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Isaac Roybal Gives Us New Modules for IIS 7!
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[Music]

Brandon Wehn: 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 Wehn, announcing show #62, with guest Isaac Roybal, recorded live at TechEd, Wednesday, June 11, 2008. RunAs Radio is produced each week by PWOP Productions, providing professional media and podcasting services online at pwop.com.

Richard Campbell: Hey, it's Richard Campbell. You're listening to RunAs Radio and we are live on the floor at TechEd IT Pro in Orlando with my co-host as usual, as always, and actually in person, Greg Hughes.

Greg Hughes: Right. We get to spend some time together this week.

Richard Campbell: We're actually in the same hotel for a change as well, so things are pretty good.

Greg Hughes: Yeah, we can actually ride to the show together or take the bus or whatever, so it's good to see you in person.

Richard Campbell: Yes it's always good. The funny part is the number of hours we spent together is pretty low considering how many hours we've recorded together.

Greg Hughes: Right. Most of our time spent together is not face-to-face; rather it's on the phone or in some other manner. Email is next to the best thing, so it's always good when we can get together. It's also good when we can get together with people that we know or that we've met or that we've talked to before at TechEd last year like what we're going to do today.

Richard Campbell: Isaac Roybal, how are you, sir?

Isaac Roybal: I'm doing great. How are you?

Richard Campbell: I'm really good. I'm glad you came back although it's literally been a year.

Isaac Roybal: Yes, well thanks for having me again.

Richard Campbell: It was last year's TechEd when we all got together and what were we talking about, anyway, technology wise?

Greg Hughes: I think last year, didn't we talk about the new release of IIS.

Isaac Roybal: We did. We talked about IIS 7 and all the goodness it has.

Greg Hughes: And since then, I think we're going to talk today from, what I understand there are some new modules or new components of IIS that have been released, quite a few of them.

Isaac Roybal: Yes, yes.

Greg Hughes: So let's just talk about them. What have you got to tell us?

Isaac Roybal: All right, well, you know, that's part of the whole plan of IIS 7 and the new modular core that we have. We're able to release modules out of band so what that means is there's a new functionality coming up from Microsoft. You no longer have to wait for the next service pack or the next major revision of Windows Server 2008, so essentially it's kind of drag and drop kind of system but we can slip stream new functionality in IIS 7 and release it out of IIS.net/downloads and part of that functionality that we have is a new admin pack. We're working on the URL rewriter which just released in technical preview last week, our new FTP server as well. Let's see, we have a few other goodies in there too that we can talk about, but really the one biggest pieces that I'm really excited about is the admin pack and the reason is what we did when we shipped IIS 7 is there was a lot of functionality that wasn't in the UI so you have to kind of crack open the config file and make some changes which is easy...

Richard Campbell: Or PowerShell it too.

Isaac Roybal: Or PowerShell as well.

Richard Campbell: PowerShell is a big way to go about that.

Isaac Roybal: Correct. So we really want to bring that full fidelity across the platform so whether you're a co-junkie and actually like PowerShell and go do those things...

Richard Campbell: I love PowerShell.

Isaac Roybal: Or your XML junkie wants to crack open, sure, you install that option but there are still the UI guys who love that UI.

Richard Campbell: Absolutely.

Isaac Roybal: So what we've done with the admin pack is actually we've brought in four UI extension modules so now you can actually get this functionality that was only in the XML file to make those changes now directly in the UI.



Greg Hughes: As I recall, it used to be there was a private API and a public API, that changed with this version of IIS.

Isaac Roybal: That did, that did.

Greg Hughes: So if you've built new, make sure I understand you right, you built new UI components if you will that are integrate directly to that public UI.

Isaac Roybal: So yes, there is a new public API, a Microsoft.web.administration and essentially what that is, is it's the same API that the entire product was written to so Microsoft also writes that API, the public can also write today. API wants to extend the UI or the functionality of the web server. So what the team did was actually wrote to this public API and created a new set of UI components within the IIS manager that actually writes into the config files.

Richard Campbell: The IIS manager, I mean, it's totally new. It does have a modular feel to it that features come and go from those screens rather than as being all dialog bum with stuff created out. We just don't have things in there that aren't needed at the time, so you're telling me as I add modules in, I'm just going to get new icons in the IIS console?

Isaac Roybal: Absolutely, absolutely. That's the whole key, the whole story after IIS is released as the extensibility model and basically, the UI is Win Forms application. So really with that public API, you can plug in new functionality and a new icon pops up in front of you.

