



SAGE Computing Services

Customised Oracle Training Workshops and Consulting

Take a load off!

Load and stress testing your web applications
(Apex, JDeveloper, web services and more)

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<http://one-size-doesnt-fit-all.blogspot.com>

♠ Oracle ACE Director - Fusion Middleware

“Oh oh,..... those requirements....”

How many users
can we support?

Is our website
slow to use?

Are we sure our
web application
doesn't crash
under load?

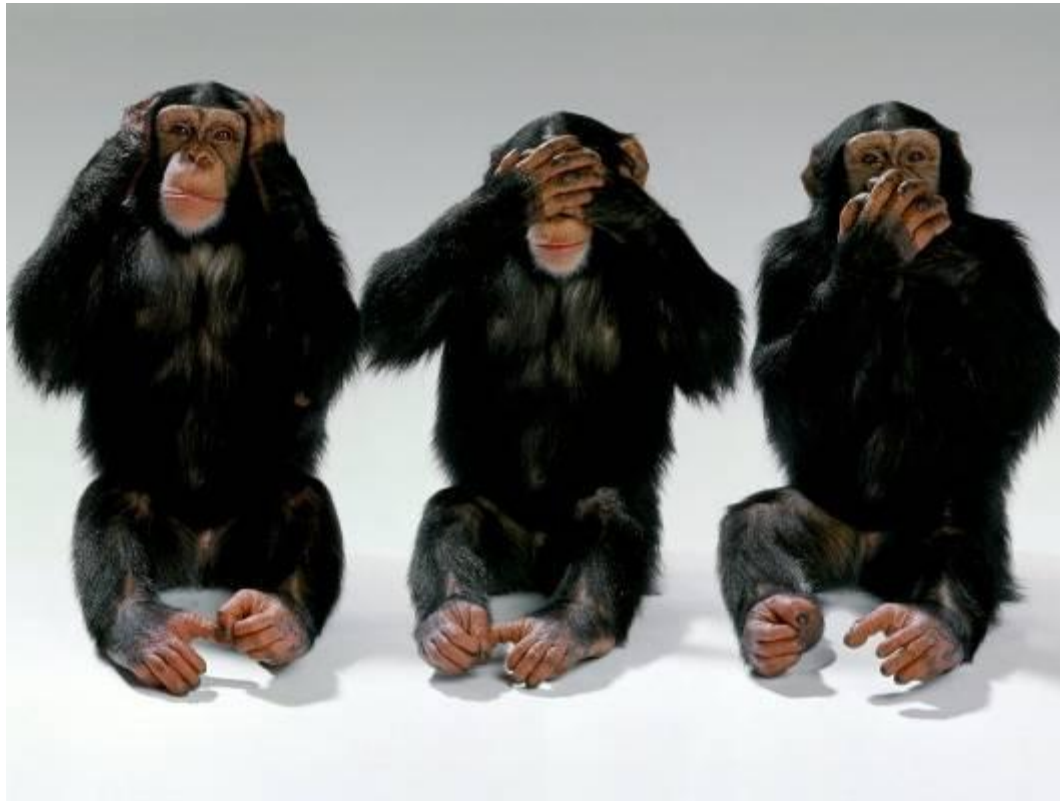
How much
bandwidth does
our website
use?

Is the system useable
by our regional offices
via dialup?

Does our system
respond in a
timely manner?

Can we support X
users without
system
degradation?





The Need for Load & Stress Testing Web Applications



- Applications moved to the web
- Apex, ADF, SOA, SaaS etc
- Potentially 1000's of users
- Systems move beyond 9 to 5 users
- Peak periods = extreme demand
- Quiet periods = near zero demand
- Multi-tiers of complexity & performance issues

Stress Reduction Kit



**Bang
Head
Here**

Directions:

1. Place kit on FIRM surface.
2. Follow directions in circle of kit.
3. Repeat step 2 as necessary, or until unconscious.
4. If unconscious, cease stress reduction activity.

- Apache's JMeter
- Eviware's SoapUI

So how does this web thing work anyway?

Or “HTTP Protocol 101”

- HTTP Request-Response Cycle
- Headers and Body
- Client Request Types:
and POSTs
- Server Responses:
pages and
Codes



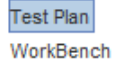
Apache's JMeter

- <http://jakarta.apache.org/jmeter/>
- Load, stress and regression testing utility
- Supports HTTP/HTTPS, JMS, JDBC, FTP, LDAP and Web Services
- Simulates 1 or more users of your system
- Free



Apache's JMeter Demonstration





Name:	Test Plan
Comments:	

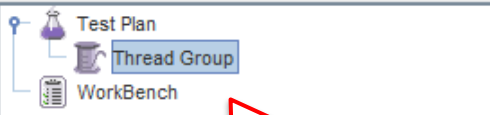
Delete

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

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

Library



Create:
Thread Group

Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

☒ Continue ☐ Stop Thread ☐ Stop Test ☐ Stop Test Now

Thread Properties

Number of Threads (users): 1

Ramp-Up Period (in seconds): 1

Loop Count: ☐ Forever 1

☐ Scheduler

Test Plan

Thread Group

WorkBench

Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

☒ Continue ☐ Stop Thread ☐ Stop Test ☐ Stop Test Now

Thread Properties

Number of Threads (users): 20

Ramp-Up Period (in seconds):

Loop Count: ☐ Forever

☐ Scheduler

Set:
Concurrent Users

Test Plan

Thread Group

WorkBench

Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

☒ Continue ☐ Stop Thread ☐ Stop Test ☐ Stop Test Now

Thread Properties

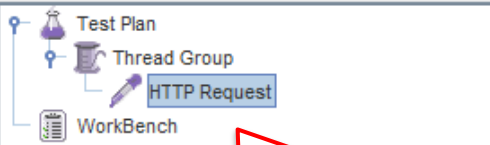
Number of Threads (users): 20

Ramp-Up Period (in seconds): 1

Loop Count: ☐ Forever 1

☐ Scheduler

Set:
Sequential Runs



Create:
HTTP Request

HTTP Request

Name: HTTP Request

Comments:

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

URL: Method: GET Content encoding:

Redirect Automatically Follow Redirects Use KeepAlive Use multipart/form-data for HTTP POST

Send Parameters With the Request:

Name:	Value	Encode?	Include Equ...

Add Delete

Send Files With the Request:

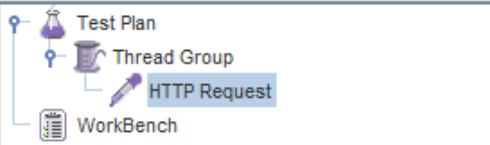
File Path:	Parameter ...	MIME Type:

Add Browse... Delete

Optional Tasks

Retrieve All Embedded Resources from HTML Files Use as Monitor Save response as MD5 hash?

Embedded URLs must match:



HTTP Request

Name:

Comments:

Web Server

Server Name or IP: Port Number:

Timeouts (milliseconds)

Connect: Response:

HTTP Request

Protocol (default http): Content encoding:

Path:

☒ Redirect Automatically

☐ multipart/form-data for HTTP POST

st:

Name	Encode?	Include Equ...

Define:
Server Address

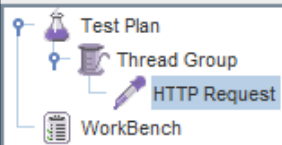
Send Files With the Request:

File Path:	Parameter ...	MIME Type:

Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files ☐ Use as Monitor ☐ Save response as MD5 hash?

Embedded URLs must match:



HTTP Request

Name: HTTP Request

Comments:

Web Server

Server Name or IP:

Port Number:

Timeouts (milliseconds)

Connect:

Response:

HTTP Request

Protocol (default http):

Method:

Content encoding:

Path:

☒ Redirect Automatically

☐ Follow Redirects

☒ Use KeepAlive

☐ Use multipart/form-data for HTTP POST

With the Request:

	Value	Encode?	Include Equ...

Add

Delete

Send Files With the Request:

File Path:	Parameter ...	MIME Type:

Add

Browse...

Delete

Optional Tasks

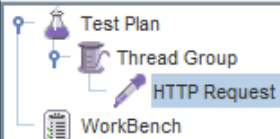
☐ Retrieve All Embedded Resources from HTML Files

☐ Use as Monitor

☐ Save response as MD5 hash?

Embedded URLs must match:

Define:
Path



HTTP Request

Name: HTTP Request

Comments:

Web Server

Server Name or IP: www.sagecomputing.com.au

Port Number:

Timeouts (milliseconds)

Connect:

Response:

HTTP Request

Protocol (default http):

Method: GET

Content encoding:

Path: /about_sage_computing_services.html

☒ Redirect Automatically

☐ Follow Redirects

☒ Use KeepAlive

☐ Use multipart/form-data for HTTP POST

Send Parameters With the Request:

Name:	Value	Encode?	Include Equ...
<div>Define: Any URL Parameters</div>			

Delete

Send Files With the Request:

File Path:	Parameter ...	MIME Type:

Add

Browse...

Delete

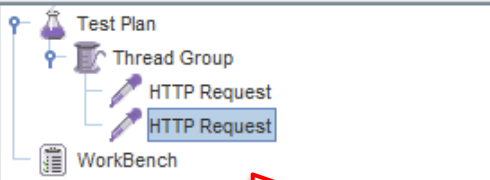
Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files

☐ Use as Monitor

☐ Save response as MD5 hash?

Embedded URLs must match:



Create:
Next HTTP Request

HTTP Request

Name: HTTP Request

Comments:

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

http: Method: GET Content encoding:

Automatically ☐ Follow Redirects ☒ Use KeepAlive ☐ Use multipart/form-data for HTTP POST

Send Parameters With the Request:

Name:	Value	Encode?	Include Equ...

Add Delete

Send Files With the Request:

File Path:	Parameter ...	MIME Type:

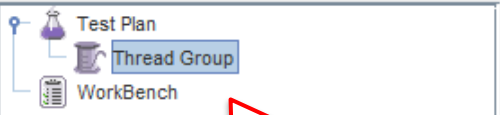
Add Browse... Delete

Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files ☐ Use as Monitor ☐ Save response as MD5 hash?

Embedded URLs must match:





Create:
Thread Group

Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

☒ Continue ☐ Stop Thread ☐ Stop Test ☐ Stop Test Now

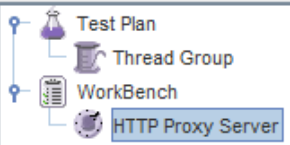
Thread Properties

Number of Threads (users): 1

Ramp-Up Period (in seconds): 1

Loop Count: ☐ Forever 1

☐ Scheduler



Create:
HTTP Proxy Server

HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8080 ☐ Attempt HTTPS Spoofing Optional URL match string:

Content-type filter: Controller: Use Recording Controller Grouping: Do not group samplers

☐ Add HTTP Headers ☐ Add Assertions ☐ Regex matching

Sampler settings: HTTP Request ☐ 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

URL Patterns to Exclude

URL Patterns to Exclude

Add Delete

Start Stop Restart

- Test Plan
- Thread Group
- WorkBench
- HTTP Proxy Server

HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8085

☐ Attempt HTTPS Spoofing Optional URL match string:

Test plan comment:

Target:

Grouping: Do not group samplers

☒ On matching

HTTP

Type

☐ Locally ☒ Follow Redirects ☒ Use KeepAlive ☐ Retrieve All Embedded

Content

Include:

Exclude:

URL Patterns to Include

URL Patterns to Include

Add

Delete

URL Patterns to Exclude

URL Patterns to Exclude

Add

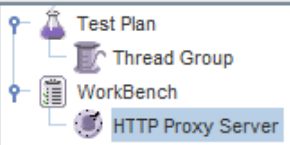
Delete

Start

Stop

Restart

Define:
Proxy Port



HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8085

☐ Attempt HTTPS Spoofing Optional URL match string:

Test plan content

Target Controller: Use Recording Controller

Grouping: Do not group samplers

☒ Capture HTTP

- Use Recording Controller
- Test Plan > Thread Group
- WorkBench > HTTP Proxy Server

Regex matching

HTTP Sampler settings

Type: HTTP Request

☐ Redirect ☒ Follow Redirects ☒ Use KeepAlive ☐ Retrieve All Embedded

Content-type filter

Include:

URL Patterns to Include

Add Delete

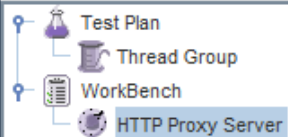
URL Patterns to Exclude

URL Patterns to Exclude

Add Delete

Start Stop Restart

Define:
Target (thread group)



HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8085

☐ Attempt HTTPS Spoofing Optional URL match string:

Test plan content

Target Controller: Use Recording Controller

Grouping: Do not group samplers

☒ Capture HTTP Headers ☐ Add Assertions ☐ Regex matching

HTTP Sampler settings

Type: HTTP Request

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Retrieve All Embedded

Content-type filter

Include:

Exclude:

URL Patterns to Include

URL Patterns to Include

Define:
URL Pattern

Add

Delete

URL Patterns to Exclude

Add

Delete

Start

Stop

Restart



HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8085

☐ Attempt HTTPS Spoofing Optional URL match string:

Test plan content

Target Controller: Use Recording Controller

Grouping: Do not group samplers

☒ Capture HTTP Headers ☐ Add Assertions ☐ Regex matching

HTTP Sampler settings

Type: HTTP Request

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Retrieve All Embedded

Content-type filter

Include:

Exclude:

URL Patterns to Include

URL Patterns to Include

*

Add Delete

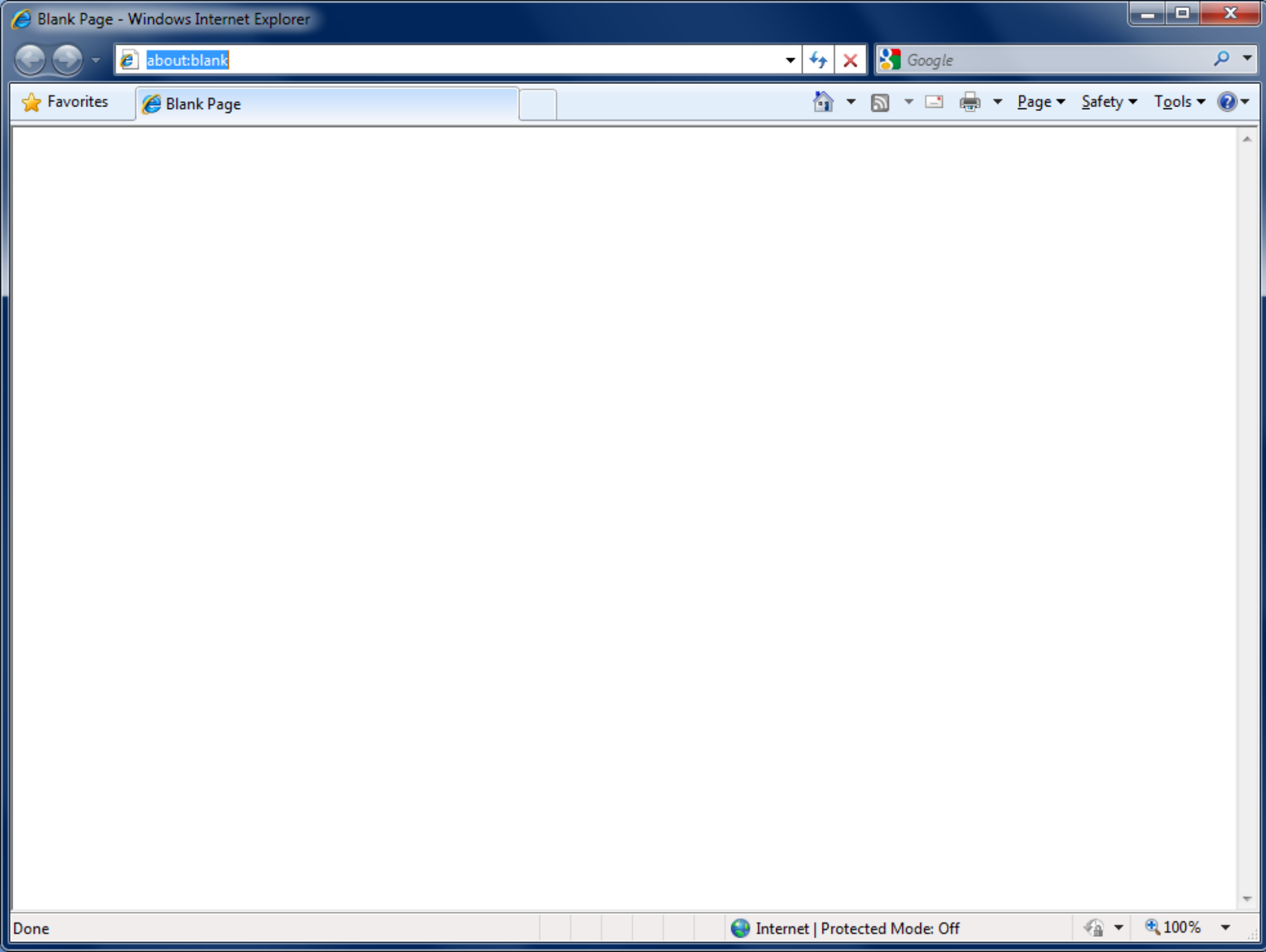
URL Patterns to Exclude

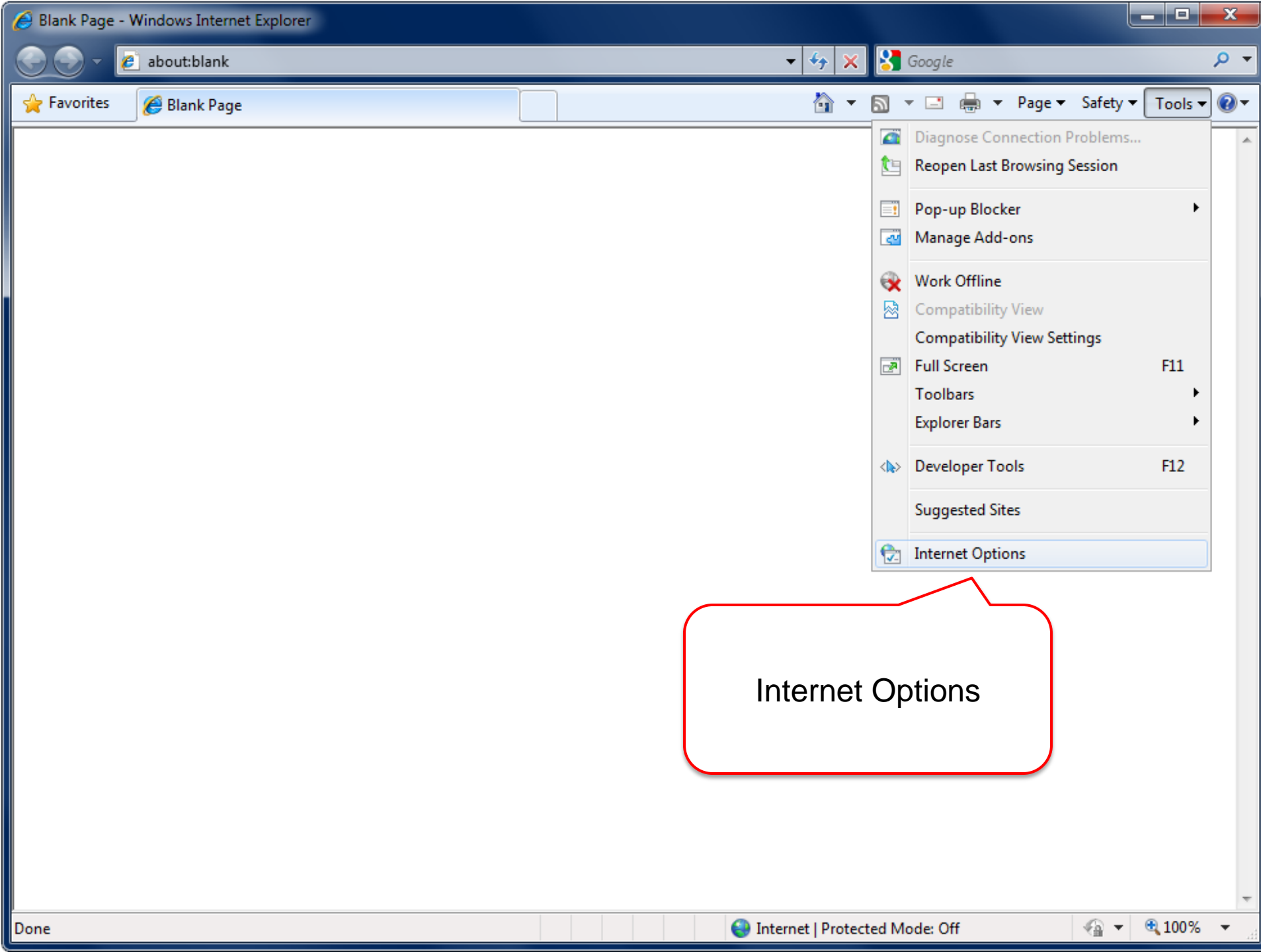
URL Patterns to Exclude

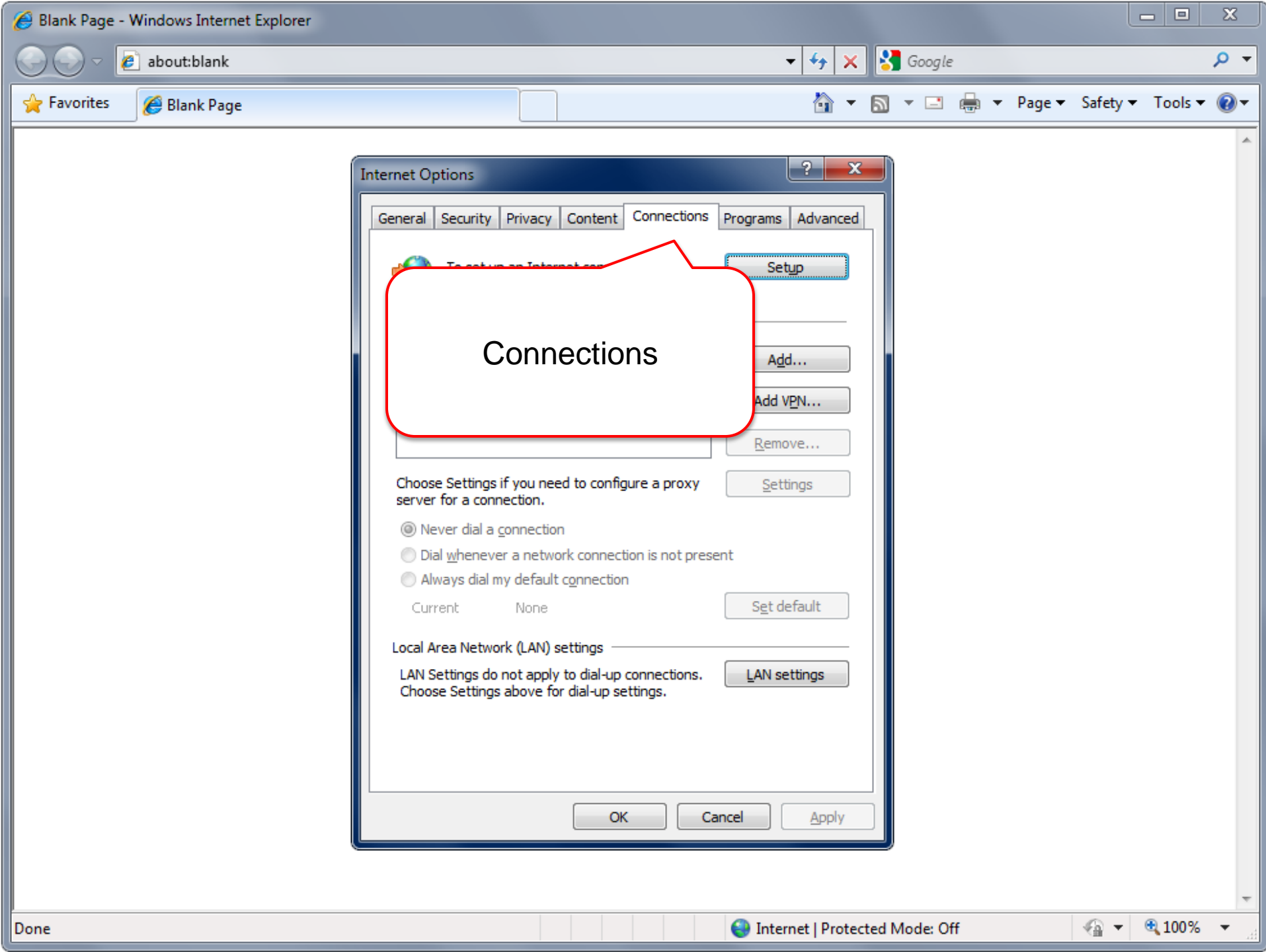
Start

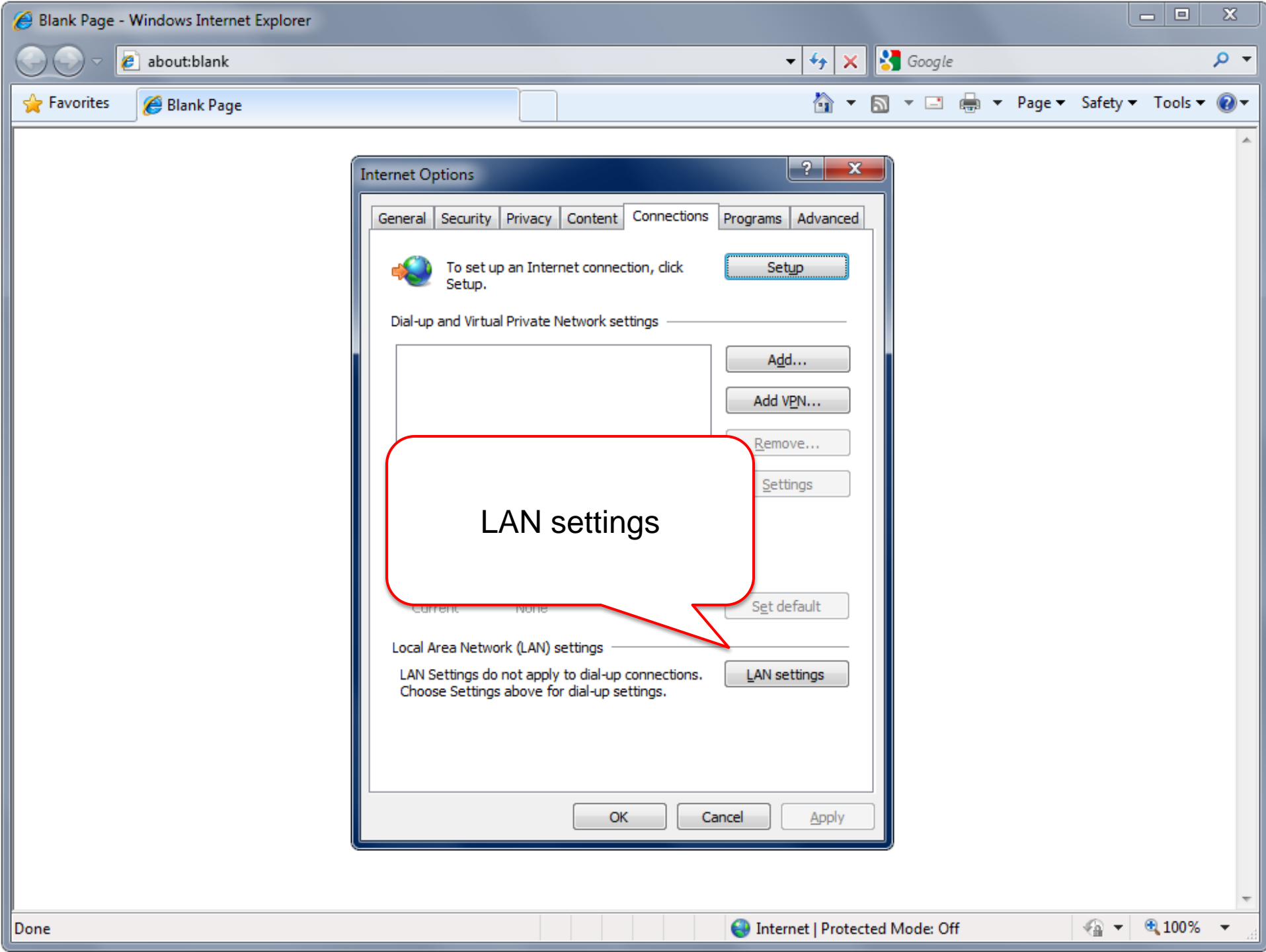
Add Delete

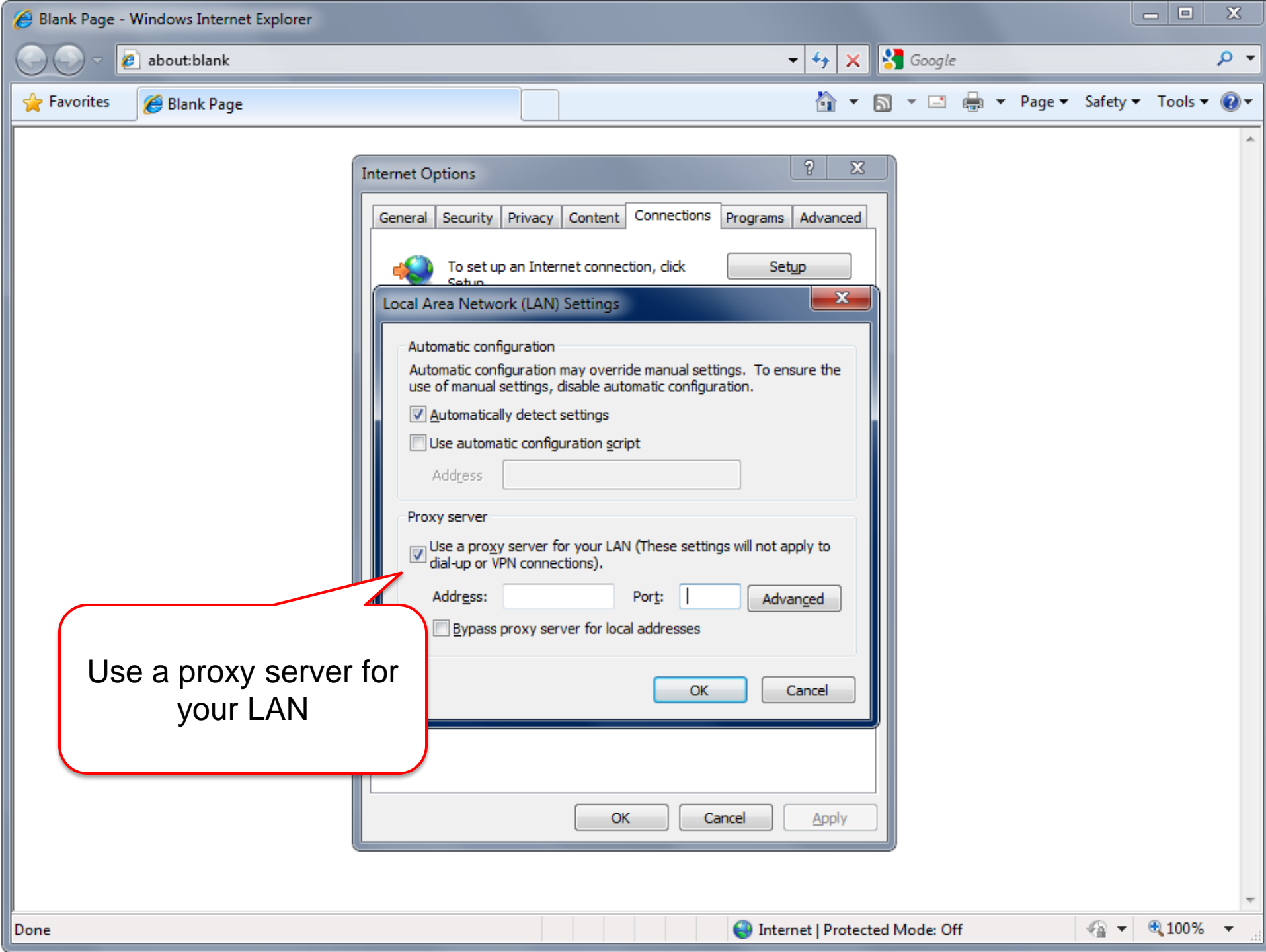
Start Stop Restart

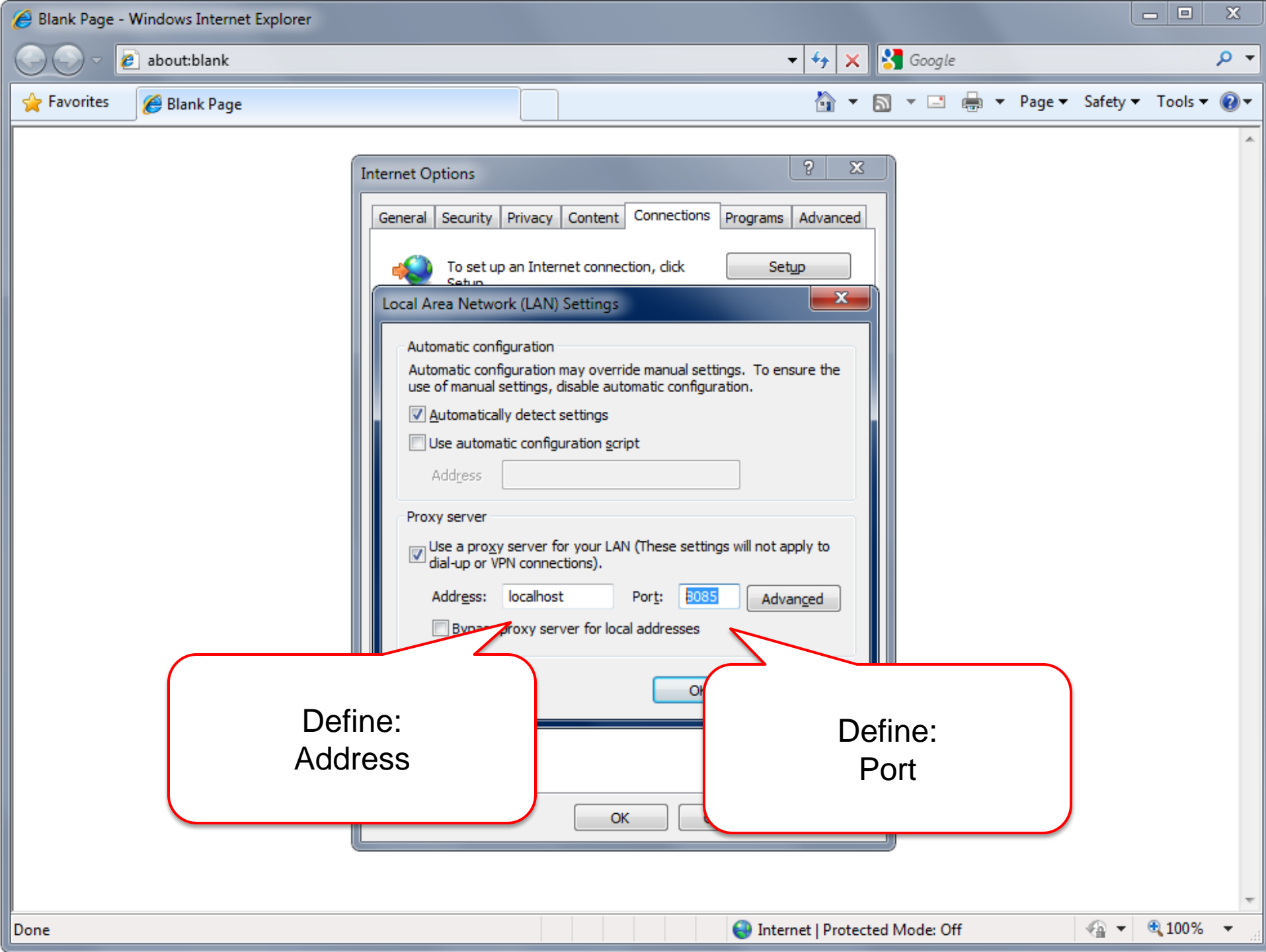


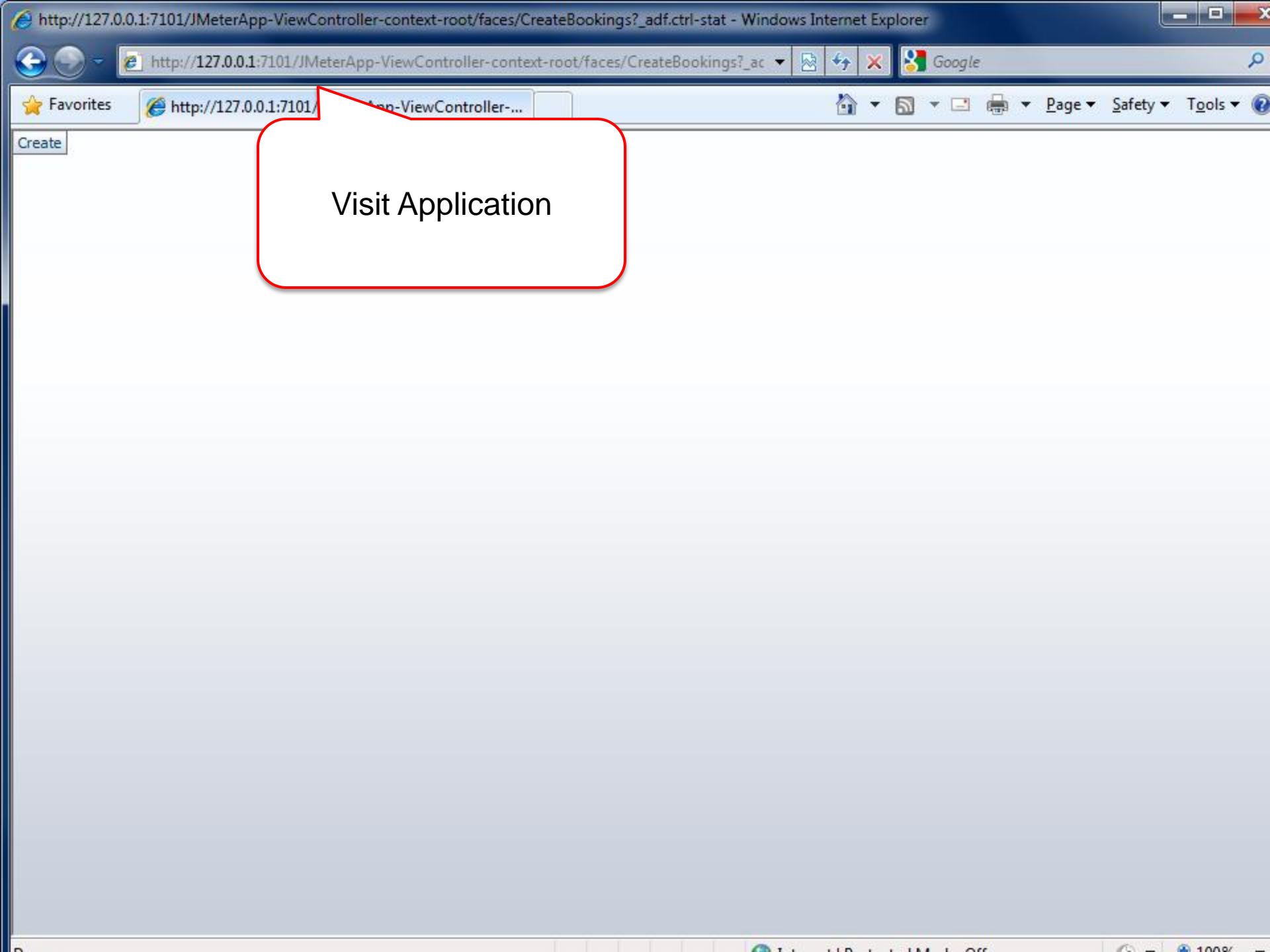




