

Commentary

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EMC Education's Role in the Journey to the Private Cloud

Change has been a constant in the IT industry. Still it feels as if technology is in a state of punctuated equilibrium, where it seems that IT evolution is undergoing a huge and sudden jump (even though that transition will take years). The transformation to a new form of data center that embraces the concepts of virtualization and cloud is a prime example of where this evolution is underway. And even though both virtualization and cloud have been talked about for some time and are already being used to good effect by many businesses, the journey to what is often referred to as the "private" cloud is still a long ways from being complete. Education, such as that which EMC plans to provide, can go a long way in helping IT managers and administrators gain the increased knowledge that they will need to design their private clouds to best meet their specific needs. Let's see how.

Where CIOs Seek Information and Advice

Now, IT organizations are constantly asking themselves about where they go from here in the data center, such as, "Can we continue to do things the

same way we always have?" If the answer is no, what do we do? CIOs are bombarded with information from many external sources, including trade media, your ever-helpful analysts, hardware/software vendors and professional service organizations. The CIO may be able to formulate some basic thoughts on what needs to be done, i.e. a vision. However, he/she needs someone to not only confirm that vision, but also to help design a solution and its execution strategies.

For that help, CIOs turn to the thought leaders within their organizations. Regardless of their official titles or positions, these people leverage their knowledge and expertise to link technology with the business value of their enterprises, thus winning the trust of the CIO and IT management team. In a sense, thought leaders play the role of strategic "architects" whether or not their title or formal job description reflects that responsibility.

Still in the rapidly changing world of virtualization and cloud, thought leaders may feel that they don't quite have all the knowledge that they need

to speak authoritatively to what should be done, let alone actually doing it if they get the green light. Now, EMC's Education organization plans to provide a level of insight and training that can fill the knowledge gaps and put thought leaders in a position where they can speak confidently on how a private cloud would benefit their enterprise and the steps that need to be taken now to move more effectively towards that end goal.

Transforming the IT Infrastructure

This new knowledge, although incremental, is essential because it is necessary to explain the transformational nature of the private cloud. As EMC points out, the way IT runs its business in the private cloud will be substantially different. Architects have to both understand what needs to happen and be comfortable with what needs to be done. This is a huge change as it has organizational, cultural, behavioral, risk and reward implications.

As EMC Education pointed out in a briefing to the IT analyst community, in private clouds existing multiple independent operations will be changed into highly integrated processes linked into one contiguous operation. The current state, which includes lots of buffer inventory (unused CPU cycles and underutilized storage), will be changed to one in which minimal buffer inventory is needed (which is one of the driving tenets of server virtualization where multiple logical servers are consolidated on one physical server). All in all, the result is improved service levels with more efficient and cost effective processes. If that sounds like pie in the sky,

consider supply chain and manufacturing processes have already undergone similar transformations. IT has actually been the laggard.

However, as EMC Education pointed out in the briefing, IT will not only be built and run differently but will be consumed and governed differently. For example, currently convoluted request processes can actually discourage useful demands (as resources are constrained, and provisioning new resources in a timely manner can be very difficult) with the result that the linkage between consumption of IT services and the value to users is often unclear. Although service level agreements (SLAs) are available in some companies today, in private clouds true SLA-driven management will be possible with self-provisioning, a catalog of tiered services, and true cost transparency (so that the user can understand what he/she will be paying for and receiving).

EMC Education pointed out that IT roles will change during this transformation process. The architecture and design role will change from creating custom dedicated infrastructures to designing a consolidated multi-tenant cloud infrastructure. Build and operate roles will focus on greater automation, performance management and IT process engineering. The product and service management roles will change from simply responding to service requests and tickets, to developing, selling and marketing, delivering and supporting service offerings.

EMC believes architects will spearhead the journey to the private cloud. The design team will consist of two types of architects — for cloud and domains.

Commentary

The former are responsible for delivering virtualization and cloud designs based on business strategies that take into account all the key technical domains. The latter (such as systems, storage, networking and security) create the detailed designs for their specific technical domain to complement and expand the work of the cloud architects.

EMC Education Offerings

To bring architects up to speed with the knowledge that they need to enhance their current skill sets, EMC Education will be offering a number of new courses expanding on existing tracks and curricula. EMC Education courses deliver "open" curriculum technology concepts focused on (albeit with EMC examples), but applicable to any vendors' environments. This means that a student's company would not have to use EMC products or even plan on using EMC products. Since EMC is a for profit company, why would it do this? The answer is two-fold. First, education leads to a faster adoption of new technology in general and the overall growth of the market, resulting in fallout that should ultimately benefit EMC (the 'rising tide benefits all' effect). The second is that students should gain a favorable impression of EMC from the courses and that might lead to future consideration of the company's products and services.

Another key to the EMC Education process is that courses can end with certification. EMC follows recognized standards for issuing certifications so they are well-accepted (and having certifications to your name is always a good career move). At the end of each

course, students must pass an exam to earn their certifications. Note that a person does not have to take the course to take the test so certifications can also be obtained without formal training. However training is helpful and probably necessary in most cases.

Not all students pass EMC's certification tests the first time around, but just like with a bar exam, they can retake the test. With the CIO looking over employees' shoulders to see that the people they sponsored in courses measure up, that would seem to provide an additional incentive.

Next quarter EMC Education will be offering courses and related certification for cloud architects and data center (a.k.a. domain) architects. The EMC-proven professional certification tracks for Cloud Architect (EMCCA) include virtualized infrastructure and IT as a service. The Data Center Architect (EMCDCA) tracks focus on storage networking, information availability, information storage security and storage service management. These latter courses reflect EMC's storage heritage, but are still key in helping domain architects flesh out ideas that the cloud architects will bring to them.

Courses are expected to take about a week each and cost roughly \$5000. That seems to be a reasonable time and money commitment when considering the value of the new and increased knowledge base the architects will bring back to their organizations.

Mesabi Musings

CIOs may very well be ambivalent about the journey to the private cloud. A careful examination shows many benefits of the private cloud, but the transformation process itself creates changes within IT concerning roles, behaviors, relationship with users, and culture that have to be managed effectively. Before the CIO takes on those challenges, he/she wants to know that the change is technically feasible. Managing change is one thing, but managing a change process that does not meet the desired outcomes is a waste of human and financial resources.

The CIO turns to the IT architects to advise and assure. However, even though architects are well-respected, trusted and very knowledgeable, they do not necessarily possess all of the knowledge they need to define and design as well as to do the other tasks, such as build, the new private cloud-focused IT infrastructure. That is more than understandable since they have not done it before.

That is where training, such as that provided by EMC Education, comes in. Education, in general, is something that IT management authorizes so that personnel keep up to speed on a particular product or technology (a good thing, but not necessarily mandatory). In many cases, what EMC Education offers, say to cloud

architects, is *mandatory* to the IT organization that wants to deliver the desired outcomes.

Now those are strong words as IT has a history of ad hoc approaches to the adoption of new technologies and has been reasonably successful. But these solutions tend to be domain specific (such as using server virtualization for a specific set of non-critical applications). However, in private clouds, we are talking about a *big* change and even though the final outcomes cannot be defined with precision today, accomplishing what one plans with more agility and flexibility means that required changes should be accommodated more easily. Bottom line: providing the right education to reach desired outcomes is the goal of EMC Education's private cloud offerings, and that should be enough motivation for customers looking for the right education.

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