

# Recording HTTP User Journeys

User's Guide



Version 6.0

## **Copyright**

Copyright © 2004, 2005, 2006, 2007, 2008, 2009 Reflective Solutions Ltd.  
All rights reserved.

## **Restricted Rights Legend**

This software and documentation is subject to and made available only pursuant to the terms and conditions of the Reflective Solutions Ltd. license agreement and may be used or copied only in accordance with the terms of that agreement. It is against the law to copy the software except as specifically allowed in the agreement. This document may not, in whole or in part, be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form without prior consent, in writing, from Reflective Solutions Ltd.

Information in this document is subject to change without notice and does not represent a commitment on the part of Reflective Solutions Ltd.

THE SOFTWARE AND DOCUMENTATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FURTHER REFLECTIVE SOLUTIONS LTD. DOES NOT WARRANT, GUARANTEE OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE, OF THE SOFTWARE OR WRITTEN MATERIAL IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY OR OTHERWISE.

## **Trademarks or Service Marks**

jTune™ and StressTester™ are registered trademarks of Reflective Solutions Ltd.

All other trademarks are the property of their respective companies.

# Contents

Introduction .....	4
Preparing to Record a User Journey .....	5
Business Transaction Requirements .....	5
Clearing the Browser's Cache.....	5
Configuring the Browser for Recording.....	8
Recording a User Journey .....	11
Starting a Recording Session.....	11
Using the StressTester™ Annotation Window.....	14
Post Recording Actions.....	16
Inspecting the Recorded User Journey.....	18
Testing the User Journey.....	19
Quick Run a User Journey.....	19
Checking the Application Responses .....	20
Further Developing the User Journey.....	22
Appendix A: Sample Recording Planning Sheet.....	23

# Introduction

This guide describes the process to be followed to successfully record an HTTP(S) User Journey.

It describes the short preparation required prior to each recording, the process of recording, and how to confirm that the recording has been successful.

## Preparing to Record a User Journey

This section details the tasks that you should perform prior to recording a User Journey to ensure that the recording is complete and correct.

The tasks consist of:

- Planning the business transaction to be recorded
- Clearing the browser's cache (if appropriate)
- Configuring the browser to use StressTester™'s recording proxy

### Business Transaction Requirements

Before recording any User Journey, it is suggested that the actions to be performed during the recording, the data to be supplied to screen fields, etc. is planned in order that the recording matches the performance testing requirements.

For more complex User Journeys, it is suggested that the user rehearses the User Journey prior to recording.

**Note:** There is no need to perform “back” actions, loops, or simulate user indecision during the recording – all of these can be configured post recording using StressTester™'s Flow Control facility (please refer to the [Configuring User Journeys to be Correct and Realistic](#) user guide for further information).

Appendix A contains a simple format sheet that that can be used to plan a recording session.

### Clearing the Browser's Cache

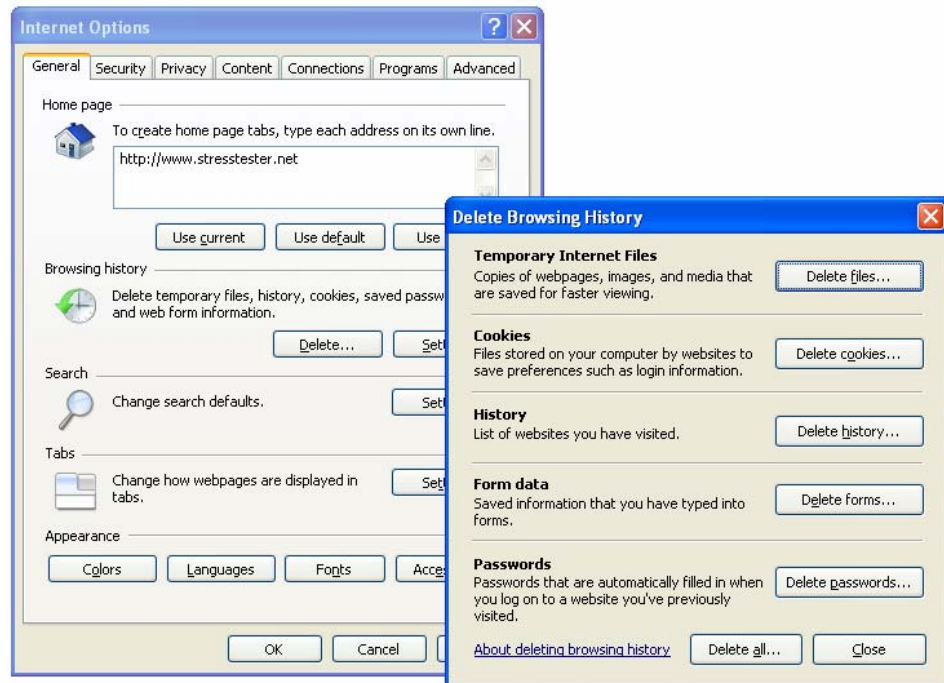
The majority of web sites allow the browser to cache certain content to reduce the number of requests made by the browser to the application servers.

