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Case Study

FIS

Micro Focus Visual COBOL-driven cloud native solution goes beyond the bounds of mainframe architecture to demonstrate cutting edge modernization

Who is FIS?

FIS is a leading provider of technology solutions for merchants, banks and capital markets firms globally. Its employees are dedicated to advancing the way the world pays, banks, and invests by applying scale, deep expertise and data-driven insights. FIS helps clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for its customers.

Improved User Experience and Platform Support

InvestOne is a key offering for FIS. It runs over 60 percent of the markets mutual funds and derivatives for FIS premier fund providers. This equates to $40 trillion in funds under management. FIS leverages InvestOne on a hosted basis for financial services organizations as well as delivering it to clients as an on-premises solution. Chuck Wainscott, Director of Architecture with FIS asset management group, talks about the history of this solution: "InvestOne was in-house developed using COBOL in the 1980s. It was based on an IBM mainframe environment and was considered very leading-edge for its time. In the late 1990s we started down a modernization path with a view to improve the user experience. We first built a Java-based HTML5 user interface, replacing the green screens and adding web service APIs to enhance and simplify process automation and data management. The COBOL engine remained, while we created a Java wrapper around the core business functionality that is still in use today."

During the early 2000s, with the growth in distributed systems as a viable platform for enterprise applications, FIS ported InvestOne to Unix to support new clients on modern distributed platforms. FIS used a third party mainframe emulation middleware technology and OpenText™ Server Express on Unix to maintain a single-source mainframe and distributed application, allowing FIS to support both platforms with the same codebase.

"It has been fantastic to migrate to cloud computing and a continuous delivery model while reusing our valuable business logic and providing full business continuity to our clients. The decision to write InvestOne in COBOL all those years ago has definitely paid off for us."

CHUCK WAINSCOTT
Director of Architecture
FIS asset management group

At a Glance

- **Industry**
  Finance
- **Location**
  Florida, USA
- **Challenge**
  Improve the speed, efficiency, and quality of software development, support, and delivery processes, while simplifying operations and improving resilience and recovery
- **Products and Services**
  Micro Focus Visual COBOL
  Micro Focus Enterprise Developer
- **Success Highlights**
  + Measurable performance improvement
  + Improved concurrent processing
  + Low risk migration for clients with no change to business processes
  + Full scalability with Docker containerization
  + Faster time to market
  + Integration into DevOps-driven CI/CD delivery pipeline

> "When we rolled out the replatformed application with [Micro Focus] Visual COBOL we actually saw an overall performance boost of more than 20 percent. Not only are our processes running faster, but we can scale out and run more concurrent processes."

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New-Found Scalability with Micro Focus Visual COBOL Docker Support

With that much improved and optimized user experience, and multi-platform support in place, the team turned its attention to the development and delivery effort. As times were changing, FIS wanted to improve the speed, efficiency, and quality of software development, support, and the resulting delivery process. FIS also looked to simplify operational resilience and recovery. This could be achieved by promoting standardization across platforms. "We now had a cloud-compatible Java front-end and, as this offered us the most flexibility, we wanted to consolidate all activities onto it. Also, as the industry grew and mergers and acquisitions drove a market consolidation, we recognized that our clients require scalability and stability above all. We made the decision to fully replatform InvestOne in a Linux environment to take advantage of modern IT architectures that deliver horizontal scalability using cloud native containerization," comments Wainscott.

Rewriting InvestOne was never a serious option as the team was happy with the existing functionality and they had built a deep COBOL-based business and solution knowledge. They also did not want to risk any instability to clients. "We chose Micro Focus (now part of OpenText™) Visual COBOL, which includes a JVM code generator that can compile COBOL applications directly to Java byte code," says Wainscott. "This gave us the opportunity to fully reuse our valuable COBOL code without any risk and integrate it with the rest of our Java architecture."

FIS introduced the Java Engine Tier (JET) which replaces all functionality provided by CICS in the mainframe environment. Leveraging Micro Focus™ Visual COBOL by OpenText™, this runs the same COBOL business logic with the JET layer managing the environment, such as database connections and transaction flow. The Java front-end and JET are containerized using Micro Focus™ Visual COBOL Docter by OpenText™ support. This easily and securely integrates in FIS's DevOps-driven CI/CD delivery pipeline. "The new architecture now allows us to easily scale up InvestOne to process increased workload just by spinning up a new container," commented Wainscott.

20% Performance Boost and Accelerated Time to Market

"We initially worried that replatforming and running COBOL as Java byte code would negatively affect our system performance," says Wainscott. "However, InvestOne is all about data input and output and data processing speed rather than pure compute speed. When we rolled out the replatformed application with [Micro Focus] Visual COBOL we actually saw an overall performance boost of more than 20 percent. Not only are our processes running faster, but we can scale out and run more concurrent processes. In line with our streamlined and agile development this is a key differentiator for our business."

InvestOne is in constant development, with 15 scrum teams working on it around the world. The consolidated stack of tools promotes more effective teamwork, according to Wainscott: "Leveraging Micro Focus Enterprise Developer in combination with [Micro Focus] Visual COBOL enables us to maintain both mainframe and COBOL versions of InvestOne through COBOL JVM development. This suits different customers and has accelerated our coding and testing cycle. We now deliver enhancements and bug fixes to our clients every month. Through the container model, our developers can test and run InvestOne anywhere without having to rely on a complicated and time-consuming installation on a server."

FIS clients enjoy the performance benefits of the new platform and really like the low-risk implementation as there is no change at all required to their business processes. All of InvestOne's existing logic is ported 'as is', giving them speed, scalability, and flexibility.

Wainscott concludes: "Constant innovation and reinvention has been our mantra for over 40 years now. The modernization journey we are on with Micro Focus (now part of OpenText™) is amazing. It has been fantastic to migrate to cloud computing and a continuous delivery model while reusing our valuable business logic and providing full business continuity to our clients. The decision to write InvestOne in COBOL all those years ago has definitely paid off for us."

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