



RUNAS RADIO



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*Text Transcript of Show #118*  
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**David Lowe Educates Us on the Microsoft Web Platform!**  
**July 22, 2009**





[Music]

**Brandon Wenn:** From [runasradio.com](http://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 #118, with guest David Lowe, recorded Thursday, July 2, 2009. RunAs Radio is produced each week by PWOP Productions, providing professional media and podcasting services online at [pwop.com](http://pwop.com). You can follow the boys on Twitter at [twitter.com/runasradio](http://twitter.com/runasradio).

**Richard Campbell:** Thank you, Brandon. This is Richard Campbell. With me as always my co-host, Greg Hughes.

**Greg Hughes:** Hey Richard.

**Richard Campbell:** Hey, it's RunAs time.

**Greg Hughes:** RunAs Radio once again.

**Richard Campbell:** Yes, we'll do it again. So let's dive right in here. I've got David Lowe with us today. David Lowe is the group product manager for Windows Server with Microsoft Corporation. In his role, he looks after product management for the IIS and Windows Web Server. David has been with Microsoft since 2001 and in his time he has managed developer and IT professional portfolios for Microsoft's learning. He led the company's security guidance training efforts and is even planning for the Windows Server launch. Prior to joining Microsoft, David was a senior lecturer with internet technologies at the Center for Advanced Technology Training in Dublin, Ireland where he specialize in web development and XML. He holds a Bachelor of Science degree from the University College in Dublin, and is the author of BizTalk Server: The Complete Reference, published by Osborne-McGraw Hill. Welcome David.

**Greg Hughes:** Hey David.

**David Lowe:** Thank you, Richard. Good to be back again.

**Richard Campbell:** Yeah, great to have you back on the show. We usually bumped into you at conferences actually.

**David Lowe:** That's true. You and I have met each other at TechEd and I think, perhaps, also Professional Developers Conference maybe.

**Richard Campbell:** Yes. I believe we are both respectively in possession of incriminating photos of each other.

**David Lowe:** That's probably best, that we remain in possession of those.

**Richard Campbell:** Yeah. We'll just keep those to ourselves, that's fine. You're really dealing with the Web Platform for Microsoft these days, right?

**David Lowe:** That's right. The Microsoft Web Platform is a complete set of tools, servers, technologies. It's really a complete ecosystem for allowing companies, small and large, to be able to build and host websites, web services, web applications really of any size and we tend to talk about the Microsoft Web Platform as an integrated and interoperable set of technologies, and as I said it really scales from the smallest hobby sites all the way up to the largest ecommerce and business applications.

**Richard Campbell:** This is primarily IIS we are talking about though.

**David Lowe:** Well, actually it does include a number of different technologies. Of course you have the operating system layer which is Windows Server, Internet Information Services (IIS) then provides the web server software on top of that. We have application frameworks that we support whether it's ASP.NET or even PHP.

**Richard Campbell:** Right.

**David Lowe:** We have database technologies like SQL Server. We've got tools that allow customers to be able to build these applications and solutions so from Visual Studio and even our free version of that Visual Web Developer which allows people to build applications, and then on the design side we have tools like Expression Web that can also be used by the folks that want to make their websites look nice and pretty.

**Richard Campbell:** So when you talk Web Platform, it's that sort of end-to-end tools for building the pages all the way back to the database and everything in between.

**David Lowe:** That's right and it's really about providing, as I've said, an ecosystem so that when customers and developers want to be able to work with their web technologies, that all of the various components are there and they're designed to integrate and interoperate with each other, and in fact through our Web Platform installer which we make available at [microsoft.com/web](http://microsoft.com/web), we make it very easy for people to be able to locate and obtain, download and install the various components of the Web Platform whether it's a developer box running Windows XP all the way up to production web server that might be running Windows Server 2008 R2. So you can download and customize the web server exactly the way you need it and you can also then



download applications that help you get started. We support a number of different community applications, open source applications for example that are either written in ASP.NET or even PHP.

