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# CRLIVE005

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[00:00:00] So we're ready to go. Ready as we'll ever be, man. All right, everyone listening on the floor. This is take number two. Welcome to the Cloud Realities podcast, and we're about to kick off.

Welcome to Cloud Realities, a conversation show exploring the practical and exciting alternate realities that can be unleashed through cloud driven transformation. I'm David Chapman and I'm Rob Kernahan. and we are still at reInvent. We are on day three at this point on the expo floor. With me is roving reporter Rob Kernaghan. Hello. Rob, how are you doing? I am, I'm actually, pretty good today, Dave. I've early late early night last night, and feeling fresh and, ready to go.

I think that would have been the sensible option for all of us. Also joining us again [00:01:00] this week is Tom Metzeler. Tom, did you have an early night? I did, easy for you to say. Sorry. My tongue doesn't follow my thinking. And how are you feeling this morning? Yeah, no, I'm okay. I'm I had already a couple of coffees, and I was here at six, things are panning out. Very good. I've had a couple of coffees as well. I feel a bit better for that and looking forward to day three of the show. Oh, absolutely. We had such great meetings and customer interactions over the last couple of days. So really good conversations around innovation, about how you drive business outcomes, how our new services and solutions are helping to think about new areas to explore it while being sustainable.

Indeed. Indeed. We'll come to that subject in a second. All right. What do you highlight to the show so far, Tom? Obviously Werner's keynote is always a highlight. Yeah. Everybody likes that. Obviously, I haven't watched it, but for the people that have watched it, You heard it was good. Yeah, I heard it was good.

Our focus on industry solution is helping [00:02:00] and thinking about how we can pinpoint key themes in industries and helping solving these AWS.

I think that's a great takeaway on how we then use partners. Not a focus area that we made strong agreement. How we use that to bring it to the market and work with customers on getting it done. Industry cloud, I think, and industry solutions for sure. The big, a big trend for, next year for sure.

But then on onwards, I think we're going to see more of it. Rob? Yeah, that whole, conversation we had yesterday with John around business outcomes, verticalization of how we operate, teams contained to create that outcome. Very important. And it's we'll talk a bit later about the power to the builders to be able to create those solutions quickly.

We heard a lot about that in the keynote this morning. We did. Fantastic. Look forward to that in a second. Tom, thanks again for joining us today. We're going to talk about cloud sustainability and what moving to the cloud [00:03:00] and What use of the cloud can do to help your organization become more sustainable.

So let's start with that first of all. So what's the current perspective on sustainability from AWS? And what are they doing to support their customers? Let me start first with trying to message the why. Why are we doing this? Oh, for sure. It's always good to understand why we are doing something right.

Yeah. Sustainability is a discipline, I would think, in which we try to reduce our impact on the environment, right? Now, why are we in need of doing this, right? We're running out of temperature, basically, right? The world is getting hotter. And that has an impact on the entire ecosystem, on the weather, on the way people heat or cool themselves.

And that has of course an impact also on the ocean. And we all live from the ocean, right?

The ocean waters have [00:04:00] become 30 percent more acid in the last 10 years. That's a big jump. Which means ocean life is changing as well. So if you want to be serious about reducing that impact, we have to have sustainability targets for everything we do as an individual and our homes as enterprises in what they produce, what they, how they deliver it, how to dispose of it at the end when it doesn't work.

Or when it's end of life. In Amazon we are very keen on, being part of that and enabling that. So we have set ourselves very ambitious sustainability goals on being carbon neutral in 2025. Which is a big and ambitious target, considering the number of data centers, fulfillment centers that we have.

In AWS, we are following that suit, of course, and making sure that our data centers are sustainable. Thirteen of our regions are already at 95%. renewable energy, and [00:05:00] the rest is following suit. So by 2024, we will have that target achieved. Now, what does it mean for our customers? That means that when you put something into the cloud, you are immediately gaining on sustainability impact.

