Accelerating Cloud Transition Through ‘Software Intelligence’

Taking an innovative approach to technical mapping of IT applications has proven a boon for agencies with intensive data requirements and fragmented legacy systems. Mon, 03/30/2020 - 09:40

Federal CIOs face the consistent challenge of modernizing IT structures while still depending on legacy systems for day-to-day operations despite their limited capabilities and efficiencies. As Luke McCormack, former Department of Homeland Security CIO states, “It’s like trying to modernize a Formula 1 car while its going 180 miles per hour!”
In fact, CAST Solutions Architect Kyle Christiansen found that federal IT executives frequently attempt to manage IT built upon competing legacy systems. With original architects having long since departed without sharing instructions on how their core mission systems are designed, it creates serious roadblocks for modernization projects and cloud transition, a quandary that CAST has sought to resolve.

To help agency CIOs, CAST offers software products to enable and accelerate that modernization journey while also maintaining reliability and security of the existing systems that run today’s federal government and industry.

CAST found that extrapolating legacy application source code and creating wholesale blueprints of an organization’s custom software systems provides a wealth of insights that empower their clients to overcome these roadblocks.

“We bundle these diverse insights under a term called ‘software intelligence,’ which is really about what can be found in the source code you have,” Christiansen said. “Being able to generate those [software intelligence] insights — to give an objective look about software health and cloud readiness, to see how everything is connected — speeds up a cloud migration effort that is almost always a component of a larger modernization initiative.”

CAST has discovered this approach is broadly applicable — not just to the deep legacy side of the house (think mainframes and monolithic apps), but to "middle-aged legacy" as well.

“We’re helping clients that have more modern code, like client server or multi-tiered systems, that are still considered legacy. It’s so tightly coupled together, mainly because it’s changed hands many times, whether it’s internal team or integrator turnover,” Christiansen said.

In outlining its platform’s capabilities, Christiansen described CAST’s two-fold approach to systems mapping and cloud transition, a process that is attentive to each client’s specific demands and technical particularities. The initial stage involves analyzing a portfolio of applications and creating a digital roadmap detailing the processes that will be necessary for each organization’s cloud migration.
Cloud Transformation

From a cloud transformation perspective, Christiansen said, CAST takes a broad portfolio-level view with the goal of helping stand up a list and build a migration map for the end user about migrating to the cloud. This map segments and prioritizes each application identifying quick wins and hurdles that exist in their applications.

"Is an application using persistent files that are not a cloud best practice? This is just one simple example of what we call 'blockers' — code characteristics that will make a cloud migration harder if not addressed beforehand," he added. "CAST detects these blockers automatically and early enough in the process to create a more accurate plan. The key to this first step is casting a broad enough net to really get that objective look at the portfolio, which in turn provides the direction on how to optimize the journey to cloud native."

CAST’s software intelligence approach has proven so broadly applicable that major cloud vendors have begun turning to them for application portfolio insights that they wouldn’t have been able to develop with internal or market solutions.

“They send clients to us because we’re looking at software components to help with that cloud ready stance, whereas everyone else on the market is looking at an infrastructure assessment about what’s running on the network,” he said. “They need help understanding the custom software that runs many of their applications to identify any hurdles in the code that could potentially delay a portfolio cloud migration.”

The second stage involves taking a look at the ore complex IT systems to effectively reverse-engineer what the code is doing by mapping all the dependancies and connections across the tech stack and identifying what is in the software components. Christiansen described this similar to what an MRI machine looking a the human body.

He added that in his experience there is little to no current and accurate technical documentation for these systems — it’s all with each developer who has worked on the system over time.
Beyond the unique benefits in providing a unified map of what might be otherwise inscrutable legacy code, the CAST platform allows organizations to maintain the integrity and unity of their code going forward — ensuring the cohesive IT maintenance necessary for ongoing modernization.

“As you’re working on that refactor, we can look at the new code being produced to make sure it’s maintaining high-quality security standards while ensuring the team adheres to the target architecture. And we can automate that check now, so you’re not back in the same boat in 10 years,” Christiansen said.

**Budget-Saving Tool**

In anticipation of the future cost of ownership and sustainability risks, CAST pays special attention to evaluating how an organization’s software can be better maintained in light of the increasing demands of cloud computing and data-intensive modernization projects.

“One of the characteristics we’ll analyze in our deeper dives is the maintainability of the software that’s being generated,” he said. “We always talk to our clients in the federal government about how this is a long-term goal, and if you don’t pay attention to it now as you’re producing code and refactoring what’s there, you’re shooting yourself in the foot and continuing to accumulate technical debt.”

Going forward, CAST holds this approach — enabled by software intelligence — as vital for supporting not merely current modernization efforts, but also future digital transformation projects. The increasing complexity and interdependence of variant IT systems will require deep attention to detail as well as cost-saving automation, components that CAST’s platform is set to facilitate.

“Our IT systems are not shrinking. They’re getting bigger, they’re doing more things, they’re just going to get more complicated. So being able to get more information any way you can becomes vital. Having something like CAST, which is an automated way to get that information, is much more scalable than hiring an army of people to come in and do the same evaluation,” Christiansen said.
“You can’t manage what you can’t see,” McCormack said. “Any CIO organization that is serious about modernizing to cloud native — and creating a solid, sustainable legacy foundation to support future missions — should leverage automated software intelligence solutions to monitor and track these initiatives.”

This is particularly relevant when facing the budget restrictions in federal government modernization. The CAST products generate software intelligence that allow an organization to see details on its custom applications that could otherwise be a cost-prohibitive transformation initiative.

For more information about how software intelligence is enabling faster modernization in the federal space, check out CAST’s upcoming six-part digital series where government and industry leaders share about their experiences applying software intelligence to their business. That series launches April 22.

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