



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)

Chris Muir

Oracle Consultant and Trainer

<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?

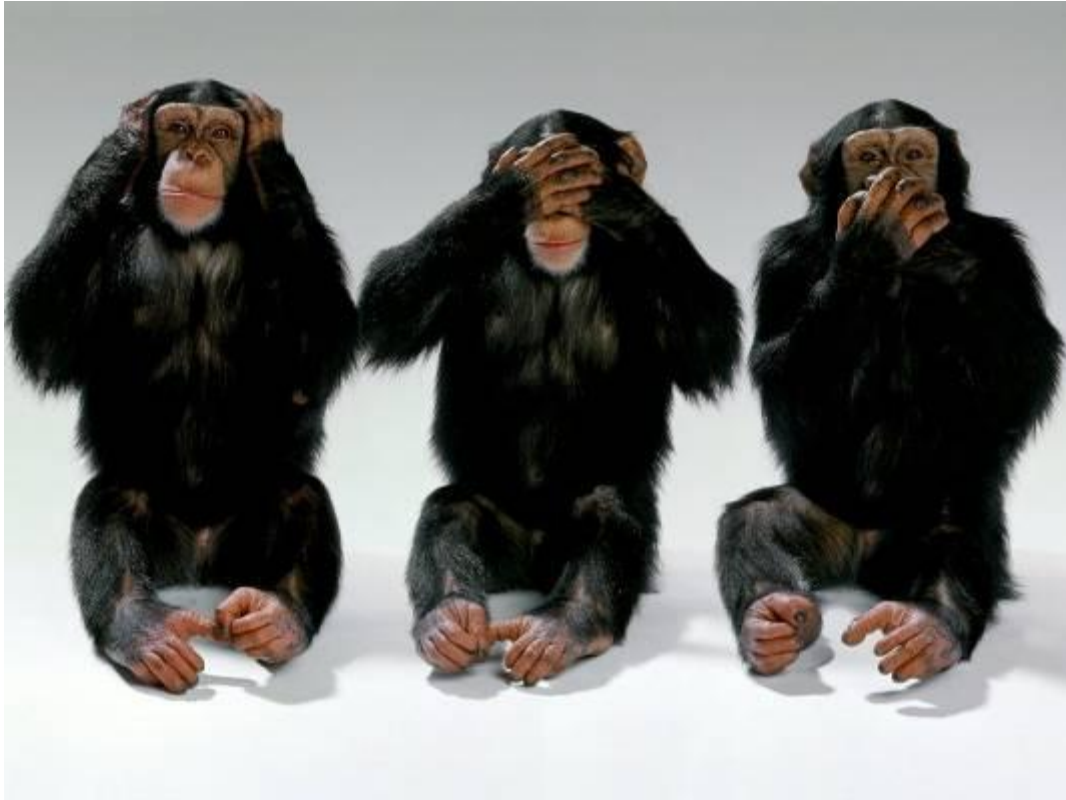
How much bandwidth does our website use?

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



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



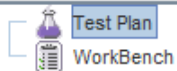
Apache's JMeter

- <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





Test Plan

Name: Test Plan

Comments:

User Defined Variables

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

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

Library

- Test Plan
 - Thread Group
 - WorkBench

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

Warm-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

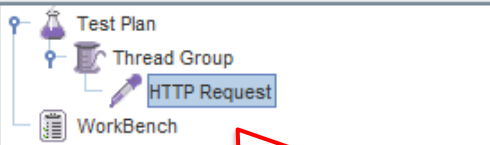
Number of Threads (users): 20

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 [x] 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:

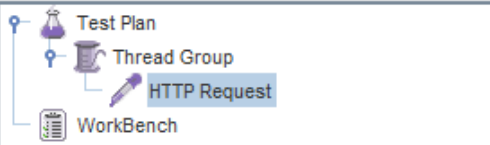
File Path:	Parameter ...	MIME Type:
------------	---------------	------------

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: HTTP Request

Comments:

Web Server

Server Name or IP: Port Number:

Timeouts (milliseconds) Connect: Response:

HTTP Request

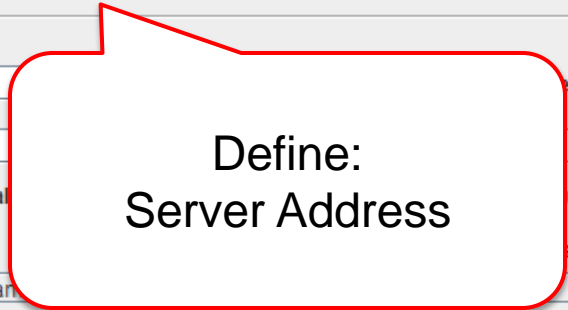
Protocol (default http): Content encoding:

Path:

Redirect Automatically

multipart/form-data for HTTP POST

Name	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:

- Test Plan
- Thread Group
- HTTP Request**
- WorkBench

HTTP Request

Name: HTTP Request

Comments:

Web Server

Server Name or IP: Port Number:

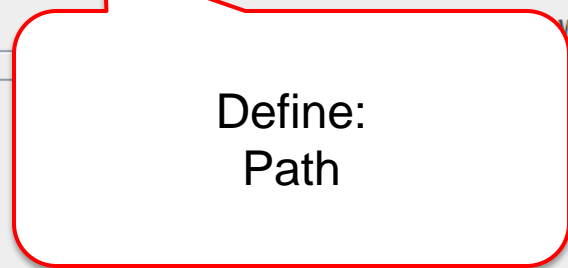
Timeouts (milliseconds) Connect: Response:

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:

