Brian Gracely (00:01)
Welcome back to the Cloudcast. I'm your host, Brian Graceley. And for many of you, you are a Mac user. You are a iPhone user, your friends, your family, maybe you're living the defaults lifestyle and, you know, everything within your home is doing things with Apple. But oftentimes when we think about that ecosystem and how pervasive that ecosystem is, we sort of forget about, you know, what it looks like to have to build those applications, you know, whether it's...

your company building an application that has an iOS app or an Android app and iOS app, or just what it takes to be involved in that ecosystem. Because so often we think about Linux and we think about AWS and we think about all these other things. And today we get a chance to really dive into what does it look like, what I'll call the backend or the cloud side of running or being involved with the Apple ecosystem. And so very excited today to have Chris Chapman, who is CTO of Mac Stadium. Chris?

Welcome aboard. Great to have you on the show.

Chris Chapman (01:01)
Yeah, thanks for having me. We're excited to be here.

Brian Gracely (01:03)
and you and I are both here in the South. So we're, you know, we're sort of in the, in the, the throes of the humidity time of the season. So, yeah, it's good that we're, that's right. That's right. It's a good, good time to be inside, even though it's nice and sunny outside. Well, listen, you know, like I said, welcome to the show. so before we dive into all things, Mac Stadium, give us a little bit of your background, cause you've been around this space for a while. And then, also what are some of your focus areas as CTO of, of Mac Stadium?

Chris Chapman (01:12)
A good time to be in a colder data center, honestly.

Yeah.

Sure. Yeah, I mean, by trade, I was educated as a computer and electrical engineer. So it sort of came from more of the embedded hardware side of the world, but then immediately pivoted and became a software engineer and a contractor for a big chunk of my life and did a lot of, you know, enterprise software development for a while, then got really addicted to startups, which I think I guess I still sort of am in that mentality. I just like to build and create and ended up running a company that...

Brian Gracely (01:57)
Yeah.

Chris Chapman (02:01)

built some software that ultimately got me acquired into Mac Stadium about six years ago. And that software was sort of a predecessor to some of the things we might talk about today with Kubernetes and orchestration and virtualization and all that kind of good stuff. And since then I have been here and trying to figure out the wild world of Mac OS. I mean, prior to Mac Stadium, I've been probably since 2008 working with Mac as either my desktop or jamming it into a data center for some reason that nobody should really do.

And then, I'm here now, I started building the software practice as I've taken more of the CTO landscape on, I'm kinda over everything from software to support to the software teams that build the products that we use to supply our customers to engaging with our product groups and things like that, and then just general showponing around and explaining what it is the heck we do in this universe. So, that's.

Brian Gracely (02:56)
Yeah.

Yeah, yeah, yeah. You and I were talking a little bit before we started recording, because I was trying to kind of wrap my head around, like I mentioned in the introduction, like we talk all the time about what's in corporate data centers and what's in the cloud and so forth. And then, like we said, there's this massive ecosystem of things we use every day with Macs and iOS and Mac OS and those types of things. And I sort of asked you this very naive question, which I'll ask again. What does it do?

mean to be a Mac cloud? What does it mean to sort of run, you know, what I would think of as like servers for Mac? Why would a bank care? Why do large organizations care? So give us, before we dive into a lot of the other things you do, give us sort of a broad sense of what is the world of Mac Stadium and the things that you guys provide for companies.

Chris Chapman (03:49)
Yeah, we are sort of, as you alluded to, a data center, but unlike any other, we're built top to bottom on Apple hardware and Apple infrastructure. Now we do put a lot of the probably things you would see in a normal data center, enterprise infrastructure, Cisco networking, high -end storage, all that kind of good stuff to really build it up. But we are the scalable Mac data center. And the reason to your sort of the earlier question that that matters is Apple is a really great...

individual experience product and it's designed for a consumer and it's, you know, the idea of Apple servers is interesting because the closest thing they build to a server is a Mac mini or a studio. It's all designed for a person on a desktop and a person in a workspace. So when you think about applying that to a data center, it doesn't. And so there's a ton of engineering into building this cloud.

that can serve that and the reason it matters is because Apple wants to create the best experience for their users. So they want everything that you do for Apple or build for Apple to be done with Apple. So as businesses try to put something on phones or computers or whatever,

somewhere along the build path, they have to use Apple hardware. And if you've ever built apps in a normal development, I'll say normal development environment, in a modern development environment, it's all.

