S1 EP10 - The Revolution in Fibre Channel

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Todd Owens, Field Marketing Director and Nishant Lodha, Director of Product Marketing – Emerging Technologies continue discussing Fibre Channel being the gold standard protocol for connecting shared storage servers. End customers, channel partners and OEM customers are particularly focused on virtualization, security, and transitioning from SCSI to NVMe, all while having low cost, persistent storage and low latency. Hear Todd and Nishant's perspectives and solutions from Marvell that enable customers and partners to increase storage workloads with optimized security.

Speaker

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Christopher Banuelos 00:04
Welcome to the Marvell Essential Technology Podcast. I'm your host, Chris Banuelos, today join in on a conversation between Todd Owens, Field Marketing Director and Nishant Lodha, Director of Product Marketing to hear their perspectives and solutions from Marvell, that enable customers and partners to increase storage workloads with optimized security.

Todd Owens 00:30
Hey, Nishant, great to be with you again, in our last podcast, you know, we talked about Fibre Channel, our favorite topic, and we talked about how it's still the one for connecting servers and shared storage resources together in the data center. We went over a few of the reasons why it's been around for a couple of decades. And, you know, it's, it's still going to be around for quite a few more years. And I think today, what I want to talk about with you is, what are some of those things that are coming that are going to make it even better tomorrow than it is today?

Nishant Lodha 01:07
Sure Todd, I'm so glad we are doing this again, it was fun kind of going down memory lane on business, critical applications, Fibre Channel, all your history with this product and technologies over the last, what two decades. It's kind of like reliving the past, so to speak, right? How we discussed that, we'll come back again and talk about the future of fibre channel, the revolution, the next big thing. So here we are, let's I would say fire up the database, bring out the storage, roll out the red carpet of fibre channel, and let's talk about what the future holds.

Todd Owens 01:43
That'd be great.

Nishant Lodha 01:44
So I know, let me let me ask you a quick question. Todd right, you speak to a lot of customers, data center architects and people like those right? Tell me in what's their voice? What are they looking to build an architect over the next two to four years? What is their next infrastructure refresh look like? And what are the things that mattered to them?

Todd Owens 02:05
So you know, in the Nishant, when I talked to the end customer, the channel partners, our OEM customers, you know, they're kind of three things that are top of mind when it comes to this infrastructure stuff. One is, you know, there's a transition going on from SCSI based technology to NVMe based and so they're, they're questioning how are we going to help them make that transition? That's number one. Number two is around the virtualization world that they find themselves living in the servers that tend to connect to these shared storage arrays that are connected with our Fibre Channel technology, all tend to be virtualized either with virtual machines, or now moving to things like, you know, containers and Kubernetes. So that's a another big question. And then the third one that is always top of mind is around security. What are we doing to make sure that the environment that we're helping them build is absolutely secure?

Nishant Lodha 02:59
Sure Todd rights been kind of interesting being in that in that journey along with all of our customers in in many ways, you know, I think that for our customers and for Fibre Channel, as they say, you know, history is repeating itself. And it's funny way of saying that, because, you know, people don't listen to History The first time and that's right, absolutely.

Todd Owens 03:20
That's true.

Nishant Lodha 03:21
But at least from, from my view, right at talking to industry, analysts, customers, other peers in the industry out there, there are a couple of things that our customers are looking to, as they as they look to modernize their enterprise storage infrastructure, right? That they're looking for something very specific, right? It starts from you know, about all the high transaction per transactions per second that they need their databases to host and build, right. And along with that, they also required cost, low cost. They're very cognizant about dollar per eye ops, they're looking at persistent storage to deliver the flexibility and agility that virtual machines need, right, and looking to get infrastructure that's ready for the future, along with, as we always say, in our world, they need something that just works.

Todd Owens 04:06
Yeah, it's got to be easy. It's got to be easy. Well, let me ask you, let's take a look at those three things that my customers are worried about. First, is that transition to NVMe. What is Marvell and the Qlogic Fibre Channel team doing to make that transition easier for customers?

Nishant Lodha 04:24
Easier, you won't believe it how easy it is to Todd to migrate from SCSI based storage to NVMe. But before we before we jump into that, right, very quickly, if you take a second actually and break down what NVMe stands for, right, it boils down to latency. And what latency means to applications is response times and when application response times go up, my customers anxiety go up

Todd Owens 04:48
That's a bad thing.