Your CO2 output will be lower. Your greenhouse gases will be lower. There's some numbers that are circulated. It's hard to put hard numbers on that, but we're talking about up to 80 percent reduction of CO2 impact by moving a workload from on prem to the cloud. Oh, that's an interesting, that's an interesting number.

That's a big number indeed, absolutely. Now, so that's one thing. We call it sustainability of the cloud. And similar to our shared responsibility model, we have the sustainability of the cloud and the sustainability of the data that our customers put into the cloud. So the sustainability of the cloud is of course our core business, right?

Moving to Graviton processes, consuming less while still being more performant. The network components that we [00:06:00] use, how they use energy. So we've seen lots of announcements during this week about our own performance being more efficient, our infrastructure, even the Nitro V5 that we announced this week, which is the hypervisor for platforms.

Is more performance versus less power consumption. So that's really a target for everything. Now, the second area, and that's where we have even more impact going forward is how do we help customers to become more sustainable in their business processes? Think about companies that produce goods. So the production of goods.

How do you make that more sustainable? How do you distribute these goods? Can you find sustainable ways of distribution? How do you put it into the stores when it's being sold? Can that be made sustainable? And then there's of course always waste. What do you do with that waste? Or what do you do with the items that are at the end of the day need to be either [00:07:00] disposed or recycled?

So the entire life cycle. There's a big call out for our customers and for our partners and we are here to support you is let's think about how we can do all these elements in a more sustainable way. And many of these areas can run and can rely on services that we're building in the cloud. Yeah. And I think we saw this earlier with AWS supply chain.

So how do you understand your footprint and become more sustainable? First, you have to visualize where the impact is. is and yes, it's a big part of it, but just understanding your supply chain from sourcing through to logistics and getting it to the consumer or the customer. That's a massive part of reducing your co2 impact.

So the tools in the cloud allow you to see it, then you can target it and then you can get a

much better impact associated with the reduction of the co2. So It is that absolute end to end view of everything for an organization. Absolutely. They're going to help them tackle the problem head on.

I'm also [00:08:00] interested in the first point you made about about the cloud infrastructure itself moving towards being more carbon neutral. What's your perspective on the sort of increased processor load from things like machine learning workloads and how do we balance that making sure that level of Extremely high processor load is sustainable in itself.

Because we're obviously moving to a future where there's more of that. There's more data, more processing load. Yeah. Again, technology helps to some extent, right? Our Graviton3 processors, the new processors that we brought out for HPC. We have we are having a big focus on how can we provide better performance.

For this very heavy workloads. Yeah. Yeah. While still reducing consumption. Now, of course, you need to be sensible when you use machine learning to in your workloads, right? So a design question, architected. We do have a well architected framework that helps to understand what is the [00:09:00] sustainability impact of the workload that you are producing, right?

So that helps to assess. Can I, will my project have a big impact or a small impact? Yeah. We have carbon estimators, right? These are tools that allow to estimate for a new workload, a new application that you build, a new scenario what the impact of that on the carbon footprint is. So these are all tools that help to go through the assessment and then the measuring part.

And how sophisticated is that tooling at the moment? Does it allow you, does it, for example, Have a look at the code that you've written and help you optimize code at this stage, is it heading in that direction? We're getting there. It's a, it's an iterative process. So we start, of course, with the infrastructure that is relatively easy to measure and to understand.

Yeah. Once you go into the workloads themselves, the code themselves, there's techniques to make code more sustainable, right? There's even a study that was done a while ago on which programming language is the most sustainable one. Which one won? No, you got me. I don't remember. [00:10:00] I think it was Rust that was actually on top of it.

So that's an interesting approach. But yeah, while we iterate and think about, okay, what else can we measure? In order to understand what the dreadlock is, we are opening up another can of worms, which is, there's a lot of data that we need to measure, we need to put the data somewhere, we need to run analytics on it, and ideally machine learning, so that we can analyze the data quickly.

And, what position do you think teams like FinOps teams, e. g. Teams that are financially optimizing environments, how do you see that evolving over the course of the next year to incorporate sustainability as something that needs to be measured and managed at least as efficiently as finance?

