S1 EP20 - The Emerging OPI Project

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Cary Ussery, Vice President of Software and Platforms in Marvell's Processors Business Unit, joins the Marvell Essential Technology Podcast to discuss the company's role as a founding member of Linux Foundation's Open Programmable Infrastructure (OPI) Project. Fellow founding members and influential thought leaders from NVIDIA, Intel, F5, Keysight Technologies, and Red Hat, are dedicated to fostering a community-driven, standards-based open ecosystem for next-generation DPU and IPU-based architectures and frameworks in data centers and the cloud. Join Cary in this podcast to learn about the OPI Project and how Marvell is promoting standardization in the ecosystem to significantly contribute to the success of workload acceleration solutions.

Speakers

Cary Ussery
Vice President of Software and Platforms

Host

Christopher Banuelos
Senior Manager of Global Social Media Marketing

Christopher Banuelos 00:04
Welcome to the Marvell Essential Technology Podcast. I'm your host Chris Banuelos. On today's episode, join me in a conversation with Cary Ussery, Vice President of Software and Platforms discussing the Open Programmable Infrastructure project (OPI), a new project with the Linux foundation that focuses on developing ecosystems of DPUs, IPUs, and acceleration cards in the distributed cloud market. Learn more about what the open programmable infrastructure project is, why it's emerging, and Marvell's role. To stay up to date on future episodes, please be sure to subscribe to the Marvell Essential Technology Podcast. Hey Cary, it's great to have you here today. And I'm looking forward to our discussion wanted to start off with just a brief introduction of yourself and what type of work are you doing here at Marvell.

Cary Ussery 00:55
So I am the Vice President of Software and platforms for our Processor Business Unit, Marvell, which is traditionally known more as a semiconductor company. But the importance of the software platform is is how you enable customers to actually use it in their solutions. So that piece is very important, especially for the processor business unit.

Christopher Banuelos 01:19
And what are you enjoying most about your current role?

Cary Ussery 01:22
It's a really fast moving market, the ecosystem moves fast. There's new technologies coming all the time from virtualization to how you do orchestration to machine learning. It's it's something where new things are being developed every year, so it never good stale.

Christopher Banuelos 01:40
So Cary, let's start off our conversation by discussing what is the OPI project? And why is it emerging now?

Cary Ussery 01:48
OPI, just for reference stands for Open Programmable Infrastructure. It's a new project with [the] Linux Foundation. Marvell, is one of the founding members together with Nvidia, Intel, Dell, F5, Red Hat, Key Site. And it was put together to develop ecosystem around DPUs and IPUs and acceleration cards in the sort of distributed cloud market that's evolving right now. I think it comes at a very good time in the market. Traditionally, DPUs really started out for very focused infrastructure in hyperscaler cloud providers, and they were able to develop very customized and optimized software for the compute elements they have, as the network start to get distributed, and you have telco edge and network edge. And you know, a lot of disaggregation in the network. You know, it's now time for enabling a new collection of software developers and to really broaden and have a standard way that people can develop for this new infrastructure without without having to do something proprietary for every new DPU or IPU out there.

Christopher Banuelos 03:04
My second question for you, Cary, is what is Marvell's role in the OPI project? And why is it so important for Marvell?

Cary Ussery 03:14
Marvell is really has a very strong belief in open standards, not trying to lock in customers and developers into our technology by by building proprietary API's and frameworks. So we really believe in an open source and open standards based ecosystem, OPI fills a gap that we saw in that ecosystem for managing provisioning and monitoring the infrastructure side of the equipment. There's a lot in the market for domain specific things like ORAN for for 5G, like the NETHIO for converged infrastructure SoFi for automotive, but there really has not been a standard that's really focused on the infrastructure management and infrastructure provisioning, that's required when you you're trying to enable these broad net networks in a software defined way in the industry. So for Marvell, it's important we have, we've been delivered DPUs for quite some time, for years, we've had a very strong portfolio of ICs software and systems, but we've seen the pain in the market of of trying to enable software developers to an application developers to really leverage the technology in a way that can be composable inside the network's around the industry. So for us, it's very important. We've always been a strong believer in open source and open platforms, and we believe this is the next step for dpus. And continuing that tradition.

Christopher Banuelos 04:42
You mentioned the term workload accelerator. Can you expand a little bit on that?

Cary Ussery 04:47
Sure. So you know, traditionally, the technology that's gone into developing DPUs has been used in different formats, but a lot of people have associated it with with what's called us SmartNIC. And that's a solid use case for hyperscaler infrastructure to optimize their own infrastructure. However, you know, this distributed, distribution of network and services around different geographies and different types of deployment notes really means that you can open up acceleration for other types of workloads. So examples would be edge computing, machine learning and inferencing. A very important one is vRAN or virtualized RAN in the RAN infrastructure. So because there's a broader class of use cases for accelerating inside the infrastructure, we prefer the term workload accelerator rather than the much more limited term SmartNIC.

Christopher Banuelos 05:48
Cary, my last question for you today is what is Marvell's long term view of the DPU market? And what's Marvel's role?

Cary Ussery 05:56
So first of all, we think the DPU market is a very exciting place to be right now, it's a new specialized device for processing key capabilities that are that are needed in the next generation of networks. And as you expand the number of data, so those capabilities would be like, you know, transport security, storage, networking, machine

learning, signal processing, control, management, there's all these capabilities that you really need in low latency environments, and the ability to really rapidly accelerate. So for us, we see this class of processing device, as important as you know, traditionally compute and, and switch technology have been in building out that infrastructure. You know, for Marvell, we continue to innovate and look at how to expand the DPU, especially in the specialized acceleration market, what can be accelerated to expand that into a new set of products, we're on leading processing process notes like five nanometer and moving beyond that, but really, for us, the importance of those specialized compute elements are the path forward for really optimizing the workloads then that need to be done here. So we really look forward to the industry, creating an ecosystem. And a platform that really enables more and more developers, the only limitation of growth of GPUs in the market will be the ability of software teams to develop interesting and exciting services and micro services. And so that whole platform that sort of enables a much broader range of people to develop for will accelerate the growth of the DPU market and the growth towards a new distributed network infrastructure that's available to everyone.

Christopher Banuelos 07:51
Cary, I have to throw on one last question before we end our podcast today. And that is what are you and your team excited about in the coming years?

Cary Ussery 08:00
Sure. So I think the team is really...Well, there's one thing I tell them that I think is a good way to look at it. And that is that the best IP protection is innovation. And the fact that we are able to embed innovation underneath a common programming platform is like a really challenging, but very fulfilling effort for you know, the software, my software developers and my team here. So that ability to like make it easy to consume really advanced technology is really what drives everyone's excitement and energy. And this is a great space for them.

Christopher Banuelos 08:41
Cary, thanks for being on today's episode. Super excited for you and your team. And I look forward to speaking with you again in the future.

Cary Ussery 08:48
So Chris, excellent talking to you today. I think those are great questions. I'm glad I had the opportunity to sort of talked about all it and I think it's a very exciting area. There's a lot of energy here and you know, a lot of opportunity for innovation and hope we can talk again sometime soon.

Christopher Banuelos 09:07
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.