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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

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**Bhargav Shukla Deploys Exchange 2010!**  
**December 2, 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 #137, with guest Bhargav Shukla, recorded Monday, November 30, 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. You're listening to RunAs Radio. With me as always, my co-host, Greg Hughes.

**Greg Hughes:** Hey, Richard. Hey, everybody.

**Richard Campbell:** And a happy Thanksgiving to you, my friend.

**Greg Hughes:** Likewise. Well, yours was a month earlier but yup, I'm just getting over the turkey coma.

**Richard Campbell:** Yeah.

**Greg Hughes:** It was good.

**Richard Campbell:** Us Canadians do our Thanksgivings in October so we're already done for a while.

**Greg Hughes:** I have no idea how or why that works the way it works but it does.

**Richard Campbell:** I'm sure it's complicated. On the upside, I get to go down and visit with the American family in November and get another turkey.

**Greg Hughes:** So you basically get to stretch your stomach the first time around and then you get to like really dive in.

**Richard Campbell:** It's all about the practice, my friend. All about the practice.

**Greg Hughes:** Right. Well, you know, when you come to America, it's all about the excess.

**Richard Campbell:** Yes.

**Greg Hughes:** So yeah.

**Richard Campbell:** All right, let's get right to our guest.

**Greg Hughes:** All right.

**Richard Campbell:** Bhargav Shukla is a Premier Field Engineer for Microsoft, our favorite people.

Fascinated by computers, he's education as a civil engineer but his passion is in IT and made him focus on what he does today. He has had 14 years of experience working on a multitude of technologies including messaging, directory services, information security, virtualization and more. As he progressed through his career, he earned industry's certifications, Microsoft, VMWare, RSA and Citrix, and when he's not working with enterprise clients in his PFE role, he contributes to the TechNet forums and blogs about Exchange at [www.bhargavs.com](http://www.bhargavs.com). Welcome, Bhargav.

**Bhargav Shukla:** Thank you to you guys.

**Richard Campbell:** So PFE folks are my favorite folks in the world. It feels like you guys do real work. How is the acceptance level of Exchange 2010?

**Bhargav Shukla:** I'd say there's a lot of buzz about Exchange 2010, especially in the circles, where they are in Exchange 2003 and they were either planning to go to 2007 sometime in the very near future or in the process of migrating to 2007 especially as everybody can guess 2010 is new, it's out, and yeah, should we really go to 2010 or not. The acceptance level, again to answer the question, is I do see quite a bit of enterprise clients seriously thinking about implementing and deploying 2010 in their environment either that be a migration from 2007 or skipping from 2003 directly to 2010.

**Richard Campbell:** Well, and you're totally speaking to me because I'm running a 2003 Exchange Server myself and then have been contemplating moving to 2007 for a while really going virtualized on the whole thing, and now with 2010 coming out I'm thinking I might as well just jump right to that one, and just to lay it on the table, is that a painful thing? Do I have to go through 2007 to get to 2010?

**Bhargav Shukla:** No, no, absolutely not. So if you're on 2003 and you never made a leap to 2007, well, make a bigger leap now to 2010 and we'll basically discuss reasons for that, but you know, one obvious reason is the new product is supported for a longer period than the previous and obviously at some point in the lifetime of 2007 you will end up operating 2010 anyway. So to save the time, save the effort, go to 2010. It definitely has its benefits, new features that you would benefit from and the support so you will have longer time to think about the newer version when it comes out and you want to preview it and to go it.

**Greg Hughes:** So before we talk about maybe an upgrade and whether we're going from 2003 or 2007, what are your top three reasons why I should care about 2010 at all? What is it about Exchange 2010 that makes using it -- even if it's a brand new deployment, what is it that makes it so great?



**Bhargav Shukla:** Okay. Well, if you break it down, administration, high availability, storage, and remote access. So you ask for three, I'll give you four.

