

# 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](https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf)

# Content

- Background
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- High-Level View / Value Proposition
- Current Test Plan
- How to leverage Jmeter's ability to auto-build 95% of a test plan for HTTP(S)
- Examples
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- Optional Plugin / Server Agent
  - Useful if CA APM (Introscope) is not available
- Supporting Slides / Information

# 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](https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf) [Peter Lin]
  - <https://www.digitalocean.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

Search

Skip to main content

idmadmin | Sign out | Help

CA Identity Manager

Tasks	Delete User task, User bugsbunny040	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Home	Delete User task, User bugsbunny049	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
My Access	Delete User task, User bugsbunny024	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Services	Delete User task, User bugsbunny028	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Users	Delete User task, User bugsbunny053	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Organizations	Delete User task, User bugsbunny056	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Groups	Delete User task, User bugsbunny033	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Roles and Tasks	Reset User Password task, User bugsbunny063	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Policies	Reset User Password task, User bugsbunny071	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Reports	Delete User task, User bugsbunny035	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
Environment Administration	Reset User Password task, User bugsbunny057	Completed	Medium	idmadmin	12/30/2015 7:08 AM	12/30/2015 7:08 AM	
System	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
03a - 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	bugsbugny001	Bugs	Bunny001	Bugs	Bunny001	Password101	Password201		
2	bugsbugny002	Bugs	Bunny002	Bugs	Bunny002	Password101	Password201		
3	bugsbugny003	Bugs	Bunny003	Bugs	Bunny003	Password101	Password201		
4	bugsbugny004	Bugs	Bunny004	Bugs	Bunny004	Password101	Password201		
5	bugsbugny005	Bugs	Bunny005	Bugs	Bunny005	Password101	Password201		
6	bugsbugny006	Bugs	Bunny006	Bugs	Bunny006	Password101	Password201		
7	bugsbugny007	Bugs	Bunny007	Bugs	Bunny007	Password101	Password201		
8	bugsbugny008	Bugs	Bunny008	Bugs	Bunny008	Password101	Password201		
9	bugsbugny009	Bugs	Bunny009	Bugs	Bunny009	Password101	Password201		
10	bugsbugny010	Bugs	Bunny010	Bugs	Bunny010	Password101	Password201		
11	bugsbugny011	Bugs	Bunny011	Bugs	Bunny011	Password101	Password201		
12	bugsbugny012	Bugs	Bunny012	Bugs	Bunny012	Password101	Password201		
13	bugsbugny013	Bugs	Bunny013	Bugs	Bunny013	Password101	Password201		
14	bugsbugny014	Bugs	Bunny014	Bugs	Bunny014	Password101	Password201		
15	bugsbugny015	Bugs	Bunny015	Bugs	Bunny015	Password101	Password201		
16	bugsbugny016	Bugs	Bunny016	Bugs	Bunny016	Password101	Password201		
17	bugsbugny017	Bugs	Bunny017	Bugs	Bunny017	Password101	Password201		
18	bugsbugny018	Bugs	Bunny018	Bugs	Bunny018	Password101	Password201		
19	bugsbugny019	Bugs	Bunny019	Bugs	Bunny019	Password101	Password201		
20	bugsbugny020	Bugs	Bunny020	Bugs	Bunny020	Password101	Password201		

☐ include group name in label?  ☒ Save Table Header

# Outline of Slides

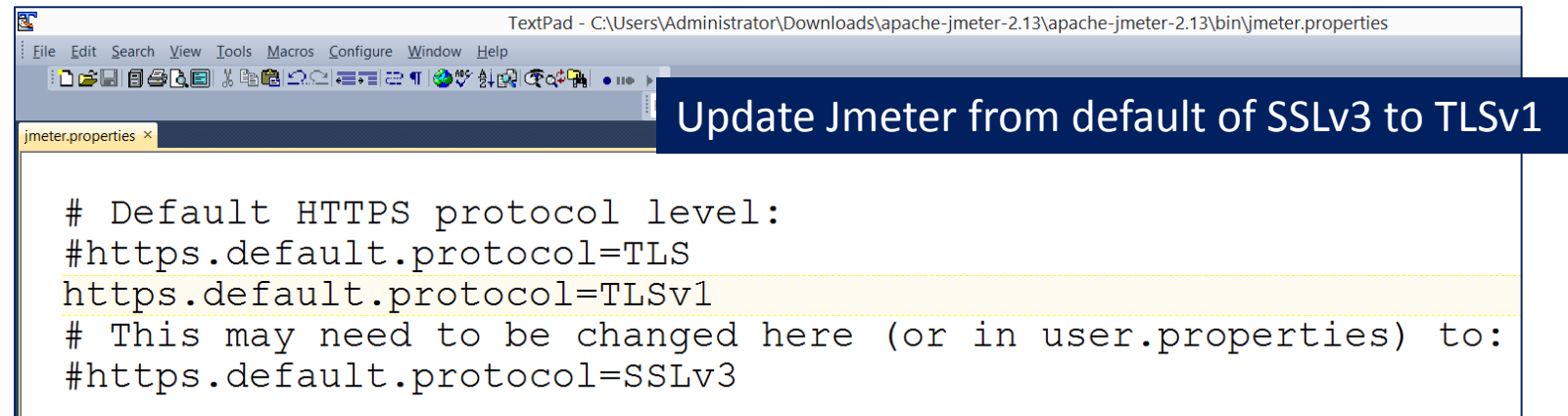
- The following slides will review the current test plan, to allow users to immediate jump into the use of the current plan, to use AS-IS or adjust as needed.
- Next, slides will review where to download Jmeter and any plugin option packages.
- Other slides will follow this section that outline how the 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

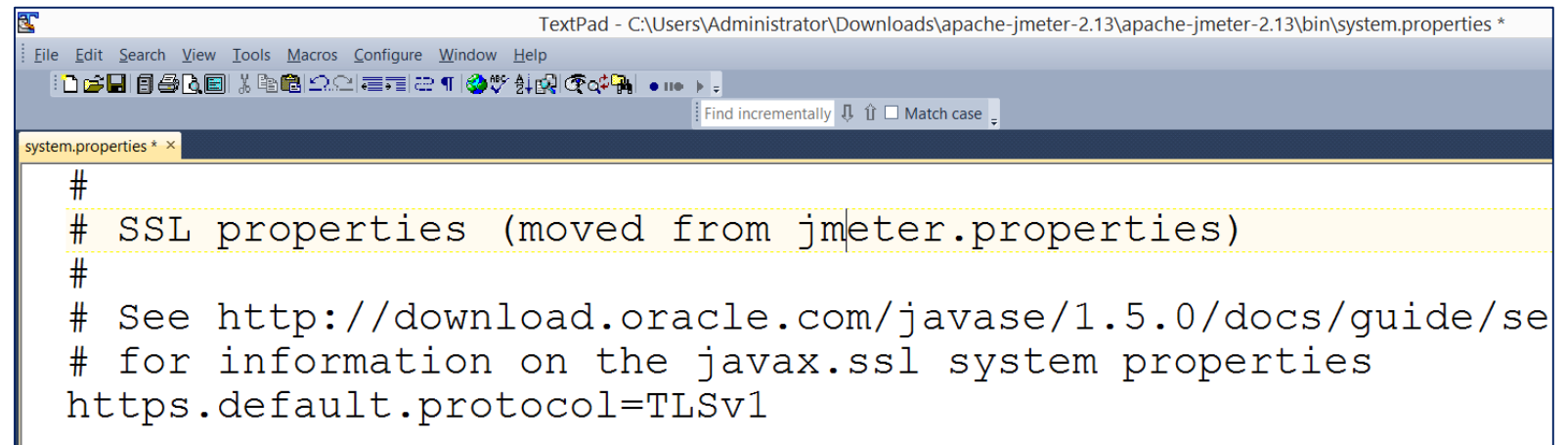
- After extracting Jmeter, navigate to the JMETER\_HOME\bin folder & adjust one SSL/TLS setting in jmeter.properties & system.properties:

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 the 'jmeter.properties' file with the following content: 

```
# 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 on the right side of the window contains the text 'Update Jmeter from default of SSLv3 to TLSv1'.

```
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  
jmeter.properties x  
# 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 screenshot of a TextPad window titled 'TextPad - C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\system.properties \*'. The window shows the 'system.properties' file with the following content: 

```
#  
# 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
```

```
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  
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
```



# 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.

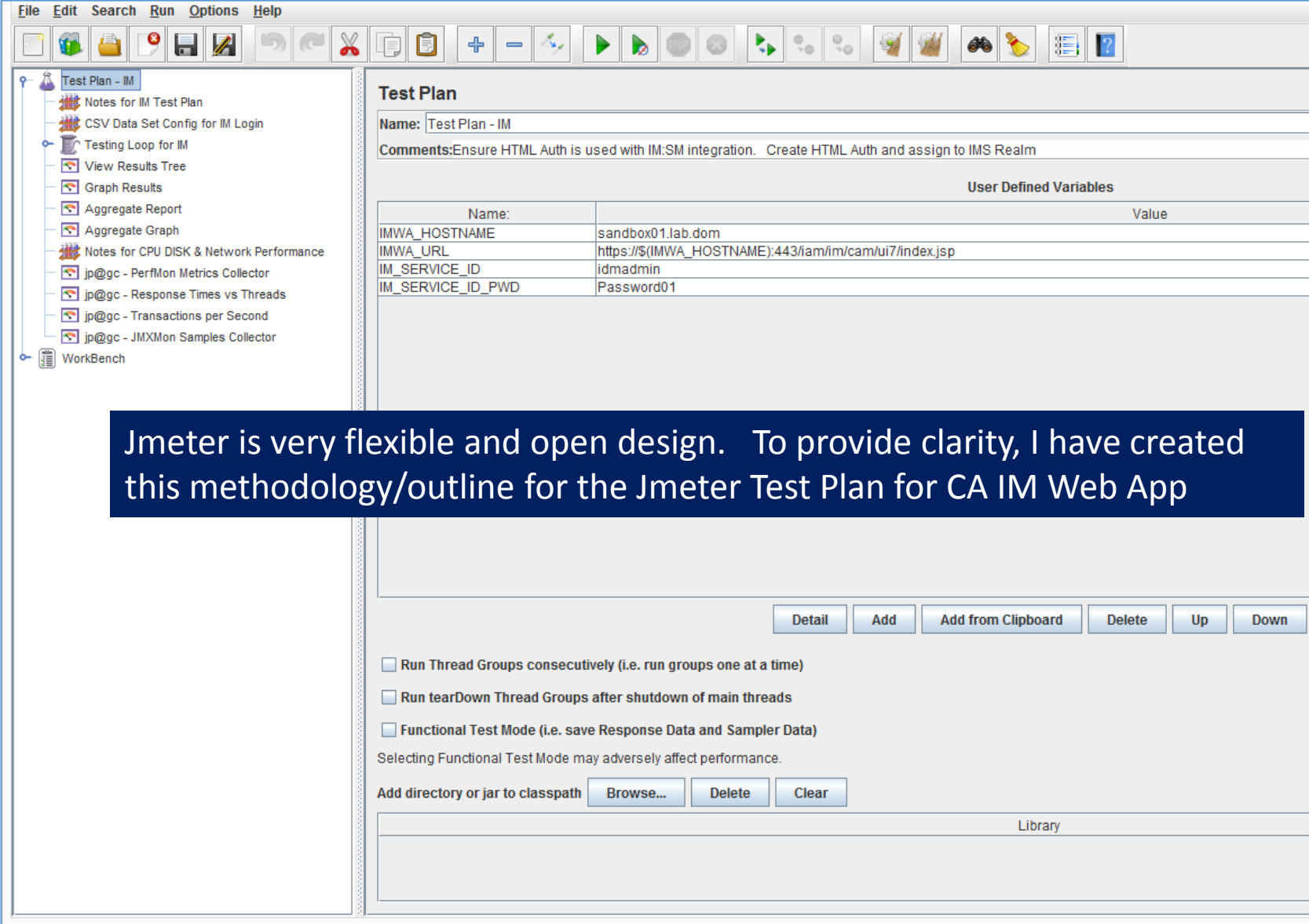
**Testing Loop** – The “container” of all testing objectives/lines.

**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.



**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

Detail Add Add from Clipboard Delete Up Down

☐ Run Thread Groups consecutively (i.e. run groups one at a time)

☐ Run tearDown Thread Groups after shutdown of main threads

☐ Functional Test Mode (i.e. save Response Data and Sampler Data)

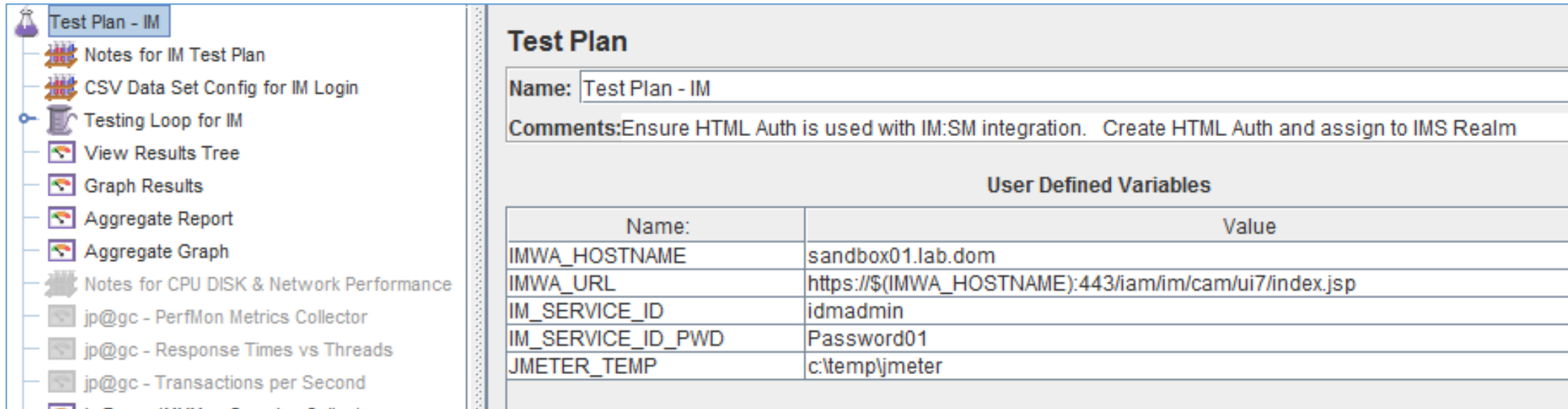
Selecting Functional Test Mode may adversely affect performance.

Add directory or jar to classpath Browse... Delete Clear

Library

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

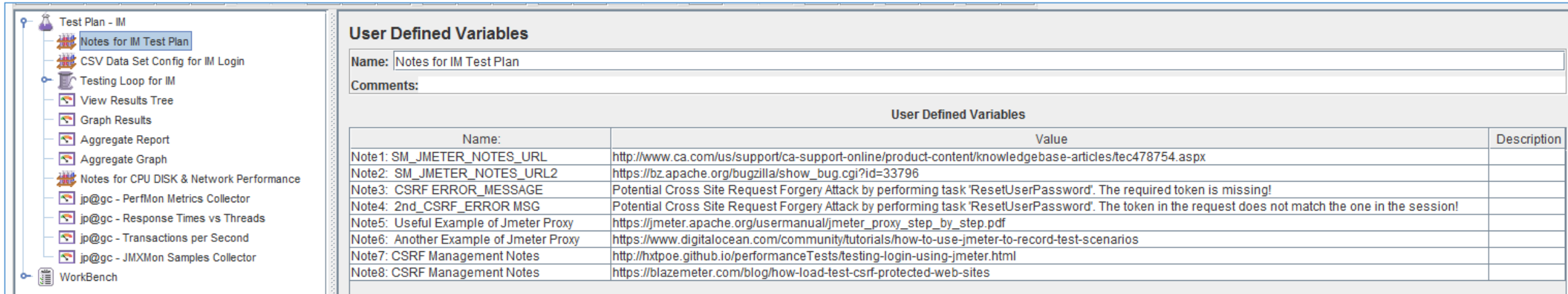
The **top** level.

Define a name & variables to be used.

Jmeter Variables are referenced by `${NAME}`



# Step 02: Jmeter Test Plan for IMWA: Notes



The screenshot displays the JMeter Test Plan interface. On the left, a tree view shows the test plan structure, including 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', and various samplers like 'jp@gc - PerfMon Metrics Collector'. The main panel on the right is titled 'User Defined Variables'. It contains a 'Name' field with the value 'Notes for IM Test Plan' and a 'Comments' field. Below this, a table lists eight user-defined variables, each with a name, a value (URL or message), and a description.

Name:	Value	Description
Note1: SM_JMETER_NOTES_URL	<a href="http://www.ca.com/us/support/ca-support-online/product-content/knowledgebase-articles/tec478754.aspx">http://www.ca.com/us/support/ca-support-online/product-content/knowledgebase-articles/tec478754.aspx</a>	
Note2: SM_JMETER_NOTES_URL2	<a href="https://bz.apache.org/bugzilla/show_bug.cgi?id=33796">https://bz.apache.org/bugzilla/show_bug.cgi?id=33796</a>	
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	<a href="https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf">https://jmeter.apache.org/usermanual/jmeter_proxy_step_by_step.pdf</a>	
Note6: Another Example of Jmeter Proxy	<a href="https://www.digitalocean.com/community/tutorials/how-to-use-jmeter-to-record-test-scenarios">https://www.digitalocean.com/community/tutorials/how-to-use-jmeter-to-record-test-scenarios</a>	
Note7: CSRF Management Notes	<a href="http://hxtpoe.github.io/performanceTests/testing-login-using-jmeter.html">http://hxtpoe.github.io/performanceTests/testing-login-using-jmeter.html</a>	
Note8: CSRF Management Notes	<a href="https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites">https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites</a>	

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 'Test Plan - IM' tree on the left. The 'CSV Data Set Config for IM Login' element is selected. The configuration panel on the right shows the following settings:

- 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 Apache JMeter GUI. On the left, the 'Test Plan' tree is visible, with 'Testing Loop for IM' selected. The main area 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 excepted use-cases. 100 (threads=users), ramped up over 60 seconds, for 1 iteration.

# Step 05: Jmeter Test Plan for IMWA: Timer



A Jmeter Test Plan will execute as RAPIDLY as possible.

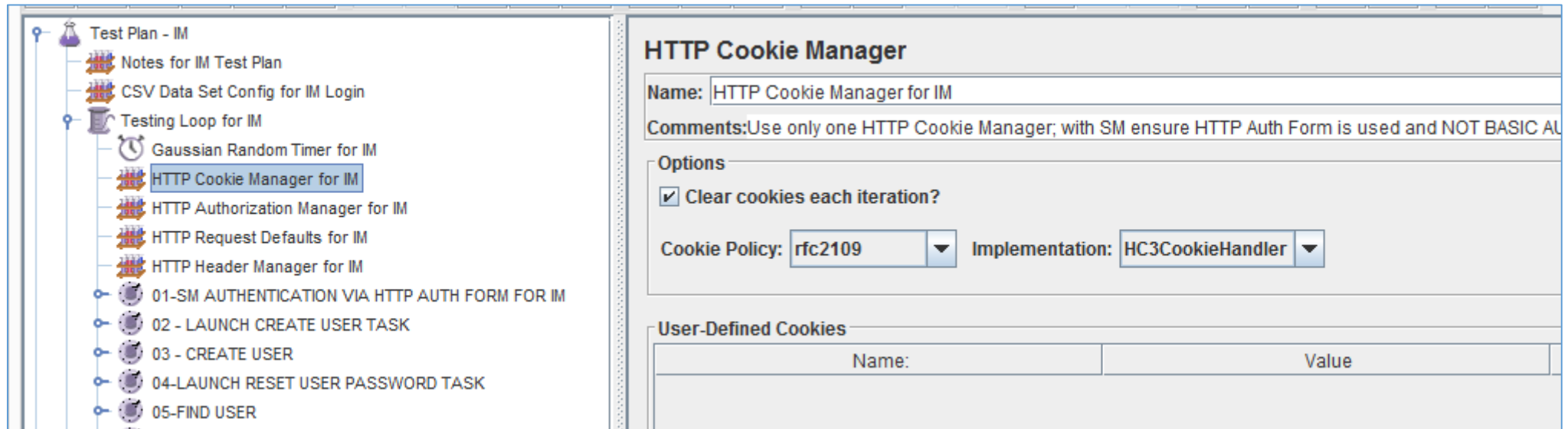
To slow down this process & emulate what a user(s) may perform, Jmeter offers several different “Timer” operations.

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



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.

HC3CookieHandler = IPv4    HC4CookieHandler = IPv6

# Step 07: Jmeter Test Plan for IMWA: Auth Manager

The screenshot shows the JMeter Test Plan structure on the left, with 'HTTP Authorization Manager for IM' selected. The main panel displays the configuration for the 'HTTP Authorization Manager'.

**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

The screenshot shows the 'SiteMinder Realm Properties' dialog box. The 'Resource' tab is selected, and the 'Authentication Scheme' is set to 'HTML Form'.

Realm Properties

\*Name: cam\_ims\_realm Description:

Resource

\*Agent: idmembedded ( Web Agent )

Resource Filter: /iam/im/cam/

Effective Resource: idmembedded(imwa001.im.dom)/iam/im/cam/

Authentication Scheme: HTML Form

Default Resource Protection: Protected

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

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

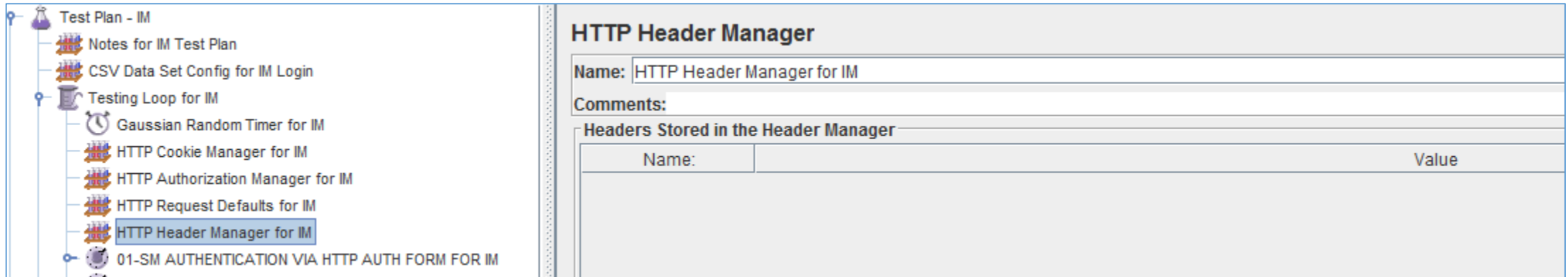
The screenshot shows the JMeter Test Plan configuration for 'HTTP Request Defaults for IM'. The left sidebar lists the test plan structure, including 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', and various samplers like 'Gaussian Random Timer for IM', 'HTTP Cookie Manager for IM', 'HTTP Authorization Manager for IM', 'HTTP Request Defaults for IM' (highlighted), 'HTTP Header Manager for IM', and several '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM' tasks. The main configuration area is titled 'HTTP Request Defaults' and contains the following fields:

- Name:** HTTP Request Defaults for IM
- Comments:**
- Web Server:**
  - Server Name or IP:** \${IMWA\_HOSTNAME}
  - Port Number:** 443
  - Timeouts (milliseconds):**
    - Connect:**
    - Response:**
- HTTP Request:**
  - Implementation:** (dropdown menu)
  - Protocol [http]:** https
  - Content encoding:**
- Path:** /
- Parameters:**
  - Send Parameters With the Request:**
  - | 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 displays the JMeter GUI. On the left, the 'Test Plan - IM' tree is expanded, showing the following hierarchy: 'Test Plan - IM' (root), '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' (selected), and '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM'. The right pane shows the configuration for the selected 'HTTP Header Manager'. It includes a 'Name' field with the value 'HTTP Header Manager for IM', an empty 'Comments' field, and a section titled 'Headers Stored in the Header Manager' which contains an empty table with two columns: 'Name' and 'Value'.

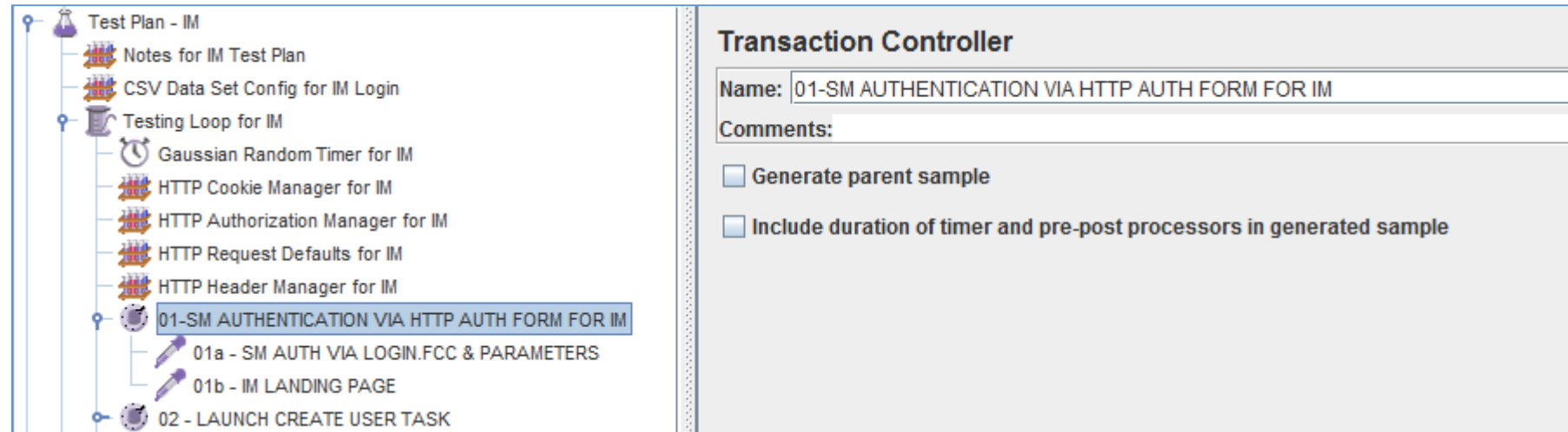
Name	Value
------	-------

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 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:  **iso-8859-1**  
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

**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
  - 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

**HTTP Request**

Name: 01b - IM LANDING PAGE

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?
-------	-------	---------	-----------------

Detail Add Add from Clipboard Delete Up Down

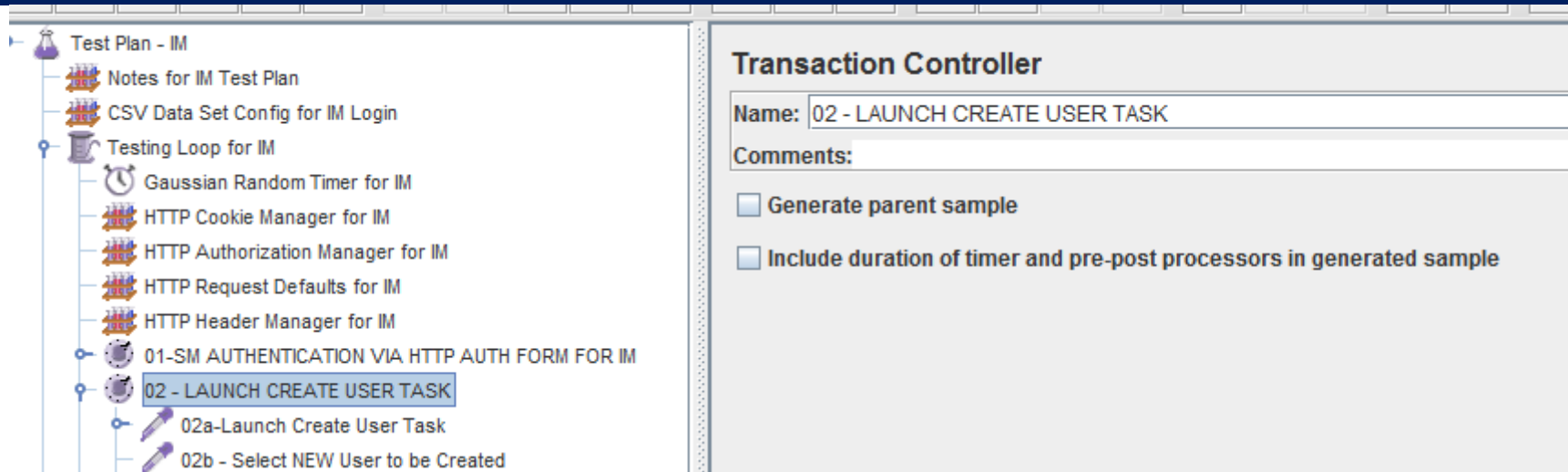
Send Files With the Request:

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.

