER
 - 84 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 95 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
- 04-LAUNCH RESET USER PASSWORD TASK
 - 232 /iam/im/cam/ui7/index.jsp - PARAMETERS
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
- 05-FIND USER
 - 253 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp - PARAMETERS
 - 274 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp - PARAMETERS
- 06-RESET PASSWORD FOR USER
 - 297 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp - PARAMETERS UPD.
 - 318 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp - PARAMETERS UPD.
- 07 - DELETE USER
 - 106 /iam/im/cam/ui7/index.jsp
 - 117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
- 05-LAUNCH VIEW SUBMITTED TASKS
- 06-SUBMITTED VST
- 07-LOG OUT OF IM

View Results Tree

- Graph Results
- Aggregate Report
- Aggregate Graph

WorkBench

- HTTP(S) Test Script Recorder for IM
 - View Results Tree

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename

Log/Display Only: Errors Successes

Text
106 /iam/im/cam/ui7/index.jsp
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
318 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
06-RESET PASSWORD FOR USER
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
318 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
06-RESET PASSWORD FOR USER
106 /iam/im/cam/ui7/index.jsp
106 /iam/im/cam/ui7/index.jsp
117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
318 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
06-RESET PASSWORD FOR USER
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
07 - DELETE USER
106 /iam/im/cam/ui7/index.jsp
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
318 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/profile/profile.jsp
06-RESET PASSWORD FOR USER
117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
07 - DELETE USER
07 - DELETE USER
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
07 - DELETE USER
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
07 - DELETE USER
106 /iam/im/cam/ui7/index.jsp
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
07 - DELETE USER
117 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
128 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
139 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
150 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
07 - DELETE USER

Sampler result Request Response data

Raw	HTTP
[Empty content area]	

Scroll automatically?

Test Plan - IM

- CSV Data Set Config for IM Login
- Recorder for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - Gaussian Random Timer for IM
- 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - SM AUTH VIA LOGIN.FCC & PARAMETERS
 - 212 /iam/im/cam/ui7/index.jsp
- 02 - LAUNCH CREATE USER TASK
 - 02a-Launch Create User Task
 - 02a - Select NEW User to be Created
 - 02c - Ist Page Loaded
 - 02d - Search on OU Placement
 - 02e - Submit OU Placement for Default OU
 - 02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after a
 - 02a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar
 - 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authent
 - 02b - Select NEW User to be Created
 - 02c - Ist Page Loaded
 - 02d - Search on OU Placement
 - 02e - Submit OU Placement for Default OU
- 03 - CREATE USER
 - 03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN PARAMETER
- 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authent
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_console.jar after authentication
- 05-FIND USER
 - 05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
 - 05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
- 06-RESET PASSWORD FOR USER
- 07 - DELETE USER
 - 07a - Launch Delete User Task
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07c - Appears 2nd Time - Find User to Delete - /iam/im/cam/ui7/index.jsp?facesViewId=app/p
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
- 05-LAUNCH VIEW SUBMITTED TASKS
- 06-SUBMITTED VST
- 07-LOG OUT OF IM
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph
- WorkBench
- HTTP(S) Test Script Recorder for IM
 - View Results Tree

Aggregate Report

Name:

Comments:

Write results to file / Read from file

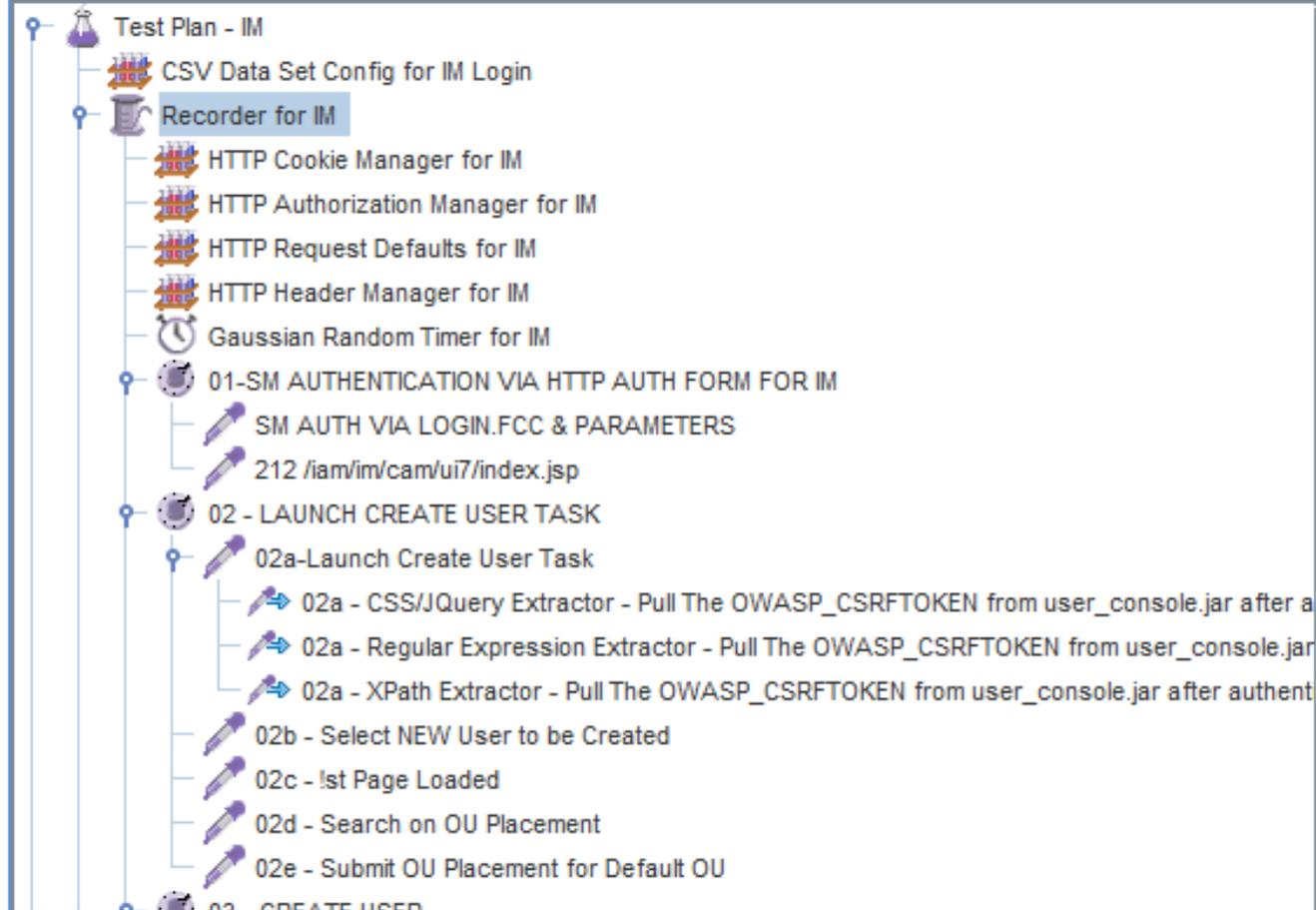
Filename Log/Display Only: Errors Successes

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	KB/sec
SM AUTH VIA LOGIN.FCC & PARAMETERS	20	1673	1296	4172	4174	4176	106	4176	0.00%	3.8/sec	377.7
212 /iam/im/cam/ui7/index.jsp	20	104	22	243	492	510	19	510	0.00%	3.8/sec	362.0
01-SM AUTHENTICATION VIA HTTP AUTH FORM ...	20	1778	1321	4192	4195	4417	126	4417	0.00%	3.5/sec	673.8
02a-Launch Create User Task	20	289	47	1084	1171	1184	28	1184	0.00%	3.3/sec	295.6
02b - Select NEW User to be Created	20	748	235	1663	1724	1873	86	1873	0.00%	2.6/sec	347.8
02c - Ist Page Loaded	20	496	394	835	845	961	176	961	0.00%	2.4/sec	218.1
02d - Search on OU Placement	20	319	180	833	881	918	57	918	0.00%	2.4/sec	223.5
02e - Submit OU Placement for Default OU	20	403	236	893	933	1103	31	1103	0.00%	2.2/sec	290.0
02 - LAUNCH CREATE USER TASK	20	2257	2321	4288	4410	4604	561	4604	0.00%	1.9/sec	1029.3
03a - Submit Create User Task & UPDATE OWAS...	20	762	759	1547	1565	1676	164	1676	0.00%	2.0/sec	171.8
03b - Confirm Submit to Create User & UPDATE ...	20	14303	14462	17372	17406	18112	7061	18112	0.00%	45.0/min	63.7
03 - CREATE USER	20	15066	15523	18132	18919	19677	7233	19677	0.00%	43.9/min	124.7
04a - Launch Reset User Password Task	20	571	613	849	967	1209	28	1209	0.00%	59.8/min	88.6
04-LAUNCH RESET USER PASSWORD TASK	20	571	613	849	967	1209	28	1209	0.00%	59.0/min	87.4
05a - UPDATE OWASP_CSRFTOKEN & OTHER ...	20	190	77	454	504	511	41	511	0.00%	1.0/sec	93.2
05b - UPDATE OWASP_CSRFTOKEN & OTHER ...	20	771	617	1675	1799	1833	124	1833	0.00%	1.0/sec	89.1
05-FIND USER	20	961	765	1818	1843	1874	231	1874	0.00%	58.2/min	174.5
06a - CHANGE TO NEW PASSWORD & UPDATE ...	20	568	457	990	1486	1492	30	1492	0.00%	59.0/min	84.2
06b - Submit Password Change & UPDATE OWA...	20	8160	7783	11613	11865	12547	4305	12547	0.00%	48.3/min	68.7
06-RESET PASSWORD FOR USER	20	8728	8560	11895	12508	13489	4443	13489	0.00%	45.8/min	130.6
07a - Launch Delete User Task	20	361	298	706	728	919	28	919	0.00%	1.6/sec	142.8
07b - Find User to Delete & UPDATE OWASP_CS...	20	167	99	275	403	429	44	429	0.00%	1.6/sec	149.1
07c - Appears 2nd Time - Find User to Delete - /ia...	20	143	146	269	287	293	19	293	0.00%	1.6/sec	142.3
07d - Submit Delete User Task & UPDATE OWAS...	20	209	175	486	492	507	32	507	0.00%	1.6/sec	140.6
07e - Confirm Submit Delete User Task & UPDAT...	20	4753	4439	6883	8240	12249	1681	12249	0.00%	1.4/sec	123.3
07 - DELETE USER	20	5636	5354	7301	9093	13119	2191	13119	0.00%	1.3/sec	552.3
TOTAL	520	2692	614	9956	14216	17978	19	19677	0.00%	12.5/sec	1713.7

