Speaker:

There's some talk about, especially about becoming a computer science department, do we need a second data center and if so would we have it in that building or would we move it to the cloud or would we try to go back to our current data center. So that's kind of what I'm looking for, interested in, in this conversation.

Bill:

So there's an interest coming from, coming from, how high up in the command structure Speaker is it coming from?

Speaker:

Alright like I work for the CIO's office and we're taking a look at, it's not only the information that we have and the stake that we have in planning this building, so the facilities that we have available, you know in terms of backup, back up for the data centers, space, equipment, and so forth. They had asked you know is it something that we want to look into taking this part onto the cloud, so we're in the beginning processes of looking at that.

Gary:

Hey Speaker this is Speaker, is that, is there gonna be a, I think there was expectations a while back, is that going be a disaster recovery site purely or uh what's the purpose of it? Is it just a renovation, is it, is the purpose to reduce cost, is it to change how you operate, or is it strictly a disaster recovery and business continuity need that you're after here?

Speaker: Actually it'

A brand new building; it's a cyber security building they're talking about building here.

Gary: Uh-huh.

Speaker:

They're having new concepts and concept drawings and I'm not really far enough along to be able to answer that for you. There's an issue facility wise in trying to get backup generators there and so forth. Is it more viable to take something to the cloud because that's not the information that actually runs the mission of the Naval Academy. It's more data research type of information that's going to be handled in that center.

Gary:

Right.

Bill:

Gary, and Speaker, one of the interesting things Speaker, that Gary and I were kind of laughing about this yesterday fine tuning Gary's presentation is that what he's going to comment to is also in looking at this, when do we actually look for a glorified hosting data center versus what does it truly mean to be a cloud data center, and how do we separate the marketing pitch from the true reality, which I have been commenting on for a year. I think it's really great Gary is kind of stepping up with this cuz Gary is a true medium business with medium business needs. We're not talking about Cocoa-Cola intending to go through this with all their resources this was a very practical, strong, medium healthy business that's just looking at this from the ground up. For the sake of time, having captured some of Speaker's objectives, is there anybody else that wants to throw something else in there so Gary and I can kind of make sure that by the end we've kind of wrapped this up for you all since we've got 55 minutes or so to work with.

Speaker:

Hey Bill this is Speaker, came in a little late sorry about that

Bill:

Hey Speaker how you doing?

Speaker:

Good, I missed probably your beginning, but is what Gary did also do desktops in the cloud also, like the whole kit and caboodle, or is it just backend in the cloud?

Bill:

Hey Gary, I'm gonna let Gary talk to that, but what Gary is talking about is both his core infrastructure for, he supports about 40,000 or so customers, their business does, and then their core infrastructure for his employees, their core infrastructure for their customers , and then also their DR needs as well, but Gary, I don't think you went into the desktop, deploying desktops from the cloud did you, of the assessment analysis that we went through?

Gary:

No Speaker, but a lot of the principles actually apply, of the assessment analysis that we went through, so I think you can take some away from that. We have done that, the presentation doesn't address VBI or desktop virtualization, but we've gone through that exercise, so I'd love to take some time and you know follow up with you in a con-call and kind of go through the pains that I went through in that assessment as well.

Speaker:

Great that would be great thank you.

Gary:

Ok.

Bill:

Hey Gary why don't you just jump into this then and you can kinda just run the presentation, and I'm assuming everybody has both the audio link, or you wouldn't be on, or is everybody also into the WebEx too that's what we're gonna start with now, so Gary do you want me to click on the first slide?

Gary:

Yeah, Bill do you have that in presentation mode?

Bill:

I can get it in presentation mode really quick. How's that?

Gary:

That's much better. Awesome, thank you!

Gary:

Everyone thank you very much for allowing me to share some of my experiences with you. Thanks Bill, I hope some of you remember me from some of the past CIO roundtable sessions, again very much appreciate it. It's all about sharing data, this is not really an educational session on what cloud computing is, etc. although we touch on it a little bit in one slide it goes through our background, what our systems on the enterprise were all about a few years ago, what we did with those systems and where we were when we did the cloud analysis, and how that analysis turned out, and what decisions we made based on that analysis. I'm gonna talk a little bit about our longstanding relationships with vendors that have play in this. I even did a spreadsheet of all the components that I went through and then at the end I give you a little bit of a peak into the dolphins that we discovered on costs, existing contracts, things of that nature, so I hope everybody walks away with a lot of data here and I'd be happy to forward this presentation, I think Bill will do it, and there's some templates of excel spreadsheets that you can use in analyzing what the end game will look like for you. And I hope this helps. Bill made sure I mention that we are in the roundtable mode so this is interactive. Please interject, ask questions as we go through, and let's have a discussion through this.

