



# CASE STUDY

Modernize IBM i or migrate? CAVAMAC relies on 'Application Healthcheck' audit from HARDIS Group and ARCAD Software to clarify their technology strategy.



## The client

CAVAMAC manages three schemes dedicated to the social protection of general insurance agents: their basic pension, supplementary pension and disability-death insurance. Established according to the French 48-101 law governing retirement allowances for the self-employed, CAVAMAC is one of the ten professional sections of the National Pension Allowance Fund for the Liberal Professions (CNAVPL). As a body governed by private law and carrying out public service missions, the company is subject to regular audits by government authorities. ♦

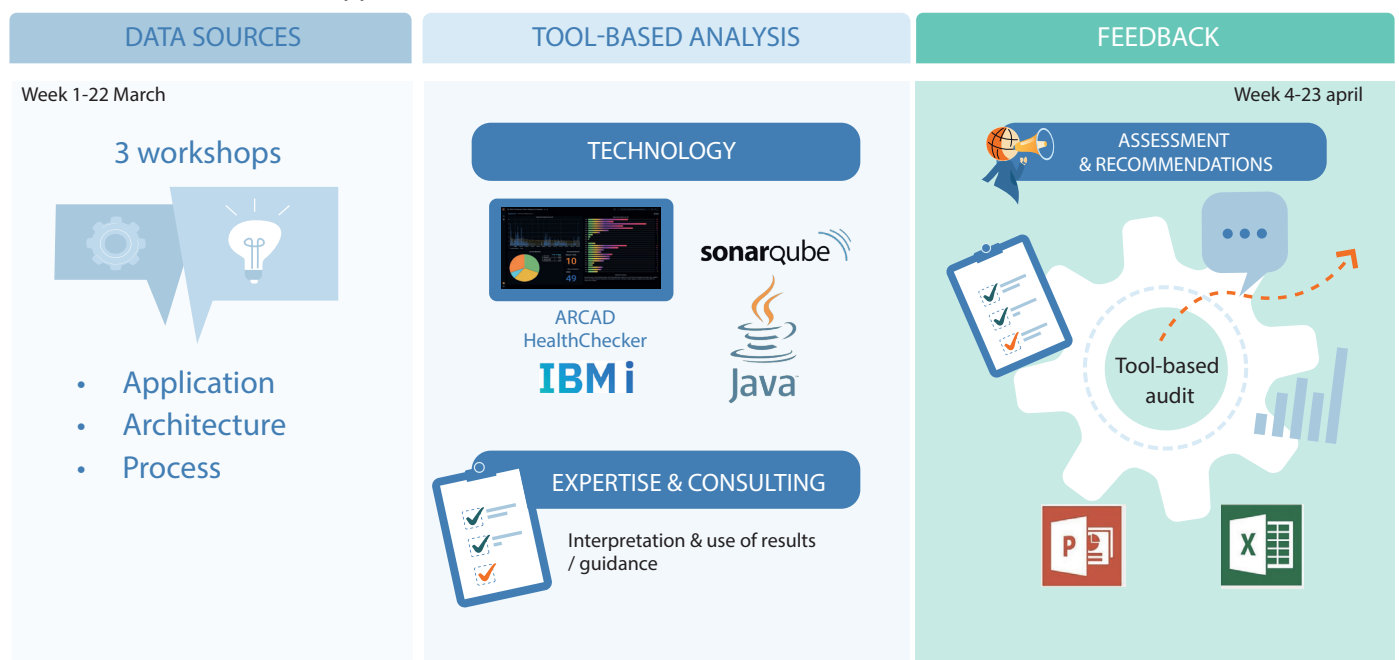


## The technical context

15 years ago, following a public tender, CAVAMAC called on an external IT services company to redevelop a custom application, using RPG for the back office and Java for the front-end. This particular application managed the basic pension, supplementary pension and disability-death insurance of general insurance agents.

CAVAMAC's internal IT team then took over to enhance the application and adapt it to external requirements (pension reforms, requests from the Social Security Department or the CNAVPL, objectives and management agreements, etc.) as well as to internal needs of administrators and the business lines. All application enhancements were managed using the ARCAD for DevOps solution for IBM i from ARCAD Software. ♦

## IBM i / Java Audit – Overall Approach





## The requirement

The extent of application changes needed led CAVAMAC, in 2020, to question long-term durability of the application, both on a technical level and also in terms of the specific IBM i skills required to maintain the source code into the future.

Two scenarios were envisaged:

