

Silk Performer 2008 Training Courseware

By

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Silk Performer Courseware

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Introduction

Need For Load Testing

Any multi-user application needs to face the concurrent access some day or the other. Before deploying the application and then exposing the application for multiple users it is better we test it and then do the deployment. This process is load testing.

Minimal Infrastructure - We cannot gather hundreds or thousands of people to carry out concurrent user tests and this will not be possible for large number of users for longer time

Reliable - Tests perform precisely the same operations each time they are run, thereby eliminating human error.

Repeatable - We can test how the application reacts after repeated execution of the same operations, for longer durations for many days

Programmable - We can program sophisticated tests that bring out hidden information.

Comprehensive - We can build a suite of tests that covers every feature in our application.

Reusable - We can reuse tests on different versions of an application, even if the user interface changes.

Silk Performer Features

The following are the key features of SP (Silk Performer).

Use Add-ins to support multiple environments. These add-ins are the ones that enable SP to recognize different protocols.

- Record vuser scripts and debug scripts (Scripts under Projects)
- Configure and Run scenarios (Work Load under Projects)
- Schedule and run scripts (Work Load under Projects)
- Run tests in a distributed manner (Agents under Projects)
- Analyze graphs (Explore Time Series, Monitor Server under Results)

Load Test Process Steps

- Plan
- Create scripts
- Create scenarios
- Run & monitor scenarios
- Analyze results

Load Test Planning

- Identify most frequently used transactions
- Identify potential number of users
- Identify potential number of concurrent users
- Apply 10:1 or 5:1 ratio for logged-in Vs concurrent users
- Identify the production platform size and configuration
- Identify the data to be used for testing
- Identify the different real-time usage combinations of test scenarios
- Identify the load test run duration
- Identify what kind of information is transmitted between server and client
- Plan load testing only after functional stability of the product is achieved
- Discuss with other stakeholders like network admin, database admin, server admin and others on what information is required for them
- Chalk out the software configurations/settings for web server, app server and database server

Functional Testing Vs Load Testing

- If preconditions are met and steps are followed, function test results are defined. Load test results are always unpredictable
- Functional test results do not change more than 5% when moved from one configuration to the other. Load Test results may even nose-dive!
- Functional test happens on a daily basis; but load test is not that frequent
- Load test results depend on database volume as well and they change when number of users change

Load Testing Checklist

- Do we have the near-production hardware configuration? If not what is the delta between test hardware and production hardware?
- Is the tool capable of recording the requests based on the protocols used by the application (e.g. HTTPS) and able to replay the same?
- Is the product functionally cleared before load testing?
- Can we get numbers on the user counts from customer, based on past records?
- Is the data pool containing unique data?
- Is the trace log enabled for database and web servers?
- Are the requests distributed equally to different boxes? Is there a load balancer?
- Is there a facility in the tool to mimic different line speeds?
- Is there a facility in the tool to mimic different browser versions?
- Is there a facility in the tool to selectively log messages?
- Is there a facility in the tool to export the data in xls format?
- Is there a facility in the tool to auto-synchronize concurrent requests?
- If the application uses queues, the queue size must be monitored during test runs.
- Do the tests need runs with and without proxy servers?
- Do the tests need runs with and without firewalls?

Load Test Guidelines

- Number of users Vs response time must not be linear
- Stress test needs to be done for shorter durations and not for longer durations
- To the extent possible, let the data pool contain more unique data than what is needed
- The load generating client machines must not be operated at capacities beyond 80% for CPU and memory
- Avoid enabling detailed log information in the tool which will take more disk IO in the client machines
- Script must be parameterized for accessing the same application with different configurable URLs. So if the application is moved form one box to the other, the script can be reused
- Wherever needed, use rendezvous points to synchronize the requests before any form submission actions in the script. This ensures the simultaneous hits at the time of form submission
- If there is a possibility, disable downloading image files as image files are not downloaded every time in real time usage.
- Check the consistency of response time over a period of elapsed time and compare it with different test runs
- All successful requests must have been submitted and the log files must match. If the requests trigger data base operations, the same must have been recorded in database.
- The queues size must be minimal at any given point of time.
- Most of the time the database and the business logic layer need to be doubted first before the web server is doubted.
- Refer to Microsoft web URLs: http://msdn.microsoft.com/library/default.asp?url=/library/enus/dnpag/html/SCAG-CH08.asp_for finer details.

Preparing the Work Bench

🖬 Borland	• 🛅	SikPerformer 2006	÷	•••	Administration Tools	•
×		N			Analysis Tools	•
					Development Tools	۲
					Documentation	•
					Sample Applications	•
				ē	Release Notes	
				P	SilkPerformer Workbench	

Go to SilkPerformer Workbench, create a project in the silk performer

Each project can have multiple scripts, each script being one business scenario. Each Script can have multiple transaction, Base transactions are Tinit, TMain, TShutdown, In between Tinit and TShutdown, We can have as many transactions as possible.

Fì	To start, nam specify the ty	e your project, add a brief description, then pe of application to be tested.
	Project name:	DefaultProject
-	Project description:	Default Project
	Application type	 Web Browser Web business transaction (HTML/HT Web low level (HTTP) Flash Remoting WebDAV (MS Outlook Web Access) Remedy ARS Web Internet
		OK Cancel

Application type needs to be selected based web or Sap or Citrix etc. Silk performer supports following



Each type is nothing but different protocols which can be recognized by the performance tool.