Gary:

        You see the agenda up in front of you. What I've done here in the first bullet is just kinda in a splot or two at a high level describe where we've been back a decade or so ago, and where we are now as far as computing needs, cloud, mobility, consumer driven access, bit data, the need to save operational expenses, as well as CAPX, that's what that first agenda item is all about. The second bullet point, the promise of the cloud and the pitch, I selected four major things that I consider what the promise of the cloud and the vision of the cloud evangelists around the cloud service providers out there are. It also encompasses what the sales pitch will be when you guys start getting a little deeper into the migration of your enterprise into "the cloud space", and I hope that gives you a little insight there. The third bullet again is to get you a little bit on insight where we were, what we're all about, how we got to the point where we did the analysis and what the outcomes were as I stated. The next one is your domain, the cloud domain, consider your new domains. This is all about homework before the work. There was an extreme level of research, study, and understanding of what the implications of the cloud were prior to us even considering any cloud service provider for a quote, or any analysis of our current systems versus going into the cloud, so it doesn't just start off, for us anyways, where we jumped into the analysis. We did a lot of legwork ahead of time. The next item is the change and shift in paradigm. You know what is the promise, what does it mean to IT folks, what does it mean to CIOs and their lieutenants, what does it mean to your current staff, what's going on with it budgets these days, etc. a very important piece. Finally the analysis, I have a spreadsheet that I'm going to share with you and I just listed a bunch of stuff that we analyzed both again from our existing systems and what we were looking for from the cloud and I hope that gives you a lot of insight. Then hopefully we can have a brief session of discussion and we can go from there.

Gary:

        Ok so where we were. We've all been doing this quite a while. Just eleven years ago we know that there was slow broadband; Wi-Fi, if you could find it, it was something special to have; we didn't have any iPhones; we didn't have any smart phone that do what the new smart phones do; no tablets and no 4G networks that the mobile telecom carriers provided. That third bullet is a major point in the progression of the need for cloud computing by the way. We didn't have the massive influx of social networking whether it's Twitter, Facebook or LinkedIn. Our PCs at the time that XP was released, I had half a dozen programs on my PC, no more. Now I have a plethora and a whole suite of products I use for various tasks and productivity tools that I need. The Cloud in quotes, there I talk about it being part of a network diagram. Here's my systems, here's my database systems, here's my web systems, here's my application systems and you have that lightning bolt go out into the internet. It was just the internet there was nothing about cloud computing.

Gary:

        Where we've Come, now we're dealing with video, we're dealing with photos, we're dealing with rich media, we're dealing with the need for open source to reduce costs, we're dealing with a heavy mobile workforce, BYOD is a major aspect of our lives. Big data has become a major part of our

lives. If you can see Bill's mouse there, it's sitting on what I call the shadow, what's happened in the IT world lately is shadow IT groups. I was in a forum recently of a lot of pharmaceutical companies, and it would blow your mind how many shadow IT groups are in these organizations because IT is not able to provide them with the services they need at the costs that they need at the time in which they need it. That shadow piece down there at the bottom is a big pet peeve of mine not only because it disrupts my teams operations but it also disperses our existence in the cloud when it occurs. It forces my team to chase data, and to chase zeros and ones across various providers. It's a big problem for IT forces out there. You know based on YouTube, based on Facebook, based on mobility, Cisco has some stats out there that talk about the internet doubling in size every 5 and a half years, they talk about 50 billion devices connected on the internet by 2020, they talk about 2015 the amount of contacts traversing the internet annually will be 550,000 times the amount travelled in 2003, a million video minutes will traverse the internet every second by 2015. These are staggering numbers along with Facebook, YouTube, big data, LinkedIn, Netflix, things of that nature. That is the driving force of why cloud computing has become important, and I think it's important that we are here and talking with each other on the driving forces and what's coming and how we reduce cost and making the right choices on going into the cloud.

Gary:

The promise and the pitch that I talked about earlier, when I first heard about cloud these four items were very much at the forefront of what the cloud had to offer. You know the cloud promised, and by the way every sales guy that comes into your office is going to talk about each four of these things and give you statistics that, their gonna make you look like the superstar, a hero, or a rock star; of course the economics of transferring your capital expenditures into operational expenditures and reducing your initial outlay of those capital expenditures to accomplish a project. You know it all depends on if CAPX and OPX is where you want to be. I want to be sure that as we go through the rest of the slides these four items stay in your forefront and you keep thinking about it in your own space and will the cloud that we're thinking about offer these four returns on your investment. The flexibility to scale up/down rapidly based on needs, you know does it take you a week to deploy a couple of web servers, how long does it take you to deploy a SQL box, do you need to get licensing first, do you have contending projects, etc. that's what that item addresses. The breakdown in technology/asset barriers is another promise, you know they talk about shared environments obviously, memory, CPU, and storage really are bundled in an offering and I kind of want to talk about if this is true or not. Does memory and CPU not matter when I'm in a cloud environment, am I gonna pay more. If I had a capital expenditure for say a pizza box from whatever vendor, you know I add more memory I add more CPU I pay more for hardware. I add more CPU I pay for more licensing on the DB side, but when I go to the cloud does all that go away. That's something to keep in mind as well and then there's the focus. You know they'll pitch to you and everyone of these that's in quotes folks, some of them will become your reality and some of them will remain in quotes because it won't make sense in your environment. Can I take 80% of the time that my IT team spends on maintenance, on hardware, on the infrastructure and transfer that into internal projects, customer facing projects. Big question for me, that item is also in quotes. These are the things that I want to focus in on as we're going through the rest of the slides and then we'll

come back, circle back, and I hope to open up the discussion and go through these items and see if there's a fit for you guys.

Gary:

Bill to the next slide. I want to tell you a little bit about MRIS and the thinking we're coming from. MRIS is a multiple listing system that serves real estate brokers, agents and appraisers in this entire region: Northern Virginia, West Virginia, Maryland, District of Columbia, Pennsylvania. We've got about 45,000 customers in our core operation and our core operation happens to be the facilitation of the real estate transaction. We do about $100,000,000 in residential real estate transactions on a daily basis. Uptime and availability are very important to us. We are, in essence, the stock market for real estate in this area. We have a second hat that we wear we happen to be the largest MLS in the country. Our core products facilitate the transactions in this region. There are other MLSes around the country and the trend in the last 5 to 10 years have wanted to consolidate and aggregate their data so that one agent could belong to one MLS and see the listings in another MLS without having to pay two dues. Perfect example is the LA basin. There are overlapping MLSes with listings in each other's regions. We don't have the problem here. We call that the overlapping market disorder. We have an engine room that aggregates master data for them so in essence we are a big data shop. Not only are we the stock market for this area we offer services to other MLSes.

Gary:

Enough patting ourselves on the back, that's what we do. Support for the cloud at MRIS, when we started the analysis it was very, very important to make sure we had C level support: CIO, CFO as well as CEO. It's very important that the board understands what's happening if you have a board or its equivalent. It's very important for the board to understand that you are about to embark on an effort of analysis and understanding of what the cloud domains are and then as a second step the analysis, that's gonna take some time and possibly some money. Not an exorbitant amount, but it will take resources from you. It will take your resources as a CTO, CIO or a lieutenant CIO or director and it's gonna take some of your top notch guys who understand the technology that your environment has currently deployed. It's not something done overnight. I will tell you that my assessment took from June till about September. In order to do an in-depth analysis of what you're trying to accomplish you need to take the time to cross the t's and dot the i's. You also need an evangelist. In MRIS' case that evangelist is me. You'll hear about the outcome of our assessment and where we are. Whether it was go or no go I am still the evangelist of the cloud solution. I believe in the future and in the vision, but I had to assess whether it was the right time or not, what the benefits were versus the cons, and you're gonna have to do the same thing once you embark in this.

Gary:

Systems considered for the migration, I told you that at the heart and soul of this we are all about facilitating the real estate transaction. We do a lot of other things. We have email, we have website offerings, we have productivity tools, we have premium products. None of that was in scope for the cloud migration. The cloud migration scope was all about the core enterprise systems. That's

database systems; the network required to run them, so the database layer, the application layer and then the web layer; the networking/security components around it, the bandwidth required to operate, and have confidentiality, integrity and availability of those systems, in the same manner and the same SLAs as the systems on our own premises. They were Oracle, they were Linux, it was Cisco systems, and it was a heck of a lot of bandwidth that we had to consider. Web Logic was in play, and some Microsoft systems were also in play.

Gary:

I think it's very important that final bullet, that I tell you the history of the systems that were in consideration for the migration. It's also important for you to understand my present and past vendor relations, floor space, etc. 4 years ago we decided that our systems at the core needed a migration. They were running heavy duty IBM metal and cost us a lot of money both operationally and as capital expenditures. We did a massive migration to Intel, more affordable storage, we kept the network components the same, we were able to reduce costs 26% and increase performance by 20% by doing that migration. So 4 years ago the migration occurred. When the analysis occurred, we were at that point where we were 26% ahead on cost and 20% increase on performance. That's a brief history; let's move on to the next phase of our assessment.

