00:00.0 - 00:13.8
DG: Welcome to the Elegant workflow podcast, a member of the tech podcast network and now available on Stitcher. Today we're speaking with Jason Schroeder, Systems Solution Architect at Diversified Systems. Jason welcome to the podcast.

00:14.1 - 00:17.2
JS: Thank you very much. Thanks for having me.

00:17.2 - 00:22.0
DG: Please tell us a little bit about your background and what led you to your current position at the Diversified Systems.

00:22.0 - 01:41.7
JS: In a nutshell, I actually have a fine art background and graduated from an art school with some skill set in the realm of getting different types of operating systems to communicate and collaborate. So in the early 90s, there weren't a whole lot of common approaches for say someone on a silicon graphics machine to exchange information with a film printer on a PC or with someone working on Mac, so I help people connect and learn how to share files between that. That grew into a career mainly doing post production, post-production for both broadcast facilities and primarily for a reality and daytime syndicated programming... lots of the day of air workflows. I've been working in shared storage since the Transoft days, the second half of the 90s and that kind of parlayed into a career in storage an asset management. As time went on, I worked for a subsidiary of Warner Bros for about a decade... Telepictures Production... did a few projects there and then I wanted to move on to a little bit more of a creative design side, so joined Diversified Systems about three-and-a-half years ago.

01:41.7 - 01:48.3
DG: I remember Transoft. Doesn't feel like it was a long ago, but you're right it was quite a while ago...

01:48.3 - 02:08.4
JS: Yeah it definitely... You know it stormed the scene with what it had promised and you know it didn't. It did have some interesting issues associated with it, but it really opened the door for people to start collaborating and smaller work groups better than ever before, so it definitely started a fire.

02:08.4 - 02:31.9
DG: And it's funny... I remember the days of fixed drives and the big work groups and "Oh you need that drive. Well now we have shuttle drives and you pull the shuttle drive out, walk it over, and here is the media... And that was all before Transoft. Obviously Unity and all the shared storage solutions out there now... But it's funny because what we all used to spend so much time doing, I don't think anybody in the enterprise even thinks about any more. How hard it was less than probably fifteen, twenty years ago.

02:31.9 - 02:56.9
JS: Yeah absolutely, especially since the components of it that were the nitty-gritty of data management haven't, weren't developed at the time the way they are now, so the tech for sharing this storage was there, but the intricacies between work stations wasn't quite there so it left a lot of room to explore that's for sure.

02:56.9 - 02:59.6
DG: So how do your approach building a modern architecture for a client?

02:59.7 - 05:17.6
JS: Well as you know there are many a different levels of clients. One of the things that surprised me when I moved to L.A. in 2000 was the sheer amount of entrepreneurial television production. Being a broadcast station engineer for a while in the Midwest, I wasn't exposed to the volume of an entrepreneurial television production, so the reality TV market and some of those early very hectic post schedules, those are from a modern perspective, they're modern to them means something that's stable and easy to manage... because they have their processes and their workflows and their creative demands that dictate one set of things... but they've always sought out stability. So for the super entrepreneurial client, who maybe doesn't have an IT staff of their own or a giant IT staff of their own and very creative entrepreneurial type production, I approach it from the standpoint of stability. Once we entered the realm of clients who have an enterprise strategy, we pushed more to think less in the ad hoc solution space. So instead of simply buying things or applying things, those problems come up trying to think of them and account for them and advance. Sometimes of course this means people have to invest a little more on the front-end, but the long-term pay off for having those things thought of in advance is immeasurable. This even lends itself, not just from the asset management and storage side of things, but into the studio production, a side of things as well. I can't tell you how many times planning for extra bandwidth, extra storage or extra interfacing into a system had paid off in the long run, either developing a show or producing some type of technical program for a technical director or something like that. So it depends really on what the client's prerogatives are, but in those two cases there's two wildly different kind of approaches for that.

05:17.6 - 05:28.9
DG: And that's true and I think a lot of clients, or, "I just want to plan for today; I don't want to think about tomorrow," paint themselves into a corner and then a year or two later go: "why did I have to rip everything out and start all over again?" Yeah.

05:31.1 - 06:00.5
JS: Yes, yeah and now that we're looking at I mean even hard drives in and of themselves have a specific lifespan so you're dealing with an animal that is naturally going to be changing over time and sometimes even choosing those pieces of infrastructure is its own problems to solve because you want to make sure that you're not throwing the baby out with the bathwater, that your previous investments have some type of relevance in what you're attempting to apply.