NOTE THIS TESTING IS ON A SANDBOX SERVER OF CENTOS WITH 2GB JVM MEMORY FOR JBOSS EAP 6.2

http_recorder_example_v501_Working_Clean_Up.jmx (C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmet

File Edit Search Run Options Help



Thread Group

Name: Recorder for IM

Comments:

Action to be taken after a Sampler error

Continue

Thread Properties

Number of Threads (users): 100

Ramp-Up Period (in seconds): 1

Loop Count: Forever 1

Delay Thread creation until needed

Scheduler

TRY TO PUSH THE SOLUTION TO FAILURE WITH RAMP-UP PERIOD = 1 SECOND FOR 100 ACCOUNT/THREADS



Test Plan - IM

- CSV Data Set Config for IM Login
- Recorder for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - Gaussian Random Timer for IM
- 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 01a - SM AUTH VIA LOGIN.FCC & PARAMETERS
 - 01b - IM LANDING PAGE
- 02 - LAUNCH CREATE USER TASK
 - 02a-Launch Create User Task
 - 02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN
 - 02a - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN
 - 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from user
 - 02b - Select NEW User to be Created
 - 02c - 1st Page Loaded
 - 02d - Search on OU Placement
 - 02e - Submit OU Placement for Default OU
- 03 - CREATE USER
 - 03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN
 - 03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN
- 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from user
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- 05-FIND USER
 - 05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
 - 05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
- 06-RESET PASSWORD FOR USER
 - 07a - Launch Delete User Task
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07c - Appears 2nd Time - Find User to Delete - /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER
- 05-LAUNCH VIEW SUBMITTED TASKS
- 06-SUBMITTED VST
- 07-LOG OUT OF IM

View Results Tree
Graph Results
Aggregate Report
Aggregate Graph
WorkBench
HTTP(S) Test Script Recorder for IM
View Results Tree

Aggregate Report

Name: Aggregate Report

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only: Errors Successes

Configure

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	KB/sec
01a - SM AUTH VIA LOGIN.FCC & PARAMETERS	100	3944	2678	9495	10799	12431	436	13263	4.00%	7.0/sec	661.7
01b - IM LANDING PAGE	100	549	370	1242	1518	2180	19	3273	3.00%	6.8/sec	624.9
01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM	100	4494	2897	10074	11481	13526	884	13914	4.00%	6.5/sec	1210.6
02a-Launch Create User Task	100	1608	1286	2970	3363	4137	15	5528	3.00%	5.5/sec	477.0
02b - Select NEW User to be Created	100	4937	5099	7340	8731	9629	24	9665	3.00%	4.6/sec	593.3
02c - 1st Page Loaded	100	4399	4397	6839	7719	8932	45	9617	3.00%	4.6/sec	394.0
02d - Search on OU Placement	100	2842	2729	5306	5830	6353	9	6530	3.00%	4.4/sec	387.2
02e - Submit OU Placement for Default OU	100	1157	1023	2221	2724	3270	9	3288	3.00%	5.3/sec	678.0
02 - LAUNCH CREATE USER TASK	100	14945	15649	18750	20005	21233	183	21315	3.00%	3.5/sec	1821.6
03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	100	3905	3734	6908	7197	7820	8	8905	3.00%	4.8/sec	393.0
03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN PARAMETER	100	12060	6888	26092	29281	33546	8	33741	3.00%	1.9/sec	189.9
03 - CREATE USER	100	15966	10522	30264	31814	39198	16	39436	3.00%	1.9/sec	344.2
04a - Launch Reset User Password Task	100	1114	824	2669	3029	3858	16	4082	2.00%	1.9/sec	163.7
04-LAUNCH RESET USER PASSWORD TASK	100	1114	824	2669	3029	3858	16	4082	2.00%	1.9/sec	163.3
05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	100	547	396	1275	1439	2154	2	2558	1.00%	1.9/sec	165.6
05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	100	837	183	2680	3311	4638	2	5352	1.00%	1.9/sec	163.6
05-FIND USER	100	1385	718	3578	4218	5151	4	7910	1.00%	1.9/sec	325.9
06a - CHANGE TO NEW PASSWORD & UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	100	613	249	1752	2474	3286	2	3330	0.00%	1.9/sec	158.3
06b - Submit Password Change & UPDATE OWASP_CSRFTOKEN PARAMETER	100	4241	2363	14371	19222	28336	9	29291	0.00%	1.5/sec	119.8
06-RESET PASSWORD FOR USER	100	4855	2707	15597	19819	29360	13	31522	0.00%	1.5/sec	238.6
07a - Launch Delete User Task	100	562	423	1173	1432	1579	10	1861	0.00%	1.5/sec	124.9
07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER	100	319	296	592	662	969	2	1002	0.00%	1.5/sec	126.0
07c - Appears 2nd Time - Find User to Delete - /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard_search.jsp	100	173	138	377	460	580	3	584	0.00%	1.5/sec	123.6
07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	100	300	227	710	923	1219	2	1288	0.00%	1.4/sec	121.5
07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	100	6954	2137	21537	22836	24117	2	24312	0.00%	1.2/sec	95.8
07 - DELETE USER	100	8309	3680	23520	24833	25863	43	25952	0.00%	1.2/sec	488.1
TOTAL	2600	3928	1413	12179	19633	28293	2	39436	1.73%	26.0/sec	3468.0

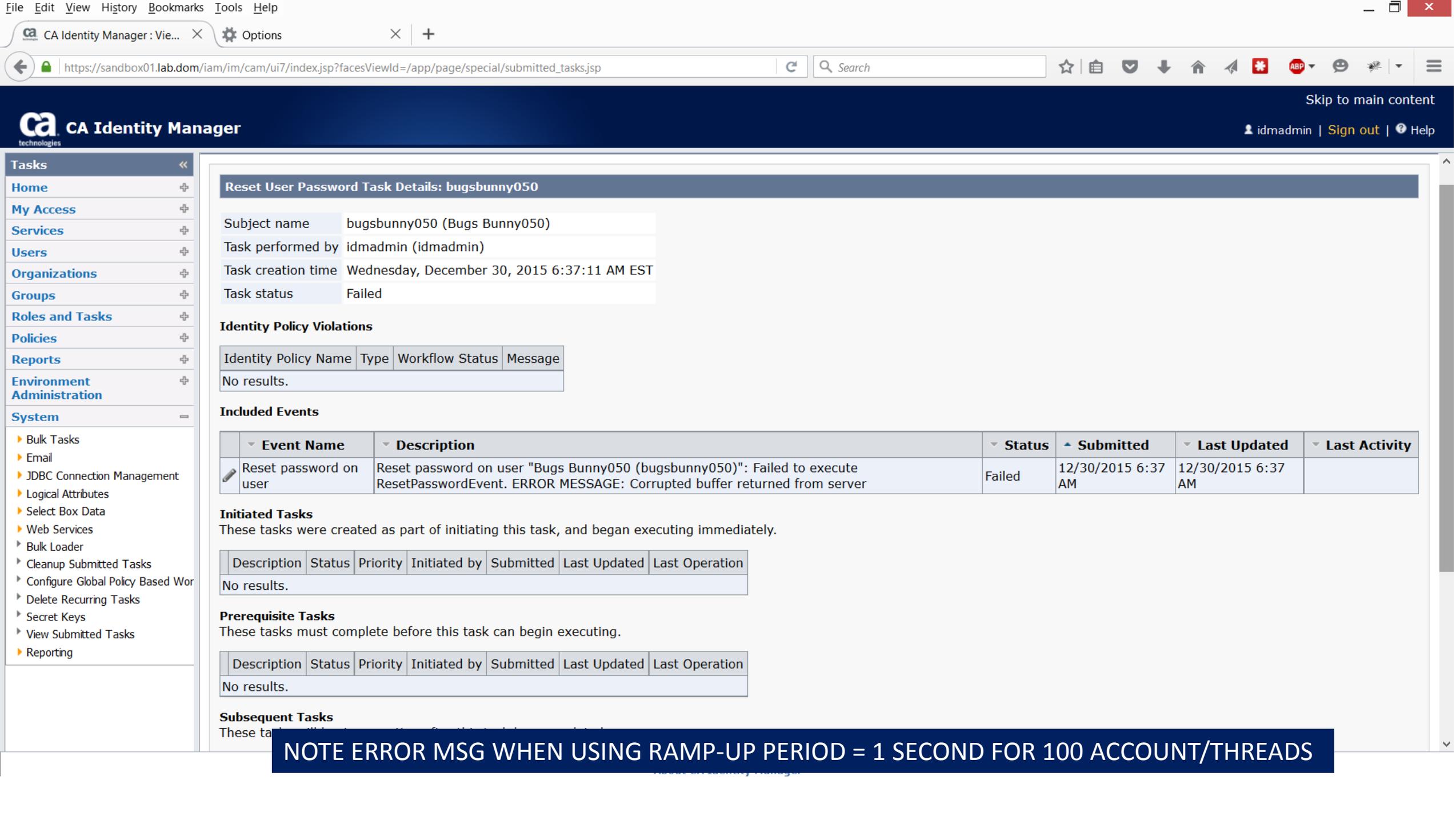
NOTE ERROR % WHEN USING RAMP-UP PERIOD = 1 SECOND FOR 100 ACCOUNT/THREADS

NOTE THIS TESTING IS ON A SANDBOX SERVER OF CENTOS WITH 2GB JVM MEMORY FOR JBOSS EAP 6.2

Include group name in label?

Save Table Data

Save Table Header



Reset User Password Task Details: bugsbunny050

Subject name bugsbunny050 (Bugs Bunny050)
 Task performed by idmadmin (idmadmin)
 Task creation time Wednesday, December 30, 2015 6:37:11 AM EST
 Task status Failed

Identity Policy Violations

Identity Policy Name	Type	Workflow Status	Message
No results.			

Included Events

Event Name	Description	Status	Submitted	Last Updated	Last Activity
Reset password on user	Reset password on user "Bugs Bunny050 (bugsbunny050)": Failed to execute ResetPasswordEvent. ERROR MESSAGE: Corrupted buffer returned from server	Failed	12/30/2015 6:37 AM	12/30/2015 6:37 AM	

Initiated Tasks
 These tasks were created as part of initiating this task, and began executing immediately.