Gary:

In the agenda I talked about the homework required to start the work. The cloud security alliance folks, has a great paper on considerations for cloud computing. They go through cloud architecture, governance in the cloud, and then operations in the cloud. This is a comprehensive of a lot of smart people in the industry that covers about 14 domains in cloud computing. Everything from enterprise risk management, electronic discovery, audit management, compliance, things of that nature. It lays out what you need to consider in security, business continuity and DR. We had to do a lot of homework and understand these domains and what the cloud is all about from a technologist's standpoint and not just a consumer like us who would consume the services of the cloud providers had to offer.

Gary:

In studying the security alliance domains of cloud computing we had to always keep in mind that as we were going through the 14 domains and developing our analysis of the cloud service providers, we always had to make sure that each domain compared what we were doing now to what we would do in the cloud. All those questions had to asked; open source was one of them, proof of concepts were one of them performance, etc. A very important aspect of this once you do the homework that allows you to start the work. You see I wrote there all three sections below covered by our doc. You have to put a request for a proposal out that covers every aspect of what you're looking for in a proof of concept. You can't have one without the other. We had everything from high ops that are storage level to bandwidth requirements, the latency of the application and latency on the internet. It's very important to do that. Our document was about 47 pages, and I will tell you that going through the analysis that document that you provide the cost service providers will give you an opportunity to assess

their skill sets, their capabilities and their knowledge level. You'll sense that they're asking questions on things that should be very clear to folks that are in this business and as you go through the weeks, week 2, week 3, week 4, and you have to reiterate what that document says, you're gonna find that you'll easily be able to scratch off cloud service providers from your list based on their inability to understand what you've actually stated in technical terms, and they are in the business of understanding that. This paper we wrote was our bible and went a long way in making sure that we got the answers we wanted and we had no surprises going through our assessment.

Gary:

Any questions on that slide? Ok. This is one of the ones that I really enjoy talking about, just in conversation even, is the change in paradigm associated with cloud computing and the slides, the busy slides where I had the Facebook, I had the big data, I had the shadow IT groups. All that folks has created a new paradigm in IT. It's created a situation where IT management as well as implementers have been asked to start working on services and not just services. In MRIS' case we were taking the core enterprise to the cloud. We weren't taking everything else. Not only did I need to maintain the expertise in house, but as solutions I had. I needed to make sure that the people I had in house were able to work on the services provided by the cloud vendors. What I'm trying to get at here is that you need to maintain the expertise to keep the cloud service providers in check. It'll be like a kid in a candy store for them if you don't have the expertise in house. Very early in our assessment process, in our homework for the work as well, I sat down with my team very, very often to make sure that their nervousness went away and they became evangelists themselves and embraced the idea of moving into the cloud. They need to understand that the paradigm has shifted; you need to start working on services and not just solutions; you need to start reading contracts and understand their implications; understanding the SLAs both for availability as well as operational. Not only are you going to continue doing your job for the systems you're keeping in house, you're gonna expand your skill set and your mind set into this new paradigm of cloud computing. The nervousness went away really quickly and folks really got excited about what we were embarking on.

Gary:

Existing relationships of paradigms are very important as well. You start looking at cloud computing the word is gonna get around. We're on a beltway, it's like real estate there's a lot of gossip around here. The vendors that you have longstanding relationships with are gonna hear that you're doing a cloud assessment. It's going to make them nervous and you're going to get the phone calls. You need to understand how to address that, deal with it and make sure they understand that you're doing your due diligence in understanding what the cloud has to offer for your specific needs. I always like to kind of bring up based on this paradigm is the fact that marketing budgets are growing at an incredibly faster pace than IT budgets. Marketing dollars not just for marketing but for cloud computing, shadow IT groups, software and services, contracts are being written without IT's knowledge, about what the SLAs are; this marketing is a problem in that new paradigm. I joke around with a lot of CIOs that I meet and I say "Do you even know what CIO means anymore?" And then I snicker and I say, "It might mean that your career is over." That's not the case if the CIO embraces, if we're a team with marketing and a

partner and that marketing is not our customer anymore, offer them the solutions they need in the cloud as long as there's a good fit, and make sure that CIO has an evangelist in the form of a lieutenant or a director, and that the lieutenant or directors team is actually behind the cloud initiative that's in place.

Gary:

We did all that, we understood the paradigm. We did our work, homework that got us to the work, we wrote our POC document, we got the support of the organization, and we got our staff and our C level behind us. Then it was time for the analysis. It's very important how to look at the opportunities and what to analyze and what our approach was. What to analyze folks, I hate to say it, I hate to make this a more daunting task than it is, but it is a daunting task, you need to look at everything. You need to look at existing relationships, you need to look at floor space contracts that you have, leases that you have outstanding, you need to look at your staff, you need to look at contracts for application management, hardware management, maintenance, etc.

