



# ResourceAnalyser case study

## Summary

**ResourceAnalyser** application provides for identification, accounting and diagnostic of hardware in large heterogeneous network.

## ResourceAnalyser



**NRJETIX**

### Service

- R & D

### Industry

- Artificial intelligence
- Telecommunications

### Project Size

- Team size:
  - 1 researcher
  - 1 software engineers
  - 1 QA engineers
- Calendar duration:
  - 3 months

### Technology

- Java
- J2SE
- RMI
- Sockets
- JDBC/Hibernate
- MySQL
- HTML
- JavaScript
- Own-developed multi-agent system

## Challenge

The application end requirements were to enable a heterogeneous network administrator to:

- Manage agents numbers and their tasks
- Identify hardware of network hosts
- Diagnose hardware of network hosts
- Account hardware of network hosts
- Control of identification, diagnose processes
- Generate reports in HTML format.

## Solution

In order to ensure the end product meeting Client's expectations NRJETIX has developed a detailed software requirements specifications (SRS).

While the previous software development vendors recommended purchasing an off-the-shelf solution to customize and make trade-offs on the desired functionality, NRJETIX believed it possible to build a custom application to meet all Client's needs. NRJETIX developed a complex distributed application.

The application architecture is built of several main parts: management console, agents, agent's environment, central application server and database. The architecture model enables make identification and diagnostic of large heterogeneous networks with more than 1000 active network host without using special equipment and software. It is allowed NRJETIX save on development time, provide the required time of network diagnostic, and provide for easiness of further modifications if required by Client.

The application architecture design and UI design were both developed by NRJETIX.

Demo version was provided to the Client at each milestone. Change requests delivered by Client were carefully evaluated and implemented.

## Specification

**ResourceAnalyser** it is a multi-tier cross-platform application developed using RMI for Java, J2SE. From an engineering point of view it is complex software consisting of several servers: a central server – custom server application, agents, manage console and a database – MySQL connected via the network. Java allows functioning agents of this system at there are lot of hardware platforms where Java environment existing. User interface functions of management console are performed by Java GUI - SWING. The report generation at management console was implemented using DHTML, JavaScript. NRJETIX built a solution that successfully achieved goals of large communications operator for a new and improved network diagnostic. The system simplifies daily operations, allows for an increase in efficiency and reliability, and allows for a more comprehensive clients servicing. Additionally, the information and documentation are tracked and maintained in the database, providing for more control and hardware failure predictions.