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 2<sup>nd</sup> 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 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
  - 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
    - 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

**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 multipart/form-data for POST ☐ Browser-compatible headers

Parameters Body Data

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"/>

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 displays the JMeter Test Plan on the left and the configuration for the '02a - 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
    - 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

**CSS/JQuery Extractor**

Name: 02a - 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 15b: Jmeter Test Plan for IMWA: RegEx

The screenshot shows the JMeter Test Plan on the left and the Regular Expression Extractor 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
    - 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: \$1\$

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

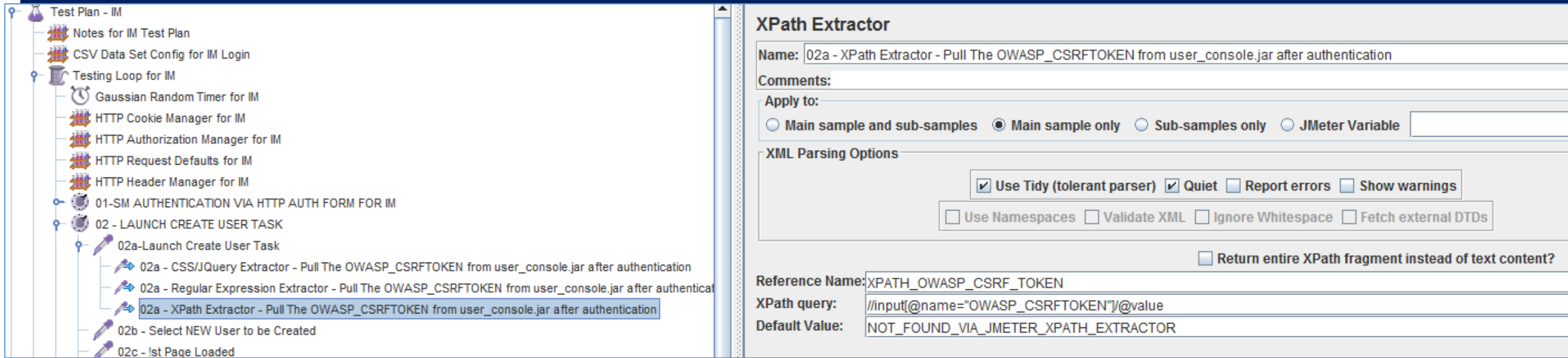
The example LAB uses the CSS / JQuery Extractor

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 Test Plan on the left and the XPath Extractor 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
    - 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
    - 02c - 1st Page Loaded

**XPath Extractor**

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

**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
    - 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
  - 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
- in@oc - PerfMon Metrics Collector

**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

**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
    - 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
  - 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

**HTTP Request**

Name: 02c - 1st Page Loaded

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?
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"/>

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

**HTTP Request**

Name: 02d - Search on OU Placement

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"/>
main_SUBMIT	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
action.standardsearch.search	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>

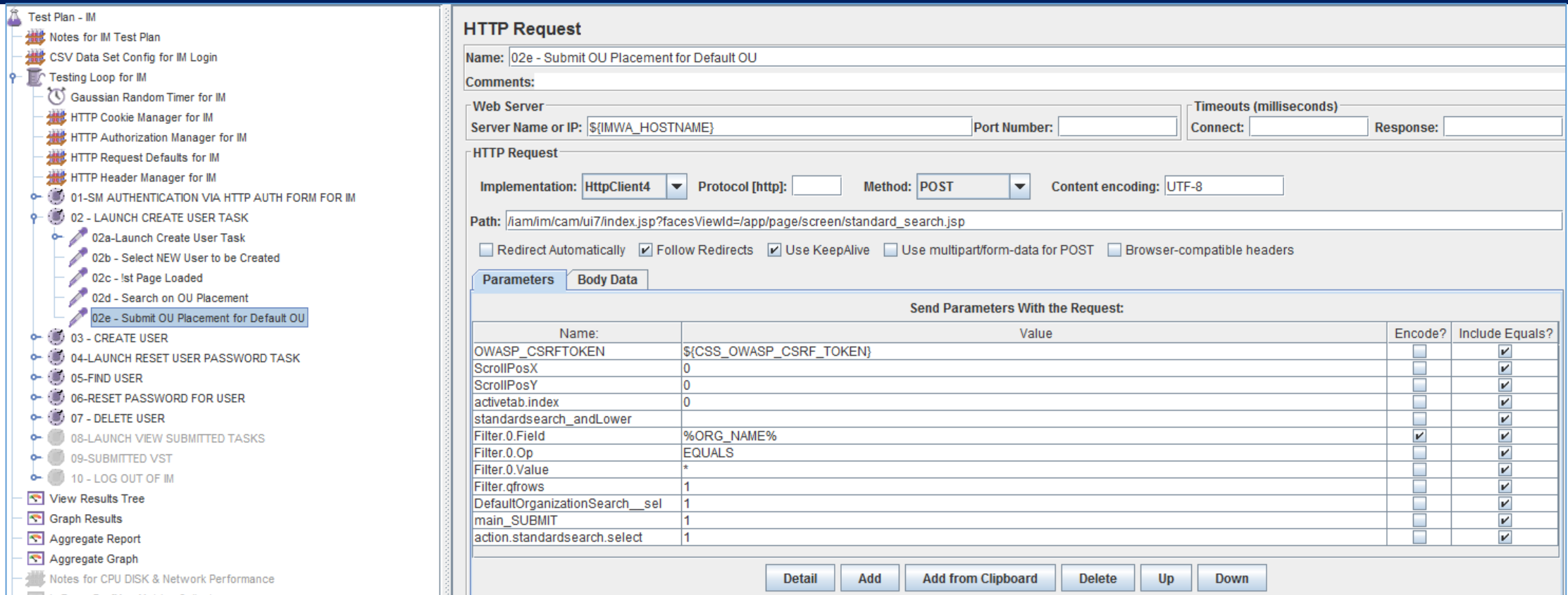
Detail Add Add from Clipboard Delete Up Down

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 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



**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
    - 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
  - 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

**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:

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?
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

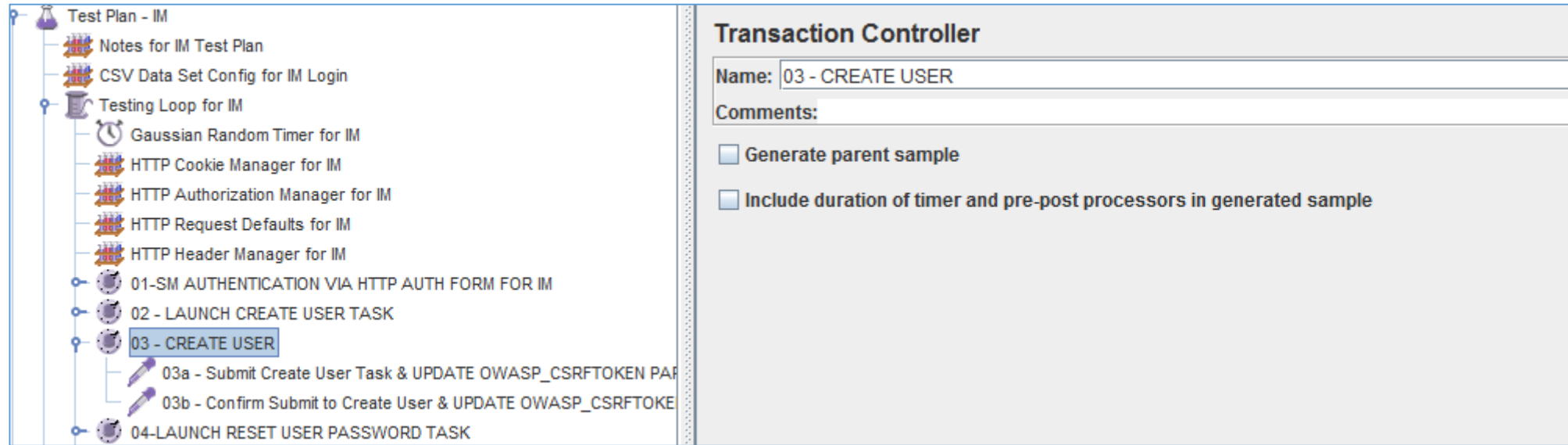
This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

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 3<sup>rd</sup> 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 displays 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
    - 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
  - 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

**HTTP Request**

Name: 03a - Submit Create User Task & UPDATE OWASP\_CSRFTOKEN PARAMETER

Comments:

Web Server

Server Name or IP: \${IMWA\_HOSTNAME} Port Number: [ ] Connect: [ ] Response: [ ]

Timeouts (milliseconds)

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

☐ 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"/>
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"/>

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 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 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
    - 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
  - 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

**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:

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

☐ 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.

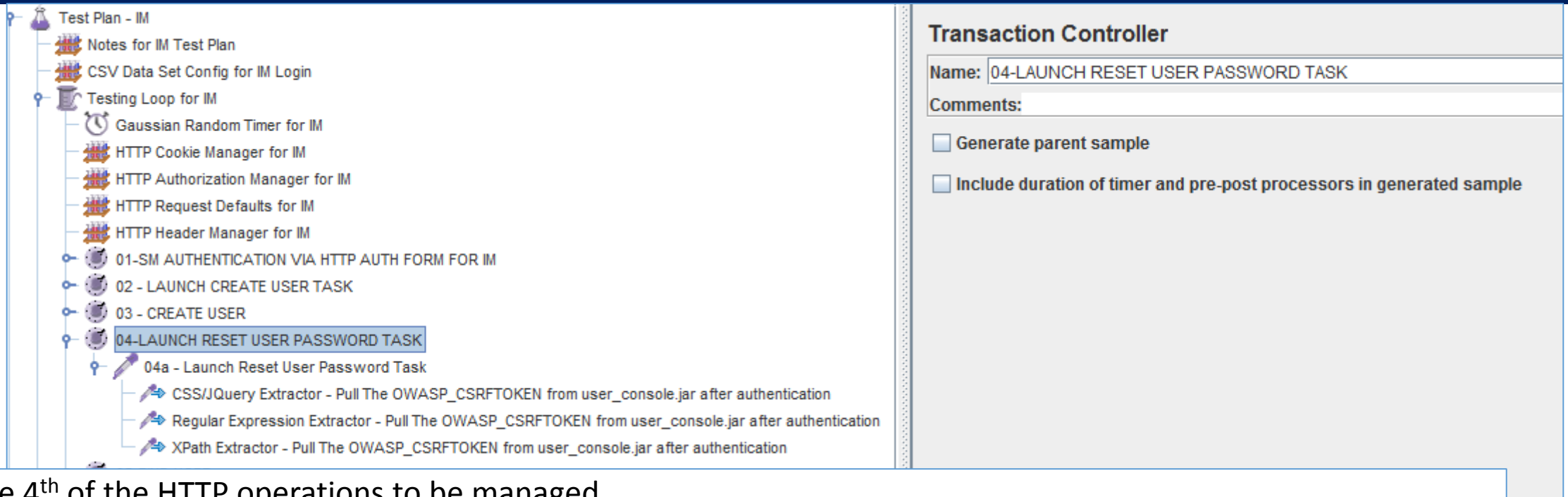
The title was re-labeled to clarify the operation being performed.

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 structure on the left and the Transaction Controller configuration 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', '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM', '02 - LAUNCH CREATE USER TASK', '03 - CREATE USER', and '04-LAUNCH RESET USER PASSWORD TASK'. The '04-LAUNCH RESET USER PASSWORD TASK' is selected and expanded, showing a sub-element '04a - Launch Reset User Password Task' which contains three extractors: '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', and 'XPath Extractor - Pull The OWASP\_CSRFTOKEN from user\_console.jar after authentication'. The Transaction Controller configuration on the right is titled 'Transaction Controller' and has the 'Name' field set to '04-LAUNCH RESET USER PASSWORD TASK'. The 'Comments' field is empty. There are two checkboxes: 'Generate parent sample' (unchecked) and 'Include duration of timer and pre-post processors in generated sample' (unchecked).

The 4<sup>th</sup> 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 displays the JMeter GUI. On the left, a tree view shows a test plan named 'Test Plan - IM' containing various components like 'Notes for IM Test Plan', 'CSV Data Set Config for IM Login', 'Testing Loop for IM', and several HTTP-related samplers. The '04a - Launch Reset User Password Task' is highlighted. On the right, the configuration for this HTTP Request is shown. The 'Name' is '04a - Launch Reset User Password Task'. The 'Web Server' section shows 'Server Name or IP' as '\${IMWA\_HOSTNAME}' and 'Port Number' as empty. 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'. Below this, there are checkboxes for 'Redirect Automatically', 'Follow Redirects', 'Use KeepAlive', 'Use multipart/form-data for POST', and 'Browser-compatible headers'. The 'Parameters' tab is active, showing a table with two parameters: 'task.tag' with value 'ResetUserPassword' and 'console.cat3' with value 'Manage Users'. Both parameters are encoded and include equals signs.

**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/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"/>

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 screenshot displays the JMeter Test Plan structure 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:

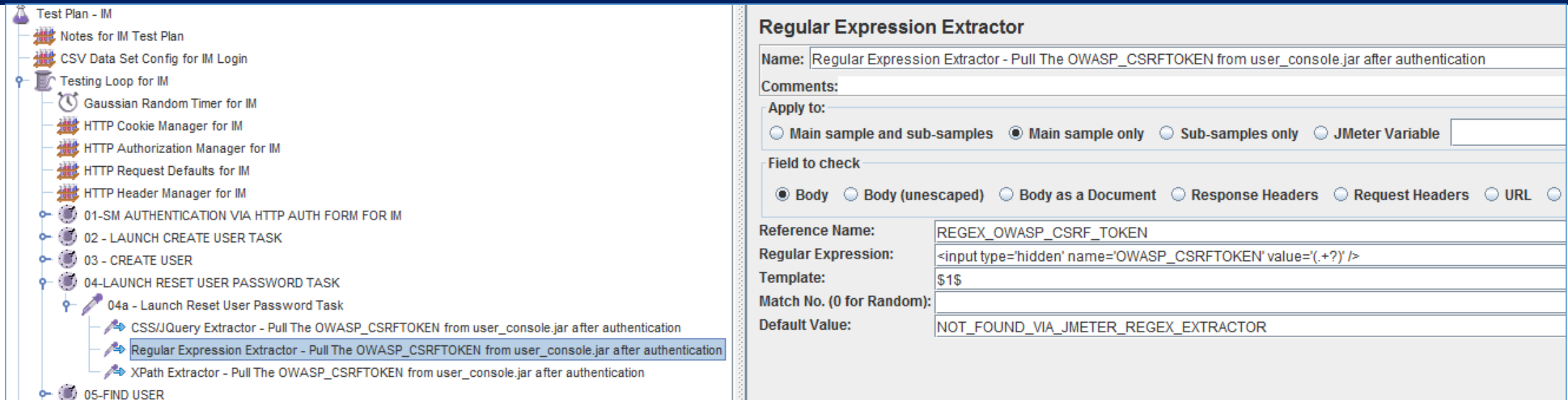
1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

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 screenshot displays 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
  - 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: \$1\$

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:

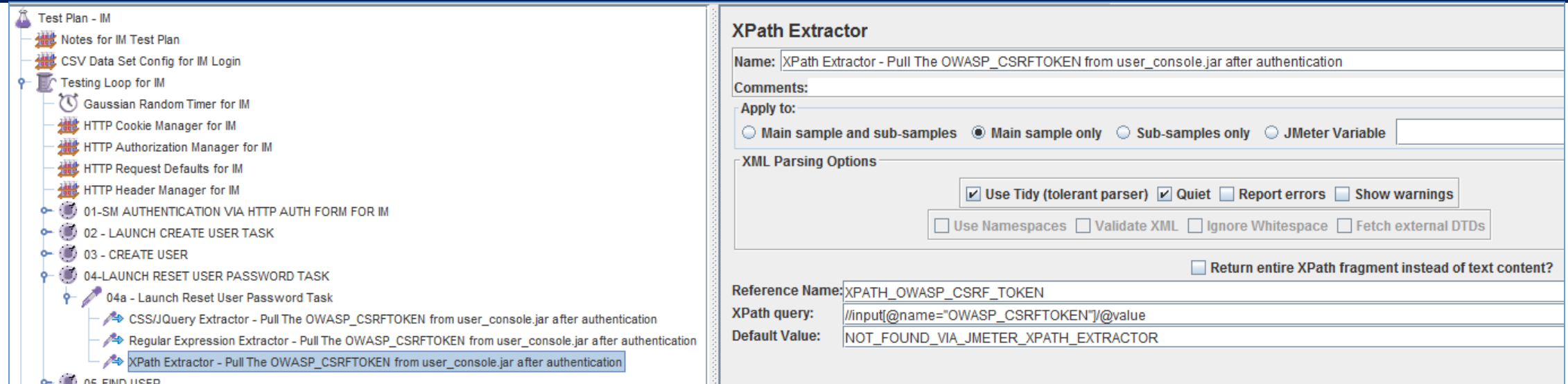
1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

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 screenshot displays the JMeter Test Plan on the left and the XPath Extractor 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

**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:

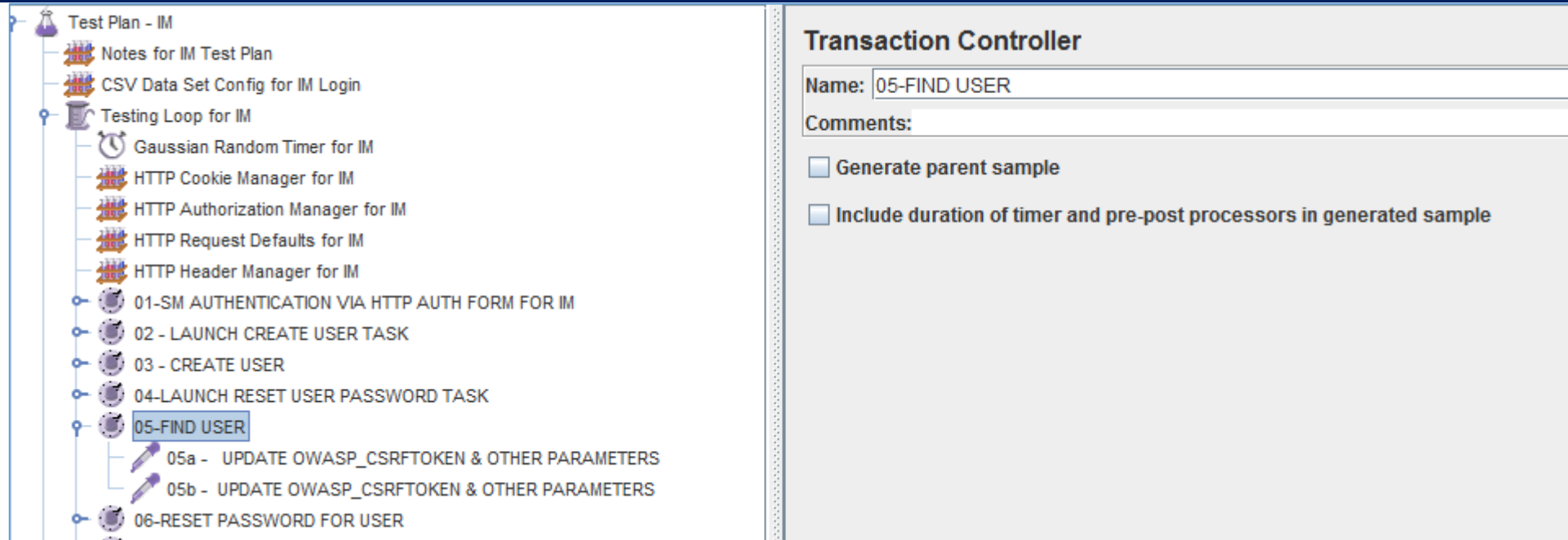
1) CSS/Jquery Extractor 2) Regular Express 3) Xpath Extractor

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.

**Test Plan - IM Structure:**

- 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** (highlighted)
      - 05a - UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS
      - 05b - UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS
    - 06-RESET PASSWORD FOR USER

**Transaction Controller Configuration:**

- Name:** 05-FIND USER
- Comments:**
- ☐ Generate parent sample
- ☐ Include duration of timer and pre-post processors in generated sample

The 5<sup>th</sup> 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

The screenshot displays the JMeter Test Plan tree on the left and the HTTP Request configuration panel 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
    - 05a - UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS**
    - 05b - UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS
  - 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
- jp@gc - JMXMon Samples Collector

**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/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?
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 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
    - 05a - UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS
    - 05b - UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS**
  - 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
- jp@gc - JMXMon Samples Collector

**HTTP Request**

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

☐ 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"/>
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"/>

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.

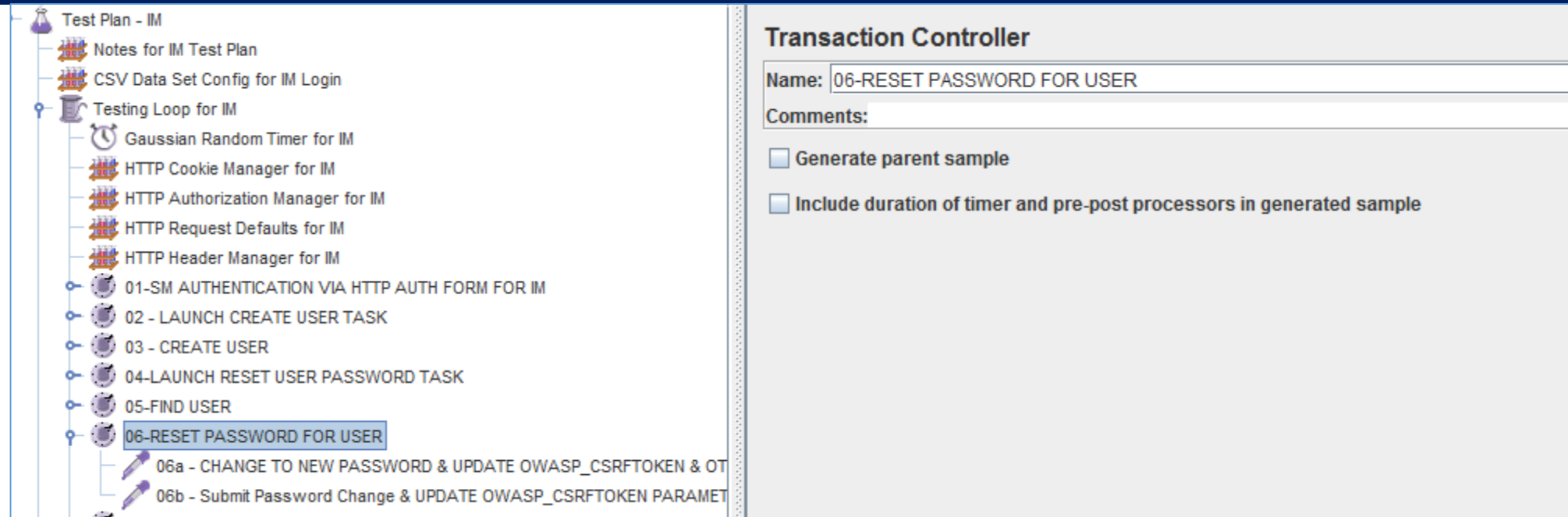
The following parameter values were updated:

“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 29: Jmeter Test Plan for IMWA: Transaction Controller



The screenshot displays the JMeter Test Plan structure on the left and the Transaction Controller configuration on the right. The Test Plan, titled 'Test Plan - IM', includes a 'Testing Loop for IM' containing several HTTP components and a sequence of tasks. The task '06-RESET PASSWORD FOR USER' is highlighted. The Transaction Controller configuration on the right shows the name '06-RESET PASSWORD FOR USER' and two unchecked options: 'Generate parent sample' and 'Include duration of timer and pre-post processors in generated sample'.

**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**
    - 06a - CHANGE TO NEW PASSWORD & UPDATE OWASP\_CSRFTOKEN & OT
    - 06b - Submit Password Change & UPDATE OWASP\_CSRFTOKEN PARAMET

**Transaction Controller**

Name: 06-RESET PASSWORD FOR USER

Comments:

☐ Generate parent sample

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

The 6<sup>th</sup> 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

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
    - 06a - CHANGE TO NEW PASSWORD & UPDATE OWASP\_CSRFTOKEN & OTHER PARAMETERS**
    - 06b - Submit Password Change & UPDATE OWASP\_CSRFTOKEN PARAMETER
  - 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

**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.

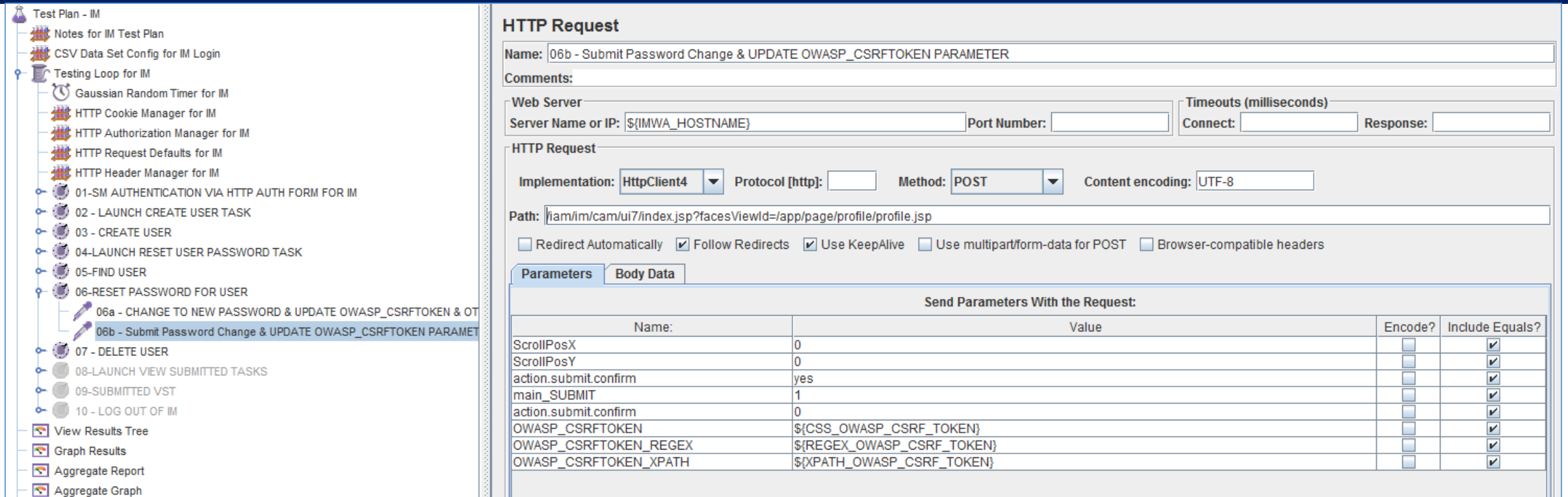
The title was re-labeled to clarify the operation being performed.