Gary:

Bill if you could go to the next slide.

Bill:

Any questions so far anybody, as we're moving along, any questions, quickly, for Gary?

Gary:

Ok good, I'll keep going ahead. On the left hand side I put a little blurb there, there's a lot to consider in your analysis. Everything in this list requires a comparison of what you're doing now and what you're going to do in the cloud, if you're gonna do anything in the cloud. A lot of legwork, again I keep saying it, but homework before the work then analysis, bandwidth cost, etc. I highlighted a few in red. I'm gonna pick a couple and go through them and I'd like to kinda open it up and if you could skim through this and have any questions, and again I'm available at a later time as well. The spreadsheet that I used to actually do this, the one that took from June to September, actually went from left to right. It had multiple things on it. I'll give you a sample of that later on.

Gary is temporarily disconnected from the conference line

Gary:

Hey Bill are you there?

Bill:

Oh there you are Gary.

Gary:

I don't know what happened.

Bill:

Yeah, that was kind of a blip there, but go ahead

Gary:

Yeah sorry about that. Everything you see on this list we compared what we were gonna do in the cloud, if we were gonna do everything, with what we had in our existing systems. The spreadsheet, I hope I'm not repeating myself at this point, but everything you see going down the left hand side actually went left to right in my spreadsheet in my analysis and it either had a yes or no answer to it, or it had a dollar amount associated with it. Yes/no the offered us this licensing or that licensing, and the dollar amounts always had a comparison of the cloud service providers that I chose for the analysis, and there should be multiples, as well as the options that I had for my on premise systems. That'll be a lot clearer to you when you see the next slide coming up, but I'm going to pick a couple here. The ones in red I thought were really important and probably hit home for everybody on the call.

Gary:

I'll pick one and talk to you about it. Replication and backups is about halfway in the red section. We have a massive Oracle database that not only serves listings and public tax record information for the immediate region it also serves all those multiple listing systems out on the west coast. I had to make sure that my replication worked and how my replication worked. I have an Oracle 11G Enterprise database system. I wanted to use Oracle Streams replication for data integrity. I did not want to use a snap mirror or a snap copy technology from any given vendor. I needed to make sure that replication and backup for Oracle, using Oracle technologies like Streams, was a skill set that the cloud service provider had. A lot of the cloud service providers could only do snapshots and that just doesn't get what I need covered. The integrity of the data isn't there. In considering it I also had to, so that was the means of replication, I also had to consider point to point connectivity for my replication. I'm hundreds of miles away from my replication data set, from my primary data center. Point to point dedicated connection folks are not cheap. They're not cheap to begin with. They're not cheap for me here in my headquarters to one of my data centers Gaithersburg, which is under 20 minutes. The further you get the more expensive they get. Take a conventional OC3 line; between here and upstate New York it's probably upwards $15,000 a month. From here to California is an exorbitantly higher cost. I need a pipe to do my point to point replication. I need to consider the fact is point to point connectivity included in the cloud service provider's offering and quote, and if not how much more are they gonna charge me. 30% of CIOs consider replication enough for their backup systems. It's not enough folks, Replication is not enough. Not only do I back up my data at the primary location after it replicates to my secondary location, which is a hybrid cloud solution for disaster recovery, it actually backs up again there; important item for me, replication and backups.

Gary:

One, two, let's see, one, two, three, four, the fourth item down, it says DC floor space; I'm talking about data center floor space there. As I considered my cloud offering and moving some of this enterprise solutions out to the cloud, I had to consider my existing contracts with the collocation provider. I had to consider first of all when my contracts expired, because I want to take some of that equipment and move it away. I also had to consider how much of that contract I could get out of. It happens to be that I had a floor minimum amount I had to pay that collocation provider. In considering my spreadsheet, that long spreadsheet going from left to right, the question was floor space with the cloud provider. The question was that answer was included, right? There was zero expenditure as far as a line item for that floor space with the cloud provider. However, I had a minimum, and by removing some of the systems in my current data center, I still had to cover that minimum. I had about $75,000-$80,000 a year in floor space that I had to pay for that wasn't being used for systems, based on the minimum for the contract that I had.

Gary:

Storage architecture and manufacture, very, very important here; it's the second to last item in red. I put high risk changes and I put "POC" in parentheses here. POC, the request for proposal document, and the subsequent proof of concept, should the vendor meet all your needs, are what are going to keep you from failing in this project. Storage was very important for me. I am a very intensive I/O environment. When folks look at it, when people like James Crifasi from RedZone looks at it, it kind of blows their minds away at how much I/O I have, mostly reads in my systems. The storage technology I currently have took that into consideration. Remember 4 years ago I did that major migration and got 20% increase in performance? The Vendor had to meet or better that. They had to use technology that was similar to what I was now because what was not acceptable to me was 5% reduction in performance based on growth potential in my organization and my unwillingness to slow down the productivity of the real-estate professional.