Richard Campbell: Are we moving away from the MMC model, it just seems to me that IIS 7 has a different feel to it. It's doesn't feel like it's integrated into a sort of common management console. Now I really want to use the IIS standalone console.

Isaac Roybal: Yeah, I wouldn't say we're actually planning to move away from MMC type model all the way around, but definitely the Win Forms application type of model gives us that flexibility that we want to introduce as the product goes along and that is one of the easiest ways to do that.

Greg Hughes: What are some of the other modules? Is module the right term?

Isaac Roybal: We either call them modules or extensions, sometimes referred to as extensions. So a couple of other pieces in there, and this particular component has a great story behind it so actually it's an IIS statistics monitor that's part of the admin pack and that's a new module within the admin pack, and

essentially what this was as one of the dev leads in IIS who wrote this little custom piece of functionality that it was just on a whim. He wrote it in about I think a hundred lines of code, in managed code, just to show the extensibility of IIS and say, "Hey, look. I can actually parse some of these logs and show everything that's happened on my web server."

Greg Hughes: This is one of those "wow!" moments for everybody, right.

Isaac Roybal: Exactly. So everybody who was kind of sitting around like, "Wow, that's a great feature. Why are we not supporting this?" So they ended up getting a team around it and then kind of put some more effort into it and put some more meat around it...

Richard Campbell: Something tells me it is more than a hundred lines of code now.

Isaac Roybal: Nah, it's probably a little more than a hundred lines of code but the point is a dev turned around and wrote this little piece and now it's a part of a bigger module or extension called the admin pack.

Richard Campbell: Well, an interesting strength here is it's really the synthesis of that environment that you can operate in words easy to add extensions combined with this really rich available data set and in the whole; he had a focus on the visualization part.

Isaac Roybal: Absolutely.

Richard Campbell: And even those pieces are components as well so it's really just connecting the bits together.

Isaac Roybal: Absolutely.

Richard Campbell: No wonder it's just a few lines of code.

Isaac Roybal: You just become the glue and bring it all together and now you have a new functionality, new piece of functionality as should say, and one of the glorious pieces of IIS and that we would really want to build around this. There's the community aspect. So this dev went and say, "Hey, I saw a need and fill this need. The community can do the exact same thing. It's all on this public API that we mentioned before so the public can go out and say, "Hey, I need this piece of functionality. I'm going to write it myself. They can actually submit it to IIS.net, which then it will be reference back to their website where people can download it.

Greg Hughes: So have you seen some good examples of that along the way?



Isaac Roybal: You know, we have a few kind of pieces of here and they're nothing really to write home about just yet because its really kind of getting that word out there, starting to see some of it, but there has been a few tools here that they're kind of doing specific things, nothing really like the admin pack that kind of have this big impact but we expect to see that change going forward...

Richard Campbell: You guys are working on this longer than the community has, I think.

Isaac Roybal: Yeah, I think those guys have a little bit more experience with it since they've been working a little bit longer on it.

Greg Hughes: You mentioned something in passing along the way as you started about URL rewriting.

Isaac Roybal: Uh-hum.

Greg Hughes: Now is this something that has not been in the IIS in the past?

Isaac Roybal: Nope.

Greg Hughes: It's been a bit of a pain that it has not been -- somehow, I'm interested to hear some details about that. Why don't you talk about the URL Rewriter and what that is and maybe you could explain for those who don't know what URL rewriting is and then also talk about how its implemented.

Isaac Roybal: Okay. Well, the details on it, they're kind of far and few in between because its very, very early. We just released it as a technical preview kind of put it out there so its a very early beta of it. So essentially, what URL Rewriter does is it allows you to take very long strings, so say for example if you hit `www.mysite.com/` and it has some sort of database quire, it can be very, very long. You can actually make it into a pretty URL to say `www.mysite.com/query` or something like that then actually rewrite that URL so it kind of goes back and does the long query string for you but in a very efficient way. So part of that, you write that functionality has not been an IIS in the past. It has been one of the top features that we get asked about all the time; and actually when we're going through the IIS development cycle, that was one of the things that was on the list to get done after RTM. We really said, "Hey, we want to release this base on functionality," then we are going to do URL Rewriter with the new extensible module architecture, we can now drop that in after the facts and it works just as if it was released out of the box.

Richard Campbell: There has been a third party rewriters for IIS for quite a while and I think one of the motivations for using that is really search engine optimization where I have three or four different domains or paths to a given page...