**Greg Hughes:** Fair enough.

**Bhargav Shukla:** You know, there are a lot of differences in 2010 even from 2007. If you talk storage, the storage is completely redesigned the way Exchange writes to the disk, the way Exchange handles the I/O, and the amount of hardware required. The bottom line for most of the action environment, especially as mentioned you are on 2003 if you think about that. The I/O was one of the biggest concern whenever anyone designed Exchange environment. In 2010, the I/O like I said in the storage is redesigned. It's done differently, and because of that the I/O demand on your disk subsystem is from 2003 it's around 90% less and from 2007 it's around 70% less.

**Richard Campbell:** How is that even possible? That's a tremendous decrease in disk traffic.

**Bhargav Shukla:** So if you think about the I/O in the previous versions in 2007 and 2003, the I/O was random, and in 2010 it's designed to be written in one large serial I/O. So when Exchange writes to the disk, it basically call as is the pages in memory and then writes one larger serial I/O on the disk instead of doing a couple of shorter bursts to the disk for pages as they come in.

**Richard Campbell:** So then the trade-off for serial transactioning like that makes me worry that there's concern around transactional integrity -- that we're not keeping up with the rate of mail coming into the Exchange Server.

**Bhargav Shukla:** Well, so you have to remember the different levels where Exchange is accepting mails. So your mail is coming in from Hub, and if you're really worried about the mailbox server which is really doing the I/O to the disk, the architecture is 64-bit now so you're going to scale your server according to your number of mailboxes you're going to have, according to the profiles you're going to have, if it is smaller mailboxes, larger mailboxes, and how much I/O you're users are doing, whether you have the heavy profile users who are really hitting the server hard and based on that, especially since it's 64-bit, you would have less of the resource issue if the server is sized properly.

**Richard Campbell:** It's much more common now, I guess this is really a scaling thing. I've only ever dealt with Exchange Server as a standalone box, but when you get into bigger systems, it's many servers. You've got front-in servers and mailbox stores and so forth. Can you give us a feel for this, the numbers

that are involved here, how many mailboxes before it start distributing and rate of traffic, what is it that you've encountered there?

**Bhargav Shukla:** Well, so for the majority of my work, it goes to the enterprise space and obviously there we see the deployments that are tiered so you have the mailbox servers and when we're talking Exchange 2010, and even folks who are on 2007, we recommend some of these terminologies which is you had the mailbox servers then you have your hub transport servers which in 2003 you can relate it to the bridgehead servers which is basically handling your mail flow. Then you have the client access servers which you can relate to OWA in 2003 which is serving the clients. So the number of machines that you need, it depends a lot on how you're going to plan your environment whether it's consolidated datacenters or two datacenters across different locations serving the entire community whether it's location-based or location less which is sales force and the mobile users. Then some companies choose to deploy, especially going to 2007 or 2010, they prefer the consolidated scene there because it helps a lot when you think about high availability, site resiliency, even in the DR scenarios, and the number of uses that the Exchange Server can host is also dependent on your configuration but it can scale pretty good.

**Greg Hughes:** I'd like to do a little sidebar. You just mentioned location less workers and I know that I've had to deal with that type of, you can either think of it as a problem or as an opportunity really, but I think that it would be interesting to hear what you have to say about Exchange and what it can do. What I hear you saying is there's some different topology or different architecture you might do depending on whether what is on one location of if you have a widely distributed workforce. What do you think about when you think about location less type of users?

**Bhargav Shukla:** So what I meant was that regardless of you have all users mobile or some users mobile or a major concentration of users in one place, you can go on one way or the other, you can go consolidated models with most of your servers hosted in a datacenter and then the second datacenter providing you the resiliency.

**Greg Hughes:** Right.

**Bhargav Shukla:** So it's not necessarily whether the users are mobile or not. However, the Exchange 2010 does provide benefits for the mobile workforce. So if you have say a company that is more or less the location less workers, a lot of sales force people or a lot of people are out in the field, not necessarily going to the offices, and then the change is like the benefits of new Outlook Web Access which is fully featured client access using Windows Mobile phones and



there are changes like the SMS sync instant messaging integration, it provides you feature improvements that help boost the productivity of the mobile workers.