Gary:

The final item here is very important as well, who is providing you the support. As we were going through the selection process of cloud services providers, we quickly noticed that some of these folks are just pitchmen. You know they're just sales guys in nice suits when you want them to be, they're in polo shirts when you want them to be, but they're using 3rd parties for either the smart hands piece or the actually deployment and integration of your infrastructure into a private, public, dedicated, or hybrid cloud. For me that was a no-no. Although you have one neck to choke, you're dispersing your responsibilities to more than one party and that was unacceptable to us, so we scratched off several cloud service providers early on in our assessment after the questions from the document in the RFP were answered. So you can see there's a lot to consider. I just chose a few in red; I'd like to open it up. If any of you saw something you would like to discuss or want me to go into further detail on I'm happy to do so right now. Anyone see anything here that is important to them, or you think maybe important to you in the future?

Speaker:

Um, I have a question, we, excuse me one of the statements that I read, with the cloud services, they said that when you move from one cloud service to another there is no guarantee to get the data back. Is that something you guys thought about or looked into or anything like that?

Gary:

Well absolutely that's part of the whole governance, operations and architecture I talked about earlier. Contracts and electronic discovery are part of that. It's very important for you to make sure contractually that you're going to get your data back. That's why this assessment and these criteria are so important for you to understand what their expertise is in a given format of data. If you're using one database system with one and another database system with another you may very well have a problem with the migration of that data. Earlier I had that, Bill can you go back to slide 4 real quick?

Bill:

Hey guys could you put your phones on mute there's some background noise coming in. Ok which one Gary?

Gary:

Four.

Bill:

Right there?

Gary:

Yes. All these things drive the existence of the cloud and the maturity of the cloud and the fact that it's part of our lives. The item to the left, Open Stack, you see that under Youtube?

All Speaker + Bill:

Yes.

Gary:

That's the future. Solutions like open stack are part of that open source need in the new paradigm of IT and cloud computing. Open Stack offers an interoperability and portability aspect of cloud computing that no one has done so far. It is a collaborative effort between companies like, or groups like believe it or not NASA, Microsoft, Citrix, Linux groups, and virtualization groups out there to create a cloud platform. This is part of your assessment. If the risk is so high for you to migrate your data from one vendor to the other, you're gonna have to wait for the maturity of a cloud platform that Open Stack represents. You should look up Open Stack you should probably become part of the community. You'll get very enlightening emails from them. You can read more about what they're trying to

accomplish. It's a fast growing community that addresses your questions specifically so that you can take your bucket of information and data pick it up and move it to another cloud provider and not have the data trouble that you just asked about. It's very important to understand what the Open Stack and open source cloud platforms will be offering you in the coming year. It's already out there people are already on it.

Bill:

Gary are you referring to portability not from the hardware side that we addressed in virtualization, but from the data portability is that where you're hitting it?

Gary:

Both actually. I started off with the data, but it's both. Take this as an example: when we did a migration from AIX to Red Hat Linux the code base that runs our solutions, the Oracle code had to be rewritten because the kernels of the processors were different. Ok? When we went from Red Hat Linux to Oracle Enterprise Linux the kernel was the same. We did not have to make any code changes to our Oracle code. We saved money by making a migration but we did not have to change code. It's both data and hardware because if you're moving from one infrastructure of a given cloud provider to another infrastructure of a cloud provider not only may you have data compatibility issues with portability you may have to rewrite you code based on differences in kernels based on the OS they were using; very important consideration in your assessment and evaluation of the offerings from the CSPs.

Bill:

That's great information Gary.

Speaker:

Thank you.

Gary: Any other, we're at 11:46, you know I think this may be my last slide, second to last I'll move on. This gives you a little bit of a, it gives you a little bit of a taste of the final outcome. That spreadsheet you just saw, again all those items went from left to right, if you look at the very bottom of this it says through 2015, one of the tabs, there's a tab for POC, there's a tab for 2013, 2014, 2015. Based on the fact that I had phased, a phased need for cloud deployment I had to break this up into three years. 2013 I was moving some windows boxes, 2014 I was gonna move my Oracle and Linux systems, and 2015 they were both gonna be out there and I had some other clever ideas of what I wanted to do. So I went across all these tabs with all those items you saw on the previous spreadsheet and I did a cost comparison. If you would look at one, two, sorry cell A2, A3, and A4, those are the three cloud service providers that I ended up with and I was actually planning to go into a proof of concept with. I started off with 7, I quickly went down to 5, and this in depth analysis was only with 3. You have to keep some sanity in this. It has to be in depth, but you have to keep it manageable.