Brian Gracely (05:03)
Yeah.

Chris Chapman (05:11)
AWS cloud, it's all ephemeral services or Azure. You just click, you sort of software define your landscape. You build your things that doesn't exist on the Mac side of the coin. It's get your laptop out, fire up Xcode, do your thing. And then as you get a team, how do you collaborate? How do you scale the hardware? How do you manage it? How do you deploy it? How do you, so we sort of address all of those concerns with what we're doing.

Brian Gracely (05:34)
Yeah.

Yeah, no, and I think your statement of like Apple designs to build a great experience for the people that use the end product, physically engage with the product. And it got me thinking, and I'm I think a decade more senior than you are, or I should say just older than you are. My first experience in dealing with some of this stuff was back when Apple had something called Apple Talk, which was this sort of small scale network that was great at finding devices, finding

file shares, finding printers, everything was just named in normal sort of human naming in English. And it was so amazingly easy to use as an end user. And then a year or so later, I was doing tech support and we were troubleshooting Apple Talk cases. And you were looking at sniffer files and all these things. And it was just massive amounts of broadcast storms and all this kind of back end stuff that you were like, God, I get how it's so easy for the user, but God, what a mess for whoever has to deal with it.

networking and security and all that other stuff. So it kind of brings it full circle for me in terms of what you're dealing with.

Chris Chapman (06:41)
Yeah, and to your point, that's the big challenge. As a company, we often get, first thing we hear is, man, that's cool, didn't think that was a problem, but see how it is. And the second part is like, well, what does Apple think of you? And especially as we grow our company and get in the investor world or anything, it's like, well, what if Apple decides to stomp you flat? Or they actually really like us because we support this crazy ecosystem. And again, their myopic focus is...

Brian Gracely (07:00)
Yeah, sure.

Chris Chapman (07:06)
I mean, they'll literally tell you, we want to build devices that change people's lives. And I'm like, that's, wow, that's lofty. I want to support you in that effort. So, but to that end, they often, and it's not because they're not geniuses, they just don't think of the world in that way. They're often very perplexed by the enterprise development or build problems around using Apple to your point, the backend complexity of it, because that's the last consideration. That's.

Brian Gracely (07:10)
Yeah. That's a big, that's big. Yeah. Yeah, exactly.

Chris Chapman (07:36)
It's all about what happens to their user. So the fact that Chris can't find documentation or the API is confusing or maybe out of date or there's all this other stuff going on, not their primary focus. And so people have a lot of challenges when it gets to that.

Brian Gracely (07:52)
Right, right. So.

So you guys ultimately then and I don't mean to simplify this like you you sort of fill in for you know people's their DevOps their their CI CD all those sort of things like how you know and there's there's parts of what you do that are things that you know people to listen to this show know a ton about things like Kubernetes but like if somebody said hey what is kind of Mac centric DevOps look like you know how do you explain that what sort of technologies are you are you using to

to make it easier for people to build those, you know, those Mac -centric apps or, you know, sort of to help change lives and stuff.

Chris Chapman (08:31)
Yeah, well, I guess sort of taking it in parts, what CI and Mac DevOps looks like, compared to the rest of the world, it's nascent. Meaning that really wasn't until very recently a focus for Apple. You know, they sort of put out this Xcode cloud thing and we had to think about what they were trying to do with that. And it's really them injecting some DevOps ideas into Xcode and Xcode workflow, but...

