

CASE STUDY

CodeSign Protect helps global bank transform the way they secure loan applications

Challenge: XML file integrity difficult to secure

A global bank's loan department had processed more than 1.5 million loan applications in the previous year, and their business goal was to increase this amount significantly as they expanded their offerings. But they had a huge issue that could potentially stymie this growth—assuring the integrity of the countless discrete bits of XML data used in every application as those files moved at machine speed.

Every piece of XML code associated with application forms, whether it contained the applicant's name, Social Security number, income, credit score or other private data, needed to be kept untampered. And data integrity needed to be maintained no matter how many hops an XML file took through innumerable APIs, internal and external, to reach its destination. Because API usage had to be consistent with Zero Trust architectures, every packet of XML code needed to be authenticated at every hop “like a hot potato,” said the bank's vice president of loan products management.

The department lacked coherent policy and enforcement for how business units stored code signing keys used for these files. Some developers stored them in HSMs, but others stored them unprotected on servers. Meanwhile, the homegrown solution they were using required anyone who needed to sign code have access to these private keys. This process increased their exposure because it allowed a copy of a given key to be anywhere and with just about anybody. And InfoSec had zero visibility into any of this.

“It was becoming a key sprawl nightmare, where we didn't know who was using them to decrypt the code or where and how they were being used. And our

homegrown code signing solution simply couldn't scale to handle this level of data—nor has it ever been able to provide us with defensible audit trails,” said the vice president. “The risk was clearly becoming too great.”

Solution: CodeSign Protect secured the entire process

The bank was already considering CodeSign Protect to help secure code in software supply chains, and the question of securing XML code came up during a conversation about the solution's ability to secure macros and PowerShell scripts. Venafi affirmed that CodeSign Protect would help secure all code regardless of type.

On the vice president's request, Venafi conducted a Proof of Concept for signing XML files, and CodeSign Protect showed how it assured integrity of XML data, no matter how many APIs it needed to pass through. Moreover, CodeSign Protect's automation capabilities meant it could easily scale to handle as many loan applications as the bank could generate. “That's what sold us,” said the vice president. “The ability to handle whatever we could throw at them is what melted any remaining resistance to the solution.”

Protects private keys while enforcing policy

The Venafi team helped the InfoSec team define their code signing processes for XML code using best practices, as well as set up automation to enforce these policies. The InfoSec team quickly saw how CodeSign Protect provided them with the observability and control they had lacked for so long and appreciated that it worked across the entire department. They were especially gratified that CodeSign Protect stored all private code signing keys in a central HSM, so that users no longer needed to have direct access to them.

Meanwhile, the users who needed to sign this code were happy that CodeSign Protect not only assured the integrity of this code, but it also removed the responsibility of managing these private keys. In fact, it facilitated faster movement of these files through APIs, allowing loans to be processed faster.

“CodeSign Protect has the automation to do it all: provide much needed visibility, enforce policy and make it easier and faster to sign code. It’s just been a revelation to us,” said the vice president.

Scales to handle any amount of data

The loan department also appreciated that CodeSign Protect could scale easily to handle increased amounts of XML data. News reports indicated that the federal interest rate was set to rise, after years of low interest rates, and the bank saw an upsurge in the number of applications for home and other loans to take advantage of the current low interest rates.

“We saw loan applications go up by a high percentage in those couple of months before the first rise, and the bulk of these applications originated online,” the vice president said. “That meant we were dealing with insane numbers of XML files. CodeSign Protect didn’t break a sweat.”

Even with U.S. loan applications temporarily dropping after the federal rate hike, the vice president said that he still expected to see applications growing overall in the long term, particularly as the bank spread into other regions and nations. He said he has no doubt that CodeSign Protect is the bank’s long-term solution because of this ability to scale. “And the Venafi team is always there to handle any question and take our suggestions. It’s already a great product, but I have no doubt it’ll be even better as we move forward with it,” he said.

Provides an audit trail for all signed XML code

Finally, CodeSign Protect provided the bank with something they lacked before: an irrefutable record of all code signing activities across the department. If, say, an XML file from a third-party partner was tampered with, CodeSign Protect could quickly provide an audit to remediate before it could impact the customer or the bank. And it provided them with an audit trail for any compliance activities.

Said the vice president: “Think of a loan application almost like a supply chain. As those XML files go through API hop after API hop, everyone’s always taking a look. CodeSign Protect actually assures the integrity of each piece of XML code, no matter how many hops it goes through—and it can do that no matter how much code you have. It’s been a game-changer in our business, not just in our security.”

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