Content can be cached for different time periods; typically either for the duration of a user's session or until a set date in the future.

In order that StressTester™ records all the interactions that a new user would make against a web application, the browser cache should usually be cleared prior to the recording occurring.

**Note:** If you are sure that 100% of your user community will always have the cacheable content in their browser cache, you can skip this step; however this is a very rare situation.

### Microsoft Internet Explorer



To clear the browser cache of Internet Explorer:

- Choose the “Tools” option in the Internet Explorer toolbar
- Choose “Internet Options” in the drop-down menu
- Click the “Delete” button in the “Browsing history” section
- Click the “Delete All” button
- Click “Yes” to confirm and then “OK” to close the pop-up window

## Mozilla Firefox



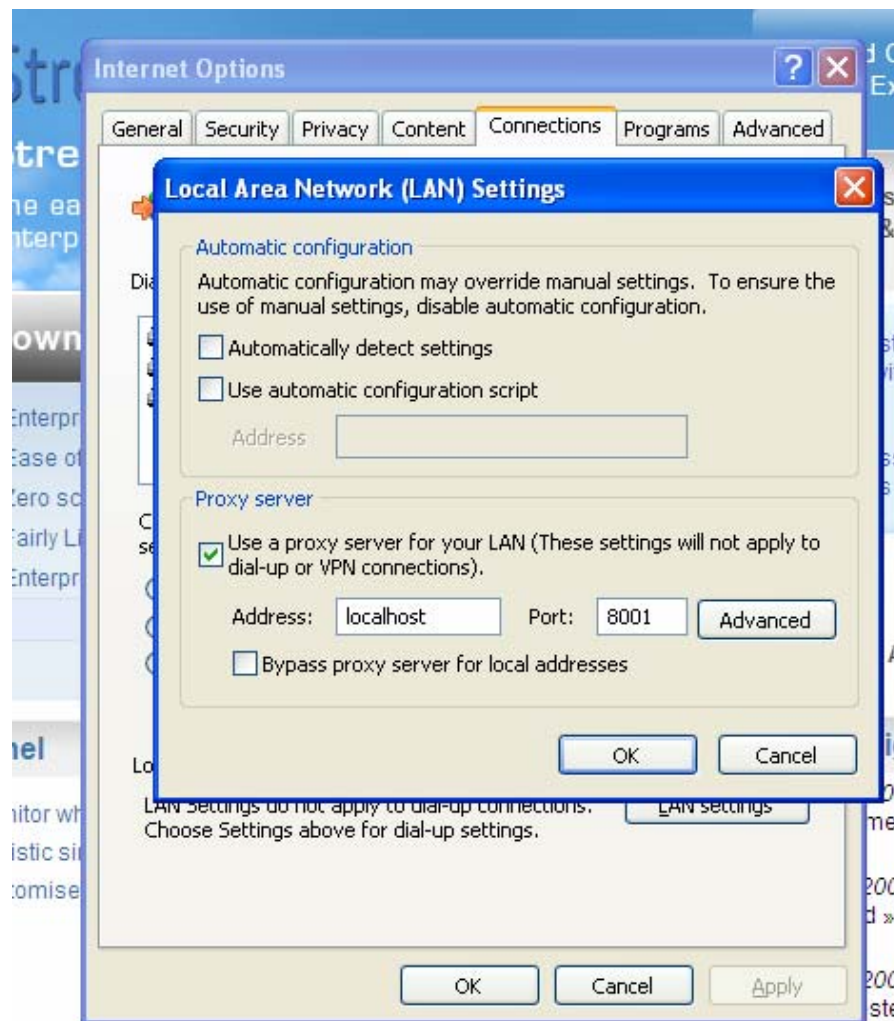
To clear the browser cache of Firefox:

- Choose the “Tools” option in the Firefox toolbar
- Choose “Clear Private Data” in the drop-down menu
- Apart from “Saved Passwords”, which can be left unchecked, all other options should be checked
- Click the “Clear Private Data Now” button

## Configuring the Browser for Recording

With the recording planned, and the browser's cache cleared, the last set-up action prior to starting the recording is to ensure that the browser is configured to use StressTester™'s recording proxy.