Isaac Roybal: Yes.

Richard Campbell: I want to consolidate www. and just a domain, so forth as a single entry.

Isaac Roybal: Yes, absolutely. That's a good point. That's also a big need for URL Rewriter.

Greg Hughes: Of course, having third parties or doing a custom and code depending on the application is different every single time so having the one stop place to be able to do it and to standardize on that, there's a lot of value in it.

Isaac Roybal: Yes, absolutely. That's a big piece of functionality that the community is really getting excited about...

Richard Campbell: And only in CTP right now.

Isaac Roybal: It's only in CTP, yes.

Richard Campbell: So we're going to be able to kick it around for a while and I mean the nice thing about this approach, and I hate to say it this way and I guess I'm going to show my chops it feels very Guthriesque. You know what I mean?

Isaac Roybal: Yes, yes.

Richard Campbell: Because in ASP.NET, I mean granted that it was just worth a 3.5, but the AJAX component, the MVC product now with dynamic data, they're releasing this standalone modules that aren't version 2 or .1 or .2 or anything like that, they're just a piece you can pick up and it feels that you guys are doing a very similar thing, I don't have to get IIS 7.1, I have 7 with the Rewriter module.

Isaac Roybal: Absolutely and that's the whole point because we don't want customers to wait around and sit on hands for our next service pack or our next major release. We want to be able to release these things quickly and easily and get it in their hands when they need it.

Richard Campbell: There's an implicit rule there that this module must be able to be easily added and removed from the equation.

Isaac Roybal: Correct.

Richard Campbell: You're sort of circumventing my versioning control when you don't give me a .1 and I



have pretty clear procedures on how to add that .1 in so I'm hoping that these modules are very independent that can drop it in, take it up for a spin and go, "Oh, let's not do what I want and get it out again."

Isaac Roybal: Absolutely, I mean, that goes back to you could do that with core components as well, so we have the 40 pieces of core components of 40 modules, you can also do the same thing, remove those and those come out of the box so when we have these out of band modules, they function in exact the same way.

Richard Campbell: Absolutely, and I guess that's one of the nice things I find with IIS 7, now I can pair it down to only the features I wanted...

Isaac Roybal: Absolutely.

Richard Campbell: Big things that happened to me in the past years, now I've got an IIS 7 in the field and loving it.

Isaac Roybal: Yes.

Richard Campbell: It's a great, great product and it's been fun to tinker and tune with. I really appreciate the fact that I still have a tendency to go direct to web config and edit it and the client doesn't barf on that, it just, "Oh, okay, you change this," and now I'm starting to play with can I go down and change it through the UI in basically the same ways. So it just feels very robust.

Isaac Roybal: Speaking of editing the config files in the admin pack, you're going to love this new feature called Config Editor that's right in the UI. You double click on it and it actually gives you all the subcomponents within the config file, where the config file I should say, and it also gives the ability to script that automatically. So you say, "This is what I want to change," then you say, "Generate a script," it gives you C#, change script, or app command, command that you need to put into the...

Greg Hughes: Across my form.

Isaac Roybal: Yes, across your form, so now you can script that easily and then generate a script and do the classic form.

Richard Campbell: It's an interesting angle of our jobs that here I am in my lab testing a configuration, making sure I get it right, and then really I want to put it to a repeat of a module that I can then push out to the farm quickly and smoothly especially if I'm doing stage rollover where I'm going to take four machines out of the farm, update those, rollover the low bounce of that four and then go update the other bank.

Isaac Roybal: Yup.

Richard Campbell: So it's nice to see bit-by-bit we're getting more and more of the mindset of IIS 7 as used in different ways and we just have to configure it correctly to make it behave correctly.

Isaac Roybal: Absolutely and that's part of the thing we want to make sure that it provides rich functionality but it's very easy to manage at the same time, because you can have all the functionality in the world, but if you can't manage it, it's almost useless.

Greg Hughes: Absolutely. So what else?

Isaac Roybal: So we have another big thing that I'm really excited about is what we're calling Web Deploy and Web Deploy is essentially a migration toolkit. It's a framework if you are to build other functionality, so right now it really focuses on migration from six to seven, synching six-to-six and also synching seven-to-seven. So it's really a great tool and forgive me, it's kind of hard to describe because it's kind of a framework but it's kind of a migration tool at the moment, so again, it's still in CTP as well so feel free to go and download it off of IIS.net/downloads and play around with that a little bit. So really, the key there is you want to give a replacement, I don't want to say an actual replacement for app center, but something that can help you in the meantime and kind of tide you over until we get a full solution out there.

