

Doing Virtualization Right to Gain Efficiencies and Savings

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Reilly:

Welcome to this IBM podcast series focused on how to optimize your technology infrastructure. I'm Reilly Starr from IBM. Through this series we'll cover topics that help lower IT complexity and improve operating efficiency along with tips and advice on using technology and services to help you and your company succeed.

Today I'm joined by Jeanine Cotter, vice president of Systems Services for IBM, to talk about virtualizing your infrastructure for maximum business advantage. Jeanine, as you know these are tough economic times and clients are facing severe budget challenges. How can virtualization and consolidation help them meet these challenges?

Jeanine:

Thanks Reilly. You know, this is a very timely topic for our clients all around the world. We are seeing companies, now more than ever, leveraging virtualization beyond its use for server consolidation to deliver cost savings and flexibility.

There are three primary uses in play around virtualization these days.

The first is carving up a single box for consolidation and simplification purposes.

The second is unifying separate resources to operate in concert as a single resource pool -- and storage virtualization would be a great example of that.

The third is dynamically adjusting resource allocation to optimize the infrastructure you have.

While we believe that IT managers should take a very deliberate approach to implementing virtualization, IBM's vision is that companies should really set their sights on virtualizing, over time, all layers of the architecture for maximum benefit. Virtualizing the resources, even if you do stage it over time, can create unprecedented flexibility and responsiveness and is the reason why virtualization is a foundational technology for both a Dynamic Infrastructure as well as Cloud Computing.

So, let me give you a few examples of how customers are seeing real cost savings and efficiency results. We tend to see typical server savings in the neighborhood of things like total cost of ownership -- savings up to 70% , hardware costs reduced up to 70% and maintenance costs reduced up to 50%. From a server and storage utilization perspective, on the server side we typically see utilization go anywhere between 10-30% all the way up to 65-70% when the project is complete. On the storage side, you can save potentially up to 30% in increasing utilization. You can also reclaim trapped storage capacity within the existing infrastructure and typically you see that is in the range of 10-20%. Hand-in-hand with that is up to 25% annual reduction in new storage capacity acquisition. As well, we can see positive environmental financial impacts in the area of heating and cooling. Clearly,

results will vary pretty widely based on the specific infrastructure size, complexity and maturity but these are some pretty sound guidelines for our clients to think about as they contemplate virtualizing their infrastructure.

Reilly:

That's very interesting Jeanine. Based on IBM's experience, where do most clients start their virtualization effort?

Jeanine:

Typically, the first steps clients take is physical consolidation. There are four basic types of consolidation. They can reduce the number of datacenters they have. They can reduce the number of server and storage devices. They can do data integration and application integration. Few companies take all of these four on at the same time, but when you combine one, two, or three or four even, you can really see greater value.

We recommend that clients choose the consolidation approaches that make the most sense for their particular infrastructure. What we also see is that most clients are at least doing server consolidation and many have started to focus on storage optimization. This has become a very big ask and demand of our clients, again, all over the world. But IBM typically recommends that IT organizations focus their attention not only on the existing environment and the existing servers that you have in your infrastructure but also look at the target environments onto which the consolidation will occur. Many companies start by considering what is often termed "like for like" consolidation because that typically does not involve any migration and reduces the need for let's a new capacity planning to be done on the target environment. This type of consolidation is absolutely very beneficial, but we also suggest that clients consider cross-pollination. Which means that an ideal target server be identified that not only delivers the typical benefits of consolidation, but also provides enhanced quality of service for the actual computing or application workload that's going to be placed on those servers.

Reilly:

If virtualization has such promise, why haven't clients already virtualized their complete environment?

Jeanine:

That's a very good question. We actually get that question quite a bit. While virtualization is not new news at IBM, because we have 40 years of experience based on our mainframe business, a large number of clients really have not been immersed in this technology until the last few years and they see the huge potential virtualization can bring to their IT infrastructure, but they do tend to struggle with concerns of being able to not only effectively implement and also manage their virtualized environment once they have it.