### Microsoft Internet Explorer

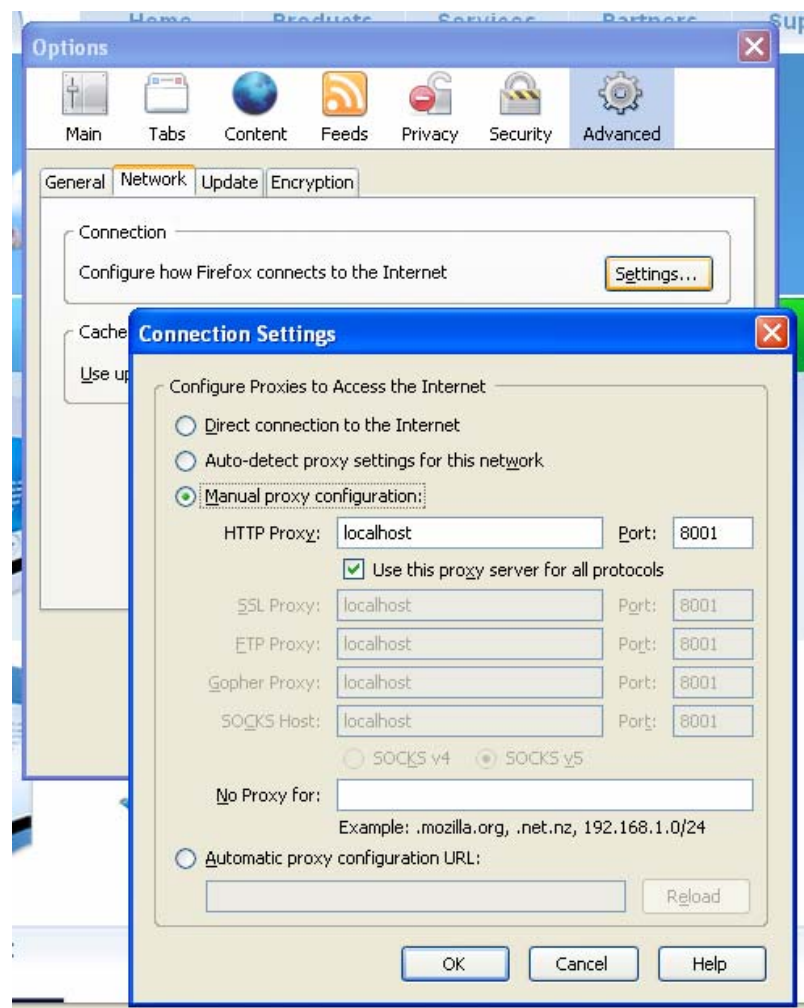


To configure Internet Explorer to use the StressTester™ recording proxy:

- Choose the “Tools” option in the Internet Explorer toolbar
- Choose “Internet Options” in the drop-down menu
- Choose the “Connections” tab

- Click the “LAN Settings” button at the bottom of the tab’s page
- Check the “Proxy Server” option and enter the details of where you will instruct StressTester™ to record – usually the values are an Address of `localhost` and a Port of `8001`
- Ensure the “Bypass proxy server for local addresses” is **not** checked.
- Click “OK” and “OK” to close the pop-up windows

### Mozilla Firefox



To configure Firefox to use the StressTester™ recording proxy:

- Choose the “Tools” option in the Firefox toolbar

- Choose “Options” in the drop-down menu
- Choose the “Network” tab
- Click the “Settings” button
- Check the “Manual proxy configuration” option and enter the details of where you will instruct StressTester™ to record – usually the values are an HTTP Proxy of `localhost` and a Port of `8001`
- Check “Use this proxy for all protocols”
- Ensure the “No Proxy for:” field is empty
- Click “OK” and “OK” to close the pop-up windows

## Recording a User Journey

Having completed the preparation, you are now ready to record a User Journey.

This section details the actions to record a new HTTP User Journey using StressTester™.