Richard Campbell: App center is one of those I loved app center in 2000, it's just beginning to be kind of an orphan and it never really felt like a real product per se because it was just a sort of a grab bag of things we needed to take care of and that I feel like pieces of it rolled in and ultimately became mom, and some pieces get lost along the way as well and I think this big one is this web synchronization that I need to roll in multiple copies out across multiple machines and I want that repeatable and as automatable as possible.

Isaac Roybal: Yeah absolutely and that's one of the keys of Web Deploy that we're trying to do, give that functionality out there to the general public.

Richard Campbell: All right, that's another one. You said nine and I think we've gotten through three, so we've talked about the admin pack, we've talked about Rewriter, and we've talked about Web Deploy...

Isaac Roybal: Oh no, I'm sorry, there was actually within the admin pack, there are seven pieces of functionalities just within it.

Richard Campbell: Oh okay.



Isaac Roybal: So part of that is the IIS stats piece that I was mentioning, as well as there is a DB manager now directly into IIS UI.

Richard Campbell: Interesting.

Isaac Roybal: Yes, so part of the admin pack is now with the extensibility, we're able to pop in a new icon into the UI and be able to manage our database through the same UI that we administer IIS.

Richard Campbell: So we're talking about the database that would largely be for state management or cash management, that sort of thing?

Isaac Roybal: Or also you're content database.

Richard Campbell: The actual content database as well.

Isaac Roybal: Yes.

Greg Hughes: So let's talk security about that. I got to tell you that the idea, the concept of somebody who's changing web servers also getting in and making changes or reviewing or whatever in the database is a little bit scary. Is there anything in there to respect security permissions of the person using it and how has that reflect itself in the UI?

Isaac Roybal: Well, that's a great point. So actually if you are administering IIS on a global basis, you're typically a local OS administrator. So within that, I believe there are actual credentials that you have to pass in the database to be able to log on to that. You do have to be allowed to access and administer that server in the backend. Now, from a remote standpoint, say if I want to grant you remote administration to my website, I can actually set that feature to non-inherited so if I was concerned in any way, it would actually the icon wouldn't show up when you log in.

Greg Hughes: So you have the ability within this UI within the system to be able to say that I can get access to A, B, and C but not D, E, and F within the UI.

Isaac Roybal: Absolutely, or I can say Isaac has access to A and B, C is read only so I can actually see what the settings are but I can't change it, and then D, E, F, I don't even know it exist within the UI so I can set those in non-inherited and I can do that with any feature in IIS.

Greg Hughes: So, how do we fill out the rest of these lists of I think you said seven within the admin?

Isaac Roybal: Okay, so let me see here. So we have the three UI extensions, so I can do request filtering of the UI which was only config level change so I'm sure you are familiar with the request filtering feature that I can taught out there.

Richard Campbell: Go into some details for folks who are not familiar with it.

Isaac Roybal: So request filtering is a great tool that was actually out of IIS six days but it was an add-on and so what we did was we rolled it in to IIS 7 and what request filtering does is actually lets you filter out suspicious or malicious URL strings coming in. So what you can actually do is, say, if a string that's coming in or a URL request and the string is longer than, say, 3,000 characters for some reason, dump it, I don't want it anymore. Or you can actually say I will only allow these extensions to be serving that. Or I want these particular directories to be protected and there's no way that anyone can ever browse in these particular directories. So in IIS 7, in the early days, it was only enabled through the application host.config file; when now through the admin pack, we've actually created a UI extension as part of that modularity.

Greg Hughes: So to make changes are clear custom policy, if you will, as to what that will and will not allow.

Isaac Roybal: Absolutely. Now you can see it right out of the UI, so you know, before I have say to crack open app post.config, but now it's right in the UI for you.

Greg Hughes: Any templates or defaults that supplies some level of protection just based on best practices right...

Isaac Roybal: Yes, there is. So actually some of them say deny the bin folder, for example, others they have just a common set of extensions such as HTM, ASPX, couple of other standard ones if you will, but then if you go further and create custom list on top of that so then you say deny string in length or if it has a certain type, essentially a signature if you will, deny it right away. So request filtering is a great feature. So let me see here.

Richard Campbell: There will be a test at the end, you know that.

Isaac Roybal: Yes.

Richard Campbell: I'm going to go back to the booth and I'm going to tell them you don't remember the features in your own product.



Isaac Roybal: It's hard to keep up with those guys.