Each project should be associated to one of these protocols. Each project is associated with

- 1. Profiles
- 2. Scripts
- 3. Include files
- 4. Data files
- 5. Agents
- 6. Work loads

After the creation of projects

System setting should be set as below, This setting are under Settings-System from menu

s	ystem Settings - F	Recorder	?×
	System	Application Profiles Proxies Services	1
		Application profile Application path	
	Workbench	Internet Explorer C: \Program Files\Internet Explorer\Explore.exe	
	_ [∎]		
	Recorder		
	<u>&</u>		
	Java		
	A	Ada Edit Hemove Copy	
	Citrix		
	SAP		
	SAPGUI		
		OK Cancel Default H	elp

s	ystem Settings -	Recorder ?	×
	System	Application Profiles Proxieg Services	1
		Record Protocol Port Connection Remote Host Port Secure	
		on HTTP 8080 any 0 auto	
	Workbench	☑ on SOCKS 19180 any O auto	
	E Recorder		
	8		
	Java	Add Edit Resourt	
	Litrix	Add Edit hemove	
	SAPGUI		
		OK Cancel Default Help	

System Settings - I	Recorder	?×
System Workbench Recorder Java Litrix SAPGUI	Application Profiles Proxies Services	
	OK Cancel Default	lelp

Profiles

Profiles are nothing but the record and Replay setting, This can be configured. Profile has following setting for both Record and Replay

- 1. Scripts
- 2. Simulation
- 3. Results
- 4. Internet
- 5. Web
- 6. Terminal Client etc.

Scripts has General, Protocol, Java

Profile - [Profile1	1] - Script	? 🗙
Record Script	General Protocols Java Script generation details ✓ Comments ✓ Commented functions ✓ Include think time Min. think time recorded: 2 sec	
Simulation Results	Mag. line length: 128 Script namespace: Record passwords encrypted	
Internet		
	Cancel Default	<u>H</u> elp

Profile - [Profile1] - Script	? 🗙
Record Script Simulation Results Results Internet	General Potocols Java Web comments ✓ Redirection / Authentication ✓ HITP errors ✓ ✓ Link, form, custom URL search details IIOP ① Generate IIOP Get functions Database ✓ SQL comment ✓ Trim SQL ✓ ✓ Trim SQL ✓ ✓ Etched data Max. number of rows: 10 Max. column width: 15 15	Detailed info for form fields Qustom URL parsing details
	OK Cano	el <u>D</u> efault <u>H</u> elp

Simulation has Simulation (Run time Settings) and Errors

Profile - [Profile1] - Simulation	? ×
Record Replay Script Simulation	Simulation Errors Think time options Stress test Eandom thinking time © Exponential distribution © Uniform distribution of +/- 20 % Think time limited to: 2 sec	
Results Internet	Settings Smooth transaction arrival rate (Queuing Workload) Choose transactions randomly Stop virtual users after simulation time (Queuing Workload) Call end transactions for stopped virtual users Complete current transactions for stopped virtual users Stop virtual users when errors occur in begin transactions	
	OK Cancel Default	Help

Results has

- 1. Time Series
- 2. Monitoring
- 3. True Log
- 4. Logging
- 5. Internet Logging
- 6. ARM
- 7. Hook Logging

The others are based on the protocol we use for the application to be load tested.

Creation of Scripts

Scripts is generally created using the record command (Model Record)

forkflow - Model Script
To create your test script, record the network traffic you need, and the script is then generated for you.
Experienced users can create the text manually by using a New Script or Sample Script.
DK Cancel
SilkPerformer Recorder - [Profile1]
Internet Explorer 💽 🖡 🕫 🕫 💷 🕫 💷 🖉
Functions: 9 Status: recording

After recording the generated script look like below



```
transaction TMain
 var
begin
    // Redirecting -> (redirection) http://www.google.co.in/
    WebCookieSet(
    WebCookleSet(
    "PREFID=a3e228063361b206:TM=1181814966:LM=1190729188:GM=1:S=7cA0i8Di-fipb3xT; domain
    "1 Oct 2017 06:07:30 GMT", "http://www.google.com/");
WebPageParseUrl("src", ".src=\"", "\", WEB_FLAG_IGNORE_WHITE_SPACE);

    WebCookieSet(
    "PREF=ID=1a05d94a441ab9c1:TM=1181814966:LM=1181814966:S=taAgw-Kx505KiMRL; domain=.goc
"ct 2017 06:07:34 GMT", "http://www.google.co.in/");
WebPageUrl("http://www.google.com/", "Google");
    ThinkTime(5.5);
WebPageLink("src", "gen_204", 3);
    WebPageBack();
    ThinkTime(5.5);
WebPageSubmit("f", FORM001, "books - Google Search"); // Form 1
 end TMain;
                                Ι
alform
FORM001:
                                                     := "" <USE_HTML_VAL> , // hidden, unchanged, value: "en"
:= "books", // changed
:= "" <USE_HTML_VAL> ; // unchanged, value: ""
    "hl
"q"
     "neta"
×
       Ē
                    \bigcirc
                                 M
                                                                                    22
                               TryScript
   Outline Project
               Model Script
```

Model Script – Records the script to the silk performer Try Script – To ensure the recorded script is working properly.

Workflow - Try Scrip	t	X
NI	Do a trial run of your new scrip test, just a try-out to debug the Profile: Profile1	t. This is not a real load script.
Allocage Bids 2 and	Script: Google.bdf	•
"Xibetalings mult ded		Vusers
	VUser	1
Project Attributes	Animated	Run Cancel

In Try Script, The entire script will run as single user and it ensures the correctness of the script to parameter data, Dynamic data used by the script, proper proxy setting.