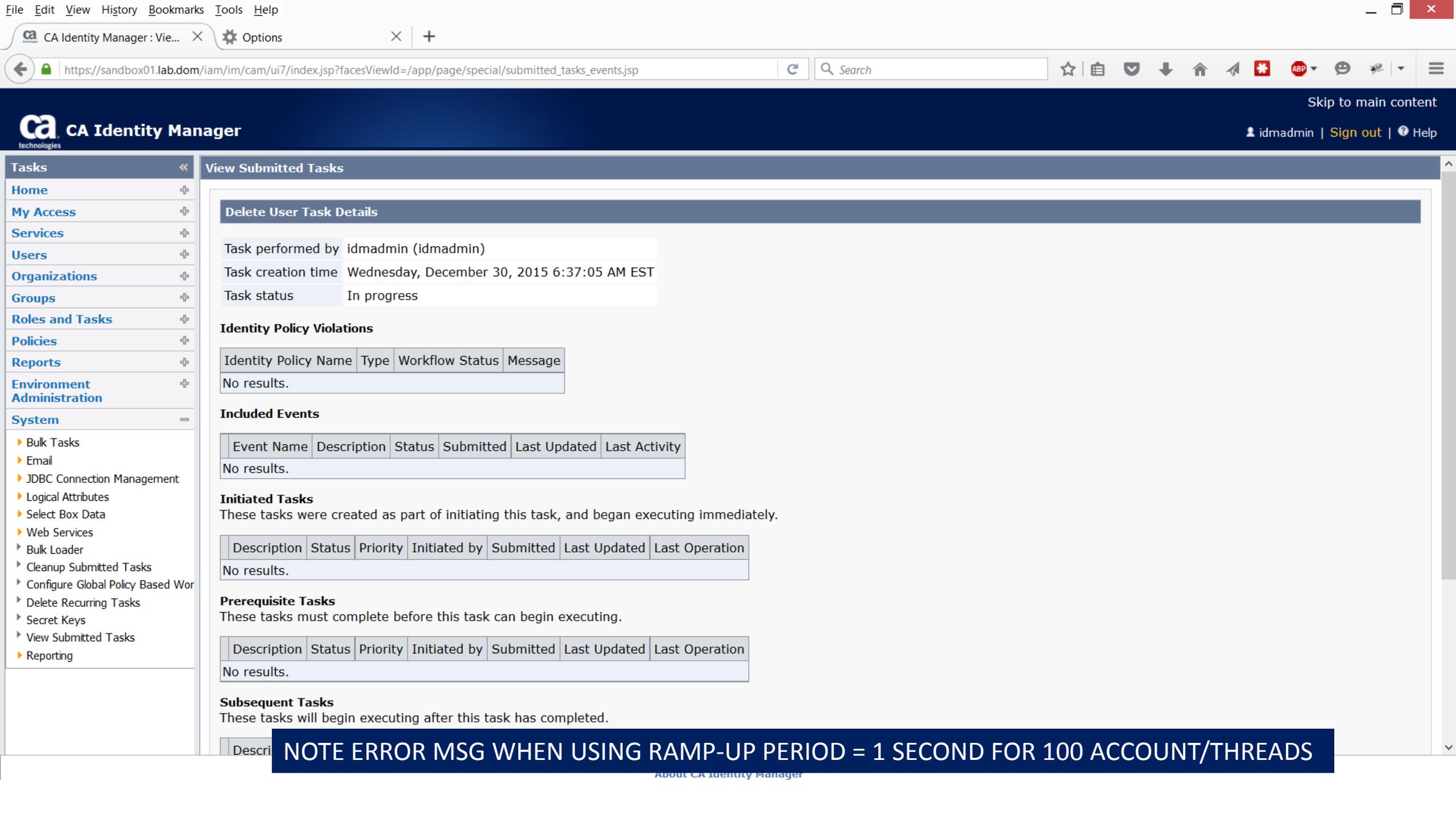
Description	Status	Priority	Initiated by	Submitted	Last Updated	Last Operation
No results.						

Prerequisite Tasks
 These tasks must complete before this task can begin executing.

Description	Status	Priority	Initiated by	Submitted	Last Updated	Last Operation
No results.						

Subsequent Tasks
 These tasks...

NOTE ERROR MSG WHEN USING RAMP-UP PERIOD = 1 SECOND FOR 100 ACCOUNT/THREADS



View Submitted Tasks

Delete User Task Details

Task performed by idmadmin (idmadmin)
Task creation time Wednesday, December 30, 2015 6:37:05 AM EST
Task status In progress

Identity Policy Violations

Table with columns: Identity Policy Name, Type, Workflow Status, Message. Content: No results.

Included Events

Table with columns: Event Name, Description, Status, Submitted, Last Updated, Last Activity. Content: No results.

Initiated Tasks

These tasks were created as part of initiating this task, and began executing immediately.

Table with columns: Description, Status, Priority, Initiated by, Submitted, Last Updated, Last Operation. Content: No results.

Prerequisite Tasks

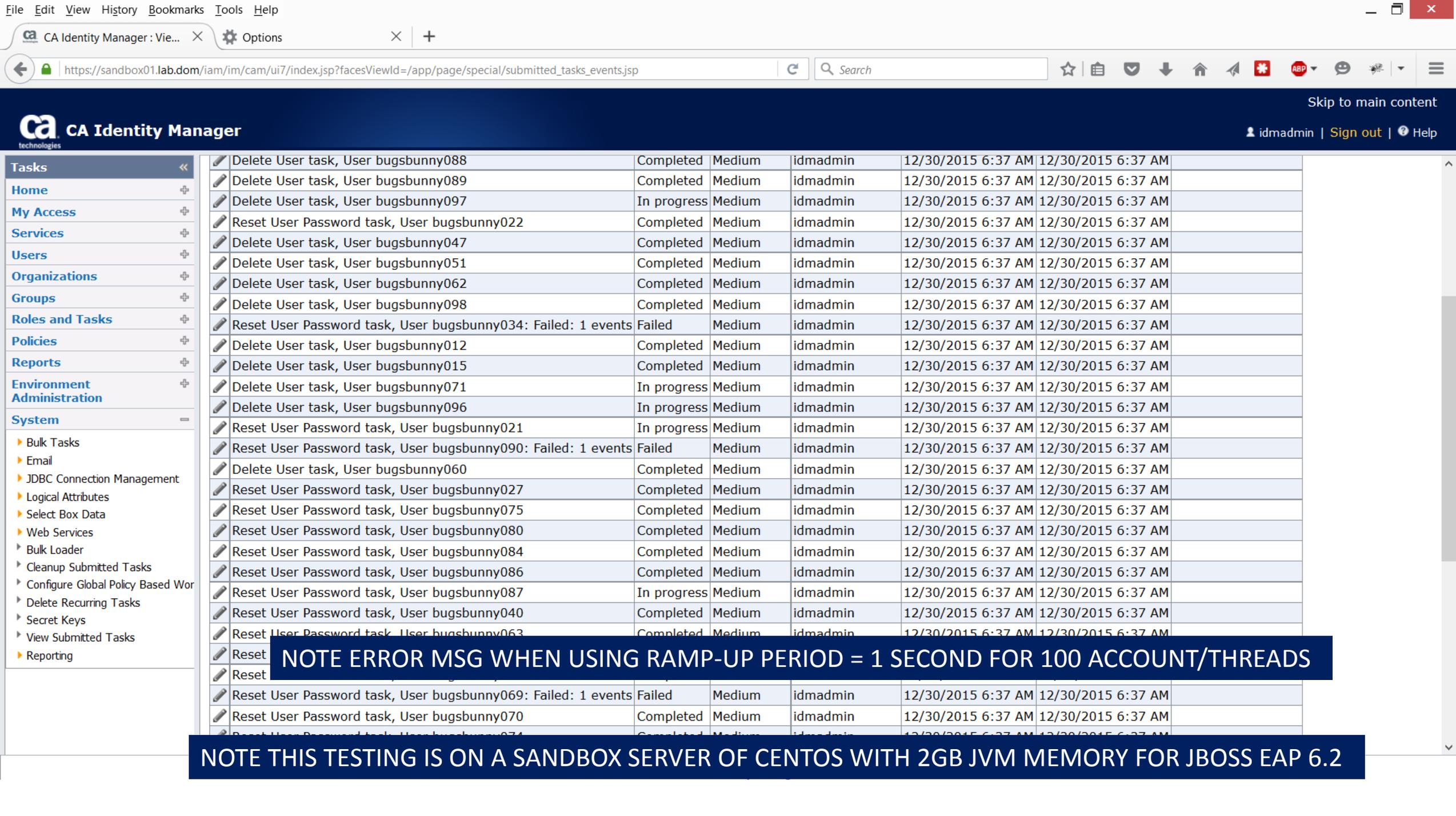
These tasks must complete before this task can begin executing.

Table with columns: Description, Status, Priority, Initiated by, Submitted, Last Updated, Last Operation. Content: No results.

Subsequent Tasks

These tasks will begin executing after this task has completed.

NOTE ERROR MSG WHEN USING RAMP-UP PERIOD = 1 SECOND FOR 100 ACCOUNT/THREADS

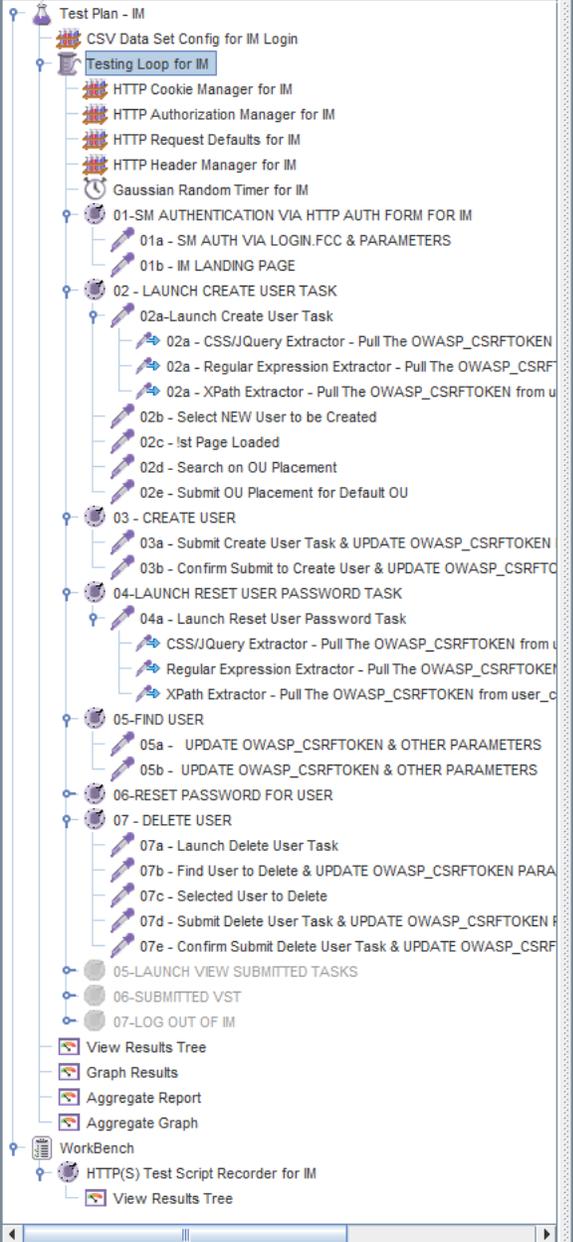


- Tasks
- Home
- My Access
- Services
- Users
- Organizations
- Groups
- Roles and Tasks
- Policies
- Reports
- Environment Administration
- System
 - Bulk Tasks
 - Email
 - JDBC Connection Management
 - Logical Attributes
 - Select Box Data
 - Web Services
 - Bulk Loader
 - Cleanup Submitted Tasks
 - Configure Global Policy Based Wor
 - Delete Recurring Tasks
 - Secret Keys
 - View Submitted Tasks
 - Reporting

