Jmeter – Testing the IMCD, IMPS, IMPD, & IMPS Router for CA Identity Manager

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References:
http://jmeter.apache.org/
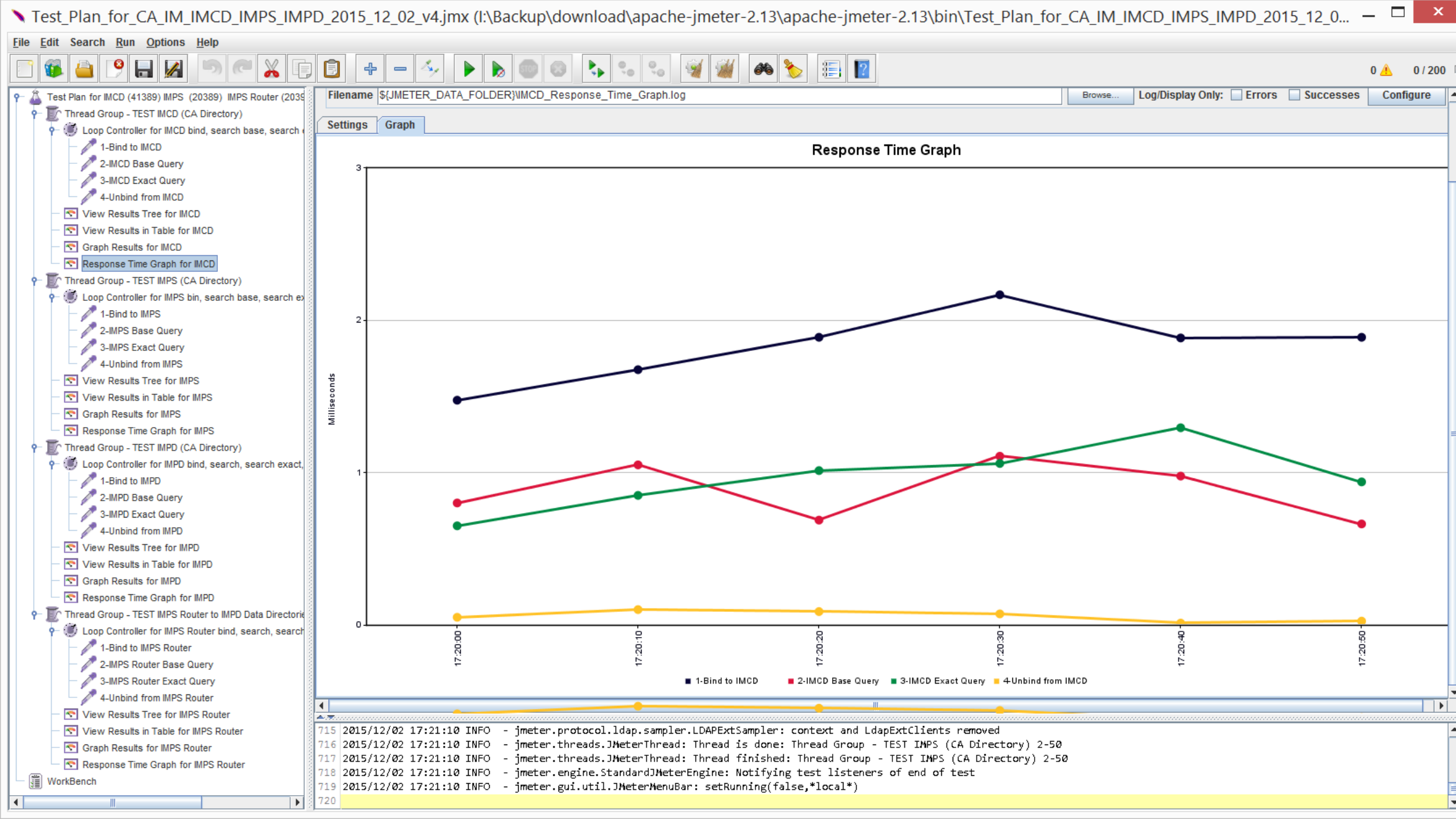http://jmeter.apache.org/usermanual/build-ldapext-test-plan.html
http://people.apache.org/~mkostrze/jmeter-docs/docs/usermanual/build-ldapext-test-plan.html

Goals

- Use Apache Jmeter as independent testing / validation tool for a "performance feedback" process.

- Pre-create definitions to the four (4) primary X500/LDAP instances for the CA Identity Management solution.

