The Deloitte On Cloud Podcast

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Title:	**Architecting and optimizing cloud for the entire enterprise**
Description:	Many of the problems organizations have with realizing cloud ROI and value stem from an architecture that isn't optimized for the overall business strategy, but instead for particular solutions or narrow business goals. In this episode, David Linthicum talks with Red Hat's E.G. Nadhan about how companies can take a collaborative approach to ensure that their architecture is built and optimized to reflect the strategy of the business as a whole, not just a sum of its parts.
Duration:	**00:24:52**

David Linthicum:
Welcome back to the On Cloud podcast. Today on the show I am joined by E.G. Nadhan. He's Red Hat's global chief architect leader. How're you doing this morning?

E.G. Nadhan:
Pretty good, David. How are you?

David Linthicum:
I was just looking at a video of him. He always has an actual red hat on. He's not doing the digital red hat that I normally see when I'm on the podcast and video calls with Red Hat people. So, give us the story. What is your day job at Red Hat? What do you typically do? What have they got you up to?

E.G. Nadhan:
Absolutely. So, my day job is actually being a chief architect. What does that mean? That means meeting with our customers and our partners to see how and where we can be relevant from a technology perspective, advance the customer's business initiatives, outcomes rather than our technology. It's not about technology for technology's sake, but it's really what are the outcomes that they are targeting for their consumers. And it's a journey, David, where it is not just about the technology of today, but we are constantly looking ahead to what is coming next. So, it's a conversation, frankly, about the products on the truck, the solutions for the customer with the technologies that are coming in the future. So, every day is different, every customer is different. That's what I do. And as a global chief architect leader, there is a global network of chiefs, so I'm a playing captain if you will, and I learn from my peers and I lead a virtual network at Red Hat where we share stories and lessons learned and how can we do better as a company and as an ecosystem.

David Linthicum:
One of the things I'm finding that it's a bit of a struggle to keep everybody's minds open. In other words, there's so many different technologies out there, so many ways of doing things, and we kind of have this set of biases that we bring into architectural discussions, and when you look at it at the end of the day, we're trying to create something that's optimized for the business. And, so, that can be any number of technologies. It's typically not going to be one technology stack that solves all problems. How do you get—since you work for such a large organization, how do you get people making sure that they're looking at this stuff objectively, they have an open mind, they're looking at bits and pieces of technology?

E.G. Nadhan:
Right. So, the last two words that you mentioned, or maybe the last four words, the open mind is really key, David. And if there is one thing that Red Hat as an organization has learned over the years—as you know, we started in the open-source community and still are very much there. Open-source is not just about software as it may come across. It's really more about that culture. We work with our customers, we work with our partners, and, hello, we work with our competitors too. So, that whole idea of "not in my back yard" or "my way or the highway" type of mindset just doesn't work. And we have learned, and we continue to advocate that type of collaborative mindset not only in the open-source community, but we bring it inside the organization too as well as when we work with the ecosystem.

So, the reason why I brought that up is because when it comes to technology choices, we have individual contributors who are leaders in the community, but how do we pick the next project to work on? It is really based upon need. It starts with the need, but it's also about adoption. Is there—frankly, there are projects that come up and then it's a fail fast approach. There are a million projects out there, doesn't mean every project is going to see the light of day. But when we see there is adoption, when there are multiple companies, not just multiple contributors within one company or two, that's when we see that, okay, this is the technology that is actually going to take—the world is going to move forward with. And we have seen over the years—David, there has been so much change, and the key driver is the adoption with a collaborative mindset. That's what actually enables us to zero in on the next set of emerging technologies, something we need to keep track of every day.

David Linthicum:
Yeah, it seems like in reading some of the current events, right now we're going through a bit of a reckoning. In other words, the prices and the costs, people are looking at ROI from cloud computing, people are looking, here we are maybe 15 years in the cloud, maybe 30 to 40 percent of workloads migrated, things like that, and so the boards of directors and the C-level folks within these organizations are really kind of looking at this as the value of cloud computing coming back, and there's some discrepancies there.

We're seeing lack of ROI in some instances. We just did a big survey at Deloitte, and we looked at both leaders and followers in the space, and we kind of found that both of them are spending about the same amount of money and the leaders are getting good value impact that's coming back to the business but the followers don't seem to be getting so much. But those data points are starting to rise up in terms of surveys, in terms of people kind of looking at the cloud cost, things like that.