- Test Plan
- Thread Group
- HTTP Request**
- WorkBench

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

Send Parameters With the Request:

Name:	Value	Encode?	Include Equ...
<div data-bbox="685 692 1255 999" data-label="Text"> <p>Define: Any URL Parameters</p> </div>			

Delete

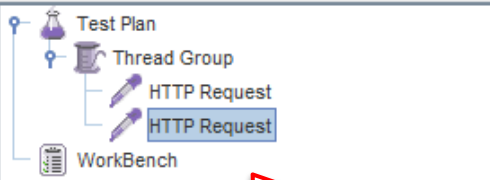
Send Files With the Request:

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:



Create:
Next HTTP Request

HTTP Request

Name: HTTP Request

Comments:

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

URL: 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:



- Test Plan
 - Thread Group
 - WorkBench

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

Warm-Up Period (in seconds): 1

Loop Count: Forever 1

Scheduler

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

Create:
HTTP Proxy Server

HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8080 Attempt HTTPS Spoofing Optional URL match string:

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

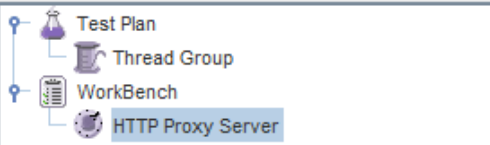
Content-type filter

Include: Exclude:

URL Patterns to Include

URL Patterns to Exclude

Start Stop Restart



HTTP Proxy Server

Name: HTTP Proxy Server

Comments:

Port: 8085 Attempt HTTPS Spoofing Optional URL match string:

Test plan configuration: Grouping: Do not group samplers

Target: Matching

HTTP Type: Follow Redirects Use KeepAlive Retrieve All Embedded

Content: Include: Exclude:

URL Patterns to Include

URL Patterns to Include

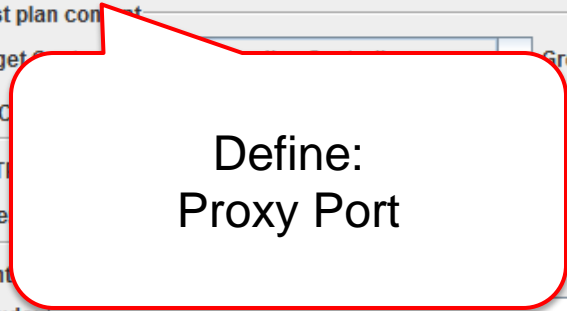
Add Delete

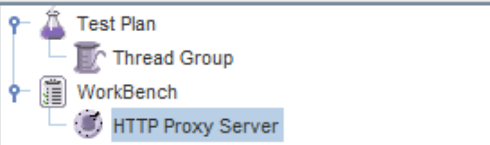
URL Patterns to Exclude

URL Patterns to Exclude

Add Delete

Start Stop Restart





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

Redirects Follow Redirects Use KeepAlive Retrieve All Embedded

Content-type filter

Include:

URL Patterns to Include

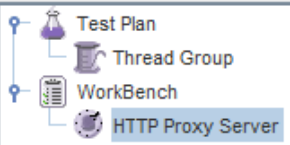
Add Delete

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

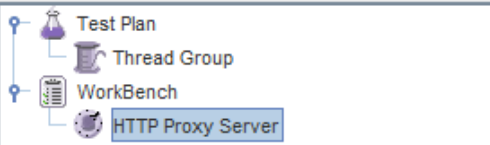
Add Delete

Define:
URL Pattern

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

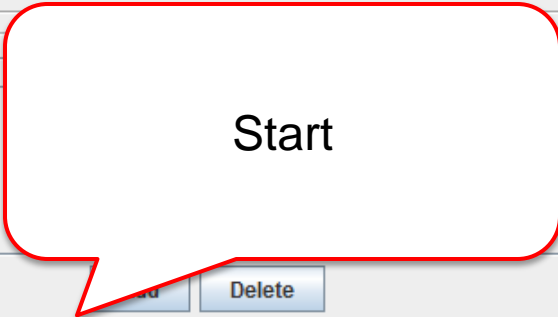
URL Patterns to Include
.*

Add Delete

URL Patterns to Exclude

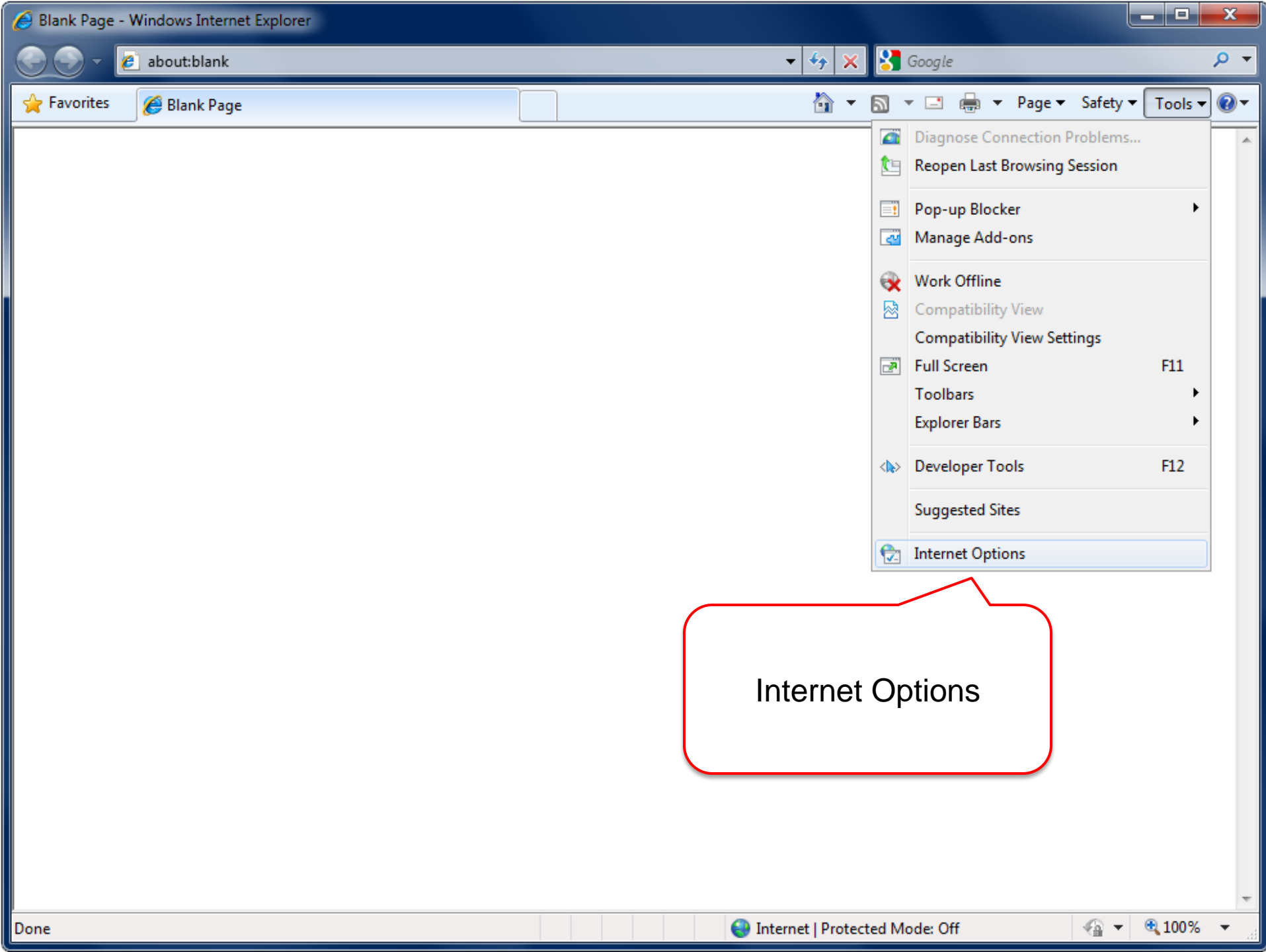
URL Patterns to Exclude

Add Delete



Start Stop Restart





Internet Options

Internet Options

General Security Privacy Content **Connections** Programs Advanced

To set up an Internet connection, click **Setup**.

Connections

Add...
Add VPN...
Remove...
Settings

Choose Settings if you need to configure a proxy server for a connection.

Never dial a connection
 Dial whenever a network connection is not present
 Always dial my default connection

Current None Set default

Local Area Network (LAN) settings

LAN Settings do not apply to dial-up connections. Choose Settings above for dial-up settings. LAN settings

OK Cancel Apply

Internet Options

General Security Privacy Content **Connections** Programs Advanced

To set up an Internet connection, click Setup.

Dial-up and Virtual Private Network settings

Add... Add VPN... Remove... Settings

Current None Set default

Local Area Network (LAN) settings

LAN Settings do not apply to dial-up connections. Choose Settings above for dial-up settings.

LAN settings

OK Cancel Apply

LAN settings

Internet Options

General Security Privacy Content Connections Programs Advanced

To set up an Internet connection, click Setup

Local Area Network (LAN) Settings

Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.

Automatically detect settings

Use automatic configuration script

Address:

Proxy server

Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).

Address: Port: Advanced

Bypass proxy server for local addresses

OK Cancel

Use a proxy server for your LAN

Internet Options

General Security Privacy Content Connections Programs Advanced

To set up an Internet connection, click Setup

Local Area Network (LAN) Settings

Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.

Automatically detect settings
 Use automatic configuration script

Address:

Proxy server
 Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).

