Ready...Steady...Virtualize

Banking Frontiers organized a roundtable on May 6, 2009 on the theme of end-to-end virtualization across the spectrum of applications, servers and desktops. Citrix, one of the pioneers in virtualization, was the knowledge partner. Edited excerpts from the deliberations at the roundtable:

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Thank You

Manoj: The discussion today is on virtualization, with an emphasis on end-to-end virtualization. Gartner says virtualization is a revolutionary technology - it will have the highest impact on IT infrastructure for the next couple of years. Given the recession and cost pressures, the banks we have spoken to have said that IT budgets are getting constrained and IT heads are asked to do with less and less. Please share from your organization's perspective: what do you see as the scope of virtualization? What kind of benefits and constraints do you see?

KM Asawa: We are actually in a stage where it is possible for us to implement virtualization at the data centre level because we are in the process of shifting the data centre. I think it is necessary for us to understand the other side of the coin. Virtualization has a serious risk of single point of failure - therefore it requires serious planning and you have to see which critical application you would really like to take into the sphere of virtualization and which you will not.

Manoj: In your case, you have outsourced so many things to HP. Does it make sense to virtualize? Is it from your perspective or outsourcing partner's perspective?

KM Asawa: There are certain cost savings for example - saving electricity is something, irrespective of whether it is outsourced or otherwise.

Ramesh Laxminarayan: Its not only about servers. Virtualization can also apply to networks and storage. When we wanted to consolidate our data centre, we went back to the

drawing board. For example, today I am sharing my network through a single virtual server. Three different organization's network is virtualized on a single server, is giving me a much larger leverage on my switch costs and also my entire network cost. Similarly on storage.

Sharad Saxena: We have undertaken a large extent of virtualization - starting from the server space, to the storage and network space as well - and benefited from the advantages - physical space, cooling, etc. Another advantage is allocation of sub unit CPU, which was not possible in the earlier environment and you had wastage of processing power. The journey is not as simple. We had to go through our share of pain in ample quantity. The things took a lot of time to stabilize. There are various features which vendors tell. Yes they work, but to make them work takes a lot of effort.

Manoj: Is it an intellectual effort where you have to do R&D, or is it more of trial and error?

Suresh Shanmugam: We were in an R&D mode because there was no precedents available and both we and the vendor had to struggle to make it happen. Another issue is scalability. Earlier we were limited by the processing capability of the box, and when we had more processing load, we would tweak our application, tune the queries and make them run better on the same box. Now with the availability of processing power on the fly, there is a tendency not to look at those aspects which is bad and dangerous. Another issue is redundancy. Earlier in we would have a application, middleware and database on separate physical boxes, and so there was some amount of redundancy. Now I don't have the transparency where the various components are running, perhaps on the same machines. Am I vulnerable there? So planning based on criticality also has to happen.

Sudip Banerjee: We just recently completed the project so we are in the early stage of reaping the benefits. Gartner said that its revolutionary technology, I think its more so for India. India does not have legacy mainframes. We actually spend a lot of time in the planning phase. From Q3 of 2007 right upto end of Q1 of 2008, we did extensive planning. IBM was our partner there. They put their own monitoring tool and they did very rigorous data flow of all our applications. The actually implementation took about 3 to 4 months and we were able to migrate about 25 applications from 90 physical servers on to 9.

Manoj: Interesting. What about Citrix? What is your vision? What is your experience on virtualization?

Vishal Khare: Specially from the application virtualization point of view, there are thousands of applications which are working well and we have hundreds of certifications including SAPs, Oracles including CRM, banking – core banking applications. Citrix believes in end to end virtualization,

which we have been propagating since ages. It is application virtualization, server virtualization and desktop virtualization. From the licensing point of view, we may not be in a position to control application vendor licensing, but at least we are trying to put an effort to bring many different kinds of licensing in front of the customer.

Manoj: When it comes to licensing you have a model where you get software as a service and you pay per user or per transaction or whatever it is; and the other model is of course to host it inhouse. What are the pros and cons?

Ramesh: In a hosted data centre model it could be legacy model or new model. Legacy hosted data centre today are not in a position to charge you on the basis on power, they still charge you on the basis of area occupied. The key out here is how you manage power because the entire data centre costing is driven by power consumption. The real estate is not challenge any more, but it was a challenge about 3 to 4 years back. So clearly, virtualization helped to move the risk away from space to the power.

Today the per rack charges could be as low as Rs 2 to 2.5 lakh, and go up to Rs 8 lakhs. Today the vendor is not transparent to tell you that how much is the physical power charge and how much is space charge, because this is something internal to him. But my own experience, I have found that the power is 60% of the cost. One more aspect, which is interesting, is the

cooling efficiency. While heat generation of computing units has reduced, the cooling itself that consumes power. There is a lot of wastage if you are trying to cool a large area which may not be required. The cooling technology is pretty evolved now today. You started with comfort ACs to precision ACs to active cooling to cool pools. The entire domain has moved so much that each rack can sense the temperature and cool accordingly. So one of the advantages out here is that if you have a very efficient cooling system, then you are also geared to do virtualization, you can use smaller space to manage the power more efficiently.

Bhuvnesh Sharma: The thumb rule what Ramesh pointed out is approximately to 50 to 60% in terms of the running cost. The one time hosting is separate.