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 shows the JMeter GUI with a test plan on the left and the configuration for an HTTP Request sampler 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
    - 06a - CHANGE TO NEW PASSWORD & UPDATE OWASP\_CSRFTOKEN & OT
    - 06b - Submit Password Change & UPDATE OWASP\_CSRFTOKEN PARAMETER**
  - 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

**HTTP Request**

Name: 06b - Submit Password Change & 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/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"/>
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 structure on the left and the Transaction Controller configuration on the right. The Test Plan, titled 'Test Plan - IM', includes a 'Testing Loop for IM' containing several components: '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 from '01-SM AUTHENTICATION VIA HTTP AUTH FORM FOR IM' to '08-LAUNCH VIEW SUBMITTED TASKS'. The task '07 - DELETE USER' is selected, revealing its sub-tasks: '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', and '07e - Confirm Submit Delete User Task & UPDATE OWASP\_CSRFTOKEN PA'. The Transaction Controller configuration on the right shows the 'Name' as '07 - DELETE USER' and the 'Comments' field. 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 7<sup>th</sup> 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\_console
    - 07a - Regular Expression Extractor - Pull The OWASP\_CSRFTOKEN from user\_console
    - 07a - XPath Extractor - Pull The OWASP\_CSRFTOKEN from user\_console.jar at
    - 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

**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 displays 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
    - 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

**HTTP Request**

Name: 07b - Find User to Delete & 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

☐ 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_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

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
    - 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: Connect: Response:

Timeouts (milliseconds)

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 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
    - 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: 07d - Submit Delete 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

☐ 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

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
    - 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:

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

☐ 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"/>

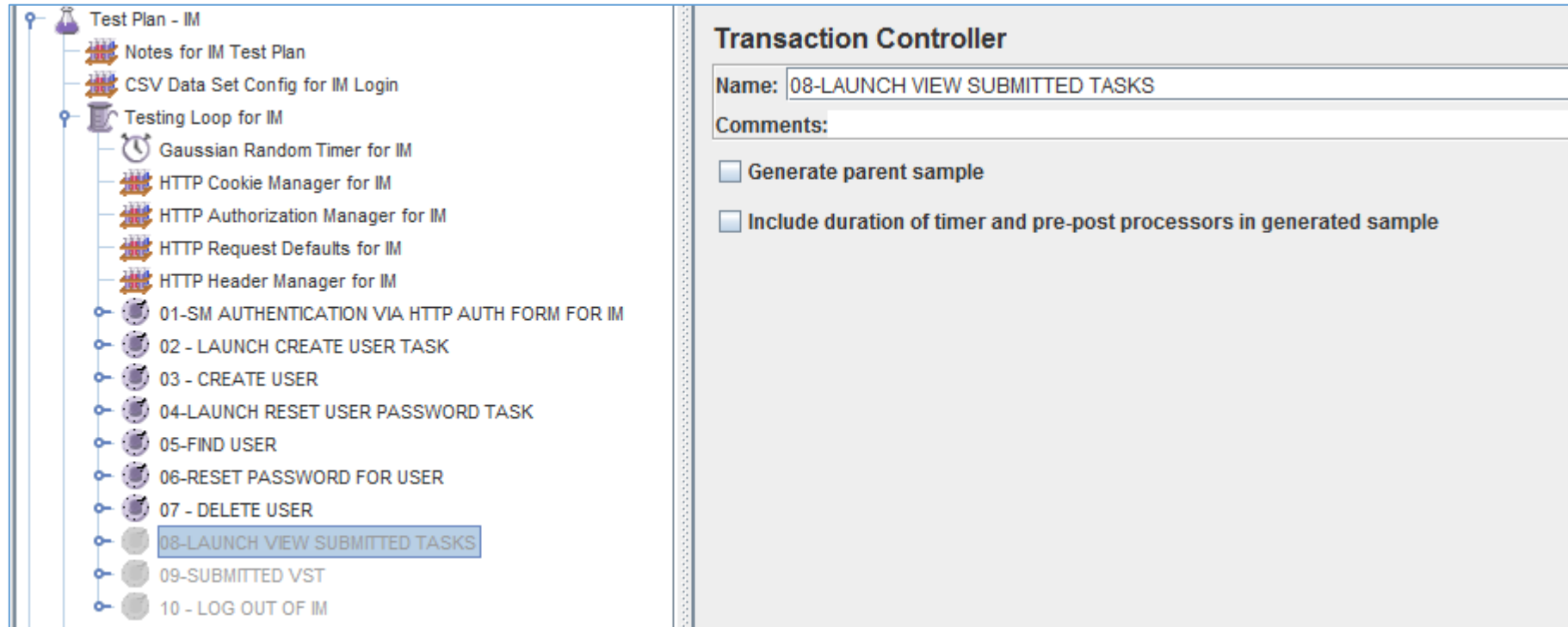
This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

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 8<sup>th</sup> 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 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
  - 08-LAUNCH VIEW SUBMITTED TASKS
    - 08a - Launch VST
  - 09-SUBMITTED VST
  - 10 - LOG OUT OF IM

**HTTP Request**

Name: 08a - Launch VST

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	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 structure on the left and the Transaction Controller 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
  - 08-LAUNCH VIEW SUBMITTED TASKS
  - 09-SUBMITTED VST** (highlighted)
    - 09a - Submit VST & UPDATE OWASP\_CSRFTOKEN
  - 10 - LOG OUT OF IM

**Transaction Controller**

Name: 09-SUBMITTED VST

Comments:

☐ Generate parent sample

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

The 9<sup>th</sup> of the HTTP operations to be managed.

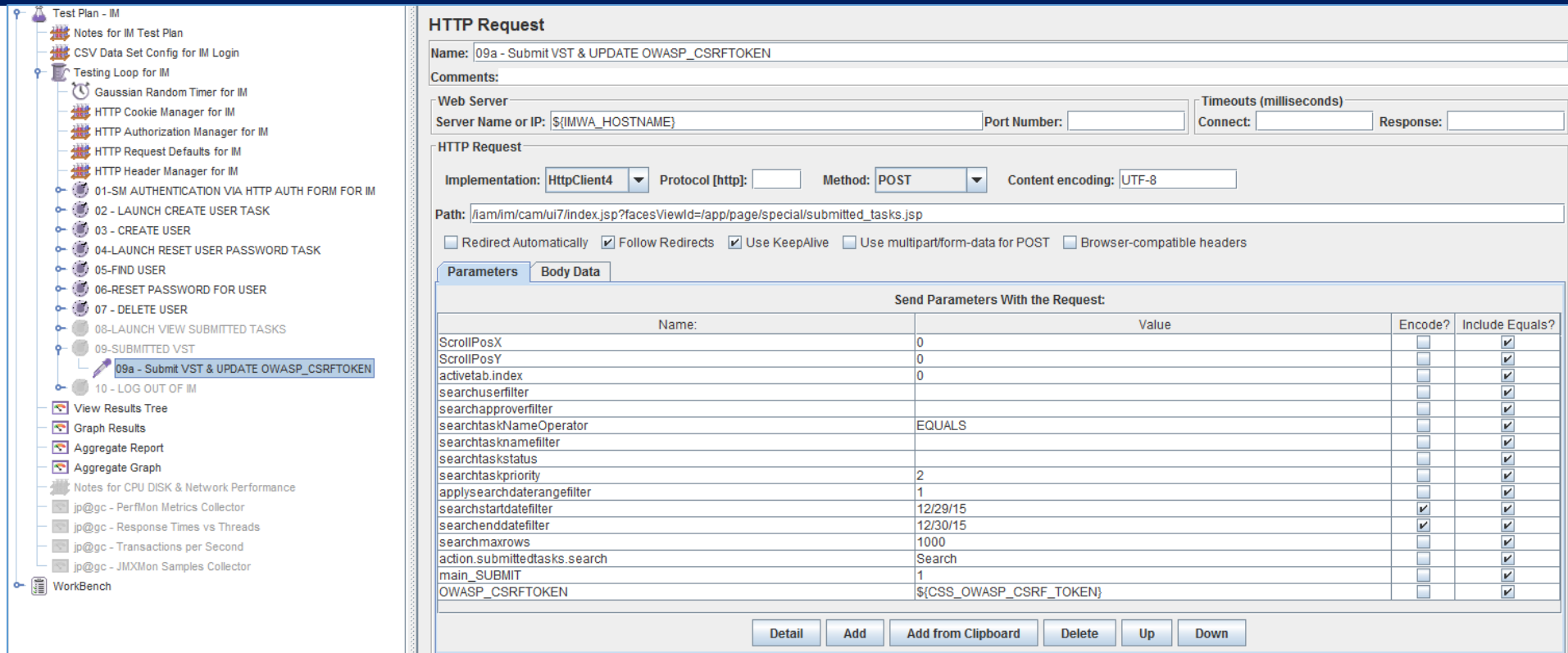
This Jmeter Transaction Controller was created by the Jmeter HTTP Recorder.

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



The screenshot shows the JMeter GUI with a test plan on the left and the configuration for an HTTP Request 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
  - 08-LAUNCH VIEW SUBMITTED TASKS
  - 09-SUBMITTED VST
    - 09a - Submit VST & UPDATE OWASP\_CSRFTOKEN
  - 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
- jp@gc - JMXMon Samples Collector

**HTTP Request**

Name: 09a - Submit VST & UPDATE OWASP\_CSRFTOKEN

Comments:

Web Server

Server Name or IP: \${IMWA\_HOSTNAME} Port Number: Connect: Response:

Timeouts (milliseconds)

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

Path: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/special/submitted\_tasks.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"/>
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 checked="" 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.

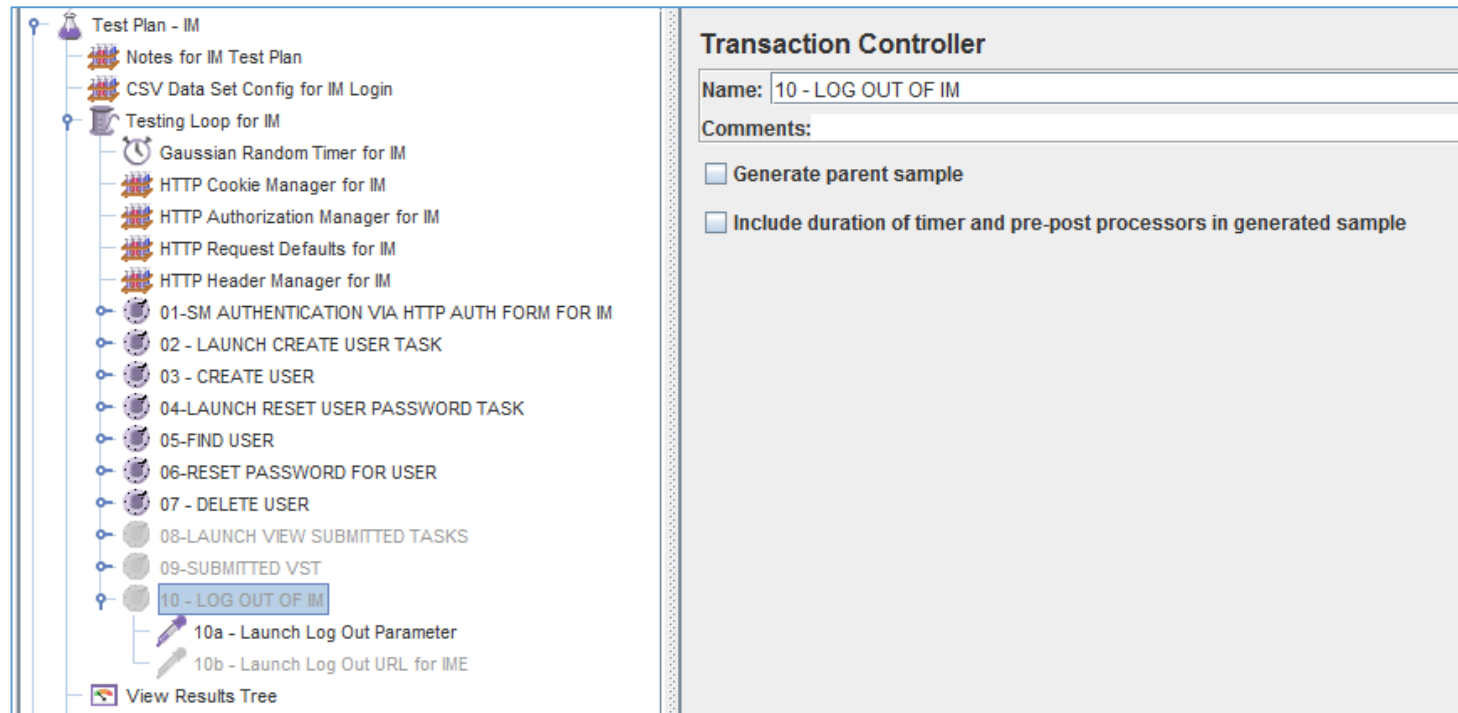
The title was re-labeled to clarify the operation being performed.

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](http://jmeter.apache.org/usermanual/functions.html#__time)

# Step 42: Jmeter Test Plan for IMWA: Transaction Controller



The 10<sup>th</sup> of the HTTP operations to be managed.

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

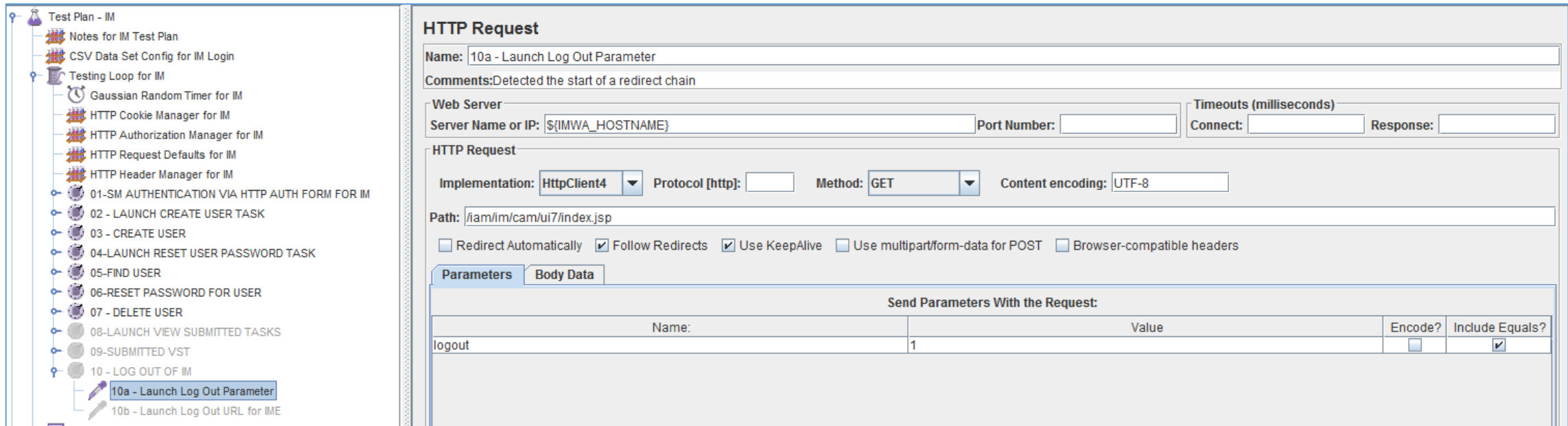
This Transaction Controller was re-labeled to clarify the operation being performed.

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 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 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 tasks including '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'. The '10a - Launch Log Out Parameter' is selected. The right pane shows the 'HTTP Request' configuration with 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:**

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 displays the JMeter GUI with a test plan on the left and the configuration for an HTTP Request sampler 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
  - 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

**HTTP Request**

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: Timeouts (milliseconds) Connect: Response:

HTTP Request

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

Path: /iam/im/logout.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?
envAlias	cam	<input type="checkbox"/>	<input checked="" type="checkbox"/>

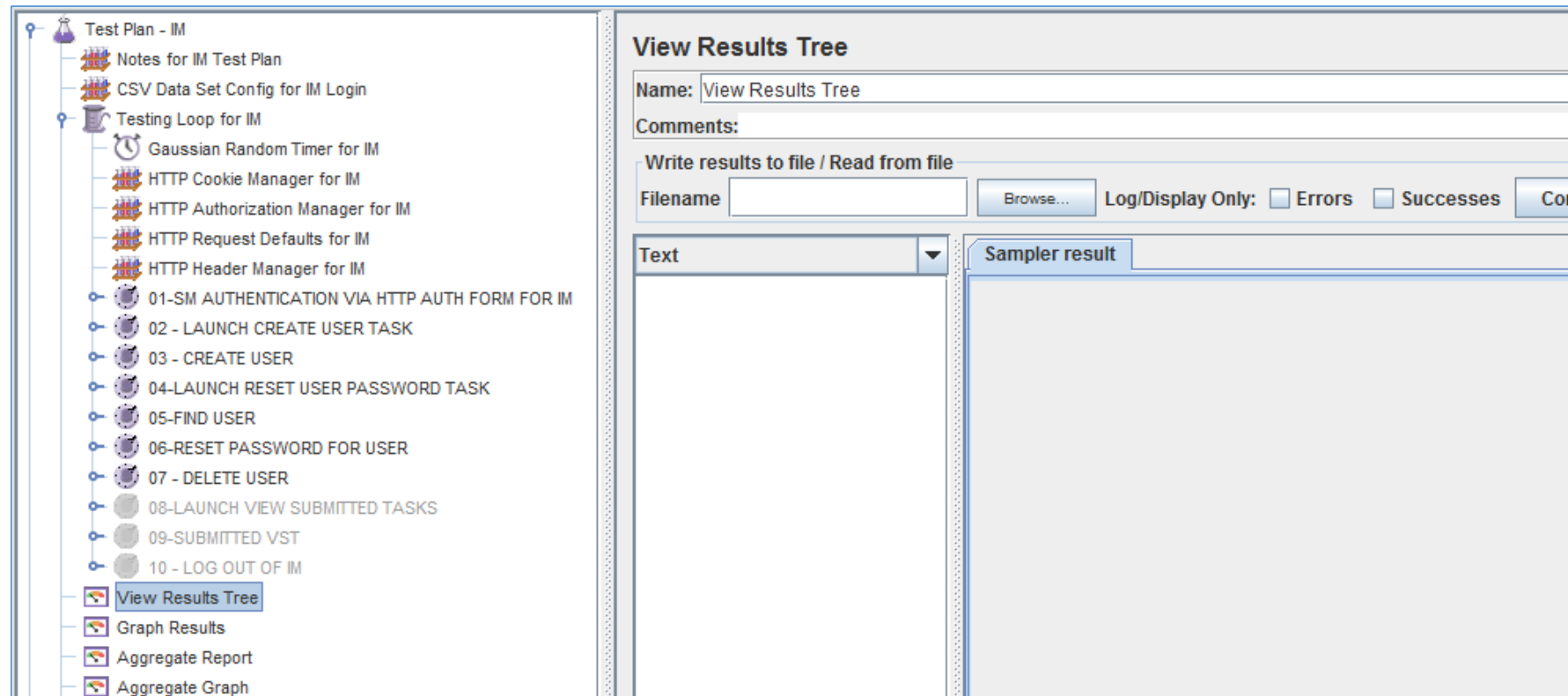
This step was captured by the Jmeter HTTP Recorder, when executed via manually in a browser.

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

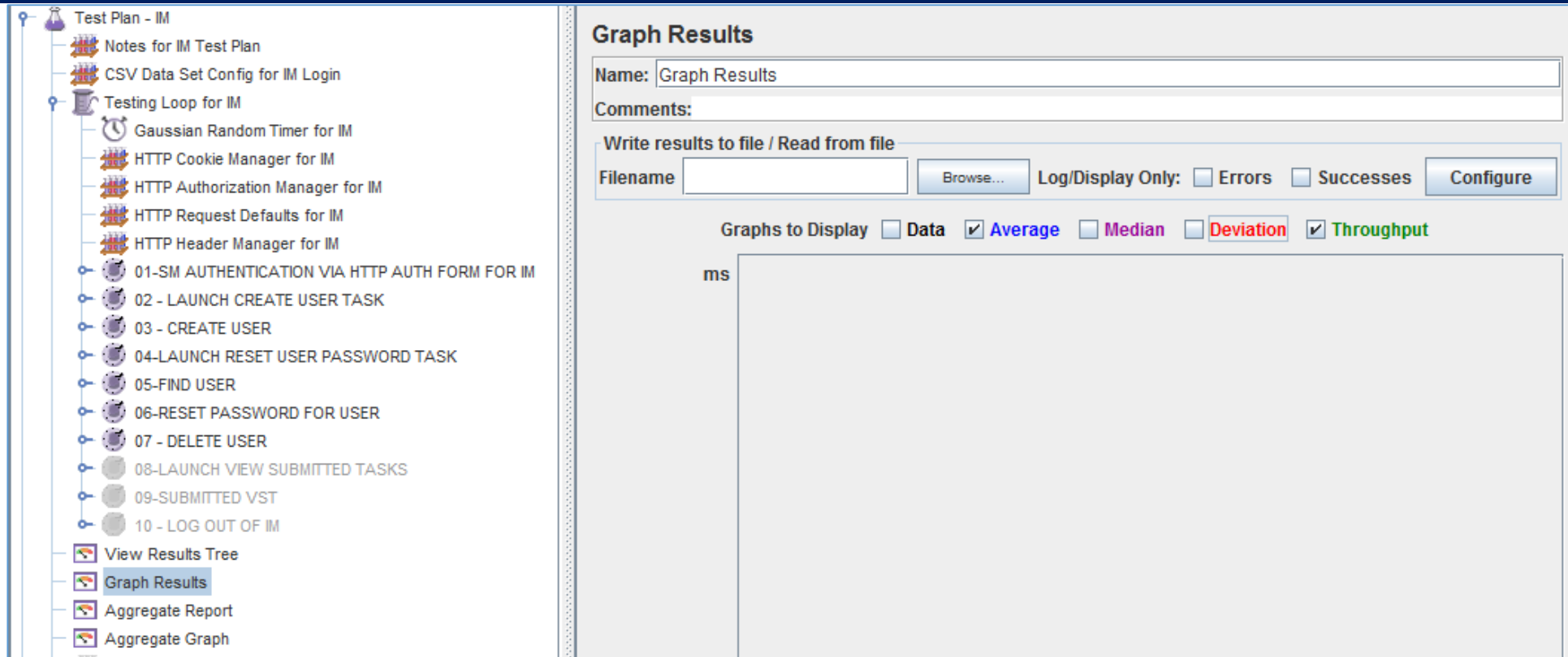


Four (4) Listeners / Reports / Graphs were added to this test plan.

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



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 shows the JMeter Test Plan configuration on the left and the Aggregate Report 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
  - 08-LAUNCH VIEW SUBMITTED TASKS
  - 09-SUBMITTED VST
  - 10 - LOG OUT OF IM
- View Results Tree
- Graph Results
- Aggregate Report
- Aggregate Graph

**Aggregate Report**

Name: Aggregate Report

Comments:

Write results to file / Read from file

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

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 Test Plan for IMWA. The left sidebar shows the test plan structure, including a 'Testing Loop for IM' containing steps 01 through 10, and four listeners/reports at the bottom: 'View Results Tree', 'Graph Results', 'Aggregate Report', and 'Aggregate Graph'. The 'Aggregate Graph' listener is selected, and its configuration is shown on the right.

