

S1 EP6 - Still the One! Why Fibre Channel is Here to Stay

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Fibre Channel has been the gold standard protocol for connecting shared storage to servers for several decades now. Recently, new technologies like Flash storage, SSD's, memory class storage and NVMe have been deployed to allow servers and storage devices to be faster and deliver more performance. This would lead one to think that the time has come for Fibre Channel to be put out to pasture and for new protocols to be used to connect servers and storage together. The reality is however, Fibre Channel technology keeps advancing as well, and is more than capable for use with the high performance servers and storage arrays of today and tomorrow. In this podcast, we will explain some of the latest innovations in Fibre Channel connectivity and why Fibre Channel will remain the gold standard for shared storage connectivity.

Speaker

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C Christopher Banuelos 00:04

Welcome to the Marvell essential technology podcast. I'm your host, Chris Banuelos. On today's episode here Nishant Lodha, Director of Product Marketing, Emerging Technologies and Todd Owens, Field Marketing Director discuss the latest innovations in Fibre Channel connectivity, and why Fibre Channel will remain the gold standard.

T Todd Owens 00:24

This is Todd. I'm the Field Marketing Director here for the OEM business at Marvell. And I've got my buddy Nishant here to answer some questions around why Fibre Channel is still the one for connectivity in our data centers for all of our customers out there.

N Nishant Lodha 00:41

My name is Nishant Lodha. I'm the Director of Technical Marketing for Marvell QLogic Fibre Channel HBAs. One of my key responsibilities is enhancing the overall customer experience. I love to talk about technology, and thought I love the topics: still the one... What does that mean?

T Todd Owens 00:59

Well, have you ever heard the song by Orleans from I think it was the 70s back in my high school days, called Still the One. The first line and that song goes, we've been together since way back when, and you know, fibre channel's kind of that way. For me, I remember back in about 1992 or 3, I wrote a white paper on fibre channel when it was, you know, one gig way back when. So, yeah, I've been together with fibre channel for a long time. And I think you have as well, right?

N Nishant Lodha 01:30

Well, indeed, Todd not as long as you have been, I got to be honest with you, you know, since you talked about the song still the one, I hadn't heard it until you brought it up. But once I did see it, it's a beautiful song, I love it, how they say, you're still the one that turns my head, and we go back together for long. And I just, it's interesting how much relevant it is for the Fibre Channel technology, which is truly still the one. Love the choice.

T Todd Owens 01:59

You know, we're out talking about our Fibre Channel technology, day in and day out to our customers. And, you know, how would you respond in talking to somebody about fibre channel when they refer to it as Oh, that's old technology?

N Nishant Lodha 02:15

I'll tell you I have two teenage daughters, and they call me old all the time. You know what I tell them? I said, are you more dependable when you were young? And you know, I get those smile from them. But you know, the pretty much the same thing applies to Fibre Channel. Yeah, Fibre Channel was invented over a decade ago and it was invented then to address a very specific need: provide enterprise business critical applications with secure high performance and dependable access to shared storage. That requirement, that specific requirement, is still very relevant today. And I would add to that thought that, you know, today's Fibre Channel is not your grandfather's Fibre Channel. Today's Fibre Channel is completely reinvented, and we call it FC NVMe. You can, an FC NVMe can give any young technology of one of these storage fabrics a run for its money.

T Todd Owens 03:05

I couldn't agree with you more, you know, Fibre Channel. Yeah, it's been around a long time, but it's continued to be innovated, not just in speeds, but feature sets. I mean, we've got some amazing technology now and Fibre Channel things where we can, you know, pretty soon we'll have self healing SANs because of some of the SAN mitigation technology that we've got in our adapters. Heck, we've even got, you know, encrypted data in flight now as a capability that we can enable. So, yeah, you know, I would say it's been around a long time, but it's definitely not old. It gets almost younger every day with the innovation that you drive from our business units, and that the industry itself drives. And some folks believe that Ethernet based solutions, like hyper converged infrastructure will replace Fibre Channel solutions. What's your take?

N Nishant Lodha 03:56

Well, Todd, you know, I like hyper converged infrastructure. It's cool, right allows you to start small and then scale, a lower barrier to entry. And yes, the connectivity between hyper converged nodes is Ethernet. But realize that end of the day hyperconverged infrastructure is based on commodity, general purpose hardware. It's not really designed from the ground up to scale delivered low latency and more importantly, deliver extreme reliability. Yes, they say that there is software defined, software intelligent software that will bring everything together for hyper converged. But you know, my decades of experience, say something fairly simple. While hardware eventually fails, software eventually someday works. To me, scale is a big problem for hyper converged infrastructure, a distributed HCI architecture, it's great, say for 8, 12 nodes, maybe you will, let's call it even 24 nodes, but after that, it's bursting on its seams. Scalability is not just from a node scalability, also think of scalability in terms of just scaling storage, right? In hyperconverged, if you want to scale storage, you need to scale compute to Ethernet is great. It connects hyperconverged nodes, Ethernet is general purpose. But when it comes to mission critical storage, I think the solution falls short.