🎗 Silk TrueLog Explorer - books - Go	oogle Search [localhost@Go	ogle_VUser-Profile1_1.xlg]		🔳 🗗 🔀
Eile Edit Script Animation Settings Too	ls <u>V</u> iew <u>H</u> elp			
] 3 3 2] 0 2	2 🗑 🖀 🛸 🖬 🗍 M 🗍	- A	ñ	Q *
Analyze Test Session Handling	ustomize Add Iser Data Verifications Tri	Analyze JeLog On Error	AL-	6
Iocalhost@Google_VUser-Profile1_1.x				Sign in 🛕
🖃 🍓 TMain (#2)	Google	Web <u>Images</u> <u>Groups</u> <u>News</u>	<u>Scholar</u> more »	
Google (http://www.google.com/		books	Search	Advanced Search Preferences
http://www.google.cc	0.2	Search: 📀 the web 🥤 pages from	n India	New! View and manage your web history
http://www.googl	Web	Results	1 - 10 of about 815,000	0,000 for books [definition]. (0.18 seconds)
en_204 (link "src" #3) http://www.google.co.in/ books - Google Search (fc	Google Book Searc books.google.co.in U	<u>]</u> se Google to find books on the subje	Sponsored Lini cts that interest you.	Sponsored Links
the state of	Google Book Search Google has digitized man books related to Old Eng	y books from library collections, inclusions, inclusions, inclusions, translations,	ding hundreds of	Largest collection of books . Good prices,Free Shipping in India. www.sura books .com
	Book - Wikipedia, the Books may also refer to a and information science, a	e free encyclopedia literary work, or a main division of su book is called a monograph, to disti	ch a work. In library nguish	Largest Online Book Store Find books on all topics. Avail discounts. Free shipping. Indiaplaza.in/book-sale
	Rendered Source	Source Differences Post Data		
	ThinkTime(5.5); WebDargSubmit("f end TMain; delform Portfoll: "hl" "neta"	". FORM001. "books - Google := "" <use_htmi := "books", // := " <use_htmi< td=""><td>VAL> // Fo VAL> // hidde changed VAL> ; // unche</td><td>rn 1 m, unchanged, value: "en" nged, value: ""</td></use_htmi<></use_htmi 	VAL> // Fo VAL> // hidde changed VAL> ; // unche	rn 1 m, unchanged, value: "en" nged, value: ""
< >	Info BDL	ences 📳 Form Data 🗣 out-hdr 📮 ou	it-data 🔤 in-hdr 🕎 ir	n-data 🔥 Statistics 🖾 dynaTrace Diagnostics Pl

×	Liser	Agent	Line	Time	Туре	Text	Info
뷥	WUser-Profile	localhost	27	00:00:00	Transaction	Exec: 0.03; Busy: 0.03; Wait: 0.00	Transaction/TInit/Trans.(busy) ok[s]
	🐼 VUser-Profile	localhost	40	00:00:00	Function	WebPageUrl	"http://www.google.com/"
	🕄 VUser-Profile	localhost	40	00:00:01	Timer	1.59	Page Timer/Google/Page time[s]
	🕄 VUser-Profile	localhost	40	00:00:01	Timer	1.25	Page Timer/Google/Document download time[s]
	🕄 VUser-Profile	localhost	40	00:00:01	Timer	0.47	Page Timer/Google/Server busy time[s]
	🕅 VUser-Profile	localhost	40	00:00:01	Timer	6.97	Page Timer/Google/Page data[kB]
	🕅 VUser-Profile	localhost	40	00:00:01	Timer	3.39	Page Timer/Google/Embedded objects data[kB]
	🕅 VUser-Profile	localhost	40	00:00:01	Timer	1.59	Page Timer/#Overall Response Time#/Page time[s]
	🕙 VUser-Profile	localhost	40	00:00:01	Timer	1.25	Page Timer/#Overall Response Time#/Document download time[s]
	🕅 VUser-Profile	localhost	40	00:00:01	Timer	0.47	Page Timer/#Overall Response Time#/Server busy time[s]
	🕄 VUser-Profile	localhost	40	00:00:01	Timer	6.97	Page Timer/#Overall Response Time#/Page data[kB]
	🕄 VUser-Profile	localhost	40	00:00:01	Timer	3.39	Page Timer/#Overall Response Time#/Embedded objects data[kB]
	f VUser-Profile	localhost	43	00:00:01	Function	WebPageLink	"http://www.google.co.in/gen_204?oi=promos_vis&cad=hppwebie6tb:en-GB8
	🕄 VUser-Profile	localhost	43	00:00:02	Timer	0.34	Page Timer/gen_204/Page time[s]
	🕄 VUser-Profile	localhost	43	00:00:02	Timer	0.34	Page Timer/gen_204/Document download time[s]
	🕄 VUser-Profile	localhost	43	00:00:02	Timer	0.26	Page Timer/gen_204/Server busy time[s]
	🕄 VUser-Profile	localhost	43	00:00:02	Timer	0.47	Page Timer/gen_204/Page data[kB]
	🕅 VUser-Profile	localhost	43	00:00:02	Timer	0.00	Page Timer/gen_204/Embedded objects data[kB]
	🕅 VUser-Profile	localhost	43	00:00:02	Timer	0.34	Page Timer/#Overall Response Time#/Page time[s]
	🕅 VUser-Profile	localhost	43	00:00:02	Timer	0.34	Page Timer/#Overall Response Time#/Document download time[s]
	🕅 VUser-Profile	localhost	43	00:00:02	Timer	0.26	Page Timer/#Overall Response Time#/Server busy time[s]
	🕙 VUser-Profile	localhost	43	00:00:02	Timer	0.47	Page Timer/#Overall Response Time#/Page data[kB]
	🕄 VUser-Profile	localhost	43	00:00:02	Timer	0.00	Page Timer/#Overall Response Time#/Embedded objects data[kB]
	Ful Villoor Drofile	localboot.	45	00.00.02	Eurochion	WebBaseBack	

Silk performer shows the run script in the true log window.

Parameterization of Scripts

To parameterize the data, select the data that needs to be parameterized

ielform .	
FORM001:	
"hl"	:= "" <use_html_val> , // hidden, unchanged, va</use_html_val>
"q"	:= "books", // changed
"meta"	:= "" <use_html_val> ; // unchanged, value: ""</use_html_val>

Right click and select the customize value

There are two ways to modify a value in the script
One way is to use an existing parameter defined in the dclparam or dclrand section.
The other way is to create a new constant value, random variable or a variable where the data comes from a multi-column data file.
Parameter customization
C Use existing parameter No C Create new parameter



File name:	NewProject		- 1	S S	eparator :		•
Handle name:	hNowProject1			_			
Parameter name:	File	Name: DataFile	ок	Can			
Select column t	o use as para ontinue.	meter and	< Ba	ck [Next >	Cano	

