

## Thomas Cook and the complexities of Load Testing for travel.

“As the Test Manager was assigned and retained for all tests this ensured familiarity with, and experience in, our platforms and code. This combined with the out of hours accommodation for our testing periods made the SciVisum approach stand out.”

Andy Dean, Service Delivery Manager UK and FR OTA eCommerce (Group), Thomas Cook

Thomas Cook is one of the best known names in travel, with over a hundred years of trading history, more than 800 high street stores, a leading website and apps, ownership of some of the world’s favourite travel brands and various services related to travel such as insurance and foreign exchange.



Thomas  
Cook



## Challenge ⚠️

Confidence that a site will be “stable under load”, that it will continue to perform as it should when there is heavy user traffic, is crucial. For travel companies that experience incredibly high numbers of visitors at different seasonal peaks, and that rely on fast moving realtime data, this is of particular concern.

In the past year Thomas Cook ran a number of different tests across different sites, brands, and countries with SciVisum, as well as tests that focus on particular functions. There was close co-operation between the Thomas Cook and SciVisum teams at all stages of the process, from first identification of the test objectives and user journey mix, through live conference call monitoring of the test, to in-depth post testing discussion.

In the testing the previous year, before SciVisum was involved, the selections were not weighted and Thomas Cook found this caused availability issues and negatively impacted the results.

## Solution ✅

The targeting / simulated load in tested by SciVisum in 2011 was not random but used specific and historic data to ensure popular destinations (which involves more complex search results) were accounted for.



The SciVisum approach to realistic load testing involves concurrent virtual users taking a number of different dynamic user journeys through the site, based on an algorithmic weighting of proportional site usage calculated from real

historic data and future projections. This kind of planning is extremely important if test results are to reflect how the site really performs outside of controlled test conditions. Traditional load testing that throws huge numbers at the URL, or at one path through the site, will only tell you how that one specific aspect works in isolation. In reality there are many different users doing many different things concurrently on any site.

Another thing the team was conscious of was ensuring that tests took place over an adequate length of time. The danger of a short test is that is easy to draw false conclusions from what are extreme behaviours if they are seen in isolation and deemed to be “normal” site performance.

**With all this in place the SciVisum Load Test Engineer was able to highlight lots of detail on how the site performs under load:**

which Journeys and which steps slowed down the most, which threw the most errors, what the errors were, and, by comparing and contrasting the various errors, provide an indication of network problems, server load issues and so on.

Two types of test were run on the user journeys defined for testing the projected 2012 peak. The first involved a mixture of sessions of different length and complexity and covered searching for holidays by random destination, resort, departure airport and type, booking accommodation with randomised interactions for duration, star rating, board type, number and age of guests and budget, and a journey for customising bookings. The second used the same journeys but with weighted selections based on historic data.

Test were run against 2 different site builds to analyse any difference in external performance results and to compare performance when

using different numbers of users on different numbers and configurations of infrastructure slices. In addition the same tests were run on at 2 entirely different data centres owned by different providers in different locations as part of the migration process. They need to be sure that the site and the data centre could hand the peak load.

The test was of the “sustained load” type where a defined number of Virtual Users are sustained for the duration of each test. As one finishes their journey, another new one starts, to maintain a constant number. The load level applied is therefore elastic. As site response times slow down, the rate of page hits will also decrease and the load level should stabilise. The number of Virtual Users increases to the peak amount over a defined percentage of the test, this number of users is then maintained until the defined ramp down period where the users decrease from the peak amount to zero.

The Virtual Users themselves were further segmented into different types and the total number in each group weighted proportionally to reflect the fact that new users cause a heavier load on the system in terms of having no cached

content and requiring component downloads. The three segments used were: the user last visited the site very recently (producing very little static component download, since most components have not passed their expiry time); the user last visited the site within the last month or so (supplying the ‘If Modified Since’ HTTP header for component downloads); the user has not visited the site for well over a month, is new to the site, or has cleared their browser cache since their last visit (full component download with session caching ). Different amount of “think time” were also built into each step.

## The Result

“This combined approach revealed a number of system weaknesses and threshold levels, a database bottleneck and an unexpected memory leak that were not visible during non peak usage. Discovering these things in testing meant that pre-emptive action could be taken to adjust configurations on key web and app layers, as well as the code adjustments in the core base code and amendments to the platform. This meant that by the time the seasonal peak hit the site was able to easily cope with the demand.”



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If you would like to schedule a free consultation regarding your website performance concerns, learn more about one of our services or arrange a free trial then please contact us.

## About SciVisum

### Measuring realistic user experience for peak digital performance

SciVisum’s cloud-based website performance monitoring and load testing services provide unparalleled insight into your customers’ digital experience by behaving exactly as end users would. A unique combination of realism – delivered by an intelligent test engine, and expert human insight provides the most accurate, actionable data enabling you to take control of today’s performance challenges.

For over ten years, SciVisum has helped leading UK brands such as Transport for London, Cineworld, Dixons Carphone, Channel 4 and Debenhams optimise user experience and deliver peak performance.



WEBSITE  
MONITORING



MOBILE  
MONITORING



LOAD  
TESTING



PERFORMANCE  
OPTIMISATION



MONITORING  
ADD-ONS