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Leading Russian Retailer Launches Collaborative Data-driven Ad Campaigns with Intel® SGX

Confidential Computing enables retail ecosystem-wide data collaboration.

МАГНИТ

Aggregion

SCONTAIN

As one of Russia's leading retailers, Magnit serves millions of customers and works with thousands of product brands. Targeting promotions of the right product to the right customer at the right time is a constant challenge for these brands and their advertising agencies. Magnit introduced a de-centralized Customer Data Platform (CDP) from Aggregion, designed to help advertisers digitize, streamline and improve the accuracy of their ad targeting. The CDP enables advertisers to use data from multiple data suppliers, such as retail chains and mobile service providers. It is essential data is kept more secure while being matched in the CDP to help protect sensitive customer and personal data, and to build and retain trust among participants, as well as comply with local data privacy laws. This is done using Confidential Computing powered by Intel® Software Guard Extensions (Intel® SGX), which creates trusted execution enclaves in memory to keep data, code and keys in use isolated from the rest of the environment.

Challenge

Wanting to maintain and strengthen its position in a competitive marketplace, Magnit needed to help the brands it works with to offer more targeted, personalized advertising to their customers. Between Magnit and other data suppliers in the marketplace, there is a vast wealth of data available to help achieve this. However, Magnit needed a way to enable stakeholders to share and monetize these data resources while improving security and compliance with privacy regulations.

Solution

Magnit implemented a de-centralized Customer Data Platform (CDP) from Aggregion. The ability to more securely match data from multiple suppliers was enabled through Confidential Computing, using Intel® Software Guard Extensions (Intel® SGX). Intel SGX creates trusted execution environments (TEEs) in memory that keep data, code and keys in use isolated from the rest of the environment and helps prevent unauthorized access.

Results

The platform is one of the first trusted data collaboration environments launched in Russia and has enabled Magnit and the brands it works with to run more dynamic, timely ad campaigns. The richer joint datasets now available mean audience segments can be more precisely filtered, helping enhance ad targeting while the self-service user interface helps to cut the costs and time associated with audience creation for digital ad campaigns.

Business Challenge

As one of Russia's largest food retailers, Magnit operates over 21,000 stores in over 7,800 locations, employs more than 300,000 people, and counts over 39 million customers in its loyalty program. In order to maintain its success, it must help the brands that sell through its stores to effectively promote their products to the customers most likely to purchase them at the most appropriate time. To do this successfully, the brands and their chosen advertising agencies must be able to build a detailed understanding of customer demographics and behavior patterns. This enables them to target their ads to the most appropriate audience segment within the customer base.

Building this understanding requires data, much of which is not held by the brands themselves. Traditionally, advertisers use techniques like customer panels to gather additional information beyond sales numbers, which could help improve the accuracy of their ad targeting. However, these approaches tended to generate information that was not dynamic, granular or personalized, and meant decisions often relied on marketing executives' experience-based instinct or opinion rather than solid data.

The data they need about customer demographics and behaviors exists, but is generally spread across multiple organizations, including Magnit itself but also other retailers and service providers such as mobile service operators. Magnit set itself the goal of developing a way for all these stakeholders to collaboratively use the data they need, while maintaining strict control over ownership and access.

Confidential Computing

In choosing which platform to use, prioritizing security and privacy of data was a key requirement for Magnit. Working with other data suppliers presented huge opportunities to improve ad targeting, personalize the customer experience and boost revenues. However, it had to be done in compliance with local data privacy regulations, and without risking unauthorized access to any protected or sensitive data.

To do this, the platform must ensure that data is protected at rest, in flight, and when in use. Protecting data in use—in this case, while it is being combined or matched with data from other sources as part of the audience segmentation process—has traditionally been the most challenging but was critical for Magnit. It needed to win its ecosystem's confidence by ensuring that data used across its platform was protected from threats wherever it was in use – on-premises or in the cloud.