### Starting a Recording Session

To start a recording session within StressTester™, first open the StressTester™ user interface.

Then click the Record User Journey button on the toolbar.



Depending on whether you have previously selected the “Do not show again” option or not, the ‘Introduction to Recording a User Journey’ help page may show.

Once you have closed this page, you will be prompted for details about the User Journey to be recorded.

The screenshot shows a window titled "Record User Journey". It contains the following fields and controls:

- User Journey Name: Search and Purchase Books
- Application Name: Bookstore
- Protocol: http(s)
- Proxy Port: 8001
- Network/Security tabs
- Address: (empty text box)
- Port: (empty text box)
- Start Recording button

The fields on the screen are as follows:

Field	Description
User Journey Name	The name to be given to the recorded User Journey.
Application Name	The name of the application against which the recording will be made. User Journeys are grouped by application within the StressTester™ user interface.
Protocol	The protocol the browser uses to communicate with the application – always set to “http(s)”
Proxy Port	The port for StressTester™’s recording proxy to listen on – this should be the same as the port set in the browser’s proxy settings – see the <a href="#">Configuring the Browser for Recording</a> section above.

The optional fields on the “Network” tab are as follows:

Address	If you usually use a proxy to access the application, this field should be set to the address where that proxy resides. If you do not usually use a proxy, then this field should be left blank.
Port	If a network proxy is specified, this field should contain the port on which that proxy listens; otherwise it should be left blank.

If your application requires a certificate to authenticate the user, details of a certificate to use during recording can be entered on the Security tab.

The screenshot shows the 'Record User Journey' dialog box with the 'Security' tab selected. The 'Network' tab is also visible. The 'User Journey Name' field contains 'Search and Purchase Books'. The 'Application Name' dropdown is set to 'Bookstore'. The 'Protocol' dropdown is set to 'http(s)'. The 'Proxy Port' field contains '8001'. The 'Security' tab contains the following fields: 'Certificate File Type' dropdown set to '<none>', 'Certificate File Name' text box, and 'Certificate File Password' text box. A 'Start Recording' button is at the bottom.

The fields on this tab are as follows:

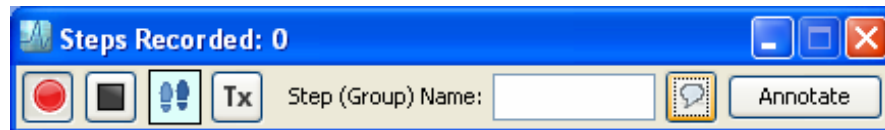
Certificate File Type	If the application requires the client to authenticate using a public key certificate, then choose the format of the certificate file that is to be presented when requested.
Certificate File Name	The filename of the certificate file. This can be a fully qualified file name, or the name of a file in a directory relative to the StressTester™ installation directory.

Certificate File Password	The password assigned to the certificate file when it was exported.  StressTester™ does not permit a certificate file to be used unless it is password protected.
---------------------------	---




Once you have completed the required fields, click the “Start Recording” button.



## Using the StressTester™ Annotation Window

During recording sessions, the StressTester™ Annotation window will be visible and “always on top”.



The fields and buttons of this window are as follows:

Button / Field	Description
Steps Recorded	Indicates the number of requests from the browser to the application recorded by StressTester™ so far in this recording session.
	Recording icon. When flashing this indicates that StressTester™'s recording proxy is ready to record browser interactions with the application.
	Stop button. Once the recording is complete, press this button to stop the recording process and close the Annotation window.
	When depressed, indicates the next annotated step will start a step group (this can be thought of as a new page in a web application).  This button is depressed by default – indicating all annotated steps are pages within the application.

Button / Field	Description
	When depressed, indicates that StressTester™ should mark the next annotated step as a transaction and include it when calculating transaction throughput for a performance test.
Step (Group) Name	The name to be given to the annotated step.
	When clicked, a notes box will appear allowing a description for the annotated step to be entered or notes made about the recording.

### Recording Process

It is suggested that you adhere to the following process when recording User Journeys.

For every action you will perform in the browser:

1. Enter a name for the action you are about to perform e.g. “Go To Home Page”, “Confirm Purchase”, etc.
2. If you wish to mark this step as a transaction, click the transaction button
3. If you wish to make notes or enter a description for the step, click the notes button and enter the required notes
4. Click the “Annotate” button
5. Perform the action in the browser

**Note:** You should not worry if you forget to annotate, mark as transaction or step group during the recording. All of these actions can be performed following recording in the StressTester™ user interface.