Gary:

If you look at A5, A6, and A7, those are my systems, my current posture and my future posture going across 2013, 14 and 15. Not only did I compare 3 cloud service providers, I compared my future posture with I wanted to do over the last 3 years. If you go across the D, E, F, G, H, this thing actually went all the way over to Z, a pad of Zs; A1, A2, A3, so it was very in depth. The important column to look at here folks, for my purposes, my needs, my current posture and what I wanted to do in the future based on the massive migration I did 3 years ago, the cheaper hardware with higher performance, my deltas came in, in this way. Look on premise number 1, which is C5. I had about, look at that it's 105.5%. Look at cloud service provider 1 at cell C2, 273% increase in how I could do the enterprise solutions on premise, in my current environment, with my current licensing costs, bandwidth costs, hardware/software management, time for my staff, resources, etc. That's the difference, 273% for cloud service provider 1, which was the lowest cost, to my 105.5%. That's 2.7 times more expensive than how I could do it.

Gary:

Earlier we went through the four areas that were very important. They were economics, flexibility, focus, and time the market, so to speak. Those were the four areas that I talked about. At MRIS folks, and this is a little bit off track but, at the end of the year we have something called mpg. It's not a bonus program, but it's a very small incentive program that helps you with your Christmas shopping. It's called MRIS Performance to Goals. Every member of the staff is eligible for this at a given percent. If we hit all our marks, you know staff gets 3.5%. This isn't a bonus. Bonuses are different, done at the department level. This is done at the corporate level. The MRIS Project to Goals is based on project management, customer satisfaction, and who can guess what the third item is? Our financial performance. If we don't accomplish our financial performance, none of the other 2 can pay out. So if we say we're gonna be at 50,000 customers this year and our revenues will be at this level, and our operational costs will be at this level, and we don't meet that, MPG goes out the window. It doesn't matter how well we did on projects and our scorecards, it doesn't matter how well we did with our customer satisfaction scores. Our board, our shareholders are not happy when the economics aren't right, everything goes out the window. So for me having a delta of this magnitude didn't make sense for the robust, high performance, complex Oracle infrastructure that I was dealing with. The operational expense was way too high.

Gary:

One of the items in the economics thing we looked at, you know what Bill I think you can go to the next tab. On the economics you see from CAPX to OPX. Well based on my relationships folks, with the storage companies of the world, the Bill Murphys of the world, the collocation companies of the world, I can compete with the best and biggest cloud service provider. My operational expenses would have been 2.7% higher over 5 years than what I can do on my own. At this time, with the maturity of the cloud solution that we were looking at, it wasn't the right time for me. I mentioned Oracle with you guys on several occasions. On the spreadsheet that went vertical I mentioned database architecture and

manufacturer. For us that's huge and very important, and let me tell you why. Oracle does not recognize virtualization boundaries. The cloud has public, private dedicated (which is not cheap), and then it has a hybrid. Our solution was to be a hybrid, but even with a hybrid solution, based on Oracle not recognizing virtualization boundaries with VMware, which was proven, I could not use shared resources for my Oracle databases. So if you have a big box and a cloud service provider that has 60 processors in it with multiple cores, and I was virtualizing using only 30 of those processors or 30 of those cores, guess what folks, since Oracle was installed on that metal, that hardware, I was going to be liable for every single core that was licensed by Oracle. It shot my cost through the roof. With what I have now at my current premise, I have dedicated systems for my database. I turn on cores only when I want to use them and I want to pay for them. Oracle is not cheap, so just based on the database thing the economics didn't make sense for us.

Gary:

The flexibility of the solutions that the cloud service providers offered was absolutely a pro in our assessment, but in evaluating our current environment and our current cost structure, and how low we could drive that CAPX based on existing relationships, folks we decided to virtualize our environment. 80 to 90 percent of our production Linux web application tier is now virtualized. We can turn up systems as quickly as a cloud service provider; we turn on our own tickets, provision systems in our personal private cloud, in our datacenters, and we're up and running in the morning handing off systems to the developers or 3rd party application developers. So that was our answer to flexibility although they offered a lot, we had a better answer at lower cost as well.

Speaker:

Gary, I got a quick question for you because I got confused on one point, you said in the cloud Oracle doesn't recognize the VM boundaries, but then you said you virtualized on premise. Did you have the same issues?