Xcode in general is just your editor to build locally. So the idea of team collaboration and DevOps and all that kind of stuff was really sort of again, sort of open source ecosystem generated with things like Brew or things like Fastlane or people sort of cobbling a bunch of tools together to try to accommodate, hey, it's not just one guy on a laptop, it's 10 guys and we're doing repeated pipelines and we want to test and secure and redeploy. So.

It's been a challenge because in this ecosystem, it's as much of an education play as it is a tooling play because generally Apple developers aren't quite as familiar with CI CD or DevOps as somebody that works in Amazon all day. What we try to do at Mac stadium for sure is build

the cloud in such a way that it lends itself to automation and DevOps practices and then tools like we have Orca, which is our Kubernetes based product. We actually ended up.

Brian Gracely (09:39)
Gotcha.

Chris Chapman (09:55)
twisting things in a way where we can actually wrap Kubernetes around Mac resources and orchestrate it through a Kubernetes control plane, which is kind of crazy. But the reason that mattered was we wanted to start exposing a wider world of CI CD and DevOps tools to the Mac ecosystem. So now you can plug in Jenkins, you can plug in GitHub actions, you can plug in, you know, name your favorite build, kite team city kind of tooling into a Mac world. And then the developer can focus on.

DevOps from a dev perspective, the DevOps engineer can focus on sort of this automated orchestrated infrastructure that'll do what they expect it to do like in any other cloud. And then everybody's kind of running down the path versus this wacky world of sort of individual desktop apps where we're still file sharing across local networks and doing crazy stuff. So.

Brian Gracely (10:42)
Yeah, yeah. If you don't mind, I want to dive in a little bit more on Orca. You were kind of the creator of Orca. I think that's how you came into the company, as I understand it.

Chris Chapman (10:51)
Yeah, the software that myself and a few others developed got acquired, like I said, about six years ago. And it had some genesis in that we were partnered with Mac Stadium Building Things. And one of the challenges and frustrations we had was sort of orchestrating and automating this. You can get bare metal clouds from us, and a lot of people do for various reasons, but they also come with their own automation. Well, we were doing things where we didn't.

care about the automation part so much we're trying to accomplish something else. But we ended up building an automation tool because we were so frustrated about not really having automation tools that were useful to us. And that was the genesis for Orca. And it sort of came from a need to want to easily virtualize Mac, which is not something that Apple focuses on. Apple focuses on the Apple device. We now provide a hypervisor framework in the new ARM architecture.

Brian Gracely (11:43)
Right, right.

Chris Chapman (11:49)
But prior to that and on the Intel platform, it was really what they called hackintosh. It was, it was doing bad things to the Mac and really stripping it down and putting Linux on it and then KVM

and QEM, you know, doing all these kinds of crazy things. Yeah. Or VM wearing it. But your, your goal was I'm just trying to turn this more into a peanut butter slathered, who cares about the hardware cloud sort of thing so I can get my work done. that was kind of the genesis of Orca. So we, we went about.

Brian Gracely (12:00)
yeah, yeah, yeah.

Chris Chapman (12:17)
going in the Kubernetes direction A because we were using it for some of the software we're using Rancher at the time to do some of our software deployment and that kind of stuff. And then we figured, well, why can't you try to containerize a Mac OS? Well, there's lots of reasons you really can't because it's not as sizable and diceable, but we figured we could take the idea of containers as luggage handles and apply them to Mac VMs in a way to make it container like and.

Brian Gracely (12:24)
Mm -hmm.

Needs the hardware. Yeah, yeah, yeah.

Chris Chapman (12:46)
give the control plane the ability to move it around just like a container and do all the scheduling and resource management. And it turns out you can. So that's what Orca really became. And again, the Kubernetes piece really gave us an unlock to the whole Kubernetes ecosystem, which we saw as sort of winning the operating system of a data center race in our worldview. So it was like, hey, if we can tee into that and add Apple to that, it's going to give us a...

Brian Gracely (13:09)
Right, right.

Chris Chapman (13:16)
clearer path to tooling and technology and automation and infrared as code capability that's sort of already really well -defined there and we just have to figure out the weird apple part.

