Revolutionising Cloud Data Security:

Insights from the Google + Vaultree Webinar

On January 11th 2024, CEO and Co-Founder of Vaultree, Ryan Lasmaili, sat down with Jobin George, a Data and Analytics Solutions Architect at Google. Together, these industry thought leaders explored the future of cloud data security and the innovative technologies that are incentivising increasing numbers of companies to move to cloud-based solutions.

In this blog post, we will detail the key talking points of this discussion, displaying how, together as trusted partners, Vaultree and Google are evolving cloud data security solutions.

For the On-Demand Version of this Webinar, Check Here!

Key Trends Shaping the Cloud Landscape

Cloud Migration and the Imperative of Security

Ryan Lasmaili to Jobin George - “Can you share your perspective on the current state of cloud migration and why security is a critical consideration for companies making this move?”

Opening the discussion, Jobin George delved into the diverse stages of cloud migration observed amongst businesses in current communication with GCP. He emphasised that while the migration to a cloud environment is certainly alluring to most, the decision is hampered primarily by challenges around security, compliance and data residency.

While these hurdles are currently slowing down an industry-wide transition, George highlighted the contemporary cyber climate, marked by increasing data breaches and cyberattacks, outlining how these contemporary systems are usually compromised by one unsecure component. In contrast, George discussed how, from inception, cloud projects place security as the priority.

Agreeing with this, Lasmaili also added - **“Yes, it’s more than just one, two or three components. You’re starting to think about hundreds of different components. Trying to do that in-house can become very complex, time and resource-intensive.”** Continuing, Lasmaili spoke on how migrating such complexity from on-prem to the cloud makes guaranteed overall protection much simpler.

Advancements in Data Encryption

Jobin George to Ryan Lasmaili - “What are the more significant trends in data encryption, especially what you see with your customers as more businesses transition into the cloud environment?”

In response, Lasmaili discussed the evolution from traditional data-at-rest and data-in-transit encryption to the emerging need for advanced encryption technologies, especially when data is in use and during processing. He then discussed, using an example, that without these persistent encryption technologies, organisations wishing to move data across the globe face numerous compliance issues with regulations such as GDPR and newer regulations such as India’s ‘Digital Personal Data Protection Act’ or Saudi Arabia’s Personal Data Protection Law (PDPL), both of which came into effect in 2023.

Lasmaili finished his thoughts by stating that **“organisations are beginning to look at how and what kind of advanced encryption technologies are out there that they can use in conjunction with the likes of Google and this ecosystem to utilise and ensure data stays within Google.”**

Concurring, George stated that as cloud solution providers, these requests are also being levied at them, instigating a partnership with Vaultree to cater towards specific industry use cases.

Enhancing Google Cloud with Vaultree's Technologies

Ryan Lasmaili to Jobin George - "How do Google AlloyDB, SQL and BigQuery address the growing demand for cloud databases that can handle encrypted data with minimal performance impact?"

Firstly, George outlined the technologies under the GCP banner, stating that **"Google Cloud SQL and AlloyDB are key relational database services while BigQuery is actually a data warehousing solution which offers a wide variety of benefits."** He then specifically focused on Cloud SQL, discussing the impressive metrics of the technology thanks to the combination of the best aspects of Google and PostgreSQL, allowing for superior performance at scale.

Moving onto how GCP handles encrypted data with minimal performance impact, George discussed the partnership between GCP and Vaultree. The conversation explored how Vaultree's Data-In-Use Encryption technology seamlessly integrated with and enhanced GCP's offering. Finally, George spoke on the critical need for such a partnership to ensure protection for industries constrained by strict regulatory standards by ensuring comprehensive security.

In response, Lasmaili commented on the ethos of ensured persistent security: **"The trust element here is massive, right? It is a key component of every business and organisation. The most valuable commodity we are trading here is trust."**

Jobin George to Ryan Lasmaili - "How does Vaultree's technology complement Google AlloyDB, cloud SQL and soon BigQuery? How do you make sure data is protected throughout its lifecycle?"

"As a partner with Google, our solution is available to be utilised in conjunction with Google AlloyDB and Cloud SQL (soon with BigQuery also). From an end-user perspective, we're adding significant value, especially with our breakthroughs in fully homomorphic encryption. This advancement allows for the kind of technology that, until now, has been virtually impossible to implement effectively within the cloud. These scientific breakthroughs enable us to integrate fully encrypted data solutions throughout the entire lifecycle, marking a significant stride in data-in-use encryption technology."

Lasmaili continued, discussing how this development dramatically increases the usability of encrypted data, allowing organisations to securely manage sensitive information within Google's ecosystem without resorting to third-party anonymization services. Additionally, key applications such as training ML models and performing data visualisation can now be executed on encrypted data, opening new possibilities for secure data handling.