Choose a data file use and change t	from the drop he handle na	p-down list box or cre me and/or the param	ate a new one. eter name whe	. Select the colur in it is necessary.	mn that you like I	to
ile name:	DataFile		- 🏠 👔	Separator :	•	•
landle name:	hDataFile1					
^o arameter name:	psDataFile0	GoogleData1				
	Google	Data		Column 2		^
1 Book 2 Soffsmith I	ofotech					
3 QAbed	motocan					
4						
6		<u>}</u>				
7						
B						1
Click Next to c column "Google arameter Wiz	reate paran eData". zard - Para	neter for ameter from Mu	< Back Iti-column	Next> Data File	Cancel	
Click Next to c column "Google arameter Wiz	reate paran eData". zard - Para	neter for ameter from Mu Choose the ir	< Back It <mark>i-column</mark> Issert attrib	Next> Data File ute of the pa	Cancel	
Click Next to c olumn "Google arameter Wiz	reate paran eData". zard - Para	ameter for ameter from Mu Choose the ir Choose in which c data file should ha	< Back Itti-column Insert attributor order the value	Next > Data File ute of the pa assignment from n to use the "File	Cancel	mn
Click Next to co column "Google arameter Wiz	reate paran eData". zard - Para	ameter for ameter from Mu Choose the ir Choose in which o data file should ha function and Sequ Observe that only	< Back Itti-column Insert attribut order the value Insertial to use the he relevant u	Next > Data File ute of the pa assignment from n to use the "File Ber groups and the "FileGetNext	Cancel arameter. In the multi colum GetRndRow" Row" function). ransactions. tha	mn
Lick Next to c	reate param eData". card - Para	ameter for ameter from Mu Choose the ir Choose in which o data file should ha function and Seq. Observe that only can use, are show	< Back Itti-column Insert attributor order the value oppen (Randor uential to use the the relevant use the the relevant use the color	Next > Data File ute of the pa assignment from n to use the "File he" "FileDetNexti ser groups and to down list boxes.	Cancel rameter. In the multi colum GetRndRow'' Row'' function). ransactions, tha	mm at j
Click Next to c column "Googl arameter Wiz	reate paramenation	ameter for ameter from Mu Choose the ir Choose in which o data file should ha function and Sequ Observe that only can use, are show Row selection o @ Random	< Back	Next > Data File ute of the pa assignment fron n to use the "File GetNextF ser groups and t down list boxes.	Cancel arameter. In the multi colum GetRndRow" Row" function). ransactions, tha	mm at y
Lick Next to c column "Google arameter Wiz	zard - Para	ameter for ameter from Mu Choose the ir Choose in which of data file should ha function and Seq. Observe that only can use, are show Row selection o © Random © Sequential	< Back Itti-column Insert attribut Insert attribut Insert attribut Insertial to use the relevant u In in the drop-or Inder	Next > Data File ute of the pa assignment from to use the "File he "FileCatNext ser groups and to down list boxes.	Cancel arameter. In the multi colum GetRndRow'' Row'' function), ransactions, tha	mm at j
Lick Next to c column "Google arameter Wiz	eate paramenation	ameter for ameter from Mu Choose the ir Choose in which o data file should ha function and Sequ Observe that only can use, are show Row selection o © Random © Sequential Attribute	< Back	Next > Data File ute of the pa assignment fron n to use the "File re" "FileGetNextF ser groups and to down list boxes.	Cancel arameter. n the multi colum GetRndRow" Row" function). ransactions, tha	nn at j
Lick Next to c column "Google arameter Wiz	zard - Para	ameter for ameter from Mu Choose the ir Choose in which o data file should ha function and Seq. Observe that only can use, are show Row selection o © Random © Sequential Attribute © Per Transac	< Back	Next > Data File ute of the pa assignment fron to use the "File GetNextf ser groups and t down list boxes.	Cancel arameter. In the multi colum GetRndRow" Row" function). ransactions, tha	nn at j
arameter Wiz	eate paramenative and a para	ameter for ameter from Mu Choose the ir Choose in which of data file should ha function and Seq Observe that only can use, are show Row selection o © Random © Sequential Attribute © Per Transac	< Back	Next > Data File ute of the pa assignment fron n to use the "File GetNextf ser groups and t down list boxes. Iser fain	Cancel arameter. In the multi colum (GetRndRow" Row" function). ransactions, tha	nn at j

After finishing the parameterization, the script changes with following commands

transaction TMain
var
<pre>begin FileGetRndRow(hDataFile1); psDataFileGogleData1 := FileGetCol(hDataFile1, 1, STRING_COMPLETE); // Redirecting -> (redirection) http://www.google.co.in/ WebCookieSet("PREF=ID=ade228063361b206:TM=1181814966:LM=1190729188:GM=1:S=7cA0i8Di-fipb3xT; domai "loct 2017 06:07:30 GMT", "http://www.google.com/"); WebPageParseUrl("src", ".src="", """, WEB_FLAG_IGNORE_WHITE_SPACE); WebCookieSet("PREF=ID=1a05d94a41ab9c1:TM=1181814966:LM=1181814966:S=taAgw-Kx505KiMRL; domain=.gc "ct 2017 06:07:34 GMT", "http://www.google.co.in/"); WebPageUrl("http://www.google.com/", "Google");</pre>
ThinkTime(5.5); WebPageLink(" <mark>src</mark> ", "gen_204", 3);
WebPageBack();
ThinkTime(5.5); WebPageSubmit("f", FORM001, "books - Google Search"); // Form 1 end TMain;
transaction TShutdown begin FileUnload(hDataFile1); end TShutdown;
dclform FORM001: "h1" := "" <use_htmi_val> , // hidden, unchanged, value: "en" // "q" := "books", // changed "q" := psDat#FileGoogleDatal, "meta" := "" <use_htmi_val> ; // unchanged, value: ""</use_htmi_val></use_htmi_val>

After the begin in transaction TMain, FileGetRndRow(hDataFile1); got inserted and below under FORM001 Variable "q" got commented and inserted new value for variable "q"

Project 'NewProject' Profiles Profile1 Google.bdf (C:\Program Files\B Include Files (2)		<pre>var begin FileGetRndRow(hDatal psDataFileGoogleData // Redirecting -> () WebCookieSet("PREF=ID=a3e228063 "1 Oct 2017 06:07 WebDecEnergeWidthered")</pre>	/ile1 a1 := redir 3361b :30 G
⊡ ···¶⊒ Data Files	orl	rland/SilkPerformer 2006/Working/Custom D	o", "
∰ DataFile csv (C:\Program Files\B		"PREF=ID=IaU5d94ad	ata\]
⊕ ·· ∰ Agents		"ct 2017 06:07:34	141ab
⊕ · ∰ Workloads		WebPageUr1("http://d	GMT"