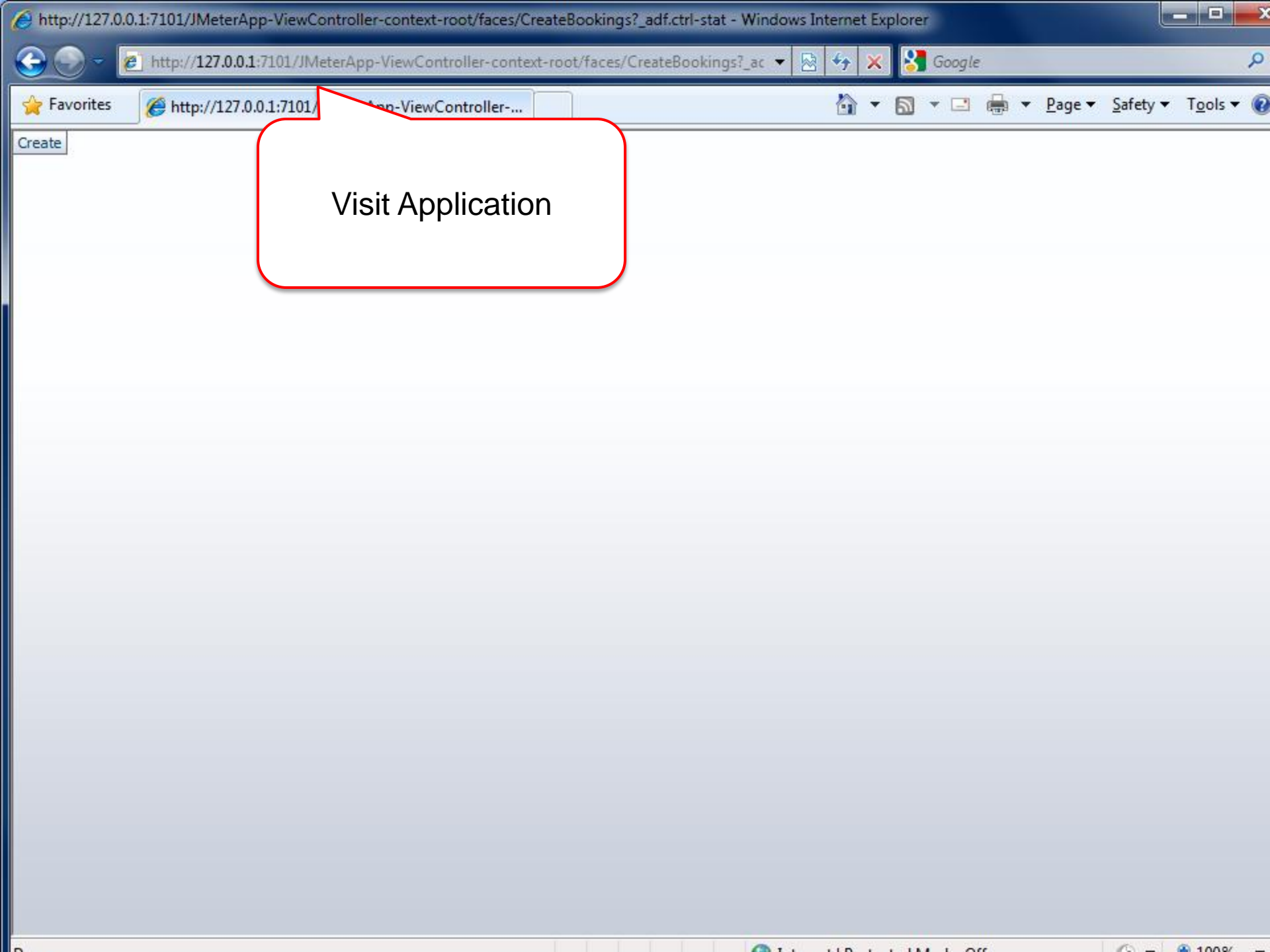
Address: localhost Port: 8085 Advanced

Bypass proxy server for local addresses

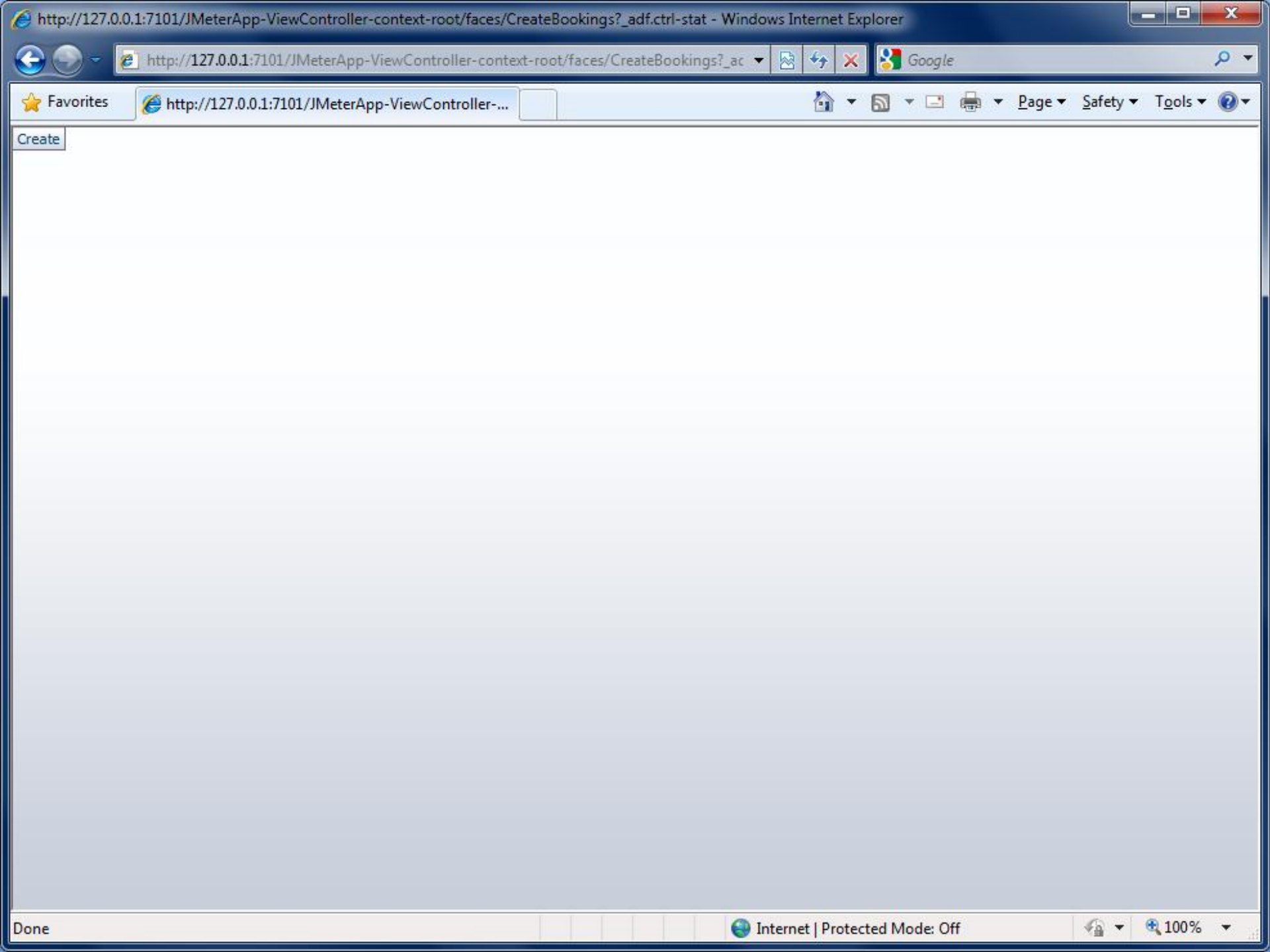
OK

Define:
Address

Define:
Port



Visit Application



BookingNo 17069

*EventNo

*ResourceCode

Chargeable

MadeBy

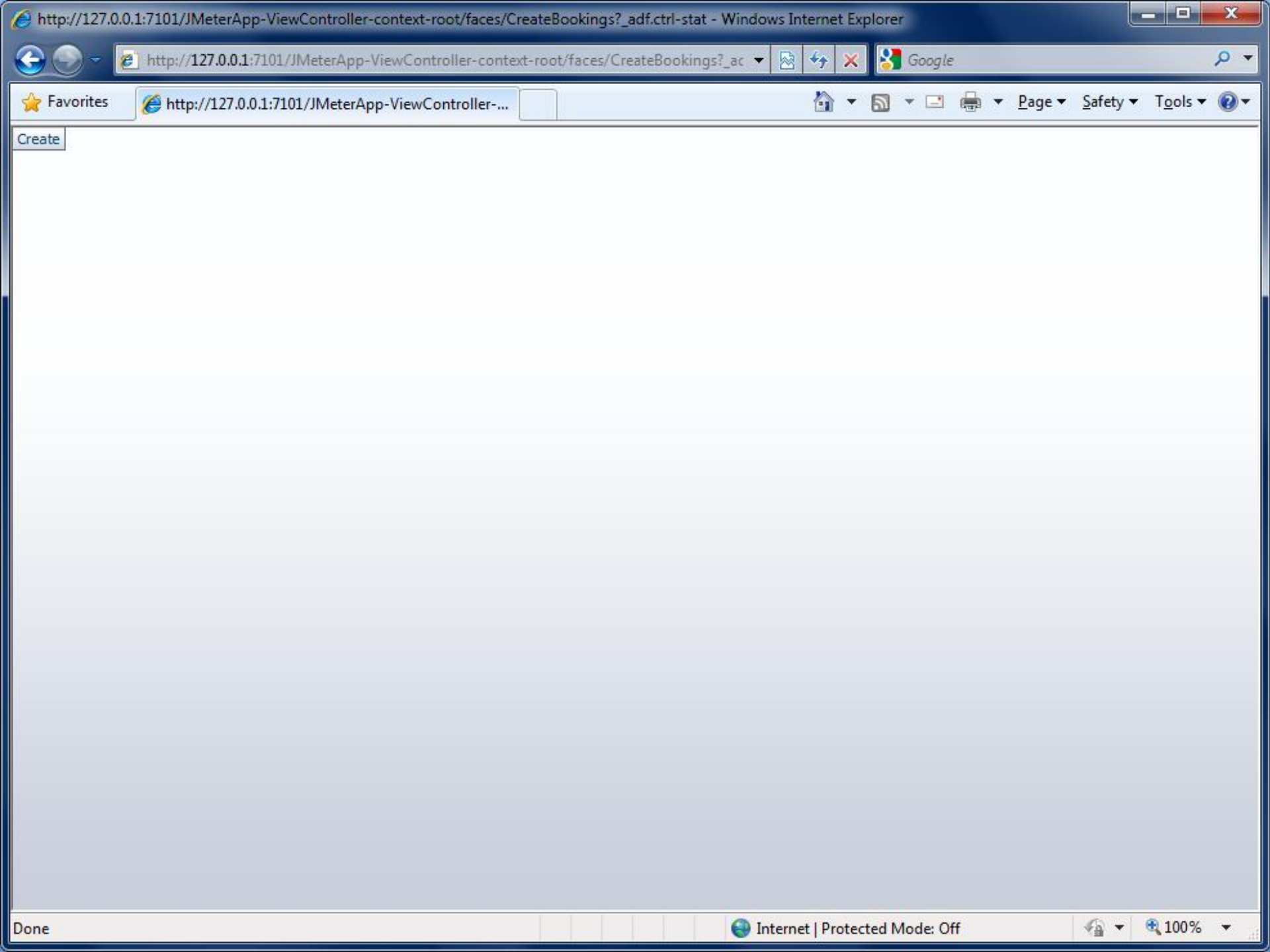
Quantity

Cost

Status

Comments

BookingNo 17069
* EventNo
* ResourceCode
Chargeable
MadeBy
Quantity
Cost
Status
Comments



Test Plan

- Thread Group
 - /JMeterApp-ViewController-context-root/faces/StartPage
 - /JMeterApp-ViewController-context-root/faces/StartPage;jsessionid=T15hLmcV3cLQDbPQv1XkXG3hmQHpd2cQbxGHqQJnc5TGDfrmKCPw!1981235046
 - /JMeterApp-ViewController-context-root/faces/StartPage
 - /JMeterApp-ViewController-context-root/afr/blank.html
 - /JMeterApp-ViewController-context-root/faces/StartPage?_adf.ctrl-state=zxetnn3jf_4
 - /JMeterApp-ViewController-context-root/faces/CreateBookings?_adf.ctrl-state=zxetnn3jf_4
- WorkBench
 - HTTP Proxy Server