**Greg Hughes:** Have there been changes in the 2010 version related to Unified Messaging?

**Bhargav Shukla:** Yes, there are. So 2010 does have changes in Unified Messaging. One of the biggest change I would say is when you receive a voicemail, if you have experience with that in the previous versions, you would just receive an attachment and you will listen to it.

**Greg Hughes:** Right.

**Bhargav Shukla:** Well, in 2010, what they had done is you would receive the voice mail, but it would also be transcribed. So when you receive it you will have an attachment but the body of the message, the email, will contain the text that is transcribed from your voice mail so you could just read even without downloading the attachment especially if you think about mobile workers, I'm on the road, I don't have the bandwidth or the connection and that's required to download the message but I got the message already, it has the text, I can just read it and see what the message is about.

**Richard Campbell:** That's amazing. What does the speech to text translation?

**Bhargav Shukla:** Yeah, the speech to text translation is with the new Unified Messaging in 2010. We have seen about 73% accuracy.

**Richard Campbell:** So it's enough to get a feel for the message at least.

**Bhargav Shukla:** Right. So I mean I have been on that for quite a while now and for most of my messages it has been transcribing successfully, and I said most of it because obviously you have to account for noise in the line, you have to account for the quality of the voice...

**Greg Hughes:** Sure.

**Bhargav Shukla:** You have to account for different languages to make sense. Given that, 73% accuracy is pretty good.

**Richard Campbell:** I also find when you're talking technology, I mean how many of your voicemails are conversations about some specific technology and full of acronyms and most of those kinds of conversion tools really struggle there.

**Bhargav Shukla:** Right, I agree.

**Greg Hughes:** I know my phone service provider provides voice mail transcriptions automated like that and it's really useful, but I'll tell you every now and then you get an email with the transcription in it and your eyes just get really big and you try to wonder what just happen. But when it works, it works really well.

**Bhargav Shukla:** Right and like I said, for the most part it works really well and then from time to time you will get some transcription that it would just not understand and when you're reading it you would be like looking at what is this text and if it even make sense in a sentence.

**Greg Hughes:** So I've dragged us off-track a little bit. Sorry about that. Maybe we should jump back into what does it mean to migrate in the details and the trenches from 2003 and from 2007 to Exchange 2010.

**Richard Campbell:** So Bhargav, anything different going from 2003 or going from 2007?

**Bhargav Shukla:** So yes in 2003, and the reason you see slower redemption rate of 2007 is because from 2003 to 2007 there was a big difference. One big difference was you are going from 32-bit to 64-bit.

**Richard Campbell:** Right.

**Bhargav Shukla:** So architecture was different and your roles were introduced and then all made it slower, not necessarily difficult if you knew what you were doing, but slower because you had to learn all that changes. You have to go from that to the newer version, you had to acquire new hardware, you had to configure the roles inside the hardware and then implement it and that made is slower overall as an adaption of 2007. Now, in 2010 going from 2007, the roles are pretty much the same but the balance is different. For example, if you were in 2007, you require x amount of guest servers or mailbox server -- sorry, I should say a cache server for x amount of mailbox servers.

**Richard Campbell:** Right.

**Bhargav Shukla:** In 2010, it's a little bit different. Now the cache servers, the client access servers do more work. All your client traffic is hitting the client access servers, and then client access servers talk to the mailbox servers as necessary to bring your mails to the client and what-not. So there's a little bit of difference there in the balance of how the servers are -- how many servers do you need for a given role, but besides that, 2007 to 2010 your roles remain the same. There is a client access server role, there is a hub server role, there's a mailbox server role, there's edge transport role, and if you're a unified messaging shop there is a unified messaging role. But from 2003, whether you're going to 2007 or to 2010, the



roles do not change, the roles are the same. Like I said balance changes. How many servers you need, how many mailbox servers you need, how much storage you need for your users, how many client access servers you will need is different. Now, obviously the features are quite a bit different. Exchange 2010 deploys new features, advantages of those features as you have, and there are some changes on how applications will access your mailbox. For example, if you talk about BlackBerry, BlackBerry always, since 2003, even in 2003, 2007, it accessed the mailboxes directly by connecting to the mailbox server. In 2010, the RPC service is now on client access server. So your application would make a connection using the Exchange Web Services, not using the map you would connect to your client access server, and then the client access server will then talk to mailbox server.

