



RUNAS RADIO



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Richard
Campbell

RunAs Radio is a weekly Internet Audio Talk Show for IT Professionals working with Microsoft products. The full range of IT topics is covered from a Microsoft-centric viewpoint.



Greg
Hughes

Text Transcript of Show #060
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Allan Hirt Virtualizes SQL Server!
June 4, 2008



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Brandon Wenn: From runasradio.com, you're listening to RunAs Radio, the Internet audio talk show for IT professionals with Richard Campbell and Greg Hughes. This is Brandon Wenn, announcing show #60, with guest Allan Hirt, recorded Thursday, May 8, 2008. RunAs Radio is produced each week by PWOP Productions, providing professional media and podcasting services online at pwop.com.

Richard Campbell: You're listening to RunAs Radio. I'm your host Richard Campbell, with me as always, my co-host Greg Hughes.

Greg Hughes: Hey, how are you doing everybody. Richard, you are, when this is going live, I think you're in Orlando, aren't you?

Richard Campbell: I am in Orlando and you are not. I'll be there for Dev Week and that's when this show is going to be on the air. So through the magic of time shifting, we're still doing the show as per normal.

Greg Hughes: That's right, and next week, if you're listening to this on the day it's released, I'll be joining you in Orlando for the IT week.

Richard Campbell: Absolutely and we're going to be on the TechEd online stage pretty much nonstop between Speaker Idol and all the panel discussions we're doing.

Greg Hughes: Right. It's going to be a lot of fun.

Richard Campbell: Absolutely and we're going to have a little space in the back of the stage to be able to record our own podcast as well, so I'm hoping we'll grab a few interesting folks there to have some interviews with and make even more shows.

Greg Hughes: Yup, and I know that there are a number of listeners, I don't know how many, but I certainly know of several that are going to be at TechEd this year and we sure hope that you will stop on by, at least say hi and sit down and we could have a conversation.

Richard Campbell: And if you can't be at TechEd, send us an email, info@runasradio.com, let us know what you think and what we could do better.

Greg Hughes: Yeah.

Richard Campbell: All right, Greg, let's introduce our guest. Allan Hirt has been using SQL Server in various guises since 1992. That was back in its feather boa phase, I believe.

Greg Hughes: Quite a while back, yeah.

Richard Campbell: For the past 10 years, he has been consulting, training, developing content, speaking at events (including a recent series on both SQL Server high availability and consolidation for Microsoft), and authoring books, whitepapers, and articles. His most recent major publications include the book Pro SQL Server 2005 High Availability from Apress and various articles for SQL Server Magazine. Before striking out on his own in 2007, he most recently worked for both Microsoft and Avanade, and still continues to work closely with Microsoft on various projects. He can be reached via his website at www.sqlha.com or at allan@sqlha.com. Hi Allan.

Allan Hirt: How's it going?

Richard Campbell: Real good. We chatted on .NET Rocks sometime last year if I remember correctly.

Allan Hirt: Yes, we did.

Richard Campbell: That was all high availability stuff which is not normally something you think about in the context of development. I thought it was really a cool show, but that is not what we're talking about today. I hear you're like the advocate for virtualization of SQL server.

Allan Hirt: Oh yes. Just throw everything in virtual and be done with it.

Greg Hughes: SQL server and virtualization, that really just sounds pretty scary.

Richard Campbell: It's crazy talk, man.

Greg Hughes: It is crazy.

Allan Hirt: To some degree, it is, and in many ways, it isn't. Fortunately or unfortunately it is something that at SQL server stage, it's going to have to just really start to deal with and come to grips with the next year to two.

Richard Campbell: So you think something is coming in next year or two that's really going to make it more feasible or actually a good idea?

Allan Hirt: I think it is just the nature of how businesses are being run that's going to enforce the issue. I don't think it is the technology itself that needed change that much in the next years. I certainly think with the introduction of Microsoft's Hyper-V, with Windows Server 2008, it may change the game a little bit in terms of portability issues but in general, where this is all coming from is hardly



coming from IT work, it's not really coming from the DBA.

Richard Campbell: Sure.

Allan Hirt: DBAs are not being kind of worse to do somebody else's evil bidding in getting this done.

Richard Campbell: Well, I mean virtualization isn't just a fad, right? I mean, it has taken the market by storm because it is a pretty good idea. It makes it a lot easier to upgrade, it takes a lot easier to backup, there are all kinds of strengths to it, but SQL server?