    - Only one (1) of the four (4) IMPD DSA are represented.

        o IMCD = IM Corporate Directory/Userstore

            o The primary IM userstore, used by the top tier of the solution, for user profiles & IM group objects.

            o May be CA Directory or other LDAP/X.500 vendor

            o May be Flat or Hierarchal, typically InetOrg schema [Open for customization] with one (1) structural class [minimal] & one (1) auxiliary class [optional]

        o IMPS = IM Provisioning Server

            o This userstore is the IM mid-tier component / service for normalizing user data and providing a connector framework to manage various endpoint userstores.

            o May use either the IMPS Manager GUI, Jxplorer, IMPS_HOME\bin\etautil, and IMPS_HOME\bin\ldapsearch to manage.

        o IMPD = IM Provisioning Directory

            o The supporting CA Directory (x500) for IMPS. Has predefined schema to support various endpoint userstores; and custom userstores.

            o Referential integrity is maintained by the IMPS Service. Do not make any changes to this directory via Jxplorer or any other tool to avoid data corruption.   Queries are fine.

        o IMPS Router = IM Provisioning Server Router DSA

            o A component of CA Directory that provides software routing, load-balancing, and failover to the IMPD tier.

- Four (4) examples of Jmeter output reports or results have been pre-defined.

Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_02_v4.jmx (I:\Backup\download\apache-jmeter-2.13\apache-jmeter-2.13\bin\Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_0...

File   Edit   Search   Run   Options   Help

0 ⚠   0 / 200

Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039
- Thread Group - TEST IMCD (CA Directory)
  - Loop Controller for IMCD bind, search base, search
    - 1-Bind to IMCD
    - 2-IMCD Base Query
    - 3-IMCD Exact Query
    - 4-Unbind from IMCD
  - View Results Tree for IMCD
  - View Results in Table for IMCD
  - Graph Results for IMCD
  - Response Time Graph for IMCD
- Thread Group - TEST IMPS (CA Directory)
  - Loop Controller for IMPS bin, search base, search ex
    - 1-Bind to IMPS
    - 2-IMPS Base Query
    - 3-IMPS Exact Query
    - 4-Unbind from IMPS
  - View Results Tree for IMPS
  - View Results in Table for IMPS
  - Graph Results for IMPS
  - Response Time Graph for IMPS
- Thread Group - TEST IMPD (CA Directory)
  - Loop Controller for IMPD bind, search, search exact,
    - 1-Bind to IMPD
    - 2-IMPD Base Query
    - 3-IMPD Exact Query
    - 4-Unbind from IMPD
  - View Results Tree for IMPD
  - View Results in Table for IMPD
  - Graph Results for IMPD
  - Response Time Graph for IMPD
- Thread Group - TEST IMPS Router to IMPD Data Directorie
  - Loop Controller for IMPS Router bind, search, search
    - 1-Bind to IMPS Router
    - 2-IMPS Router Base Query
    - 3-IMPS Router Exact Query
    - 4-Unbind from IMPS Router
  - View Results Tree for IMPS Router
  - View Results in Table for IMPS Router
  - Graph Results for IMPS Router
  - Response Time Graph for IMPS Router
- WorkBench

Filename ${JMETER_DATA_FOLDER}\IMCD_Response_Time_Graph.log   Browse...   Log/Display Only: ☐ Errors ☐ Successes   Configure

Settings   Graph

Response Time Graph

Milliseconds

3

2

1

0

17-20:00   17-20:10   17-20:20   17-20:30   17-20:40   17-20:50

■ 1-Bind to IMCD   ■ 2-IMCD Base Query   ■ 3-IMCD Exact Query   ■ 4-Unbind from IMCD

715 2015/12/02 17:21:10 INFO - jmeter.protocol.ldap.sampler.LDAPExtSampler: context and LdapExtClients removed
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
718 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
719 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
720

File   Edit   Search   Run   Options   Help

0 ⚠   0 / 200

Test Plan for IMCD (41389) IMPS (20389) IMPS Router (20391) and IMPD (20394) with no
- Thread Group - TEST IMCD (CA Directory)
  - Loop Controller for IMCD bind, search base, search exact, unbind
    - 1-Bind to IMCD
    - 2-IMCD Base Query
    - 3-IMCD Exact Query
    - 4-Unbind from IMCD
  - View Results Tree for IMCD
  - View Results in Table for IMCD
  - Graph Results for IMCD
  - Response Time Graph for IMCD
- Thread Group - TEST IMPS (CA Directory)
  - Loop Controller for IMPS bin, search base, search exact GUI, unbind
    - 1-Bind to IMPS
    - 2-IMPS Base Query
    - 3-IMPS Exact Query
    - 4-Unbind from IMPS
  - View Results Tree for IMPS
  - View Results in Table for IMPS
  - Graph Results for IMPS
  - Response Time Graph for IMPS
- Thread Group - TEST IMPD (CA Directory)
  - Loop Controller for IMPD bind, search base, search exact, unbind
    - 1-Bind to IMPD
    - 2-IMPD Base Query
    - 3-IMPD Exact Query
    - 4-Unbind from IMPD
  - View Results Tree for IMPD
  - View Results in Table for IMPD
  - Graph Results for IMPD
  - Response Time Graph for IMPD
- Thread Group - TEST IMPS Router to IMPD Data Directories (CA Directory)
  - Loop Controller for IMPS Router bind, search, search exact, unbind
    - 1-Bind to IMPS Router
    - 2-IMPS Router Base Query
    - 3-IMPS Router Exact Query
    - 4-Unbind from IMPS Router
  - View Results Tree for IMPS Router
  - View Results in Table for IMPS Router
  - Graph Results for IMPS Router
  - Response Time Graph for IMPS Router
- WorkBench