**Aggregate Graph Configuration:**

- Name:** Aggregate Graph
- Comments:**
- Write results to file / Read from file:** (with a 'Browse...' button)
- Filename:** (empty text field)

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

**Settings / Graph Tab:**

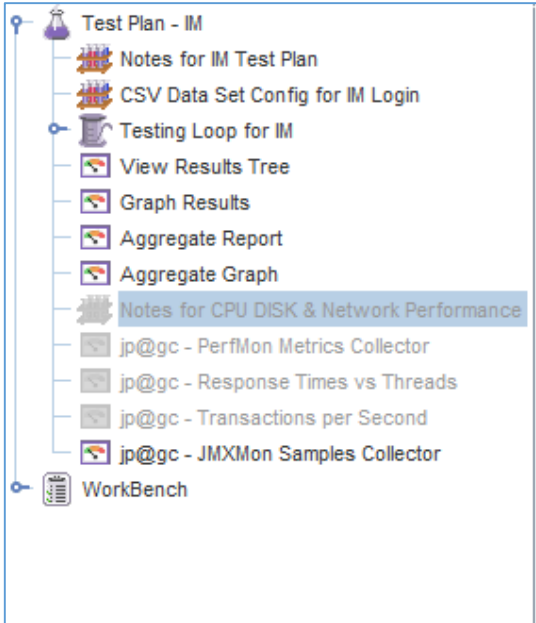
- Display Graph:** (button)
- Column settings:**
  - Columns to display:** ☒ Average (red bar), ☐ Median (blue bar), ☐ 90% Line (green bar), ☐ 95% Line (yellow bar), ☐ 99% Line (light blue bar)
  - Value font:** Sans Serif, **Size:** 10, **Style:** Normal
  - ☒ Draw outlines bar? ☒ Show number grouping? ☒

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



- 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 - JMXMon Samples Collector
- WorkBench

### User Defined Variables

**Name:** Notes for CPU DISK & Network Performance

**Comments:** Must install ServerAgent on remote server; download and extra extra libraries for Jmeter

User Defined Variables	
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: <a href="http://jmeter-plugins.org/wiki/StandardSet/">http://jmeter-plugins.org/wiki/StandardSet/</a>
Note8	JMETER PLUGIN EXTRA SET: <a href="http://jmeter-plugins.org/wiki/ExtrasSet/">http://jmeter-plugins.org/wiki/ExtrasSet/</a>
Note9	JMX Monitoring Examples with JBOSS: <a href="https://planet.jboss.org/post/jmx_connections_to_jboss_as">https://planet.jboss.org/post/jmx_connections_to_jboss_as</a>
Note10	Jconsole JMX via JBOSS version: <a href="http://www.mastertheboss.com/jboss-server/jboss-monitoring/using-jconsole-to-monitor-a-remote-wildfly-server">http://www.mastertheboss.com/jboss-server/jboss-monitoring/using-jconsole-to-monitor-a-remote-wildfly-server</a>
Note11	Heap Memory Info: <a href="https://pubs.vmware.com/vfabric52/index.jsp?topic=/com.vmware.vfabric.em4i.1.2/em4i/conf-heap-management.html">https://pubs.vmware.com/vfabric52/index.jsp?topic=/com.vmware.vfabric.em4i.1.2/em4i/conf-heap-management.html</a>

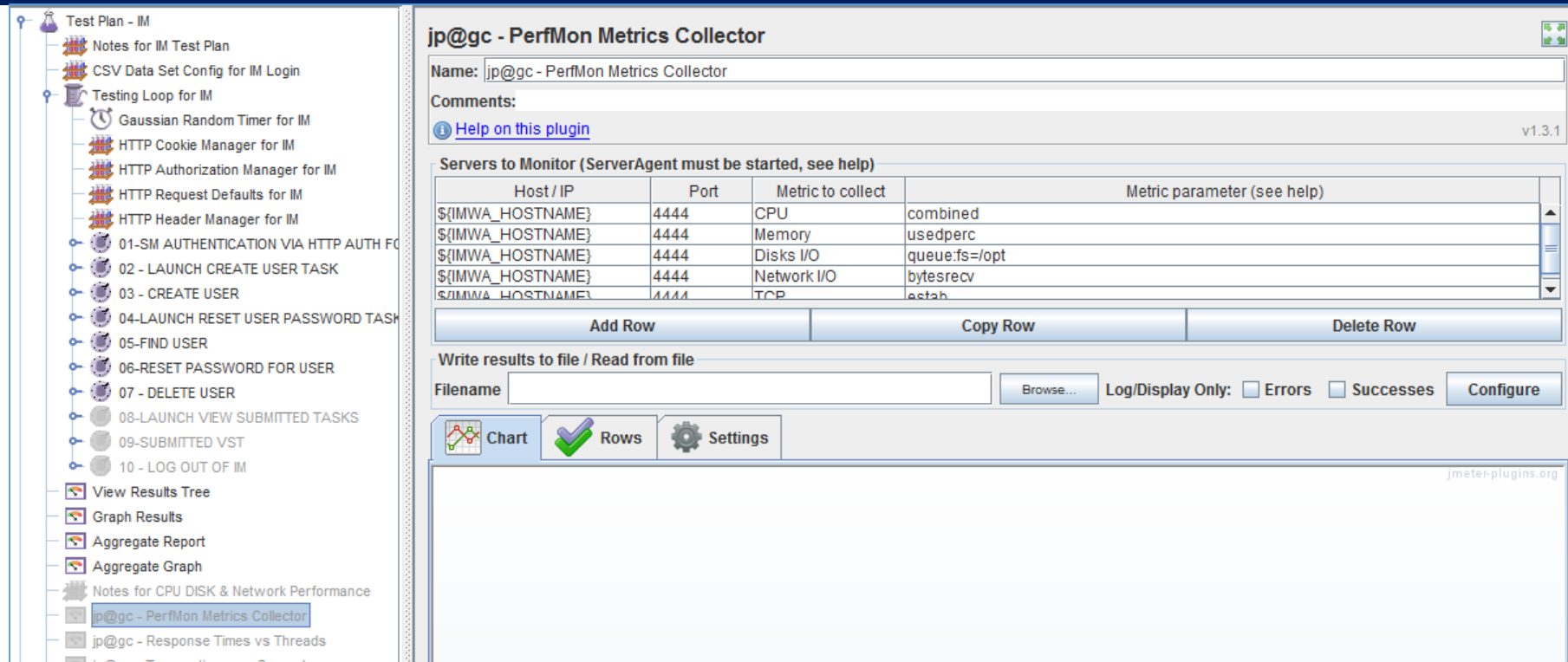
To monitor disk I/O, CPU & Network utilization, Thread Counts, there are additional Jmeter Libraries that need to be added to the base Jmeter solution: <http://jmeter-plugins.org/>

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

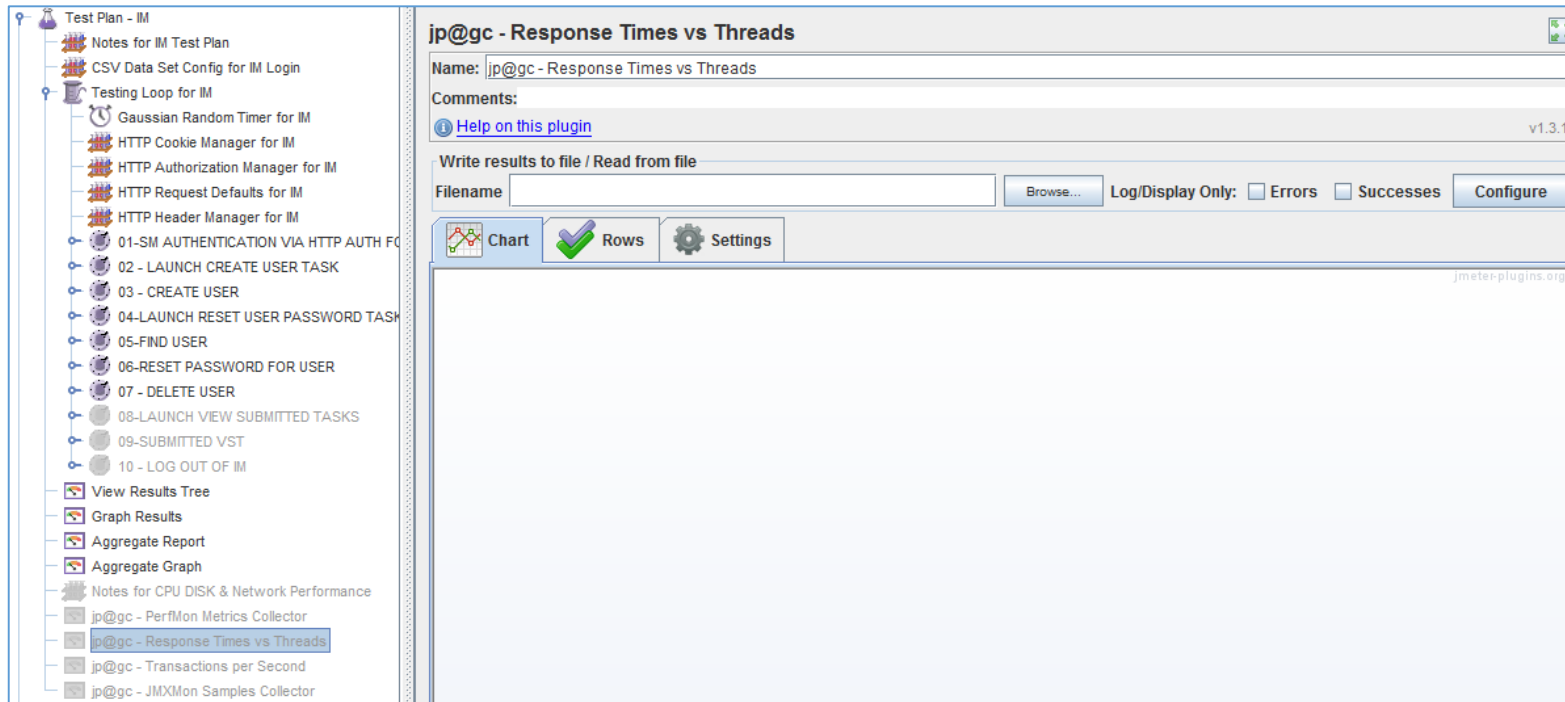


To monitor disk I/O, CPU & Network utilization, requires three (3) steps:

- 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.

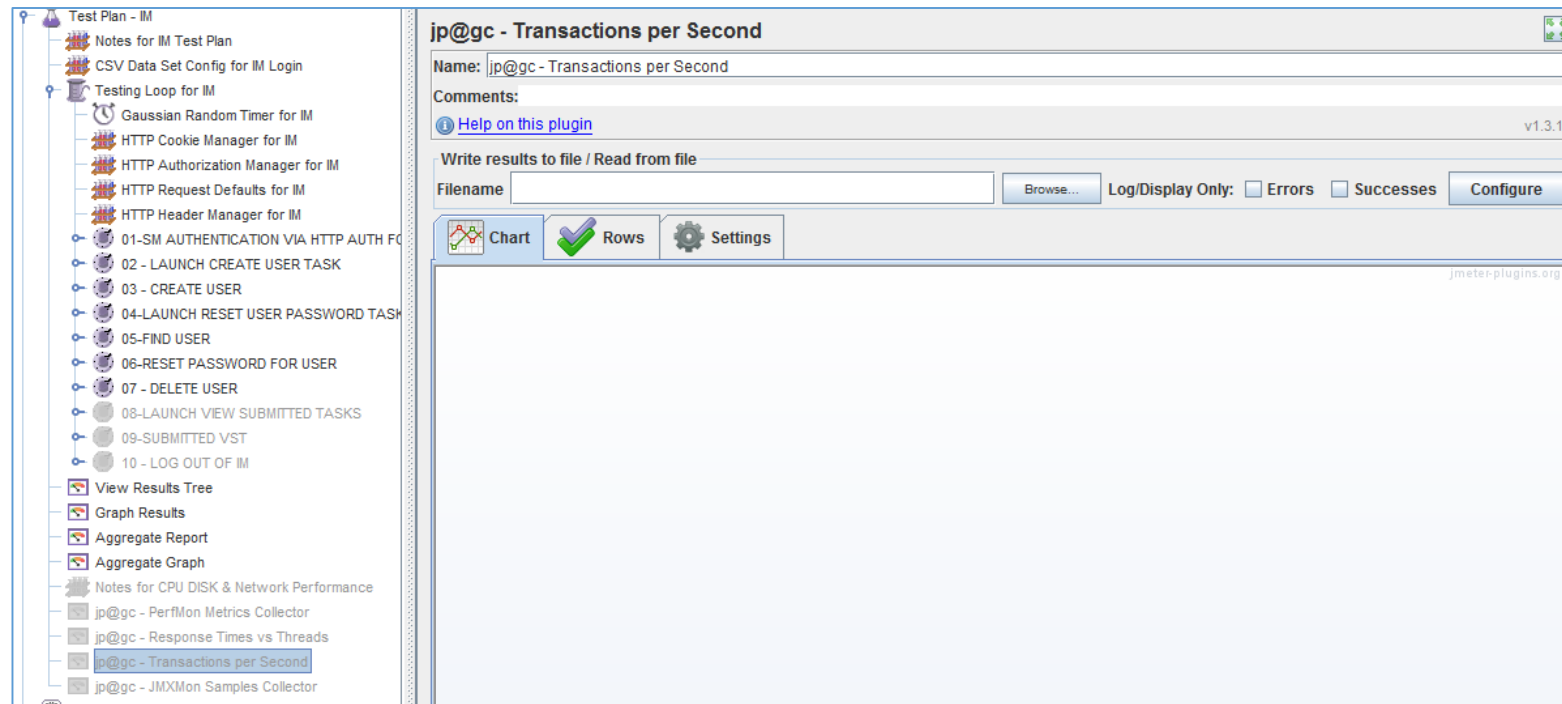
# Step 51: OPTIONAL for IMWA: Notes for Expansion Kit



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

**jp@gc - JMXMon Samples Collector**

Name: jp@gc - JMXMon 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: v1.3.1

[Help on this plugin](#)

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"/>

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

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](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](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 'JConsole: New Connection' dialog is open, showing the 'Local Process' tab with a table of processes:

Name	PID
sun.tools.jconsole.JConsole	8709
jboss-modules.jar -mp /opt/CA/jboss/im_02...	3626
jboss-modules.jar -mp /opt/CA/jboss/im_01...	3625

Below this, the 'Remote Process' tab is selected, showing the configuration for a remote JBoss instance:

- 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

On the right, the 'JConsole: Output' window shows the connection log:

```
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
```

Below the log, the 'Ref:' section provides links to JMeter plugins and JBoss documentation:

- Ref: [http://jmeter-plugins.org/wiki/JMXMon/?utm\\_source=jmeter&utm\\_medium=helplink&utm\\_campaign=JMXMon](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](https://planet.jboss.org/post/jmx_connections_to_jboss_as)

On the far right, the 'Java Monitoring & Management Console' window shows the 'JBoss CLI / sandbox01' overview. It includes several monitoring graphs:

- Heap Memory Usage:** Shows a line graph of memory usage over time. The y-axis ranges from 400 Mb to 600 Mb. The current value is 535,783,856 bytes (535.8 Mb). The committed memory is 1.6 Gb, and the maximum is 2.8 Gb.
- Threads:** Shows a line graph of thread count over time. The y-axis ranges from 200 to 300. The current value is 276 live threads. The peak is 349, and the total is 1,035.
- Classes:** Shows a line graph of class count over time. The y-axis ranges from 20,000 to 30,000. The current value is 23,553 loaded classes. The total is 23,662.
- CPU Usage:** Shows a line graph of CPU usage percentage over time. The y-axis ranges from 0% to 40%. The current value is 0.7%.

Validate REMOTE JMX for JBOSS with JBOSS Java Jconsole

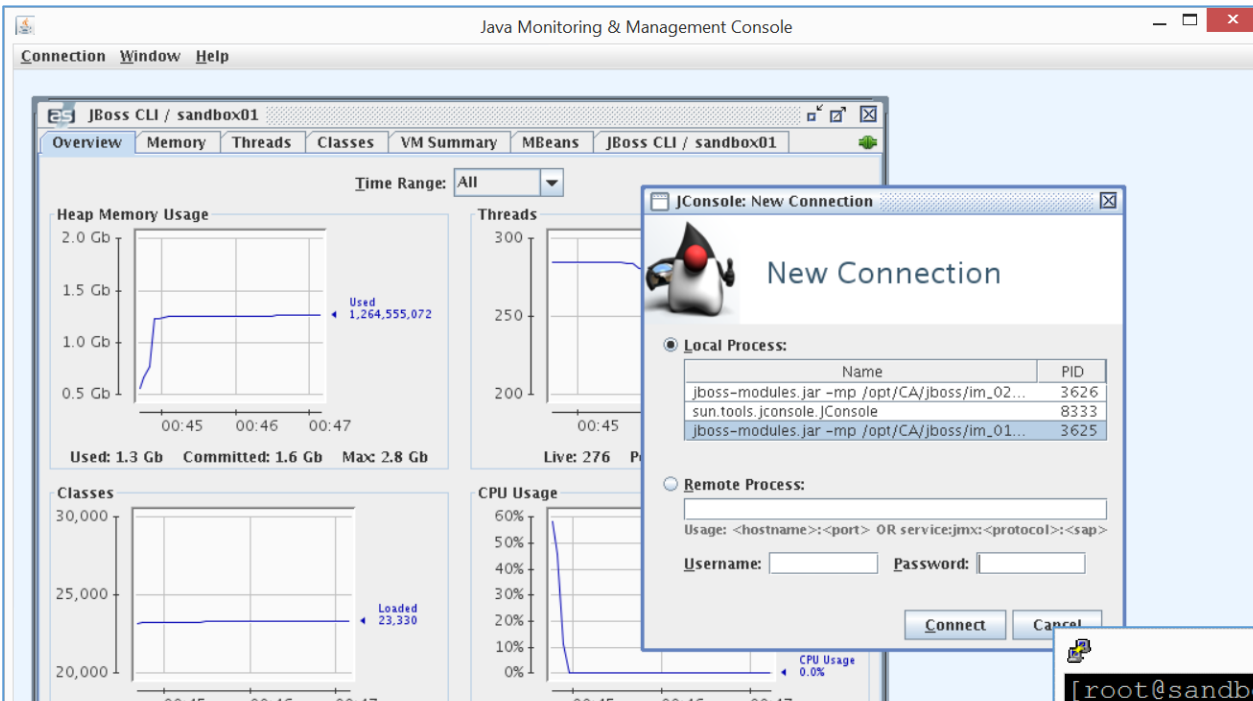
Requires the following:

- 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

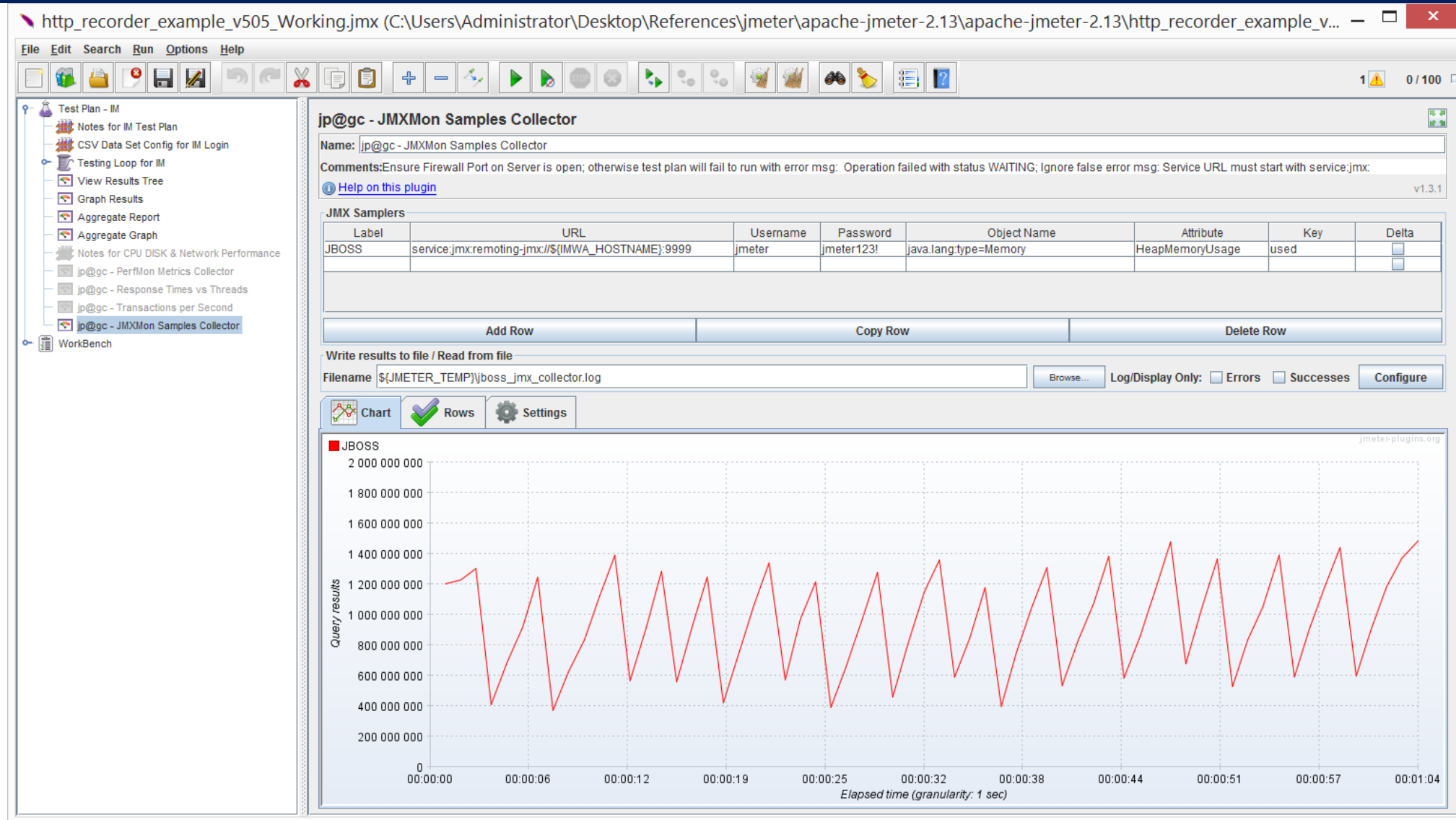
Requires the following:

- 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

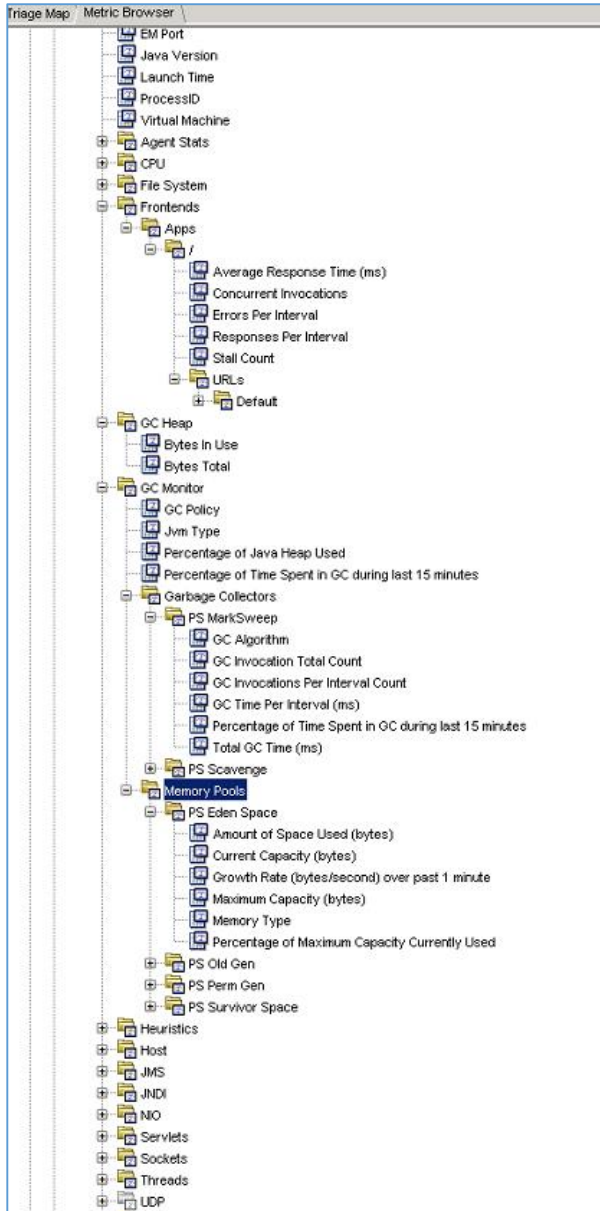


Ignore false error message: MalformedURLException: Service URL must start with service:jmx:

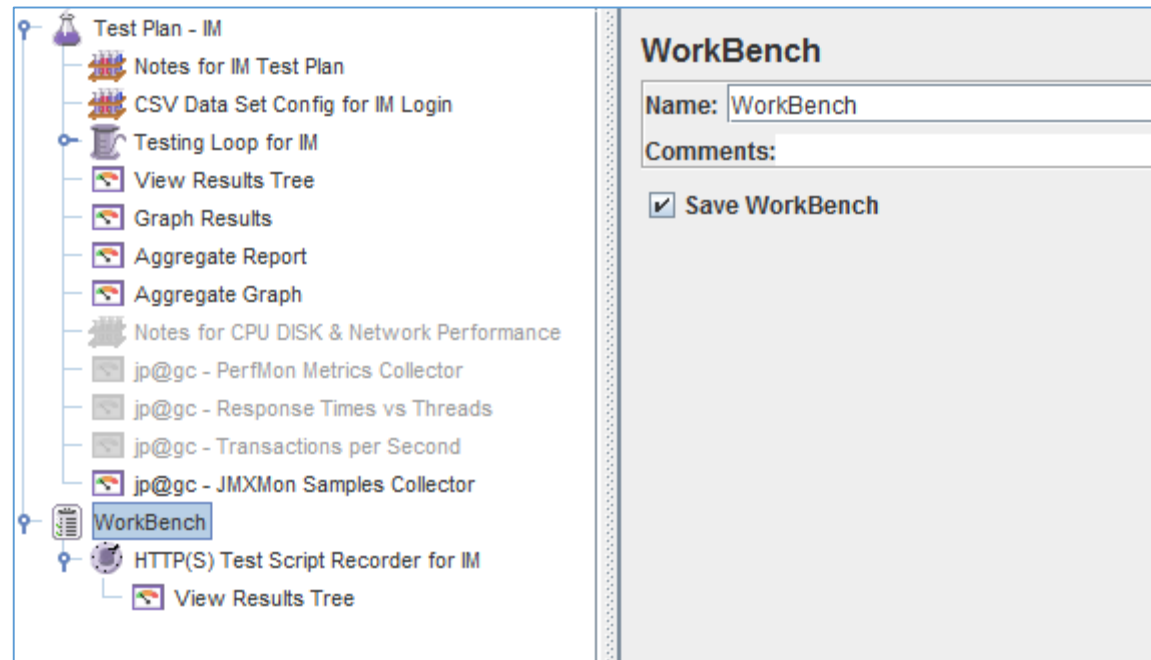


# Step 53e OPTIONAL for IMWA: Notes for Expansion Kit

## 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.

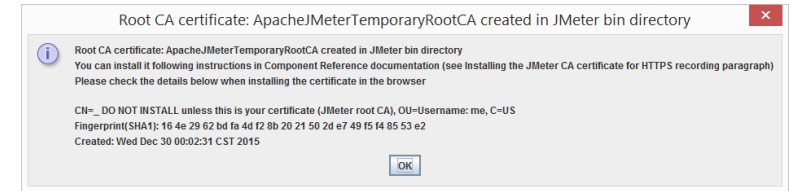
This section is where the JMETER HTTP Recorder will be attached for later use.

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 'HTTP(S) Test Script Recorder' configuration window. The 'Name' field is 'HTTP(S) Test Script Recorder for IM'. The 'Port' is set to 8888 and 'HTTPS Domains' is 'lab.dom'. The 'Test plan content' section shows 'Target Controller' as 'Test Plan - IM > Testing Loop for IM' and 'Grouping' as 'Put each group in a new transaction controller'. The 'HTTP Sampler settings' section has 'Type' set to 'HttpClient4' and checkboxes for 'Follow Redirects', 'Use KeepAlive', and 'Regex matching'. The 'Content-type filter' section has 'Include' and 'Exclude' fields. The 'URL Patterns to Include' section has an empty list with 'Add', 'Delete', and 'Add from Clipboard' buttons. The 'URL Patterns to Exclude' section has a list containing '\*.\\(bmp|css|js|gif|ico|jpe?g|png|swf|woff)' with 'Add', 'Delete', 'Add from Clipboard', and 'Add suggested Excludes' buttons. The 'Notify Child Listeners of filtered samplers' section has a checked checkbox 'Notify Child Listeners of filtered samplers'. At the bottom are 'Start', 'Stop', and 'Restart' buttons.