Greg Hughes: Well, there are some things in SQL server that nudge you to compete with yourself, I mean like I/O, I think about these related things and even with Hyper-V and the multi-processor and multi-threading and all that, isn't I/O still an issue?

Allan Hirt: Oh yeah. Well, let's go back to a little bit of history. So, in the Windows space, virtualization is relatively new. I mean VMware has a product. It's been around since about 2001 and I worked with it in -- ESX, it wasn't called ESX, I forget what it's called, but Workstation was around you also had connections like Virtual PC before Microsoft bought them and then when Microsoft bought them, we had Virtual PC and Virtual Server. So, it's not new in the Windows space but it's fairly new in terms of, shall we say, prominent in the corporate space as a real method of getting business done. I'd say it had been shipped in the past two to three years. Now, where it's really getting a lot of play is with people who have done their application servers so the next logical progression is why can't we do our database server.

Richard Campbell: Right.

Allan Hirt: Because think about it, at this point, the SQL server world and databases, and instances and whatever else you have, no matter what database platform, people are starting to look at the database layer as utility and where some of that I think it all started was that switch from direct attached toward your dad's SAN where your disk infrastructure became a shared resource. So we went from the world of dedicated disk for every server whether it is Exchange or SQL or Oracle to a world where everybody and their Uncle, is now sitting on the same shared disk.

Richard Campbell: Right.

Allan Hirt: So, this isn't anything new. This isn't anything that's been catching anyone by surprise but now we are starting to hit the database arena and the pressure is coming down from the IT world because, you know, it is kind of a popular

puzzling thing at the moment to virtualize SQL. So, yeah, you have a lot of the traditional bottleneck and it's kind of interesting to see the DBAs struggling to come up with the reasons why they can't virtualize. Now, I've been doing a series of consolidation talks with Microsoft and virtualization takes up a good chunk of time because it's a pretty open discussion because out of, say, each event we had roughly anywhere between 15 and 30 people, every single one of them is getting this pressure in their organization and that's just Microsoft and what's really happening out there.

Richard Campbell: Right. So, right off the bat, one of the key factors has been the SAN. Aren't the LUNs the problem when we try to virtualize?

Allan Hirt: Yeah, we've already got the issue where storage have been virtualized to the point of neutering performance and DBAs are having to jump through hoops to prove that it is actually the SAN causing their problems and not anything else.

Richard Campbell: Right.

Allan Hirt: But that's another discussion topic in and of itself so I'm fine to leave it at that, but then you have now the issue of virtualized software or virtualized servers under some people's software that enables that, where on a dedicated server, even if you're on a SAN that's highly virtualized in and of itself, you have more control over the I/O by dedicated HBAs, or Host Bus Adapters, in the servers. Now, you may have, let's say you have a ratio of 15 or 20 virtual servers to a single ESX or Hyper-V type of scenario...

Richard Campbell: Right.

Allan Hirt: Now, underneath that, even if you're able to throttle or give direct access at the disk level, which I know is enabled in Hyper-V, things have gotten better in the way of this version of ESX, the problem is that you're still sharing your Host Bus Adapters with all those other servers.

Greg Hughes: Right.

Richard Campbell: Right.

Allan Hirt: So, again, what kind of performance are you going to do? The worst part is that most people don't know how to do load testing so they can't even prove where the performance problem is so you really need to test this stuff before things happen then you bubble that up a layer or two and say, "Okay, we may have a potential I/O complex," then you get into memory and CPU. Well, again, you are having host equivalent of a real server and all its requirements under a bigger umbrella. So, you are



going to need a very large server to handle what might have just been even an old SQL 2000 box, there is only 512 meg of memory and whatever you've got, now you needed a box bigger than that to just handle that load then you combine that with other the stuff in the overhead of the virtualizing bag and you're not necessarily getting the full process or bandwidth performance. You're getting some amalgamation of that. So, you can't predict performance as easy under a virtualized environment. Now, that's not to say it's all bad. In my experience where people are actually already doing it in SQL world, isn't the dev and test world.

Richard Campbell: Sure.

Allan Hirt: We've been doing it obviously with like Virtual server and Virtual PCs to give people their own imaging, but you are starting to see people not buying dedicated, say, dev and test boxes and putting them in virtual. So, that's already happening and it has happened with a lot of clients I know, but you're then starting to see a phase and why can't we do it in production and it's becoming a harder and harder argument for the DBAs to rally.