**Richard Campbell:** Are you running a separate BlackBerry interface there or is it just built into Exchange now?

**Bhargav Shukla:** So the BlackBerry versions that are out there currently are not compatible with 2010. They are planning to release the Exchange 2010 version, as per the announcement 30 days from launch.

**Richard Campbell:** Right.

**Bhargav Shukla:** It should be someday soon.

**Richard Campbell:** But there is a way for BlackBerry to get into Exchange without that additional software.

**Bhargav Shukla:** In 2010, no, I'm afraid not. If you were going to make a jump to 2010 without waiting for that new version of BlackBerry server software to come out, you'll not be able to connect to your mailboxes on Exchange 2010.

**Richard Campbell:** Yeah. Okay, that's an important thing to know. People love their BlackBerries.

**Bhargav Shukla:** Correct and that's a very important thing to know. There are places that I'm aware of, they had made a leap to Exchange 2010 and the community that suffers the most is the community that is running BlackBerries and most of them just think about it, your executive is CEOs, CIOs.

**Greg Hughes:** Right.

**Bhargav Shukla:** The most important people, well, they are the ones who are not reaping the benefit of going to 2010 right now even though if you think about it they are the ones who gave you all the resources you need to go there.

**Greg Hughes:** That's one of your critical due diligence things. Everybody is, you know. Make sure if you got anything that's touching Exchange that it will work when you make the change.

**Bhargav Shukla:** It definitely is and to that point, like you said, everything that touches Exchange you have to remember your custom applications, you have to remember your business logic, you have to remember any application that you have designed to either work with SMTP just to send email or the applications like SharePoint where you have your own portal and you have custom logic that's connecting to users' mailbox so when they go to the portal, it shows then the appointments for example. Well, when you go there make sure that your code is compliant with the Exchange web services and it's connecting to correct servers to make the calls get to respond and be able to function properly.

**Greg Hughes:** Right.

**Richard Campbell:** All right, we've talked about migrating from 2007, how different is the situation with 2003? Is that the same pain that 2003 folks had going in 2007?

**Bhargav Shukla:** Yes, the answer is yes in short because you have to go either to 2007 or 2010, you will be going off of your 32-bit hardware. You would be investing into the new hardware or leapfrogging. If your hardware is recent enough to host the 64-bit operating system and the software for Exchange which is also 64-bit, you will be leapfrogging. So one way or the other, you will basically be going to new set of servers either it's the new set of hardware or the leapfrog method going to the new.

**Richard Campbell:** Right.

**Bhargav Shukla:** But yes, you will be going through the same process as if you were going to 2007. You would basically implement the client access role, hub transport role and then the mailbox server, you will migrate your users off to 2010.

**Greg Hughes:** Is there anything about going directly to 2010? If I'm an Exchange 2003 user now, other than feature functionality, is there anything about Exchange 2010 from a migration standpoint that makes it easier at all?

**Bhargav Shukla:** So from the process perspective, it is pretty much the same. I would say when you're going to 2007 or 2010, the process is pretty much the same. You have to implement the new world, you have to start cutting off your previous version of software. So if we take the step one of client access server role, then it is your web access. You have to switch your web access to your client access role, then you take the next step of hub



transport and mail flow, switch mail flow, and the process again like I said is pretty much the same.

**Greg Hughes:** You know, another question that comes up that I hear periodically is how do I get off this note server, IBM Lotus notes type of email and collaboration system, and move over to Exchange? Is there anything in 2010 to assist with that that's different than what I might do in 2007 or otherwise? It might even be worthwhile, regardless of what the answer is, to sort of talk briefly about what is the process of leaving from a notes type system over to Exchange?