Delete User task, User bugsbunny088	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny089	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny097	In progress	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny022	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny047	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny051	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny062	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny098	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny034: Failed: 1 events	Failed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny012	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny015	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny071	In progress	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny096	In progress	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny021	In progress	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny090: Failed: 1 events	Failed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Delete User task, User bugsbunny060	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny027	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny075	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny080	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny084	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny086	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny087	In progress	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny040	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny063	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny069: Failed: 1 events	Failed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny070	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM
Reset User Password task, User bugsbunny074	Completed	Medium	idmadmin	12/30/2015 6:37 AM	12/30/2015 6:37 AM

NOTE ERROR MSG WHEN USING RAMP-UP PERIOD = 1 SECOND FOR 100 ACCOUNT/THREADS

NOTE THIS TESTING IS ON A SANDBOX SERVER OF CENTOS WITH 2GB JVM MEMORY FOR JBOSS EAP 6.2



Thread Group

Name:

Comments:

Action to be taken after a Sampler error

Continue Start Next Thread Loop Stop Thread Stop Test Stop Test Now

Thread Properties

Number of Threads (users):

Ramp-Up Period (in seconds):

Loop Count: Forever

Delay Thread creation until needed

Scheduler

Bump the Ramp-Up Period to 10 seconds

Test Plan - IM

- CSV Data Set Config for IM Login
- Testing Loop for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - Gaussian Random Timer for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 01a - SM AUTH VIA LOGIN.FCC & PARAMETERS
 - 01b - IM LANDING PAGE
 - 02 - LAUNCH CREATE USER TASK
 - 02a-Launch Create User Task
 - 02a - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN
 - 02a - Regular Expression Extractor - Pull The OWASP_CSRF
 - 02a - XPath Extractor - Pull The OWASP_CSRFTOKEN from u
 - 02b - Select NEW User to be Created
 - 02c - 1st Page Loaded
 - 02d - Search on OU Placement
 - 02e - Submit OU Placement for Default OU
 - 03 - CREATE USER
 - 03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN
 - 03b - Confirm Submit to Create User & UPDATE OWASP_CSRF
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 04a - Launch Reset User Password Task
 - CSS/JQuery Extractor - Pull The OWASP_CSRFTOKEN from u
 - Regular Expression Extractor - Pull The OWASP_CSRFTOKEN
 - XPath Extractor - Pull The OWASP_CSRFTOKEN from user_c
 - 05-FIND USER
 - 05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
 - 05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 07a - Launch Delete User Task
 - 07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARA
 - 07c - Selected User to Delete
 - 07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN F
 - 07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRF
 - 05-LAUNCH VIEW SUBMITTED TASKS
 - 06-SUBMITTED VST
 - 07-LOG OUT OF IM
- View Results Tree
 - Graph Results
 - Aggregate Report
 - Aggregate Graph
- WorkBench
 - HTTP(S) Test Script Recorder for IM
 - View Results Tree

Aggregate Report

Name:

Comments:

Write results to file / Read from file

Filename: Log/Display Only: Errors Successes

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	KB/sec
01a - SM AUTH VIA LOGIN.FCC & PARAMETERS	100	5689	4866	9892	10231	10680	101	11010	0.00%	5.0/sec	494.5
01b - IM LANDING PAGE	100	386	257	862	1082	1305	18	1658	0.00%	4.9/sec	466.9
01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM	100	6076	4995	10479	10630	11293	119	11417	0.00%	4.8/sec	930.6
02a-Launch Create User Task	100	752	700	1536	1812	2070	26	2139	0.00%	4.6/sec	418.4
02b - Select NEW User to be Created	100	1869	1658	3598	3808	4063	74	4187	0.00%	3.8/sec	511.9
02c - 1st Page Loaded	100	998	944	1768	1976	2273	151	2325	0.00%	3.7/sec	336.7
02d - Search on OU Placement	100	1390	1299	2508	2862	3316	51	4252	0.00%	3.6/sec	329.7
02e - Submit OU Placement for Default OU	100	676	582	1340	1441	2323	30	2456	0.00%	3.5/sec	467.7
02 - LAUNCH CREATE USER TASK	100	5687	6489	8427	8988	9945	364	9999	0.00%	3.4/sec	1812.6
03a - Submit Create User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	100	1677	1638	2927	3109	3941	162	3949	0.00%	3.3/sec	282.1
03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN PARAMETER	100	8235	2712	19968	20839	23354	249	23442	0.00%	2.0/sec	225.2
03 - CREATE USER	100	9913	4744	22399	23865	24383	566	25387	0.00%	1.9/sec	388.4
04a - Launch Reset User Password Task	100	773	671	1588	1677	2145	25	2165	0.00%	2.0/sec	177.3
04-LAUNCH RESET USER PASSWORD TASK	100	773	671	1588	1677	2145	25	2165	0.00%	2.0/sec	176.2
05a - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	100	812	512	1821	2341	2845	39	3214	0.00%	2.0/sec	181.7
05b - UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	100	1186	1094	2212	2855	3171	16	4203	0.00%	2.0/sec	177.2
05-FIND USER	100	1998	1885	3929	4514	5199	55	6879	0.00%	2.0/sec	354.6
06a - CHANGE TO NEW PASSWORD & UPDATE OWASP_CSRFTOKEN & OTHER PARAMETERS	100	659	541	1488	1818	2282	15	2417	0.00%	2.0/sec	170.6
06b - Submit Password Change & UPDATE OWASP_CSRFTOKEN PARAMETER	100	11769	17784	21791	22073	22618	34	22792	0.00%	1.6/sec	138.8
06-RESET PASSWORD FOR USER	100	12428	18325	22717	23535	24372	117	24524	0.00%	1.6/sec	275.1
07a - Launch Delete User Task	100	426	406	725	811	2049	24	2096	0.00%	1.9/sec	172.2
07b - Find User to Delete & UPDATE OWASP_CSRFTOKEN PARAMETER	100	260	208	461	572	1546	37	1797	0.00%	1.9/sec	177.4
07c - Selected User to Delete	100	136	105	295	344	458	15	506	0.00%	2.0/sec	176.6
07d - Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	100	204	131	395	632	979	15	2182	0.00%	2.0/sec	174.2
07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN PARAMETER	100	11800	16089	18093	19117	20423	33	20980	0.00%	1.7/sec	146.7
07 - DELETE USER	100	12829	17194	19319	20020	24691	166	26520	0.00%	1.6/sec	701.9
TOTAL	2600	3823	1096	16797	19678	22618	15	26520	0.00%	33.3/sec	4649.0

NO ERROR % NOTED WHEN USING RAMP-UP PERIOD = 10 SECONDS FOR 100 ACCOUNT/THREADS

NOTE THIS TESTING IS ON A SANDBOX SERVER OF CENTOS WITH 2GB JVM MEMORY FOR JBOSS EAP 6.2

JMeter Plugins



jmeter-plugins.org

Every load test needs some sexy features!



- [Home](#)
- [Downloads](#)
- [Documentation](#)
- [Support Forums](#)
- [Source Code](#)



Custom Plugins for Apache JMeter™

This project is an independent set of plugins for [Apache JMeter](#), the popular Open-Source load and performance testing tool.

Latest Update

[Version 1.3.1](#) was released on the 12th of October, 2015. It is mostly a maintenance release that fixes issue with Ultimate Thread Group. See [Changelog](#) page for the list of all other changes.

The prerequisite is to run **JMeter 2.12** or above with a **Java 7**. Follow [installation procedure](#) after download.

Choose on Your Taste

Standard Set

Basic plugins for everyday needs. Does not require additional libs to run.

- [Download](#)
- [Installation](#)
- [Package Contents](#)



Extras Set

Additional plugins for extended and complex testing. Does not require additional libs to run.

- [Download](#)
- [Installation](#)
- [Package Contents](#)



WebDriver Set




```

top - 16:35:38 up 19:47, 2 users, load average: 2.82, 0.99, 0.57
Tasks: 579 total, 1 running, 577 sleeping, 0 stopped, 1 zombie
%Cpu(s): 19.8 us, 16.3 sy, 0.0 ni, 59.5 id, 0.2 wa, 0.0 hi, 4.2 si, 0.0 st
KiB Mem : 16253208 total, 2116828 free, 3703412 used, 10432968 buff/cache
KiB Swap: 4190204 total, 4190204 free, 0 used, 11545680 avail Mem