Richard Campbell: I like how in the latest versions of the Virtual server products, we're being able to actually assign a NIC to a specific VM so we're no longer trying to share that resource and I'm wondering if the HBAs ultimately will go the same way.

Allan Hirt: Well, they might, but again even think of like a network card scenario, how many NICs are you putting in a box?

Richard Campbell: I've seen a lot.

Greg Hughes: Yeah.

Richard Campbell: 8 or 12.

Allan Hirt: Right, but the thing is not every server you're going to buy is going to have 12 PCI slots.

Richard Campbell: Right.

Allan Hirt: Most people are trying to even do this more on the cheap and let's have a farm of this stuff and let's get Blade, right?

Greg Hughes: Right.

Allan Hirt: So, because, think about it. The way we've gone with multiple cores and you can have even some Blade to have 16 and 32 gig of memory. Well, you need to have a big Iron server to do this stuff for some people. So, when you've only got two NICs or two or three HBAs, even if it goes that

way, how many virtuals are you hosting, at some point that means if you're only getting a couple directly attached to HBAs, they probably should have been in physical using multiple instances anyway.

Greg Hughes: Sure.

Richard Campbell: I'm just trying to think about ways we can -- the problem is that I know that SQL server, when you run it bare-metal, gobbles the entire machine as quickly as it can as load goes up just to give itself some headroom. When we virtualized it, I guess the only constrictions we can put on the machine really is you only get two processors and you only get four gigs of RAM go to town, there is really no other way to limit the impact of the given SQL servers. So once I get four or five of these or six of these running on one machine and they all get busy, it sounds like things are going to get very, very frantic. I've also always focused on the problems of virtualization at the shared resource level. I figured the HBAs are what's going to kill us every time.

Allan Hirt: Well, it's a lot of things. Then think about it this way, sort of put it in consolidation in making things easier is to reduce your overhead of administration.

Richard Campbell: Right.

Allan Hirt: Forget the tangible cost of the business ones as you have thought the IT side of the world for a second. When you take a visible OS and virtualize it, what do you say to yourself? You still got to log into that thing, you got to patch it, you got to maintain it.

Greg Hughes: Right.

Allan Hirt: Well, you've really not reduced anything. To me, it's generally better in the SQL server world to reduce your server count by going to less servers and more instances on those servers. You know, more often than not, that generate is a better way to go and is more cost effective.

Richard Campbell: And you simplify your management because you don't have multiple databases running in a given instance.

Allan Hirt: Well, but you are also going to that route as well because, again, databases are getting to the point where utility, because the problem a lot of people have in deploying applications is their process, because when you spin up an application, whenever IT gets involved in this, somebody wants a new box, there is a TO process. You got to wait for the hardware to come in. You got to rack it, you got to configure it. Then and only then can you install



SQL, and for a lot of companies, that can be a two to six months process.

Richard Campbell: Right.

Allan Hirt: Now whereas you want to be able to just have an instance fitting somewhere and say, we can host you, we can configure a database here, we can put it tomorrow if you want. And that is only really achieved when you can only scale doing that right now using real hardware.

Richard Campbell: Of course again, back in the test environment and the development environment, we do that sort of thing all the time, spin up a machine very quickly to do some related test or some piece of code and then shut it back down again hopefully.

Greg Hughes: That's one of the real strong spaces or strong points of virtualization really is in being agile when it comes to if you're doing software development or have to do lots of different test systems and changing gears a lot. You really can see some real benefits that way.

Allan Hirt: Right; And that's what makes it so sexy to a lot of orgs. We have your traditional IT folks who aren't managing the virtual environment. They are DBAs or traditional Windows administrators, going, you know, it will take X amount of time to do it, you're talking to the same people who wants the app in your environment. Then you have the guys managing the virtual environment say, "Forget those guys, we'll get you up and running tomorrow. We'll right click, then boom, you got a server."

Greg Hughes: Yup.

Allan Hirt: That's very effective.

Greg Hughes: It is very effective. I can say, personally, I instituted and implemented racks of blades specifically for doing that when you have a lot of different kinds of systems that you have to -- it also allows you to maintain that library so you have your VMs, the files that are created, the benefits of not having to recreate that or reinstall that every time are pretty huge.