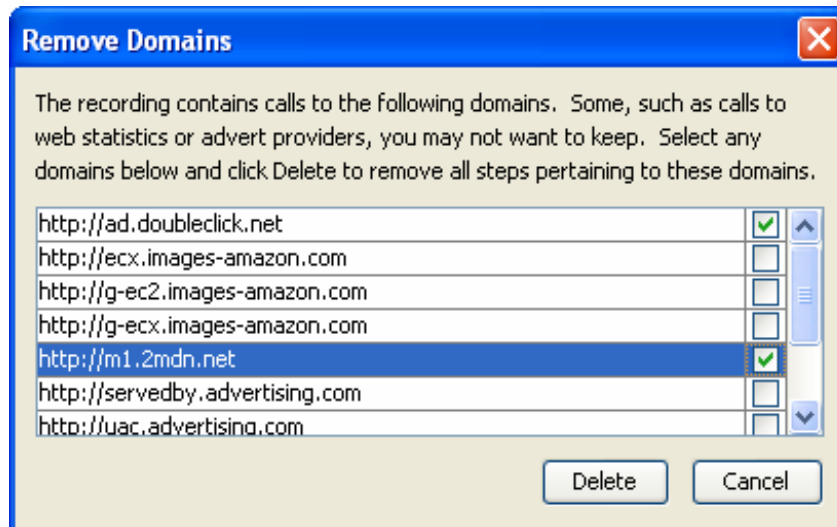
### Finishing Recording

When you have finished recording the business transaction you wish to simulate, simply click the stop button in the Annotation Window to stop recording.

## Post Recording Actions

### Remove Calls to Unwanted Domains

When you switch back to the main StressTester™ window, you may be prompted with a pop-up window offering you the chance to remove steps from domains you do not wish to keep in your recording.

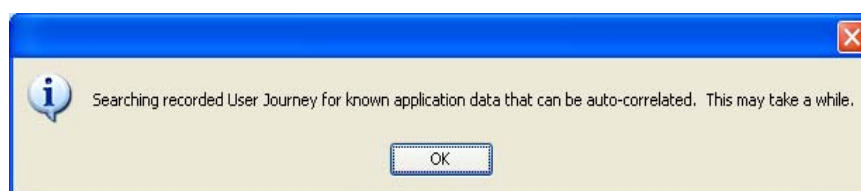


It is common - especially when recording against public commercial web sites - for Internet applications to retrieve content from many domains (including external advertising and web monitoring sites).

However, it may not be desirable to make such requests when executing performance tests – for example you may be charged by each advert requested.

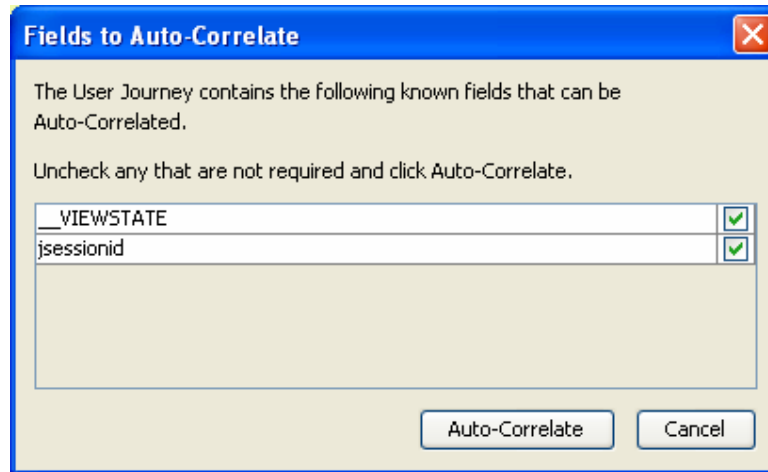
By selecting the domains you do not wish to include in your performance tests and clicking the “Delete” button, StressTester™ will automatically remove all steps from the User Journey that access those domains.

StressTester™ will then present an informative pop-up indicating that it is about to search for known session control variables that it can handle automatically.