**Richard Campbell:** Why would someone run PHP on the Microsoft Web Platform?

**David Lowe:** The main reason is because we provide first class support for PHP and because it is a very popular technology with web application developers. So we have the fastCGI support that came with IIS7 and we also made that available down level for IIS6 which provides a much more reliable and better performing way for PHP applications to be run, and the Microsoft Web Platform installer will actually download PHP and install and configure it for you and then it will even download these community applications that might use PHP and get them set up for you as well. Of course that's one of the strength of PHP, it's a lot of applications, there's a big community behind PHP and we want to be able to support that, we want to be able to make sure that the web developers who use that technology feel that our platform provides first class support for it.

**Richard Campbell:** So what versions of PHP are we talking about here?

**David Lowe:** We have PHP 5.2 and in fact the IIS team is actively engaged with the PHP community and is even contributing code towards the next version, PHP 5.3.

**Richard Campbell:** Nice. So I could take a PHP application that's been running on a typical apache PHP stack or sort of LAMP stack and fire it up under IIS with PHP and it will run?

**David Lowe:** That's right. If you use the Web Platform installer for example, it will give you the option to download WordPress or Drupal or Joomla, and if you require back-end database you can also download the PHP driver for SQL Servers if you want to use SQL Server with some of these applications and it will install and configure all of the various components that you need. So it will install fastCGI if you don't have it. It will install PHP if you don't have it, and then it actually goes out to the source location for those applications so we really provide pointers to the latest and greatest versions of those community applications.

**Greg Hughes:** Cool.

**Richard Campbell:** Yeah. You're talking about a full LAMP stack migration there. There is a version of MySQL that runs on the Windows as well, right?

**David Lowe:** That's right.

**Richard Campbell:** So yeah, you've got all the bits there. You can move it across. Is there anything special I'm going to get from this, or is it just that I own these Windows licenses -- all right, you know, we're currently developing in that model and I've got apps in PHP or I've got talent in PHP so I want to be able to run it in this infrastructure.

**David Lowe:** Well, we know that a very high proportion of PHP developers actually do their development on the Windows platform and so we want to make it easier for them to be able to set up their development environment, but then also to be able to deploy those applications to the similar production environment. So we provide a number of different technologies that can help in that, not just the web platform and installer, but we also have something called the Web Deployment Tool, and the Web Deployment Tool is an extension for IIS that allows you to package up an application and you can do that either from a command line, we provide a full command line interface, but for those of you who are a little averse to typing up the commands we pulled integration with IIS Manager. So right there from the IIS Manager interface you can right click an application and say that you want to package up that application. It will package it into a zip file including the static pages, the dynamic pages, if it's an ASP.NET application even the code-behind pages, style sheets. It will do GAC assemblies, components. It will even package up your database and then you can actually deploy that to another web server, a staging or production web server. IIS Manager also supports direct import of the zip files. It can be a great way to keep a number of web servers in sync, staging and production, or web servers in a server farm. It's a great way to even migrate from IIS6 to IIS7.

**Richard Campbell:** I'm trying to envision how you would do a web farm using the PHP stack. I guess that pretty much requires an extra low bounce or could I use NLB in that scenario too?

**David Lowe:** We absolutely support network load balancers, both the Network Load Balancing that's built into Windows Server.

**Richard Campbell:** Right.

**David Lowe:** And also hardware-based load balancers. But we have another IIS extension that's called Application Request Routing.

**Richard Campbell:** All right.

**David Lowe:** Application Request Routing is a layer 7 as opposed to layer 4 technology that looks at HTTP requests at that application layer on the web



server request based on various information that might be in the HTTP headers or the URL and it uses another IIS extension called URL rewriter which provides great support for being able to look at URLs that have been requested from the server. For example, you can have canonicalization of URLs, you can rewrite very complicated query strings into very nice easy to remember URLs. It's great for Search Engine Optimization as well. But the Application Request Routing part of it, for example, you can put an IIS server in front of a farm of other IIS servers and do a number of load balancing algorithms that are based into that, they're built into it whether it's simple round-robin or you can have waited request going more to one server versus another depending on the URL that's being requested. This is also great for hosting scenarios, in fact, as well. We have a number of hosting providers that are looking at Application Request Routing as a way to provide a more scalable and elastic infrastructure. So for example, you could imagine maybe a web hosting company that provides share hosting. So they might have maybe a hundred websites. Of course they might have a thousand or even five thousand web servers...