Lastly, Lasmaili made a point of mentioning that **"Vaultree's approach to data-in-use encryption does not lead to the high computing costs traditionally associated with such technologies. This efficiency makes our solution not only technologically advanced but also cost-effective, debunking previous misconceptions about the impracticality of encrypted data processing within cloud environments."**

The ROI of Secure Cloud Databases

> Jobin George to Ryan Lasmaili - “Can you share insights on how the integration with Google services, particularly AlloyDB and Cloud SQL, improve the ROI for companies investing in data security.”

To answer this, Lasmaili first focused on the significant way Vaultree’s integration will impact Google Cloud services like AlloyDB and Cloud SQL, stating, **“We can look at it from both a cost reduction and value creation perspective.”** Below is a summary of these points:

Cost Reduction

- Vaultree enables businesses to keep their data encrypted when sharing with a third party while maintaining data utility, removing the need to use a third party to anonymise the data first or create some form of synthetic data.
- Vaultree’s solution also reduces the time and financial resources needed to handle operations such as audits or changes to compliance laws requiring action.
- Additionally, Lasmaili spoke on how the efficiency of this technology reduces costs via a reduction in demand for storage, energy and additional application spending.

Value Creation

- This integration provides quicker insights and real-time access to encrypted data, facilitating more efficient and effective data analysis.
- Previously untouchable data sets are now accessible while remaining secure, enabling organisations to harness their full potential.
- By ensuring data remains encrypted throughout its lifecycle, overall risk is reduced, and compliance is simplified.
- This approach opens up possibilities for creating new products and services that were not feasible before due to data security constraints.

To further substantiate this important value creation and cost reduction brought by Vaultree to Google services, George states that this is all possible while **“keeping the performance consistent,”** an important distinction when discussing implementations of FHE.

Insights from the Q&A Section

To round up the webinar, Lasmaili and George opened the floor for questions from the live attendees, allowing the speakers to address audience curiosities or concerns in real time. Please find a short summary of a selection of asked questions:

1. "As a data scientist, I find myself getting told no more often than yes from our legal privacy teams. If we were to implement technology like this, could I get more access to data in real-time?"

Lasmaili took this question, affirming that implementing Vaultree's solution would indeed enable data scientists to access more data securely in real-time. He further emphasised that this technology allows for the secure handling of data that previously might have been inaccessible due to privacy concerns, thus enabling comprehensive data analysis within the bounds of legal and privacy concerns.

2. "Do you think that the current encryption landscape is failing to meet the needs of both business and security?"

Here, the Vaultree CEO acknowledged that the traditional encryption landscape has limitations, especially around data-in-use. He then followed up by stating that Vaultree's innovations in FHE have solved these issues, opening new possibilities for previously non-feasible secure data utilisation.

3. "Do you think the security from data-in-use encryption that Vaultree provides will have companies that have been public cloud hesitant reconsider their hesitancy?"

Jobin George answered this question by noting that if security concerns are the primary reason for hesitancy towards cloud adoption, the integration of Vaultree's encryption technology could indeed sway companies to reconsider. However, he did acknowledge that this is just one of many potential factors at play in this adoption decision.

Key Takeaways

From this insightful discussion, we can derive several key takeaways that are crucial for businesses navigating the complex landscape of cloud adoption or security:

1. **The Importance of Advanced Encryption:** The webinar emphasised the necessity of advanced encryption, like Data-In-Use Encryption, for real-time, secure data processing in cloud computing. The Vaultree difference was highlighted here when George stated, "Vaultree gives our customers the peace of mind they need when it comes to security and overcoming the fear of giving up control of their data."
2. **Cloud Adoption vs. Compliance:** A key discussion point was the balance between leveraging cloud technology benefits while adhering to compliance standards, with Vaultree and Google Cloud providing effective solutions.
3. **ROI Benefits from Cloud Integration:** Lasmaili highlighted several ROI advantages of integrating Vaultree's Data-In-Use Encryption solution with Google Cloud services, enhancing both data security and business efficiency.
4. **Reducing Cloud Adoption Hesitancy:** The advancements in encryption technology, particularly Vaultree's solutions, could encourage businesses previously hesitant about cloud adoption to reconsider, especially concerning data security. Several times, Lasmaili detailed specifically how these solutions remove long-held cloud myths.

5. **Enabling Data-Intensive Sectors:** Vaultree's technology shows significant potential in transforming data handling in sectors like healthcare and finance, ensuring both security and efficient data utilisation.

For the full conversation between Ryan and Jobin, check out the recorded Webinar here!