```

PID	USER	PR	NI	UIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
9871	jboss	20	0	5552688	2.393g	26380	S	102.0	15.4	52:49.90	java
26709	oracle	20	0	1268864	36724	33812	D	10.2	0.2	0:00.45	oracle
26824	oracle	20	0	1268868	25424	23004	S	3.3	0.2	0:00.10	oracle
26826	oracle	20	0	1269380	27568	25048	S	3.3	0.2	0:00.10	oracle
26828	oracle	20	0	1269380	25624	23180	S	3.3	0.2	0:00.10	oracle
279	root	20	0	0	0	0	S	1.7	0.0	0:02.34	ksoftirqd/3
1899	dsa	20	0	623596	9780	3632	S	1.7	0.1	0:38.28	dxserver
9550	smuser	20	0	509452	82840	30080	S	1.7	0.5	1:42.69	smpolicyrv
26830	oracle	20	0	1269892	23064	20624	S	1.7	0.1	0:00.05	oracle
26832	oracle	20	0	1269380	23156	20772	S	1.7	0.1	0:00.05	oracle
137	root	20	0	0	0	0	S	1.0	0.0	0:42.23	rcu_sched
5706	oracle	20	0	1283336	22700	20336	S	1.0	0.1	0:20.98	oracle
25345	root	20	0	0	0	0	S	1.0	0.0	0:01.64	kworker/u256:1
25928	oracle	20	0	1268988	49932	47036	S	1.0	0.3	0:01.03	oracle
25987	oracle	20	0	1268984	50368	47396	S	1.0	0.3	0:00.96	oracle
26499	smuser	20	0	398152	15060	10968	S	1.0	0.1	0:00.14	httpd
26509	smuser	20	0	398152	14916	10824	S	1.0	0.1	0:00.16	httpd
26548	oracle	20	0	1268896	36812	33956	S	1.0	0.2	0:00.28	oracle
26651	smuser	20	0	332616	15456	11364	S	1.0	0.1	0:00.16	httpd
26772	smuser	20	0	267080	15204	11116	S	1.0	0.1	0:00.19	httpd
26783	smuser	20	0	267080	14704	10616	S	1.0	0.1	0:00.18	httpd
26818	oracle	20	0	1268868	28488	25868	S	1.0	0.2	0:00.13	oracle
291	root	20	0	0	0	0	S	0.7	0.0	0:34.18	kworker/1:1
3194	oracle	20	0	237496	13804	10252	S	0.7	0.1	0:07.72	tnslsnr
17369	oracle	20	0	1270104	135640	131788	S	0.7	0.8	0:07.58	oracle
23392	oracle	20	0	1269504	58120	55016	S	0.7	0.4	0:02.13	oracle
23396	oracle	20	0	1269528	65684	62024	S	0.7	0.4	0:02.10	oracle
23418	oracle	20	0	1269504	58180	55048	S	0.7	0.4	0:02.11	oracle
25962	oracle	20	0	1268992	50444	47532	S	0.7	0.3	0:00.98	oracle
25992	oracle	20	0	1270048	49128	46360	S	0.7	0.3	0:00.84	oracle
26275	smuser	20	0	398188	17896	13768	S	0.7	0.1	0:00.46	httpd
26298	oracle	20	0	1268940	44744	41880	S	0.7	0.3	0:00.64	oracle
26498	smuser	20	0	398152	15188	11096	S	0.7	0.1	0:00.14	httpd
26560	oracle	20	0	1268900	36016	33372	S	0.7	0.2	0:00.29	oracle
26598	oracle	20	0	1269980	36624	33688	S	0.7	0.2	0:00.27	oracle
26604	oracle	20	0	1268892	36428	33788	S	0.7	0.2	0:00.26	oracle
26621	smuser	20	0	398152	15440	11344	S	0.7	0.1	0:00.16	httpd
26622	smuser	20	0	398152	15176	11072	S	0.7	0.1	0:00.16	httpd
26641	smuser	20	0	398152	15368	11276	S	0.7	0.1	0:00.17	httpd
26652	smuser	20	0	332616	15188	11096	S	0.7	0.1	0:00.15	httpd
26670	smuser	20	0	332616	14924	10836	S	0.7	0.1	0:00.11	httpd

Test Plan - IM

- CSV Data Set Config for IM Login
- Testing Loop for IM
 - Gaussian Random Timer for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 08-LAUNCH VIEW SUBMITTED TASKS
 - 09-SUBMITTED VST
 - 10 - LOG OUT OF IM
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph
- WorkBench

Aggregate Report

Name:

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	KB/sec
01a - SM AUT...	100	1474	1602	2108	2440	2732	104	2852	0.00%	1.6/sec	162.2
01b - IM LANDI...	100	169	103	407	507	674	17	843	0.00%	1.6/sec	155.5
01-SM AUTHE...	100	1644	1753	2364	2711	2845	121	3404	0.00%	1.6/sec	314.7
02a-Launch C...	100	550	510	1111	1299	1631	24	2070	0.00%	1.6/sec	146.4
02b - Select N...	100	1109	1168	1877	2204	2520	68	2633	0.00%	1.6/sec	212.0
02c - !st Page ...	100	655	622	1020	1232	1596	144	1658	0.00%	1.6/sec	141.2
02d - Search o...	100	537	484	938	1098	1331	43	1361	0.00%	1.6/sec	143.5
02e - Submit ...	100	385	336	781	942	1094	27	1186	0.00%	1.5/sec	206.5
02 - LAUNCH ...	100	3238	3256	4703	5109	5757	337	5771	0.00%	1.5/sec	817.5
03a - Submit ...	100	822	744	1320	1700	2173	152	2265	0.00%	1.5/sec	131.4
03b - Confirm ...	100	9840	12168	18342	19092	19583	72	19786	0.00%	1.2/sec	125.9
03 - CREATE ...	100	10663	12653	19373	20047	20998	781	21012	0.00%	1.2/sec	227.9
04a - Launch ...	100	579	541	1134	1323	1555	25	1575	0.00%	1.2/sec	110.7
04-LAUNCH R...	100	579	541	1134	1323	1555	25	1575	0.00%	1.2/sec	110.5
05a - UPDAT...	100	266	219	520	738	998	39	1014	0.00%	1.2/sec	112.8
05b - UPDAT...	100	783	796	1764	1998	2138	16	2422	0.00%	1.2/sec	109.9
05-FIND USER	100	1050	1020	1952	2313	2621	56	2746	0.00%	1.2/sec	221.2
06a - CHANG...	100	447	370	950	1047	1303	13	1627	0.00%	1.2/sec	106.1
06b - Submit P...	100	13487	17222	19142	19454	20760	31	20837	0.00%	1.2/sec	105.4
06-RESET PA...	100	13935	17792	19757	20289	21481	94	21985	0.00%	1.2/sec	209.3
07a - Launch ...	100	451	351	1032	1267	1396	23	1521	0.00%	1.3/sec	115.9
07b - Find Use...	100	272	197	591	746	1164	39	1200	0.00%	1.3/sec	118.1
07c - Selected ...	100	199	135	445	552	801	15	1170	0.00%	1.3/sec	114.6
07d - Submit ...	100	282	243	550	601	973	15	1056	0.00%	1.3/sec	112.0
07e - Confirm ...	100	13971	16789	18234	18801	19676	33	19694	0.00%	1.1/sec	91.8
07 - DELETE ...	100	15177	17860	20320	21349	21624	648	22111	0.00%	1.1/sec	465.7
TOTAL	2600	3560	732	17372	18506	20087	13	22111	0.00%	24.6/sec	3412.5



root@sandbox01:/opt/CA/media/iso/3rd/jmeter/ServerAgent-2.2.1

```
extracting: lib/cmdrunner-1.0.1.jar
extracting: lib/jorphan-2.6.jar
extracting: lib/logkit-2.0.jar
extracting: lib/sigar-1.6.4.jar
extracting: lib/avalon-framework-4.1.5.jar
extracting: ServerAgent.jar
extracting: CMDRunner.jar
  inflating: LICENSE
[root@sandbox01 ServerAgent-2.2.1]# ls
CMDRunner.jar  lib  LICENSE  ServerAgent-2.2.1.zip  ServerAgent.jar  startAgent.bat  startAgent.sh
[root@sandbox01 ServerAgent-2.2.1]# ./startAgent.sh
./startAgent.sh: line 3: java: command not found
[root@sandbox01 ServerAgent-2.2.1]# vi startAgent.sh
[root@sandbox01 ServerAgent-2.2.1]# ./startAgent.sh
INFO      2015-12-30 17:33:20.686 [kg.apc.p] (): Binding UDP to 4444
INFO      2015-12-30 17:33:21.686 [kg.apc.p] (): Binding TCP to 4444
INFO      2015-12-30 17:33:21.689 [kg.apc.p] (): JP@GC Agent v2.2.0 started
```

JAVA_HOME=/opt/CA/jdk/jdk1.7.0_71_x64

PATH=\$PATH:\$JAVA_HOME/bin

DISPLAY=\$(who -m | gawk -F(' '{ print \$2}' | gawk -F')' '{print \$1}'):0.0;export DISPLAY

<https://www.stevefenton.co.uk/2014/12/really-useful-jmeter-plugins-perfmon-metrics/>



- Home
- Downloads
- Documentation
- Support Forums
- Source Code

Response Times vs Threads since 0.0.1

Available in [Extras Set](#)

⚠ Don't forget to set up saving thread counts when running in non-GUI mode!

This graph shows how Response Time changes with amount of parallel threads. Naturally, server takes longer to respond when a lot of users requests it simultaneously. This graph visualizes such dependencies.

Example graph:



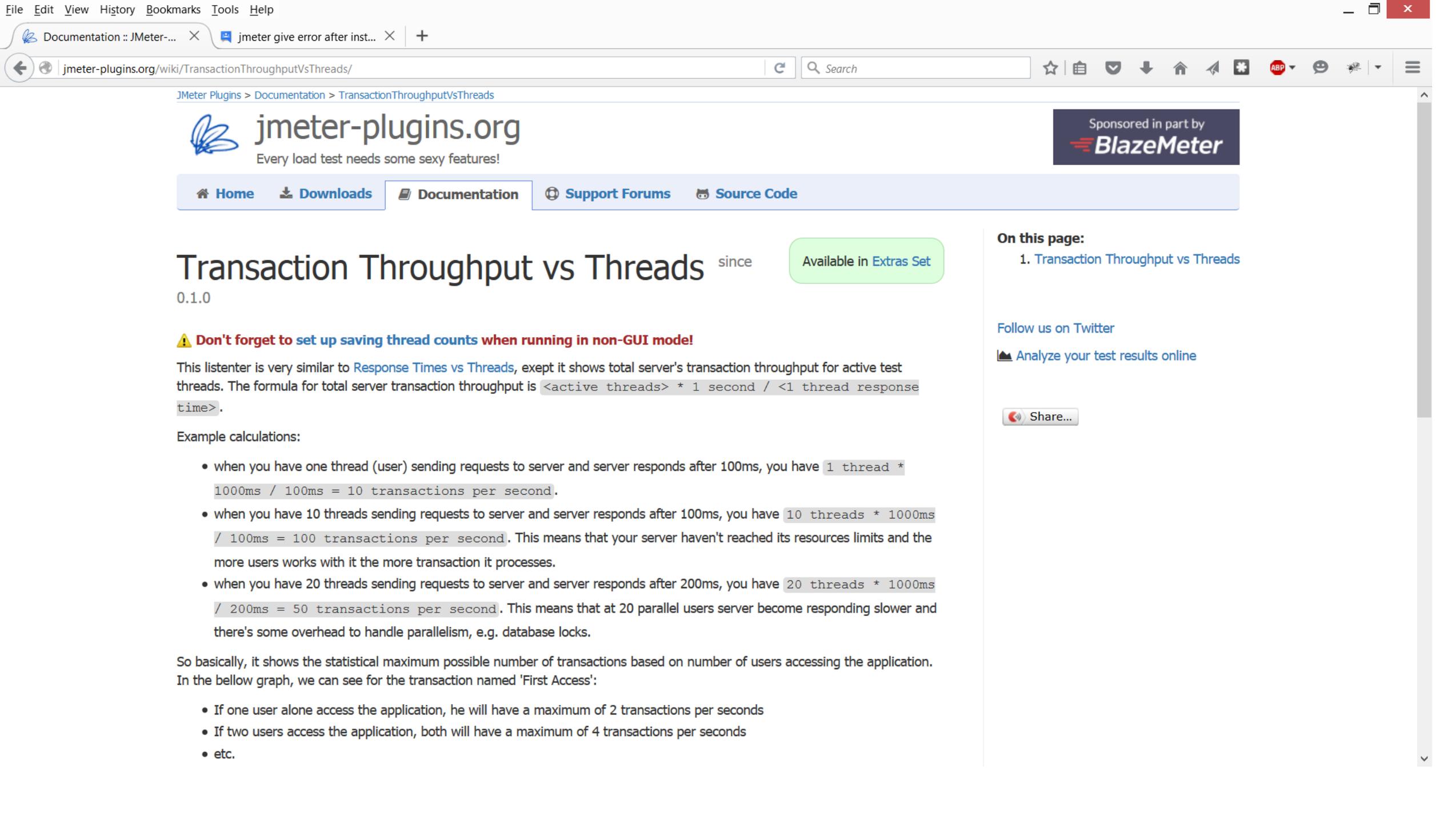
On this page:

- Response Times vs Threads
 - Online Version for This Graph

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[Analyze your test results online](#)

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jmeter-plugins.org

Every load test needs some sexy features!



Transaction Throughput vs Threads

Available in Extras Set

0.1.0

⚠ Don't forget to set up saving thread counts when running in non-GUI mode!

This listener is very similar to [Response Times vs Threads](#), except it shows total server's transaction throughput for active test threads. The formula for total server transaction throughput is `<active threads> * 1 second / <1 thread response time>`.

Example calculations:

- when you have one thread (user) sending requests to server and server responds after 100ms, you have `1 thread * 1000ms / 100ms = 10 transactions per second`.
- when you have 10 threads sending requests to server and server responds after 100ms, you have `10 threads * 1000ms / 100ms = 100 transactions per second`. This means that your server haven't reached its resources limits and the more users works with it the more transaction it processes.
- when you have 20 threads sending requests to server and server responds after 200ms, you have `20 threads * 1000ms / 200ms = 50 transactions per second`. This means that at 20 parallel users server become responding slower and there's some overhead to handle parallelism, e.g. database locks.

So basically, it shows the statistical maximum possible number of transactions based on number of users accessing the application. In the bellow graph, we can see for the transaction named 'First Access':

- If one user alone access the application, he will have a maximum of 2 transactions per seconds
- If two users access the application, both will have a maximum of 4 transactions per seconds
- etc.

On this page:

1. [Transaction Throughput vs Threads](#)

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Share...



root@sandbox01:/opt/CA/jdk/jdk1.7.0_71_x64/jre/lib/management



```
[root@sandbox01 management]# pwd
/opt/CA/jdk/jdk1.7.0_71_x64/jre/lib/management
[root@sandbox01 management]# ls
jmxremote.access  jmxremote.password.template  management.properties  snmp.acl.template
[root@sandbox01 management]#
```



root@sandbox01:/opt/CA/jdk/jdk1.7.0_71_x64/jre/lib/management



```
# A given role
# has no entry
# If multiple
# is used.
#
# In a typical
# local machin
# For # securit
# or specify another, less accessible file in the management config file
# as described above.
#
# Following are two commented-out entries. The "measureRole" role has
# password "QED". The "controlRole" role has password "R&D".
#
monitorRole QED
controlRole R&D
:wq!
```

```
# Default access control entries:
# o The "monitorRole" role has readonly access.
# o The "controlRole" role has readwrite access and can create the standard
# Timer and Monitor MBeans defined by the JMX API.
monitorRole    readonly
controlRole    readwrite \
               create javax.management.monitor.*,javax.management.timer.* \
               unregister
```

Add the ServerAgent default port (4444) to Linux Firewall (Assumes RHEL/CentOS 7.x)

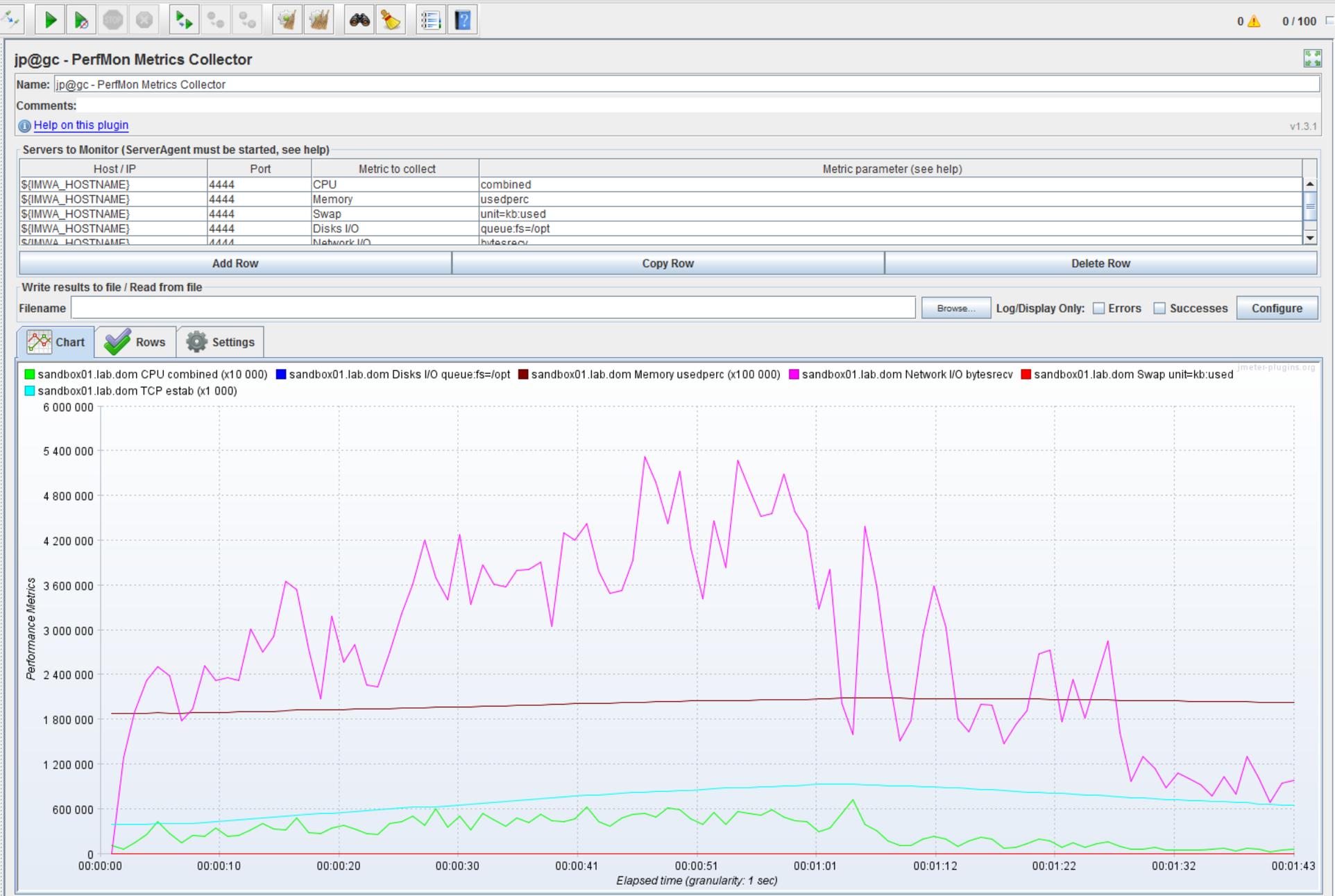
```
firewall-cmd --zone=public --permanent --add-port=4444/tcp
```

```
firewall-cmd --reload
```



```
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/ type=trfs
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/run/user/1001 type=tmpfs
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/run/user/1000 type=tmpfs
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/run/user/1003 type=tmpfs
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/sys/fs/cgroup/blkio type=cgroup
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/proc/sys/fs/binfmt_misc type=binfmt_misc
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/run/user/1002 type=tmpfs
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/sys/fs/cgroup/memory type=cgroup
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/sys/fs/cgroup/net_cls type=cgroup
INFO 2016-01-01 00:02:21.481 [kg.apc.p] (): Filesystem: fs=/proc type=proc
INFO 2016-01-01 00:02:21.482 [kg.apc.p] (): *** Logging available network interfaces ***
INFO 2016-01-01 00:02:21.483 [kg.apc.p] (): Network interface: iface=lo addr=127.0.0.1 type=Local Loopback
INFO 2016-01-01 00:02:21.483 [kg.apc.p] (): Network interface: iface=enol6777736 addr=192.168.92.129 type=Ethernet
INFO 2016-01-01 00:02:21.483 [kg.apc.p] (): *** Done logging sysinfo ***
INFO 2016-01-01 00:02:21.484 [kg.apc.p] (): Binding UDP to 4444
INFO 2016-01-01 00:02:21.490 [kg.apc.p] (): Binding TCP to 4444
INFO 2016-01-01 00:02:21.492 [kg.apc.p] (): JP@GC Agent v2.2.0 started
INFO 2016-01-01 00:03:49.922 [kg.apc.p] (): Accepting new TCP connection
INFO 2016-01-01 00:03:49.926 [kg.apc.p] (): Yep, we received the 'test' command
INFO 2016-01-01 00:03:49.928 [kg.apc.p] (): Starting measures: swap:unit=kb:used disks i/o:queue:fs=/opt network
i/o:bytesrecv cpu:combined tcp:estab memory:usedperc
INFO 2016-01-01 00:05:34.263 [kg.apc.p] (): Client disconnected
```