The 'Connection Settings' dialog box is shown. It has a section 'Configure Proxies to Access the Internet' with radio buttons for 'No proxy', 'Auto-detect proxy settings for this network', 'Use system proxy settings', and 'Manual proxy configuration:'. The 'Manual proxy configuration' option is selected. Below it, there are fields for 'HTTP Proxy' (localhost), 'Port' (8888), 'SSL Proxy' (localhost), 'Port' (8888), 'ETP Proxy' (localhost), 'Port' (8888), and 'SOCKS Host' (localhost), 'Port' (8888). There are also checkboxes for 'Use this proxy server for all protocols', 'SOCKS v4', 'SOCKS v5', and 'Remote DNS'. A section 'No Proxy for:' has a text field containing 'localhost, 127.0.0.1'. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

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”

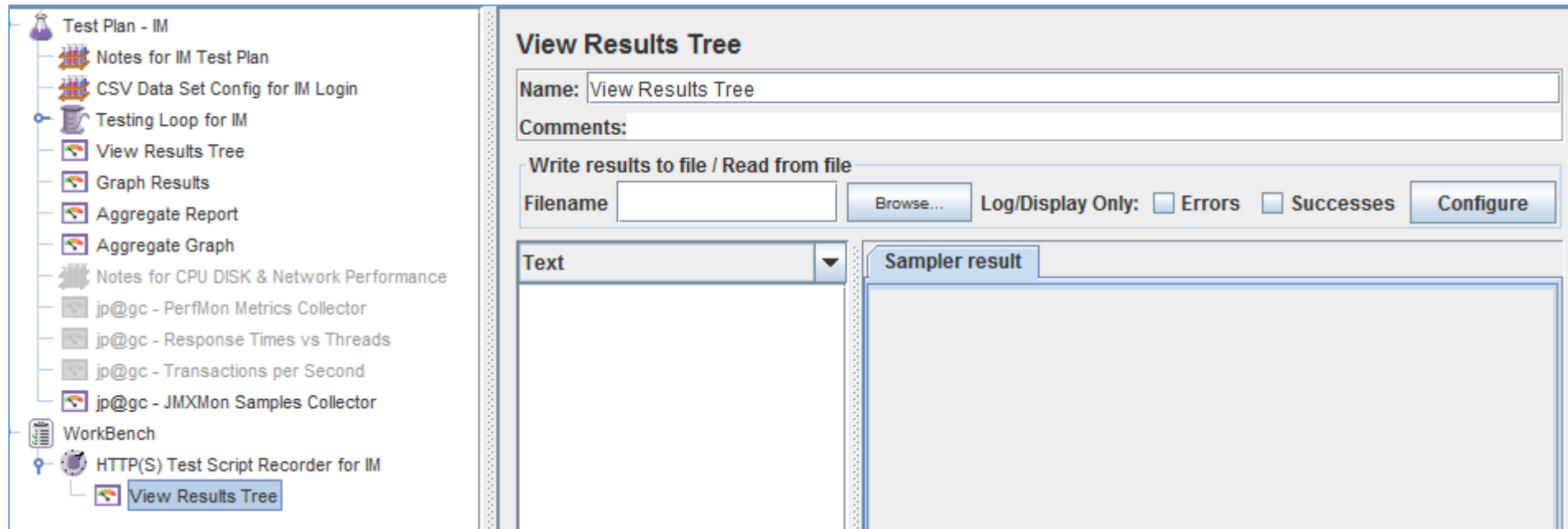
Added URL Patterns to Exclude. These “images” and other static information will not be displayed to avoid clutter.

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.

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

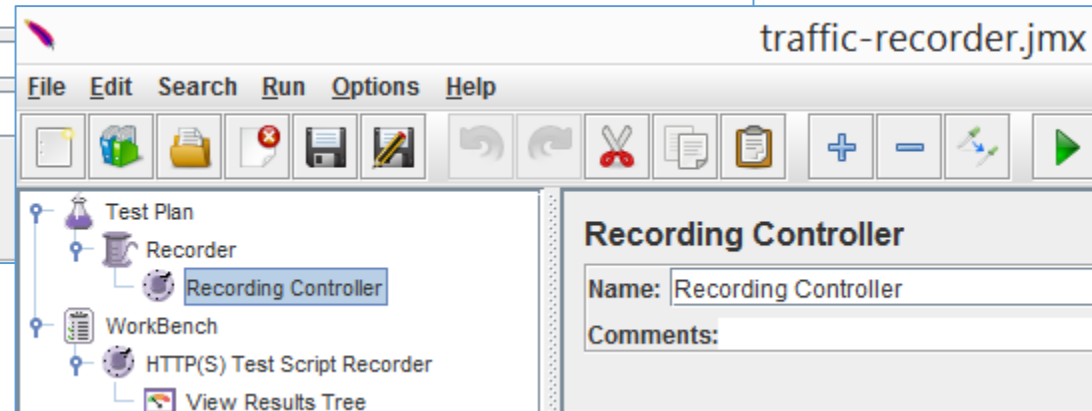
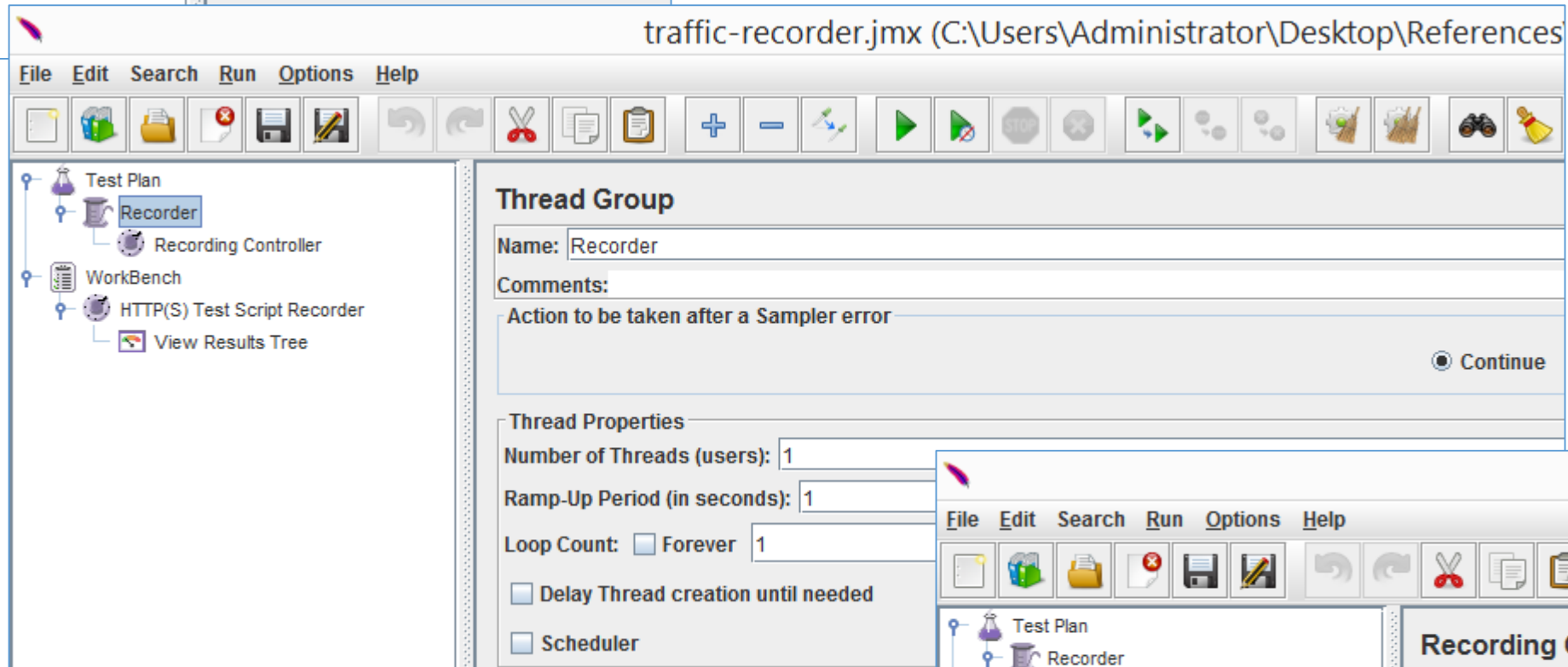
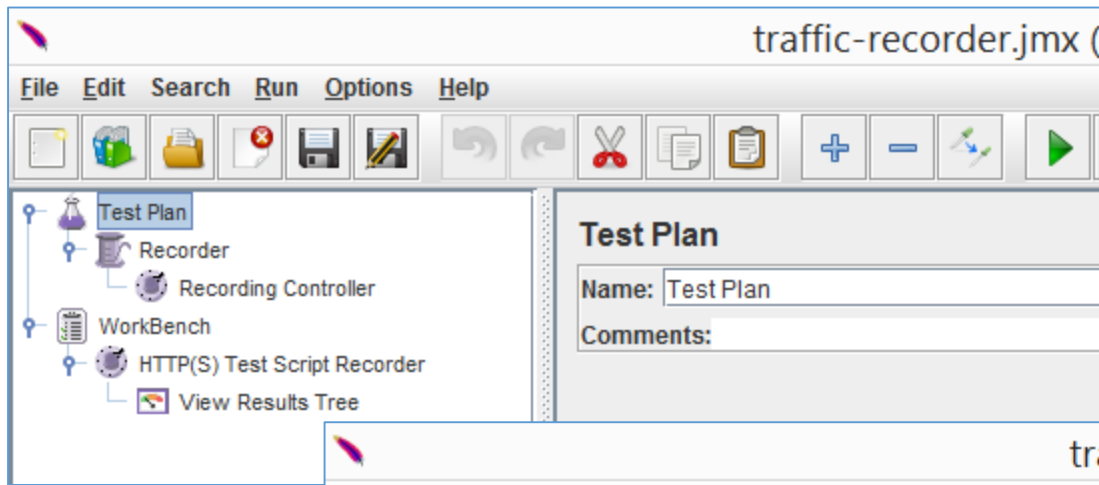
Quick Example by Peter Lin



Adobe Acrobat  
Document

[https://jmeter.apache.org/usermanual/jmeter\\_proxy\\_step\\_by\\_step.pdf](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 from Clipboard

### URL Patterns to Exclude

URL Patterns to Exclude

(?!.\*(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



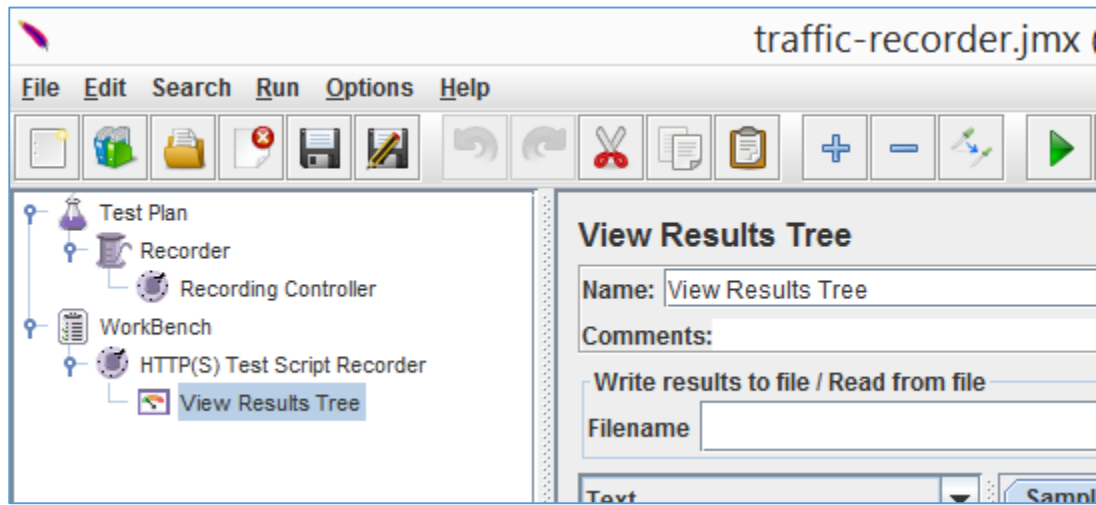
- Test Plan
- Recorder
- Recording Controller
- WorkBench
- HTTP(S) Test Script Recorder
- View Results Tree

## WorkBench

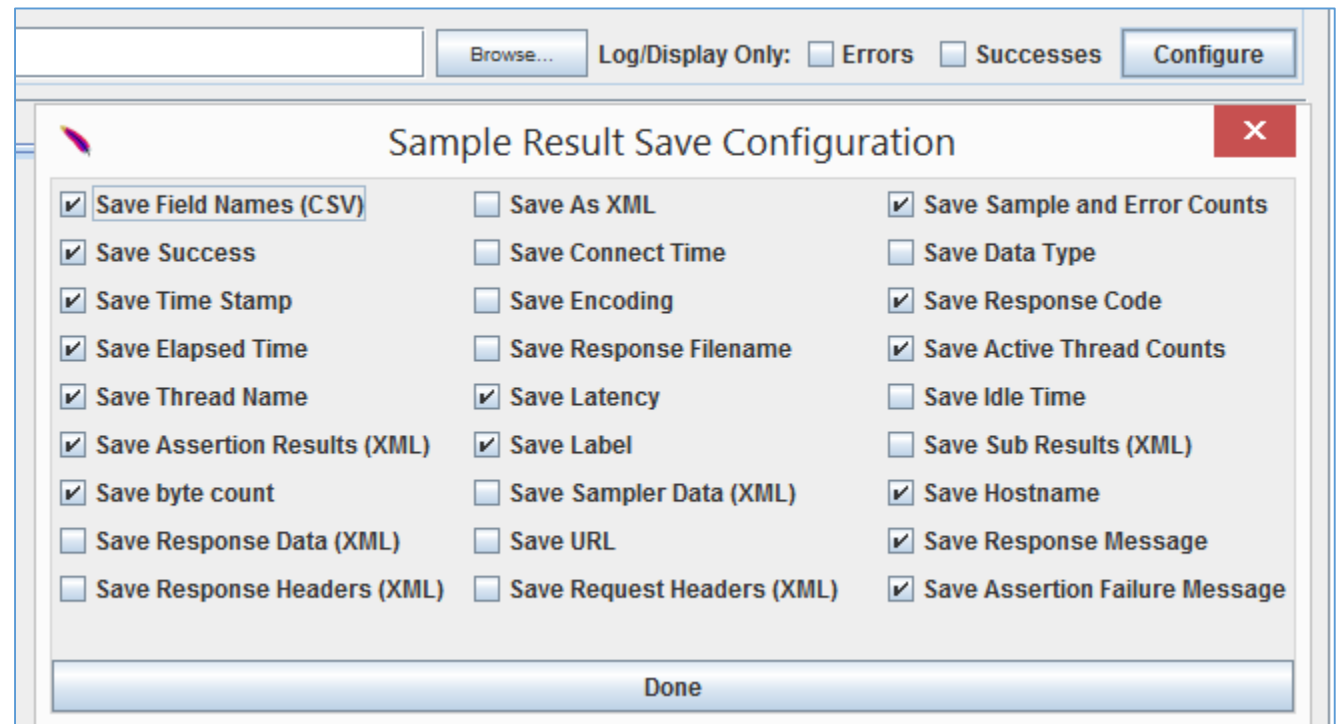
Name: WorkBench

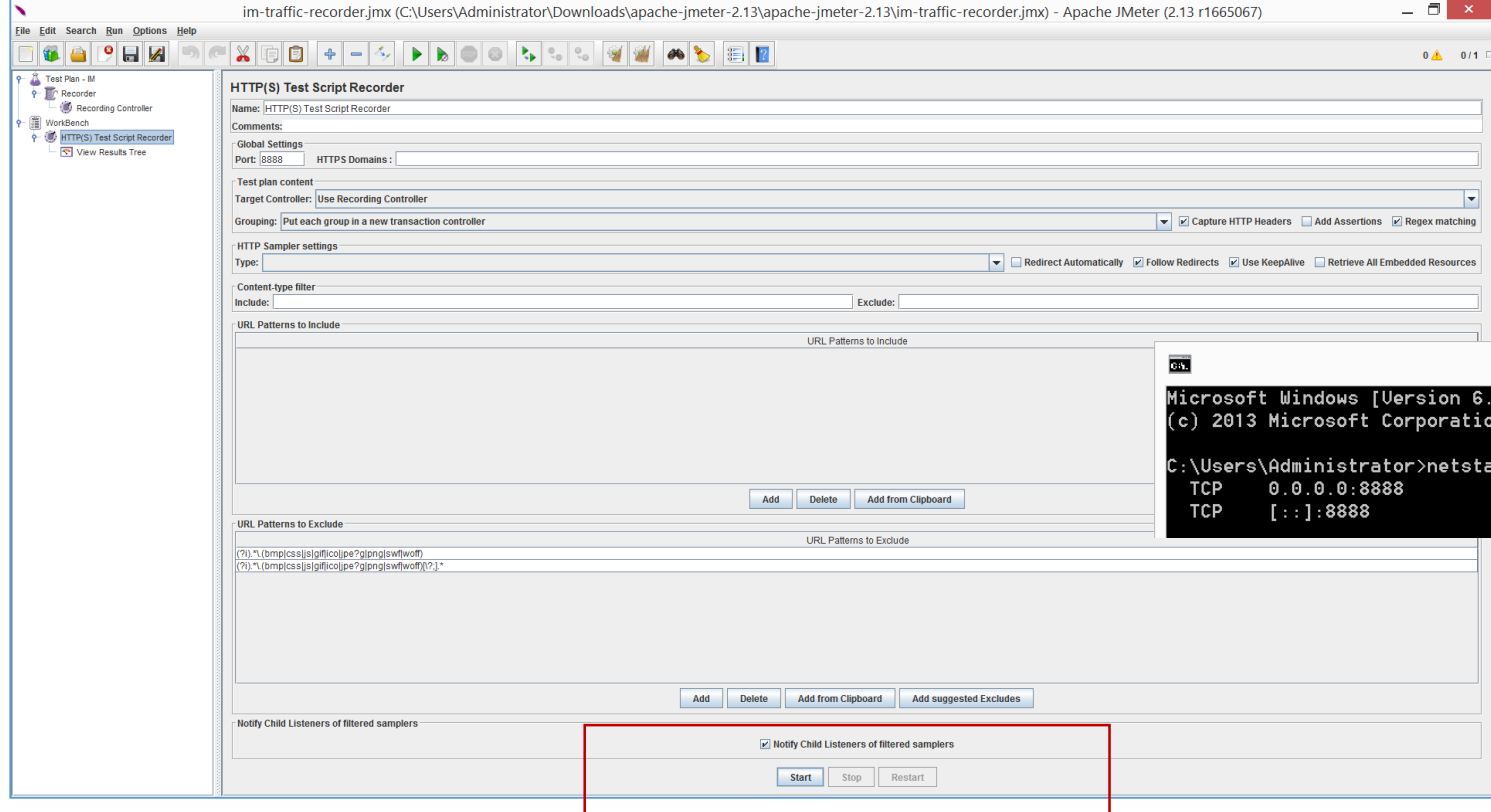
Comments:

☒ Save WorkBench



## View Results Tree



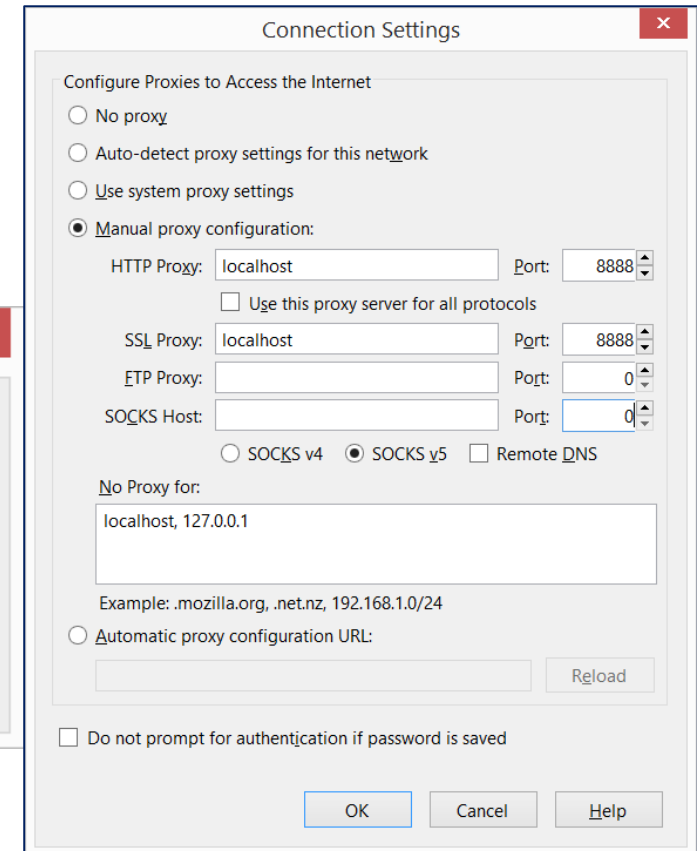


Click "START" on the Listener, to have Jmeter listen for web traffic on port 8888. & Update Proxy in Browser (FF)

```
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
```



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

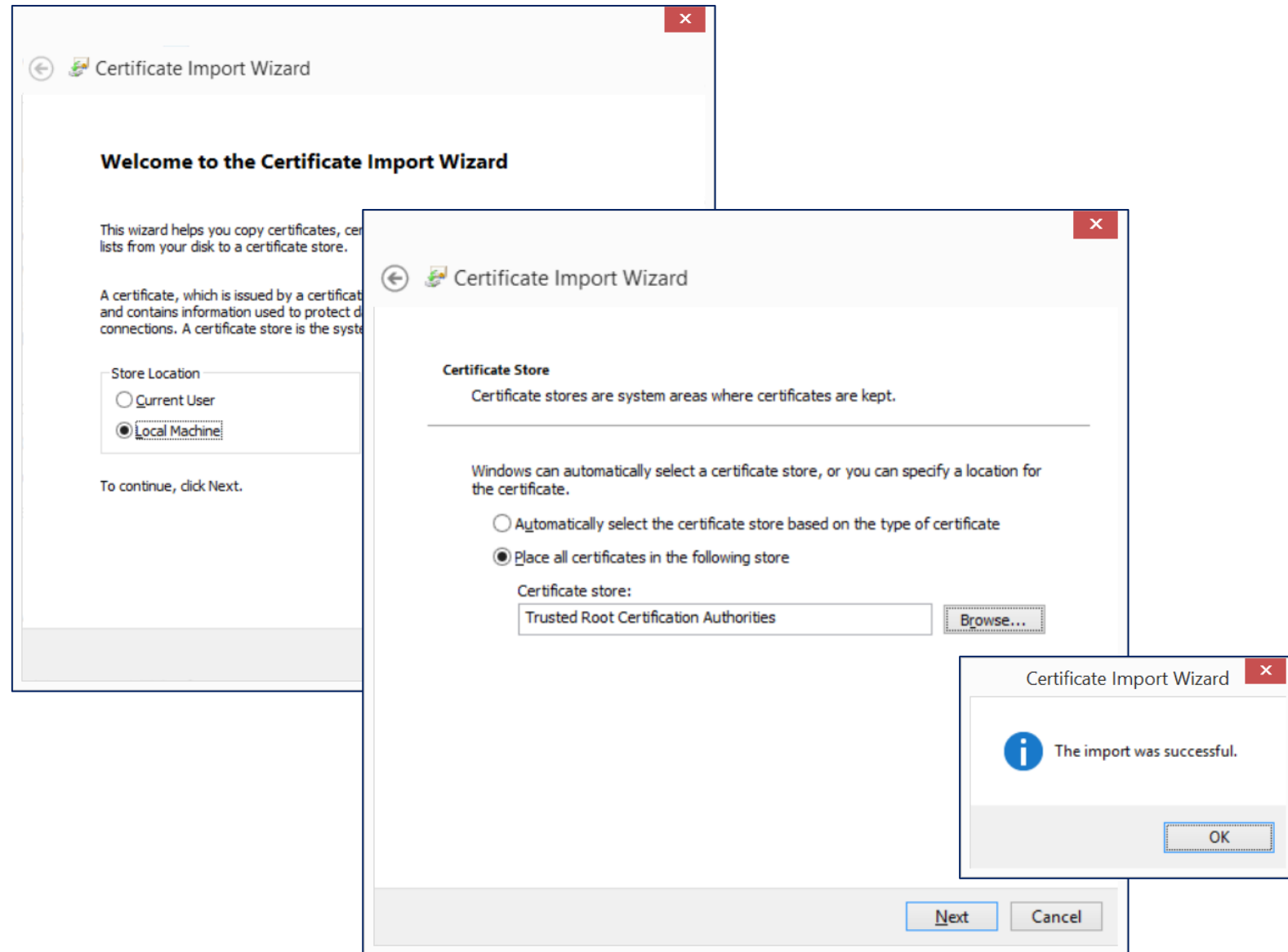
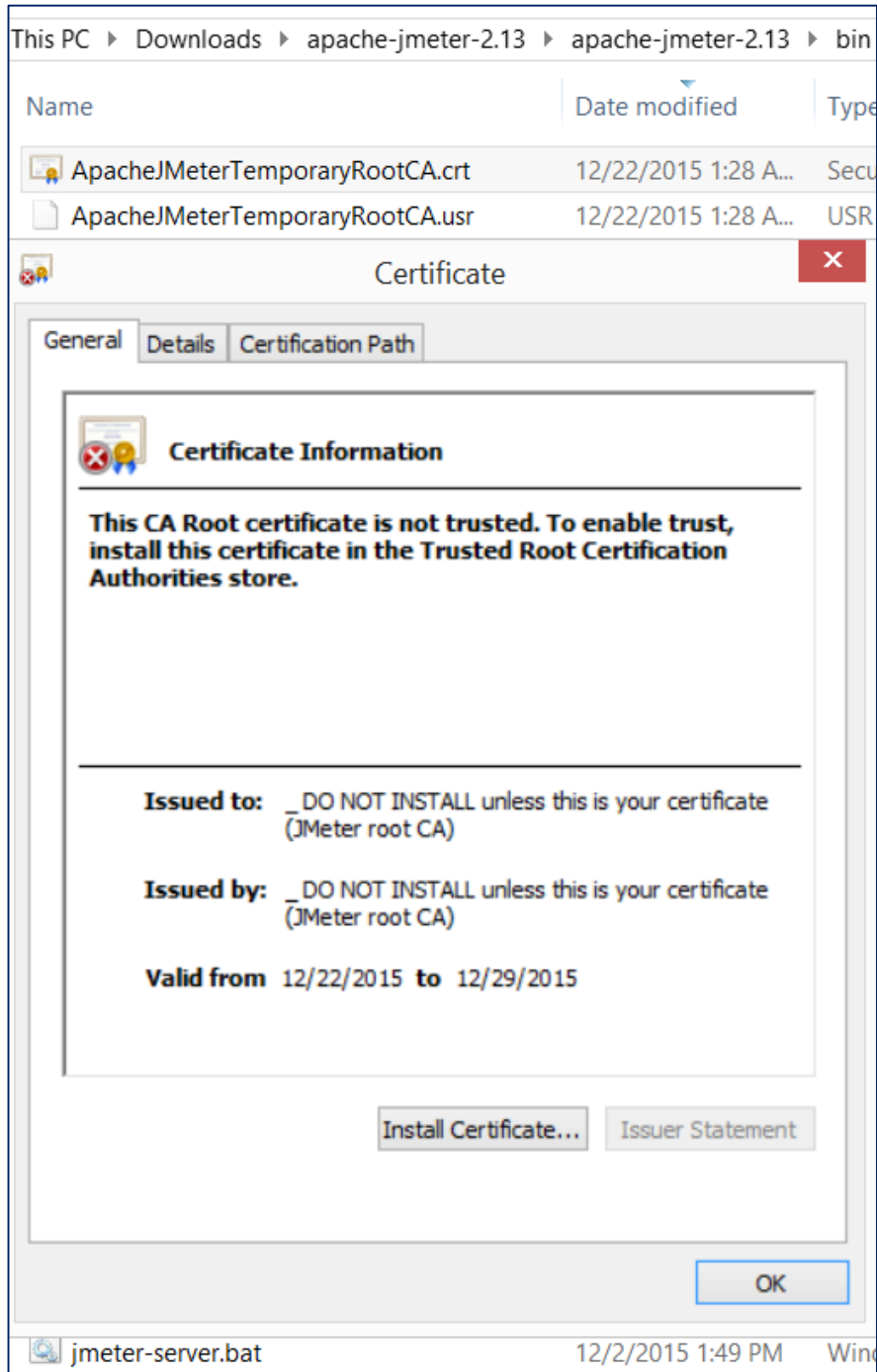
Created: Tue Dec 22 01:28:28 CST 2015