T Todd Owens 05:20

You know, I would agree, I haven't found a customer yet, or a channel partner selling an Oracle solution on an HCI system. You know, there are specific workloads that are designed to work best with true shared storage, SAN connections, right to these high performance disk arrays. And I just don't think that HCI can replace that, can do what needs to be done to get that job done. So things like Oracle, or SQL, and those kinds of things are really best suited for shared storage, where you do have that scalability you're talking about, what about the

transition to NVMe? You mentioned FC NVMe a minute ago? How is that going to happen with NVMe storage arrays that you know, will other technologies like NVMe over RoCE, or NVMe over TCP phase out the need for Fibre Channel?

N Nishant Lodha 06:18

Yep, as you know, NVMe storage arrays, they are happening or they have happened and continue to happen all around us. There is no doubt that NVMe is the future of storage. But just like in real life, customers want choices when it comes to connecting NVMe. And like you mentioned, we have and our customers have a bunch of choices. It could be NVMe over RoCE, NVMe over RDMA. It could be the more newer standard NVMe over TCP and there is definitely Fibre Channel or its latest avatar, FC NVMe. Let's talk about them one by one, right. So NVMe or RoCE, that's RDMA. It's great for kind of AI/ML, very small, contained workloads, it delivers excellent latency and end of the day is useful for more like specialized HPC, or high performance computing applications. I don't see RoCE moving out of that arena, so to speak, just because it can be really complicated to scale beyond a rack or so. But then, let's compare and contrast that to TCP or NVMe over TCP, for that matter. NVMe over TCP is pretty easy to set up. Pretty easy to scale. Well, our internet runs on TCP and TCP scales pretty well. But you know NVMe over TCP is not offloaded, which means you're going to pay the price of running NVMe over TCP invested CPU cycles, which eventually translates to lost efficiency, higher costs. In addition, since it is not offloaded, it does not work very well for mission critical workloads who need all the compute to deliver the efficiency, they do permission and business critical applications. That's exactly where FC NVMe shines; first, delivering the maturity of having delivered storage to mission critical applications for over a decade, fully offloaded. I would say FC NVMe is still the one that turns heads when it comes to NVMe storage.

T Todd Owens 08:19

You know, I think there's another angle there too. And it has to do with security, right? You mentioned NVMe over TCP running the internet and being easy to scale. You know, I hear all the time about Ethernet networks being hacked or, you know, having some kind of a challenge. I've yet to hear of a Fibre Channel network actually being hacked. So I think there's a security angle there as well, that for those customers, again, running those business critical, and I guess my definition of business critical is when the business is the data, you know, that is an area where you want to be as protected as possible. So I agree with you, I think Fibre Channel is still the one even with the transition that we're going through to, you know, from rotating this to these NVMe storage arrays. So here's my last question for you. What do you see that the future holds for Fibre Channel? Where's it all going?

N Nishant Lodha 09:09

If you look at it broadly, right, our customers are on a journey and I call it the cloud journey whether they are reinventing their enterprise with private cloud, looking at the public cloud or finding space in between with a hybrid cloud and Fibre Channel is going along in this journey, Fibre Channel is reinventing itself. One of the first three interventions was making Fibre Channel more relevant to NVMe, which is the new language of storage, making Fibre Channel deliver a completely offloaded secure encryption solution, bringing controls like congestion management, APIs and value at scale to customers. Today's Fibre Channel is not only reliable and secure, it is also extreme low latency, fully offloaded, a lot of our customers are looking at OEM Storage as a Service models, just like cloud like models, and Fibre Channel is an integral part of many of these storage as a service model. Love to talk about it more, perhaps next time.

T Todd Owens 10:11

You know, I think Nishant the answers that you've given to those questions really do prove that Fibre Channel is still the one for connecting servers to shared storage arrays for mission critical workloads, you know, reliability, performance, and the continued innovation that's going on in the Fibre Channel industry, you know, make it a rock solid choice for anybody that has a need to connect their mission critical workloads, you know, in a server and storage environment. So I really appreciate you taking the time with me today. And you know, let's rock on with fibre channel. We've got a long way to go.

T **Todd Owens 10:49**
You bet, Fibre Channel is still the one--way to go.

C **Christopher Banuelos 10:54**
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.



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