When you look at it, and I study a lot of this stuff, it really kind of gets down to architectural optimization as something that we seem to be missing. In other words, we get into building systems, and we go, "Okay, this is going to be serverless and containers and we're going to leverage AI systems and big data analytics and stuff," and you get into a lot of the cool tools that the cool kids are using, where at the end of the day this is about finding one solution, which, by the way may, be very different at the end of the journey than you anticipated, but that's the solution that's going to provide the best value back to the business. And you really have to have this open mind in terms of all these different alternatives out there. And, sometimes the alternative is going to be leave it alone or repatriate it back into these systems. We're trying to find these optimized architectures, things like that, but we're still kind of driven by the hype train. How are you fighting against that right now?

E.G. Nadhan:
Yeah, so two things, David. One, when it comes to ROI, return on investment, you need a baseline as to how we are doing today. When I talk to customers, I do find that there is incredible focus on, "Okay, how do we measure the metrics in the target environment," but then if you don't have the right measures in place, even in today's environment, how do you even know if you are doing better? And there have been many conversations when I post a question the customer would be like "aha, that's something that we have"—we don't have a direct answer, or they know what they want to measure but they are not measuring it.

So, one key aspect of ROI is just that: where are we today so that we can actually measure the return over time? Having said that, there is also a lot to be said—you talked about architecture and optimization. If there is one word that comes to mind when it comes to technology, it is change. So, that doesn't mean a radical change to the architecture, but the architecture should be accommodative of different environments, heterogeneous environments in the data center, outside, different cloud environments and so on so that you have—you as the enterprise have the freedom of choice as to the target—the environment that is best suited for the workload. So, it is not a world where everything can go to maybe just stay in the data center or just stay on the server or just be virtualized. There is an environment that is the best fit for each workload, and you need that choice. So, that's my way of saying open platforms are vital to realize ROI, and it is not just about having multiple choices.

You should have the right choices that best fit your workload needs. And having an open platform really enables you to get the benefit of not just one environment but do things in a way that is consistent, that can be reused, that can have the right governance. And this is the—I would have a hunch that the leaders are more likely to have not only an open mind but definitely they have targeted open platforms in their modernized environment, David.

David Linthicum:
There's something profound that you said, freedom of choice. I think that kind of gets into an architectural reality that we need to kind of face right now. We are facing this thing where we're not getting the efficiency, the cost efficiency back from the solutions we're building, and then we're finding underlying reasons for that is that we may have made the wrong choices about different technologies to configure into the final architectural endpoint that we're creating, which could be very complex or very simple depending on the problem that you're solving. And it's really empowering architects and empowering developers and solution designers and security architects and operational architects into really having and looking at all different kinds of technologies out there and picking the best of breed that are going to be optimized for the system.

Too often, I see there's some even cultural limitations when you start working with a company based on the fact that they've gone off with this particular provider and they're looking to work in this walled garden. They kind of view this as the path of least resistance. Well, I can tell that if they're going to move in those directions that their solutions are going to be likely under-optimized, and that means they're going to work but they're going to cost a lot more to run and operate moving forward.

I think you can certainly do that, but then you're going to have the reactions like we're seeing right now where people are complaining for some of the ROI that's coming back because they build these things in closed solutions. They didn't consider and open their minds to all the different technologies that they can leverage, and they didn't normalize the hype in terms of the architecture realities and the business realities and how to build this thing. So, do you think we're going to get better at this moving forward?

E.G. Nadhan:
Yes. Well, we have to get better at this, and this is through lessons learned, and just to add a little bit of color to the scenario you painted, typically what enterprises wind up doing is let's start with a project, and the project will be maybe representative of a set of workloads, maybe one business unit or one department of IT and whatnot. And the target environment, even let us say that they go—they open champagne bottles and so on, yeah, success, this is actually working. What has not been realized then is what about the other units? What about the other workloads? Not every workload is the same. Not every application is the same.

So, if we take a strategic approach, it is kind of like moving houses. I don't want to imply that everything needs to move, but if you had to move houses, rather than seeing where does the furniture in the family room—what is a good environment for that and the right room for that? If you were to move houses just based on what we have in one room rather than considering overall what do we have under the roof and then what type of a house do we need, maybe we need multiple houses, different locations, and whatnot. That's the approach that enterprises should be taking. Whereas what they do is in shadow IT and different units kind of doing their own ways and landing up with yet another set of heterogeneous choices. That's where we are landing. How do we do better?

So, number one, listening to this podcast would help with fine thoughts from David and the guests that you bring to the table. But then these are forums as well as, I would say, communities out there in the open-source and sharing experiences. No matter who you are, you could be a CIO, you could be an enterprise architect. I am part of a chief architects' forum. So, go outside your enterprise and share the stories, share what is working, what is not working, and learn from each other. That will actually open—that's open mind and that is open culture. And this way it is not just about your project, your team, your unit, your company. It is about doing things right for the benefit of the end consumer. That type of an approach is what I would assert, David, is really the solution. Not easy to achieve, but it is possible.