Richard Campbell: Yeah, yeah, they're crazy. You're outnumbered.

Isaac Roybal: To be honest, I am because I sit in a completely different building as these guys. I come over and I have synch meetings with them and I go, "Hey, we're building this new module. Wow, its great and exciting." It's so hard to keep up with them because they are so nimble and they are so excited about the product.

Richard Campbell: It's just that we've gotten to a nice place.

Isaac Roybal: Absolutely.

Richard Campbell: We had other products where they hit to a point where it is just now easy to do a lot of these things and we have these explosions of features.

Isaac Roybal: Oh absolutely and I say the IIS team is really on the verge of really putting out a lot more modules because that really is the value add to IIS. So we gave a lot of good functionality in RTM but we're just going to continue to deploy and grant some more features as time goes on.

Greg Hughes: You're enabling the whole concept of like iterative product development and incremental product development that wasn't there before.

Isaac Roybal: Absolutely.

Greg Hughes: So for a company that emphasizes innovation as much as Microsoft does to its employees, it's a tool by the way the product is developed, it's enabling those developers and those idea people to come up with ideas and really make them happen without having to wait for a big two-year-old life cycle and product to be able to...

Isaac Roybal: Absolutely it's not a major upgrade. I think that's one of the keys to the point earlier, yup, you can remove it just as easily as you put it in. If something goes wacky for you, you can just pull it right back out and you're back at your original state.

Greg Hughes: So anything else in the admin pack that you want to point out?

Isaac Roybal: In general, I think I talked about the scripting feature that I was really excited about. I thought that was amazing. You can really go in and set some changes in the config file and then you can

script it in not only VB but C# as well. So it gives you end as well as app command, it spits out everything you need.

Richard Campbell: Did you say FTP at the beginning of this conversation?

Isaac Roybal: Oh, yes, I did say FTP.

Richard Campbell: Why is FTP still alive? I felt like for a while, Microsoft was going to give up on FTP and it was all about web folders and that sort of thing, but yet I see a resurgence too like FTP is a good technology. The real question is the security module, restart module, and here I'm answering your questions obviously, you see. Tell us about the FTP model, Isaac.

Isaac Roybal: Well, so FTP, I'm going to tell you about FTP out-of-band module and something else you need to watch out for. So FTP, I agree, has been a technology that has just been strong. You kind of thought it was going to go away but it never does. It's just one of those house guests, a family member that never goes away, it continue to live...

Greg Hughes: You can't kill it, right.

Isaac Roybal: You can't, you can't. Well, part of that, the IIS6 FTP server cannot take some lumps because it didn't have secure FTP.

Richard Campbell: Right.

Isaac Roybal: You couldn't have secure FTP...

Richard Campbell: No, you have to throw HTTP around and try -- you basically have to work around a relatively unsophisticated FTP server to create a secure environment.

Isaac Roybal: Absolutely. So we heard that feedback in IIS 7. We have a new FTP server for IIS 7, so that's the key. You have to remember that term, FTP for IIS 7; and what's key about that, it was written from the ground up: completely from scratch. We wrote a completely new FTP server from the ground up...

Greg Hughes: With what in mind?

Isaac Roybal: With the security in mind. That was one of the key pieces. So now it supports a secure FTP...

Greg Hughes: So SFTP...

Isaac Roybal: Yes, SFTP.



Greg Hughes: As opposed to FTPS or any variety of other labors of...

Isaac Roybal: Yes, it's SFTP, again it's just an out of band module off of IIS.net/downloads. You could pull that on and throw it right out of your server and you're ready to go. So one thing to be aware of though, is with Window Server 2008 at an OS level that ships with an FTP server which is the same...

Richard Campbell: That's true. The old one.

Isaac Roybal: The old one, that's the old one.

Richard Campbell: So we have to consciously go out and get the new one.

Isaac Roybal: Yes. So actually, there was, in RTM, we do have FTP services installed, it's in a installed book component via IIS, so if you go and get the out-of-band module, I believe you get a little more bells and whistles that weren't available at RTM.

Richard Campbell: Please tell me you did recovery as well in FTP so I can restart halfway through a send or...

Isaac Roybal: Yes, yes, we did do that.

Richard Campbell: The old one didn't do that. Ask me how I know.

Isaac Roybal: I'm sure you had the experience and more stories about that.

Richard Campbell: Yeah, yeah. And therein lies the battle which is here is the tool that everybody's got and it has a very, very basic set of features. It is nice to see it has richened up, it's well-worth to spend a little time to get the new one.

