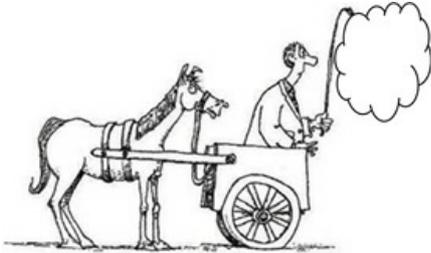# Putting the Cloud Before the Horse

Lori MacVittie, 2009-14-08

Without processes the cloud is not a cloud

So you've virtualized your application infrastructure using VMware or Microsoft or the "virtualization solution de jour." You probably also virtualized the application access via an application delivery solution so you can provide scalability on-demand. You might have even virtualized your storage to make it more efficient.

Basically, you're all ready to go and operators are standing by …

And therein lies the problem: *operators are standing by*. The on-demand piece of your little private cloud is almost entirely managed by human beings, which means you aren't getting nearly the efficiencies you could be getting if you'd taken the next step: automation.

IT ISN'T REALLY A CLOUD UNLESS IT'S AUTOMATED

If the processes you follow for provisioning and de-provisioning of resources (applications) aren't automated then you really haven't built a cloud, you've likely just virtualized your architecture. That's not a bad thing; there are plenty of benefits of virtualization alone to make it worth the effort. But you haven't built a *cloud* until you've gone through the effort of automating as much of the processes related to scalability and availability and application delivery in general as you can.

When you're building your own private, personal cloud you aren't getting as many of the benefits as you would from utilizing an external, shared cloud. That's because *you* are still responsible for operations; you're still managing, upgrading, patching, and maintaining all the servers – physical and virtual – that make up your enterprise infrastructure. The benefits you've seen come from your efforts derive primarily from consolidation and software-oriented maintenance and management. And those benefits aren't nearly as great as people think. Research and analyst firm IDC notes that not only are the number of virtual machines per physical server increasing, but so is the ratio of responsibility to administrators: 25:1 for physical servers but 35:1 for virtual servers. (*Datacenter of the Future, March 2009)* If you want to take it to the next level, you're going to have to automate processes because that's where real operational benefits will be realized in a private cloud implementation.
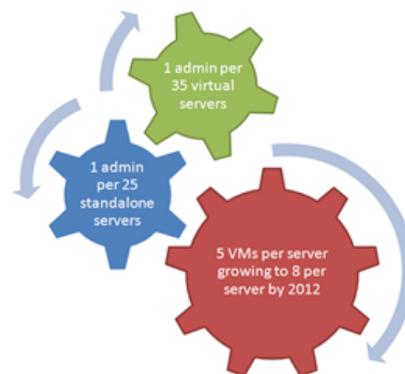
On-demand scalability should be just that: on-demand. And on-demand implies, at least, an autonomic response. That automatic response to conditions within and without the data center requires automation of *some kind*, whether it's a packaged management application or home-grown scripts or custom-developed solutions built using the integration capabilities of all the disparate components that make up the architecture.

Without that automation what do you have? A bunch of servers running applications. That those applications are virtualized is really irrelevant to the architecture because you haven't done anything but changed which physical server they're being deployed on. Without the ability for the infrastructure to make decisions based on actionable data that's shared between the components, you really don't have anything all that much different than you did before.

VIRTUALIZATION IS THE STARTING POINT, NOT THE DESTINATION

A recent survey of IT executives indicates a growing interest in private cloud computing, citing benefits we're all pretty familiar with at this point:

> The survey also cited that IT executives are positive about the benefits of the technology, with most (41%) citing 'improving efficiency' as the biggest motivation for establishing a private cloud. This was followed by 'resource scalability' (18%), 'cutting costs; (17%), 'experimenting with cloud computing' (15%) and 'improving IT responsiveness' (9%).

With the number of virtual servers a given administrator is responsible for increasing, and the need for operators/administrators to manually provide the "on-demand" piece of scalability, it seems obvious that it would be difficult to realize the "efficiency" and "cutting costs" benefits that so many executives cite as the reason for moving forward with private cloud computing in the first place.

Virtualization is probably the first step in moving toward a private cloud implementation, but it's certainly not the last stop. You need some way to automate scalability and management of application availability and performance, and virtualizing those applications is certainly one way – some might argue the *best* way – to do that. But you can't stop there. You need to continue on and take advantage of what that virtualization provides: the means to automate many of the mundane, tedious tasks that is currently chewing up administrators and operators time. Time that could be spent innovating or handling other tasks that provide even more value to both IT and the business it supports.

It is the automation of processes that achieve on-demand scalability and resource efficiency and migration that makes a cloud a cloud. It's that level of automation and efficiency that makes external cloud offerings appealing – providers have already figured it out and implemented the automation that makes their cloud "cloud". Without process automation you're just doing more of what you've always done: manually manage resources. The cloud requires collaboration, and collaboration comes through integration of all the moving parts that make up the infrastructure.

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