David Linthicum:
So, business requirements always come up when you deal with architecture, and obviously we're always trying to solve problems and configure technology that's going to maximize the value coming back to the business. We all know that's what you say, but it's very different than actually following those paths and really kind of having the culture where we're getting a core understanding of what the business really needs. And at the center of architecture, I think the fact that we have a tendency to solve tactical problems dealing with accounting and dealing with sales transaction tracking and business analytics and all these sorts of things.

The reality as we're moving forward, the business is kind of asking us for more. They're asking us for the ability to provide the technology that's going to provide the capabilities to be more innovative moving forward. And that means we're building something that is going to create something that we may not be anticipating. We're providing the technology to the end users, to the business leaders, to the managers, to the staff in the organization where they're able to leverage technology the way it should be leveraged as a force multiplier moving forward versus just solving tactical problems. Do you think we have enough thinking around how that happens? I was thinking about that the other day, and I don't see people thinking that way in many instances.

It's a bit concerning to me because if you think about it, innovation is how we're valuing businesses moving forward. We look at ride sharing programs and condo sharing programs and all the things that are out there. They don't actually own anything, but they provide the innovation to make it happen, so we're

seeing they do the next things in manufacturing, in pharmaceuticals and additional retail stuff where the innovation becomes everything. Do we have enough people thinking in terms of how we're going to architect to be innovative? How we're going to architect the changes? How we're going to architect to scale?

E.G. Nadhan:
Yeah, if I may, I will paraphrase your question a little bit to say do we have enough people. I don't have a straight answer for that, but I would change the question a little bit to do we have enough enterprises who are actually thinking that way and the people come along with? I want to take an anecdotal— share an anecdote. One of the executive briefings that I was working with was a customer where we usually—it would be like a CIO and the SVP infrastructure and so on. This one was a little different. We had 13 people. Half of them were from IT, including the CIO, and this CIO's peers from the lines of business also showed up.

And the briefing was like a two-part briefing where we met with the line of business leaders and the CIO's team and then we brought them together. And the CIO actually had—IT had an opportunity to say, "Here are the initiatives that we are working with and here is how they relate to different businesses." That right there—and then there was debate, why this, why not that, and so on, and it was not about talking about cloud and the containers and all that. it was more the technology initiative that the businesses could actually relate to.

And, of course, the question was what's in it for me. What's it doing for me? And then there was—based on the healthy debate, where this customer landed was here are the initiatives that are really relevant, where there are business outcomes that matter. For example, autos delivered on time. Customer walking into the retail store being happy. Flights, the experience overall of checking in. Are we drawing cash? Whatever that end consumer experience is, that's what was the target as a company. That type of an environment and that type of dialog, David, I would submit will bring forth the right people with the right mindset to do it right.

David Linthicum:
Yeah, I have to believe that's going to be the case moving forward. Just have to think differently in how we do architecture. Speaking about thinking differently, it's thinking about the different dimensions and how you deal with architecture, physical and logical layers, and this is something that's been fundamental to me. I've been an architect most of my career, and the reality is I think about things in the abstract and then I think about things in the physical, and as we try to get these solutions together to make them happen, we have to understand logically what we're looking to do without really kind of tying in or coupling into particular technologies, operating systems, even specific cloud providers and things like that.

And then the physical instance of that where we actually tie it to particular technologies and take it to the next level, and we're seeing instances of this right now, certainly the rise of supercloud and the ability to have this logical layer that sits above the cloud providers which is able to provide abstraction of different redundant systems in there. Do we have enough thinking—back to the thinking question again—do we have enough thinking around working these things out logically, dealing with security, governance, operations, database management, FinOps, all these sorts of things in this logical layer that exists above the various technologies versus always thinking in terms of how we're going to implement it with technology? It seems like we're missing the boat, we're missing solutions because we don't have this logical thinking that's going along with the physical instances.

E.G. Nadhan:
Yep. So, we are human, and humans have a tendency to be—to react to maybe a single provider coming across trunks saying we can do it all and so on. And relying on that particular provider or vendor's capabilities and kind of taking the easy way but definitely not the right way. The call to action here is for the enterprise architecture team to look out for what's right for the enterprise, working with—it's not that we have to actually have a dialog with the different—the providers of the technology choices. Maybe some are home grown, maybe some are provided as a SaaS service. In some cases, we actually have to have a good dialog with the vendor, put them to the test, and so on.