In the DataFiles, CSV file got inserted after the creation of parameter to the script

Analyze Customize C Test Session Handling U	ustomize Add ser Data Verificatio	Analyse ms Truskeg on Error			
Iccalhost@Google_VUser-Profile1_1.x Gy TInit (#1) Gy TMain (#2)	Quarte	Sign.in Web Images Groups News Scholar more »			
Google (http://www.goog	Google	QAbed Search Advanced Search			
gen_204 (link src #3)		Search: the web C names from India			
TShutdown (#3)		New View and manage your web history			
101. N	web	Results 1 - 10 of about 1,370 for QAbed. (0.40 seconds)			
	Qabed Map I Iran Google Satellite Maps Qabed google map. Satellite image of Qabed, Iran and near destinations. Travel deals. www.maplandia.com/iran/horasan/qabed/ - 20k - Cached - Similar pages Maps, Weather, and Airports for Qabed, Iran Time zone (est), UTC+330(44:30DT). Approximate population for 7 km radius from this point: 2772. Google links for Qabed, Iran www.fallingrain.com/worldR30Qabed.html - 5k - Cached - Similar pages QABED KHORASANIRAN (Geography Population Map City and cities Geographical database, places and cities in the whole world.				
	🔗 API call	Ň			
	Script file:	C:\Program Files\Borland\SilkPerformer 2006\Working\Projects\NewProject\Google.bdf			
	Function:	WebPageSubmit			
	Line number:	57			
	Time:	2007-10-11; 12:02:15			
	Duration:	0.64 sec			
	Absolute URL:	http://www.google.co.in/search?hl=en&q=QAbed&meta=			
	Completion status:	Success			

We can use the same file for other parameter data.

Random run took the Qabed this time of try script. This ensures the right parameterization.

Creation of Scripts with Manual Correlation

Following are the commands that needs to be used for manual correlation,

Manual correlations are used to get the list box items, Hidden Session id etc.

WebParseDataBoundEx(out sResult : string,

in nMaxResultLen : number optional,

- in sLeftBoundary : string optional,
- in nLeftOccurrence : number optional,

in sRightBoundary : string optional,

in nOptions : number optional,

in nDocNum : number optional,

out nBytesParsed : number optional);

Return value

• none

Parameter	Description						
sResult	String variable that receives the string between the specified boundary strings.						
nMaxResultLen	Maximum length of the string to return (optional). If this parameter is omitted or set to STRING_COMPLETE all available data is stored in sResult.						
sLeftBoundary	Left boundary of the HTML content to compare.						
nLeftOccurrence	The sLeftBoundary has to be found nLeftOccurrence times, before the copy process starts and the right boundary is searched (optional). The default value is one. Provide WEB_OCCURENCE_LAST to specify the last occurrence.						
sRightBoundary	Right boundary of the HTML content to compare.						
nOptions	(optional)						
	 WEB_FLAG_CASE_SENSITIVE. If this flag is set the string compare operation is case sensitive. WEB_FLAG_IGNORE_WHITE_SPACE. If this flag is set all white spaces are ignored. WEB_FLAG_DONT_FORCE_LOAD. Specify this option to enable caching for subsequent request. Note that nothing is parsed if the specified table is not loaded (cache hit). WEB_FLAG_SYNCHRON. Parsing operations with this flag set, are done in a sequential way. The second parsing operation is not executed before the first has been completed. WEB_FLAG_ALL_RESPONSES. If this flag is specified all server responses are scanned (even redirection responses, which are normally not displayed by a browser). WEB_FLAG_INCLUDE_EMBEDDED. If this flag is specified, even embedded documents can be specified by the nDocNum parameter. Normally the number of a document is defined by the occurrence of the source definition in an HTML document (src=). If this flag is specified, every embedded object increases this counter, which assigns higher numbers to subsequent frames. WEB_FLAG_INCLUDE_HEADER. If this flag is specified the response header can also be verified. 						

	 the response header is verified. WEB_FLAG_RULE. Specify this flag to perform the parsing operation in every subsequent web function. After every web function the specified output variables are set to the new value. If you want to use the variables in other transactions or in event handler functions use global variables! Call WebCancelAllRules() do disable all verification and parsing rules. Note: The option WEB_FLAG_RULE should only be used in the INIT transaction or in combination with the WebCancelAllRules function!
nDocNum	Specifies the document to parse (optional). Specify WEB_DOC_ALL if you want to parse all documents. If this parameter is omitted, the first document gets parsed. (see above definition FLAG_INCLUDE_EMBEDDED)
nBytesParsed	Variable receiving the number of bytes actually parsed (optional).

Example for Single value

rRndUniN1 – this is the random value with in a range defined as, this is used to take the occurrence between Left boundary "Value=" and Right boundary "\"

dclrand

rRndUniN1 : RndUniN (27..30);

WebParseDataBoundEx(sParseDataVar1, STRING_COMPLETE, ToEncoding("value=\""), rRndUniN1, ToEncoding("\""), WEB_FLAG_IGNORE_WHITE_SPACE | WEB_FLAG_CASE_SENSITIVE, 1); WebPageUrl("http://192.168.1.107/SPCG/AddActionItem.aspx", "Action Item (#1)", SPCG_ADDACTIONITEM_ASPX012); Print("sParseDataVar1: " + FromEncoding(sParseDataVar1)); Writeln("sParseDataVar1: " + FromEncoding(sParseDataVar1));

Syntex for Multiple values in an array

Include file

WebAPI.bdh

Syntax

WebParseDataBoundArray(inout saResult : array of string,

- in nMaxCount : number,
- in sLeftBoundary : string,
- in sRightBoundary : string allownull,
- out nFound : number optional,

in	nOptions	: number optional,
in	nSkip	: number optional,
in	nDocNum	: number optional,

in nMaxLen : number optional);