Nishant Lodha 04:50
Exactly. So that's where Fibre Channel comes in. Right the Fibre Channel from Day Zero bond and invented as a lossless network, zero copy Fully offloaded and ideal transport for this low latency NVMe based storage, right? Several years ago, bunch of experts in the industry got together as part of the NVMe group built a standard out of this, they call it without much fanfare, just FC NVMe or NVMe, or Fibre Channel, right? So you know, building the ecosystem is one thing. And I'm really proud to say that whether operating system vendors major hypervisors, like VMware ESX, Windows, Linux have built strong support for FC NVMe up and down their stack. Not only that server manufacturers, people that you and me work with closely have strong support within their server lines to HBAs supported and the biggest thing, there is a whole lot of storage targets from all the major manufacturers that support FC NVMe. The time for FC NVMe is here. And now. And to answer your question about the migration, it is really easy. If you have one of those Fibre Channel HBAs, that have a nice little Marvell or QLogic sticker on them, your life is much more easier, just make sure your software is updated on those HBAs. And they are already capable of FC NVMe in addition to standard fibre channel, so you get something extra and you don't lose anything.

Todd Owens 06:13
One, one thing that's really important about that too, I think is with our drivers. There, they're a universal driver. So the same driver that you're using today to run your Fibre Channel with SCSI is the same driver, you use tomorrow to run NVMe, so that you don't have to touch the server to make that transition. And our competitors can't say that. So that's a real, that's real kudos to you and the engineering team of being figuring out how to build a better mousetrap. But let's get on to the second topic that has to do with virtualization in this world, this move to containers. You know what, one of the challenges we were talking to a big bank, and that banks concern was, they could not identify in a virtual environment where their noisy neighbor was when they had congestion, the congestion would appear but they wouldn't know exactly. You know, where it's coming from in a virtualized environment. What are we doing in the Fibre Channel world to address that issue?

Nishant Lodha 07:11
Yeah, Todd as beautiful server virtualization has been running a whole bunch of workloads on the same server, managing it live migrating it, the growth in virtualization, just like any other Growing Pains has made our IT administrator's life difficult, right. Just like you said, that big bank and many other kinds of institutions that I talked to, it was easy for those IT administrators to track physical VM physical workload as they cannot traverse to their, to their SAN. But with VMs it's been really hard. It's been like herding cats, knowing which VM is consuming how much of the bandwidth what at what at Marvell, we have done with archeologic line of HBAs. We plan to introduce a technology that we call as VM ID or virtual machine identifier, the fiber channel HBA add full performance tags, every frame that leaves the server, a virtualized server like VMware ESX, with the Fibre Channel ID with a virtual machine Fibre Channel ID so that we can track individual virtual machines in the sand, pretty slick stuff, I encourage you and your customers and your listeners go check it out.

Todd Owens 08:20
No, I that would be make the day for a lot of virtual machine and sand administrators out there. I know, that's a real real challenge for them. You know, the last thing that, again, is Top of Mind with with the customers typically out there is the security thing, and I know that you know a lot of the parts of the industry have implemented things like silicon Root of Trust, where we build, you know, these keys into the actual silicon to prevent things like rogue firmware, or bots or things to be, you know, installed into our environment. Well, what else can be done in that Fibre Channel? Well, I mean, we're already in air gap network, right? We're our own dedicated network, we're inside the data center. Isn't that enough?

Nishant Lodha 09:04
No amount of security is enough. Todd I hate to sell you that but it has been. It has been significant work done by us to make sure that security is tight security is reliable security is strong to protect the critical data that Fibre Channel often traverses through the sand. It is air gap network, which means it's dedicated to us for a single purpose that makes it increasingly secure than almost any other fabric that I have seen. However, there have been kind of application source attacks and malicious insiders rootkit attacks, for example, right which we have recently kind of built the hardware root of trust technology to stop but one of the kind of more recent innovations within the Marvell QLogic family of Fibre Channel HBAs has been complete end to end encryption, which means at no point of time any of the customer's precious data is is in the clear when it traverses through the sand. That means nobody with a jammer, a man in the middle kind of attack, or a malicious insider can actually steal your data. And all of this is done without compromising performance. It's it's an it's a huge undertaking and is loved by our customers.

Todd Owens 10:19
That'll help SAN administrators sleep easy at night. Well, that's great, you know, good stuff. I really appreciate you taking the time today to talk through this. And maybe we can do a couple of deep dives on some of these topics in the very near future. So thanks, Nishant. Really appreciate it.

Nishant Lodha 10:33
Thanks, Todd. It's always good to talk to you looking forward to that future, which is influenced for applications to scale infinitely have complete visibility of their virtual machines, their IT infrastructure and the secure world driven by NVMe and Fibre Channel. Always happy to talk to you.

Todd Owens 10:48
We're gonna make that happen. Thanks, man. Take care.

Nishant Lodha 10:51
Thank you, Todd.

Christopher Banuelos 10:54
Thank you for listening to the Marvel essential technology podcast. As always, please feel free to visit our website to learn more, and we'll see you on the next episode.