**Bhargav Shukla:** So if you're talking Exchange 2010, no, Exchange 2010 does not have a way like the previous versions to go directly from notes to Exchange 2010.

**Greg Hughes:** Okay.

**Bhargav Shukla:** So basically, you will have to either rely on the partners, solutions, which will allow you to jump, leap directly from notes to 2010 or you use previous version, go from notes to the previous version and then migrate the previous version to 2010.

**Greg Hughes:** Oh, okay.

**Richard Campbell:** Bhargav, would I ever end up with a logical reason to be in a hybrid situation where maybe I just move my cache servers over to 2010 and leave the mailbox store back at 2003 or 2007?

**Bhargav Shukla:** Well, so there's version compatibility you have to keep in mind. If your mailbox server is 2010, or if you plan to have your users on Exchange rate and mailbox server, you have to have Exchange 2010 hub transport servers in the set of client access servers. You could have the hybrid environment where you have some users in 2010, some users in 2007, and some users in 2003 but the version dependency is still there so you have to have a set of all servers, so you have to have the client access role, hub transport role, and mailbox server role installed. Now, it doesn't mean you have to have three different servers depending on your environment. You could end up having one server running on the roles which is possible.

**Richard Campbell:** Right.

**Bhargav Shukla:** And then you can run the client access hub transport and mailbox on the same role, but the version routing, for example, if you have 2007 server on the mailbox to users and 2010 server for hosting some mailbox users, the mailbox server talks to hub transport server but the 2007 hub transport cannot deliver mail directly to 2010 mailbox and the same the other way around.

**Richard Campbell:** Well, and as you said the progression is client access, then hub transport, then mailbox.

**Bhargav Shukla:** That's correct.

**Richard Campbell:** So to me it sounds like I could run client access in 2010 and leave the others in 2007 and it would work. It doesn't make a lot of sense, but it does work.

**Bhargav Shukla:** So your question is whether if you have the 2010 client access, would it be able to connect to 2007 mailbox servers?

**Richard Campbell:** Right, yeah.

**Bhargav Shukla:** Yes.

**Richard Campbell:** And that should just work fine. What you can do is put a 2010 mailbox server up and expect the 2007 hub transports to work properly with it.

**Greg Hughes:** Right.

**Bhargav Shukla:** No, no. It just won't work. So you have to have the correct -- if you implement a mailbox server running Exchange 2010 and you don't have a hub transfer server with Exchange 2010 running, it just won't be able to send or receive emails.

**Richard Campbell:** Yeah and people might notice that.

**Greg Hughes:** No big deal.

**Richard Campbell:** One of the big jumps for 2010 that people are really waxing poetic about is the latest version of Outlook Web Access, although apparently we're not allowed to call it that anymore, right?.

**Bhargav Shukla:** It's Outlook Web App now.

**Richard Campbell:** Okay.

**Bhargav Shukla:** It's still OWA, it's still OWA.

**Richard Campbell:** Yeah, still OWA. They just changed the words in the acronym.

**Bhargav Shukla:** Yeah and you might have noticed with Office 2010, there is the web app which is basically if you have a document stored on your SharePoint for example, you just click on the document and that's going to open right in your Internet Explorer. You don't need to have Word or Excel installed on your machines.

**Greg Hughes:** Right.



**Bhargav Shukla:** So I guess going with that in line with Outlook Web App.

**Greg Hughes:** The idea that it is an entire application, it's web-based as opposed to a fat client that gets called. That kind of makes sense.

**Bhargav Shukla:** Correct and actually if you think about it, the Outlook Web App, an Outlook Web Access, it has come a long way from previously being able to just access your mail online. Now, it is pretty much a full-featured Outlook client if you think about what it can do now with the newer versions.

**Greg Hughes:** Sure.

**Bhargav Shukla:** Even in 2007, you may have noticed that difference and then it credit down it's definitely quite a bit of difference, multiple browsers support, single page messages, and conversations via, say if you're on an email chain, you don't have to go find your previous thread to do the reference, it's all in the conversation and that's all web-based so you don't even have to have your Outlook 2010 to see the conversation here.