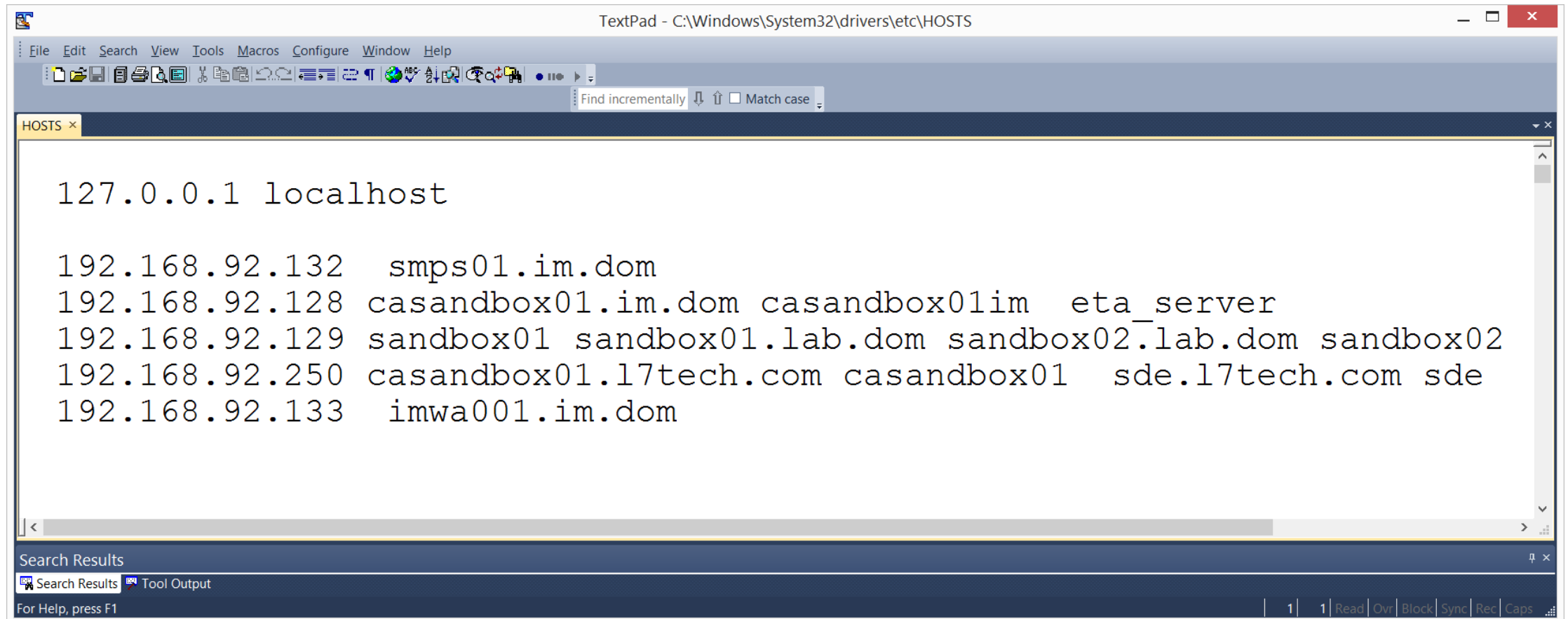




# Install Jmeter Temporary Root CA Cert



# 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 [Find icon] [Match case checkbox]

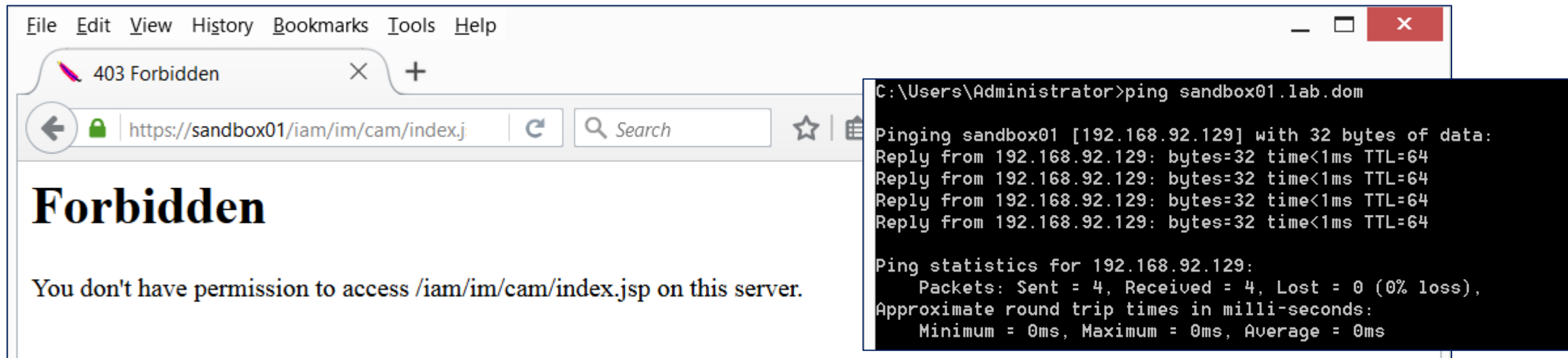
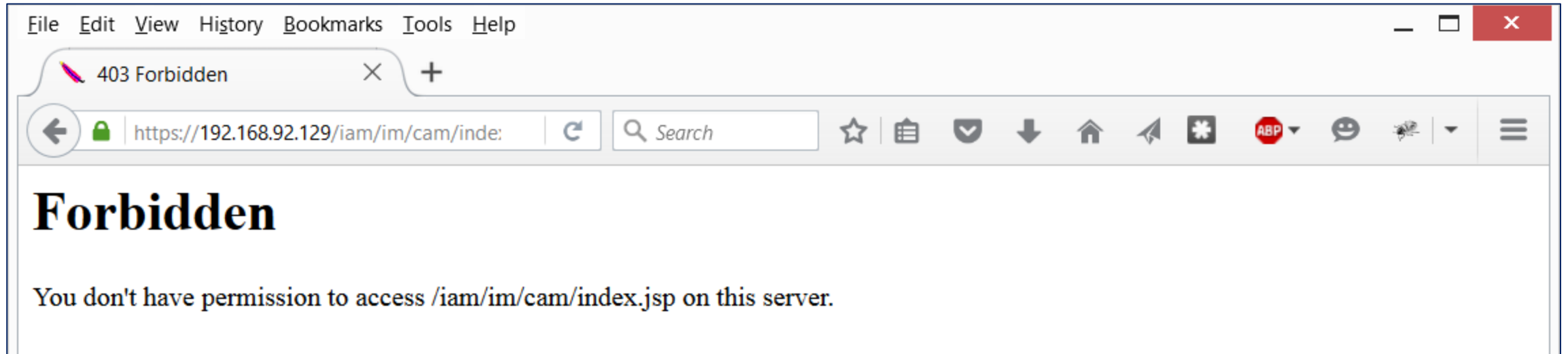
HOSTS x

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



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 Find 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 Find 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 with the URL `money.cnn.com/2015/12/21/news/companies/spacex-launch-rocket-landing/index.html`. The page features a CNN Money header with navigation links for Business, Markets, Tech, Media, Personal Finance, Small Biz, and Luxury. A search bar labeled 'stock tickers' is also present. The main content area displays a video of a SpaceX rocket landing, with a progress bar at the bottom showing '00:09 / 01:15'. To the right of the video, there is a 'Social Surge - What's Trending' section with three articles: 'Steve Harvey mistakenly crowns the wrong Miss Universe 2015', 'Donald Trump: Make Miss Colombia and Miss Philippines 'co-winners'', and 'Travel fur-cast just got less stressful: United Airlines adds comfort dogs'. Below this section is a 'Search for Jobs' box with input fields for 'Job title' and 'Location', a 'Find Jobs' button, and a list of job categories: Accounting, Engineering, and Developer.

File Edit View History Bookmarks Tools Help

Success! SpaceX lands roc... Options

money.cnn.com/2015/12/21/news/companies/spacex-launch-rocket-landing/index.html

CNN Money Business Markets Tech Media Personal Finance Small Biz Luxury stock tickers

T+ 00:09:42

STAGE 2 SPEED 25991 km/h 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

SATELLITES INTERNAL STRONGBACK RETRACT LIFTOFF MECO BOOSTBACK BURN SECO DEPLOY 2 DEPLOY 4 DEPLOY 6

00:09 / 01:15

Cheers erupt as SpaceX successfully lands rocket

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



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

Name:	View Results Tree
-------	-------------------

Name:	View Results Tree
-------	-------------------

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only:

Er

## Successes

Configure

Text

### Sampler result

- 1 /
- 2 /
- [ /I1.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.elementimg/4.0/logos/menu\_politics.png]
- [21 /cnn.elementimg/4.0/logos/menu\_bleacher.png]
- [20 /cnn.elementimg/4.0/logos/menu\_money.png]
- [19 /cnn.elementimg/4.0/logos/menu\_style.png]
- [23 /a.fonts/cnn/2.3.0/990dea59-fcdd-461d-863d-3517e48e8ed0.woff]
- [25 /a/1.229.0/assets/logo\_cnn\_badge\_2up.png]
- [26 /a/1.229.0/assets/sprite-s1dced3f2b.png]
- [32 /data/occs/section/index.html:homepage2-zone-1/views/zones/co]
- [38 /data/occs/section/index.html:homepage4-zone-5/views/zones/co]
- [39 /data/occs/section/index.html:homepage4-zone-6/views/zones/co]
- [33 /data/occs/section/index.html:homepage3-zone-1/views/zones/co]
- [36 /data/occs/section/index.html:homepage4-zone-3/views/zones/co]
- [30 /a.fonts/cnn/2.3.0/14f6081-326d-4dae-b778-dfa66166fc.woff]
- [27 /a.fonts/icons/2.0.12/cnn-icons.woff]
- [35 /data/occs/section/index.html:homepage4-zone-2/views/zones/co]
- [40 /data/occs/section/index.html:homepage4-zone-7/views/zones/co]
- [37 /data/occs/section/index.html:homepage4-zone-4/views/zones/co]
- [34 /data/occs/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/2.3.0/2cd056da8-4920-4e20-8c69-8a6b315458a9.vf]
- [28 /a.fonts/cnn/2.3.0/60be5c39-863e-40cb-9434-6ebafb62ab2b.wf]
- [29 /a.fonts/cnn/2.3.0/53d0ee22-5c31-4e9ff-bf62-31d510d9656.wf]
- [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]

☐ Scroll automatically?

Raw

Parsed



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

## View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only: ☐ Errors ☐ Successes

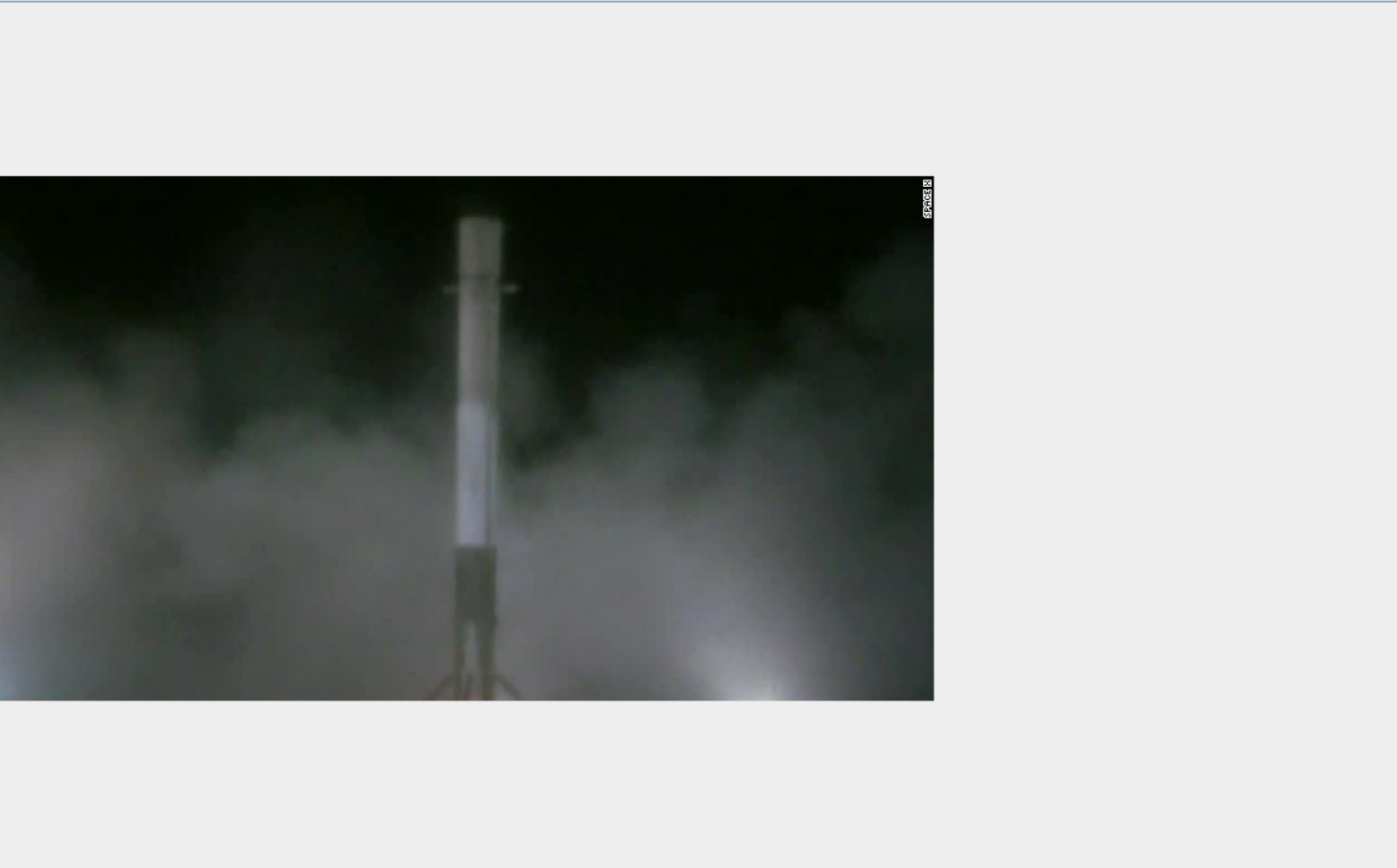
Configure

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/151111165556-symmetry-1-large-tease.jp...]  
[50 /cnnnext/dam/assets/151221125702-slow-mo-guys-fire-breath...]  
[49 /cnnnext/dam/assets/150707065823-restricted-amanda-peters...]  
[51 /cnnnext/dam/assets/151218152240-10-emerging-destinations...]  
[52 /cnnnext/dam/assets/151111165556-symmetry-1-medium-teas...]  
[53 /cnnnext/dam/assets/150707065823-restricted-amanda-peters...]  
[54 /cnnnext/dam/assets/151221125702-slow-mo-guys-fire-breath...]  
[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-lan...]  
[63 /cnnnext/dam/assets/151220073641-snl-republican-debate-ori...

☐ Scroll automatically?

Sampler result Request Response data



Search:

Find

☐ Case sensitive ☐ Regular exp.



Comments:

☐ 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 Edit View Options

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

ca CA Identity Manager technologies


Skip to main content


idmadmin | Sign out | Help

**Tasks**

- Home
  - Change My Account
  - Change My Password
  - Modify My Groups
  - Modify My Profile
  - View My Bulk Loader Notification
  - 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**

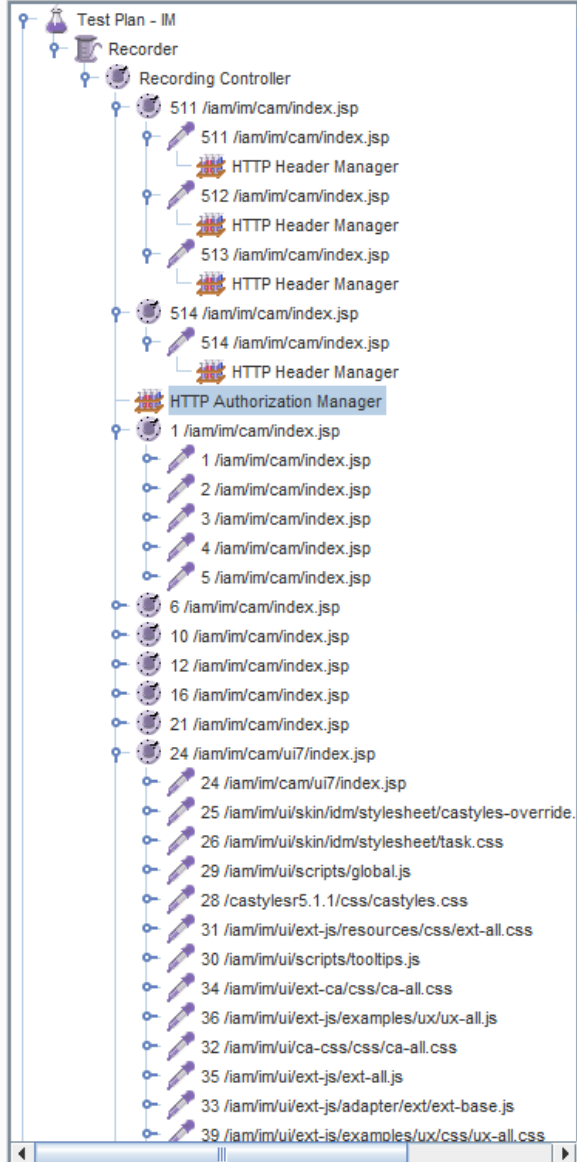
 **Change My Password**

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[About CA Identity Manager](#)

File Edit Search Run Options Help



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## 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

im-traffic-recorder\_v2.jmx (C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\im-traffic-recorder\_v2.jmx) - Apache JMeter (2.13 r16650... — [X]

File Edit Search Run Options Help

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/stylesheet/castyles-override.  
26 /iam/im/ui/skin/idm/stylesheet/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/adaptor/ext/ext-base.js

### HTTP Request

Name: 1 /iam/im/cam/index.jsp  
Comments:

Web Server  
Server Name or IP: sandbox01.im.dom Port Number: 443  
Timeouts (milliseconds)  
Connect: Response:

HTTP Request  
Implementation: Protocol [http]: https Method: GET Content encoding:  
Path: /iam/im/cam/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?
-------	-------	---------	-----------------

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

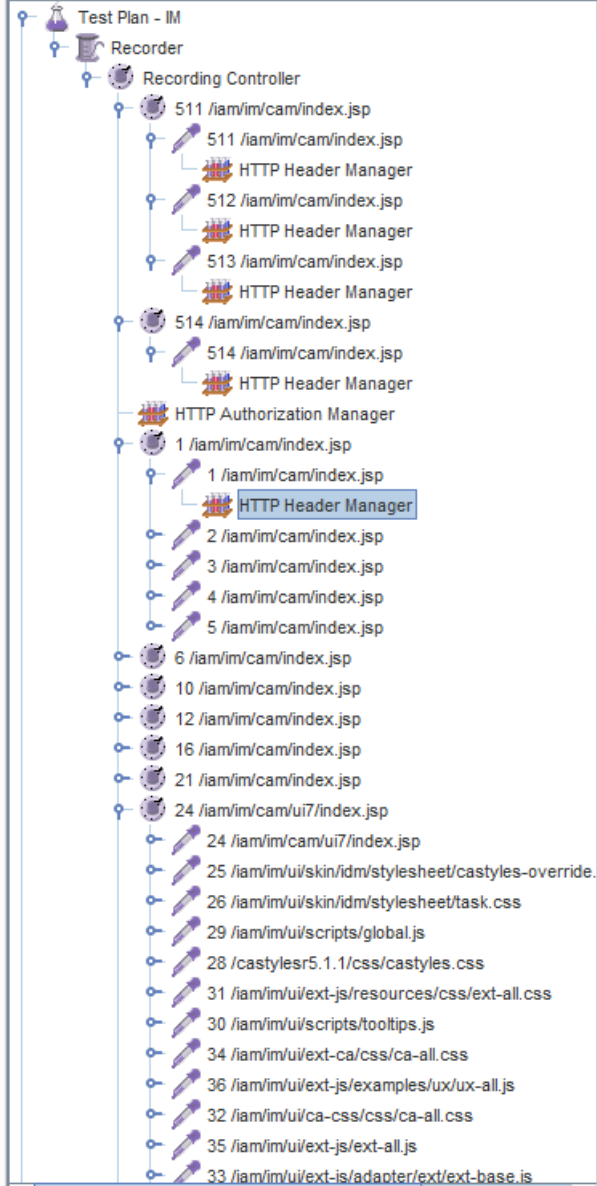
Optional Tasks  
☐ Use as Monitor ☐ Save response as MD5 hash?



File Edit Search Run Options Help



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## 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

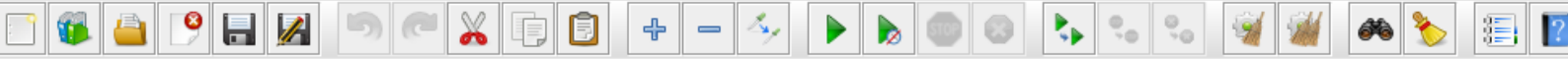
Delete


Load

Save



File Edit Search Run Options Help



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Test Plan - IM

Recorder

Recording Controller

511 /iam/im/cam/index.jsp

511 /iam/im/cam/index.jsp

512 /iam/im/cam/index.jsp

513 /iam/im/cam/index.jsp

514 /iam/im/cam/index.jsp

514 /iam/im/cam/index.jsp

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

HTTP Request

Name: 24 /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:

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?
-------	-------	---------	-----------------

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

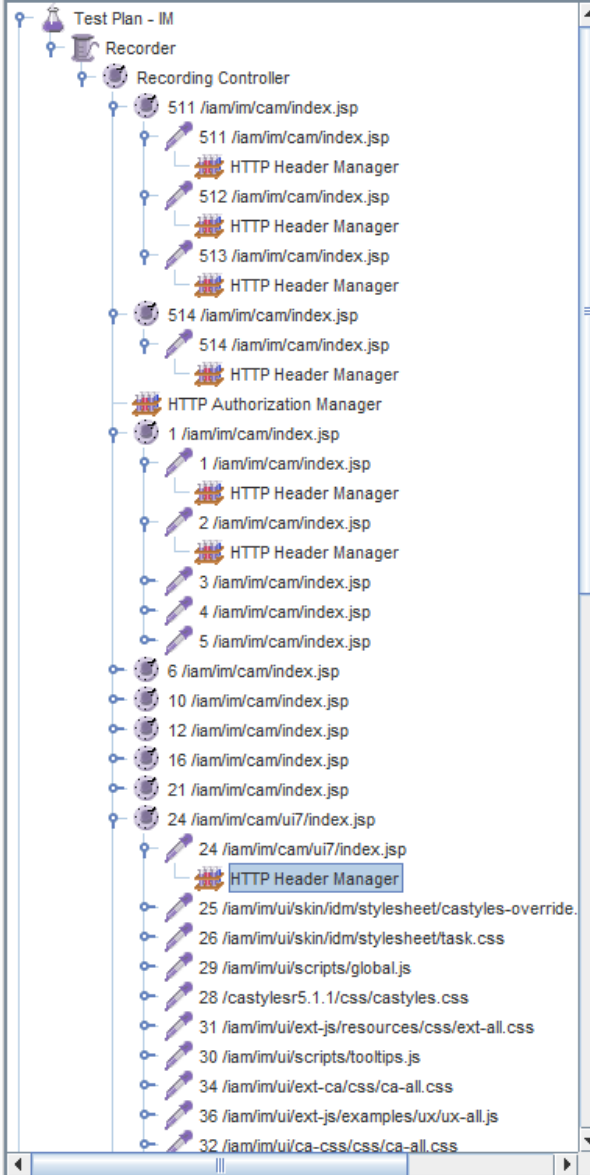
☐ Retrieve All Embedded Resources ☐ Use concurrent pool. Size: 4 URLs must match:

Source address

IP/Hostname

Optional Tasks

☐ Use as Monitor ☐ Save response as MD5 hash?



### 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

File Edit Search Run Options Help

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/bottom.png  
91 /iam/im/ui/ext-js/resources/images/default/progressbar.png  
92 /iam/im/ui/ext-js/resources/images/default/share.png  
93 /iam/im/ui/ext-js/resources/images/default/shadow.png  
94 /iam/im/ui/ext-js/resources/images/default/shadow.png  
95 /iam/im/ui/ext-js/resources/images/default/shadow.png  
96 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page.js  
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?

File Edit Search Run Options Help



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- 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/page/screen/standard\_search.jsp
- 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/ext-base.js
- 102 /iam/im/ui/ext-ca/ca-all.js

## HTTP Request

Name: 96 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard\_search.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/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	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"/>
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.search	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?

File Edit Search Run Options Help



0 0/0

- 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
- 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/adapters/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/unsorted.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/pa
- HTTP Header Manager
- 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/adapters/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: /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/screen/standard\_search.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/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	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"/>

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?



File Edit Search Run Options Help



0 0/0

- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/
- 108 /iam/im/cam/ui7/index.jsp?facesViewId=/app/page/
- 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/adaptor/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/page/
- 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/adaptor/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/page/
- 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/adaptor/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:

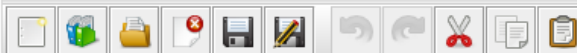
## Source address

IP/Hostname

## Optional Tasks

☐ Use as Monitor☐ Save response as MD5 hash?

File Edit Search Run Options Help



0 0/0

- 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/adapters/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/adapters/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: 128 /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"/>
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: 4

URLs must match:

Source address

IP/Hostname

Optional Tasks

☐ Use as Monitor☐ Save response as MD5 hash?