But it is that enterprise architecture team they are really architecting for the enterprise no matter what that technology is and what that environment is. And the right enterprise architecture team, David, would be on the lookout for what are those services that really go across no matter who the provider is. How do we actually—how can we gain cost efficiencies, rapid deployment, and reels of services and so on? That's what the enterprise architecture team ought to be doing.

Now, I have confidence that with collaboration, with the right type of information exchange, we will get there, but the need to have that type of an overarching platform and overarching layer that actually goes across multiple environments led with direction and guidance by the enterprise architecture team is not going away. That's going to stay. And that's where I would say we can address it the right way so that there is more—better usage and less proliferation and technical depth and so on. I certainly don't want to be on a podcast 20 years from now, David, talking about the same topic. I honestly hope we are better much earlier.

David Linthicum:
Yeah, I hope so as well. I think, like you said, I've been in this game a long time, and we seem to be focused more, to your point, on implementation of specific technologies which is probably leading us in the wrong direction. I understand why they're doing it. It's the point we're human and we like to deal with cool stuff and we like to understand—we like to talk about particular technology we can put our hands on and try, but at the end of the day, and certainly as we're trying to solve the multicloud complexity issues, we're dealing with those with abstraction and automation, you really kind of understand in the abstract what those things need to do first before we start throwing technology at it.

You have to remember that if we're looking at something like building layers of security and operations within a multi-cloud environment, for instance, or building a supercloud, or a metacloud, or a layer of technologies that's above it that may run physically under cloud providers or even on premise, that if we get into really kind of looking at this as particular instances of technology, we're going to be missing the boat because we're trying to create redundancy, we're trying to create a logical view, and we're trying to create a vision of what this technology needs to be now as we're solving one solution but also taking it into the future where security, where governance, where operations needs to be.

And it seems to me that the underlying technology is going to be ever changing and we should be iterating through it and continually improve it and putting technology in there that may fit better and things like that. And having that logical solution is just becoming more important as things are becoming more complex because we can deal with the complexity through abstraction, we deal with the complexity through automation, and understanding that the technology's going to be dynamic and changing and that if we focus too much on that, we're going to be missing the larger picture. And to the point you made earlier, we're not necessarily getting to a fully optimized architecture by doing that because there's not a consistent vision, there's not a consistent understanding, there's not a consistent set of metrics in how we're returning value to the business. Am I overcomplicating this? Sometimes I think I sound like Old Man Linthicum and his architecture stories, but it just seems to me we're missing that.

E.G. Nadhan:
I have never heard you overcomplicate anything. If at all, it has been simplification. Even though you state the problem as it is, you simplify it for everyone to get a better understanding. I will add a little bit—a different dimension to this. There has always been a need to validate architectures, and that is even more accentuated. And, something that enterprise architecture teams should pay close attention to is to see what types of patterns are they seeing and then—you know what I'm talking about when I say patterns, but I'm going one step further is to actually have those patterns deployed in a sandbox environment and package them in such a way that they can be readily tested because we are well beyond this let me go to the whiteboard and start drawing boxes and lines and call it architecture.

Okay, fine, maybe at some abstract level they could be, but we are beyond that, David. We need actually running code, and I'm not just talking about a demo of a product functionality. I am talking about capabilities coming together with single-click deployments that actually show this is not just on paper. It has life. That's where we are and that's where we need to be even more so going forward, David.

David Linthicum:
Very profound. And I think that's exactly what we need to be thinking about and wise words. So, where can our listeners find more about you on the web?

E.G. Nadhan:
Well, they can actually go to my LinkedIn profile for sure, and they will also see where I have multiple articles published, but I would encourage listeners, of course, the redhat.com website, but the more exciting part, honestly, is next.redhat.com. N-E-X-T.redhat.com. And there is a reason why, David, because that's where we actually share with the world what projects are we focusing on. So, there are the products on the truck. That's not what I'm talking about. I'm talking about what is coming next or what we intend to bring in next, and the truth be told, some may not see the light of day. There are a million projects out there. Next.redhat.com will tell the world what we are focusing on now.

David Linthicum:
So, you're not only showing what you're doing but you're showing your work, in other words, how you're getting to it and how you're—and the details behind it. We have so many things to figure out. We should be sharing information better and getting to the common solutions on how we solve these issues. So, if you enjoyed this podcast, make sure to like us, rate us, and subscribe. Also, you can check out our past episodes, including those hosted by my good friend, Mike Kavis. Find out more at deloittecloudpodcast.com. if you'd like to contact me directly, email me at dlinthicum@deloitte.com. So, until next time, best of luck on your cloud journey. You guys stay safe. Cheers.

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