**Greg Hughes:** Sure.

**David Lowe:** Because IIS does scale very well, IIS7, and let's say they have a hundred websites across five servers in a server farm. They might configure Application Request Routing so that if requests are coming in for sites 1 through 20, it goes to the first server. For 21 through 40, it goes to the second server. For 41 through 60, it goes to the third server, etc, and so although all 100 sites are kept in sync across the five servers through both client and server-based affinity, you can write those requests to an appropriate server but maybe if one of those sites is expecting additional traffic, the hoster can actually double the capacity of that particular site simply by reconfiguring with a couple of clicks Application Request Routing to say that, let's say, request coming in to site #6 should be handled by both server #1 and server #2. So you've now doubled the capacity with just a couple of clicks. So Application Request Routing is a very, very powerful feature both for dedicated hosting scenarios and shared hosting scenarios, as well as enterprises that just want to manage a large server farm.

**Richard Campbell:** When I think about resource routing, I think separating images from pages, from dynamic pages.

**David Lowe:** Absolutely and you can do the same thing because based on the URL that's being requested, you might have Application Request Routing configured so that static pages are being requested from one server, that images are being requested from a different server, that CGI

applications are being run on a third. I mean, you could really configure it any way you like depending on how imaginative you are, and we know that some customers will do that kind of separation of resource processing.

**Richard Campbell:** Certainly in my experience, I found that IIS is a different creature when it's not running CGI or ASP.NET. If it's just serving static resources, it manages memory different, like it's a really amazing product that way. Not that it's bad in the other scenarios, but it's just a different feel when you're just serving static resources from IIS.

**David Lowe:** Well, in IIS7 we introduce the idea of both a static and dynamic compression, and also static and dynamic caching so it's possible for you to configure a query string in dynamic content caching so that even when requests are coming in that need to be process by server-side code, that can actually be cache as well. So IIS7 is a much better performing web server when it comes to both static content and dynamic content, and as I said with fast CGI really we're right up there in terms of be the processing for PHP applications as well. Going back to your earlier question in terms of being able to scale out PHP applications across the server farm, really IIS doesn't really care too much in terms of what kind of content it's serving up. From a server farm, Application Request Routing is really just looking at the URL that's coming in and the server that's processing them, and the server itself doesn't need to really care about whether it's a standalone server or it's part of a server farm.

**Richard Campbell:** Right.

**David Lowe:** And then with shared configuration which is one of the other big features we introduced with IIS7, it's so much easier to set up a server farm and to add new servers to the farm because you can specify that both the content and the configuration information should be located on a central file share and when you want to add a new server to the farm you simply type in the UNC path to that shared folder and it will instantly pick up the content and the configuration and you don't have to do any extra configuration in order to have a new server added to the farm to pick up the load.

**Greg Hughes:** What are some of the new capabilities? What are the things that people may not realize from a securing IIS7 standpoint? What do we need to know?

**David Lowe:** Well, IIS7 has been designed as a much more modular and extensible platform. As an extensible platform, it makes it a lot easier both for us as the Windows Server and IIS teams to be able to put out new functionalities as IIS extensions like the