File Edit Search Run Options Help



0 0/0

- 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/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/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
- AbstractTabConfigPage.class
- AbstractTabPage.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];

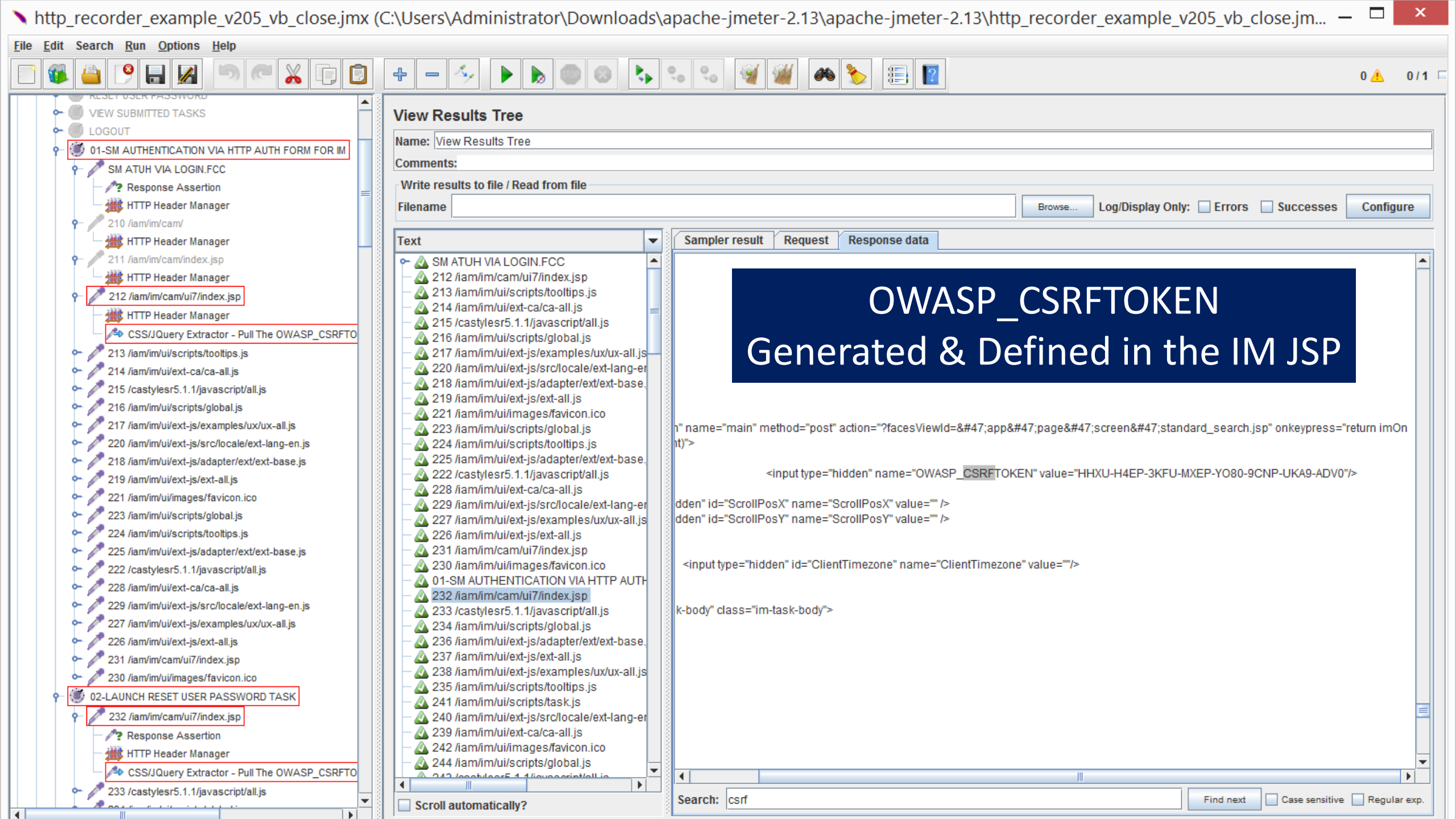
    1064 String sessionTokenValue = (String)request.getSession().getAttribute("OWASP_CSRFTOKEN");
    1066 if (!requestTokenValue.equals(sessionTokenValue))
    {
    1069     String errorMsg = "The token in the request does not match the one in the session!";

    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;
    }

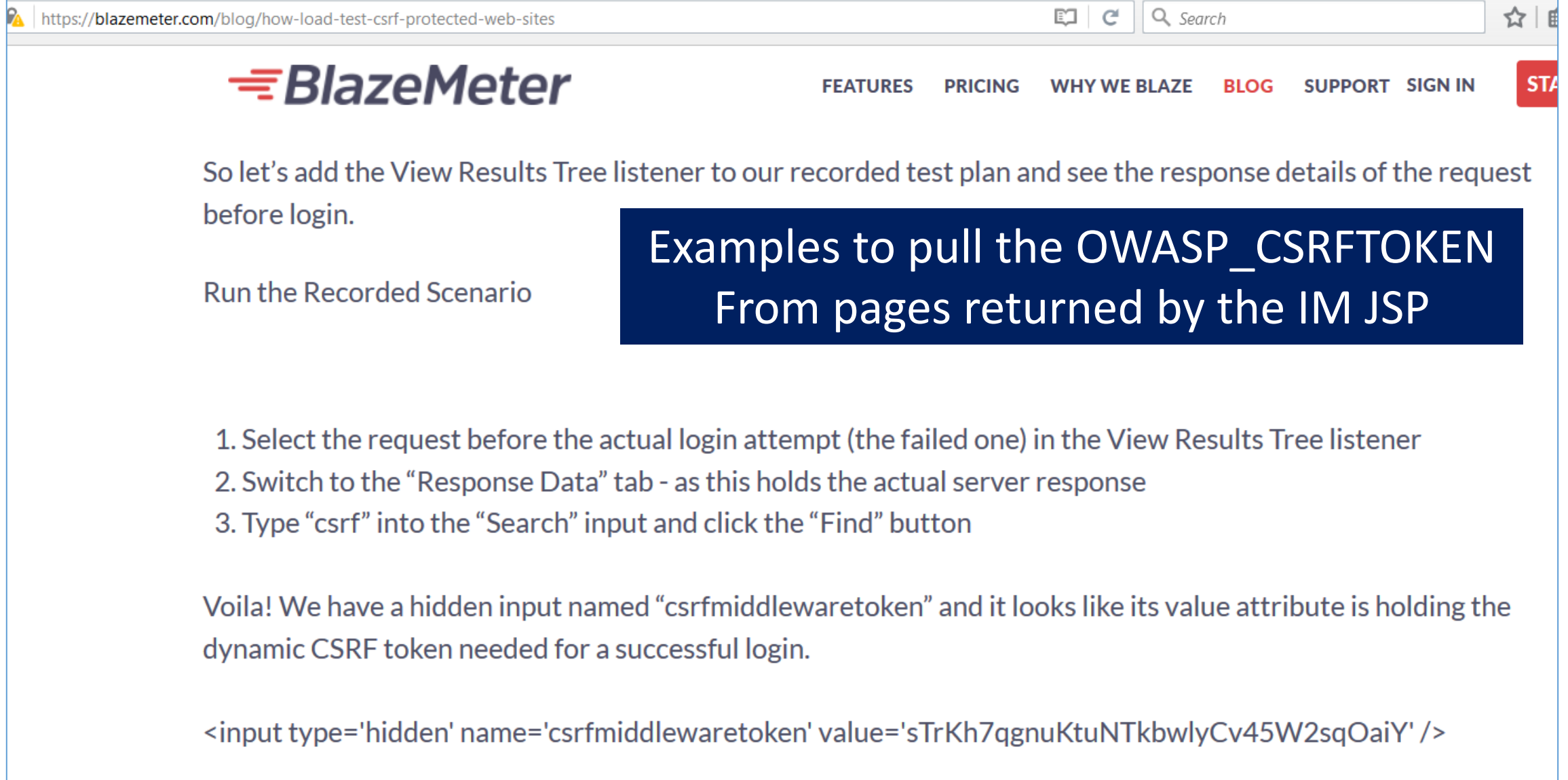
    public void taskSubmit(HttpServletRequest request)
        throws Exception

```

OWASP\_CSRFTOKEN  
IN CA IM user\_console.jar



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



The screenshot shows the BlazeMeter website with the URL <https://blazemeter.com/blog/how-load-test-csrf-protected-web-sites> in the browser address bar. The page features the BlazeMeter logo and a navigation menu with links for FEATURES, PRICING, WHY WE BLAZE, BLOG, SUPPORT, and SIGN IN. The main content area discusses adding a View Results Tree listener to a recorded test plan. A dark blue box highlights the title of the article: 'Examples to pull the OWASP\_CSRFTOKEN From pages returned by the IM JSP'. Below this, a list of three steps is provided: 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. The text '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.' is followed by an HTML code snippet: `<input type='hidden' name='csrfmiddlewaretoken' value='sTrKh7qgnuKtuNTkbwlyCv45W2sqOaiY' />`.

BlazeMeter

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

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='(.+?)' />
```





3



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](#)

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

Dmitri's Examples to pull the  
CSRF TOKEN



# 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

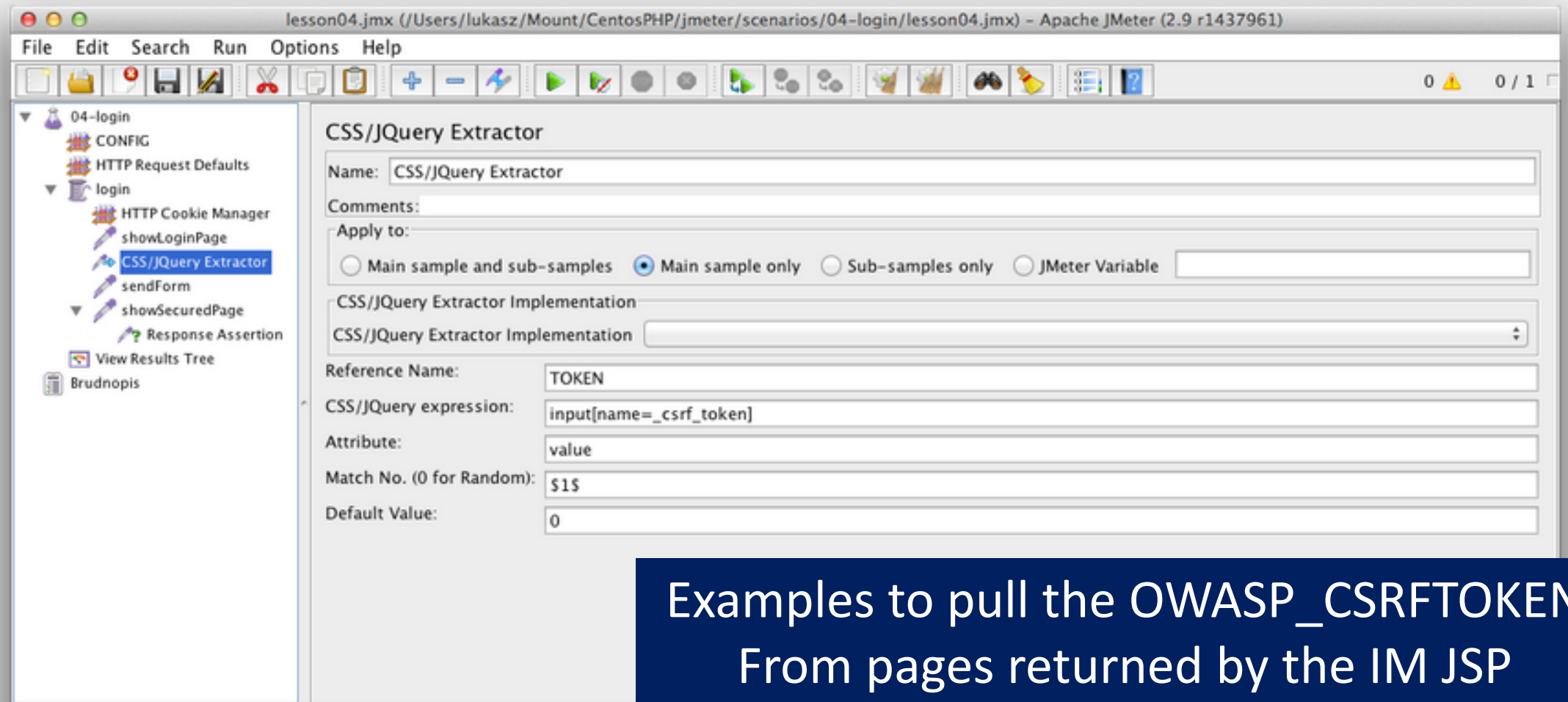
[http://jmeter.apache.org/usermanual/component\\_reference.html#Regular\\_Expression\\_Extractor](http://jmeter.apache.org/usermanual/component_reference.html#Regular_Expression_Extractor)

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

[http://jmeter.apache.org/usermanual/component\\_reference.html#CSS/JQuery\\_Extractor](http://jmeter.apache.org/usermanual/component_reference.html#CSS/JQuery_Extractor)

<http://hxt Poe.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 test plan named '04-login' with a tree structure including 'CONFIG', 'HTTP Request Defaults', 'login', 'HTTP Cookie Manager', 'showLoginPage', 'CSS/JQuery Extractor' (highlighted), 'sendForm', 'showSecuredPage', 'Response Assertion', 'View Results Tree', and 'Brudnopis'. The main panel is titled 'CSS/JQuery Extractor' and contains the following configuration fields:

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

A dark blue banner at the bottom right of the image contains the text: 'Examples to pull the OWASP\_CSRFTOKEN From pages returned by the IM JSP'.

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
- 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 authentication
    - 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
- 07-LOG OUT OF IM

View Results Tree

Graph Results

Aggregate Report

Aggregate Graph

WorkBench

### 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: 0

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

# Supporting Information on Jmeter

- <http://jmeter.apache.org/usermanual/functions.html>
- <http://hxt Poe.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, showing three options: 'HttpClient4' (selected), 'HttpClient3.1', and 'Java'. The 'Path' field is set to '/changes.htm'. The 'Method' is set to 'GET'. The 'Use KeepAlive' checkbox is checked. The 'Send Parameters' button is visible at the bottom right.

**HTTP Request**

Name: HTTP Request

Comments:

Web Server

Server Name or IP: jmeter.apache.org

HTTP Request

Implementation: HttpClient4 (selected) | HttpClient3.1 | Java

Path: /changes.htm

Protocol [http]:  Method: GET

☐ Redirect Automatically ☒ Use KeepAlive ☐ Use multipart/form-data

Parameters Post Body

Send Parameters



Tasks	View Submitted 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	

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 4:39 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
- 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 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: HTTP(S) Test Script Recorder for IM

Comments:

### Global Settings

Port: 8888

HTTPS Domains : lab.dom

### Test plan content

Target Controller: Test Plan - IM > Recorder for IM

Grouping: Put each group in a new transaction controller

☒ Capture HTTP Headers ☒ Add Assertions ☒ Regex matching

### HTTP Sampler settings

Type: HttpClient4

☐ 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 from Clipboard

### URL Patterns to Exclude

URL Patterns to Exclude

Add

Delete

Add from Clipboard

Add suggested Excludes

### Notify Child Listeners of filtered samplers

☒ Notify Child Listeners of filtered samplers

Start

Stop

Restart





FileEditViewHistoryBookmarksToolsHelp

CA Identity Manager : Vie...Options

https://sandbox01.lab.dom/iam/im/cam/ui7/index.jsp?facesViewId=/app/page/special/submitted\_tasks.jspSearch

Skip to main contentidmadmin | Sign out | Help

CA Identity Manager

TasksView Submitted Tasks

HomeMy AccessServicesUsersOrganizationsGroupsRoles and TasksPoliciesReportsEnvironment AdministrationSystem

Bulk TasksEmailJDBC Connection ManagementLogical AttributesSelect Box DataWeb ServicesBulk LoaderCleanup Submitted TasksConfigure Global Policy Based WorDelete Recurring TasksSecret KeysView Submitted TasksReporting

1-50 of 100 > >>

	Description	Status	Priority	Initiated by	Submitted	Last Updated	Last Operation
	Delete User task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 5:41 AM	12/30/2015 5:41 AM	
	Create User task, User bugsbunny001	Completed	Medium	idmadmin	12/30/2015 5:40 AM	12/30/2015 5:40 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:11 AM	12/30/2015 5:11 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 5:10 AM	12/30/2015 5:10 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:58 AM	12/30/2015 4:58 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:58 AM	12/30/2015 4:58 AM	
	Reset User Password task, User bob02	Completed	Medium	idmadmin	12/30/2015 4:58 AM	12/30/2015 4:58 AM	

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About CA Identity Manager

Book1 - Excel

FILEHOMEINSERTPAGE LAYOUTFORMULASDATAREVIEWVIEWDEVELOPER

From Access

From Web

From Text

From Other Sources

Existing Connections

Get External Data

Refresh All

Connections

Properties

Edit Links

Sort

Filter

Clear Reapply

Advanced

Sort & Filter

Text to Columns

Flash Fill

Remove Duplicates

Data Validation

Data

J7

Save As

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

Search apache-jmeter-2.13

OrganizeNew folder

Desktop

Downloads

Recent places

This PC

Desktop

Documents

Downloads

Music

Pictures

Name

bin

docs

extras

lib

licenses

printable\_docs

users.csv

Date modified

12/30/2015 1:10 A...

12/2/2015 1:49 PM

12/2/2015 1:49 PM

12/2/2015 1:49 PM

12/2/2015 1:49 PM

12/2/2015 1:49 PM

12/31/2015 2:20 PM

Type

File folder

File folder

File folder

File folder

File folder

File folder

Microsoft Excel Co...

Size

2 KB

File name:users.csv

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

Authors:Windows User

Tags:Add a tag

Title:Add a title

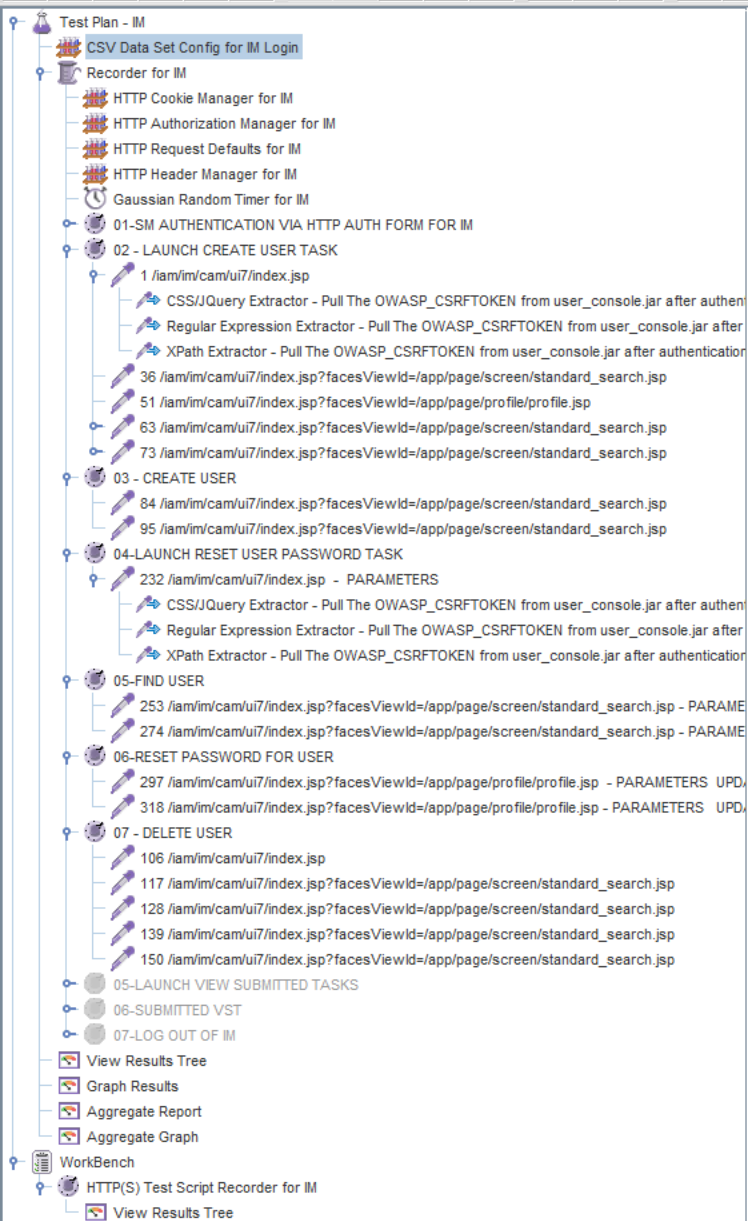
Hide Folders

Tools

Save

Cancel





## CSV Data Set Config

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:

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

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	



FileEditViewHistoryBookmarksToolsHelp

CA Identity Manager : Vie...Options

https://sandbox01.lab.dom/iam/im/cam/ui7/index.jsp?facesViewId=/app/page/special/submitted\_tasks.jspSearch

Skip to main content

CA Identity Manager

idmadmin | Sign out | Help

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

	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	

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About CA Identity Manager

## View Results Tree

07 DELETE USER

Raw HTTP

Navigation icons: back, forward, search, etc.

TING 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





http\_recorder\_example\_v501\_Working\_Clean\_Up.jmx (C:\Users\Administrator\Downloads\apache-jmeter-2.13\apache-jmeter-2.13\bin\http\_recorder\_example\_v501\_Working\_Clean\_Up.jmx)

File Edit Search Run Options Help

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 - 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 - 1st Page Loaded
  - 02d - Search on OU Placement
  - 02e - Submit OU Placement for Default OU
- 03 - CREATE USER

**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\_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 from user\_c

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 - Appears 2nd Time - Find User to Delete - /iam/im/cam/ui7/in

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: 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

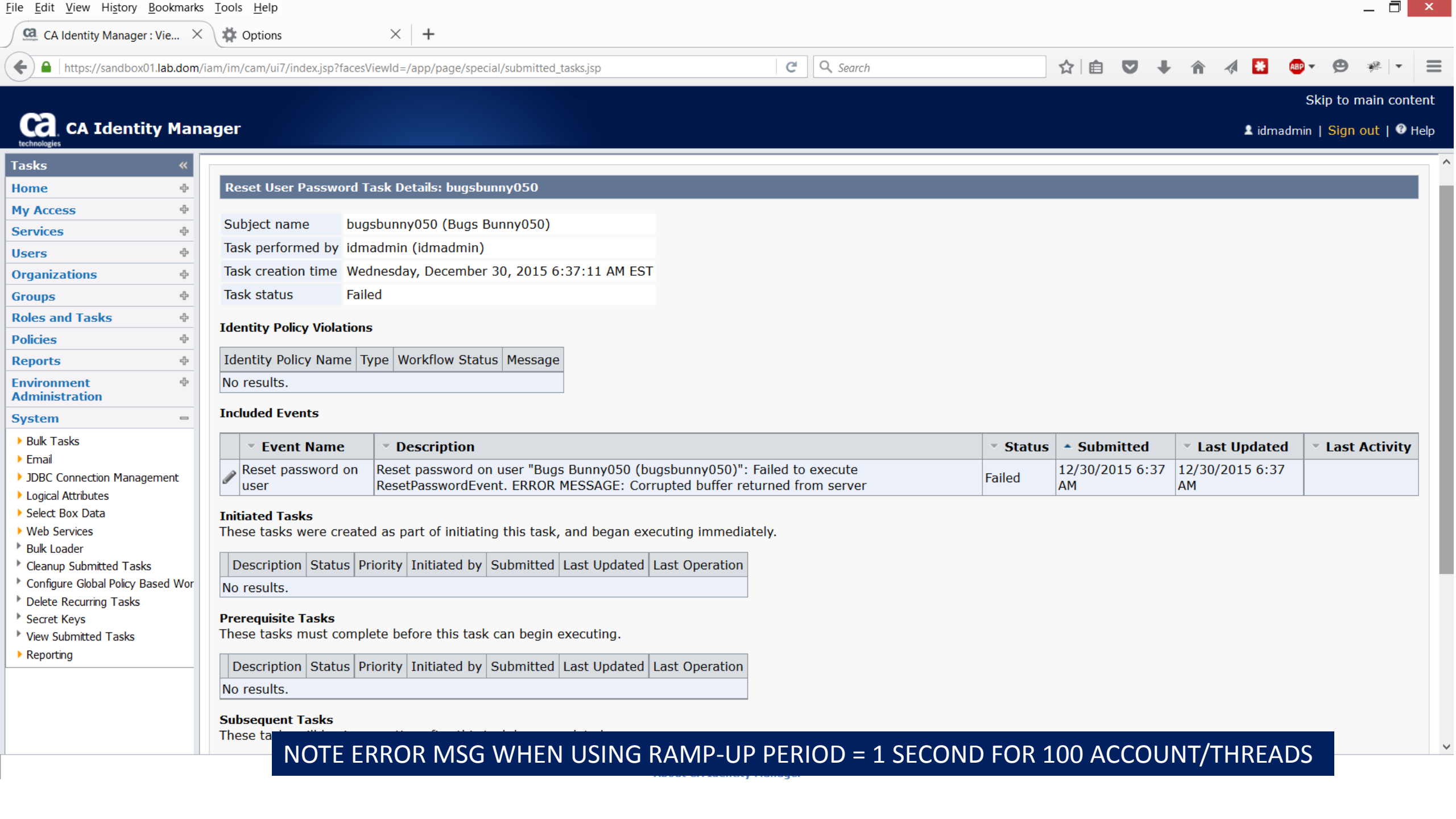
☐ Include group name in label? 

Save Table Data

☒ Save Table Header

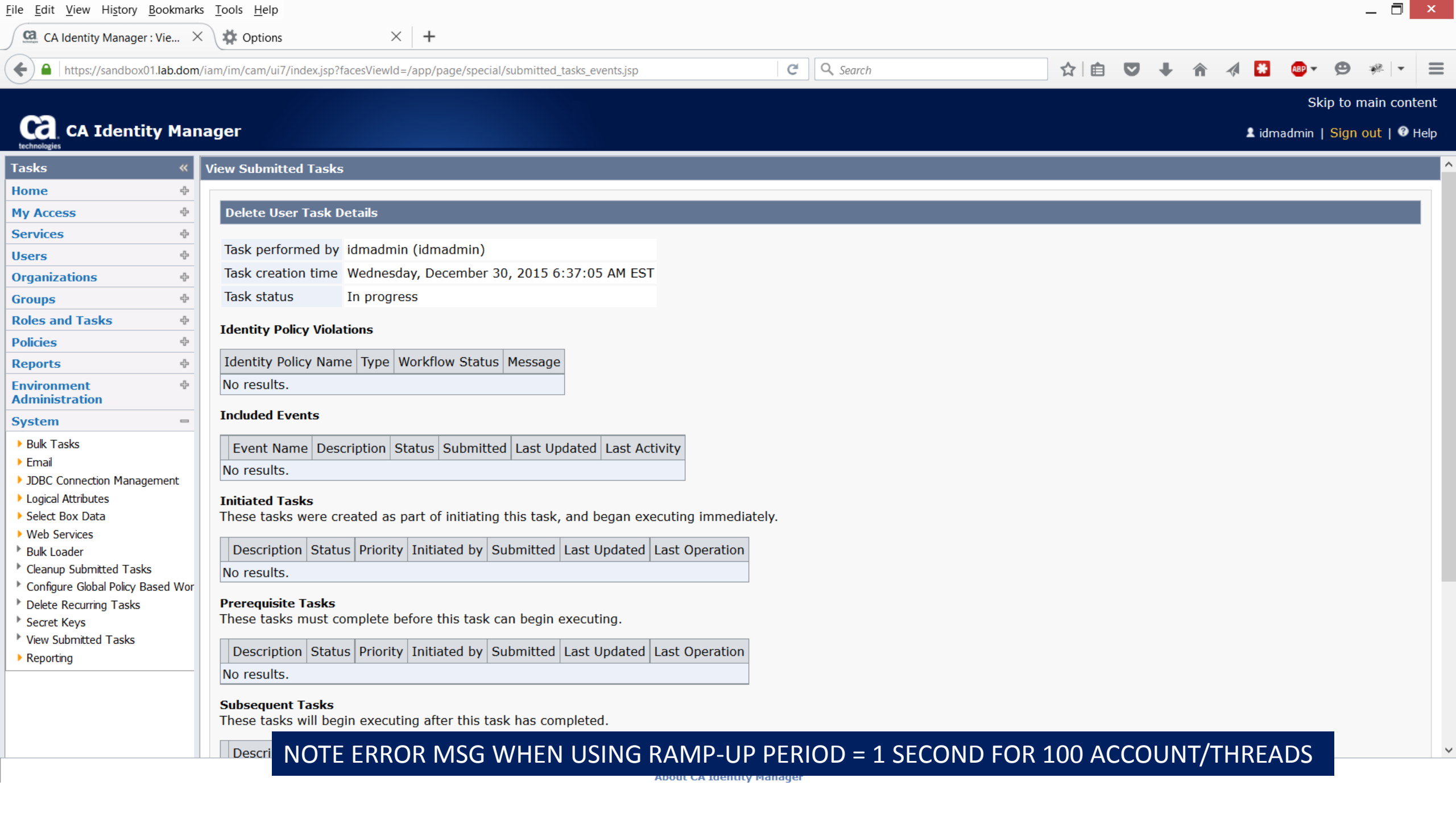
NOTE ERROR % WHEN USING RAMP-UP PERIOD = 1 SECOND FOR 100 ACCOUNT/THREADS

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



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

Identity Policy Name	Type	Workflow Status	Message
No results.			