06:00.6 - 06:35.1
DG: I think that's very true because, you're right, you're always gonna be upgrading systems, are always gonna be changing systems that they have to pay out... So when the client says, "Oh my appreciation cycle was three years or five years you'll design it differently because something has the last five years, which is like, it's a lifetime in this business. You're gonna obviously try to be a little bit more bleeding edge than possibly a system, where they say they can talk about three years. Gives you a little bit more breathing room. Maybe do something a little bit more standard for today and knowing that you'll be able to upgrade it within a short time span.

06:35.1 - 06:38.7
JS: Exactly, exactly.

06:38.7 - 06:42.4
DG: And what new trends are you seeing in the media and entertainment industry that excite you around technology these days?

06:42.4 - 09:06.9
JS: Coming from the previous question about how to leverage existing things and not waste money and keep things within the context of being able to make money, the past two years has been really interesting from the standpoint of what performance people can expect from traditional media access protocols versus specialized media access protocols. It used to be that in order to have a video workflow or a video editing workflow, you had to invest in a premium style system with whatever the interface may actually be that there was generally associated a higher cost for that type of storage than others... and that gap is closing. I think one of the things that shocked me was the most was most simple thing and that was the accessibility of different media over SMB v3. I've seen the overhead in that protocol go way, way down and I'm getting close now to wire speed over it. In some cases, with connectivity mass was difficult in version one in version two for a lot of clients because the overhead was so large. But now for a smaller work group you can get really easily into some entry-level stuff that can be fully integrated into a domain that has a place in 10-gig and forty-gig networks that allows you to apply editors to something that doesn't require you to reinvent your entire infrastructure at that base level and then moving forward like I said time into the previous question... When the customer has a greater rethink their storage strategy because that piece is so flexible it can become part of a cost saving solution. We just recently had a client that wanted to invest a certain amount in a SAND based technology, but they couldn't afford the full spread, so we took some storage that they already had, which was fully SMB v3 capable, integrated into their domain and available on the same network and paired with a storage strategy that they can grow from, an enterprise level going forward but not get rid of anything that they were working with before.

09:06.9 - 09:12.3
DG: That's pretty cool. And I guess a lot of that is because today you can get so much more capabilities at much lower cost.

09:12.3 - 09:58.7
JS: Yeah for just as a kind of a technical example: if I am connected to a server system all over gigabit Ethernet and trying to work off of a mass, the overhead for SMB v1 or v2 is anywhere between a seventy in forty percent. So on that gig line, all kinds of crazy overhead for file transactions, but I've gotten as fast as 170, 180 megabytes per second, playing back multiple streams of pro-res material things like that so that's in an accessibility and practicality aspect, that's one of the more exciting things for me in the past couple years.

09:58.7 - 10:15.9
DG: And like you mentioned, I mean you're doing that over more of a standard interface, so you're not having to deal with fiber and a lot of these high-end interfaces, it really probably helps the client out a lot around their budgets and lot of folks just don't have a big money to go out and do these crazy fiber installs.

10:15.9 - 11:05.3
JS: That is correct. Now on the flipside of that coin, the 10-gig Ethernet question comes up a lot for houses that are used to budgeting for gigabit Ethernet access and lately I'm trying to nudge and push customers more to thinking about attending the environment mainly because it's going to provide them overhead to grow for the next decade. Maybe they only need maybe speeds now or only have the wherewithal to plan for any network distribution. But we're really pushing them into a realm where they should start at considering connecting their work state when in this type of environment to 10-gig at a minimum and only value engineer backwards if it's absolutely necessary

11:05.3 - 11:27.0
DG: And look how much 10-gig has come down over the years too. I remember it was just ridiculous to even look at... And now it's pretty reasonable. The cards for the computers are pretty reasonable. The switches are reasonable. If anything I'm sure some people probably are asking about forty gig and looking at it that it may be building that into the infrastructure just so they can actually go maybe five years without having to make any changes.

11:27.0 - 11:32.3
JS: Yeah that's come up quite a bit actually in the past couple of months.

11:32.3 - 11:46.0
DG: If you could create one industry standard because it feels like there's so many things that do need standards and there aren't a lot of standards or there are standards, people don't always respect them... So if you could create one and everybody had to follow it, what would it be and why would you pick that specific thing?