Parameter	Description					
saResult	Array of string variable that receives all the strings between the specified boundary strings.					
nMaxCount	Maximum number of strings copied into the provided array. This value must be less than or equal to the size of the array.					
sLeftBoundary	Left boundary to compare.					
sRightBoundary	Right boundary. After the sLeftBoundary has been found, all data is copied into the actual string parameter until the right boundary is found (optional). If this parameter is omitted the nMaxLen parameter must be specified.					
nFound	Variable that receives the number of the found strings (optional.					
nOptions	(optional)					
	 WEB_FLAG_CASE_SENSITIVE. If this flag is set the string compare operation is case sensitive. WEB_FLAG_IGNORE_WHITE_SPACE. If this flag is set all white spaces are ignored. WEB_FLAG_DONT_FORCE_LOAD. Specify this option to enable caching for subsequent request. Note that nothing is parsed if the specified table is not loaded (cache hit). WEB_FLAG_SYNCHRON. Parsing operations with this flag set, are done in a sequential way. The second parsing operation is not executed before the first has been completed. WEB_FLAG_ALL_RESPONSES. If this flag is specified all server responses are scanned (even redirection responses, which are normally not displayed by a browser). WEB_FLAG_INCLUDE_EMBEDDED. If this flag is specified, even embedded documents can be specified by the nDocNum parameter. Normally the number of a document is defined by the occurrence of the source definition in an HTML document (src=). If this flag is specified, every embedded object increases this counter, which assigns higher numbers to subsequent frames. WEB_FLAG_HEADER_ONLY. If this flag is specified only the response header can also be verified. WEB_FLAG_HEADER_ONLY. If this flag is specified only the response header is verified. WEB_FLAG_RULE. Specify this flag to perform the parsing operation in every subsequent web function. After every web function the specified output variables are set to the new value. If you want to use the variables in other transactions or in event 					

	 handler functions use global variables! Call WebCancelAllRules() do disable all verification and parsing rules. Note: The option WEB_FLAG_RULE should only be used in the INIT transaction or in combination with the WebCancelAllRules function!
nSkip	Specifies the number of parse results, which should not be stored in the array (optional). The first element of the array will be the (nSkip+1) th parse result.
nDocNum	Specifies the document to parse (optional). Specify WEB_DOC_ALL if you want to parse all documents. If this parameter is omitted, the first document gets parsed. (see above definition FLAG_INCLUDE_EMBEDDED)
nMaxLen	Specifies the maximum number of bytes copied to each string (optional). If the sRightBoundary parameter is omitted this parameter must be specified and determines the end of every parsing operation.

Measuring page times

To measure the page times in the log, we can also use following to measure the time

Measurestart ("StringName") MeasureStop("StringName") MeasureGet

MeasureStart Include file

Kernel.bdh

Syntax

MeasureStart(in sMeasure : string): boolean;

Return value

- true if successful
- false otherwise

Parameter Description

sMeasure Measure name used to identify the measure when calling additional measure functions and when analyzing the results written to both the results repository and individual result files

Example

MeasureStart ("<StringName>");

MeasureStop Include file

Kernel.bdh

Syntax

MeasureStop(in sMeasure : string

in bIgnoreOnError : boolean optional): number;

Return value

Final value of the custom time measure in 1/1000 secs.

Parameter Description

sMeasureMeasure name identifying the custom time measure to stopbIgnoreOnErrorWhen enabled, measured time is included in calculations if no error has
occurred since the timer started (optional). The default value is false.

Example MeasureStop("<StringName>") MeasureGet Include file

Kernel.bdh

Syntax

MeasureGet(in sName : string,

in nClass : number,

in nKind : number,

out fTime : float,

in bAll : boolean optional): boolean;

Return value

- true if successful
- **false** otherwise

Parameter Description

sName Name of the object concerned with the measurement. Must be one of the following:

	 Custom time measure. Pass to the function exactly the same name as to the MeasureStart and the MeasureStop function Custom counter. Pass to the function exactly the same name as to the MeasureInc function Transaction. Specify the transaction name as declared in the load testing script. SQL command. Make sure to specify the SQL command identifier (defined in the dclsql section of the test script) in capital letters. Web form. Make sure the specify the Web form identifier (defined in the dclsql section of the test script) in capital letters. CORBA object TUXEDO service
nClass	Specifies the type of measure to retrieve.
	To retrieve the value of a custom time measure, pass the MEASURE_TIMER_RESPONSETIME parameter to the function. To retrieve the value of a custom counter, pass the MEASURE_COUNTER_CUSTOMCOUNTER parameter to the function
	function.
	To retrieve the value of an average counter, pass the MEASURE_COUNTER_AVERAGE parameter to the function.
	In any other case, pass any of the following parameters to the function, depending on the type of information you are interested in.
	 MEASURE_PAGE_PAGETIME MEASURE_PAGE_PAGEBYTES MEASURE_PAGE_EMBEDDEDBYTES MEASURE_PAGE_DOCDOWNLOAD MEASURE_PAGE_SERVERBUSY MEASURE_IIOP_ROUNDTRIP MEASURE_SQL_SQLPARSE MEASURE_SQL_SQLEXEC MEASURE_TRANS_TRANSOK MEASURE_TRANS_TRANSERR MEASURE_FORM_BYTESSENT MEASURE_FORM_HITSOK MEASURE_FORM_HITSERR MEASURE_FORM_ROUNDTRIP
nKind	 MEASURE_FORM_SERVERBUSY MEASURE_TUXEDO_BYTESSENT MEASURE_TUXEDO_BYTESRECEIVED MEASURE_TUXEDO_RESPONSETIME
nKind	specifies the type of measure value to retrieve. The following options are

	possible:
	 MEASURE_KIND_SUM. Retrieves the sum of all measure values, for example, the total time for executing all transactions MEASURE_KIND_COUNT. Retrieves the number how often an action was performed, for example, how often a counter was incremented, or how often a transaction was executed MEASURE_KIND_AVERAGE. Returns the average of all measure values, for example, the average time required for a CORBA operation call. MEASURE_KIND_MIN. Returns the minimum of all measure values MEASURE_KIND_MAX. Returns the maximum of all measure values MEASURE_KIND_LAST. Returns the last value set for the measure MEASURE_KIND_SQSUM. Calculates for each measure value the square value, and sums up all square values. MEASURE_KIND_STDEVIATION. Returns the standard
fTime	Variable receiving the measure value
bAll	Specifies the time interval used for measurement value calculation (optional).
	 If this parameter is set to true, the measure value is calculated based on all measurements performed during the simulation. Otherwise, if this parameter is set to false, the measure value is calculated based only on the measurements performed during the measurement interval (default).