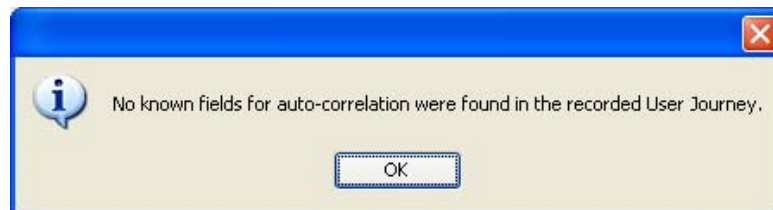
Clicking “OK” will start the search.

In the event that StressTester™ finds any known variables, it will present a pop-up window identifying those found.



Select any variables that you wish StressTester™ to handle on your behalf and click the “Auto-Correlate” button.

In the event that no known variables were found an informative pop-up will be presented.

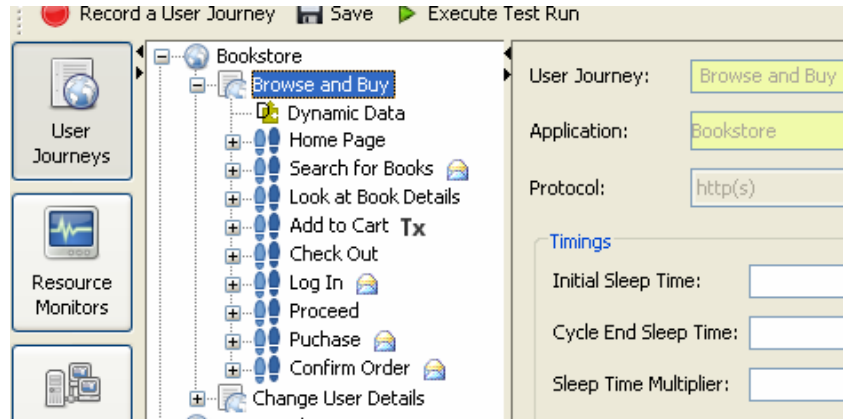



Click the “OK” button to close.

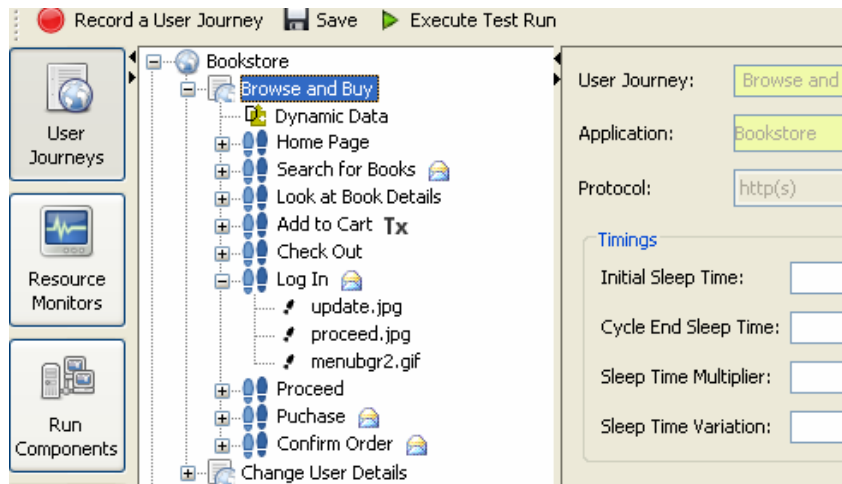
**Note:** It is highly recommended, unless you are sure you do not need to do so, that you always allow StressTester™ to auto-correlate any session variables it finds.

## Inspecting the Recorded User Journey

The recorded User Journey will be shown expanded and selected in the StressTester™ user interface.



The step groups within the User Journey – indicated by the  navigation tree nodes, can be expanded to show the steps within the group.



In the screen shot above, you can see that the Log In page consists of its request and then requests for three images.

## Testing the User Journey

After you are satisfied that the User Journey has been recorded successfully, the next step is to check that the User Journey executes successfully against the application.

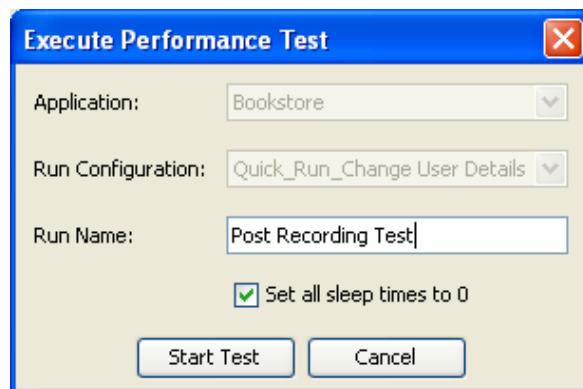
### Quick Run a User Journey

Having followed the sections above, your User Journey is in a state where it has calls to non-required domains removed, and session state variables configured for auto-correlation.