Yeah. Sustainability should be just one of the elements that are measured as part of the FinOps practice. Yeah, I think give you an example here that we have a team called cloud economics team. So that's a team that works on business cases with customers and with partners and helps to [00:11:00] shape what the outcome is in terms of financial impact.

Now we have added to that a while back the impact assessment on sustainability to that as well. So it's part of the cloud economics practice, which is which, which helps to provide

these inputs and to get the output. Yeah, absolutely. There is a direct correlation, of course, financial soundness or economic soundness also creates sustainable soundness as well, which is that the more efficient you are with cost, it has a direct relationship.

So the two disciplines are very closely linked, as you said.

Sorry, just one more thing. We talked the other day about innovation, right? So innovation is really key for becoming more sustainable, right? We can do all the Things that we can do on the hardware and on the infrastructure and even assessing code. But at the end of the day, we need to innovate also on our mechanisms, on our processes and the way the business operates, right?

So in the Amazon world, of course, we are [00:12:00] optimizing our supply chain. We are moving to electrical vehicles for the last mile delivery. We are. Making our warehouses sustainable and using less carbon. We have a water pledge that we're also starting now to reduce water and become water positive over time.

So we set a target on that as well because of the direct impact of that. Temperature rising is, of course, the lack of water, right? And the other thing is, what are we building new to how far, what solutions, what business cases can we come up with that help reduce some of the problems that we have created?

Over the last years ourselves as human mankind. One example we have a In Malaysia, right? Four places. There's a great company that is busy in the process of recycling plastic. Making that plastic available. Yeah. And that company has gone and reached out to partners to, and with us to, to work on a solution, to [00:13:00] trace the plastic and to reduce the amount of plastic that is hitting the ocean.

That's one of our big problems, right? How much plastic is hitting the ocean. But we have other systems that collect plastic with chips. Their approach was to trace all the plastic items. So they are scanned with computer vision when they go into the life cycle and they can trace them back of where these items are and can then collect them and bring them back into a recycle mechanism, all based on our machine learning.

computer vision technologies. That's incredible. And how does that actually work? Have they got like tags in the bottles? The tag? The bottles are absolutely amazing. Absolutely amazing. So maybe just to bring our conversation for today to a bit of a close, I guess if I'm either some portion into the cloud, or I'm just starting a cloud adoption journey.

What advice would you give organizations to ensure that their journey is going to drive a sustainable agenda? I think part of [00:14:00] the decision making process when you build a new workload or when you move your workload into the cloud, Should we, what is my sustainability impact of that?

Make that assessment. There's tools available to do that. We have solution architects that can help with that. We have partners that can help with that. And that's a first important step, right? How can I assess it? I need data, right? If I build something new, can I assess it, what's the impact of that is, and is that hitting my sustainabil sustainability targets as a company.

And if you do that, then of course you can start building on that, iterate on it, start measuring also once it's in production, and keep on improving. And from a business case point of view, When you're thinking about taking a cloud adoption journey at whatever points, often cost can be at the heart of that business case.

Sustainability, presumably now can be business case in a hard target sort of way. Absolutely.

As I said earlier, right? So if you look at our cloud [00:15:00] economics principles, you've talked about FinSpace. So it's all linked, right? When you do your exercise of the business case, you want to understand that sustainability impact.

You want to understand the direct impact, right? So where does it run and how does it run? But you also want to probably assess over time. What does that mean over a long term, right? Yeah, in a year, two years, three years from now, and then continually monitor that and then make sure that you are not growing in your sustainability impact, but it's actually reducing it by using other technology or mechanisms to.

Very good, Tom. Lots of chew on that. So thank you very much for that. Rob, have you been out on the floor, combing around? I have, yes. I have the final two themes of it. These are your last ones, but the good ones. Only two. Only two, but they're good. The first one is absurd scale. Absurd scale. Absurd scale.