**Richard Campbell:** Well, Bhargav, anything we've missed in the whole deployment of 2010 here?

**Bhargav Shukla:** So in terms of certain role or rethinking about the way it works now, there are quite a few things that we have to keep in mind obviously so I'm not sure what you're referring to but if you think about permissions, for example, there is a new role-based to access model now in Exchange 2010.

**Richard Campbell:** Right.

**Bhargav Shukla:** So when you're assigning permissions, for example, in 2007 or 2003, you will give the permissions based on delegations and Active Directory permissions. In 2010, now it's role-based access control. So what you're doing is you're creating the roles and you can go granular as much as you want. You can go to the point where you can mention a user, you can edit their for example office phone number because that changes. If you remember, in the previous versions it was very difficult to do that because basically that's not a change, that's Active Directory.

**Richard Campbell:** Right.

**Bhargav Shukla:** And you have to go in Active Directory, you have to give users permission in Active Directory. With ARBAC, you don't have to. With role-based access control, you're creating the roles and designing precisely what a group of users be able to do, whether it's users, whether it's help desk staff, whether it's second and third level Exchange administrators who are troubleshooting at a certain level in Exchange and then do have access to certain

features, because how it works now is that the ARBAC decides what you can do as a user when he logs on to your management console or using the Shell and then it actually does the work on your behalf. So once you have ability to execute certain commands, it will execute it for you.

**Richard Campbell:** Now, just to be clear here, in the phone number scenario you just described, in 2010 we're still storing that phone number in Active Directory but ARBAC is providing the front-end to doing that Active Directory update?

**Bhargav Shukla:** That is correct. So the information is still stored in Active Directory. That's not changed, none of that has changed. What has changed though is how you go about assigning permissions and how you're able to manage that from backend so Exchange can make the updates to Active Directory.

**Richard Campbell:** Okay. So the big thing from my perspective then is that Exchange is taking responsibility for the interface to Active Directory.

**Bhargav Shukla:** Correct.

**Richard Campbell:** Okay, and that's a pretty compelling point because it's always been a struggle going back and forth with the Active Directory.

**Bhargav Shukla:** Right and when you're talking about struggle, we briefly talked about the mobile work for us. Well, it's not always necessary that your administrators are in the office where the action servers are either. So there is another benefit in 2010 and that is using Exchange control panel. So if you log on to Outlook Web Access, Outlook Web App I should say, you will notice a difference when you go to options. You will be able to manage yourself, and if you have proper permissions you will be able to manage your organization, not necessarily everything you can do using the Shell but a lot of that you will be able to do using the Exchange control panel over the web.

**Richard Campbell:** That's pretty cool. So that's why they call it Outlook Web App.

**Bhargav Shukla:** Correct.

**Richard Campbell:** It's not just about managing your mail anymore.

**Bhargav Shukla:** Right and that's why as we've discussed earlier, it's not necessarily accessing your mail anymore using the Outlook Web App, now you're doing quite a few things.

**Richard Campbell:** Well, Bhargav, I think we're about out of time. Any final words, places people



should look if they want to get more involved with 2010?

**Bhargav Shukla:** Yes. I would highly recommend you go to TechNet, in the TechNet Tech Center for Action 2010, it's redesigned, it has lots and lots of information there. I always recommend also that you check out the TechNet webcast. There are quite a few webcasts, MS Exchange Team blog which has wealth of information, and the help for Exchange 2010 which is also there. It's a work in progress as always and it always is updated with the latest information as it comes along. So if you're planning to go to 2010 or if you just want to learn about 2010, what's new, how to go from 2003 to 2010 or how to go from 2007 to 2010, what to watch out for, what are the gadgets, what are the new functions that they think they could break or enhance what you're trying to do, how it can make your business recovery better. It's all out there. TechNet is, you know, any time I have to refer something, I always go there before going anywhere else.

**Greg Hughes:** Very cool.

**Richard Campbell:** Bhargav Shukla, thanks so much for coming on the show.

**Bhargav Shukla:** Thank you, guys. It's a pleasure.

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