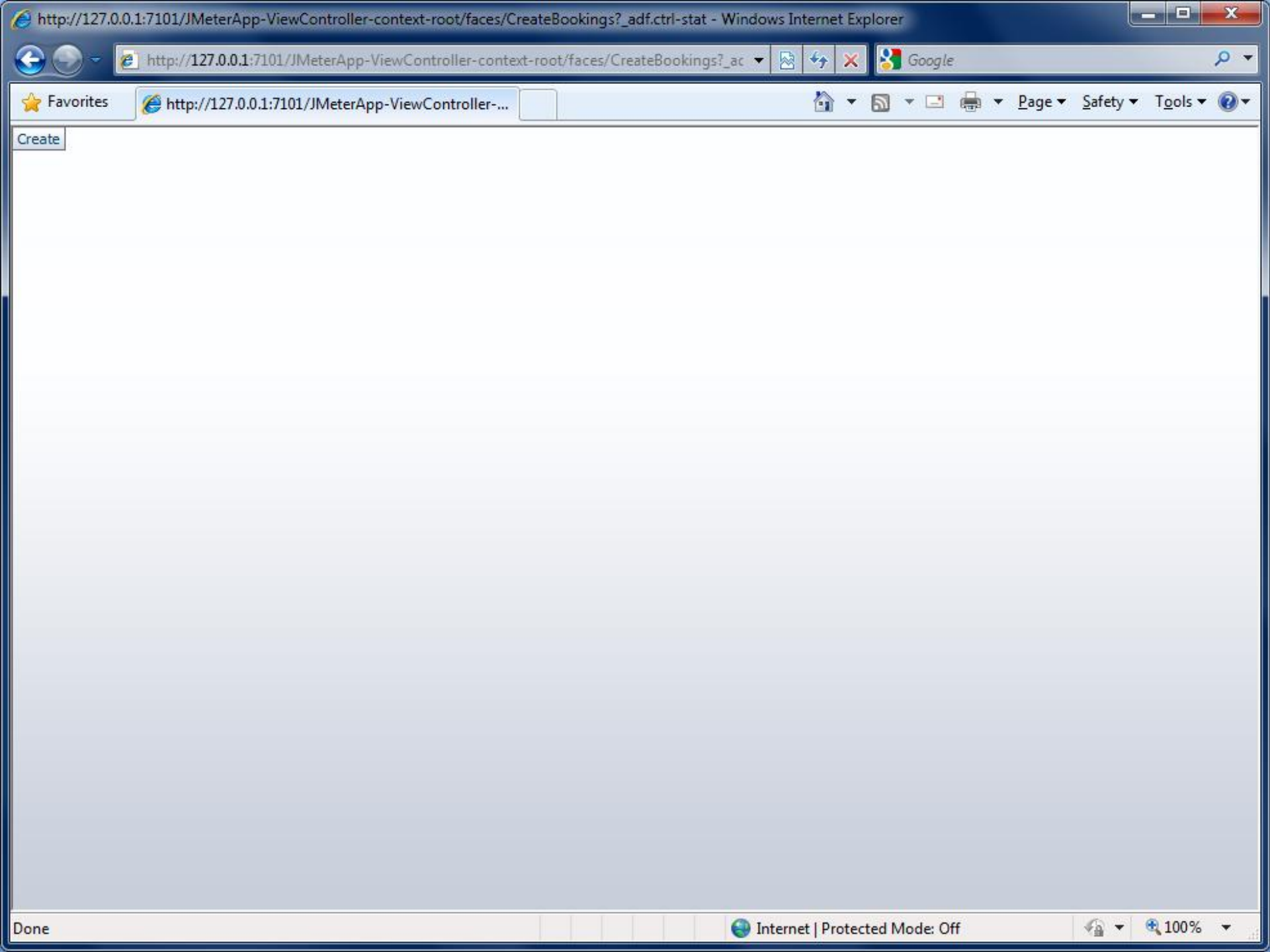


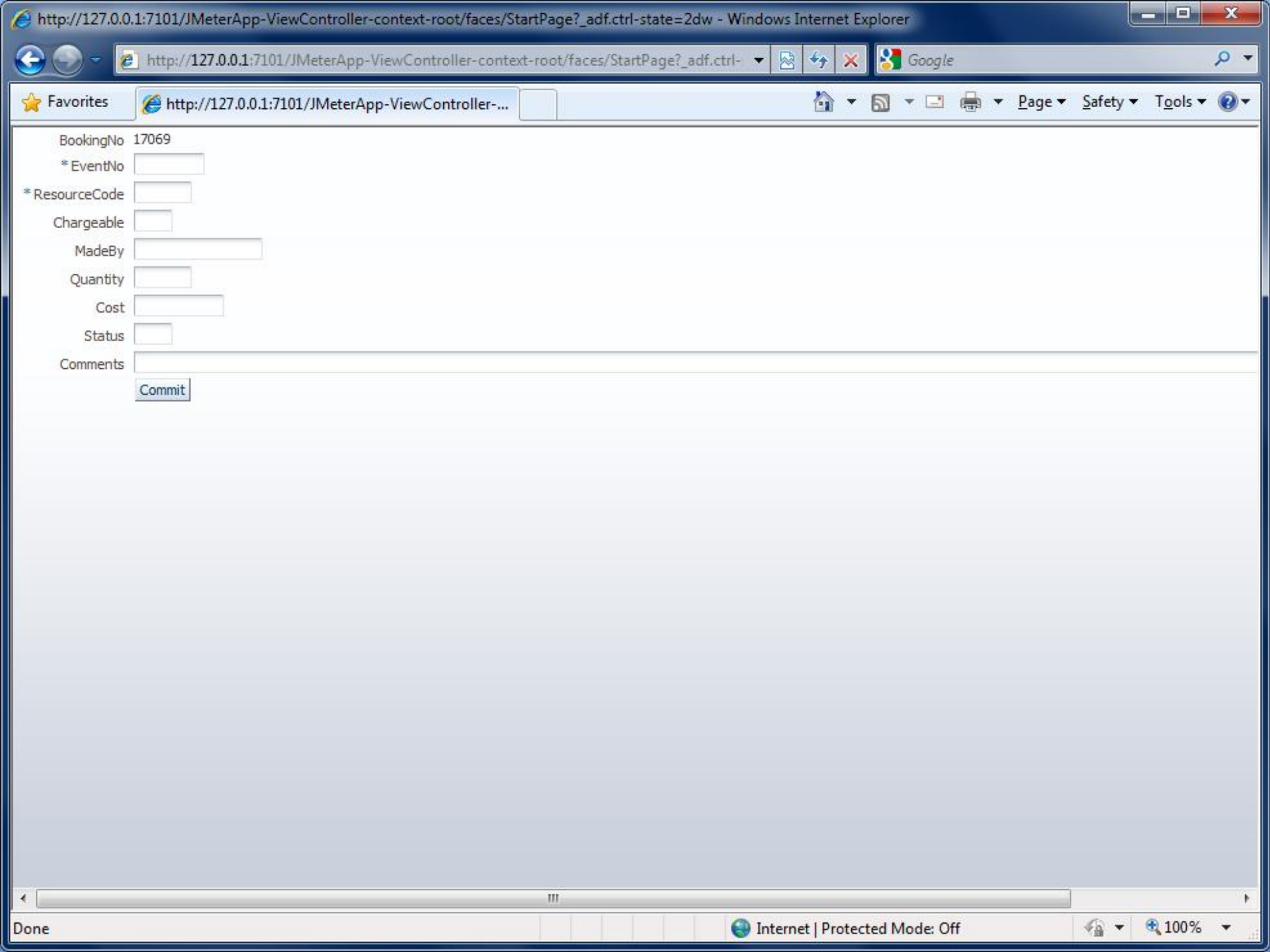


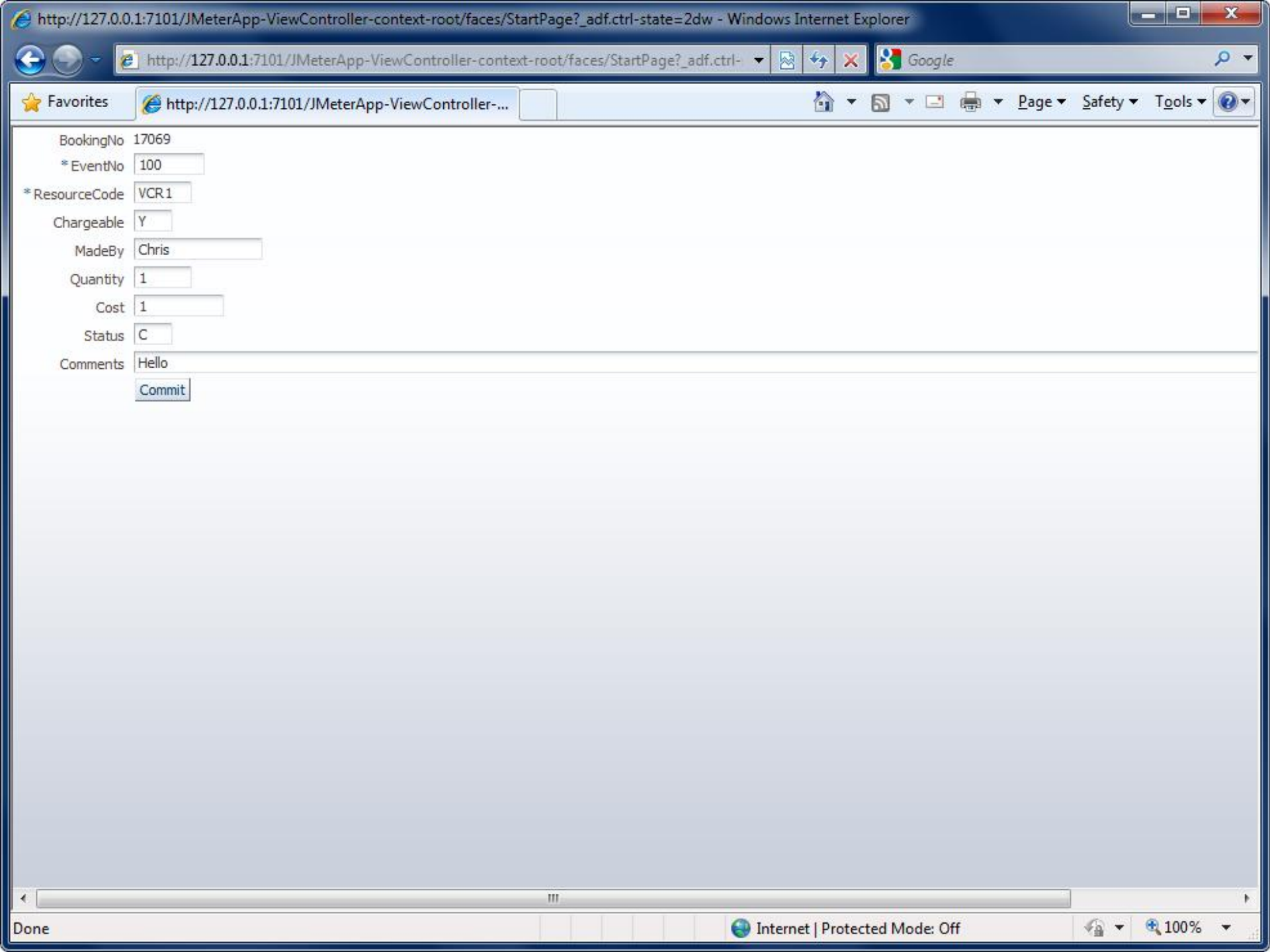




Visit Application







BookingNo 17069

*EventNo 100

*ResourceCode VCR1

Chargeable Y

MadeBy Chris

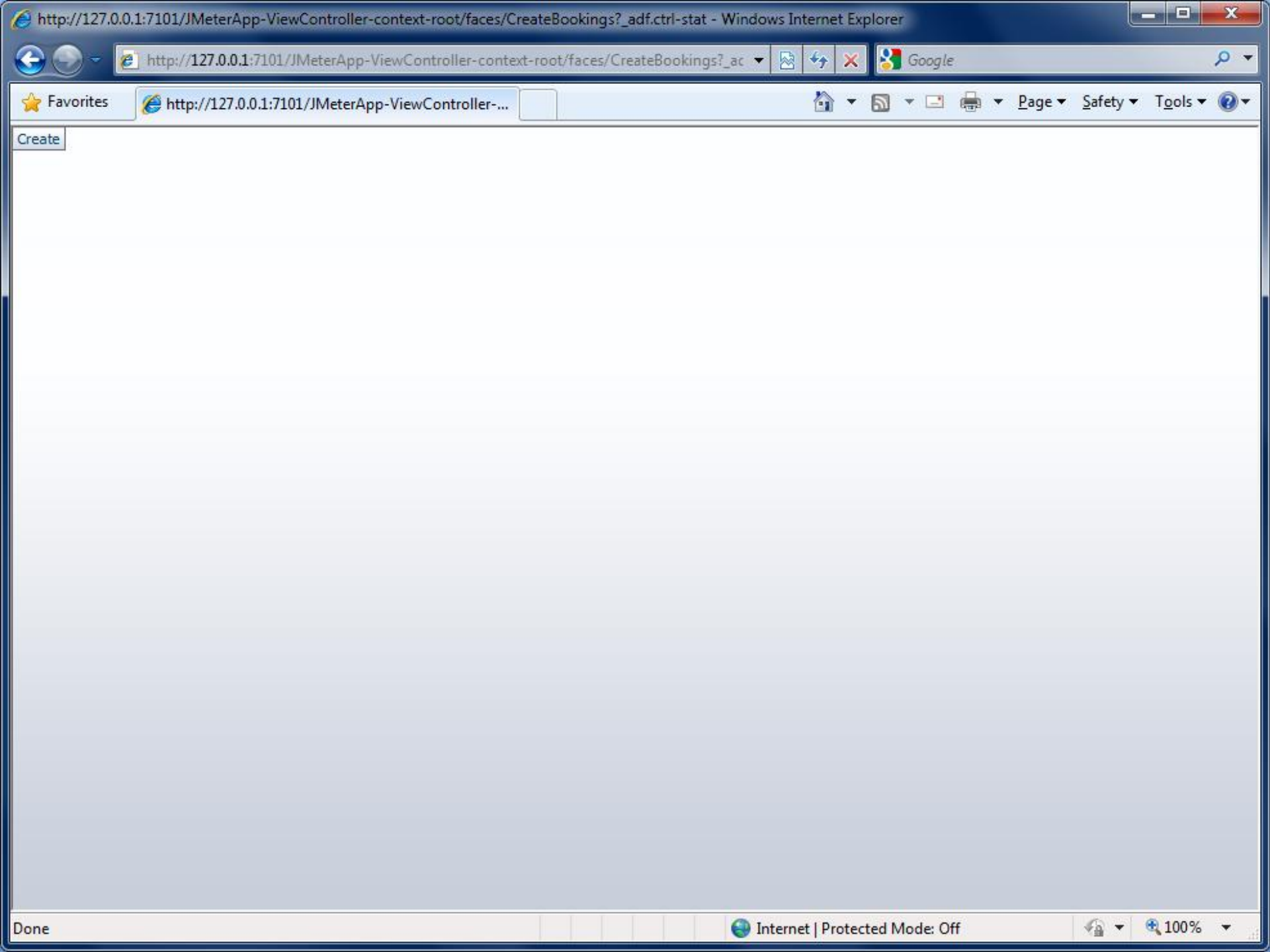
Quantity 1

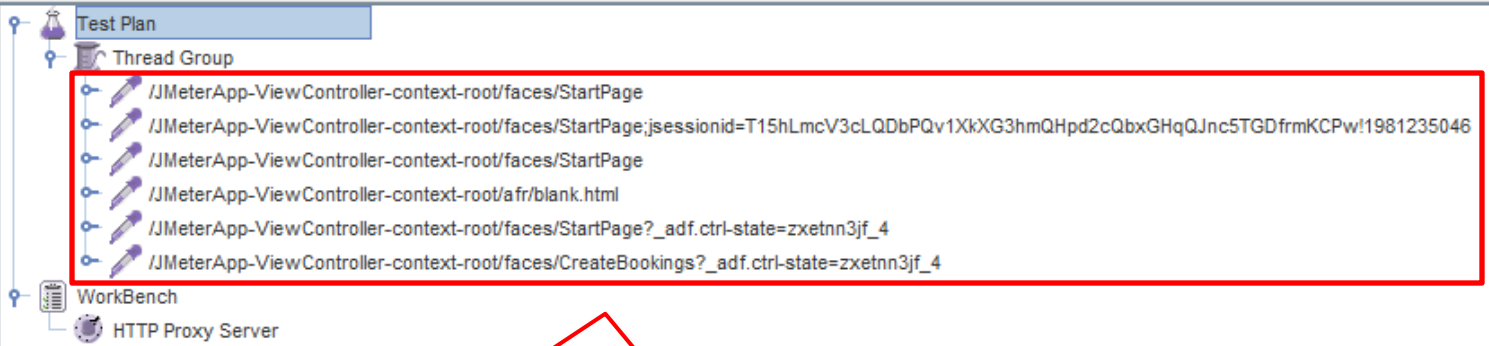
Cost 1

Status C

Comments Hello

Commit





Recorded Session

Test Plan

Name: Test Plan

Comments:

User Def

Name:

Add

☐ Run Thread Groups consecutiv

☐ Functional Test Mode (i.e. save

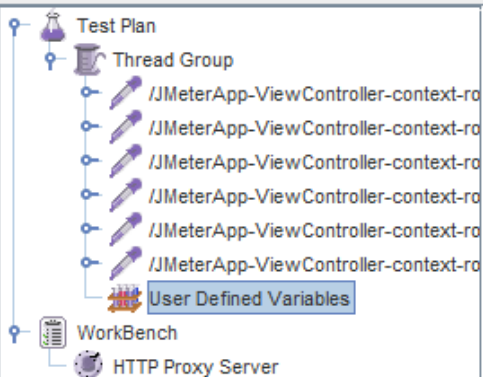
Selecting Functional Test Mode ma

Add directory or jar to classpath





Create: User Variables



User Defined Variables

Name: User Defined Variables

Comments:

User Defined Variables

Name:	Value
adf.ctrl-state	
afrLoop	
afrWindowId	
javax.faces.ViewState	
jsessionId	