And what we heard, especially from Werner Vogel's keynote this morning, was building architectures that are just mind boggling with a few [00:16:00] clicks. Yeah, 10, 000 node event driven architectures that are solving the world's biggest issues. Wow. And then the observability over the top of that to be able to understand it.

So you've got control over such a large architecture. Just a few years ago, building something like that would have been really difficult and now it's just delivered with ease. So this is connected to the sort of themes earlier in the week in terms of simplifying driving scale, managing scale more effectively.

Absolutely. It was demonstrated that. These types of architectures solve the biggest problems in the world for the largest organization. So quite exciting to see that level of scale deployed so easily. And in such a manageable way, and it's all connected. Again, going back to the themes we've heard all week.

Indeed, and there's a sustainability angle to that as well, right? What... Sort of data sets can we use to produce reports that help us to understand what impact we can drive down on the, on our environment, right? Yeah, absolutely. Absolutely. It's done. It's just making everything easier. Yeah.

Which brings me on to theme two, which it's it's all about [00:17:00] the builders. And making their life easier. A lot easier to go and build exciting things. So we're seeing friction massively reduced in deploying large scale architectures, everything connecting easily, and we're seeing a massive increase in scale and performance across the whole architecture set.

But what's left is obviously you just need some funky imagination to know what you're going to build with it. All right, so that's cool, but you've really seen making the builders lives easier. Have you got like an example of. If I'm a builder, what can I do now more straightforwardly than I did before?

So the whole, there was always this thing about, and we always like to build technical plumbing, because we like that type of thing, but that whole problem of plumbing and making sure everything's connected and accessible, it's just got so much easier. So conceptually how I deploy something new over the top of data, apply ML to it, observe it easily.

It's just all the pain's been taken away architecturally. So you have to think less about the core components and more about what the outcome you're going to create. So you can spend more time thinking about how to create that business outcome, that business [00:18:00] solution and deliver on your vision.

It is architectural structuring built into some of this, so like previously in, in scaling cloud, you have to be extremely mindful from the landing zone up the sort of architectures that you're creating. How are some of these tools helping with that issue? So we heard from John yesterday about.

Automatic guide rails that stop you doing things you shouldn't do. Yeah. Then we're seeing an increase in easy connectivity so that we can join architectures together very quickly. And then we're seeing AI and ML being applied to the top so that you can get a result and an insight very quickly and not have to stare at dashboards.

It's that point we used yesterday about Alexa, what's the next thing I need to think about type conversation. And it's just all easier. So friction massively reduced to create compelling outcomes much quicker. Thank you, Rob. And Tom, it's interesting, isn't it, that there's a lot of themes around making scale easier this week.

How do you think that balances with the sustainability agenda? It goes hand in hand, really, because while [00:19:00] we need this big thinking big approach. to solve really big problems. At the same time, we are also building out an infrastructure that is sustainable, right? In the cloud. So there's, while you're building this out, and you may think you're actually producing more than you have a bigger impact, you are not, because we are at the same time reducing the impact that the application has.

Yeah, like optimizing infrastructure. I want to make a point on the next level of optimization, perhaps, just to your point on... Simplifying it for builders. We're doing actually the same for developing, right? The AI tools that are available to help in coding. And there's a vision that many of these tools can actually in the future be substituting some part of the mundane task of coding.

That's an interesting approach as well, because it will help also to optimize code in terms of sustainability. Yeah. Fantastic, Rob. Great themes again, thank you very much. And the next show we're going to pull all those together, I think, and just take a step back and see what the whole picture looks like.

[00:20:00] Absolutely, we'll get that ready. Can't wait to listen to your summary. And Tom, thank you very much again for spending some time with us. It was my great pleasure. Lots of insights on, possibly the most important subject at the exhibition this year. Thanks to our producer Marcel, our sound and editing wizards, Ben and Louis, and of course, to all of our listeners.

We're on LinkedIn and X, Dave Chapman, Rob Kernahan, and Sjoukje Zaal. Feel free to follow or connect with us and please get in touch if you have any comments or ideas for the show. And of course, if you haven't already done that, rate and subscribe to our podcast.

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