You are now ready to test your User Journey.

Right-click the User Journey node in the navigation tree and select the “Quick Run” option.

After selecting “Quick Run” you will be presented with a pop-up window asking you to give a unique name to this test.



Enter a Run Name, and set the “Set all sleep times to 0” checkbox as required. When this control is checked, the recorded (inter-step) sleep times are ignored, and the User Journey executes as fast as possible. When the control is unchecked, the inter-step times are adhered to, and the User Journey executes at the speed at which it was recorded.

Then click the “Start Test” button which will cause StressTester™ to run the User Journey for one simulated user and one cycle, logging all step requests and responses to separate files for inspection.

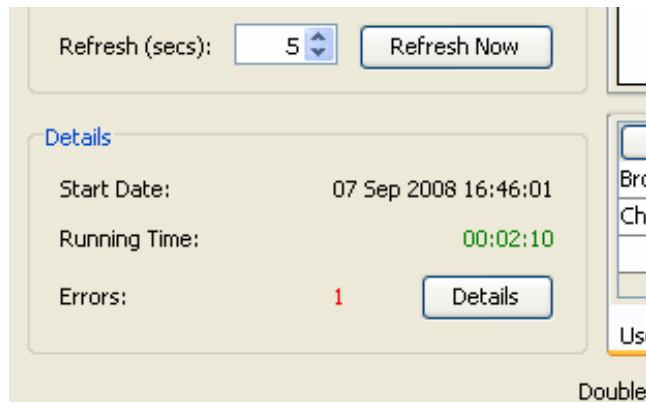
The files will be stored within a subdirectory of the StressTester™ installation called `/log/<Run Name>`.

During the run, StressTester™ will display the analysis screen. This section will not detail that screen – see the [Analyzing Performance Test Results](#) user guide for further details.

However, you are advised to select the User Journey in the “User Journeys and Monitors” navigation tree and set a Refresh value of 5 seconds.

You will be notified when the Quick Run performance test finishes.

If the error count (in the bottom left of the analysis screen – shown below) is not zero, you should click the “Details” button to see information about the errors that have occurred.



## Checking the Application Responses

When you have managed to Quick Run the User Journey without any errors being reported (or can explain the errors – such as missing images on the server), you can then verify that the application responded successfully and as you would have expected.

If you look in the `/log` directory of the StressTester™ installation, you will see a sub-directory with the same name as you chose for the Quick Run test.

If you sort the contents of this directory in ascending order, you will see one request file (file type of `request`) and one response file (file type of whatever the response type is) for each User Journey step.

For named steps, the name of the step appears within the file.

It is advised that you open each of the named response files and check that the contents of the files are that what you would expect to be returned from the application. Most of these files will be HTML and hence will open and display within a browser.

**Note:** Although the pages will display within a browser, files of type `html` will have no embedded images or other resources – these will be contained in subsequent step responses.

## Further Developing the User Journey

A User Journey that runs successfully for one cycle and one user should not be confused with one whose configuration is complete.

In order to perform correct testing, it is necessary to configure the User Journey to include the following:

- Varying the data contained in requests
- Checking the application responses are correct for the data supplied in the requests
- Varying the route and flows simulated users take through the business transaction
- Ensuring inter-step sleep and wait times are realistic

It is suggested you next read the [Configuring User Journeys to Ensure Correct Testing](#) user guide for information on how to accomplish all of the above and truly be ready to execute performance tests.

## Appendix A: Sample Recording Planning Sheet

The sheet below is used to plan the steps that will be executed during the recording and data that will be supplied.

Id.	Step Name	Action	Tx?
1	Home Page	Go to <a href="http://www.mysite.com">www.mysite.com</a>	
2	Select Category	Wait 3 seconds and then:  Select the link for the books category on the right hand side of the home page	
3	Search	Wait 5 seconds and then:  Search for “performance testing” – enter the search term and click “Search”	
4	Look at a book’s details	Wait 2 seconds and then:  Choose one of the books (note in the notes window which one is chosen) and click its “More Details” link.	
...	...	...	
...	...	...	
n	Confirm Purchase	Click “Confirm”	Y