Test Plan

Name: Test Plan for IMCD (41389) IMPS (20389) IMPS Router (20391) and IMPD (20394) with no SSL

Comments: Run all in parallel or change selection to run each "Thread Group" one at a time.   AB 2015-12-02

User Defined Variables

Name:	Value
IMCD_HostName	192.168.92.129
IMCD_Bind_DN	cn=diradmin,ou=serviceaccount,ou=cam,o=ca
IMPS_HostName	192.168.92.129
IMPS_Bind_DN	eTGlobalUserName=idmadmin,eTGlobalUserUserContainerName=Global User,eTNamespaceName=CommonObjects,dc=im,dc=eta
IMPD_HostName	192.168.92.129
IMPD_Bind_DN	eTDSAContainerName=DSAs,eTNamespaceName=CommonObjects,dc=etadb
JMETER_DATA_FOLDER	C:\TEMP\JMETER

Define useful variables here

Hostnames & Bind DN & the Data Folder for any Output are useful

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

715 2015/12/02 17:21:10 INFO - jmeter.protocol.ldap.sampler.LDAPExtSampler: context and LdapExtClients removed
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
718 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
719 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
720

Define # of users (threads) & ramp up time

Start with # of threads = 50, after successful initial testing
jump this value to 10x or higher

File   Edit   Search   Run   Options   Help

0 / 200

Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039
  Thread Group - TEST IMCD (CA Directory)
    Loop Controller for IMCD bind, search base, search
      1-Bind to IMCD
      2-IMCD Base Query
      3-IMCD Exact Query
      4-Unbind from IMCD
    View Results Tree for IMCD
    View Results in Table for IMCD
    Graph Results for IMCD
    Response Time Graph for IMCD
  Thread Group - TEST IMPS (CA Directory)
    Loop Controller for IMPS bin, search base, search ex
      1-Bind to IMPS
      2-IMPS Base Query
      3-IMPS Exact Query
      4-Unbind from IMPS
    View Results Tree for IMPS
    View Results in Table for IMPS
    Graph Results for IMPS
    Response Time Graph for IMPS
  Thread Group - TEST IMPD (CA Directory)
    Loop Controller for IMPD bind, search, search exact,
      1-Bind to IMPD
      2-IMPD Base Query
      3-IMPD Exact Query
      4-Unbind from IMPD
    View Results Tree for IMPD
    View Results in Table for IMPD
    Graph Results for IMPD
    Response Time Graph for IMPD
  Thread Group - TEST IMPS Router to IMPD Data Directorie
    Loop Controller for IMPS Router bind, search, search
      1-Bind to IMPS Router
      2-IMPS Router Base Query
      3-IMPS Router Exact Query
      4-Unbind from IMPS Router
    View Results Tree for IMPS Router
    View Results in Table for IMPS Router
    Graph Results for IMPS Router
    Response Time Graph for IMPS Router
WorkBench

Loop Controller

Name: Loop Controller for IMCD bind, search base, search exact, unbind

Comments:

Loop Count: ☐ Forever   1

Thread Group
- TEST IMCD (CA Director
roller for IMCD bind, searc
d to IMCD
D Base Query
D Exact Query
ind from IMCD
ults Tree for IMCD
ults in Table for IMCD
sults for IMCD

Add
Cut   Ctrl-X
Copy   Ctrl-C
Paste   Ctrl-V
Duplicate   Ctrl+Shift-C
Reset Gui
Remove   Delete

Logic Controller
Config Element
Timer
Pre Processors
Sampler
Post Processors
Assertions

Critical Section Controller
ForEach Controller
If Controller
Include Controller
Interleave Controller
Loop Controller
Module Controller

Define Loop Controller (Container Object)

715 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
718 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
719 2015/12/02 17:28:57 INFO - jmeter.services.FileServer: Set new base='C:\temp\jmeter'
720

LDAP Extended Request

Name: 1-Bind to IMCD

Comments: Leave BASE DN empty to avoid impacting the RELATIVE BASE DN in the other queries

Test Configuration

Test

○ Thread Bind ○ Thread Unbind ○ Single bind/unbind ○ Rename entry

○ Add test ○ Deletion test ○ Search test ○ Compare ○ Modification test

Servername : ${IMCD_HostName}

Port: 41389

DN

Username ${IMCD_Bind_DN}

Password ••••••••••

Connection timeout (in milliseconds)

☐ Use Secure LDAP Protocol ?

