

RADICALLY TRANSFORMING THE MARITIME INDUSTRY



Navidium Plc is a Maritime CleanTech company, headquartered at Oulu, Finland having wide range of innovative IoT products for the maritime industry which are designed to integrate human expertise and AI-generated insights into one smooth process, include to meet the needs of data consumers across the maritime industry landscape: from ship-officers and crews to managers, owners, and charterers.

Project Summary

Client Name: **Navidium**

Project Domain: **Maritime Industry**

The KiwiQA approach

KiwiQA specializes in load and performance testing to ensure the usability of client's software or app. Our Performance projects utilize K-SPARC, a proprietary, five-stage framework. K-SPARC has been tested and proven in many projects, with a focus on throughput and application load. The framework covers all aspects of performance testing, from identifying requirements to producing a test execution summary report.

Emerging & sustainable digital innovation for maritime

Our company creates software that makes it easy to understand and act on data insights by combining and contextualizing data from various sources. Our solutions assist owners, charterers, and managers in achieving their goals. Navidium is a global team of experts and innovators who work with our partners, customers, and users to continually develop advanced and sustainable digital solutions for the maritime industry.

TAKING A STEP-BY-STEP APPROACH TO ADDRESSING ISSUES

Problems to be resolved

Navidium wanted to ensure that their MareCast and RPM applications could handle a large user base and that the APIs developed for these products, along with their associated modules, performed well when accessed by a large number of users.

- The goal was to ensure the robustness and reliability of the products, which were critical success factors for Navidium.



- Navidium commissioned KiwiQA to conduct performance testing exercises.

ACCOMPLISHING THE INTENDED RESULTS

- In the first round, performance tests were conducted on the app hosted on the existing environment. In the second, these tests were repeated after issues identified in the first round were fixed and other changes were implemented.
- The tests were conducted on a replica of the production environment, using the K-SPARC performance testing framework.



- Performance test assets were created using JMeter 5.3v for both the API and web-based (three for MareCast and 12 for RPM Business-Scenarios) modules of Navidium.
- Baseline tests were conducted for both the API & web modules at different load levels using Redline 13, with infrastructure monitoring using NewRelic APM.

- The test results were analysed for performance issues and benchmarked for load.

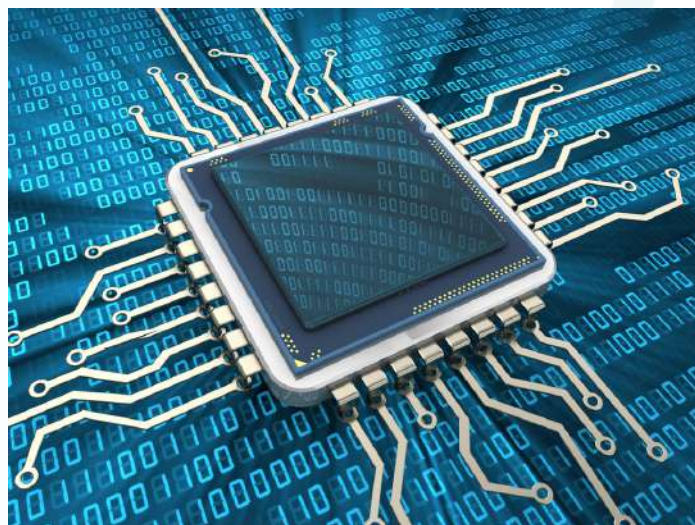
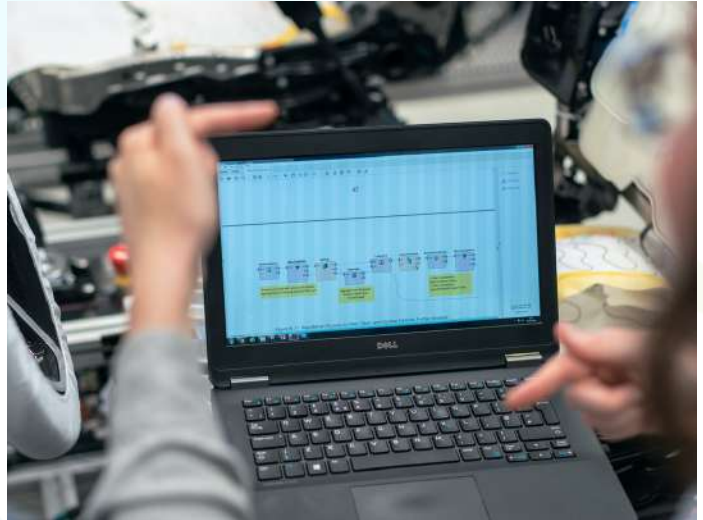


WHAT WE ACHIEVED

The KiwiQA approach

We were able to deliver below features to client within given time:

- A probing test was conducted to identify pre-issues on APIs and data. This test involved a single user and was conducted prior to the baseline and benchmark performance tests.
- The response times for many of the APIs across different modules of MareCast were found to be high, as were the response times for creating and saving routes for different scenarios.



- The RPM product had a high response time for the login transaction, which interacted with different layers, and the DB server displayed high utilization during the test execution window.
- High CPU utilization was observed on both the host and the DB server when the APIs associated with the Back Office modules were performance tested. The Weather APIs also displayed high DB server utilization when performance tested.

- Variations in business calls and queries from all of the above modules were analyzed and shared with the product owners for fixes.
- The second phase of testing will commence with fixes for the APIs with high response times, along with the complete migration of all products to a cloud infrastructure.