- Test Plan - IM
 - CSV Data Set Config for IM Login
 - Testing Loop for IM
 - HTTP Cookie Manager for IM
 - HTTP Authorization Manager for IM
 - HTTP Request Defaults for IM
 - HTTP Header Manager for IM
 - 01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM
 - 01a - SM AUTH VIA LOGIN.FCC & PARAMETERS
 - 01b - IM LANDING PAGE
 - Gaussian Random Timer for IM
 - 02 - LAUNCH CREATE USER TASK
 - 03 - CREATE USER
 - 04-LAUNCH RESET USER PASSWORD TASK
 - 05-FIND USER
 - 06-RESET PASSWORD FOR USER
 - 07 - DELETE USER
 - 08-LAUNCH VIEW SUBMITTED TASKS
 - 09-SUBMITTED VST
 - 10 - LOG OUT OF IM
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph
- Notes for CPU DISK & Network Performance
 - jp@gc - PerfMon Metrics Collector
 - jp@gc - Response Times vs Threads
 - jp@gc - Transactions per Second
- WorkBench





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jp@gc - Response Times vs Threads

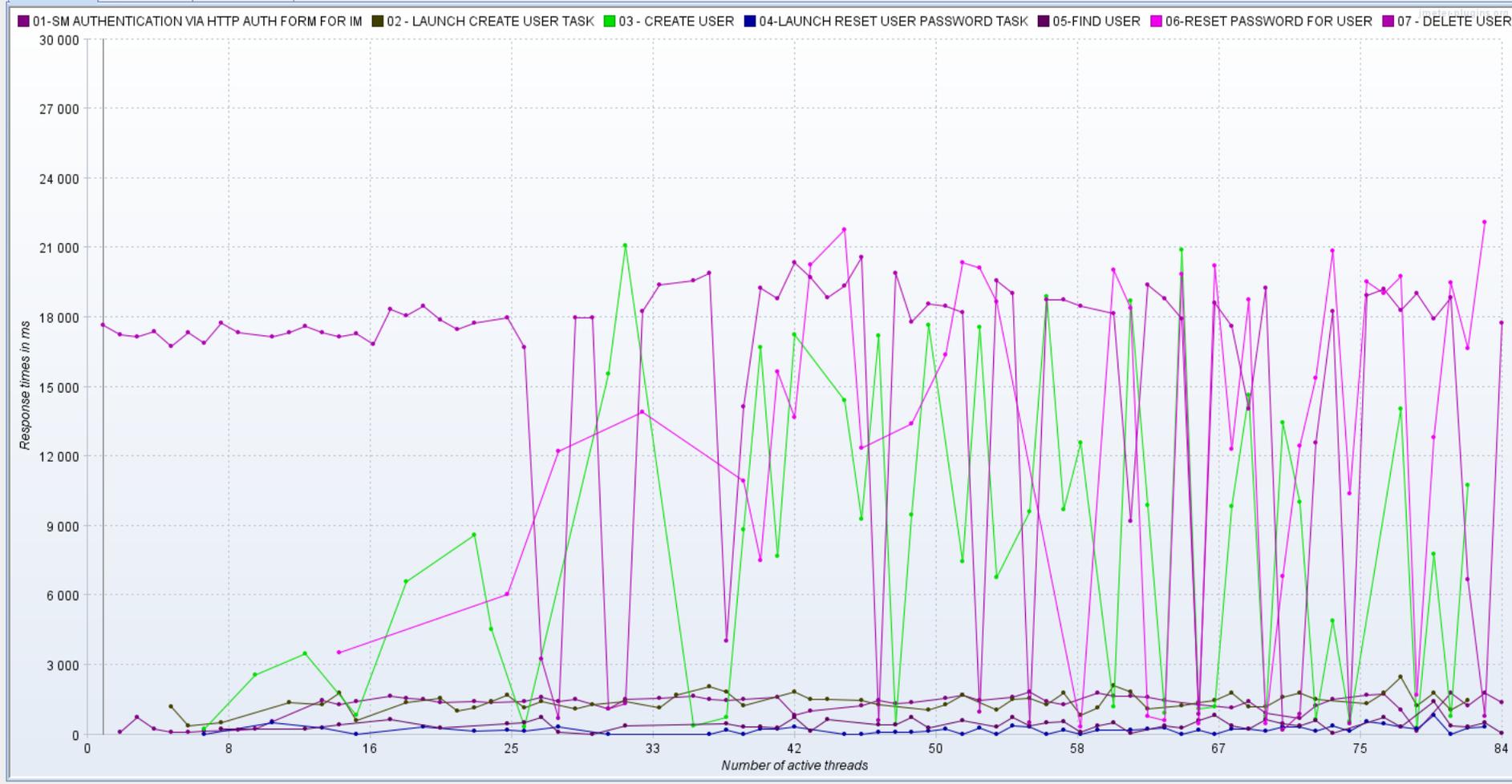
Name: jp@gc - Response Times vs Threads

Comments:

[Help on this plugin](#) v1.3.0

Write results to file / Read from file

Filename: Log/Display Only: Errors Successes





- Test Plan - IM
 - CSV Data Set Config for IM Login
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 - jp@gc - Transactions per Second
- WorkBench

jp@gc - Transactions per Second

Name: jp@gc - Transactions per Second

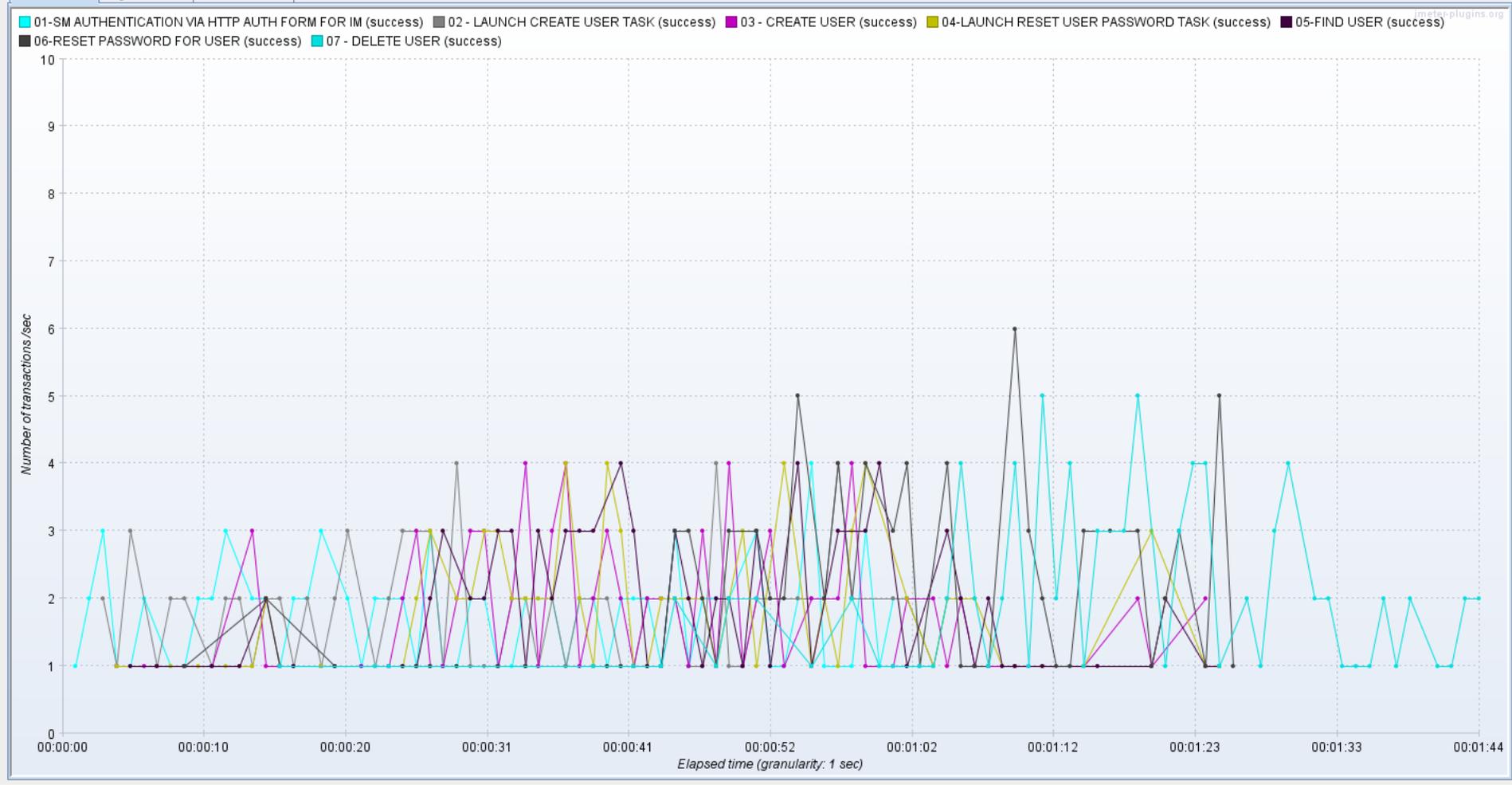
Comments:

[Help on this plugin](#) v1.3

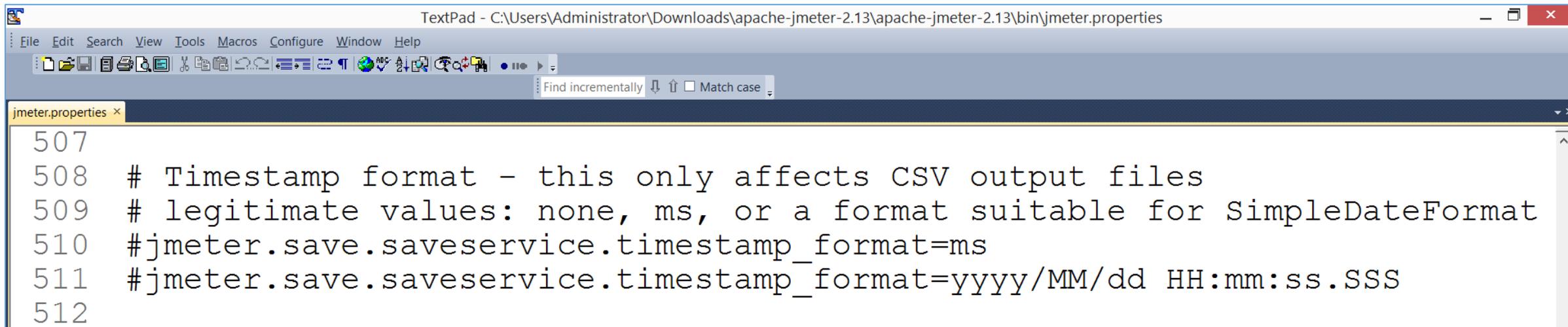
Write results to file / Read from file

Filename: Browse... Log/Display Only: Errors Successes

Chart Rows Settings

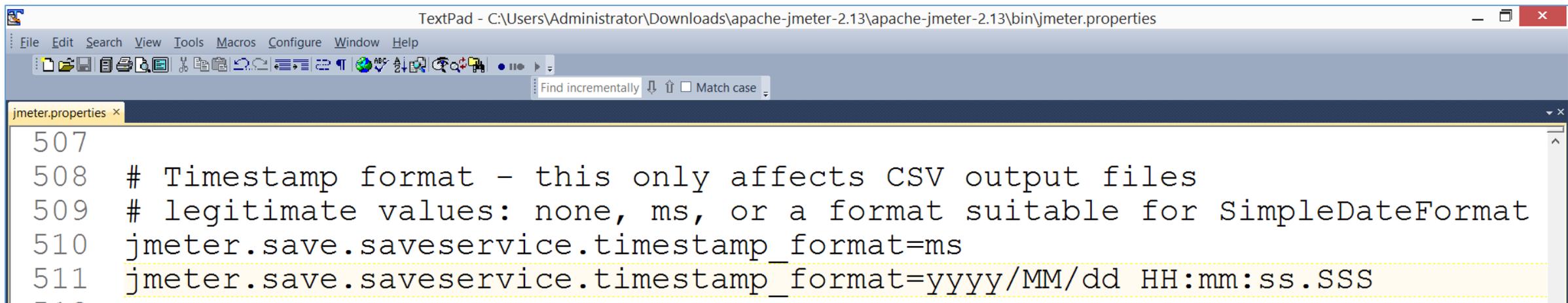


Jmeter Configurations



A screenshot of a TextPad window titled "TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\jmeter.properties". The window shows a text editor with a menu bar (File, Edit, Search, View, Tools, Macros, Configure, Window, Help) and a toolbar. The main text area contains the following lines of code:

```
507
508 # Timestamp format - this only affects CSV output files
509 # legitimate values: none, ms, or a format suitable for SimpleDateFormat
510 #jmeter.save.saveservice.timestamp_format=ms
511 #jmeter.save.saveservice.timestamp_format=yyyy/MM/dd HH:mm:ss.SSS
512
```



A screenshot of a TextPad window titled "TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\jmeter.properties". The window shows a text editor with a menu bar (File, Edit, Search, View, Tools, Macros, Configure, Window, Help) and a toolbar. The main text area contains the following lines of code:

```
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508 # Timestamp format - this only affects CSV output files
509 # legitimate values: none, ms, or a format suitable for SimpleDateFormat
510 jmeter.save.saveservice.timestamp_format=ms
511 jmeter.save.saveservice.timestamp_format=yyyy/MM/dd HH:mm:ss.SSS
```

The last line of code is highlighted with a yellow background.

SiteMinder Authentication Scheme Dialog

Authentication Scheme Properties

*Name: HTML Form Description:

Scheme Common Setup

Authentication Scheme Type: HTML Form Template

Protection Level: 5 [1 - 1,000, higher is more secure]

Password Policies Enabled for this Authentication Scheme

Scheme Setup **Advanced**

SM Default; NOT IM

Use Relative Target

Web Server Name: imwa001.im.dom

Use SSL Connection

*Target: /siteminderagent/forms/login.fcc

Allow this scheme to save credential Support non-browser client

Additional Attribute List

OK Cancel Apply

Authentication Scheme HTML Form

SiteMinder Authentication Scheme Dialog

Authentication Scheme Properties

Name: HTML Form Description:

Scheme Common Setup

Authentication Scheme Type: HTML Form Template

Protection Level: 5 [1 - 1,000, higher is more secure]

Password Policies Enabled for this Authentication Scheme

Scheme Setup **Advanced**

SM Default; NOT IM

Library: smauthhtml

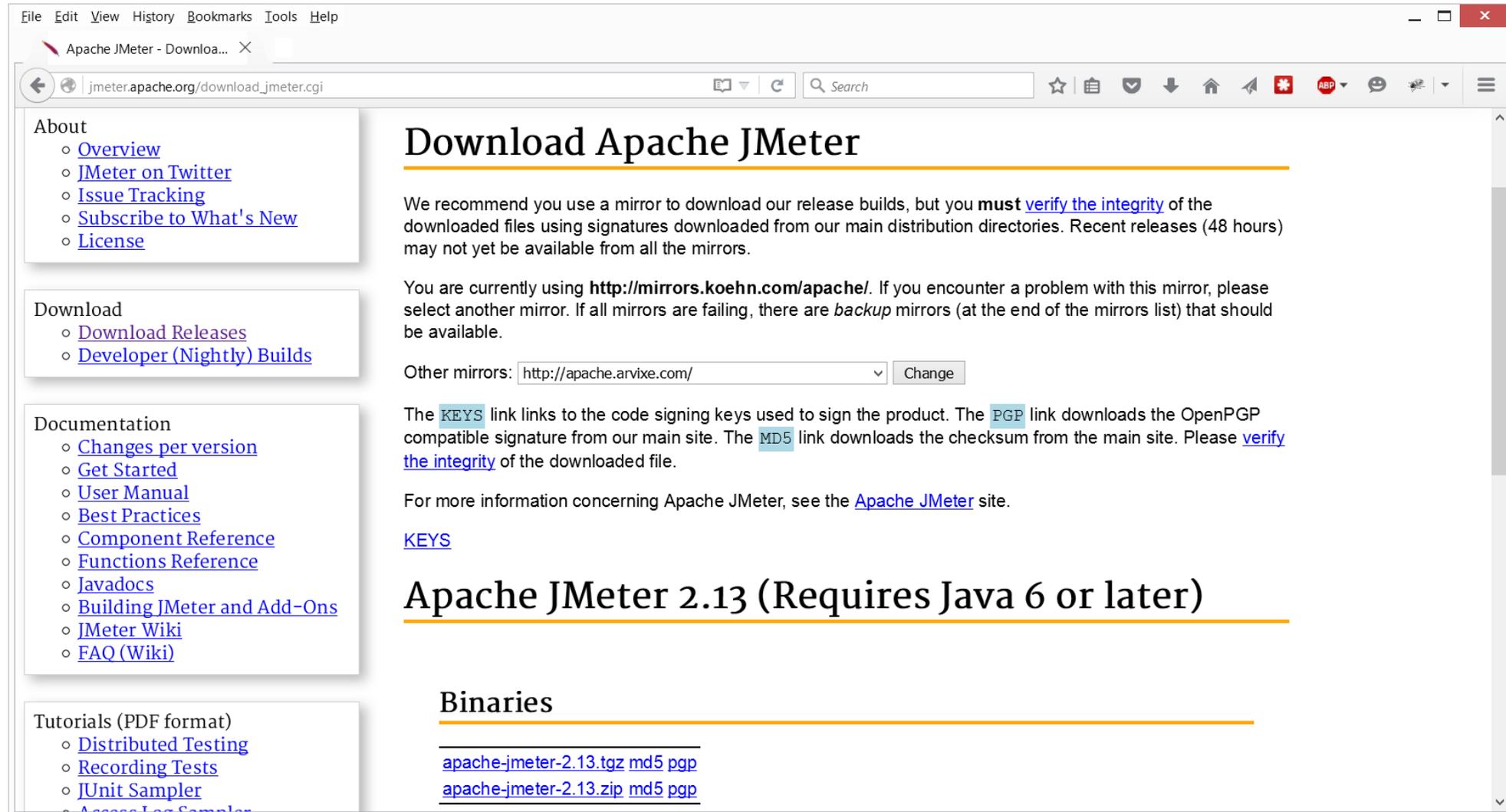
Parameter: http://imwa001.im.dom/siteminderagent/forms/login.fcc;ACS=0;REL=0

Enable this scheme for SiteMinder Administrators

OK Cancel Apply

Authentication Scheme HTML Form

Where to download Apache Jmeter



The screenshot shows a web browser window displaying the Apache JMeter download page. The browser's address bar shows the URL `jmeter.apache.org/download_jmeter.cgi`. The page has a navigation menu on the left with categories: About, Download, Documentation, and Tutorials (PDF format). The main content area features a heading "Download Apache JMeter" followed by a paragraph recommending the use of mirrors and a warning to verify file integrity. Below this is a section for "Other mirrors" with a dropdown menu currently set to `http://apache.arvixe.com/` and a "Change" button. Further down, there is a paragraph explaining the "KEYS", "PGP", and "MD5" links and a link to the "Apache JMeter" site. The next section is titled "Apache JMeter 2.13 (Requires Java 6 or later)" and is followed by a "Binaries" section containing two lines of download links: `apache-jmeter-2.13.tgz md5 pgp` and `apache-jmeter-2.13.zip md5 pgp`.

File Edit View History Bookmarks Tools Help

Apache JMeter - Downloa... X

jmeter.apache.org/download_jmeter.cgi

About

- Overview
- JMeter on Twitter
- Issue Tracking
- Subscribe to What's New
- License

Download

- Download Releases
- Developer (Nightly) Builds

Documentation

- Changes per version
- Get Started
- User Manual
- Best Practices
- Component Reference
- Functions Reference
- Javadocs
- Building JMeter and Add-Ons
- JMeter Wiki
- FAQ (Wiki)

Tutorials (PDF format)

- Distributed Testing
- Recording Tests
- JUnit Sampler
- Access Log Sampler

Download Apache JMeter

We recommend you use a mirror to download our release builds, but you **must** [verify the integrity](#) of the downloaded files using signatures downloaded from our main distribution directories. Recent releases (48 hours) may not yet be available from all the mirrors.

You are currently using <http://mirrors.koehn.com/apache/>. If you encounter a problem with this mirror, please select another mirror. If all mirrors are failing, there are *backup* mirrors (at the end of the mirrors list) that should be available.

Other mirrors:

The [KEYS](#) link links to the code signing keys used to sign the product. The [PGP](#) link downloads the OpenPGP compatible signature from our main site. The [MD5](#) link downloads the checksum from the main site. Please [verify the integrity](#) of the downloaded file.

For more information concerning Apache JMeter, see the [Apache JMeter](#) site.

[KEYS](#)

Apache JMeter 2.13 (Requires Java 6 or later)

Binaries

[apache-jmeter-2.13.tgz md5 pgp](#)

[apache-jmeter-2.13.zip md5 pgp](#)

Install on Linux & Run remotely

Only needed if wish to remove latency from performance testing.

Suggest latency be retained from a “client” view point, e.g. 20-40 milliseconds

Apache Jmeter Startup View