This practice is known as Confidential Computing. Magnit knew that it would be the key to fulfilling its vision of enabling large-scale advertising campaigns using data from multiple suppliers.

Solution Summary

Magnit engaged Aggregion, a specialist in building de-centralized protocols and products, to help build its new solution. Aggregion's Customer Data Platform (CDP) software offers the de-centralized data cooperation and management

required to support large-scale audience segmentation, and joint analytics. It is designed to help improve the accuracy of audience targeting in advertising campaigns by using customer data, such as purchases in Magnit supermarkets. As it is able to integrate any type of customer information from multiple data suppliers, Aggregion makes it possible to create audience segments from dozens of behavioral attributes and thousands of product categories. This significantly enhances the accuracy with which specific offers can be targeted to customers.

The Confidential Computing element of the solution is based on Intel® Software Guard Extensions (Intel® SGX). This is delivered as part of the SCONE cloud-native Confidential Computing platform from Scontain, which enables the Confidential Computing of containers using Intel SGX. The Scontain platform provides the Intel SGX capability that enables Magnit to account for the applications and customers that data on the platform while helping prevent data misuse.

Intel SGX is a set of instructions that increases the security of application code and data, giving them more protection from disclosure or modification. Developers can partition sensitive information into enclaves, which are areas of execution in-memory with more security protection. Enclaves have hardware-assisted confidentiality and integrity-added protections to help prevent access from processes at higher privilege levels. Through attestation services, a relying party can receive some verification on the identity of an application enclave before launch. With these capabilities, applications are prepared for more security.

This helps prevent anyone—the application developer, system administrator, server owner, or cloud service provider—from being able to access the data and code within the enclave. Organizations participating in the CDP can use the latest data from other data suppliers without needing to decrypt it for access. There is also no need for participants to send their data to a centralized repository, which could be vulnerable to threats and attack. Instead, each participant has their own secure enclave in which to carry out the analytics they require, using data from another participant on the platform.

Business Results

The CDP has introduced dynamic, real-time insights to advertising campaigns run by the brands, and indeed by Magnit itself as well. It enables targeting to be more effectively optimized over time, for example by performing A/B testing. This involves sending an ad to some customers within a segment and not to others, then comparing how their subsequent purchasing behavior varies. This is made possible using online-to-offline (O2O) reporting, which enables brands to not only target their ads more accurately, but also to then refer to retail purchase data to see whether their campaigns have resulted in an uplift in actual sales.