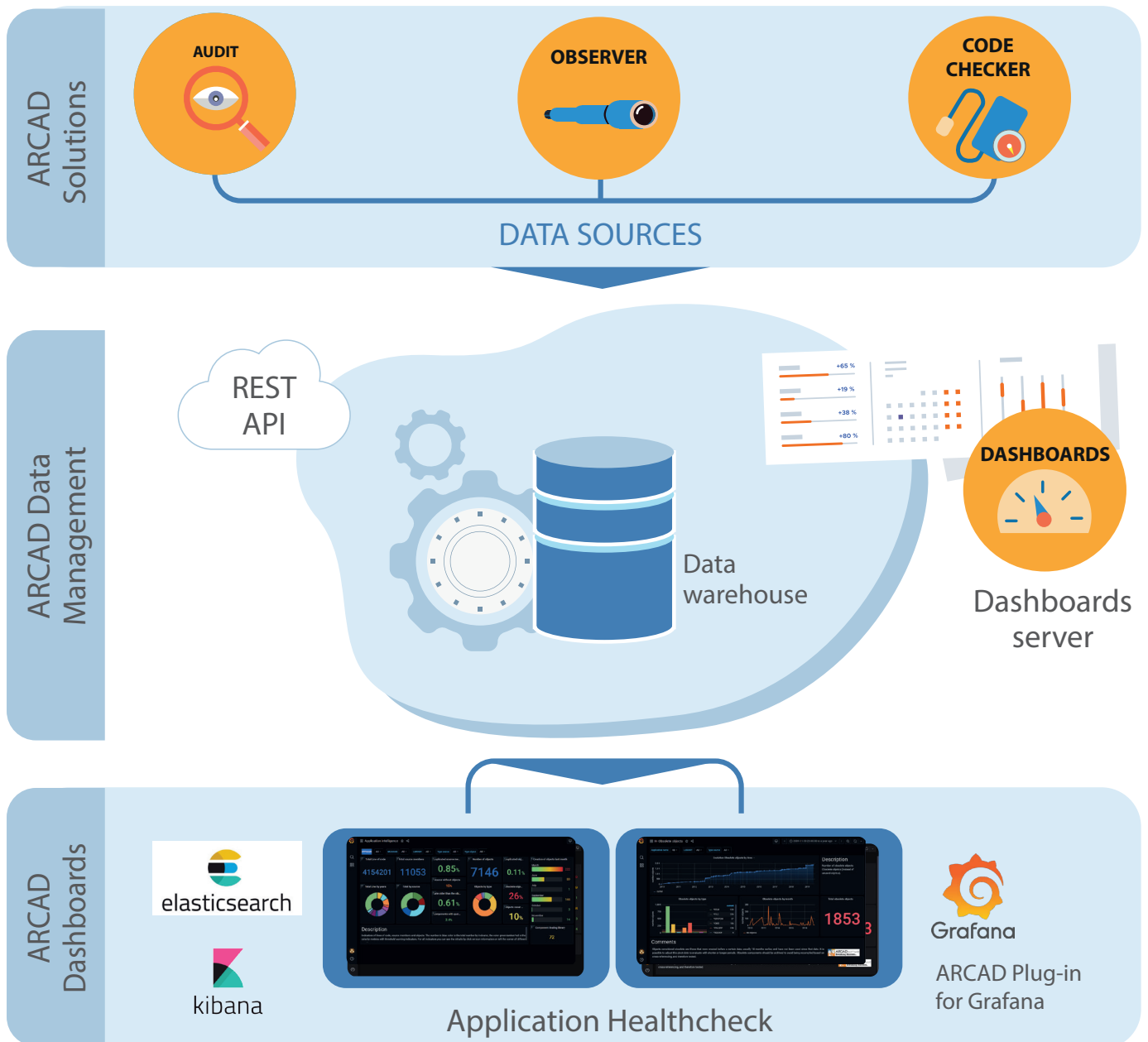
1. Migration of the application to Windows and an "in-house" database,
2. Retention of the IBM i platform for another 15 years.

In order to make an informed decision, CAVAMAC decided to undertake an external application audit. The goals of the audit were to generate an objective

inventory of existing assets, evaluate the adaptability of the application in line with changing regulatory requirements and, in the case the application would be retained, identify areas for improvement.

In order to perform the audit, CAVAMAC put out to tender several suppliers including a certain number catalogued in the UGAP central purchasing agency. Following the call for tenders, the CAVAMAC team chose the 'Application Healthcheck' service from Hardis Group and ARCAD Software, which offered a tool-based audit of application assets.

As part of the service, the RPG programs were evaluated using an automated toolset from ARCAD Software, including ARCAD Observer for Application Analysis, ARCAD CodeChecker for code quality and security checking, and ARCAD Dashboards for metrics visualization and reporting.



On the Java side, source code was analyzed using SonarQube. Beyond the technical audit, three preliminary workshops were organized to analyze the context (both technical and organizational), along with a follow-up workshop to report on results and determine priorities in the progress plan. ♦



## The audit

Carried out over a period of only four weeks, including presentation of the results to CAVAMAC administrators, the 'Application Healthcheck' audit concluded that the IBM I application could adapt perfectly well to the functional changes needed, thanks in part to the quality of the source code. ♦

**"This audit gave us a means of objectively evaluating the quality of our legacy application. Using industry-standard metrics, we were able to confirm that RPG programs and development processes on IBM i exceeded objectives in terms of code quality and security, traceability and segregation of duties.**

**Code complexity was low, giving us confidence in our development costs moving forward. The modular structure of the application will enable easy integration with other systems in the future.**

**In the end, it was the Java front-end that raised the most questions about its technological durability. What emerged was that it was imperative to move to Java 8 and correct Java security flaws, which we did immediately following the audit."**

*says Maryse Gauthier, head of IT department at CAVAMAC*



## Benefits

As presented to CAVAMAC management and administrators, the ARCAD-HARDIS 'Application Healthcheck' audit delivered quantitative and qualitative insights into the long-term viability of application assets, enabling objective decision-making in a short timeframe.

The audit demonstrated the quality and robustness of the IBM i applications in place at CAVAMAC, clarifying the company's technology choices moving forward. Results also revealed that the DevOps and version control processes in place on IBM i respected best practices in terms of traceability, security, governance and separation of duties.

The audit also concluded that CAVAMAC's internal organization and skills were entirely sufficient to enable autonomous development on the application into the future.

For all of these reasons, the choice was made to retain and modernize the business application developed in RPG and Java, rather than migrate the application to another platform.

Further, the CAVAMAC team were also able to re-use deliverables from the 'Application Healthcheck' during their twice-yearly audit, carried out by the CNAVPL. The results certify the sustainability and security of the information system, saving the team considerable time and effort in future audits.

Finally, perspectives for future development have been identified at CAVAMAC, such as early discussions around the potential migration of IBM i infrastructures to the Cloud, the use of Web Services to interface with partners' information systems and the automated conversion of the RPG code into Free Form. ♦



Low complexity rate



High level of security



High level of quality



High level of scalability