



CASE STUDY

USING ARCAD FOR DEVOPS, GIT AND JENKINS, DANCERACE RESOLVES 'BIMODAL' CHALLENGES TO REDUCE THE IBM i RELEASE MANAGEMENT WORKLOAD BY 50%

Using ARCAD for DevOps, Git and Jenkins, Dancerace resolves 'bimodal' challenges to reduce the IBM i release management workload by 50%



THE CUSTOMER



Founded in 1992, Dancerace is a leading ISV in the banking and financial services sector providing best-in-class asset-based lending (ABL) systems for businesses across the globe. Dancerace has long led the ABL market, developing one of the world's first online banking systems, the first receivables system to offer a modern graphical user interface, and the first ISV in their sector to embrace the cloud. With a portfolio of applications and a core system on the IBM i (formerly iSeries, AS/400), Dancerace can safely claim that its systems haven't lost a day of business since 1992. ♦



BACKGROUND

Dancerace started development on a major banking platform back in 1992. Elliot Avison, CEO at Dancerace, explained the reasoning behind their technology choices: "RPG on IBM i was a natural fit for our business requirements, the only truly scalable platform at that time and incredibly secure. In our niche sector in banking and financial services, our goal was to introduce a 'software as a service' offering into what was then a pen and paper industry. RPG gave us the high performance access to real-time data we needed".

Since those early days, core mission-critical areas of the system have remained in RPG while other areas have evolved to take advantage of web and cloud technologies. React is used for building UI components and front-end

languages such as Java. "We chose to retain our core system on RPG and IBM i which enabled us to run literally any size of business with the same software. It remains a highly cost effective solution and its stability is unrivalled today. We service financiers of all sizes and our applications are used constantly by tens of thousands of users.

Knowing that the system is 'always on' and performing well 24/7 x 365 is a massive win for us", added Avison.

The Dancerace application today combines the back-end DB2 database with a Linux system hosting the online banking component. Stored procedures and an API layer have been added, connected via RESTful APIs to an Amazon Web Services (AWS) platform. Avison commented **"We are proud to have achieved this modernization of our system architecture without any invasive changes to our RPG code – and with no performance hit"**. ♦



CHALLENGE

As the Dancerace development team started to diversify their technology landscape adding open source tools such as Git, Jenkins and Jira, a clear 'cultural divide' began to appear. Software development was clearly easier in the 'new world' with modern tooling.

The traditional in-house developed scripts used on IBM i for change management and deployment were difficult to maintain and complex to use. As customers were demanding more and more features, the lack of modern tooling on IBM i meant that RPG enhancements were taking far longer than on the Java side of the business. In short, development was becoming excessively 'bimodal'. The crux came in 2015 when Dancerace doubled the number of clients and maintenance costs grew sharply.

"Using open source tooling such as Git and Jenkins, we were delivering Java enhancements bi-weekly. GitLab along with container technology like Docker and Terraform meant we had a true CI/CD model in place for AWS and Java. This was in stark contrast with the RPG application, for which although the change rate was far lower, we were delivering only bi-annually. 20 of our systems are international and needed to be upgraded out-of-hours. We needed to allocate around 60 man days per year to manage the upgrade process".

The Dancerace team had ambitious goals in terms of delivery speed and application availability. Their objective



www.arcadsoftware.com

was to halve the number of man days spent in managing application releases. To stay reactive in a rapidly changing business it was clear that the team would need to sunset in-house tools. In 2018, the team took the decision to migrate their RPG source code to Git and adopt a cross-platform Jenkins pipeline for continuous build and deploy. This would guarantee that the Java and RPG sides of the business were updated in perfect synchronization.

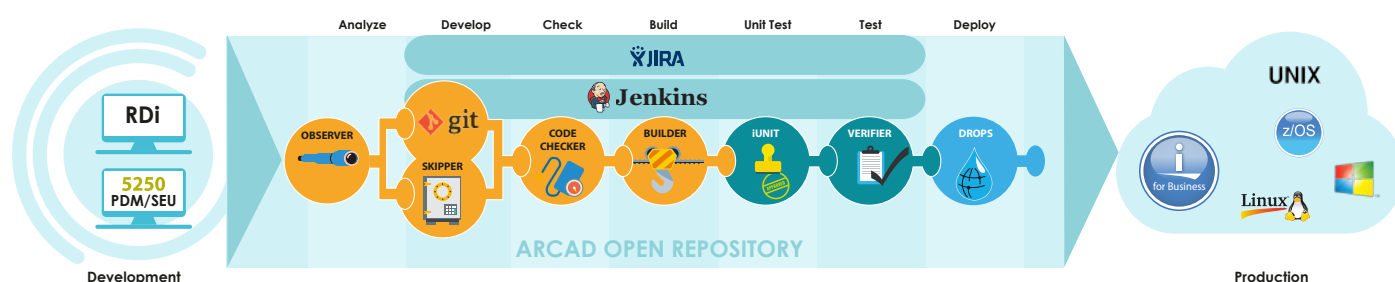
Avison explained some of the challenges they faced: "Git and Jenkins are great tools but quite impractical on IBM i when used 'raw'. For one, RPG must be compiled natively on the IBM i system and the build and any continuous integration process would be partially manual with the open source tools. Our development team would never accept the loss in productivity that would entail". ♦



SOLUTION

After searching the market and running an on-site proof of concept, Dancerace selected the ARCAD for DevOps solution from ARCAD Software. ARCAD's Git and Jenkins plugins provided the advanced IBM i layer they needed to handle the technical specifics of RPG development on IBM i.

In particular, **ARCAD for DevOps was the only solution able to support true continuous integration on IBM i. Thanks to its underlying metadata repository and smart 'dependency build', ARCAD for DevOps automatically recompiled only those components impacted by a change. ARCAD also handled all the compilation specifics so that an RPG change could be deployed to test and production automatically after a successful commit. With ARCAD, both 5250 and RDi interfaces could be used with Git meaning that both experienced IBM i developers and the newer non-i members adapted very quickly to the new tooling.**



ARCAD for DevOps : end-to-end CI/CD pipeline for IBM i

"A development organization can only move as fast as its slowest moving parts. **With ARCAD for DevOps, we have automated an enterprise-grade CI/CD pipeline for RPG based on Git and Jenkins and massively improved our responsiveness to user demands.** We are now ramping up to the same bi-weekly updates on RPG as we have with Java".

ARCAD for DevOps has also introduced the powerful audit trail, change tracking and reporting capabilities that the Dancerace team needed in their highly regulated industry. ♦



www.arcadsoftware.com



Next Steps

As a next step, the DanceRace team will now enhance their ARCAD for DevOps CI/CD pipeline with test automation using ARCAD iUnit and ARCAD CodeChecker to automate unit testing and continuous checking of code quality and security.

ARCAD handled all the compilation specifics so that an RPG change could be deployed to test and production automatically after a successful commit.

"As an ISV in the financial sector we process billions of pounds daily and have prioritized a least-risk approach to modernization. Instead of rip-and-replace, our strategy has been to combine our proven RPG applications with leading edge SaaS and cloud technologies to deliver performance and stability for our customers".

"Having managed a bimodal environment and witnessed lightning advances in development tooling, it is my conviction that the IBM i platform has a firm place in successful businesses well into the future. In our organization - where we have hand-picked the best of both RPG and the newest technologies on the market - we are all fully aware that the modern world is only 'standing on the shoulders of giants' ". ♦



Elliot Avison,
Dancerace CEO

With ARCAD for DevOps, we have automated an enterprise-grade CI/CD pipeline for RPG based on Git and Jenkins and massively improved our responsiveness to user demands.