web deployment tool, or like URL rewriter, or like Application Request Routing, but it also means that we have a modular architecture that supports streamlining the web server installation to include just the components that you require. So in IIS6, for example, you really only had a handful of choices in terms of what components you wanted to install in the web server, but with IIS7 there are about 45 different components that you get to pick and choose and you can get very granular. You could say, "Well, I'm going to need ASP.NET but I'm not going to need ASP," or, "I'm going to need Windows Authentication but I'm not going to need basic or digest authentication. I'm not going to need maybe some of the logging features. I'm not going to need maybe some of the management features depending on how the server is going to function." And so you can really have a very, very stripped down web server that might only include maybe five or six sets of those 45 components so you have a much smaller server footprint, you have a much smaller tax surface of course as well and far fewer components that might need to be managed and maintained in terms of patching, and then of course with the server core installation option that's introduced in Windows Server 2008, we take that a step further so that you can have this really stripped down installation of Windows Server 2008 and you can reduce the overall server footprint by about 75% and still run IIS on top of that and have support for fast CGI and PHP, and then in Windows Server 2008 R2 which of course we just brought out the release candidate for that a little while ago and we're on track to get that shipped in the third quarter of this year, you will see support for ASP.NET also on the server core. That was one of the most commonly requested items from customers, it was to provide support for the .NET framework on the server core installation option. So you're going to see that in Windows Server 2008 R2. That provides not just the ability to run ASP.NET, it also provides the ability to do remote management through IIS Manager, other Server Core installation. It means that you can run PowerShell scripts directly on the box and through the web administration module that we include with Windows Server 2008 R2. It means you would be able to run all those partial commandlets directly on the server core installation to manage your IIS box.

**Richard Campbell:** I get to sense that the R2 core configuration with ASP.NET is going to be the new reference web farm configuration like that's the one you're going to run for maximum performance.

**David Lowe:** Absolutely and we'll be recommending that to customers. If you don't have the need to have all the graphical bells and whistles that come with the full user interface on your production web server because you're going to be managing it remotely, you're going to be using the shared configuration, you're going to be using IIS

Manager to do remote administration, you're going to be potentially using the Windows PowerShell Commandlets, you might be using the web deployment tool to deploy your applications and which does run as well on the server core installation. There really is no need for your production web servers to have all that additional code in place and all those different components that might need to be managed and maintained. So yeah, it does provide a much more reliable and easier to maintain system. Of course as well as with Windows Server 2008 R2, we're also providing a user interface that's built into IIS Manager that allows you to do configuration of what we call Request Filtering, and Request Filtering is another security feature that allows you to look at the types of URLs that are being requested and the potentially blocked malicious requests. It can even be used to mitigate against SQL Injection attacks if perhaps you have an older application that doesn't follow application security best practices while you fix the application to be able to ensure that it's not going to be susceptible, for example, to SQL Injection attacks. So there's a lot of good security features built in.

**Greg Hughes:** Just like the URL scan extension, that one you're talking about there?

**David Lowe:** You're exactly right. In IIS7 and in IIS7.5 which is the version that's in Windows Server 2008 R2, it's called Request Filtering.

**Greg Hughes:** Ah, okay.

**David Lowe:** And in IIS7 we made available an administration pack extension that included a UI component for Request Filtering that allows you to actually set up those filters and configure them through the IIS Manager interface, but really that is the same technology as we released as URL scan that allowed people to provide better security for IIS6 and IIS 5.1.

**Greg Hughes:** Right. I know having used URL scan in production environments before that it can be a very powerful tool to help mitigate some pretty serious problems.

**David Lowe:** Uh-hmm.

**Richard Campbell:** What I like about that is, from an IT Pro perspective, you can't just keep demanding to developers to make this app more secure, make it more secure to actually be able to box in the inputs coming into the app in the first place. It means we can buy convention configuration, restrict the kinds of hacks that app can be subjected to.

**Greg Hughes:** Right.



**David Lowe:** Well, I think it is a shared responsibility. I mean, it's up to the application developer to educate themselves and familiarize themselves with application security best practices, but that the IT professionals as well should be making sure that they're doing their parts to reduce the risks of attacks on the server. We've actually put another IIS extension. We've got loads of IIS extensions. In fact, people should go to [www.iis.net/extensions](http://www.iis.net/extensions) just to see all the different modules and tools and technologies that we brought out from IIS since IIS7 was released. We've got a new one that came out just a little while ago that's called Dynamic IP Restrictions.