So here are some typical challenges that we see clients facing. The first is the lack of sufficient in-house skills in virtualization in general, but then also the planning and design skills that are required to implement virtualization right the first time. Many

clients don't want to replace physical sprawl with virtual machine sprawl, so you really need to get it right to begin with. Not all workloads work equally well in a virtualized environment, so again here too, you have to carefully plan and execute so that performance issues will not occur to impact their service levels. Next is migration challenges of data and applications which if not done right can really impact both systems as well as application availability. Managing security tends to be a challenge in this environment. Last, understanding changes to systems management processes and policies is definitely needed.

So, deploying virtualization on a large production scale requires pretty thoughtful planning and execution or clients may never realize the potential benefits. This really starts with first understanding your current environment, analyzing that input to target the starting points that will provide the most business benefit and the next is creating a detailed design and detailed plan that will keep you on course and drive the subsequent technology decisions that need to be made.

Finally, you need an implementation plan to actually roll out new environments without disrupting the IT support that you're currently providing to your business. So there is a fair amount of effort that's required to successfully move to a virtualized environment, but the benefits are definitely tangible. Now, on the flipside, if you don't get virtualization right, you're likely to replace your physical systems sprawl with virtual systems sprawl which can be a costly mistake and can cost as much, if not more sometimes, than physical environments.

Reilly:

How can IBM help clients accelerate their system's virtualization and realize the full potential business benefits?

Jeanine:

We can absolutely help clients. We offer a comprehensive set of virtualization solutions built on, as I mentioned before, 40 years of real life client experience. We have both consolidation and virtualization solutions and, unlike our competitors, we offer these solutions across all major platforms—Mainframe, Unix, Wintel—and this can all help clients match existing and new workload requirements for the right platform optimizing for both the cost efficiency as well as the performance dimensions.

Our continued investments over the last few years, both organically within the services capability that we're developing and also through acquisitions, really shows IBM's leadership and commitment to innovation in this area. When you couple that with the 40 years of experience we have, we can really help clients realize a return on their investment in as little as 6 months.

Let me take a few minutes to illustrate the benefits of this approach. I'll use an example right from within IBM's own four walls. This is an example of how we've leveraged consolidation and virtualization to reduce the hosting cost associated with IBM's Events Infrastructure. We did this while actually increasing the service we provide to the clients by that infrastructure. As many of you who watch sporting events might be aware, the IBM Events Infrastructure hosts a number of key sporting events, including all four of the major tennis tournaments around the world, the Masters Golf tournament in the United States, and over the years the Events Infrastructure has faced many of the same problems as our customers have and it's a very good example of the journey a company can take to a more efficient and dynamic infrastructure.

Some of the problems that the team that manages this environment faced over years were unpredictable spikes in demand, which you can understand given the sporting events that we host here, escalating operational costs and then over-provisioning of the servers in the environment just to handle the peak demand that comes when these events occur. The Team that manages this environment tracked their progress over the past few years as they've gone through this journey to a dynamic environment and one of the first major efforts they did to improve the infrastructure was basic consolidation. The Team leverages systems in three geographically dispersed datacenters around the world to provide extremely high levels of availability which is again required given the applications that we run.

The first consolidation effort reduced the number of servers from 60 down to 9—three in each location. In 2008, when the Team implemented Power 6 technology, they were able to take that number of servers from 9 down to 6—in total 60 down to 6 servers running this environment. As they began to leverage more advanced virtualization and also management technologies, they saw the benefits increase even further.

For example, they were able to keep hosting costs constant throughout the whole of 2008, even though they were adding an additional event that year. They also saw energy consumption reduced and the number of visits to the site went up, but the cost per visit went down. Let me just put some numbers on this to make this very specific. Again, this is from 2006 to today.

Visits grew by 26% while the cost per visit in that same timeframe was reduced by 38%; the number of users increased by 20% and the cost per user, again in that same timeframe, reduced by 27%. As I mentioned before, the hosting costs remained constant despite the growth in the environment and the addition of that one event. And then, on the energy consumption side, it was reduced by 40% and the cooling demands were reduced by 48%. The Events Infrastructure Team will tell you they have seen great benefits from implementing a progressive virtualization strategy and I hope our listeners can realize a return on their investment in as little as 6 months.

Reilly:

Thank you Jeanine and this concludes our podcast.

Jeanine:

Thank you for having me Reilly.