



## Scapa<sup>®</sup> Test and Performance Platform

Scapa TPP testing in complex, real-world, Thin Client environments brings many business benefits; ensuring user experience, predicting system capacity etc. This case study describes ECABO's use of Scapa TPP to accurately predict system capacity and identify bottlenecks.

*This case study describes the real life experiences of using Scapa TPP by ECABO, the Centre of Expertise on Secondary Vocational Education, Training and Labour Market in The Netherlands.*

*ECABO is the vocational education knowledge centre for professions in economy, administration, ICT and security. The organization focuses on all levels of secondary vocational education so that students gain an optimal level of education during their school career.*

*ECABO's aim is to provide professional training that matches up optimally to the demands of the labour market, bridging the gap between trade, industry and vocational training.*

*ECABO used Scapa TPP to investigate the limits of specific software and hardware running their platform.*

*"Scapa TPP demonstrated its ability to operate in diverse environments. Examining results of the tests showed its capability to pinpoint various problems... "Scapa TPP was just what we needed and more...and much cheaper. We plan to work with Scapa Technologies again in the future on further projects."*

- Onno Tomson, Ecabo

### Why Scapa TPP

Scapa TPP, the professionals' testing, capacity planning and monitoring tool of choice.

Scapa TPP is the only test tool with the power, flexibility and feature list required for proper and accurate performance, capacity and scalability testing of solutions from Microsoft®, Citrix®, VMware®, BMC Software® and others. With a highly scalable engine technology, tests can be scaled to hundreds of thousands of users, using any automated GUI scripting tool of choice – such as WinTask, AutoIT, .Net™ etc.

### Why Scapa TPP was selected

ECABO provides schools with the largest examination platform for secondary vocational education in the world (TSSBVE). The number of schools (135) and students (135,000) participating in ECABO is large and still growing. ECABO's main objective in undertaking a performance testing project with Scapa Technologies was to find all limitations of the entire systems environment of TSSBVE. To cope with the increase in user volume, ECABO needed to understand whether the TSSBVE hardware resources also needed to be extended.

The performance of the Questionmark™ Perception™ assessment management software, that TSSBVE is based on, is crucial for ECABO during the examination period, response times had to be at an acceptable level at all times and failures due to heavy use were unacceptable. ECABO also had concerns that the hardware capacity may also be affected by the introduction of new Question Mark software based on .Net in the near future.

ECABO needed to discover how many concurrent users could operate on one server at any one time, in order to cut server failures completely. With the help of Scapa TPP, ECABO wanted to uncover information concerning the capacity of the entire system in order to pinpoint and remove any current and potential future, bottlenecks.

ECABO investigated the load testing tool market and selected Scapa Test and Performance Platform on the bases of quality and price. The platform demonstrated itself to be the most comprehensive yet easy-to-use performance testing tool for creating and repeating tests.

### The Solution

Scapa TPP was used to simulate real users of ECABO's system, in order to push it to its limits. This would have been an impossible task if real users had been working their way through an exam within an explorer browser window. Scapa TPP was able to replicate assessments which involved calling a URL, and pulling assessments out of a multiple Questionmark Perception environment (20 to 40 instances/ URLs on one server) so that load could be monitored. Neither party had performed this task before.

# With Scapa TPP risks are minimized, profits maximized.



## The Result

Running these tests allowed ECABO to collect comprehensive information concerning the performance and scalability of their applications and platform and, in particular, to provide details on:

- Limitations of the TSSVBE platform
- User response times
- Effects on performance through increases in user count.
- Maximum number of concurrent users on one server

Scapa Technologies' consultants provided an understanding of all the factors affecting the overall performance of the system. ECABO now investigates the performance of their systems on an ongoing basis to achieve further long-term improvements.

## Benefits

Scapa TPP provides ECABO with a comprehensive performance testing, diagnosis and monitoring solution for investigating the capacity of their system. Using Scapa TPP enabled ECABO to meet all the main project objectives in full and the tests conducted covered all problem areas of the original plan.

Scapa TPP captures system performance information dynamically and in real time, allowing immediate, easy to access results analysis. All ECABO's systems limitations in memory, processing and connection were shown while the tests were running and Scapa Technologies' consultants were on site to help with translating the results to pinpoint the bottlenecks and problem areas.

ECABO's use of Scapa TPP allowed them to discover that no more than 20 Questionmark Perception instances could take place on one 4-processor server at any one time due to the limited number of work processes one processor can handle. This was adjusted and this problem has never occurred since. ECABO also discovered that the total number of people taking assessments at the same time (i.e. concurrent users) could be very high but this does not create a capacity bottleneck and, therefore, was not an issue.

ECABO now uses Scapa TPP on an ongoing basis to test new versions of Questionmark Perception to determine server capacity and so help ECABO maximize the return on their entire system investment.

## Top Ten Technical Advantages

There are many key differentiators with the Scapa TPP solution – the Top Ten are listed below:

1. Performance and scalability characteristics are taken from the end user experience, in addition to the server side experience. Server side metrics and end user experience metrics are correlated within Scapa TPP to expose the performance and scalability of your system.
2. The ability to define your a workload model to suit any particular workflow and application mix.
3. Ability to run live interactive tests (user load can be increased and decreased during tests runs) with real time results in addition to predefined, scheduled 'canned' tests.
4. Concurrent login capability with the Citrix, Microsoft and other clients.
5. Ability to login to Citrix (and RDS/other) sessions via the Web broker
6. Distributable Engine technology establishes the client sessions and handles the control, messaging and synchronisation logic from multiple locations simultaneously.
7. Highly scalable architecture with insignificant CPU requirements from the Scapa Engine load injector component.
8. Small results storage space requirements – full access to all results via SQL to the embedded relational database.
9. Highly scalable and optimized, multithreaded Engine technology built with C enables Scapa to be virtually CPU insignificant, on the client and server side, enabling tests to scale to hundreds of thousands of users.
10. Extensible architecture: Scapa TPP has a generic, load generating, multithreading architecture, built on a mix of Java and C, enabling the tool to be highly dynamic in responding to changes in the underlying architectures of the systems under test.

## Scapa Technologies ([www.scapatech.com](http://www.scapatech.com))

Scapa TPP is a best-of-breed performance testing tool for Virtual Desktop, Remote Desktop, Citrix® and BMC Software® Remedy® AR System®, with support for additional technologies (such as HTTP(s) protocols).

All of the functionality is available in a single product and can be applied in combination, allowing Scapa TPP to:

- Benchmark
- Prove the value of WAN Optimization
- Highlight bottlenecks
- Reveal the performance and scalability characteristics from the end user perspective.
- Function in virtual architectures of any complexity.
- Facilitate migration projects between physical or virtual architectures in any combination and of any complexity.

Scapa Test and Performance Platform has a unique level of integration with Remedy AR Server and ITSM™ architectures at the C API, Java API and the http layer, and via multiple other touchpoints.