Vishal Khare: If you are look at challenge in front of us, the main thing we need to consider when deciding our strategy is that are we making our IT simpler. Look at the electricity model or telecom model. In telecom, just by making a change at the switch level we are able to offer same kind of service to our residence, same mobile phones we are able to receive different kind of services just by calling different numbers. It is a utility kind of model. So now what we should look at is whether it is outsourced or whether it is inhouse, we should probably look at technologies and concepts which can help to ensure that the application is delivered in a simplistic manner, it is not device dependent. It is not a location or a network depended technology.

Manoj: In ICICI case you have number of group companies and subsidiaries. Is the virtualization project across entities or within entities?

Sharad Saxena: Across entities.

Ashish Singhal: As far as ICICI group is concerned, the group has taken the view for the last couple of years, that whatever the software and whatever the technologies, we would look at a group wide basis. So that has been the ethos for 4 to 5 years now.

Ramesh: That's why I said consolidation and virtualization go together. You cannot say overnight I will do virtualization

or consolidation. When I started, we had 5 data centers and now I have gone down to one, but that's a three year journey. Kotak Securities started with UAT applications being ported on virtualization, and then finally it flowed down to the production applications.

Manoj: What about HDFC and Reliance? You have so many subsidiaries. Do you try to do virtualization across the group or within the organization?

Sudip Banerjee: Three of our group companies, General Insurance, Life Insurance and Reliance Money, have gone for virtualization. Reliance Money core trading platform is not amenable to any virtualization, but what they have is huge farms for trading applications - they have consolidated to some extent. Life Insurance has gone for storage consolidation.

Ajith Rath: Though we have started a small POC for server virtualization, in my understanding we can start immediately on desktop virtualization. For a bank like us, where corporate office itself has tens of thousands of machines, the challenge is keeping separate local storage on each machine and also running batch management and antivirus management activities. So, we can start desktop virtualization thereby we can manage batch releases. Immediately thereafter, storage virtualization is another area where we can benefit.

Manoj: If virtualization benefits the IT operations, then does it benefit the user in any way?

Ajith Rath: Certainly. You just see they are not bothered about keeping their own data backup; so you have it at a centralized space.

Vishal Khare: What we have seen is that in case of usage of desktop over a period of time, the desktop starts becoming slower because you are adding so many things. In case of desktop virtualization, what we have seen is the people had benefited from the point of view that everyday the user is getting a pristine desktop because the desktop is getting reverted from your data centre where the user is not allowed to load whatever

is not recommended by the organization policy.

Ramesh: In my mind two things are very critical. One is obviously the cost. While I can do virtualization today, really the ability to invest in rural branches is limited because the ROI is also limited. For example, I have today 20,000 devices in my group. I am sure that out of 20,000 licenses, 5000 or 6000 licenses are idle because somebody has gone on leave or somebody has moved out and the PC asset has not been replaced and I cannot redeploy that asset. I am paying for that idle asset. Suppose the person is on a maternity leave, can I clean up the PC and move the licensing, and give it to the same person again after 12 months?

Narendra Kumar: It is difficult to manage your assets.

Sometimes the machines are unattended, unused for quite sometime and over a period of time, if it is in a remote branch, even the parts of the machine get stolen. So desktop virtualization is the simplest form of virtualization which we can go ahead with. We have been using Citrix technology for almost 8 to 9 years down the line, and it is one technology which we found so easy to use, easy to manage and easy to deploy and very cost effective.

Vishal Khare: Regarding desktop virtualization, vendors like us have been able to bring down the bandwidth utilization to very minimal. The good news is that desktop virtualization can now work on WAN also, whereas earlier it was limited to the LAN.

Atul Sashitta: Virtualization was not out of choice because in this recession period somebody had asked me to create a DR site in 6 months. My first challenge is: how do I handle the change management process. My second challenge is that earlier we had very strong teams who were champions of what they were looking at. One was a network specialist, the other one was a system administrator, another a DBA. They are not criss-crossing into each other's territories. Now with virtualization, I need people who have multiple skills.

Ramesh: The beauty of this technology is that the application team really loves it because getting a development server is a

challenge. Typically, it used to go into weeks, whereas now it is available right away.

Manoj: Should you go for a single virtualization software? Does one software meets all needs? Or for different kind of things different scale of things you need different softwares or different solutions?

Sharad Saxena: Actually this particular question is not restricted to virtualization. It is for all types of softwares as such. You cannot start experimenting with 2-3 things at a time. You need to figure which is best. Your choice cannot have best of features and all the areas, so you do the due diligence and pick out one and then experiment with that. Now to continue with that once you succeed depends on what kind of vendor lock-in you are worried about, what sort of licensing policy is there. You want to free yourself from lock-ins and have an alternate ready. It's a strategic call as for any other software.

Deval Mazumdar: We are using Citrix solutions for quite sometime now over 5 years now. Its been quite stable. One particular issue I face here is the licensing issue - the difference between Microsoft and Citrix. Citrix is concurrent, Microsoft is device or user based. It's a challenge to really estimate how may users licenses you need to have in place.

R Koteeswaran: We are migrating to a new data center. We are thinking of building it as a green IT, latest technology with heat sensors, etc so that the power consumption is reduced. For virtualization we are going for SI.

Sharad Saxena: I was my back against the wall in terms of the power which I get from place where I have the data centre, which is critical. If my back is against the wall in terms of rack space or power, then I will surely opt for virtualization. So once has to see the overall benefit, rather than just comparing it to hardware cost saving.

Manoj: *End to end virtualization - everything is getting virtualized. There is a scenario we are running into. Yes – it has been an interesting discussion. I thank you all of you. Banking Frontiers and Citrix thank all of you for your participation.*