Example

MeasureGet("<StringName>", MEASURE_TIMER_RESPONSETIME,

MEASURE_KIND_SUM, fValue);

WorkLoads

 Increasing Steady State Dynamic All Day Queuing Balance load across agents 	start us	user	.00:0		mea: 00:00:20 increase after simulation tim	00:18:20 surement time 1 add users me: 00:18:2	0	00:00:00	end 0	5 users	() time
Script	User Type Usergroup I VUser	Profile		Max. Vusers 55	Start Time Offset 00:00:00	Simulation Time 00:18:20	VVarmup Time 00:00:00	Measurement Time 00:00:00	Start Users 1	Add Users 1	Inc a a 00

Workload means scheduling the scripts for multiple users. We can schedule the load in following pattern

- 1. Increasing This is called ramp up where the load to the server is increased by definite time and can run for certain duration called Simulation time.
- 2. Steady State Here all the virtual users are loaded simultaneously for definite duration

Workload Co	onfigu	ration - [N	∛orkload′	1]							[? ×
Workload -		6 70 .										
Steady S Dynam	itate	55 start user		00:0)0 ime	mea	00:18:20 surement time		00:00:00	end u	5 isers	
C Queuing	load	transactions	T1				Tn-3	Tn-2	n-1 Tn	_	_ > ©	
M across a	gents	L	00:00:00			simulation ti	me: 00:18:2	20	00:18:2	20	time	
Scrip	ot	User Type Usergroup	Profile		Vusers	Start Time Offset	Simulation Time	Warmup Time	Measurement Time	Auto- assign	Agents	
God 🔂 🔽	ogle.bd	VUser	Profile1		55	00:00:00	00:18:20	00:00:00	00:00:00	R	localho	
Start time):00:00 Relativ	/e	ettings Automatio TrueLog	cally On E	start mon Error	itoring	Loadtest descriptio	on:				
0	Absolu	ite										~
User Distribu	ution O v	erview	Configure	AIL	Day Work	load				ок	Can	el

Workload Configurat	tion - [Workload1]				? 🗙
Workload C Increasing C Steady State C Dynamic C All Day C Queuing Image: Balance load across agents	😰 user 🕇			55 max users time	
Use Script Use	er Type ergroup	Max. Auto Vusers assi)- 3D	Agents	^
Google.bd VU	Jser Profile1	55 🔽	localhost(55)		
					~
Start time 00:00:00 Relative C Absolute	Settings	lly start monitorin n Error	g Loadtest description:		<
User Distribution Overvi	iew Configure Al	ll Day Workload		OK Canc	el

3. Dynamic – The load is dynamically used by the system for definite duration

4. Queuing – There will be definite wait time between transactions.

Workload Configu	ration - [Workload	1]								? >
Workload C Increasing C Steady State Dynamic All Day Queuing Balance load across agents	55 start use c):00:0 mup t	ime Ti	mea 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	00:00:00 surement time T3]] me: 00:00:0		00:00:00 pise down time Tin 00:00:1	end u	5 Isers	1
Script	User Type Usergroup VUser	Profile Profile1		Vusers 55	Start Time Offset	Simulation Time 00:00:00	Warmup Time	Measurement Time 00:00:00	Auto- assign	Agents	
Start time 00:00:00 Relativ C Absolu	re Ite	Settings V Automati T TrueLog	ically 1 On E	start mon Error	itoring	Loadtest descriptio	on:				<
User Distribution Ov	erview	Configure	e All I	Day Work	load				ок	Can	cel

Once we set the work load for which the load testing needs to be done, Run the test using the Run test from menu run or



Workload Config	uration - [Workload1]								?×
Workload C Increasing Steady State Dynamic	start use	user	time	mea	surement time	clo	Dose down time	end user	·s	
C Queuing Balance load across agents	transactions			T3 Ti	Tn-3	In-2 Ir			→ Ö time	
Script	User Type Usergroup	Profile	Vusers	Start Time Offset	Simulation Time	Warmup Time	Measurement Time	Auto- A assign	Agents	
Coogle bo	I VUser	Profile1	10 k	00:00:00	00:02:20	00:00:00	00:00:00		localho	
Start time 00:00:00 Relati Absol	ive ute	Gettings ▼ Automaticalļ □ TrueLog On	y start mon Error	itoring	Loadtest descriptio	on:				
User Distribution O	verview	Configure All	Day Work	load	Connect	Rur		ок	Cano	el

Starting the run test will give the configuration screen for load, we have changed the vusers to 10 and duration to 2:20 min



5 sec 💌	8 🔯 🛃	/ 🐽 🕞 🕄 🕄	866 ያ		1	х×	1. 1					
Summary		Status	Users	created	exec.	failed	Сри	Memory	Resp	Transactions	Tra. Bu	Page
🕵 All Users		executing	10	10	10	0	11%	121%	100%	114	2.17	
Iocalhost		executing	10	10	10	0	11%	121%	100%	114	2.17	
🕵 Google.bdf/VUse	r-Profile1	executing	10	10	10	0				114	2.17	
<												>
User	Agent	Status	Curren	t Transa	ction		Last R	esp. A	vg. Resp.	Transactions	Tra. Bu	Page
🐉 VUser-Pro	localhost	executing	TMain ((9)			1	7.25	15.02	9	1.71	
🐻 VUser-Pro	localhost	thinktime	TMain ((9)			1.	4.65	14.78	9	7.98	
🐻 VUser-Pro	localhost	thinktime	TMain ((15)			1	0.00	8.46	15	1.71	
🐻 VUser-Pro	localhost	thinktime	TMain ((12)				4.23	11.05	12	2.28	
🐻 VUser-Pro	localhost	thinktime	TMain ((11)			1	5.39	10.86	11	2.14	
🐻 VUser-Pro	lockhost	thinktime	TMain ((8)			13	2.65	16.53	8	2.28	
🐻 VUser-Pro	locaľhost	thinktime	TMain ((10)			:	3.32	10.68	10	2.25	
🐻 VUser-Pro	localhost	thinktime	TMain ((14)			:	3.20	8.93	14	2.67	
🐻 VUser-Pro	localhost	executing	TMain ((10)			2	3.85	14.10	10	3.29	
🕃 VUser-Pro	localhost	thinktime	TMain ((13)				9.00	10.22	13	1.71	