11:46.2 - 13:38.8
JS: Well one of my big struggles and this is, it has been this way ever since I got into this business was impressing upon an any entity that's interested in producing video or producing

media that you know that represents the video market is the importance of curated media management in media managers for about a personnel standpoint. The analogy I always make one trying to explain to people who don't know what a media manager is that: say Diversified Systems was not in the video business, but in the accounting business and we sold accounting systems to large fortune five hundred companies at the end of the multi-million-dollar computer system install for say a giant bank, we wouldn't then say, "Okay well who's gonna be in charge of it," and someone would say, "Oh you know... I have four years of experience with Quicken and maybe I'll do it." What we'd expect to happen is that a CPA would be in charge of how that system was used that set expectations from the accounting industry would be applied to it. Often in our industry and entertainment and the creative industries, the opposite happens where media management is thought of after the fact and if there's one industry standard that I would create it would actually be a discipline of the library sciences that have to do with the education and promotion of people who can successfully drive computer systems to deliver the same level of audit ability and full function within an enterprise that say CPA would of an accounting system.

13:38.9 - 13:59.5
DG: That's actually interesting way to look at I've never thought about it in that way. You're right. Like you put in SAP. You know one of these high end systems. You spent tens of millions of dollars... And then you wouldn't turn over to the Intern... And I think part of it is because it's, it is an after-thought. Somebody tells that they need this, soo they put it in, but then they either don't use it correctly or they don't use it at all.

13:59.6 - 15:38.0
JS: Yeah exactly. I mean if we take a you know a little bit of a trip back into the past in remember and as I'm sure you do remember as well as I do looking up a book that we need it at the library in a card catalogue. You know the curator of that card catalogue cared very much about every "T" crossed, "I" being dotted and so on and so forth, so that when you access the catalog it was in a way that you felt like you were accessing an institution of data... And that's if sometimes missing now I run across some incredible media managers these days when they're good they're really good because they understand the nuances between a different people skill sets and can leverage the software different ways to help them along. I knew a guy once that he basically turned off all of the commitment to the database right access for a certain group of editors, so that in the morning when he came in he had a bunch of the nightly ingest in front of him, but he got to clean it all up and fix all of the errors before committing it to the database and he intentionally used the software to lock them out of that final step to be able to do that and so the end result was that not only did he check everything before went in, but everything conformed to his standards no matter what. So there are some smart people out there. I just think it needs to be promoted and in a wider audience about important people like that are.

15:38.0 - 16:18.4
DG: But I always love this on the production side you spend how much money?... Hundreds of thousands of dollars shooting something on the set and then they hand the memory cards to a P.A. Luckily things have changed. But early on they would hand the memory cards to the P.A.

and haven't put them on drives or something. And here you go you have this person who's probably making a little bit over minimum wage holding your valuable daily. It feels like there's a disconnect with the data. Because everybody thinks well it's easy it's just the computer file and you just like a drive in and you copy it... And I don't think people realize this is your content. And if it gets lost what are you gonna do? You have to go shoot it again... and in some cases you may not be able to get that shot.

16:18.4 - 16:53.0
JS: We we've dealt a lot in the talk show industry with talking about keeping things that have been shot that are that kind of have a shelf life - certain celebrity interviews or topics that they were addressed. And I always made the case that, "Hey you paid money to create this if it's in your interest to make sure that you have access to it in perpetuity for as long as your business case makes sense because you spent the money to do it, so why not care for it and curate it and have it in an in a system that you can leverage?

16:53.0 - 17:24.0
DG: And what do you watch these days on the cloud? Everybody is promising how the cloud all will solve every problem and lower costs and then make everything amazing in the world and everything would just be this perfect Nirvana and I think they're still is a need for a lot of on prem equipment. Just by the nature of the fact that there's a limited bandwidth to the cloud... So what are your thoughts on that and how do you see it impacting on prem architecture and how do you see the two working together because I think there's a lot of need for hybrid as well.

17:24.2 - 21:04.5
JS: Well the initial doubts about it have a lot to do with hype versus reality. I remember the first very first production conversation I had with the show executive and they wanted to take their entire system into the cloud... And he came to the table and he goes: "Okay, I want to take the whole show into the cloud because the cloud is unlimited storage, unlimited bandwidth and we can work on it anywhere... And his two technical team members that were there with him immediately raised their hands... And talk about the things that you and I deal with on a technical level every day and that it's not unlimited bandwidth... And when it goes down, were down and have no control or no way to answer certain issues. Case in point - the web site that was tied to that show had gone down just a few days prior because of a cloud storage issue. So in that small conversation it was kind of obvious that this was not right now going to be a panacea. Now it is also important to remember though that one of the most universal tools now for communication - email - could be considered a cloud technology in the sense that it is designed to operate at different levels on the Internet in a way that's extracted to the end user. I can have an email service at any number of different services that have disaster recovery capabilities, that get a protected and encrypted over multiple geo-locations and at its core that's what it represents - the ability to just plug in and use a service that everyone else uses. So lately where the cloud discussion has been really beneficial is talking to companies that have multiple geo-locations that can share basic information. For example, let's say I'm starting a news bureau in three different cities in the United States. Well my high risk is probably gonna