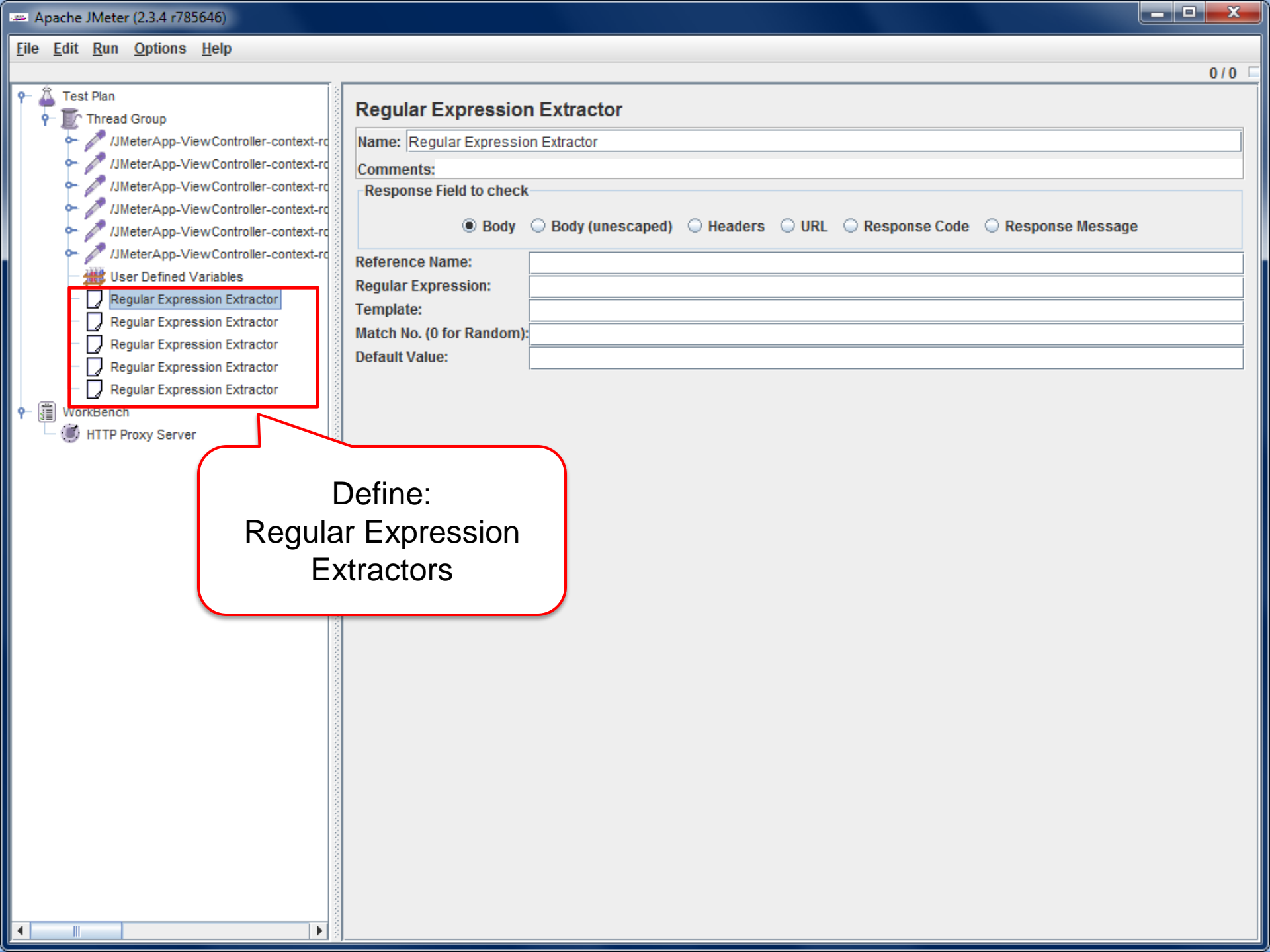
Define:
Each User State
Variable

Add

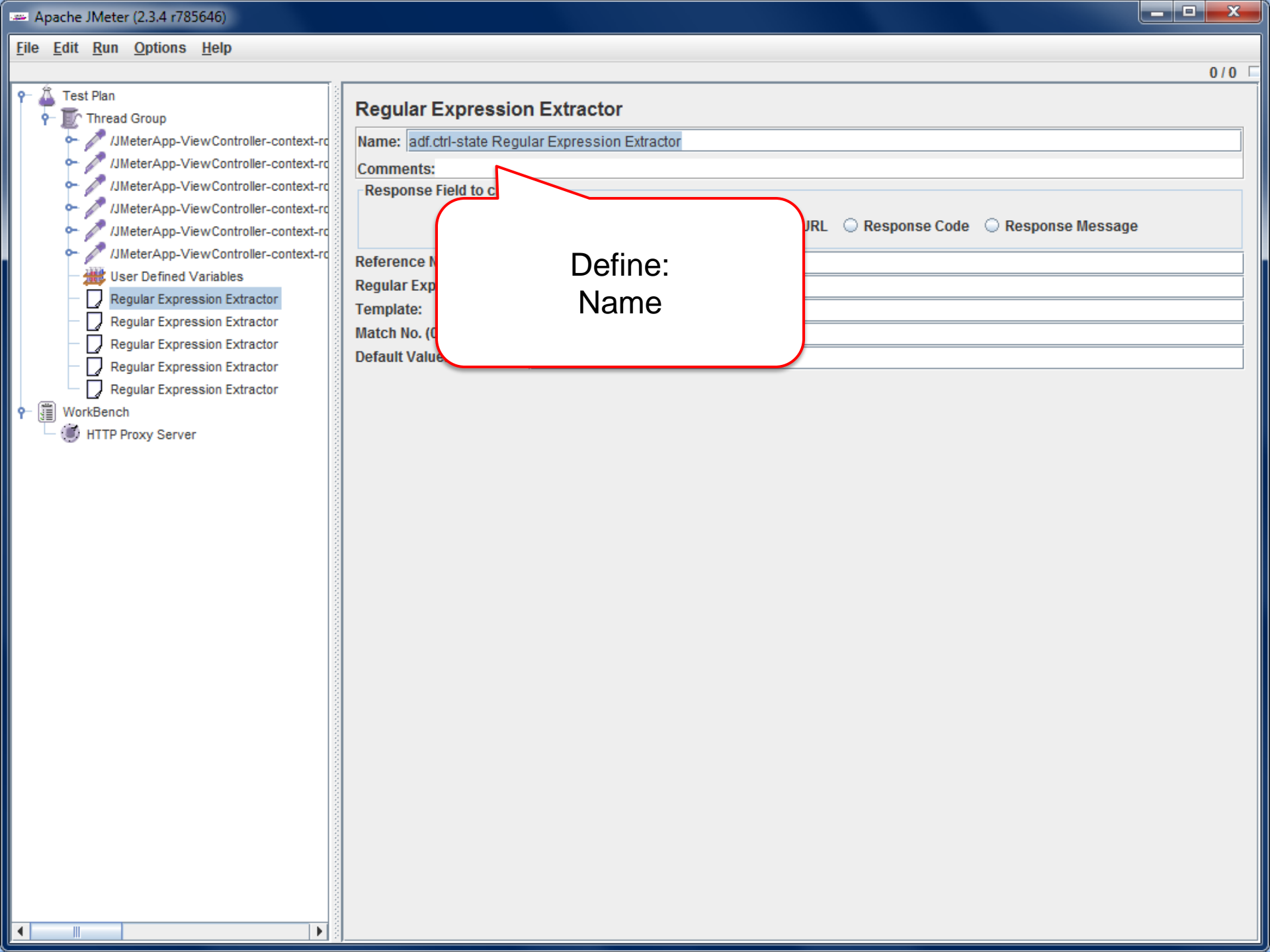
Delete

Reference

- Stress & load testing web applications (even ADF & Apex) using Apache JMeter: <http://one-size-doesnt-fit-all.blogspot.com/2009/06/stress-load-testing-web-applications.html>
- Configuring Apache JMeter specifically for Oracle's ADF 11g: <http://one-size-doesnt-fit-all.blogspot.com/2010/04/configuring-apache-jmeter-specifically.html>
- Configuring Apache JMeter for Apex: <http://one-size-doesnt-fit-all.blogspot.com/2010/05/configuring-apache-jmeter-for-apex.html>



Define:
Regular Expression
Extractors



Test Plan
Thread Group

/JMeterApp-ViewController-context-rc
/JMeterApp-ViewController-context-rc
/JMeterApp-ViewController-context-rc
/JMeterApp-ViewController-context-rc
/JMeterApp-ViewController-context-rc
/JMeterApp-ViewController-context-rc

User Defined Variables
Regular Expression Extractor
Regular Expression Extractor
Regular Expression Extractor
Regular Expression Extractor
Regular Expression Extractor

WorkBench
HTTP Proxy Server

Regular Expression Extractor

Name: adf.ctrl-state Regular Expression Extractor

Comments:

Response Field to c

☐ URL ☐ Response Code ☐ Response Message

Reference N

Regular Exp

Template:

Match No. (0

Default Value

Define:
Name

Test Plan

- Thread Group
 - /JMeterApp-ViewController-context-rd
 - /JMeterApp-ViewController-context-rd
 - /JMeterApp-ViewController-context-rd
 - /JMeterApp-ViewController-context-rd
 - /JMeterApp-ViewController-context-rd
 - /JMeterApp-ViewController-context-rd
 - User Defined Variables
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
- WorkBench
 - HTTP Proxy Server

Regular Expression Extractor

Name:

Comments:

Response Field to check

☒ Body ☐ Body (unescaped) ☐ Headers ☐ URL ☐ Response Code ☐ Response Message

Reference Name:

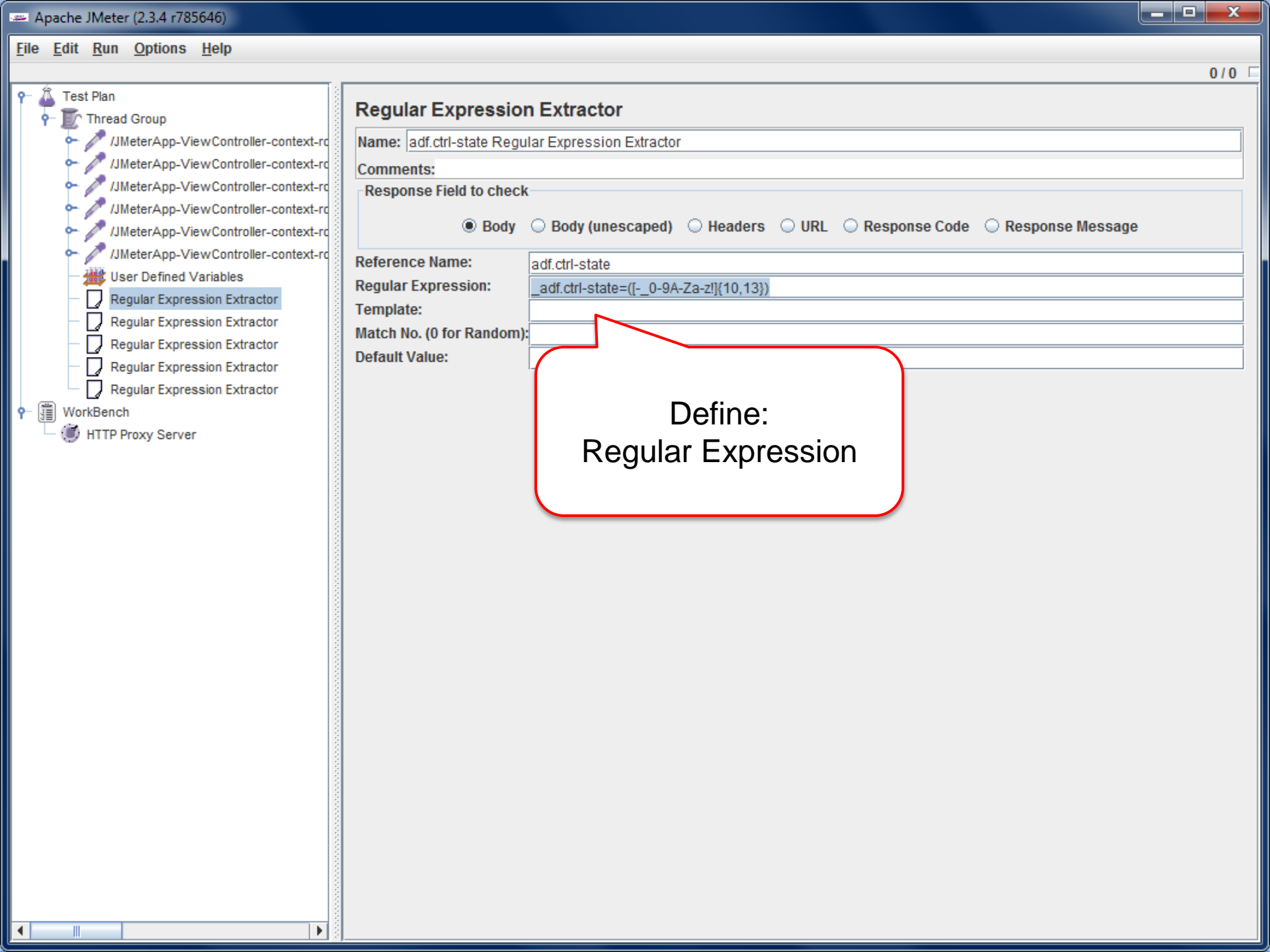
Regular Expression:

Template:

Match No. (0 for Random):

Default Value:

Define:
User Variable



Regular Expression Extractor

Name: adf.ctrl-state Regular Expression Extractor

Comments:

Response Field to check

☒ Body ☐ Body (unescaped) ☐ Headers ☐ URL ☐ Response Code ☐ Response Message

Reference Name: adf.ctrl-state

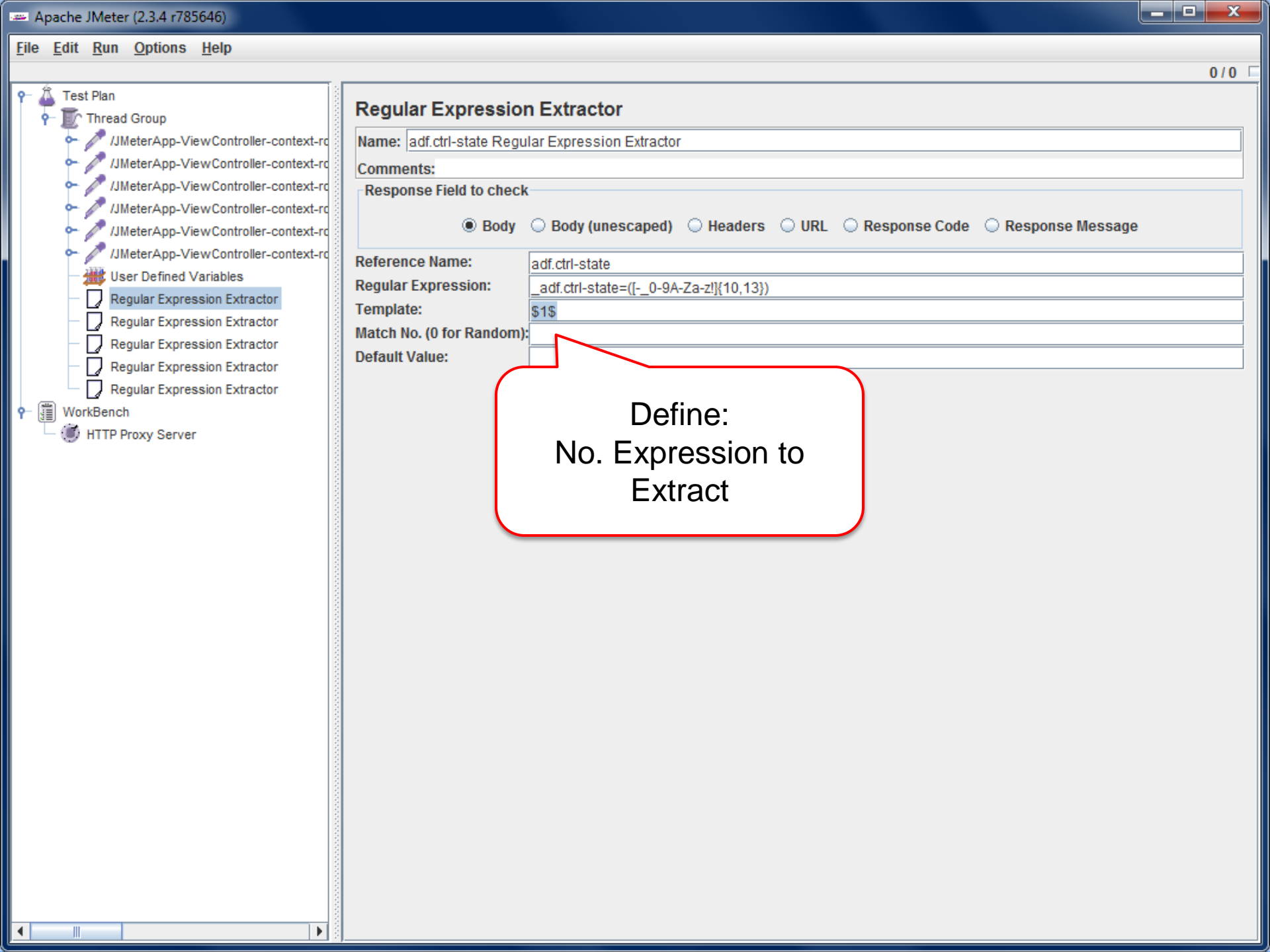
Regular Expression: _adf.ctrl-state=[-_0-9A-Za-z!]{10,13}

Template:

Match No. (0 for Random):

Default Value:

Define:
Regular Expression



Test Plan

Thread Group

JMeterApp-ViewController-context-r

JMeterApp-ViewController-context-r

JMeterApp-ViewController-context-r

JMeterApp-ViewController-context-r

JMeterApp-ViewController-context-r

JMeterApp-ViewController-context-r

User Defined Variables

Regular Expression Extractor

Regular Expression Extractor

Regular Expression Extractor

Regular Expression Extractor

Regular Expression Extractor

WorkBench

HTTP Proxy Server

Regular Expression Extractor

Name: adf.ctrl-state Regular Expression Extractor

Comments:

Response Field to check



Body



Body (unescaped)



Headers



URL



Response Code



Response Message

Reference Name:

adf.ctrl-state

Regular Expression:

_adf.ctrl-state=([-_0-9A-Za-z!]{10,13})

Template:

\$1\$

Match No. (0 for Random):

Default Value:

Define:
No. Expression to
Extract

Test Plan

- Thread Group
 - /JMeterApp-ViewController-context-rc
 - /JMeterApp-ViewController-context-rc
 - /JMeterApp-ViewController-context-rc
 - /JMeterApp-ViewController-context-rc
 - /JMeterApp-ViewController-context-rc
 - /JMeterApp-ViewController-context-rc
 - User Defined Variables
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
- WorkBench
 - HTTP Proxy Server

Regular Expression Extractor

Name:

Comments:

Response Field to check

☒ Body
 ☐ Body (unescaped)
 ☐ Headers
 ☐ URL
 ☐ Response Code
 ☐ Response Message

Reference Name:

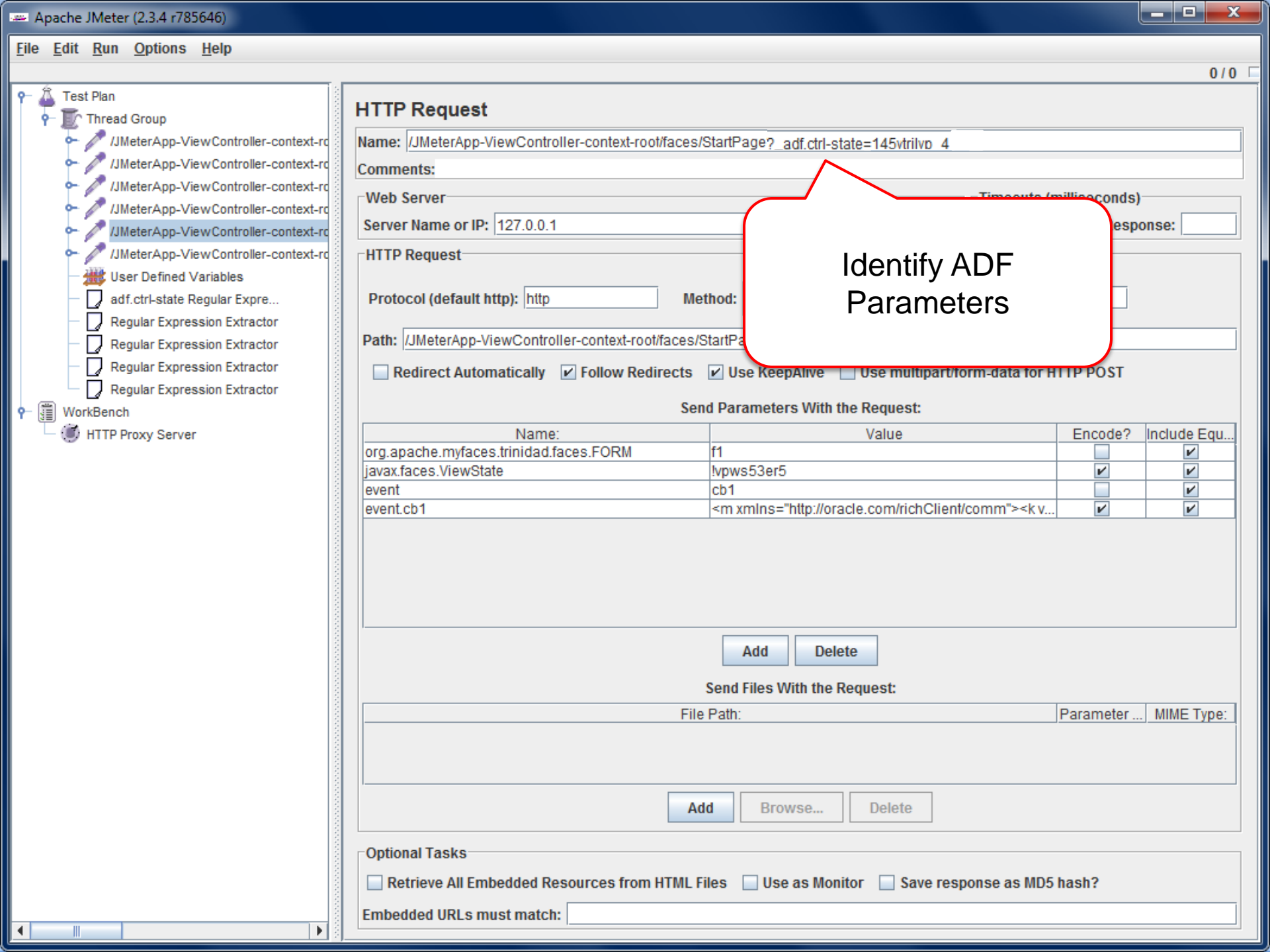
Regular Expression:

Template:

Match No. (0 for Random):

Default Value:

Define:
Occurrence to Extract



HTTP Request

Name: /JMeterApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=145vtrlv0_4

Comments:

Web Server

Server Name or IP: 127.0.0.1

HTTP Request

Protocol (default http): http

Method:

Path: /JMeterApp-ViewController-context-root/faces/StartPage

☐ Redirect Automatically

☒ Follow Redirects

☒ Use KeepAlive

☐ Use multipart/form-data for HTTP POST

Send Parameters With the Request:

Name:	Value	Encode?	Include Equ...
org.apache.myfaces.trinidad.faces.FORM	f1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
javax.faces.ViewState	lpws53er5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
event	cb1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
event.cb1	<m xmlns="http://oracle.com/richClient/comm"><k v...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add

Delete

Send Files With the Request:

File Path:	Parameter ...	MIME Type:

Add

Browse...