Distributing users to Multiple IP Address In the above situation, the virtual users are distributed through only one ip address, if we like to distribute the users with multiple IP address then

- 1. Go to SilkPerformer->Tools->SystemConfigurationManager
- 2. Select IP address Manager

	tem Confi	guration M	anager			
Agent	localho	ost		Conne	ct <u>I</u> o	N ?
	System Infe IP Address	ormation Manager		Service Status Applications		System Tuning System Report
	🛄 Ada <u>p</u>	ter: [1] Inte	el(R) PRO/V	Vireless 3945AB	G Network (Connection
F	°addresses- ↓↓ DHC	Pistatus: en	abled, card	disconnected	T	otal addresses: 0
	IP a	iddress	Subn	et mask	Status	T est result
	<u></u>	ave	<u>L</u> oad	A <u>d</u> d	<u>E</u> dit.	. <u>R</u> emove
	Chec	ks the route o name or IP ao	of all working ddress:	g (status = up) If	^D addresses I	to the specified host.
				<u>o</u> k		ancel Apply
5ystem (Click)	Configuration Add from	Manager IP Addre:	sses			
Add I	P Addresse	es		? 🔀		
the second se						
From	IP address:	10 .	1.1.	. 100		
From I Subne	IP address: et mask:	10 . 255 . 2	1.1. 255.255.	. 100		
From Subne	IP address: et mask: Number: To IP addres	10 . 255 . 2 1 s: 10 .	1.1. 255.255. 	. 100		

3. 4.



10.11. The same also can be saved as .smf file which can be loaded for different workspace.

Configuring the Servers and its monitors

For performance testing, we have to configure the servers to get the information on those servers, The information can be of %cpu usage, Memory available, Concurrent connection etc.

To do the same.

1. Select the From SilkPerformer->Results->MonitorServer

💁 Silk Performan <mark>s</mark> e Explorer - H	ittp Pages/sec - [localhost]	
∐ Eile Edit Explore Monitor ⊻iew W	izard Series <u>S</u> ettings <u>W</u> indow <u>H</u> elp	
🛛 🗟 🗎 🖬 🕼 😭 🗶 🖓 🛱	; 🖬 🚓 🛛 😵 😵 🗟 🛍 🛍 😫 🎥 🛼 💽 🖊 🗍	•=• 🔆 🔚 🔛 🗍 😳 🖉
Overview Report Costantize Report	Select Graph Select Report Find Root Grass Compare Graph View as HTML	Monitor Server Reuse Monito
	Active Users - [localhost]	ors - [localhost] ncurrent Connections - n Pages/sec - flocalhost Http Pages 😰 Http Page
Select From Monitors->	Add data source	
Monitor View Wizard Series Add Data Source	; <u>S</u> ettings <u>W</u> indo	
Data Source Wizard		
	Select Data Sources Either select predefined Data Sources or have the Data Source Wizard scan for available Data Sources.	
Method Realtime System Settings	 Select from predefined Data Sources Have Data Sources detected 	
Keys	ß	
	< Back Next > Finish Cance	4
b. Select from the system t	the server you like to monitor	





16. We can add any no. of parameter to this.

Analysis

Analysis can be done based on the Responses for each page and understand the behavior of each page.



By selecting the appropriate measuring units, we can drill down the bottle neck in the pages.

For errors, there is "Analyze Error" tool which can cumulate all the errors (http errors) and from that we need to provide the solutions.

Actual Base Line Report

From Menu – Results – Actual Base Line report can be generated. This report is mostly used for every final run.

Borland							Report g	enerated at: 2	2007-10-1	1 12:45:29
Actual Baseline R	eport									
Version:	SilkPerforme	er 7.4.0	0.2776							
Project:	NewProject									
Start date/time:	2007-10-11	12:22:	:55							
Workload:	Workload1									
Workload model:	Steady State	э								
Status:	No errors	s occur	red							
Baseline test result ove	rview								(back to top
Select a user type, or click	on one of the cour	nters, to	jump directly to the	according section.						
User Type	#Us	sers	Test duration [s]	Session Time [s]	Session Busy Time [s]	Average Page Time [s]	#Transaction OK	#cancelled	#failed	#Errors
Google.bdf/VUser/I	Profile1	10	00:02:21	11.808	2.670	0.892	122	0	0	
Accept Baseline										
Results for Google.bdf	/VUser/Profile1								back to	overview

ivame	AVg	חווייו	мах	Count	Stapev	Histogram
#Overall Response Time#						
response time breakdown (server / document / page)						
Page time[s]	0.892	0.281	7.359	349	0.972	
Document download time[s]	0.725	0.281	6.484	349	0.729	
Server busy time[s]	0.384	0.000	1.734	349	0.246	
Page data[kB]	4.338	0.475	6.975	349	2.784	
Embedded objects data[kB]	1.184	0.000	3.386	349	1.614	
books - Google Search						
response time breakdown (server / document / page)						
Page time[s]	0.594	0.281	3.391	112	0.551	
Document download time[s]	0.594	0.281	3.391	112	0.551	
Server busy time[s]	0.258	0.000	1.281	112	0.231	
Page data[kB]	5.437	5.210	5.689	112	0.233	
Embedded objects data[kB]	0.000	0.000	0.000	112	0.000	
gen_204						
response time breakdown (server / document / page)						
Page time[s]	0.452	0.312	1.812	115	0.258	
Document download time[s]	0.452	0.312	1.812	115	0.258	
Server busy time[s]	0.349	0.000	1.734	115	0.254	
Page data[kB]	0.475	0.475	0.475	115	0.000	
Embedded objects data[kB]	0.000	0.000	0.000	115	0.000	
Google						
response time breakdown (server / document / page)						
Page time[s]	1.581	0.781	7.359	122	1.275	
Document download time[c]	1 102	0.562	6 484	122	0.076	