Allan Hirt: I hundred percent agree with that and especially like where you have a dev and test environment where you need to recreate multiple scenarios. Having a library of that stuff is great. The problem that you are also going to run into and a lot of people don't think about this cost is licensing.

Richard Campbell: Right.

Allan Hirt: Depending on how you licensed your staff and get an hour, recommend

anyone to talk to either their sales folks or qualified Microsoft licensing reps about this...

Richard Campbell: Is there such a thing?

Allan Hirt: There is. I talked to a few of them but you know, you really got to talk to the right people because for example, there is a big difference between enterprise edition of SQL and standard in terms of licensing.

Richard Campbell: Right.

Allan Hirt: I know this for a fact where if you have gone to any consolidation event, that let's say you've got a four-pack box, and you are going to then say put Hyper-V on that, if you buy Enterprise edition and licensed software packs, you can have however many virtuals, however many SQL you want, all of the other Biz stuff.

Greg Hughes: Right.

Allan Hirt: If you are doing standard, on paper it may look cheaper, but then you're getting to the point where you're licensing per server and then per virtual. So you may have a more hairy licensing team going to virtualized, and depending on what editions of the OS and SQL you're using, and that's a huge cost of the business where they might have thought they are saving themselves money by going virtualized and going to standard edition. You may have actually increased your IT budget per license.

Greg Hughes: Probably also worth pointing out and putting a little plug in for MSDN Universal or MSDN licensing for dev and test that quite often that that can be a cost effective way to properly license people to be able to access systems with software on them that otherwise might really be exorbitant or completely cost prohibitive for a business.

Allan Hirt: Absolutely.

Richard Campbell: I have also read that Microsoft now provides passive copy licensing so that if you have backup hardware that's not actually doing work, you don't have to pay extra for those licenses.

Greg Hughes: Right.

Allan Hirt: Not yet, that's isn't in place for a while. It's been more the year towards like the HA folks, like you're doing log shipping or something like that where mirroring where it's just purely a standby server. Now essentially the way that works in the HA world in SQL is you've got 30 days, let's say you bring that server live because of a disaster, you've got 30 days or a month or whatever it is, before you have to actually licensed that thing. They figured in that time



frame, you need to go back to the primary at some point anyway.

Richard Campbell: Right, that makes sense.

Allan Hirt: But taken to the issue there, people want to say, "Well, I just want to do reporting so I'll just use my standby server." The second you press that into interactive service, you got to pay for it.

Richard Campbell: Yeah, you're breaking the licensing rules at that point.

Allan Hirt: Yeah, people don't think of that. I would tell people, kind of jokingly, they come and do mirroring, and you want to do a snapshot on it, great, go tell you boss that that reporting solution just costs you, you know, if you got two processors and you're doing Enterprise list price, that just cost you \$50,000.

Richard Campbell: Right.

Allan Hirt: Probably won't like that answer.

Richard Campbell: Yeah, not so much.

Allan Hirt: I won't do it.

Richard Campbell: So where do you see SQL servers' fall down when they're running in virtualization? What are they running out of?

Allan Hirt: Well, I/O is number one, so if you're going to put stuff in there, put it low I/O. For example, another good use is you're trying to get rid of those old 6.0, 5.0, and 7.0 boxes that you got lying around, so we all had these applications that worked with customers that have those applications they can't get rid of. So, you P to V, you physical to virtual, there's a bunch of software to do that, make it virtual, you can get rid of the physical, fine. There is a customer asking the delivery yesterday that I did in Seattle area that said that by actually virtualizing their old SQL 7.0 box, they got better performance than they had in the old box.

Richard Campbell: Nice.

Greg Hughes: Oh, the new hardware. Yeah, I've experienced that as well.

Allan Hirt: Exactly. So that's a great use in that case but if you are going to start looking at this stuff, you got to look at low I/O very small utilization by itself. I wouldn't be throwing my mission critical needed to be highly available HA system SAP in there.

Greg Hughes: Right.

Allan Hirt: That's the other thing too that changes the game here, is your high availability strategy because you're traditional method like where a lot of people may have considered traditional clustering, that goes away just because if your two nodes are essentially under the virtual, what are you buying yourself? You know, all the same server. Now every like Hyper-V or you look at ESX with VMotion, they've got their own HA stuff, but really if it's all in the same box in the end, you're going to need time for separation to get yourself higher availability. So, maybe you have two separate servers and you're replicating LUNs at the disk level which is again another expense so you can just bring up the server on the other virtual by powering it on so you have a direct copy of the disk level.