Delete

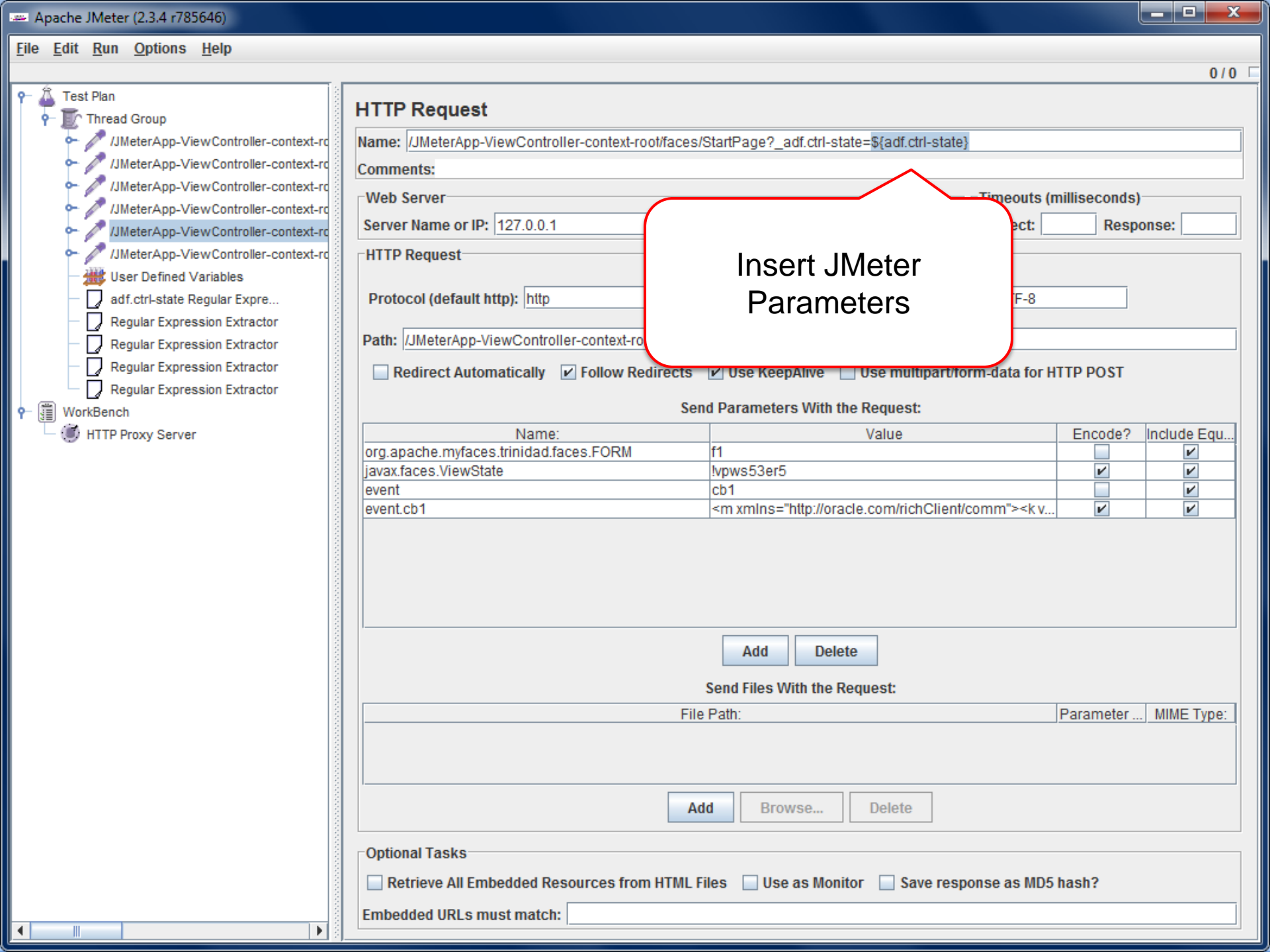
Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files

☐ Use as Monitor

☐ Save response as MD5 hash?

Embedded URLs must match:



Insert JMeter
Parameters

HTTP Request

Name: /JMETERApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=\${adf.ctrl-state}

Comments:

Web Server

Server Name or IP: 127.0.0.1

Timeouts (milliseconds)

Connect: Response:

HTTP Request

Protocol (default http): http

F-8

Path: /JMETERApp-ViewController-context-root

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Use multipart/form-data for HTTP POST

Send Parameters With the Request:

Name:	Value	Encode?	Include Equ...
org.apache.myfaces.trinidad.faces.FORM	f1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
javax.faces.ViewState	/vpws53er5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
event	cb1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
event.cb1	<m xmlns="http://oracle.com/richClient/comm"><k v...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add

Delete

Send Files With the Request:

File Path:	Parameter ...	MIME Type:

Add

Browse...

Delete

Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files ☐ Use as Monitor ☐ Save response as MD5 hash?

Embedded URLs must match:

Test Plan

- Thread Group
 - /JMeterApp-ViewController-context-root
 - /JMeterApp-ViewController-context-root
 - /JMeterApp-ViewController-context-root
 - /JMeterApp-ViewController-context-root
 - /JMeterApp-ViewController-context-root
 - /JMeterApp-ViewController-context-root
 - User Defined Variables
 - adf.ctrl-state Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
 - Regular Expression Extractor
- WorkBench
 - HTTP Proxy Server

HTTP Request

Name: /JMeterApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=\${adf.ctrl-state}

Comments:

Web Server

Server Name or IP: 127.0.0.1 Port Number: 7101

Timeouts (milliseconds)

Connect: Response:

HTTP Request

Protocol (default http): http Method: POST Content encoding: UTF-8

Path: /JMeterApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=\${adf.ctrl-state}

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Use multipart/form-data for HTTP POST

Name:	Encode?	Include Equ...
org.apache.myfaces.trinidad.faces.FORM	<input type="checkbox"/>	<input checked="" type="checkbox"/>
javax.faces.ViewState	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
event	<input type="checkbox"/>	<input checked="" type="checkbox"/>
event.cb1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Insert JMeter Parameter

Add Delete

Send Files With the Request:

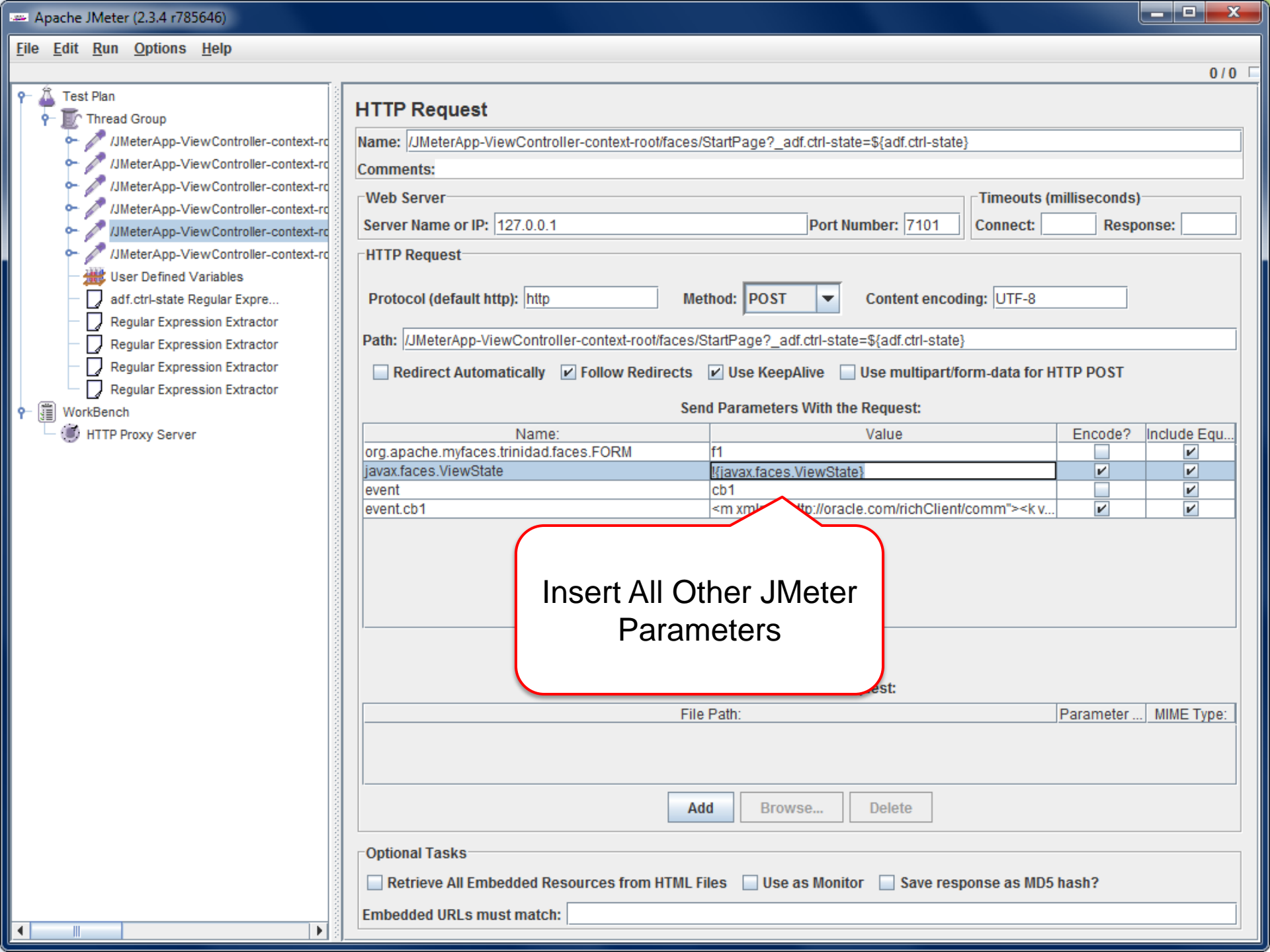
File Path:	Parameter ...	MIME Type:

Add Browse... Delete

Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files ☐ Use as Monitor ☐ Save response as MD5 hash?

Embedded URLs must match:



HTTP Request

Name: /JMeterApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=\${adf.ctrl-state}

Comments:

Web Server
Server Name or IP: 127.0.0.1 Port Number: 7101
Timeouts (milliseconds)
Connect: Response:

HTTP Request

Protocol (default http): http Method: POST Content encoding: UTF-8

Path: /JMeterApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=\${adf.ctrl-state}

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Use multipart/form-data for HTTP POST

Send Parameters With the Request:			
Name:	Value	Encode?	Include Equ...
org.apache.myfaces.trinidad.faces.FORM	f1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
javax.faces.ViewState	{javax.faces.ViewState}	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
event	cb1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
event.cb1	<m xmlns:trinidad=http://oracle.com/richClient/comm"><k v...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Insert All Other JMeter Parameters

Test:

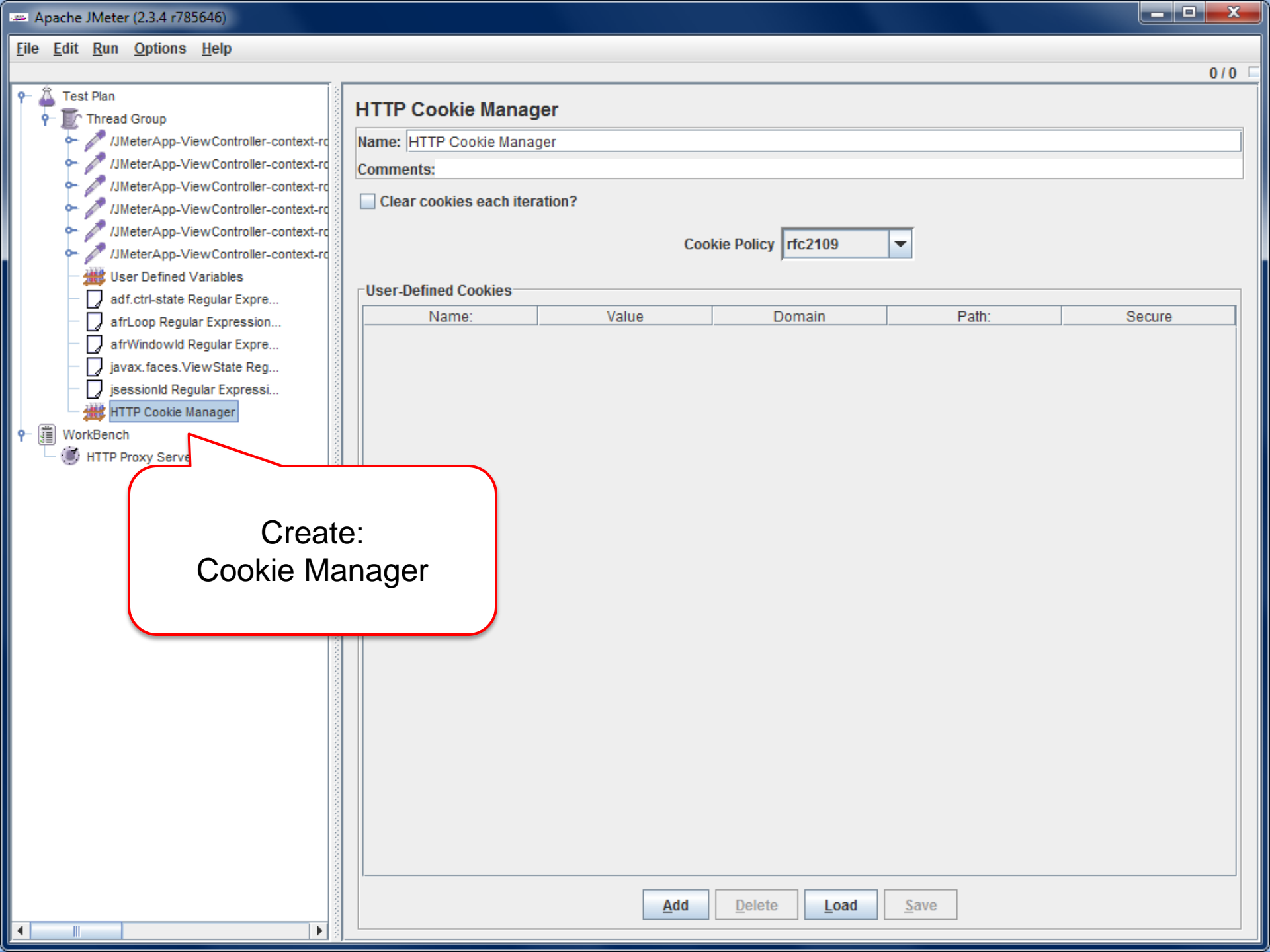
File Path:	Parameter ...	MIME Type:

Add Browse... Delete

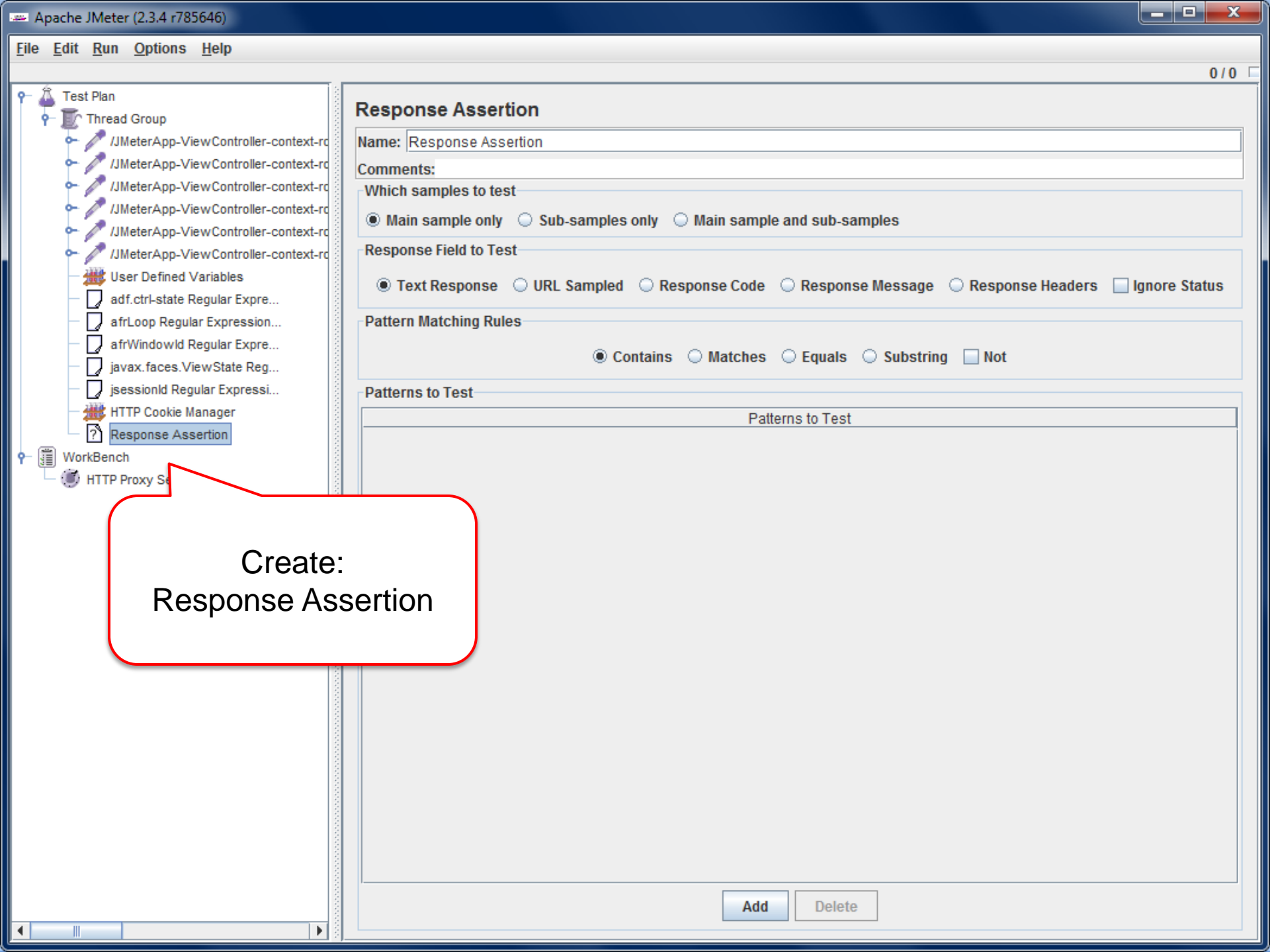
Optional Tasks

☐ Retrieve All Embedded Resources from HTML Files ☐ Use as Monitor ☐ Save response as MD5 hash?

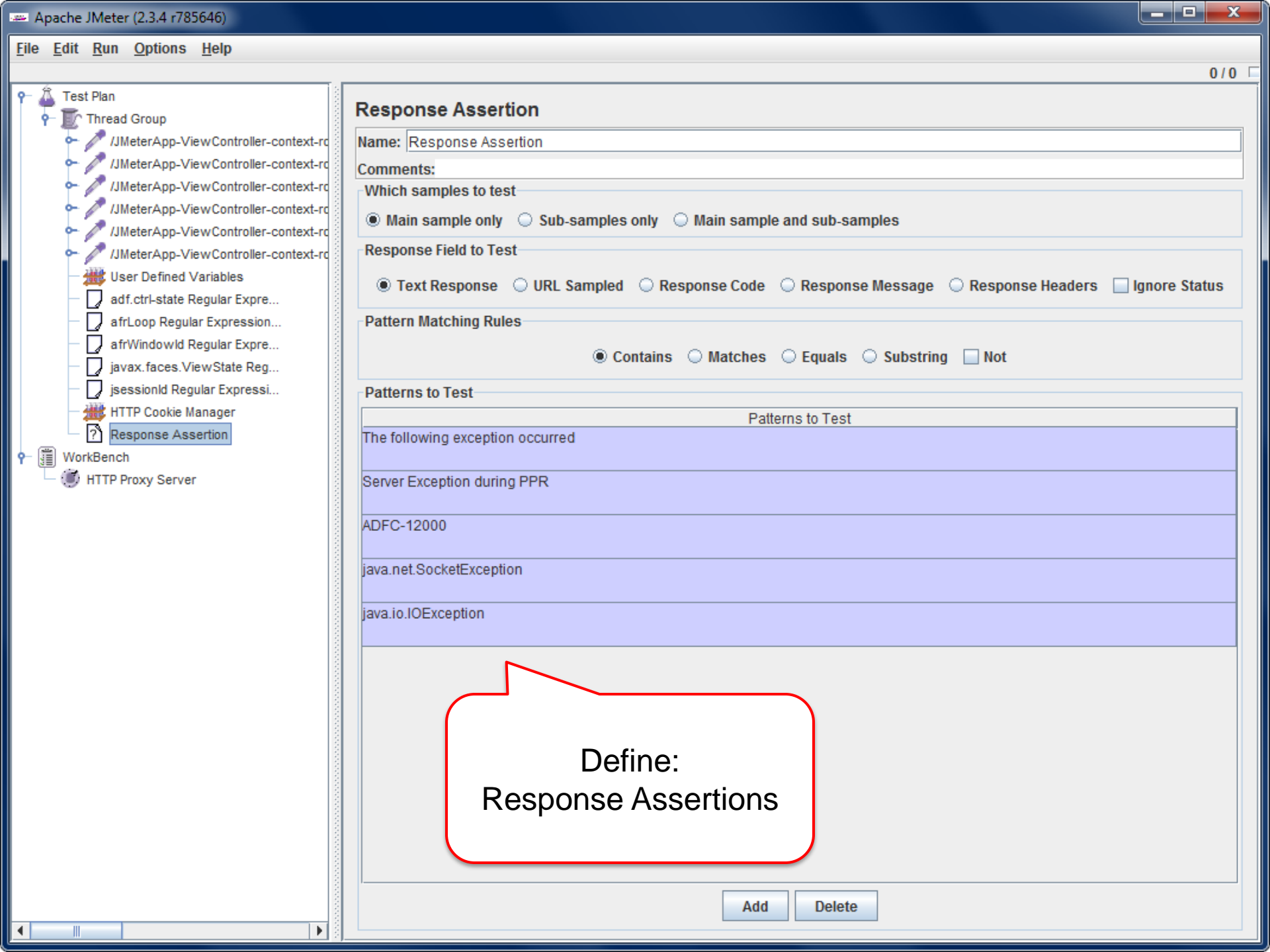
Embedded URLs must match:



Create:
Cookie Manager



Create:
Response Assertion



Response Assertion

Name: Response Assertion

Comments:

Which samples to test

☒ Main sample only ☐ Sub-samples only ☐ Main sample and sub-samples

Response Field to Test

☒ Text Response ☐ URL Sampled ☐ Response Code ☐ Response Message ☐ Response Headers ☐ Ignore Status

Pattern Matching Rules

☒ Contains ☐ Matches ☐ Equals ☐ Substring ☐ Not

Patterns to Test

Patterns to Test

The following exception occurred

Server Exception during PPR

ADFC-12000

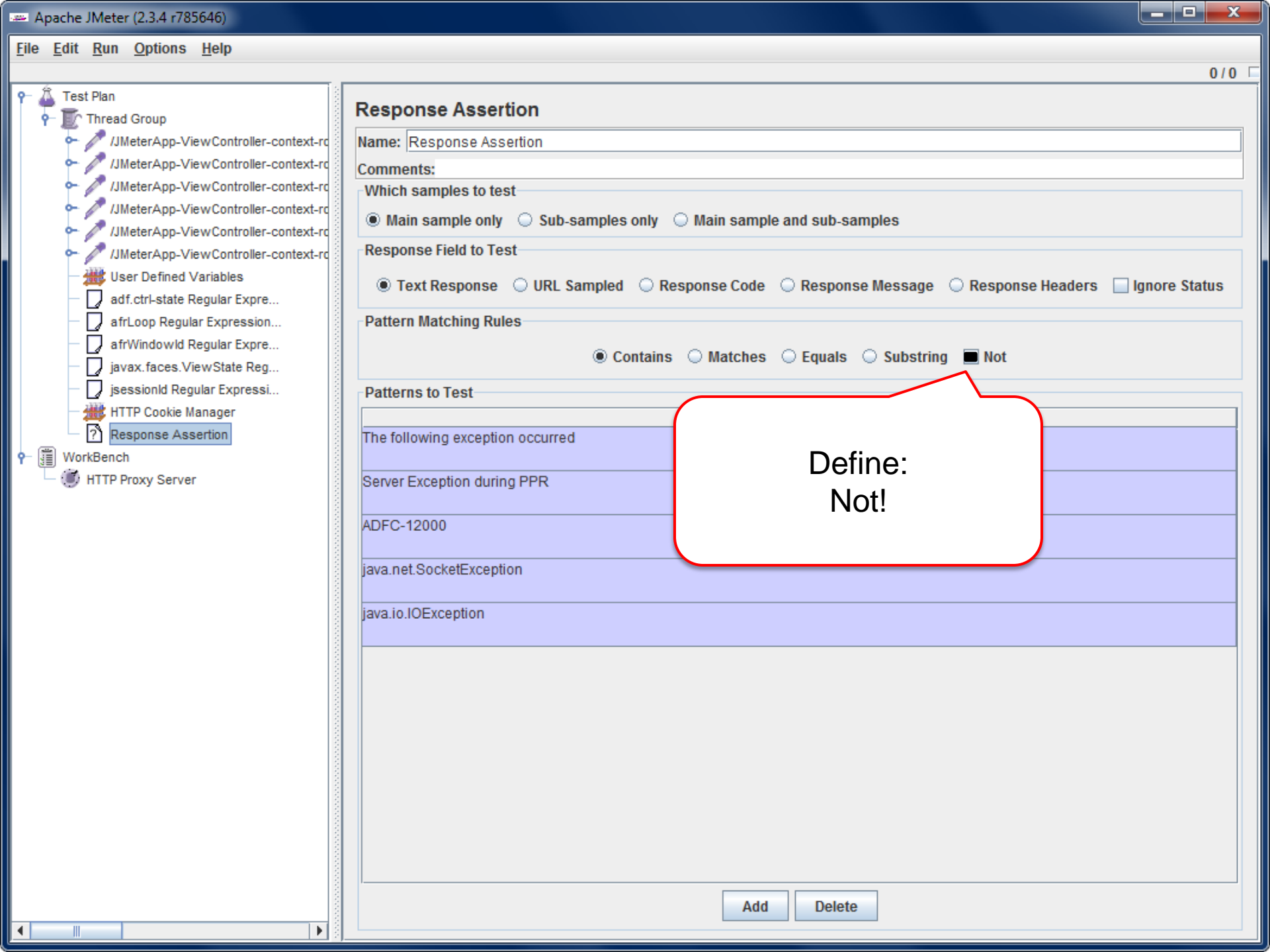
java.net.SocketException

java.io.IOException

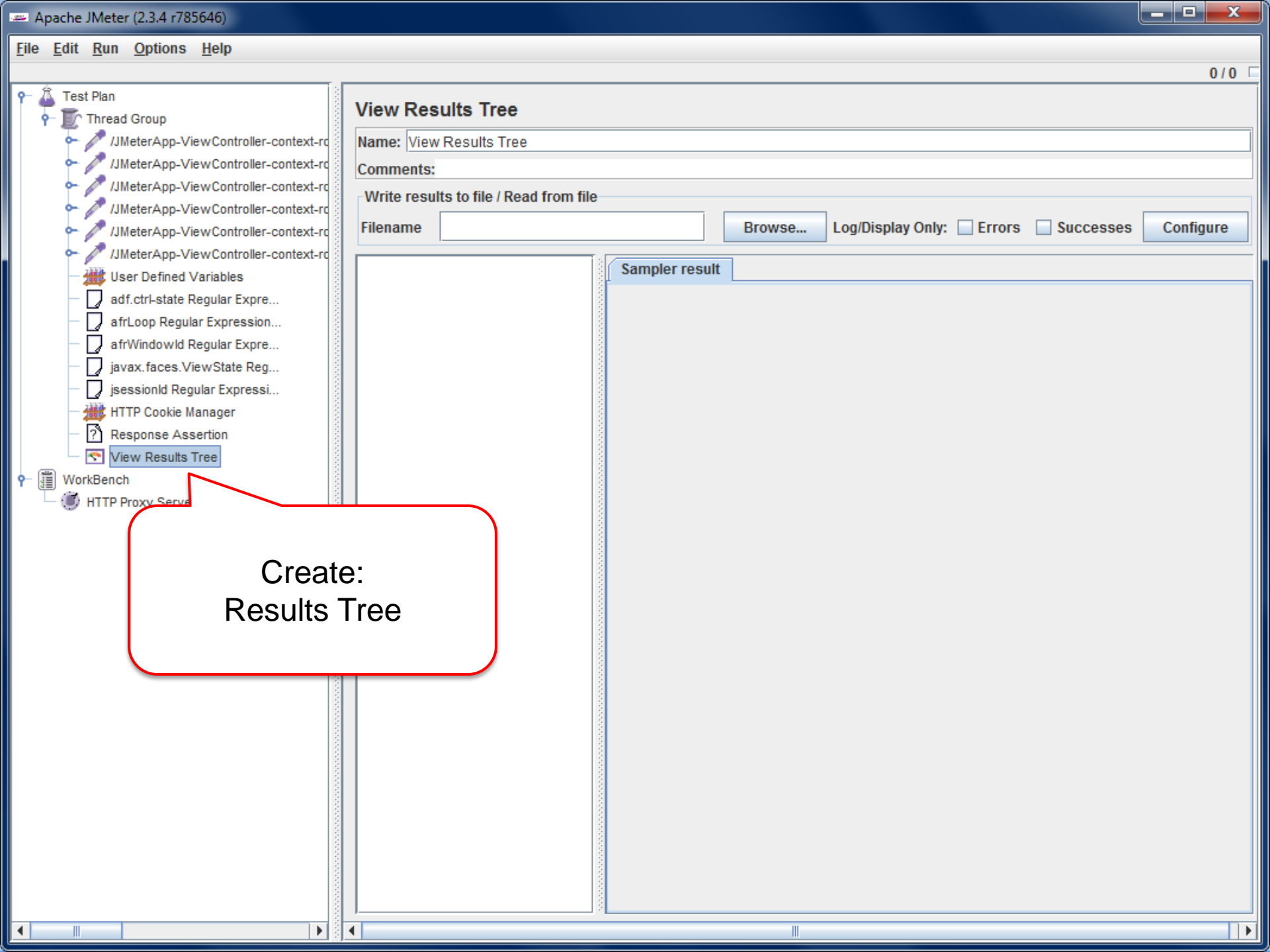
Define:
Response Assertions

Add

Delete



Define:
Not!