Isaac Roybal: Yes, absolutely, absolutely.

Richard Campbell: All right, Isaac, it's getting close to the end of the show here, any final thoughts?

Isaac Roybal: You know, I'm really excited about IIS. The last year that we've been talking about this product, we've seen a huge momentum pre-RTM from hosters picking it up and doing some great things. Now customers are really starting to discover the value of it now that it's actually out in the market place. We expect to just see that momentum continue and with the new extensibility module, to continue to add that value as customers start using the product more and more. So really if you want to take a look at all of these downloads and modules, go to iis.net/downloads and the community site as well as IIS.net.

Richard Campbell: With any vision around an IIS ATF?

Isaac Roybal: No, not yet, actually that is a little further out in the planning stages.

Richard Campbell: What do you think is one of the side effects of that incremental release, is it that you've really -- now because it's much harder to justify an IIS8, when do we really need to rewrite this platform when we're still just exploring the existing ones potential?

Isaac Roybal: That is a good point but I think as we continue to go on, IIS8 would be at the fundamental core level of the HTTP server.

Richard Campbell: That's where you want to go.

Isaac Roybal: Exactly, and the rest of it is just the bells and whistles that we want to add on which will continue to thrive in this modular architecture that we have.

Greg Hughes: What about IIS on server core, anything to say there? I mean, the last time we talked about it, it was a year ago.

Isaac Roybal: Yes, so nothing really new to say. There is still no .NET support in server core but again, it's not a question of if but when and I know the dev team is actually looking at the...

Richard Campbell: Even then, I've put together a couple of core IIS 7 and setups for image serving and resource serving and just stunningly fast, really lean, the thing I say in my sessions now is IIS is a different product when .NET is not around. It's not that the .NET is bad, it's that it works in a certain way with .NET and you should really, there are strong advantages to isolating your .NET work from everything else.

Isaac Roybal: Oh absolutely, absolutely.

Richard Campbell: So we know the fully install with .NET on one side, the core install with just IIS 7, and a resource config on the other side. This could be very interesting to see if it makes sense, that will bring .NET to that as well, I'm sure they're working on it -- we'll see what the results look like...

Isaac Roybal: That is a good point and also if you're looking at doing a dynamic content in a server core environment, we recommend PHP. So PHP is now fully supported on IIS with the FastCGI module...

Richard Campbell: I love that, it's hilarious. How do we get here? That the PHP is a good idea in the



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Windows space, it's just interesting to see the evolution of all these technologies that now we're at a place where no languages are important. What do you want to do?

Isaac Roybal: I really think it's really a key example of Microsoft's mindset, change in mindset I should say, that, hey, really it is about a platform. A person looks at it as a platform and not about a Silo technology approach, right?

Greg Hughes: No, it's a common ubiquitous scripting and language that people are using right now and it's maybe like a cycle reverse field of dreams kind of thing. There are so many people out there that are doing this that it's time to build that field and to do it well.

Isaac Roybal: Yup.

Greg Hughes: And it give you the platform to be able to leverage on Windows to do that the...

Isaac Roybal: Yeah, that's a great point. I mean we look at some of these things and hey, PHP is doing some good things. They got some great applications out there and you know, we don't want to knock down in any way so hey, come on over and we got a great platform for you to host on and continue to support that now, really the key there is that from an IT administrator standpoint or even a CTO or a CIO standpoint, you'll only need one platform to manage all these applications.

Richard Campbell: Right, and so common management tools, common metrics, that's the big thing for me as I have a tough time when I have multiple platforms being able to measure who's performing well, who's not, what do I need more of, and so forth.

Isaac Roybal: Yes, and you only need one set of expertise really.

Richard Campbell: Yeah, a pure skill is all very useful.

Isaac Roybal: Yeah, exactly. Yeah, so it would be great. So really from a management perspective, it really brings it all into one place so that's really one of the keys behind that PHP adoption.

Richard Campbell: All right, well, I think that is a show, Isaac.

Isaac Roybal: Well, great. Thanks for having me again guys.

Richard Campbell: I guess we have to talk to you again next year.

Isaac Roybal: Yeah, absolutely, absolutely, you see, maybe we'll have IIS8 plans, I don't know.

Greg Hughes: We could do our annual Isaac show.

Isaac Roybal: Yes, that would be great. That would be great.

Greg Hughes: It's good to see you again.

Isaac Roybal: Same here. Thanks a lot for having me.

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