**Greg Hughes:** Yeah, that one's cool.

**David Lowe:** And Dynamic IP Restrictions again allows people to be able to look at the IP addresses from which requests are being made and as a result then you actually can configure the server to be more secure in terms of how it handles those requests. So it's a configurable module and it can help, again, mitigate or block, denial of service attacks by blocking those IP addresses if they follow a particular pattern that might indicate such an attack could be in progress.

**Greg Hughes:** So this plug-in approach is really cool. We can have new modules, new security. You could update just the Dynamic IP Restriction extension without having to do a rev of IIS necessarily to take advantage of it.

**David Lowe:** Absolutely and in fact we actually just released a few weeks ago a patch for Dynamic IP Restrictions. For example, if somebody was using the web platform installer to keep the web server up-to-date, it could recognize and let you know that an updated version of whatever extensions you have installed are available. So the web platform installer is another great way to make sure that your server kept up-to-date and that you're aware of these different extensions that we make available.

**Richard Campbell:** Yeah. This just really feels like we're finally reaping the benefits of the redesigned that IIS7 represents. What are you possibly going to do with IIS8?

**David Lowe:** Well, we're really just in the initial stages of planning for the next version of Windows Server and IIS of course. Our priority right now is to get Windows Server 2008 R2 out the door. We have a number of technology adaption program customers that are already using it in production that are very happy with it. There seems, again, improvements in reliability, in performance while also being able to take advantage of some of the extensions that we've integrated including updated

versions of FTP and WebDev, and then the administration pack extensions that we integrated the web administration module for PowerShell, and we've also got, of course, support for .NET on server core in R2, and we've also got a couple of nice little features as well in there like application preload which is very useful for when applications have to be able to start more promptly. We hear this actually a lot from people that are running SharePoint on Windows Server, that sometimes that first request, the one that kicks off the application...

**Richard Campbell:** Yes.

**David Lowe:** Can actually take some time to get up and running. So you can now actually specify in the web.config or in the application host.config that an application should be preloaded by IIS so that those first requests are handled much more promptly.

**Richard Campbell:** Yeah, it's nice to be able to activate, I'm thinking in .NET context through the sort of just in time compilation rather than having the user suffer the punishment of that happening. That part of the start of process, it does that automatically.

**David Lowe:** Absolutely. Two more things that I would like to just kind of -- that you just reminded me as we talk about these extensions. Two more things that I'd like to briefly mention. You know, we've just release an update to IIS Media Services. So with IIS Media Services, we provide a number of different integrated technologies like Web Playlist and Bit Rate Throttling, as well as Smooth Streaming and a version of Live Smooth Streaming.

**Richard Campbell:** Oh yeah.

**David Lowe:** It enable to adapt the streaming of live events to Silverlight clients, and we've had a number of very big and very high profile media events like the Olympics and the French Open, and we're looking at the Tour de France, and even Wimbledon, we're looking at a number of big sporting events actually using Live Smooth Streaming to provide HTTP but true HD quality at 720p for live web broadcasts that are streamed down to Silverlight clients and it's providing an incredibly rich and really, really powerful way of delivering media.

**Richard Campbell:** If I remember correctly, Live Smooth Streaming is all about not making the user decide what sort of resolution or size of their pipe there is but just to say I'll play you the best one and change it on the fly if it's wrong.

**David Lowe:** That's exactly right. So it's adaptive streaming and it keeps the content close to the end-user, as close to the end-user as possible



and it means that for live web broadcast, instead of the content providers worrying about how much capacity they need to dedicate on perhaps a resource constraint streaming network, they're using HTTP, they can take advantage of all the resources maybe built into their network in terms of proxies and that's going to resolve in the best possible viewing experience then for the consumer because depending on the kind of connection that they have, if they've got a high quality or high speed connection, they will see a very high bit rate of media coming through that will play back consistently across those kinds of like the last-mile connections speeds.

**Richard Campbell:** So how does one actually create -- how do you do this, that you have different speeds available? Do you actually code your file multiple times?