### Included Events

Event Name	Description	Status	Submitted	Last Updated	Last Activity
No results.					

### 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 will begin executing after this task has completed.

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

FileEditViewHistoryBookmarksToolsHelp

CA Identity Manager : Vie...Options

https://sandbox01.lab.dom/iam/im/cam/ui7/index.jsp?facesViewId=/app/page/special/submitted\_tasks\_events.jsp

Search

Skip to main content

idmadmin | Sign out | Help

CA Identity Manager

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





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

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 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: 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	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	100	1677	1638	2927	3109	3941	162	3949	0.00%	3.3/sec	282.1
03b - Confirm Submit to Create User & UPDATE OWASP_CSRFTOKEN	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	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	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	100	204	131	395	632	979	15	2182	0.00%	2.0/sec	174.2
07e - Confirm Submit Delete User Task & UPDATE OWASP_CSRFTOKEN	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

☐ Include group name in label?

Save Table Data

☒ Save Table Header

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





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# 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.

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### WebDriver Set





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## Latest Stable Release

**JMeterPlugins-Standard-1.3.1.zip**, 1.15 MB, Oct 12, 2015,  
*Standard Set*

Download count: 21039

**ServerAgent-2.2.1.zip**, 3.51 MB, Jul 12, 2013,  
*PerfMon Agent to use with Standard Set*

Download count: 50802

**JMeterPlugins-Extras-1.3.1.zip**, 410.13 KB, Oct 12, 2015,  
*Extras Set*

Download count: 12815

**JMeterPlugins-ExtrasLibs-1.3.1.zip**, 3.54 MB, Oct 12, 2015,  
*Extras with Libs Set*

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**JMeterPlugins-WebDriver-1.3.1.zip**, 9.89 MB, Oct 12, 2015,  
*WebDriver Set*

Download count: 5147

**JMeterPlugins-Hadoop-1.3.1.zip**, 11.14 MB, Oct 12, 2015,  
*Hadoop Set*

Download count: 2079

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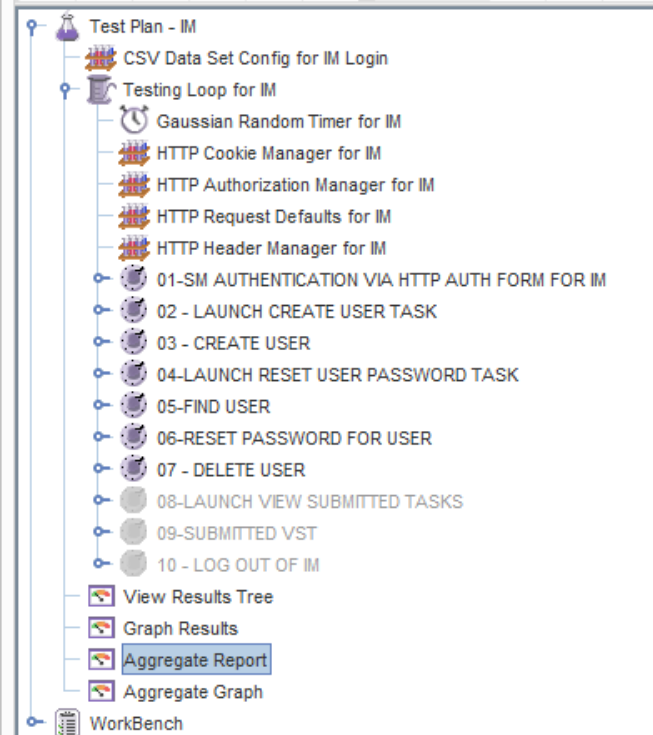
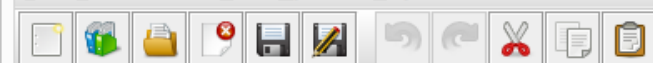
1. [Latest Stable Release](#)
2. [Previous Releases](#)
3. [Developer Snapshots](#)

```

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	VRT	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



## 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 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

☐ Include group name in label?

Save Table Data

☒ Save Table Header





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/>



jmeter-plugins.org

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# Response Times vs Threads

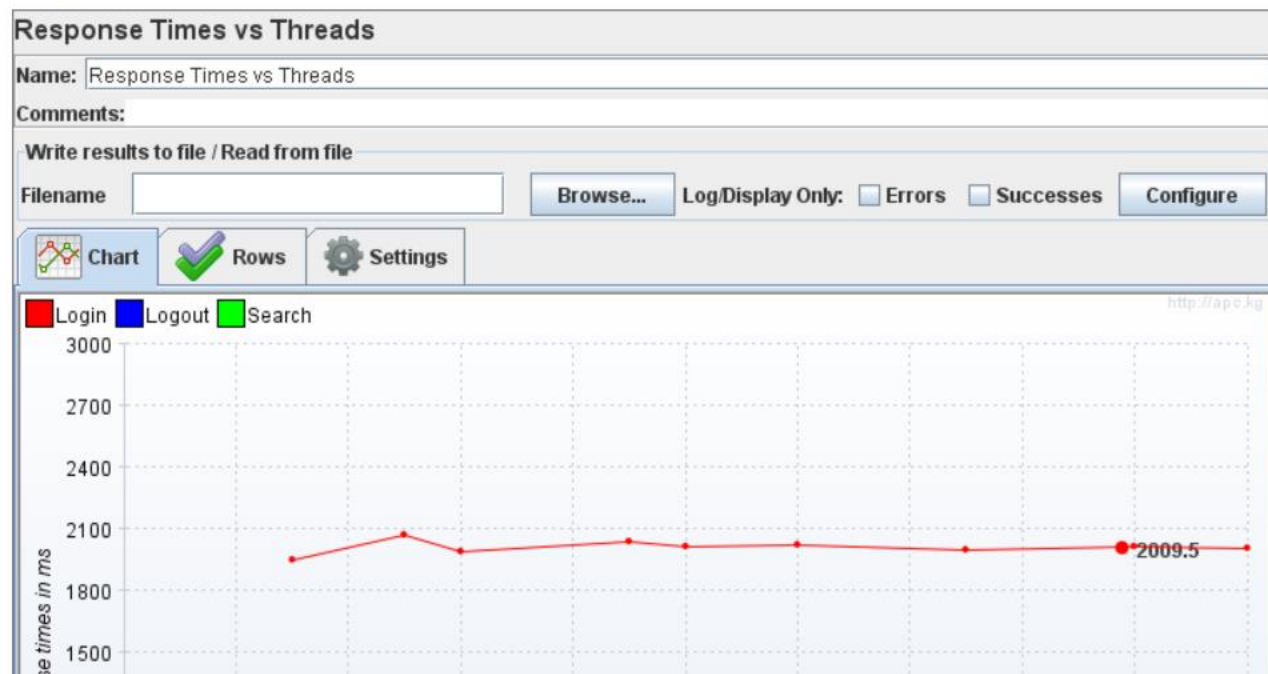
since 0.0.1

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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# jmeter-plugins.org

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# Transaction Throughput vs Threads

since

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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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 machine
```

```
# For security, you should either reserve the access to this file,
```

```
# 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=xfs
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

## jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector

Comments:

[Help on this plugin](#)

v1.3.

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	Swap	unit=kb:used
\$(IMWA_HOSTNAME)	4444	Disks I/O	queue:fs=/opt
\$(IMWA_HOSTNAME)	4444	Network I/O	bytesrcv

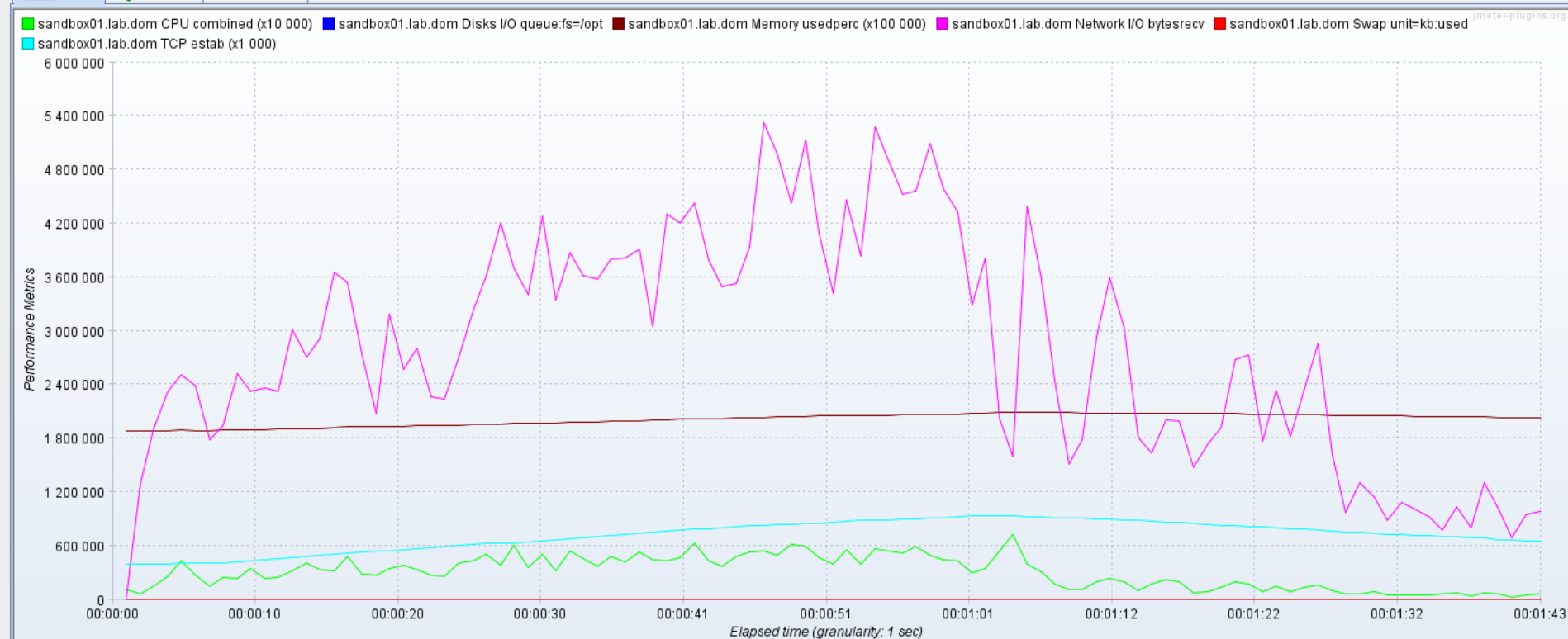
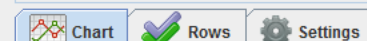
Add Row Copy Row Delete Row

Write results to file / Read from file

Filename

Browse...

Log/Display Only: ☐ Errors ☐ Successes [Configure](#)





- 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
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      - 01b - IM LANDING PAGE
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  - 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

## jp@gc - Response Times vs Threads

Name: jp@gc - Response Times vs Threads

Comments:

[Help on this plugin](#)

v1.3.

Write results to file / Read from file

Filename

Browse...

Log/Display Only:

☐ Errors

☐ Successes

Configure



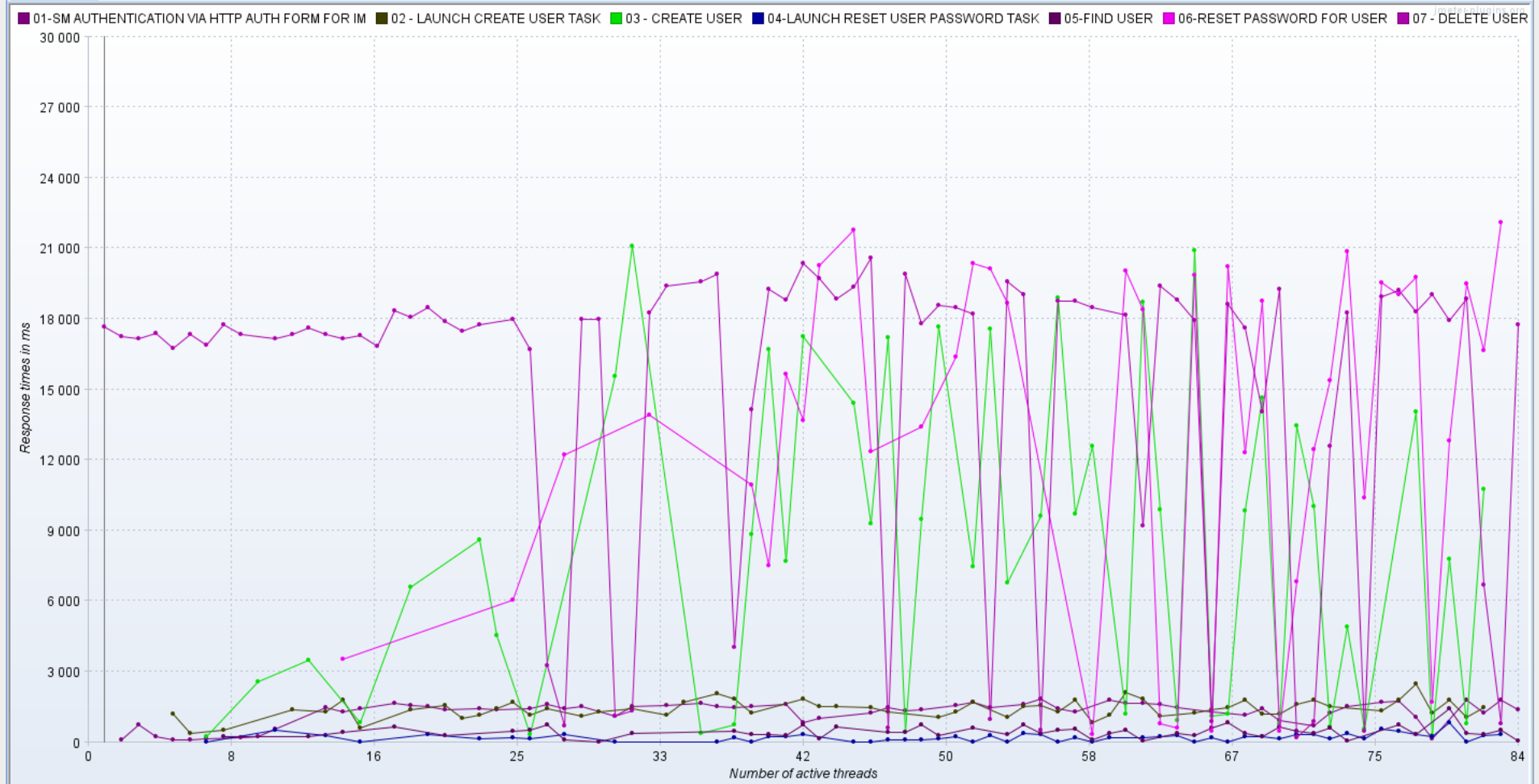
Chart



Rows



Settings





- 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
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  - 05-FIND USER
  - 06-RESET PASSWORD FOR USER
  - 07 - DELETE USER
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- 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 - 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

Configure



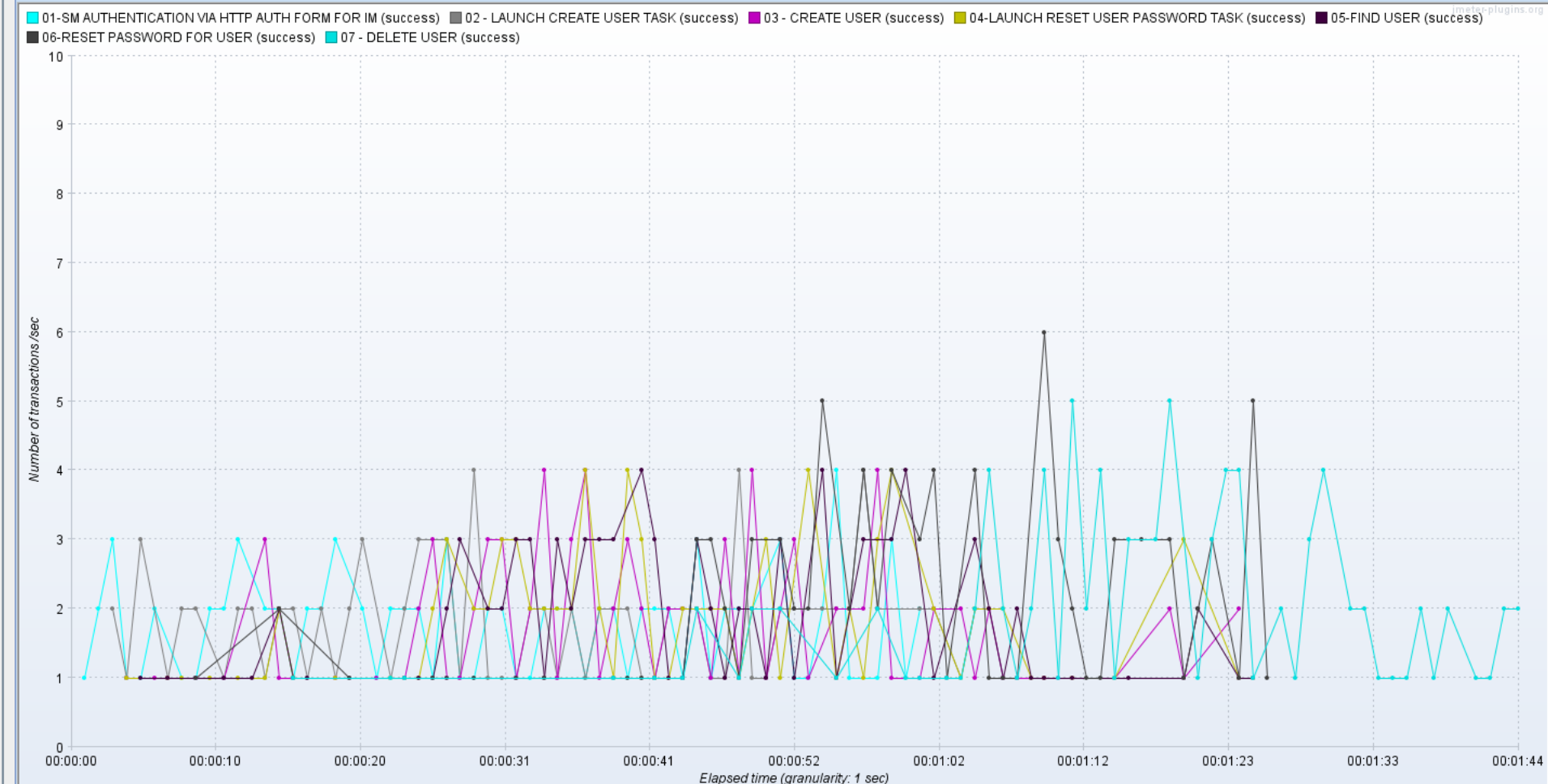
Chart



Rows

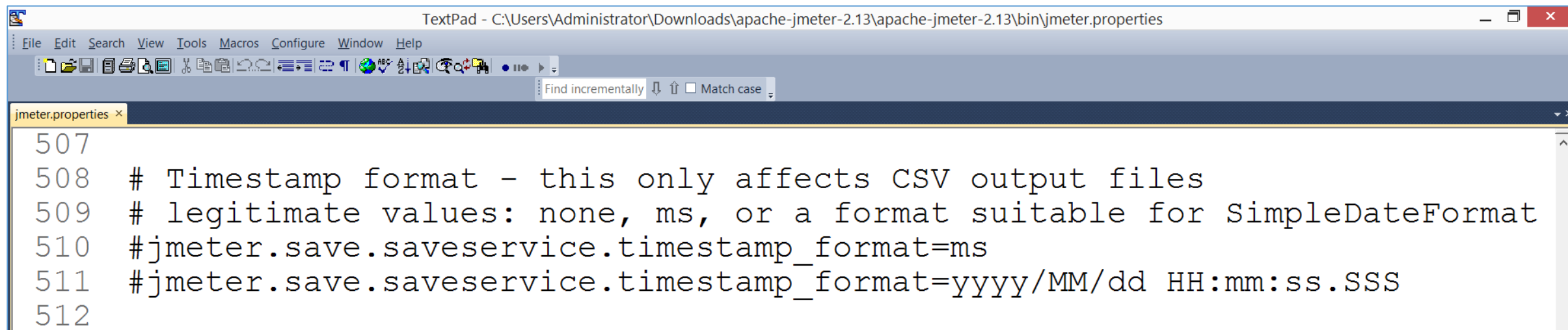


Settings

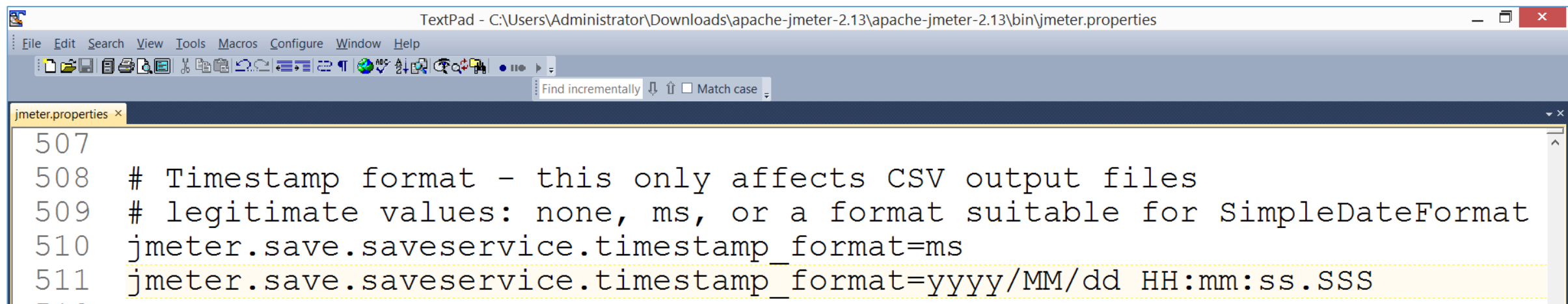




# Jmeter Configurations

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 text content is as follows:

```
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 text content is as follows:

```
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
```

The last two lines (510 and 511) are highlighted with a yellow background.



SiteMinder Authentication Scheme Dialog

Authentication Scheme Properties

Name:HTML Form

Description:

Scheme Common Setup

Authentication Scheme TypeHTML 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 TypeHTML 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

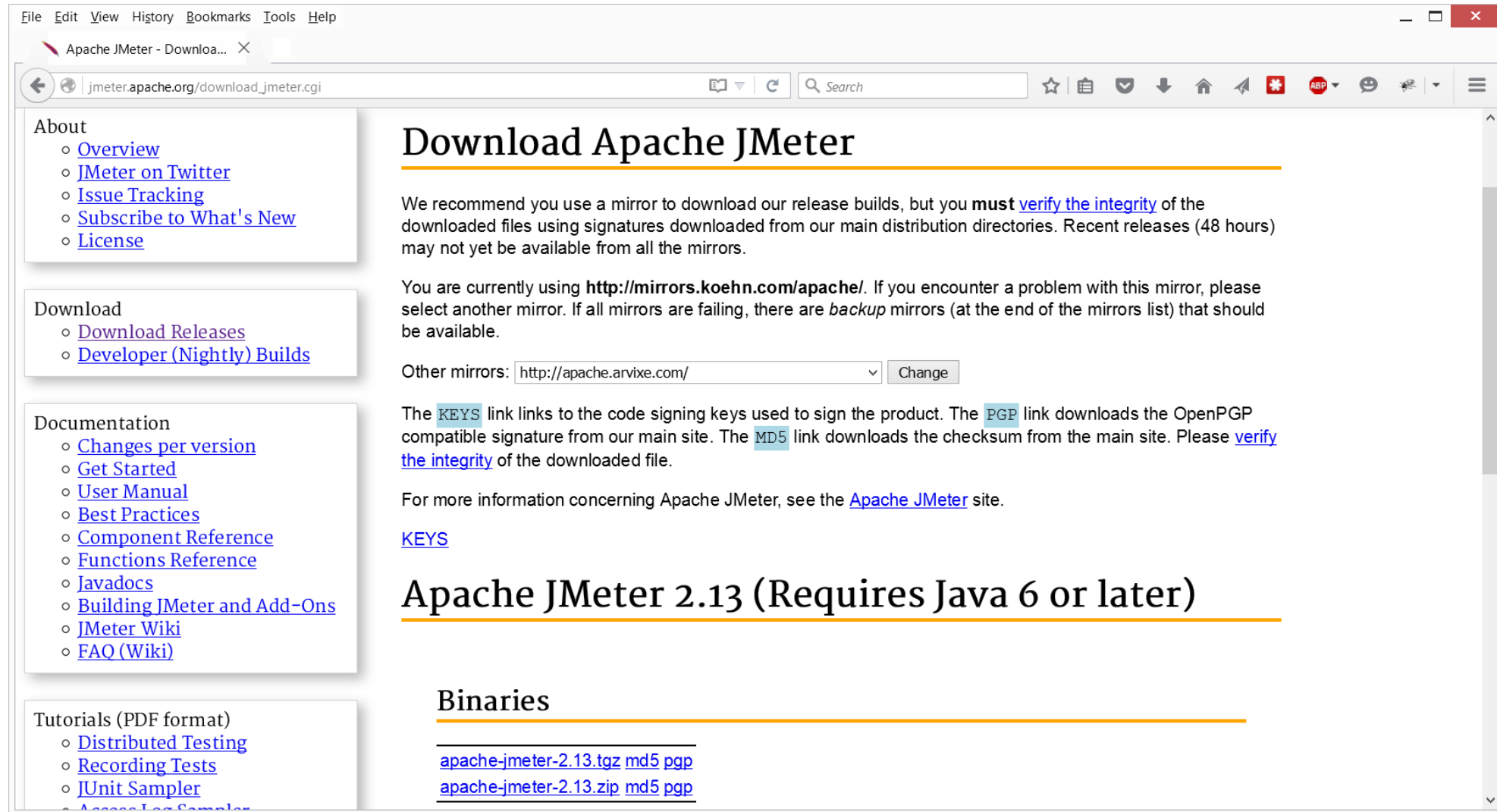
OK

Cancel

Apply

Authentication Scheme HTML Form

# Where to download Apache Jmeter



The screenshot shows the Apache JMeter download page in a web browser. The browser's address bar shows the URL `jmeter.apache.org/download_jmeter.cgi`. The page has a sidebar on the left with navigation links under 'About', 'Download', 'Documentation', and 'Tutorials (PDF format)'. The main content area has a heading 'Download Apache JMeter' followed by a paragraph recommending mirrors and verifying integrity. Below this is a section for 'Other mirrors' with a dropdown menu showing `http://apache.arvixe.com/` and a 'Change' button. Further down, there's a paragraph about signing keys and links to 'KEYS', 'PGP', and 'MD5'. The next section is 'Apache JMeter 2.13 (Requires Java 6 or later)' followed by a 'Binaries' section with links to download `apache-jmeter-2.13.tgz` and `apache-jmeter-2.13.zip`, each with associated `md5` and `pgp` signature links.

File Edit View History Bookmarks Tools Help

Apache JMeter - Downloa... X

jmeter.apache.org/download\_jmeter.cgi

Search

About

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- Issue Tracking
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- Developer (Nightly) Builds

Documentation

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- 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
- Apache 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