Recorded Session

Test Plan

Name: Test Plan

Comments:

User Def

Name:

[Empty text area for user definition]

Add

Run Thread Groups consecutiv

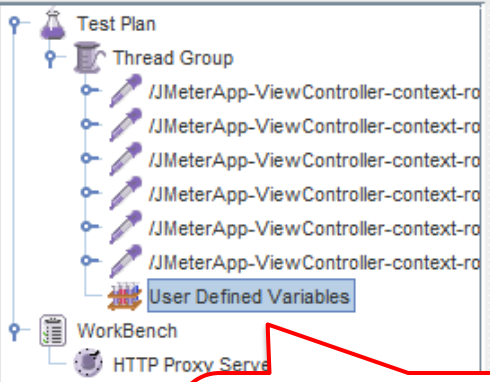
Functional Test Mode (i.e. save

Selecting Functional Test Mode ma

Add directory or jar to classpath

[Empty text area for classpath]





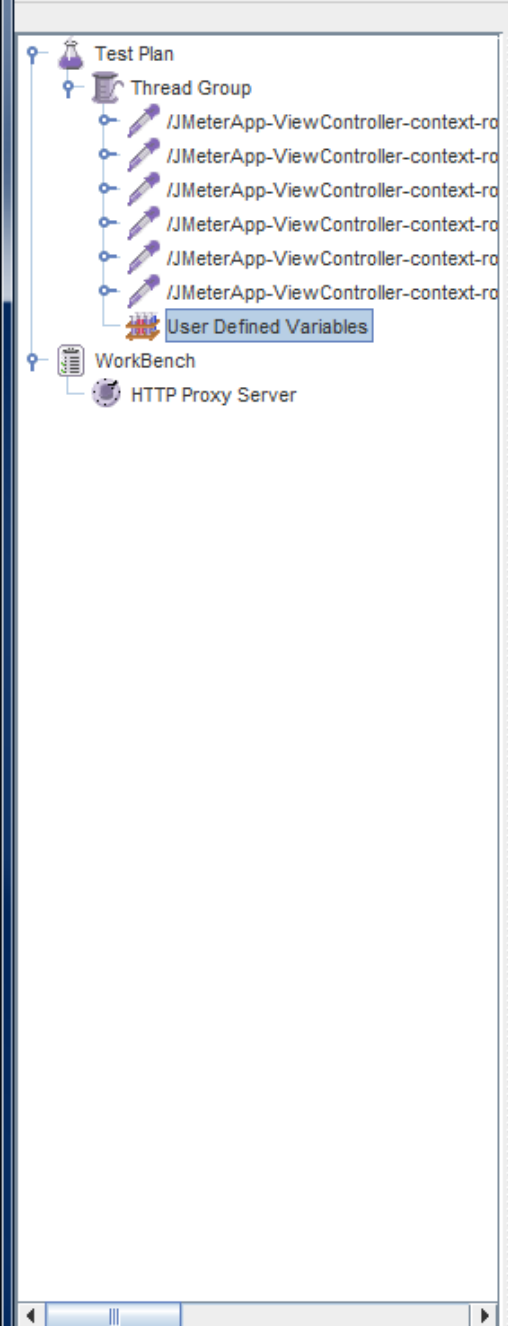
User Defined Variables

Name:
Comments:

User Defined Variables

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

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>

- 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
 - WorkBench
 - HTTP Proxy Server

Regular Expression Extractor

Name: Regular Expression Extractor

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:
Regular Expression
Extractors

- 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
 - WorkBench
 - HTTP Proxy Server

Regular Expression Extractor

Name:

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

- 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
 - 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:
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
 - 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:
No. Expression to
Extract

- 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:

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

- 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=145vtrlvo_4

Comments:

Web Server

Server Name or IP: 127.0.0.1

Timeouts (milliseconds) response: []

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	lvpws53er5	<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:

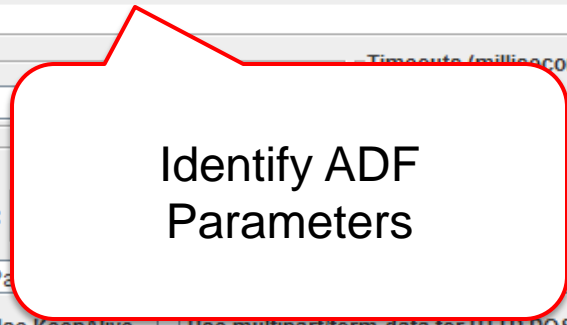
File Path:	Parameter ...	MIME Type:

Add Browse... Delete

Optional Tasks

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

Embedded URLs must match: []



Identify ADF Parameters

- 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

Timeouts (milliseconds)
 Connect: Response:

HTTP Request

Protocol (default http): http

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	lvpws53er5	<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"/>

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:

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"/>



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

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	<message id="http://oracle.com/richClient/comm"><k.v...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Insert All Other JMeter Parameters

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-r...
 - /JMeterApp-ViewController-context-r...
 - /JMeterApp-ViewController-context-r...
 - /JMeterApp-ViewController-context-r...
 - /JMeterApp-ViewController-context-r...
 - /JMeterApp-ViewController-context-r...
 - User Defined Variables
 - adf.ctrl.state Regular Expre...
 - afrLoop Regular Expression...
 - afrWindowId Regular Expre...
 - javax.faces.ViewState Reg...
 - jsessionId Regular Expressi...
 - HTTP Cookie Manager**
 - WorkBench
 - HTTP Proxy Serve

HTTP Cookie Manager

Name: HTTP Cookie Manager

Comments:

Clear cookies each iteration?