Brian Gracely (13:26)
Gotcha, gotcha. And now is that, I'm getting a little bit off track, but like, is that then technology, the Kubernetes piece, would you combine that with managing non -Mac environments as well, or do you guys kind of keep that constrained to, obviously, you know, your world is Mac, but are you just sort of extending Kubernetes to make that happen, or how do those two worlds intersect, or do they?

Chris Chapman (13:45)

Yeah, I mean, yeah, no, yeah, there's still sort of Kublety kind of things going on there. And we do always have customers that want sort of Mac and non Mac capabilities. So they might have a private repository or a build server or something that they want to spin up. And that's not necessarily useful or good on Mac per se. So they want containers or, or a suite of.

security and remediation, whatever they want, they can put that. So we have the concept of being able to sort of sandbox and spin up non -Mac as well as Mac capacity. And at Mac Stadium, we also provide infrastructure with non -Mac capacity that lets people sort of do the normal kind of cloud stuff if they need a couple of VMs for something or, but we don't necessarily go to market to try to be better than Amazon or better than, you know,

Brian Gracely (14:35)
Gotcha.

Chris Chapman (14:43)
Rackspace or somebody else at non -Mac compute because that's really not where we focus, but we do have the ability to do that.

Brian Gracely (14:50)
Yeah, no, and that makes sense because the reality is even in the most sort of intended to be pristine environments with anything having to do with IT, there's always going to be one or two other things that you need. It's a security thing, it's an authentication thing, it's a whatever. So yeah, it makes sense that you guys have the ability to just bring in those other things as necessary, but that's not your differentiation.

Chris Chapman (15:16)
Well, and my clients are a little weird when it comes to clouds in that Apple demands that you own or control the resource completely as the customer while you use it, which basically is a legalese way of saying no multi -tenancy. So it's a crazy world.

Brian Gracely (15:30)
Yeah, yeah, yeah. It's the same, well yeah, it's the same sort of stuff Microsoft has done for a long time with Windows where you can't, yeah, you can't sort of, like you said, can't multi -tenantize one license for something else. I'm curious, so we tend to know, at least mostly, where cloud providers' responsibilities sort of stop and customer responsibilities sort of start, at least.

Chris Chapman (15:45)
Yeah, yeah, yeah.

Brian Gracely (15:56)
You know, people like AWS do a pretty good job of kind of drawing out a picture and they say, you know, these things we run, we manage for you, we'll make sure they're available, we'll upgrade them, you know, whether it's, you know, whatever, right? Like we'll make sure those are

available. And then above that, that's your responsibility. And so they try and more or less define kind of the shared responsibility model. How do you guys think about your interaction with customers? Like where does Mac Stadium stop and start and what are your customers?

kind of expect from that, you know, where that line is drawn. Is it pretty common or is it variable from customer to customer?

Chris Chapman (16:32)
It, it, we try to keep it as consistent as possible. It, it does vary a little bit based on the product. We, we do provide a shared responsibility model as well, but kind of like I was alluding to before, sort of the odd aspect of our cloud is that everything from the network to the hardware is dedicated to the customer. So it is a siloed sort of thing versus a stratified kind of thing and meaning we'll hand over a customer and environment and they will.

have full scope over the actual hardware. If it's virtualized, they'll have the firewall, they'll have that. So we will take care of all of those concerns internally, but they will, for example, get full right access to the firewall. So they could change the firewall rules if they wanted to. They get those kinds of abilities. So that's where the line gets a little blurry and some customers want it to be set up and never think about it because they'll abstract it away from the software perspective and others.

Brian Gracely (17:18)
Okay.

Chris Chapman (17:30)
need us more involved to help them with imaging or changing out systems. We do upgrade stuff. We take care of, of course, PowerPython ping and all the normal things. When we get into Oracle land, we take care of orca support, the software and virtualization layer. We sort of really manage that Kubernetes layer because it's your own little Kubernetes cluster over your Apple stuff. But then the customer is responsible for any of their CI plugins or their software or their integrations and that kind of thing.