Always required. Initial BIND

Leave DN blank, to avoid impacting the other Actions' base DN.
The Actions' base DN is "relative" to this BIND DN per Jmeter documentation. If there is an overlap, error message return for an action may state "Object Not Found"

Tree panel (left):
- Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039...
  - Thread Group - TEST IMCD (CA Directory)
    - Loop Controller for IMCD bind, search base, search
      - 1-Bind to IMCD
      - 2-IMCD Base Query
      - 3-IMCD Exact Query
      - 4-Unbind from IMCD
    - View Results Tree for IMCD
    - View Results in Table for IMCD
    - Graph Results for IMCD
    - Response Time Graph for IMCD
  - Thread Group - TEST IMPS (CA Directory)
    - Loop Controller for IMPS bin, search base, search ex
      - 1-Bind to IMPS
      - 2-IMPS Base Query
      - 3-IMPS Exact Query
      - 4-Unbind from IMPS
    - View Results Tree for IMPS
    - View Results in Table for IMPS
    - Graph Results for IMPS
    - Response Time Graph for IMPS
  - Thread Group - TEST IMPD (CA Directory)
    - Loop Controller for IMPD bind, search, search exact,
      - 1-Bind to IMPD
      - 2-IMPD Base Query
      - 3-IMPD Exact Query
      - 4-Unbind from IMPD
    - View Results Tree for IMPD
    - View Results in Table for IMPD
    - Graph Results for IMPD
    - Response Time Graph for IMPD
  - Thread Group - TEST IMPS Router to IMPD Data Directori
    - Loop Controller for IMPS Router bind, search, search
      - 1-Bind to IMPS Router
      - 2-IMPS Router Base Query
      - 3-IMPS Router Exact Query
      - 4-Unbind from IMPS Router
    - View Results Tree for IMPS Router
    - View Results in Table for IMPS Router
    - Graph Results for IMPS Router
    - Response Time Graph for IMPS Router
  - WorkBench

Log panel (bottom):
```
715 2015/12/02 17:21:10 INFO  - jmeter.protocol.ldap.sampler.LDAPExtSampler: context and LdapExtClients removed
716 2015/12/02 17:21:10 INFO  - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO  - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
718 2015/12/02 17:21:10 INFO  - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
719 2015/12/02 17:21:10 INFO  - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
720
```
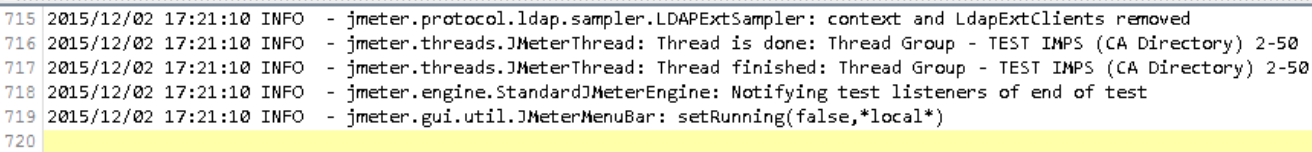
Title bar: Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_02_v4.jmx (I:\Backup\download\apache-jmeter-2.13\apache-jmeter-2.13\bin\Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_0...

Menu: File Edit Search Run Options Help

Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_02_v4.jmx (I:\Backup\download\apache-jmeter-2.13\apache-jmeter-2.13\bin\Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_0...

File   Edit   Search   Run   Options   Help

0 ⚠   0 / 200

- Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039
  - Thread Group - TEST IMCD (CA Directory)
    - Loop Controller for IMCD bind, search base, search
      - 1-Bind to IMCD
      - 2-IMCD Base Query
      - 3-IMCD Exact Query
      - 4-Unbind from IMCD
    - View Results Tree for IMCD
    - View Results in Table for IMCD
    - Graph Results for IMCD
    - Response Time Graph for IMCD
  - Thread Group - TEST IMPS (CA Directory)
    - Loop Controller for IMPS bin, search base, search ex
      - 1-Bind to IMPS
      - 2-IMPS Base Query
      - 3-IMPS Exact Query
      - 4-Unbind from IMPS
    - View Results Tree for IMPS
    - View Results in Table for IMPS
    - Graph Results for IMPS
    - Response Time Graph for IMPS
  - Thread Group - TEST IMPD (CA Directory)
    - Loop Controller for IMPD bind, search, search exact,
      - 1-Bind to IMPD
      - 2-IMPD Base Query
      - 3-IMPD Exact Query
      - 4-Unbind from IMPD
    - View Results Tree for IMPD
    - View Results in Table for IMPD
    - Graph Results for IMPD
    - Response Time Graph for IMPD
  - Thread Group - TEST IMPS Router to IMPD Data Directorie
    - Loop Controller for IMPS Router bind, search, search
      - 1-Bind to IMPS Router
      - 2-IMPS Router Base Query
      - 3-IMPS Router Exact Query
      - 4-Unbind from IMPS Router
    - View Results Tree for IMPS Router
    - View Results in Table for IMPS Router
    - Graph Results for IMPS Router
    - Response Time Graph for IMPS Router
  - WorkBench

LDAP Extended Request

Name: 2-IMCD Base Query

Comments:

Test Configuration

○ Thread Bind   ○ Thread Unbind   ○ Single bind/unbind   ○ Rename entry

Test

○ Add test   ○ Deletion test   ● Search test   ○ Compare   ○ Modification test

Search base   ou=cam,o=ca

Search Filter   (objectClass=*)

Scope   Perform baseobject search ▼

Size limit   1000

Time limit

Attributes

☐ Return object

☐ Dereference aliases

☐ Parse the search results ?