have to live in a localized storage because it needs to be close to the editors that are editing it, but we could share eight pool of proxies over objects... object-based storage that could be protected over multiple geo-locations, so that instead of having to build a strategy to do proxy replication across all of these sites, they were all looking at the same proxy... And that's incredibly beneficial because what that does is that number one gives those entities a way to get into that information that is part of a new and accessible protocol to that data. You know being able to access an object over the web is a much more familiar interface than telling someone who doesn't know about computers that, "Oh I'm gonna have to build you VPN connection to our napsharers and then we're gonna have to figure out what napshare protocol you want to use to view it" etcetera, etcetera, when an HTML link just works in that sense. The trick here is ramping up the understanding of how customers expect the Asset Management software to interact with the object-based storage and what the difference is there... ad what difference it makes two them. I definitely think it has a place but I agree that right now people misunderstand the performance aspect of it and what it truly means to invest in the infrastructure of either a private or public life.

21:04.5 - 21:32.8
DG: Yeah I agree with you. I think there's a lot of misconceptions and the clouds had a lot of great marketing and a lot of great PR, but it's definitely not the solution for everything and I think people need to hear all sides and understand that what they may think you can do, it may be able to do in five years when we all have fiber running into our homes and running toward our desks. There will always be compromises and even if they want to do it all-cloud workflow, they probably can't afford the bandwidth to do it. And it's an ongoing cost versus a one-time cost for a something on prem.

21:32.8 - 22:08.6
JS: Yeah and at the end of the day for our editors for the actual creative staff, latency is king. A low-latency is so important that there are some situations where it makes no sense to put something super far away at a high latency because this is going to frustrate them. And when you have a happy editor you get a better creative product. So they're still are some things that need to be localized. But on the note of the cloud have you have you heard of the fog yet.

22:08.6 - 22:10.2
DG: No I haven't heard of the fog. What's that?

22:10.2 - 22:52.5
JS: The fog is a term that I saw on Cisco's website recently and basically what the fog is it's the cloud for the Internet-of-things. So they have, you know, a missive about the fog and I thought it was funny right because you know as technologists sometimes the vernacular in the words surprise even us when things get chosen and here it is. You know somebody came out with the product called the fog. So now you know your smart thermostat or your smart light switches or you know starting your car in the morning through the Internet... all of that stuff will happen through the fog.

22:53.7 - 23:32.2
DG: That's funny... Well even the cloud. If you think about it... Thirty years ago, forty years ago when you have to teletypes and you had data terminals and you tied into a mainframe that was the cloud. They just didn't call it the cloud back then. So it's interesting it's been around for a long time. It's just now it's marketed in a different way and obviously there's a lot of the great things about of like you mentioned with email mean I wouldn't think of wanting to host an email server. Why would I? If I was doing video editing at a facility, I would think twice before trying to do it all in the cloud. There's certain aspects of it I might want want to do but not the entire thing.

23:32.2 - 23:35.8
JS: Yeah for sure.

23:35.8 - 23:37.3
DG: So what is your definition of an elegant workflow?

23:37.3 - 25:39.0
JS: And I'm gonna answer that by going back to the industry standard and that: a lot of the time because of my fine art background, one of the things that I kind of committed to early on when I started this career was making sure that was an advocate for the creative professionals, so generally an elegant workflow for me is one that it fully takes into account and respects the creative professionals, who actually has to produce using this system while also being able to communicate business decisions successfully to that creative professional. So what I see happen a lot of the time with certain workflows is that the operator is not given a voice until it's time to train on the system. Where the most elegant workflows and the most successful workflows are ones that the creative professional has been given a chance to give input, has been given a chance to validate some of what's promised. Of course, in our world there are so many choices; they couldn't validate everything. But a real sincere attempt at validating as much as possible in whatever solutions provided and then taking concerns from the business side: Do we really need to spend this much on "x" or do we really need to provide sixteen ports of this as opposed to ten ports; do we really need this speed of disk instead of this... And then having the creative professionals who trust you to then I audit their needs based on that. So it started for the relationship that includes both sides. There's no "I don't believe there's any such thing as a panacea" or a single thing that is the answer to every problem, so in order to reach the thing that is the final perfect kind of system for the users, needs that development from both sides.