Richard Campbell: Right.

Allan Hirt: But the thing that I get asked a lot of times, "I do a lot of high availability stuff. What can I cluster under virtual?" Technically you can, but again, I don't see the point in it. It makes no sense.

Richard Campbell: Not when you can do a switchover in a few seconds.

Allan Hirt: Exactly. Again, whether it's using something like V-motion or you're doing it at disk level only to power this thing off, whatever.

Richard Campbell: Yeah, it changes up the game on what that means.

Allan Hirt: Yeah, you need to change up all your IT processes to get this done.

Richard Campbell: Right. How does iSCSI fit into this equation? Does that not make things better?

Allan Hirt: Well, it makes things cheaper. I wouldn't necessarily say better.

Richard Campbell: Okay. In terms of sharing resources and things, no difference?

Allan Hirt: Well, remember that iSCSI has some network overhead.

Richard Campbell: Right.

Allan Hirt: So again, where is your bottleneck going to come in? And then you have again the performance of, do you want to put a tier one on iSCSI when you may know that pure fiber channel HBAs perform better.

Greg Hughes: Sure.



Allan Hirt: So it boils down to cost in the end with the...

Richard Campbell: More than anything else.

Allan Hirt: Yeah.

Greg Hughes: So let's say that you want to put together what's Allan's ultimate realistic real world sort of way to -- what hardware are you going to put together in order to bring up a few instances of SQL server for business use, not just for test, what do you think of in terms of the actual resources required to do it well?

Allan Hirt: I mean you're looking at probably a 4 and 8 pack box and with dual or quad course, minimum of probably 8 to 16 gig of memory, if I'm right 16 or 32 bit and I/O bandwidth. I mean none of these are expensive anymore, because the hardware really is coming down.

Richard Campbell: Right.

Allan Hirt: You still have any very robust box to do this stuff.

Richard Campbell: I find it very interesting to think about what would I get more benefit from, running four separate virtualized instances of SQL server or running a bare-metal SQL server with four instances of SQL server in that?

Allan Hirt: Well, your challenge there, for example, are things like security. You get better isolation in virtualization.

Richard Campbell: Right.

Allan Hirt: You know a clear win for virtualization ads, things like can you manage, what's your patching theme because as we all know, if you need to patch the entire OS and you need to go to a reboot, your effective four instances, you just pop it out.

Richard Campbell: Ah, very interesting point where in virtualized, we reboot each one of them separately.

Allan Hirt: Right, but then you get into the, well, is it more of a pain to manage a hundred of those things versus one OS and four.

Richard Campbell: Right. I only have to patch once instead of patching a bunch of times.

Allan Hirt: Exactly. So, it's where you're pain and whether you're going to feel it or not.

Richard Campbell: That's a great balancing act.

Allan Hirt: It's not as cut and dry as people like to make it out today clearly but you know your passing schemes and how you do your administration is all going to have to change. You need to think of whether it will be more of a pain to go through physical or virtual and how you affect them and how you notify people, because in the end, if you can't manage this boxes whether it is physical or virtual, it's not going to matter how you do it.

Richard Campbell: Right.

Allan Hirt: It's going to be bad either way. So if you really think about these scenarios before you embrace either one or maybe as you start to think through this in your own environment, where is the best place for us to deploy virtualization and where are the scenarios which absolutely need to be on physical? So I think in the next year or two, you're going to see a very big hybrid in the environment of this is where virtual will always be, this is where we will never use...

Richard Campbell: And high availability also changes in the virtual model, it's different.

Allan Hirt: Well, absolutely. As we have talked about it before where you might have just put a clustering before, now you can't necessarily think that, but the problem then comes in, okay, I'm want to do mirroring or maybe I'll do log shipping, well, that's the per database level, so you've got 50 databases that's 50 jobs or log shipping jobs or key-log backup jobs needs really, really monger and you got to make sure mirroring is running, administrative nightmare for yourself in other way.

Richard Campbell: Right, sure. So, what scenario do you think absolutely never virtualized the bare-metal what kind of SQL situation?

Allan Hirt: Your Bet-the-farm Mission Critical Application.