Brian Gracely (17:59)
Yeah. How does, you know.

answer or don't answer, but like how do things like data governance come into play? I know, you know, we're obviously we're seeing, you know, certain countries around the world, especially in the EU, where, you know, if you're in Germany, your data stays in Germany, and so on and so forth. Like, how does that work with your world? And then, like the Apple services, like, you know, does Apple need to put some aspect of their service in your facility to help with that? Or do you run into

into those sort of problems or is more or less, you know, the customer's data eventually going to live like in an Apple service? Like I asked that again, sort of naively, like where, you know, how does that impact your world in terms of governance and locality of data and things like that?

Chris Chapman (18:49)
Yeah, it affects, it definitely affects us. We have an amazing security team who tries to keep really tightly wrapped. Our CISO keeps ahead of the game on that. So we, you know, we have GDPR certifications and all of these ISO 27 ,001, all the SOCs and all those kinds of things. We do have facilities in Dublin and then the rest in the U .S. The nature of what we do.

Brian Gracely (19:03)
Gotcha.

Chris Chapman (19:16)
often helps us avoid a little bit of it because a lot of customers aren't putting PII and things like that into the system. It's more they're building applications and then wherever those go, we'll end up having the data concern. But we do have to deal with data privacy laws. We do have to deal with customer data scrubbing. We do have this customer portal where customers can sort of self -serve and interact. And that one is the one that's definitely starting to push the...

Brian Gracely (19:22)
Gotcha.

Gotcha.

Chris Chapman (19:43)
challenges there because you know, like you said if you have any new customer they have different concerns and and any credit card information or User database stuff that they put in there is gonna is gonna press against us So we do have to navigate that a bit but less so on the Mac specific side unless they end up building a customer data focused application on the Mac and then we sort of have a way around that with

It's your dedicated siloed environment, so you're still accountable for your data, and we just have to have really good data destruction policies and all those kinds of things, if that makes sense.

Brian Gracely (20:17)
Sure. Yeah, yeah, yeah. Okay, so yeah, where it's needed is the ability to create sort of private versions of the Mac Stadium Cloud, at least virtual versions of it, and so forth, very cool.

Chris Chapman (20:27)
Yeah.

Yes, yes. And then we try to geo locate if, you know, if it's a EU customer, ideally they would be going to Dublin anyway. So they're in the EU and they're in the zone. So it's not the US, but we have to work with them and their security teams quite a bit usually.

Brian Gracely (20:34)
Yep.

Yeah.

Yeah, no, it makes sense. It makes sense. I'll ask you one last question and then I'll let you get out of here. What are, you know, just sort of at a high level, what are some of the best ways that companies take advantage of your expertise in this space, your ability to automate things for them? You know, what's the typical sort of, you know, entry point for people and then where do they typically expand in terms of going, okay, you saved me a ton of time in this. I didn't realize that there was so much involved with that. Like, what are the sort of best ways companies engage?

take advantage of all the things that Mac Stadium does.

Chris Chapman (21:18)
Yeah, well, and I like the way you asked the question because one of the words in there was kind of the key to it all. I think what we do better than most is we do encapsulate expertise. So again, we're solving this weird problem of how to make Apple be an enterprise lights out cloud based sort of thing.

And everybody that's coming to us and you know, the typical journey we see is someone either start small or if they don't start small is still sort of on your desk or a DIY kind of thing. They've cobbled together a way to make this work for their team. They've put it in a closet. They've maybe tried some open source virtualization, but that is not their day job. They're trying to just get something done. And all we do is focus on the ever moving landscape of Apple.

All we do is focus on how to apply it to enterprise and build and dev and ops. And all we do is build tools that focus around that problem. So I think as soon as people sort of reluctantly, and it's also sort of a cost and I'm a smart engineer, I can do it myself sort of thing that happens with anybody that's, is anybody's trying to go to the cloud? Like, I don't, you know, I'll just, but it becomes this overbearing problem and they're like, fine, I'll do it. Maybe it costs a little extra, but I think when people get in, they find like, my gosh.

