Styra Blends Flexible Integration and Policy-as-Code Framework for Capital One

Capital One Financial Corporation, the nation's largest direct bank, is known for being a data and tech pioneer in the financial services industry.

The Fortune 100 company has been progressive in setting a bold agenda around digital and tech transformation and embracing the comprehensive change that it requires. Capital One is years ahead of most enterprises in moving to the cloud, scaling its in-house engineering workforce, and adopting agile, microservices, open source, and a modern data ecosystem.

Last year, Capital One became the first U.S. bank to exit its on-prem legacy data centers and go all-in on the public cloud. So it's no surprise that Capital One was also an early adopter of Open Policy Agent (OPA).

In 2020, a new program presented the opportunity to lean further into their tech-forward strategy and leverage OPA like never before, at a scale that can only come from a global enterprise. This massive global scale, and Capital One's pace of innovation, required an OPA management framework that could accelerate delivery, as well as ensure a detailed audit log and compliance records: Styra Declarative Authorization Service (DAS).

The Challenge

"How do we drive the highest levels of efficiency and compliance from our development teams?". That's a key area of focus for Jason Burks, a director of software engineering at Capital One.

One way the Capital One team is tackling that is through a new internal Kubernetes platform aimed at transforming and modernizing the software delivery experience. Capital One rolled out the platform in mid-2020 and began migrating containerized apps from older platforms to the new platform.

How do we drive the highest levels of efficiency and compliance from our development teams?"

The team understood that in order to scale in the way they wanted, they couldn't simply rely on custom implementations of open source technology, and the maintenance that entails. Instead, they needed to operationalize the platform with a standardized, central control plane that provided pre-built Kubernetes PSP policies and easy authoring of custom policies, as well as enabling decision log visibility, policy authoring, tenant/cluster management and impact analysis.

The Solution

Already familiar with the power of OPA for policy-based controls and guardrails, Capital One just needed a solution to scale those policies. They turned to the creators of OPA, and found that Styra DAS could help them operationalize OPA at scale in the way they needed, scaling and standardizing the policy-based control and guardrails that are essential to the success of an enterprise-scale platform.

Part of a successful DevOps formula is ensuring that internal policies and procedures are followed, especially when pushing changes to computing environments. These policies are intended to place guardrails around cloud usage without slowing engineers. When done well, these guardrails can actually accelerate development, by eliminating errors early, and only allowing what's right.

As a lightweight, general-purpose policy engine, OPA provides the flexible integration (sidecar, host-level daemon or library) and co-location capabilities that Capital One needed. Styra DAS levels up OPA by offering Capital One a turnkey, unified control plane to seamlessly manage the entire policy lifecycle.

With Styra DAS and OPA, Capital One can add logic to data in an expressive platform that not only tolerates but encourages nuanced rules and the writing of multiple, overlapping policies. Without OPA and Styra DAS, Capital One would have needed to implement policy management from scratch, updating manually for each iteration of the platform and its functions. Required components would need to be carefully designed, implemented and tested to ensure correct behavior and a positive user experience. Put simply, that's a lot of work.

The Outcome

Styra DAS/OPA is helping Capital One transform the software delivery experience. Today, Capital One is working to standardize best-in-breed technologies and frameworks, facilitating faster innovation in a secure, flexible and highly efficient environment.

Styra DAS/OPA empowers Capital One to do away with much of the heavy lifting and repetition between all policies that need to be written, ensuring that developers can write just the amount of expressive Rego they need.

And they're not done yet. Capital One continues to evolve their platform, and the guardrails in place help ensure that when new developers or applications are brought in, they're entering a system that's already set up for success.