The multi-data targeting model enabled by the CDP can help enhance a wide range of other customer engagement activities, beyond advertising. For example, it also helps brands to more accurately select customers to participate in surveys, or to target specific customers with personalized offer coupons.
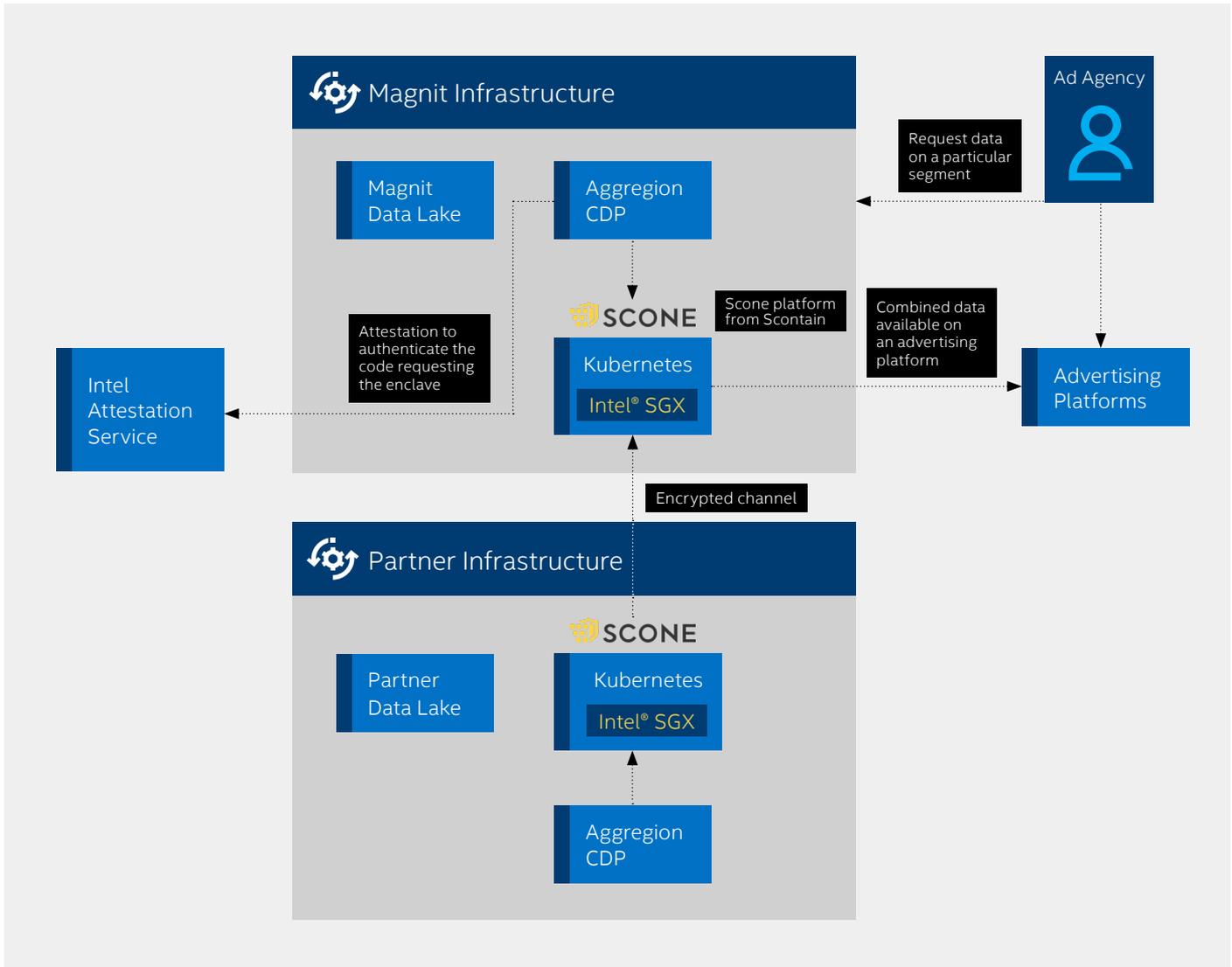
Figure 1. Magnit's Customer Data Platform, with Confidential Computing enabled by Intel® SGX.

The platform is one of the first de-centralized data collaboration environments launched in Russia, helping Magnit lead its industry in secure digital innovation. By enabling data-based collaboration while helping protect against critical information leakage with Intel SGX, the company is building trust across the whole marketplace. It is opening a new frontier in retail that will benefit retailers, data suppliers, brands and—most importantly—customers.

"Using Intel SGX has allowed us to build a platform that can more securely and privately process data from a variety of partners," says Fabian Schaefer, director of analytics and data management, Magnit. "This allows us to all collaborate better and create more effective advertising campaigns for customers. Our team is extremely excited about the upcoming enhancements to Intel SGX that will allow the secure enclaves to handle even more data, meaning we can further scale our data management platform."

Spotlight on Magnit

Magnit is one of Russia's leading food retail chains, number one by the amount of stores and geographical coverage.

The company operates in more than 3,700 localities. Almost 12 million customers visit its stores every day. Magnit uses a multiformat model, which includes convenience and drug stores, supermarkets and pharmacies. As of June 30, 2020, the company had a total of 20,894 stores in 65 regions of Russia. Magnit's cross-format loyalty program covers over 34 million people.

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