Gary:

No, No, No I had a 2 part, I apologize for the confusion. They don't recognize virtualization boundaries period, unless it's their own vm, which is not proven, it's not robust. Ok, so we're a vmware shop. What we have in our own datacenters are cores that we control. We turn them up, turn them down, as needed on an annual basis. What we virtualized were the application layer, the web logic layer. They do recognize, web logic is an Oracle product as well, they do recognize it on the web logic front; they don't recognize it on the database front. I apologize for the confusion.

Speaker:

No problem. One other question, because I know we're running out of time, when you look, this is great by the way, and I kinda assumed no I'm not as complicated and Oracle is definitely gonna address these costs, and it looks like they did, but that's what you need. As far as more sensitive areas, as far as staff and I know you said you sort of repurposed this, was there any points from senior

management where they said hey, and I don't know how big your staff is, but are you looking to cut any costs there? I didn't see anything in the slides, or maybe you just couldn't.

Gary:

I kind of glazed over it I apologize. I've got a very lean team first of all. Was there an opportunity to perhaps you know, to perhaps eliminate some low level positions, yeah the opportunity is there, but the point I was trying to bring home on that one was that you must maintain the expertise in house or the cloud service provider will be a kid in a candy store and give you a run for your money. You have to have the checks and balances internally and you have to have people to manage the contracts, mange the services as opposed to managing the solutions. Now do you need an engineering squad of 15 Linux engineers, probably not, but depending on the size of your enterprise and infrastructure, you better have those folks on staff constantly monitoring SLAs operationally, availability, what these people are charging you, what burstable bandwidth is being charged to you, so there is potential and opportunity for slight reduction, but it's all relative for the size of your organization. But if you don't maintain the expertise you're gonna be in a world of hurt.

 Speaker:

Thank you.

Gary:

You know, I think I'm just going to go over the breakdown in technology because we are running out of time. You know Cisco has systems out there that pulls information. It's all relative points folks. The point of my entire rant here is all about relativity to your needs, the criteria that you need to establish at a very, very tight place and quite frankly, a couple of the cloud service providers were highly irritated at the level of questions we were asking. One cloud service provider saw the document and said "we don't have the capability that you want, either use our technology or lose our services" and they were out. It's all relative; you gotta do your homework to start the work; you gotta make sure you got the buy in for your staff; you gotta make sure you limit the fear factor and let them understand they all need to be evangelists; and you gotta just completely do your due diligence cross the "t's" and dot the "i's" because guys at the end of the day the cloud has become very cloudy I think for some folks, with the question about cost savings, and I would just like to close out by saying you know with hosting versus cloud services typically cloud services are more expensive. They're charged by 1 hour increments really in some models out there and I like to throw this analogy out there for people to kind of bring it home. If you need a vehicle for ten minutes you'll take a taxi right? A 10 minute trip that costs 10 minutes equals $60 an hour unit cost. If you need a car for a day what do you do? You rent a car, that's $50 a day, which lowers it to $2 an hour unit cost. You have to consider that, those return on investments and the fact that not necessarily is the car cheaper, and for us that was step 1. You have to weigh things across the board, and understand what you're criteria are, and make sure you understand the domains of cloud computing, governance, operations, as well as the cloud architecture and what's out there for you.

Bill:

What's nice about this Gary is that you actually boiled it down to its essence, which is you found out you could actually compete and provide this service and prove to the business that you could provide this service at a better cost and a higher SLA at the end of the day.

Gary:

Yeah not only did it validate what we had done 3 years ago, it showed how we're maintaining a system at an incredibly affordable place while we're adding solutions to it by doing what the cloud service providers are doing, on our own. You know I heard the Navy is on this call, that's a lot of buying power. I would bet that they get a better price than I do even. You know folks we do a lot of things in the cloud. We have multiple solutions in the software as a service space. We have a lot of 3rd party contracts with folks. The lesson in that is that the 15 contracts that I have for software as a service through various real estate application vendors guess what? The SLAs all look the same. If they didn't want to do business with us they could walk away. Even if you're taking baby steps your documents are important to what, the Bible that you create, and the domains are important because it will teach you not to disperse your cloud solutions, but if you are doing it as a software as a service aspect make sure your SLAs are the same, make sure your contract terms are the same. It's gonna save you a lot of headache. It's gonna save you from getting pie in the face as the cloud evangelist because we all know that as soon as you stick your neck out there, your neck is the one on the chopping block.

Bill:

Before we close the roundtable session there was one more person I think who had a question and I'm one minute past so why don't we jump into that question and then wrap up.

pause waiting for question

Bill:

Maybe that person's gone. Ok everyone, thank you very much Gary this has been fantastic and it's been enlightening for myself and I'm sure everybody. Thank you for providing this information to us.

Speaker:

Gary thank you.

Gary:

Absolutely, my pleasure, and thank you for listening to me I appreciate it.

Bill:

Thanks everyone, goodbye.