Create:
Results Tree

[Start JMeter]

File Edit Run Options Help

0 / 1

Start Ctrl-R

Remote Start

Remote Start All Ctrl+Shift-R

Stop

Shutdown

Remote Stop

Remote Stop All

Remote Exit

Remote Exit All

Clear Ctrl+Shift-E

Clear All Ctrl-E

Start Run

Thread Group

Continue Stop Thread Stop Test Stop Test Now

Ramp-Up Period (in seconds): 1

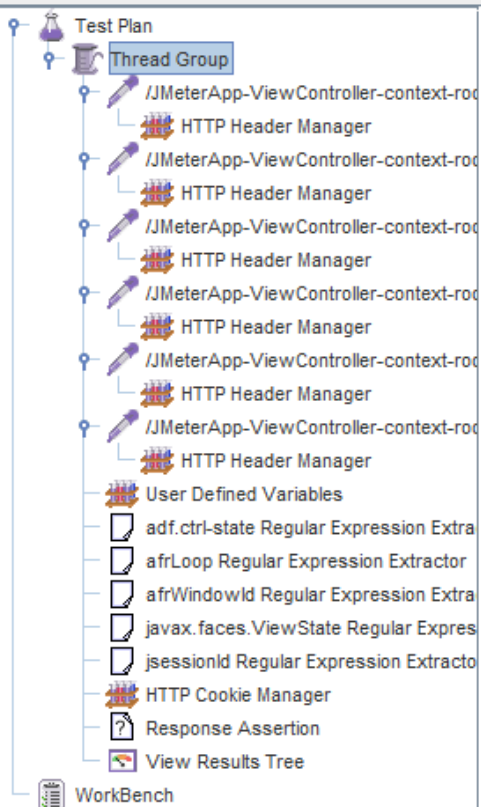
Loop Count: ☐ Forever 1

☐ Scheduler

WorkBench

HTTP Proxy Server

File Edit Run Options Help



Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

☒ Continue ☐ Stop Thread ☐ Stop Test

Thread Properties

Number of Threads (users): 20

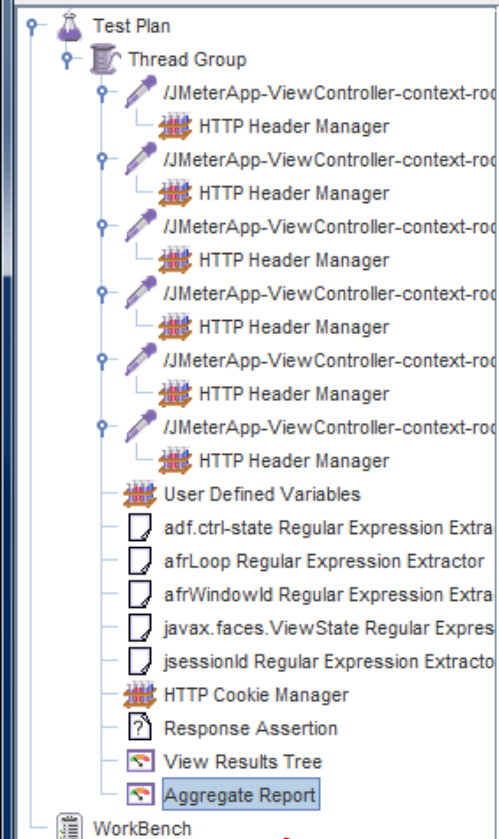
Ramp-Up Period (in seconds): 1

Loop Count: ☐ Forever 1

☐ Scheduler

Count Down

Results



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	Min	Max	Error %	Throughput	KB/sec
TOTAL	0	0	0	0	0	922337203...	0.00%	.0/hour	.0

Create:
Aggregate Report

☐ Include group name in label?

Save Table Data

Test Plan

- Thread Group
 - /JMeterApp-ViewController-context-ro...
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro...
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro...
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro...
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro...
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro...
 - HTTP Header Manager
 - User Defined Variables
 - adf.ctrl-state Regular Expression Extra...
 - afrLoop Regular Expression Extractor
 - afrWindowId Regular Expression Extra...
 - javax.faces.ViewState Regular Expres...
 - jsessionId Regular Expression Extracto...
 - HTTP Cookie Manager
 - Response Assertion
 - View Results Tree
 - Aggregate Report

WorkBench

Aggregate Report

Name: Aggregate Report

Comments:

Write results to file / Read from file

Filename

Browse...

Log/Display Only: ☐ Errors ☐ Successes

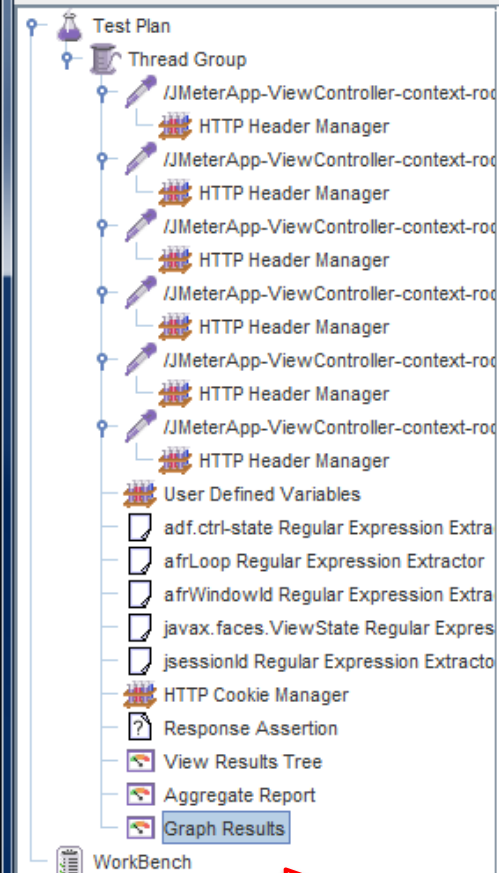
Configure

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/JMeterApp-...	40	13	14	26	2	27	0.00%	38.3/sec	190.8
/JMeterApp-...	20	51	48	82	24	90	0.00%	19.7/sec	198.0
/JMeterApp-...	20	9	7	21	3	24	0.00%	20.5/sec	3.2
/JMeterApp-...	20	37	36	58	24	68	0.00%	20.3/sec	241.3
/JMeterApp-...	20	32	27	66	16	71	0.00%	21.5/sec	184.9
TOTAL	120	26	22	58	2	90	0.00%	110.1/sec	745.7

Results

☐ Include group name in label?

Save Table Data



Graph Results

Name: Graph Results

Comments:

Write results to file / Read from file

Filename

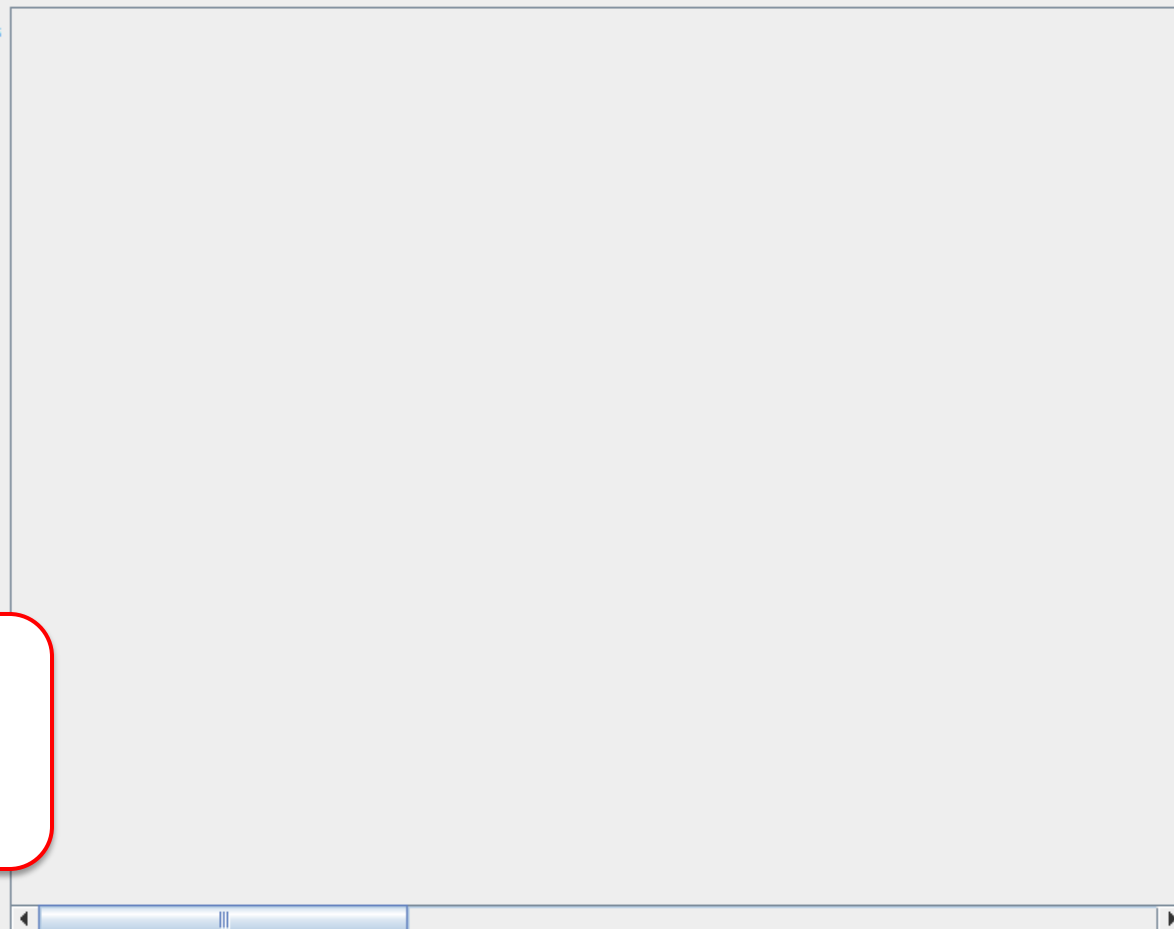
Browse...

Log/Display Only: ☐ Errors ☐ Successes

Configure

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

ms



Create:
Graph Results

ms

No of Samples
Deviation

Latest Sample
Throughput

Average
Median

Test Plan

- Thread Group
 - /JMeterApp-ViewController-context-ro
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-ro
 - HTTP Header Manager
 - User Defined Variables
 - adf.ctrl-state Regular Expression Extra
 - afrLoop Regular Expression Extractor
 - afrWindowId Regular Expression Extra
 - javax.faces.ViewState Regular Expres
 - jsessionId Regular Expression Extracto
 - HTTP Cookie Manager
 - Response Assertion
 - View Results Tree
 - Aggregate Report
 - Graph Results

WorkBench

Graph Results

Name: Graph Results

Comments:

Write results to file / Read from file

Filename

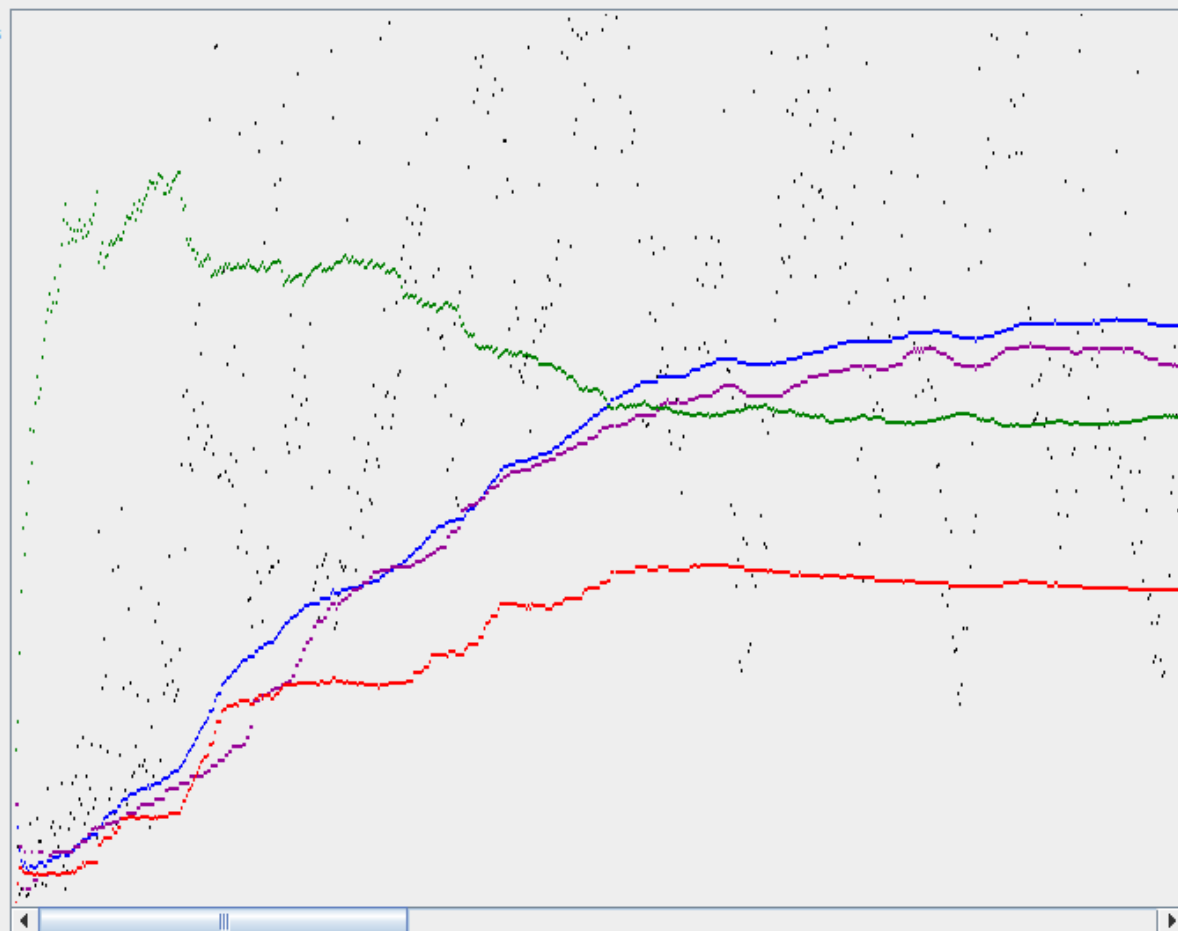
Browse...

Log/Display Only: ☐ Errors ☐ Successes

Configure

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

346 ms



0 ms

No of Samples 832

Latest Sample 192

Average 228

Deviation 116

Throughput 4,877.858/minute

Median 216

Other JMeter Uses

- Conditional testing
- Periodic verification of internet host or vendor capacity
- Tender software evaluation

JMeter Out-of-the-Box Uses

- Bloat your blog visitor statistics
- Denial of service attacks
- On-line click fraud

- Um, Disclaimer: don't try this at home

Eviware's SoapUI

- <http://www.soapui.org/>
- Defacto web service load, stress and regression testing utility
- Example: <http://one-size-doesnt-fit-all.blogspot.com/2009/08/soapui-for-web-service-testing.html>
- Free



Eviware's SoapUI Demonstration



[[View WSDL](#)]

[[Start SoapUI](#)]





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