Harmail Singh Chatha
I call one of our data centers, my baby. We've heard about building data centers submerged in the ocean. You know, data centers traditionally are super boring. Let's just have an honest conversation.

Jason Lopez
If you're following along in our series of three podcasts with Harmail Chatha, Director of Global Data Center Operations for Nutanix, you know his vision is of a software defined world. A world where efficiency is a key factor in how people are thinking about data centers these days. This is the Tech Barometer podcast, I'm Jason Lopez. As the work goes into data centers to make them more sustainable, they also have to do more. Just about everything we do compute wise from surfing the Internet to the cloud to AI comes from a data center.

Harmail Singh Chatha
Back in the data center. In the 2000 fives or earlier, it was that cookie cutter approach of, you know, just give me a 42 rack. People used to push three four kilowatts per rack. They didn't really challenge the process. They just wanted a fail safe environment to go into.

Jason Lopez
If you've ever been in a data center unless you're an IT engineer there's really not a lot to see.

Harmail Singh Chatha
You walk in, there's just rows and rows of servers and lots of cables and you know, back in the day, cable management wasn't a thing. You just connected it, get it online, and the servers are gray, the racks are black and you have white light in the data center.

Jason Lopez
Harmail said the bland look of data centers inspired his team to build the Nutanix data center with a bit of flair.

Harmail Singh Chatha
When you walk into our data center, you're going to see a lot of LED lights. You're going to see hologens of the Nutanix logo, you're going to see blue and green inside the hot out containment. It's rows and rows of Nutanix gear. But we have a cool LED wall on one side just to brighten up the space and a little bit more engagement and not have it so boring.

Jason Lopez
But there are data centers out there Which have a fantasy golf course feel if you will, not so much because of what they look like on the inside but rather the environments they're in.

Harmail Singh Chatha
There's a cool one in the Nordic track up north. It's built inside of a hill. It's very small, but it's very exotic. Haven't been to that one yet, but it's definitely on the list. That one is pretty cool.

Jason Lopez
And what sounds like out of a James Bond movie, you can even find data centers that are underwater or on boats.

Harmail Singh Chatha
Can that really scale out? Like look at the total megawatts of data center power being consumed or built total square footage worldwide of data centers. You know, the folks that are hosting on barges, I would think are just like a small mini subset of services that live there that are highly critical in the grand scheme of things. I don't think those small data centers is going to hold up because of the demand. But if there was ever a vent of some sort of environmental impact, the barge would just take off with your environment. It's fully connected, it's powered up, and it'll stay on.

Jason Lopez
We wondered if there were any movies where Harmail felt they got data centers right... something that made him say, "that's a data center." Iron Man, Transcendence, The Matrix?

Harmail Singh Chatha
No, obviously it's dramatized. The closest that I feel like anybody's come to those Hollywood data centers is probably our data center that we purpose built for customers engagement. It hasn't been used in the movie yet. We've done some videos on it just to highlight it, but we've had a lot of customers walk through there and just absolutely be floored. And what it does is just creates a memorable moment when you walk in, you're like, "Oh, this is a data center." And not every data center's like that.

Harmail Singh Chatha
It's all about customization.

Jason Lopez
During the pandemic Harmail and his team built a data center amid the challenges of staffing and the world's supply chain issues. They didn't build it out-of-the-box but custom designed it in the way they wanted, fully planning for it to scale out.

Harmail Singh Chatha
We faced no issues, fortunately, no power constraints. Nothing went down. And it's really just having that vetted design that you know is going to work for you. But also at the same time, like, you know, what we're doing in that data center, the traditional route was a 400 amp, 208 volt busway, a power busway, and people would do two per row A and B versus we have two rows. We went with the 800 amp busway and just two bars across the top and then crossing AB power and going 415 volt. And of course going higher density on the racks is. And it's hot out containment we're pushing anywhere from like 110 to 125 degrees hot air in the pods themselves. So you can just imagine the density of that.

Jason Lopez

One of the things Harmail watches as a date center goes online is whether the plan he had, which is the architecture, is robust enough. Can it hold up to the demands put on it. For his team, that's a global effort.

Harmail Singh Chatha
Under my umbrella, we've got about a dozen or so data centers around the world that my team and I are responsible for. We're working with all the major providers. Some of them are partners in what we do. And a lot of them are just, you know, where we're leveraging their, their real estate, their power efficiency, cooling efficiency to host our gear.

Jason Lopez
He began working in data centers in 2005 at a couple of ecommerce platforms and it turned out not to be just work… he had found his calling.

Harmail Singh Chatha
I started in my IT career just working in IT and just, you know, helping, helping people troubleshoot issues and stuff like that. And I got to go to my first data center by Mission College there was a data center there. I just fell in love with them. It was just like a very ah moment.

Jason Lopez
When he told us about cool data centers he'd like to visit we asked, well, how many have you walked through? 30?

Harmail Singh Chatha
 Way more than that.

Jason Lopez
75?

Harmail Singh Chatha
I think I've been in probably 100 plus data centers.

Jason Lopez
If you think about how many technologies since the 1990s have fired people up, not only in Silicon Valley but around the world: smartphones, IoT, peer-to-peer, cloud, virtualization, artificial intelligence, and the list could go on, they're brought to you by data centers.

Harmail Singh Chatha
I love the challenge of it, you know, to build these data centers out, to maintain these data centers and do some unique work that not everybody gets an opportunity to do.There's a limited number of football players and basketball players, there's a very limited number of people that actually operate data centers and get to be hands on data centers and that's what really excites.

Jason Lopez
We're in an era when data centers are becoming even more central to how the world works. Perhaps Hollywood goes overboard and doesn't get it right technically, but the movies are on to one thing: today's data centers are more than just a repository of rack mounted gray server computers in the basement with a secure always on mission.

Harmail Singh Chatha
That mindset is changing. Everything else is becoming more efficient. Compute is becoming more efficient. Data center providers are becoming more efficient. Everything is going to a software defined network. The conversation started 10 years ago, but it's finally starting to come to fruition where networking is deployed as code servers are provisioned, as code instances are spun up as code. That's the mindset that everybody has to go into as they're going into this industry.

Harmail Chatha is the Director of global data center operations for Nutanix. This is one of three podcasts about him and his work at Nutanix. Check back at theforecastbynutanix.com for stories on data center sustainability as well as trends. This is the Tech Barometer podcast I'm Jason Lopez, thanks for listening. We've got an extensive library of written stories as well as podcasts, again, at theforecastbynutanix.com