Richard Campbell: So, when it comes down to absolutely must be up 100% of the time, you still trust bare-metal clustered solutions.

Allan Hirt: Take clustering out of it because even though I've done two white papers on clustering and two books on high availability, with my clients, they never leave with clustering because they're use may dictate something else. So, whether it's clustering, mirroring, log shipping, even replication, sometimes in the big iron cases where you got a bus that needs 64 gigs of memory and 16 processors ,



you're never going to want to virtualized that because you've got the overhead of them virtualizing.

Richard Campbell: Right.

Allan Hirt: Because that is the only thing we didn't talk about is that a lot of the products now still limit how much you can scale your virtuals.

Richard Campbell: How many processes and how much memory.

Allan Hirt: Exactly. So if you really do have those big iron systems, they're never going to fit in current virtualization models.

Richard Campbell: I'm just wondering, what is the limit on, say a Hyper-V virtualization for processes and memory?

Allan Hirt: I haven't played with the Hyper-V that much, I honestly don't know, but I would assume it's not 16 processor and 64 gig of memory, and I've seen implementations out there that really do need that.

Richard Campbell: Well, it does seem silly as soon as you were talking in that scale, why would you virtualize? That sounds like anything that would need that kind of power, if you need 16 processors for a given data base, you are not going to put anything else on that virtual machine, why would you bother?

Allan Hirt: Well, I've found in all the years that I've been in the IT and working with SQL server, if some customers can find it work, they'll do it, even if it goes against any kind of common sense.

Greg Hughes: I've seen virtualization used in some scenarios where it was really a shock to see it used in some very huge volume application, used internet applications were not running on virtualized platforms and successfully. Now in that particular case, the SQL server was not running in a virtualized environment. That was the only piece that was on bare-metal.

Allan Hirt: And that is actually pretty common. People virtualize the up servers and everything else in the environment. It just won't do the SQL servers. That's a pretty common scenario right now, although I think customers really want, or a lot of *ITers* also want that change.

Greg Hughes: Yup. Again in the dev and test environment, it can be really valuable to just be able to shut it down and bring it back up when you need it. I think one thing that we mentioned on the show before, talking about the greening of the data center is that virtualization is an opportunity in a data center

environment to reduce the amount of heat build and power use that quite often restricts data centers from actually leveraging the total amount of space that is available in the building.

Allan Hirt: Oh, you know in a big problem I'm actually talking with a lot of customers who are running out of data center space and that partially fueling this -- well, that's actually fueling a lot it's consolidation conversations that I have with folks as well, that they are out of space. They are not buying another data center, so how do we approach this problem? And again, virtualization is very easy answer but maybe not the right answer.

Richard Campbell: It's just increasing the densification of your data center, creates new problems, now you have heat problems and you have power problems, how much power can you get to a given rack.

Allan Hirt: Yup. It's certainly going to, I'd say this stage especially in the SQL server or the database, you know, whether its Oracle or whatever, the space for virtualization where, I think in the Windows, where it defined itself, and in the next year or two, only because I think there's so much critical thinking or desire from people to do it that it's going to define itself. There's going to be no choice.

Richard Campbell: I just looked up some notes here and it looks like Hyper-V limits the number of virtualprocessors to a given virtual machine to four but up to 64 gigabytes of RAM.

Allan Hirt: Yes, so now in that case, your bottleneck will be your processor.

Richard Campbell: Right. It seems odd that you would allow that much RAM in that few processors, but still if you have 64 gigabytes of Ram you want to put in your virtual machine, why wouldn't you bare-metal, there's not going to be much more memory in that machine.

Greg Hughes: Now especially if you're running SQL server on that machine.

Richard Campbell: Absolutely. So let's flip t his around a little bit. We talked about the machine, it will always be bare-metal. What's the one that's always virtual, is it the 657 machines?

Allan Hirt: Yeah, to me that's the one I always do on a virtual because let's face it, it's probably either on NT 3.5.1 or on NT 4.0, you're not sure how to even deal with it on a physical, you're scared that it's going to go down.



Richard Campbell: Yeah, it is a piece of hardware you're afraid of on an application you probably have no real information about.

Allan Hirt: Yeah, and you have no chance of migrating to any later version of SQL server.

Richard Campbell: No, it's lost.

Allan Hirt: Yes. So absolutely take that box and shove it in virtual and forget about it.