Validate Base Query

715 2015/12/02 17:21:10 INFO - jmeter.protocol.ldap.sampler.LDAPExtSampler: context and LdapExtClients removed
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
718 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
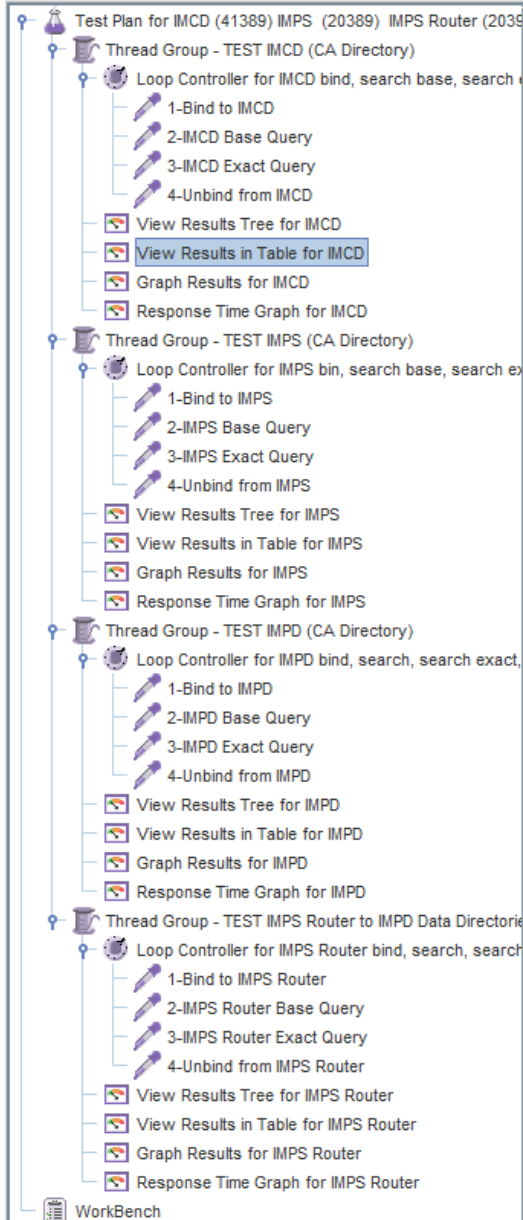719 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
720

Validate Exact Search Query

File   Edit   Search   Run   Options   Help

Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039
- Thread Group - TEST IMCD (CA Directory)
  - Loop Controller for IMCD bind, search base, search
    - 1-Bind to IMCD
    - 2-IMCD Base Query
    - 3-IMCD Exact Query
    - 4-Unbind from IMCD
  - View Results Tree for IMCD
  - View Results in Table for IMCD
  - Graph Results for IMCD
  - Response Time Graph for IMCD
- Thread Group - TEST IMPS (CA Directory)
  - Loop Controller for IMPS bin, search base, search e
    - 1-Bind to IMPS
    - 2-IMPS Base Query
    - 3-IMPS Exact Query
    - 4-Unbind from IMPS
  - View Results Tree for IMPS
  - View Results in Table for IMPS
  - Graph Results for IMPS
  - Response Time Graph for IMPS
- Thread Group - TEST IMPD (CA Directory)
  - Loop Controller for IMPD bind, search, search exact,
    - 1-Bind to IMPD
    - 2-IMPD Base Query
    - 3-IMPD Exact Query
    - 4-Unbind from IMPD
  - View Results Tree for IMPD
  - View Results in Table for IMPD
  - Graph Results for IMPD
  - Response Time Graph for IMPD
- Thread Group - TEST IMPS Router to IMPD Data Directorie
  - Loop Controller for IMPS Router bind, search, search
    - 1-Bind to IMPS Router
    - 2-IMPS Router Base Query
    - 3-IMPS Router Exact Query
    - 4-Unbind from IMPS Router
  - View Results Tree for IMPS Router
  - View Results in Table for IMPS Router
  - Graph Results for IMPS Router
  - Response Time Graph for IMPS Router
- WorkBench

LDAP Extended Request

Name: 4-Unbind from IMCD

Comments:

Test Configuration

○ Thread Bind   ● Thread Unbind   ○ Single bind/unbind   ○ Rename entry

Test

○ Add test   ○ Deletion test   ○ Search test   ○ Compare   ○ Modification test

Required. UnBIND to reset to initial conditions

715 2015/12/02 17:21:10 INFO - jmeter.protocol.ldap.sampler.LDAPExtSampler: context and LdapExtClients removed
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
718 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
719 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
720

Example of Results Tree

Useful report. Response Data Tab can show LDAP query results if selected on prior actions to return attribute values.

Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_02_v4.jmx (C:\temp\jmeter\Test_Plan_for_CA_IM_IMCD_IMPS_IMPD_2015_12_02_v4.jmx) - Apache JMeter (2.13 r1665067)

File   Edit   Search   Run   Options   Help

Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039
- Thread Group - TEST IMCD (CA Directory)
  - Loop Controller for IMCD bind, search base, search
    - 1-Bind to IMCD
    - 2-IMCD Base Query
    - 3-IMCD Exact Query
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  - View Results in Table for IMCD
  - Graph Results for IMCD
  - Response Time Graph for IMCD
- Thread Group - TEST IMPS (CA Directory)
  - Loop Controller for IMPS bin, search base, search e
    - 1-Bind to IMPS
    - 2-IMPS Base Query
    - 3-IMPS Exact Query
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    - 2-IMPD Base Query
    - 3-IMPD Exact Query
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- Thread Group - TEST IMPS Router to IMPD Data Directorie
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    - 3-IMPS Router Exact Query
    - 4-Unbind from IMPS Router
  - View Results Tree for IMPS Router
  - View Results in Table for IMPS Router
  - Graph Results for IMPS Router
  - Response Time Graph for IMPS Router
- WorkBench

View Results in Table

Name: View Results in Table for IMCD

Comments:

Write results to file / Read from file

Filename ${JMETER_DATA_FOLDER}\IMCD_Results_Table.csv   Browse...   Log/Display Only: ☐ Errors   ☐ Successes   Configure

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Latency	Connect Time(ms)
1	17:20:01.327	Thread Group - TEST I...	1-Bind to IMCD	2	⚠	236	0	0
2	17:20:01.359	Thread Group - TEST I...	2-IMCD Base Query	0	⚠	353	0	0
3	17:20:01.360	Thread Group - TEST I...	3-IMCD Exact Query	0	⚠	380	0	0
4	17:20:01.361	Thread Group - TEST I...	4-Unbind from IMCD	0	⚠	173	0	0
5	17:20:01.364	Thread Group - TEST I...	1-Bind to IMCD	1	⚠	236	0	0
6	17:20:01.367	Thread Group - TEST I...	2-IMCD Base Query	1	⚠	353	0	0
7	17:20:01.369	Thread Group - TEST I...	3-IMCD Exact Query	1	⚠	380	0	0
8	17:20:01.370	Thread Group - TEST I...	4-Unbind from IMCD	0	⚠	173	0	0
9	17:20:01.374	Thread Gro...				236		
10	17:20:01.380	Thread Gro...				353		
11	17:20:01.384	Thread Gro...				380		
12	17:20:01.388	Thread Gro...				173		
13	17:20:01.394	Thread Gro...				236		
14	17:20:01.398	Thread Gro...				353		
15	17:20:01.402	Thread Group - TEST I...	3-IMCD Exact Query	2	⚠	380	0	0
16	17:20:01.405	Thread Group - TEST I...	4-Unbind from IMCD	0	⚠	173	0	0
17	17:20:01.409	Thread Group - TEST I...	1-Bind to IMCD	3	⚠	236	0	0
18	17:20:01.416	Thread Group - TEST I...	2-IMCD Base Query	1	⚠	353	0	0
19	17:20:01.420	Thread Group - TEST I...	3-IMCD Exact Query	1	⚠	380	0	0
20	17:20:01.424	Thread Group - TEST I...	4-Unbind from IMCD	0	⚠	173	0	0
21	17:20:01.430	Thread Group - TEST I...	1-Bind to IMCD	1	⚠	236	0	0
22								
23								
24								
25	17:20:01.459	Thread Group - TEST I...	1-Bind to IMCD	1	⚠	236	0	0
26	17:20:01.465	Thread Group - TEST I...	2-IMCD Base Query	1	⚠	353	0	0
27	17:20:01.469	Thread Group - TEST I...	3-IMCD Exact Query	1	⚠	380	0	0
28	17:20:01.471	Thread Group - TEST I...	4-Unbind from IMCD	0	⚠	173	0	0
29	17:20:01.475	Thread Group - TEST I...	1-Bind to IMCD	2	⚠	236	0	0
30	17:20:01.480	Thread Group - TEST I...	2-IMCD Base Query	1	⚠	353	0	0
31	17:20:01.484	Thread Group - TEST I...	3-IMCD Exact Query	0	⚠	380	0	0

Example of Table View

Useful for 1st attempt to validate no issues with any Action via the Status Column.

