

S1 EP18 - Securing Private Keys in the Public Cloud

Friday, July 29, 2022 · 08:45

Amer Haider, VP Product Management Security Solutions Business Unit and podcast host Chris Banelos discuss industry trends related to hardware security modules (HSM) as well as how Marvell is shaping the industry. Hear Amer's perspective and insights on how the security solutions industry has changed since the start of the pandemic and how trends in data privacy and trust are at the forefront of thinking across the industry.

Speaker

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VP Product Management
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Host

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C Christopher Banelos 00:04

Welcome to the Marvell Essential Technology Podcast. I'm your host Chris Banelos. On today's episode join me and Amer Haider, VP of Product Management Security Solutions Business Unit discussing Marvell's unique position in the hardware security modules market. Learn more about how Marvell is shaping the industry. What's new for Marvell trends in data privacy and trust, as well as how the industry has evolved during the pandemic. To stay up to date on future episodes, be sure to subscribe to the Marvell Essential Technology Podcast. Hey Amer it's great to have you on today's episode, I wanted to start off just getting a brief overview of your background and the type of work you're doing here at Marvell.

A Amer Haider 00:47

So I started my career in security at Cavium. This was a company founded back in 2000, and caveat was ultimately acquired by Marvell. I had left Cavium prior to the acquisition, but now I'm very excited to rejoin Marvell and just a couple months ago. And at Marvell, I am now managing the security business unit. I'm very excited to be part of this business unit. This takes me back to my security roots when we had created a hardware security module over 10 years ago.

C Christopher Banelos 01:22

So what's new in terms of hardware security modules for 2022?

A Amer Haider 01:26

Let me start by providing some background. He says were created way back in 1972 by Muhammad Atala in Silicon Valley, Muhammad figured that the security of encrypted data was dependent on protecting the encryption keys. If the encryption keys are lost, then data security is lost, and in many cases, without any detection. So Muhammad created a box of keys called the HSM. And since its creation, HSM has become the

gold standard for protecting and securing encryption keys, and have been adopted by governments and many industries to the point where the US government has a standard, a FIPS standard, around certifying HSMs. Until recently, if an organization wanted to implement configure, and operate HSMs, the cost was significant in terms of buying the equipment, hiring experts to implement the equipment and configure it, and then being able to operate it. But now the market is going through huge transformation. With the advent of cloud HSM have become extremely easy to use. Now, any software developer can go to Amazon, Google, Microsoft, Oracle, and get an HSM for approximately \$2 an hour.

C Christopher Banuelos 02:43

My next question is how is Marvell shaping the industry for hardware security modules?

A Amer Haider 02:49

So Marvell has a deep history and high performance processors. And what we've done is we've taken the Marvell custom IP, and has been able to create an HSM that has performance like no other device on the market, we're doing over 32 partitions in the car. What this means is that one device that you can buy from Marvell, you can slice it up into 32 independent partitions. And that's what many of the cloud providers are doing. They're taking our card, slicing it up to multiple partitions, and then selling each partition for about \$2 an hour. So it's a really good device for the cloud HSM, you know HSM as a service area. Additionally, we have over we're performing at over 35,000 RSA transactions per second and over 10 gig of bulk encryption. So these numbers are unheard of, in the power and form factor that that we offer from anyone else.

C Christopher Banuelos 03:46

Amer How has COVID. And the pandemic changed and even evolved the industry?

A Amer Haider 03:53

With COVID, everybody's now working from home, the became quite the norm. So with that it enterprises had to scramble and offer essentially their entire suite of applications that are used by their employees in their home. And this became the ultimate borderless enterprise. With this now, all data needs to be encrypted. And not only that, there's a huge requirement for multiple authentication techniques and then storing data on prem in the cloud. Data is now in different SAS clouds. So having the need for storing your encryption keys in hardware has gone up significantly. And with that, the need for HSM says is gone up significantly. And we can see this from the demand for HSM either in the cloud space or even on prem or hybrid cloud crop cloud space. And so that's how COVID has impacted the data center market in a way that is positive for for at least the marketing group.

C Christopher Banuelos 05:04

Amer, I wanted to jump to this next topic, I was circled around trends in data privacy, and trust, what are some of the conversations that you and your team are having, and what thoughts have occurred to you?

A Amer Haider 05:16

Data privacy is a huge, there's a huge push and topic in the HSM space. Because as you move towards government mandated or regulated privacy, now, all companies need to encrypt their data, encrypt data, they need to be able to manage the data in a way that is clearly identifiable and whose data belongs to who, and then having the ability to take that data. And if the customer asks for it, be able to just deliver it back to them. And well, they're the custodian of a user's data being able to encrypt and, and that data. Now, there's also customer owned keys is a huge initiative. I mean, we see this in for example, WhatsApp, you know, say this conversation is encrypted using your keys, Facebook can't see that that conversation because the keys essentially owned or managed by the user, and then in one way, so with that, in mind, this has been, I would say, the growth of privacy and the implementation of privacy has not really manifested its self on top of the HSM market growth yet. But I'm quite optimistic that as regulation increases for privacy, and as companies figure out how to partition customer data, secure customer data, and then actually encrypt that data for privacy, using customer managed keys or customer own keys, we're gonna see quite a significant increase in the need for hardware based HSMs. I like to tell the story here. And this is around seatbelts. If you look at any move old movies, you'll see, you know,

kids and everybody, just roaming in a car, right with no airbags or anything and without any seatbelts. Right. Now, people knew wearing seatbelts was a good idea. But nobody wore them until 1968, when there was a mandate that thou shall wear seatbelts because it's a good idea. I think there will be a time as we move forward in the future right now, security is like a seatbelt. You know, you don't need it till you really need it. And by that time, it's too late. And so today, most people will, who are proactive or regulated will just implement hardware key security. But as we move forward, I'm hopeful that there'll be regulation that mandates that all encryption keys are stored in hardware and are more secure, stored in a more secure fashion, and that will really update the market.

C Christopher Banuelos 07:50
Amer, what's what's next for Marvell?

A Amer Haider 07:52
Well, we have a very exciting roadmap that we haven't announced yet. I would tell everybody to keep your eyes open, we're going to be announcing some very exciting products that are going to really step up the bar for HSM in the market, it's going to not only increase performance, which is kind of obvious parameter that folks would assume, but also really new features that are going to address some of the trends that we talked about around privacy around additional performance and hybrid cloud.

C Christopher Banuelos 08:25
Amer I wanted to thank you for your participation on today's episode. Really looking forward to hearing more from you and your team. Thank you for listening to the Marvell essential technology podcast. As always, please feel free to visit our website to learn more, and we'll see you on the next episode.



To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

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