Cookie Policy **rfc2109**

User-Defined Cookies

Name:	Value	Domain	Path:	Secure
-------	-------	--------	-------	--------

Add Delete Load Save

Create:
Cookie Manager

- 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
 - adf.ctrl.state Regular Expre...
 - afrLoop Regular Expression...
 - afrWindowId Regular Expre...
 - javax.faces.ViewState Reg...
 - jsessionId Regular Expressi...
 - HTTP Cookie Manager
 - Response Assertion**
- WorkBench
 - HTTP Proxy S...

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

Add Delete

Create:
Response Assertion

- 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
 - adf.ctrl-state Regular Expre...
 - afrLoop Regular Expression...
 - afrWindowId Regular Expre...
 - javax.faces.ViewState Reg...
 - jsessionId Regular Expressi...
 - HTTP Cookie Manager
 - Response Assertion**
- WorkBench
 - HTTP Proxy Server

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

- 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
 - adf.ctrl.state Regular Expre...
 - afrLoop Regular Expression...
 - afrWindowId Regular Expre...
 - javax.faces.ViewState Reg...
 - jsessionId Regular Expressi...
 - HTTP Cookie Manager
 - Response Assertion**
- WorkBench
 - HTTP Proxy Server

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

The following exception occurred
Server Exception during PPR
ADFC-12000
java.net.SocketException
java.io.IOException

Define:
Not!

Add Delete

- 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
 - adf.ctrl-state Regular Expre...
 - afrLoop Regular Expression...
 - afrWindowId Regular Expre...
 - javax.faces.ViewState Reg...
 - jsessionId Regular Expressi...
 - HTTP Cookie Manager
 - Response Assertion
 - View Results Tree**
- WorkBench
 - HTTP Proxy Serv...

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

Sampler result

Create:
Results Tree

[Start JMeter]

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
 - /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

WorkBench

Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

Continue Stop Thread Stop Test

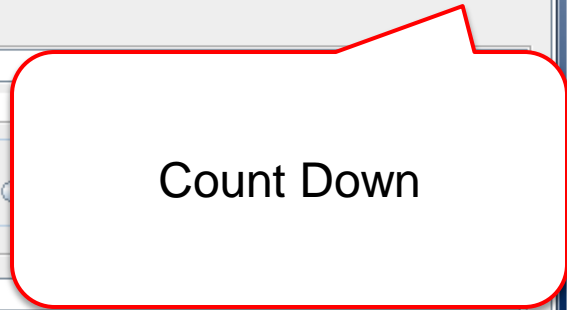
Thread Properties

Number of Threads (users): 20

Ramp-Up Period (in seconds): 1

Loop Count: Forever 1

Scheduler



Count Down

- Test Plan
 - Thread Group
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - 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

Aggregate Report

Name:

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

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

- 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

Aggregate Report

Name:

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

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



- Test Plan
 - Thread Group
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - HTTP Header Manager
 - /JMeterApp-ViewController-context-roo
 - 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

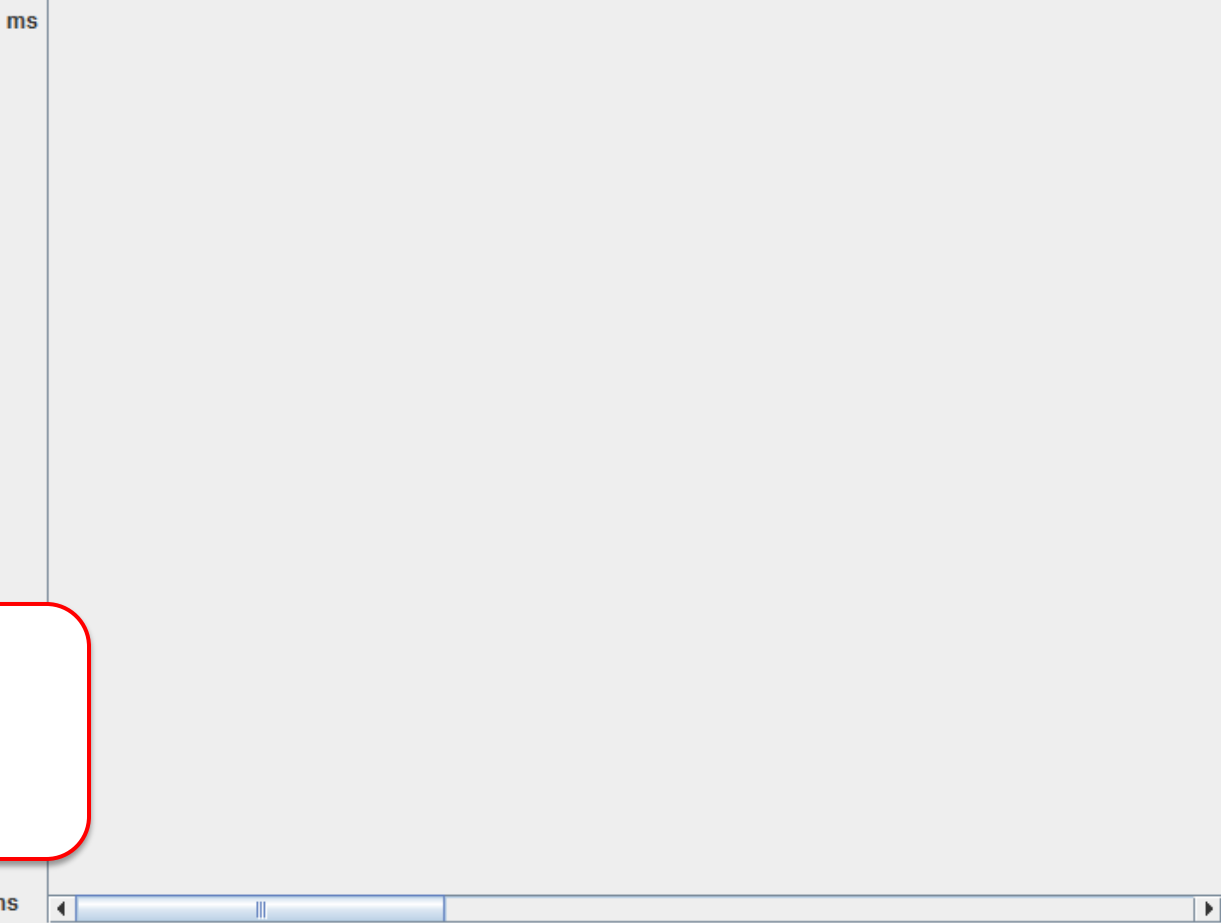
Name:

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

Graphs to Display Data Average Median Deviation Throughput



Create:
Graph Results

ms
No of Samples Latest Sample Average
Deviation Throughput 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

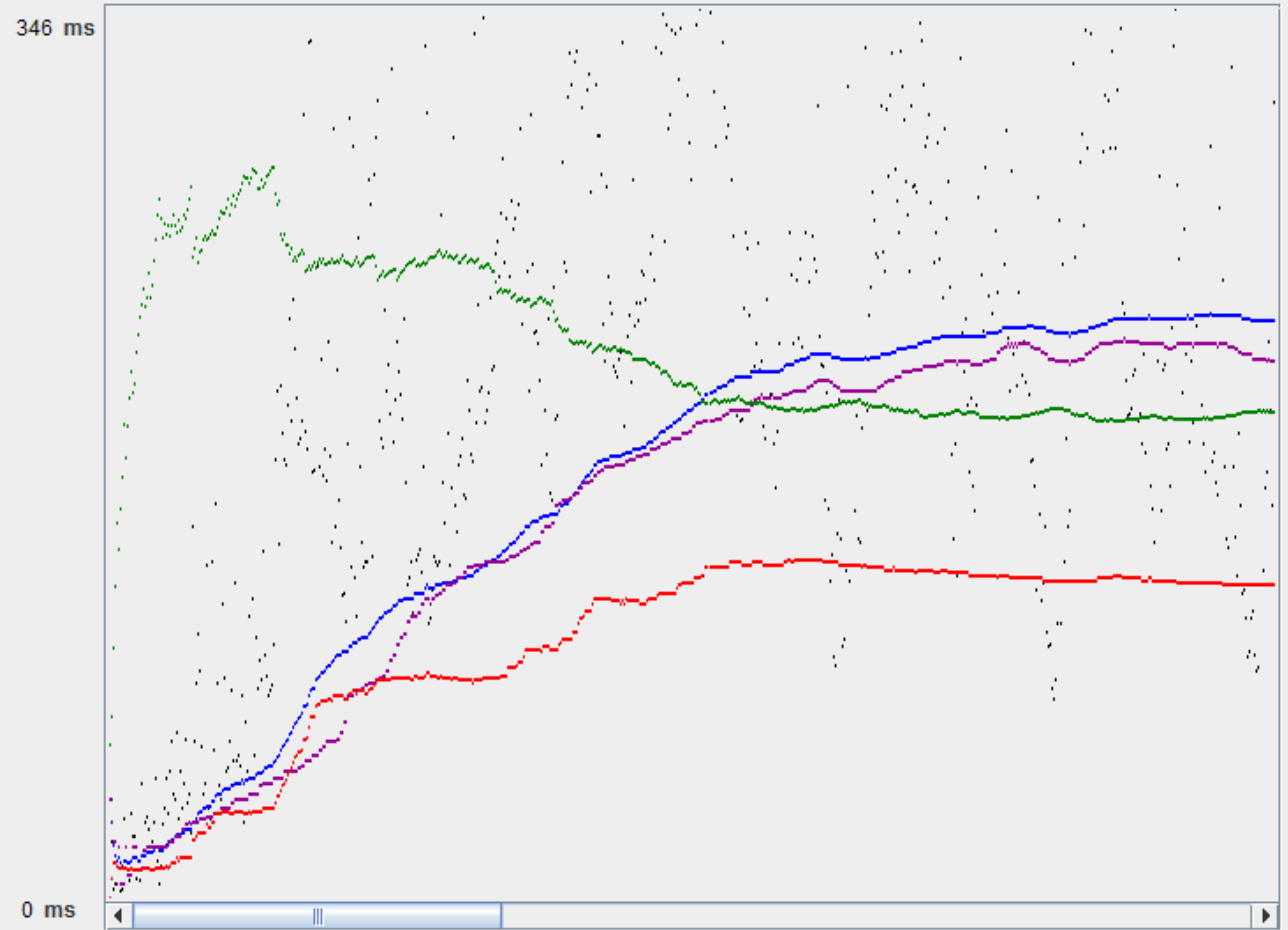
Name:

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

Graphs to Display Data Average Median Deviation Throughput



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](#)]





SAGE Computing Services

Customised Oracle Training Workshops and Consulting

Questions and Answers?

Presentations are available from our website:

www.sagecomputing.com.au

enquiries@sagecomputing.com.au

chris.muir@sagecomputing.com.au

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