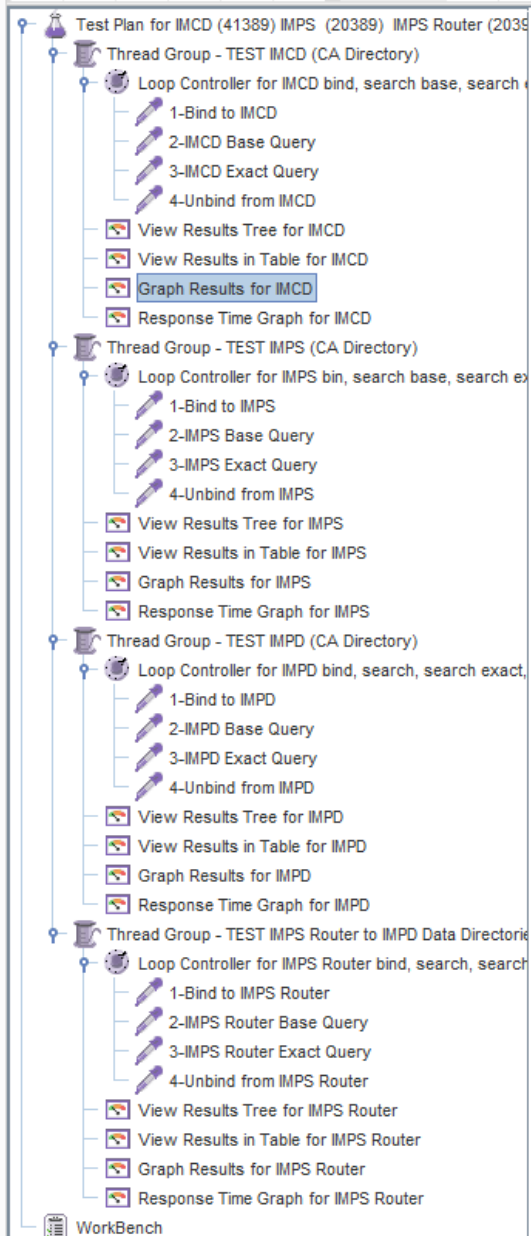☐ Scroll automatically?   ☐ Child samples?   No of Samples 2000   Latest Sample 0   Average 0   Deviation 1

715 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
718 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
719 2015/12/02 17:28:57 INFO - jmeter.services.FileServer: Set new base='C:\temp\jmeter'
720

File   Edit   Search   Run   Options   Help

0 ⚠   0 / 200

Test Plan for IMCD (41389) IMPS (20389) IMPS Router (2039
Thread Group - TEST IMCD (CA Directory)
  Loop Controller for IMCD bind, search base, search
    1-Bind to IMCD
    2-IMCD Base Query
    3-IMCD Exact Query
    4-Unbind from IMCD
  View Results Tree for IMCD
  View Results in Table for IMCD
  Graph Results for IMCD
  Response Time Graph for IMCD
Thread Group - TEST IMPS (CA Directory)
  Loop Controller for IMPS bin, search base, search e
    1-Bind to IMPS
    2-IMPS Base Query
    3-IMPS Exact Query
    4-Unbind from IMPS
  View Results Tree for IMPS
  View Results in Table for IMPS
  Graph Results for IMPS
  Response Time Graph for IMPS
Thread Group - TEST IMPD (CA Directory)
  Loop Controller for IMPD bind, search, search exact,
    1-Bind to IMPD
    2-IMPD Base Query
    3-IMPD Exact Query
    4-Unbind from IMPD
  View Results Tree for IMPD
  View Results in Table for IMPD
  Graph Results for IMPD
  Response Time Graph for IMPD
Thread Group - TEST IMPS Router to IMPD Data Directorie
  Loop Controller for IMPS Router bind, search, search
    1-Bind to IMPS Router
    2-IMPS Router Base Query
    3-IMPS Router Exact Query
    4-Unbind from IMPS Router
  View Results Tree for IMPS Router
  View Results in Table for IMPS Router
  Graph Results for IMPS Router
  Response Time Graph for IMPS Router
WorkBench

Graph Results

Name: Graph Results for IMCD
Comments:

Write results to file / Read from file

Filename ${JMETER_DATA_FOLDER}\IMCD_Graph_Results.log   Browse...   Log/Display Only: ☐ Errors   ☐ Successes   Configure

Graphs to Display ☑ Data ☑ Average ☑ Median ☑ Deviation ☑ Throughput

2 ms

Example of Graph View

Limited value.

0 ms

No of Samples 2000   Latest Sample 0   Average 0
Deviation   1   Throughput   2,013.693/minute   Median 1

715 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread is done: Thread Group - TEST IMPS (CA Directory) 2-50
716 2015/12/02 17:21:10 INFO - jmeter.threads.JMeterThread: Thread finished: Thread Group - TEST IMPS (CA Directory) 2-50
717 2015/12/02 17:21:10 INFO - jmeter.engine.StandardJMeterEngine: Notifying test listeners of end of test
718 2015/12/02 17:21:10 INFO - jmeter.gui.util.JMeterMenuBar: setRunning(false,*local*)
719 2015/12/02 17:28:57 INFO - jmeter.services.FileServer: Set new base='C:\temp\jmeter'
720