Brian Gracely (22:21)
Yeah.

Right.

Chris Chapman (22:35)

You just turned Mac infrastructure into software -defined infrastructure. You just turned a desktop thing into a CI platform that the whole team can just sit here and focus on code and not focus on this thing. And I have to stress less when Apple comes out next week at WWDC and says, it does this now and it's shaped like a starfish. Good luck putting it in a rack. And like, you know, like it's sort of, right, right, right, right.

Brian Gracely (22:55)
Yeah, it's a lot of I don't know what I don't know type of things and yeah.

Chris Chapman (23:01)
Or they do what Apple does. They make the experience better with a software update, but as we've all experienced with our phones and everything else, you get those and it does some great stuff and you also go, wait, where did that go? And how come that doesn't do this? And for software builders, it's like, holy cow, they took this thing away that I was relying on. How do I get around that now? What's the replacement for it? And we have a lot of that knowledge and expertise baked in.

both at the physical layer and at the software layer. And I think as people connect with us, they realize that that's a capability because they use it in the tooling, but then they also start to open up and ask a lot of questions and go, hey, we're really trying to do this. What do you think? And they're like, well, there's a way to do that. And this is the.

Brian Gracely (23:46)
Yeah.

Yeah, no, very, very cool. Very cool. Good stuff. Well, you know, for me, you know, individually and for on behalf of Aaron and I, thank you for kind of opening us up to this world. Like I said, I feel like I deal with Mac technology, Apple technology every day, but, you know, understanding how all these applications get to me has always been a little bit of a black hole. So you filled in a ton of detail for me. Hopefully for people who, you know, are in this world or, you know, it's part of what you have to do, you know, it's open.

up some some windows and some some ideas for you as well because yeah like you said there's there's part of what everybody does that you do have a tendency to be like I probably could figure that out or you know there's a forum I can read enough stuff I could figure it out but you know there's certain things that just you know having access to that expertise is so so important and you realize it just you know it makes your life that much easier which again aligns so much to what Apple tries to do as well so Chris thank you so much for the time I mean if folks want to engage

with your team what's typically the best way to get started or just you know kind of kind of engage with that expertise.

Chris Chapman (24:53)

Well, we're very web friendly, so definitely go to our website at maxstadium .com. You can pretty much instantly get on and start.

trying to access the Mac stuff and the expertise there on the website. It's also very easy to contact one of our salespeople from there and we love to get on the phone and chat about the problem and quickly get you into something that works at that point. We also have a tool called Orca Desktop coming out in the next week. It is a free forever download it on your Mac and play with it and shows you sort of desktop virtualization and gets you into this weird world of what it might be like if you were to use Orca or anything else in Mac Stadium and hopefully help solve

problems about how to play on your Mac without bricking it when you're messing around.

Brian Gracely (25:36)
Yeah, no, absolutely. Well, and I think just with this new era of AI and all the hardware that may come with that and other things, I think you guys might end up being a bit busier on a whole other level here that might happen, which is probably a good thing for you. You guys are the experts at that stuff.

Chris Chapman (25:50)
Yeah, we might be working with a lot of people on things that have that in the title and places. So yeah, it's pretty exciting.

Brian Gracely (25:57)
Absolutely.

Very cool, very cool. Well, listen, Chris, we have Aaron and I, have all of us on the Cloudcast. Thank you so much for the time today. We really, really appreciate it. Learned a ton. Folks, with that, I'm going to wrap it up. I want to, again, thank Chris for his time. Thank all of you for listening. Thanks for everybody who listens, who gives us feedback, who rates us on all the places you get your podcasts and sends us feedback. Show at thecloudcast .net. Send us your questions, send us your comments. So thank you for that. With that, I'm going to wrap it up and we will talk to you next week.