**David Lowe:** That's right. So you'd use the media encoder and in terms of getting started with smooth streaming. Again, if you go to the [iis.net](http://iis.net) website on [learn.iis.net](http://learn.iis.net), there's a whole bunch of information about how to set up IIS Live Smooth Streaming, how to deploy the files, how to configure the server and then of course there's also information on [www.microsoft.com/web](http://www.microsoft.com/web) about Silverlight and about how to actually create the Smooth Streaming video files, for example, using Microsoft Expression encoder.

**Richard Campbell:** Right, and just to clarify, there's Smooth Streaming which is you've got pre-encoded files in different formats so that it can vary the speed according to the bandwidth of the user, and then Live Smooth Streaming is literally built so that I can have an HD camera and you'll vary it on the fly?

**David Lowe:** Exactly right.

**Richard Campbell:** That's crazy.

**David Lowe:** I know.

**Richard Campbell:** How the hell do you do that?

**David Lowe:** I don't know. There's some kind of magic going on there. I just let them get on my bed.

**Richard Campbell:** That sounds like magic and of course the Live part is still in beta, right.

**David Lowe:** That's right but we've got Silverlight 3.0 coming up soon and you'll probably see a release candidate, if not a file version, of Live Smooth Streaming coming out in the same kind of timeframe as Silverlight 3.0.

**Richard Campbell:** And just to be very clear here, all of these Smooth Streaming technologies depend on Silverlight on the client end.

**David Lowe:** Yes. We do use Silverlight on the client end. I mean, the Smooth Streaming works with Silverlight but IIS Media Services, the great thing about it is that -- I mean, whereas we had a very powerful set of technologies in Windows Media Services that work with the Windows media, audio, and video file formats, IIS Media Services uses just standard old HTTP for any kind of media content regardless of what it is, and in fact you can even use things like Bit Rate Throttling to prevent your network from being saturated by people downloading very large files no matter what kind of files there are. They might be ISO files, they might large PDF, they could be PowerPoint, whatever it is, you could specify that. Your network doesn't get overloaded by people looking to download those large files. But in terms of media, that's where it really comes into its own because we know that when people tend to look at media on websites, they rarely watch the entire thing and it's a bit of a waste if you push the entire file down to the client as quickly as possible, and instead you want to be able to just keep ahead of what the client is trying to download so that they've got a good experience but you're providing just enough bandwidth to support that experience.

**Richard Campbell:** Yeah and it seems silly to hold the whole file down before they have to watch anything.

**David Lowe:** Exactly, exactly.

**Richard Campbell:** So besides R2, are there any other things we need to know coming up?

**David Lowe:** Actually yeah. One big thing that we just released just about two or three weeks ago maybe, is something called the Search Engine Optimization toolkit.

**Richard Campbell:** Oh yeah.

**David Lowe:** This is another IIS extension that helps web developers, hosters, to improve website relevance in search results, and it does this through a number of integrated modules which again appears in the IIS Manager Interface. The most important one is probably the Site Analysis module, there's also Robots Exclusion and Sitemaps and Site Indexes module, but the Site Analysis one is really, really powerful so you can basically point it at your website. In fact, you can point it at any website and you can see, for example, how well other websites are actually doing in terms of their Search Engine Optimization. So it will look at the content, look at the structure, look at the URLs, it will check to see if there



are common problems where you maybe not following best practices as a result negatively affect the visitor's experience or the search engine's experience. There are a number of pre-built reports that are built right in there. So it checks the compliance with the SEO recommendations. It will check for broken links, it will check to see if you have duplicate resources, are there other performance issues that potentially could be slowing down your website. It looks at things like making sure that you have canonical URLs, that you don't have multiple URLs pointing to the same resource.

**Richard Campbell:** Right.

**David Lowe:** So it's a very, very powerful feature existing in beta right now and we've got a lot of very positive reviews on that so far.

**Richard Campbell:** Excellent. David, thanks so much for coming on the show.

**David Lowe:** Thanks again, Richard. It's great to be here.

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