Example of Time Graph View

The Best Summary Results Report. High Value
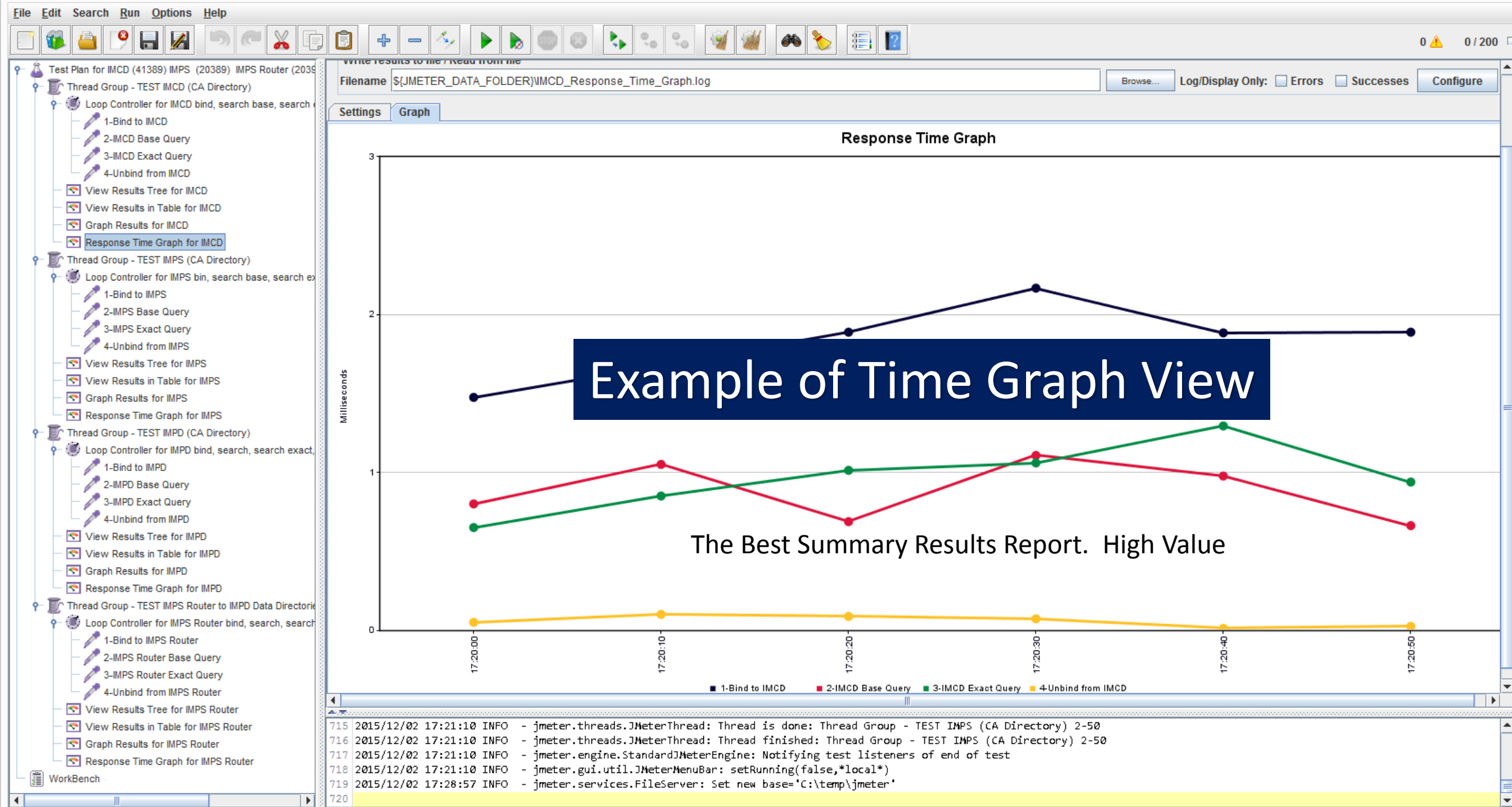
Monitor network connections with netstat to the Directory Servers

```
Every 2.0s: netstat -an | grep 41389 | wc -l

2
```

```
Every 2.0s: netstat -an | grep 41389 | wc -l

140
```

```
Every 2.0s: netstat -an | grep 41389 | wc -l

324
```

```
Every 2.0s: netstat -an | grep 41389 | wc -l

426
```

Example where # of threads are set to 500 over 60 seconds ramp up time.

Export of the IM Jmeter Test Lab

1. Save to disk (XML file with jmx extension)

2. Open / Load with Latest Jmeter

   a.   http://jmeter.apache.org/   (Require Java 1.6+)

3. Update the configuration entry with variables & ports for your servers.

4. Test with current settings

5. Review and adjust settings for other tests

6. Add to for delete/modify/creation operations

C:\temp\jmeter\
Plan_for_CA_IM_IM

jmx

C:\temp\jmeter\
Plan_for_CA_IM_IM

Jmx renamed to txt