Richard Campbell: Yeah and never have to worry - just shuffles from machine to machine and you'll never ever remember to turn it off, really. One day people will stop using it.

Allan Hirt: Exactly. You're not the only case I can see where almost 100% of the time, I would do it.

Richard Campbell: Virtualization is a better answer.

Allan Hirt: Yeah.

Richard Campbell: It's an interesting scenario. So at the top of the show, we're talking about in the next couple of years, this is going to become a huge issue but is there any -- and it's not really a technological issue, is there really a technological advancement we're waiting for that's just going to make virtualization prevalent for everything, you would never run it any other way?

Allan Hirt: I don't think we'll ever get away from completely eliminating physical servers because if you think about virtualization in other ways, it's the you're putting all your eggs in one basket scenario.

Richard Campbell: Right.

Allan Hirt: You've got N number of virtuals under one virtualized OS or whatever you want to call it. So, how much of that happens before somebody has a really bad outage. Unfortunately, I hear horror stories all the time from SANS where like the storage guys who thought they would just update the firmware or BIOS got 70 servers attached to it, the update goes south, you take out 70 servers.

Richard Campbell: Yeah, boom.

Allan Hirt: I assume before that happens in some mission critical environment with a Hyper-V or ESX, until somebody says, "Oh, no more virtualization for us. We're going all physical again."

Richard Campbell: And that's going to happen one of these days.

Allan Hirt: Exactly. So, it's just like everything else like the people who had bad experiences with multi-instance pulled it out and now they only have one instance per box.

Richard Campbell: Right.

Allan Hirt: It's going to happen to somebody somewhere.

Richard Campbell: Sooner or later and it's funny now severe we get these IT folks where we banish technologies because of our bad experience even though obviously there are thousands of folks out there that had been completely successful with it.

Greg Hughes: Yeah. Part of that bipolar IT personality, it's either all good or all bad and it couldn't even possibly be me that screwed it up.

Richard Campbell: Yes, really no...

Allan Hirt: Don't worry, I want to be on the bleeding edge but once I really fail on the bleeding edge, I want to go ultra state.

Richard Campbell: Yeah,

Greg Hughes: Yeah, absolutely. The risk of being on the bleeding edge is bleeding out, right.

Allan Hirt: Oh yeah.

Greg Hughes: Never a good thing.

Allan Hirt: But that what makes all we do fun, right.

Richard Campbell: Oh if it was easy, everybody would be doing it.

Allan Hirt: Exactly.

Richard Campbell: So really the key argument coming in today is that IT is pushing down on the DBA saying why can't we virtualize the production environment and...

Allan Hirt: Right.

Richard Campbell: Your point here really comes down to that you need to have a fairly comprehensive set of controls over what the virtualized production environment looks like and there are definite limits as to how big a system you could have that should be virtualized.

Allan Hirt: Yeah, and the other thing I would advise any DBAs or even just folks who are



looking to virtualization even if it's not SQL server is if you're getting pressured or even if you aren't pressured with something you want to do, start actively monitoring your systems. I find most people aren't taking historical information and really analyzing it to understand what performance you're getting now so that when you try a method into a virtual, you will see if you have enough bandwidth because that's the thing with any kind of migration, even going to new hardware. People don't hate this information, so when you have to go and buy a new hardware, you kind of look into each other going, "Well, we never monitored this."

Richard Campbell: We don't know what we need.

Allan Hirt: Right, exactly. I mean, if you got the servers in-house, it's not that hard to spin up even if you don't have a centralized monitoring tool. Go run some perfmon sessions.

Richard Campbell: Sure.

Allan Hirt: Dump some stuff out to some files, bring it into Excel, analyze it.

Richard Campbell: All right, Allan, I think we're coming to about the end of the show. Where are we going to see you next, TechEd?

Allan Hirt: Yeah, I will be in TechEd speaking clustering SQL with Windows Server 2008 in the second week of the IT week in June.

Richard Campbell: Great. We'll be there too.

Allan Hirt: Awesome.

Greg Hughes: Which is right about now, about the time the show hits the air.

Richard Campbell: Pretty close. All right, Allan thanks very much for coming on the show.

Greg Hughes: Thanks Allan.

Allan Hirt: Thanks guys.

Richard Campbell: And we'll talk to you next week on RunAs Radio.