10 questions to test your virtualization readiness

Before diving into virtualization, industry analyst group suggests asking critical questions.
By Denise Dubie , Network World , 07/03/2007

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Virtualization appeals to IT executives looking to maximize data-center operations, but they must ask themselves 10 difficult questions before rolling virtualization out to successfully adopt the technology, industry watchers say.

Enterprise Management Associates this week released its collection of "Top 10 questions to ask before any virtualization project." According to EMA senior analyst Andi Mann, the list starts with the basics around existing skill sets and quickly moves on to technical hurdles of which every IT organization should be aware. The benefits of abstracting software away from hardware to create a flexible, dynamic environment are compelling, but successful adoption depends on having the right skills, security and management tools and business drivers in place.

"In some cases, the technology is not ready, or the returns will not be sufficient, to embark on such a major change in technology, architecture and process," Mann writes. "Virtualization should not be rushed. It is a long-term opportunity, and enterprises that approach virtualization carefully as a strategy, not just a project, will be better positioned to benefit in the long run."

Here is a rundown of the key questions to ask before embarking on an enterprisewide virtualization project.

1. Do you have the skills to support virtualization?

EMA ranks the lack of "appropriate skills" as potentially the biggest barrier to successful virtualization deployments. The research firm says about three-quarters of enterprise companies that don't yet have virtualization in place believe they don't have the skills to support the technology. EMA recommends training staff before the technology is adopted, determining requirements, documenting expected changes and performing pilots of virtualization technology in small sample environments.

2. Are you ready for the politics virtualization could introduce?

The second pitfall is also related to the human element. Because IT departments have existed in siloed groups for years, IT executives could face pushback in their efforts to win mainstream acceptance of virtualization technology, EMA says.

For instance, some groups may not wish to share server resources, and for that reason, EMA recommends organizations put in reporting tools to show how virtualization is either helping performance or at the least not hurting departments by sharing resources among them.

3. Have you considered and can you accept the risks?

Virtualization technology reduces the amount of physical resources needed to support multiple systems and applications.

But at the same time, it "concentrates more users and applications on fewer, more complex, shared virtual environments," the EMA report reads, and because of that, "the impact of hardware failure, human errors, security breaches, planning problems, support issues and more are vastly magnified in a virtual environment." Among its suggestions, the research group recommends enterprise companies develop detailed business continuity and disaster-recovery plans at all stages of the virtualization project.

4. How will your security systems hold up? Virtualization can introduce more security holes, more forms of malware and more vulnerabilities than many organizations are prepared to tackle -- mostly because today's technology isn't yet equipped to deal with the new threats. Such security issues as hypervisor infections, rootkit viruses and malicious virtual machines can "be virtually undetectable with current tools," EMA says. IT executives must secure virtual machines as the do physical machines, and take extra steps to ensure the virtual environment is locked down. "Technology and disciplines for discovery, configuration, change management and more become critical to detecting virtual malware," the report reads.

5. Do you have compatible systems and applications? Some applications and systems do not mesh well with virtualization. For instance, EMA cites applications with "highly efficient usage, severe requirement spikes or continuously high utilization of any resource." Also applications that interact directly with hardware will also stall a virtualization project, the research firm says.

6. Do you have a capacity-planning discipline? Virtual server sprawl is a common result of virtualization deployments outgrowing their existing capacity. EMA recommends IT organizations use detailed capacity-planning measures to make sure they have sufficient hardware and software resources to support their virtualization implementation and make sure it doesn't get out of control.

7. Is there support for your environments? While many popular, packaged applications support virtualization, many applications do not, EMA says. The research group recommends IT shops investigate which of their software and hardware platforms are supported and which might require them to upgrade before rolling out virtualization.

8. Can your network support virtualization? Network and storage can represent potential bottlenecks for virtualization in the data center. For instance, virtualization technologies that focus on the user, such as application or desktop virtualization or application streaming, don't work well over low-bandwidth connections, EMA says. Enterprise IT managers can try to address network and storage limitations with WAN-optimization technologies or by limiting the proliferation of images.

9. Can your management systems handle virtual environments? While virtualization reduces the number of physical resources to manage, it increases the complexity of the overall environment and introduces management issues that that could challenge some IT managers. For instance, the ease of deployment leads to a proliferation of virtual machines, or virtual server sprawl, which

makes management exponentially more difficult. Also the added layer of software increases the complexity of managing the entire environment, EMA says. "Until management tools catch up with virtualization, the key to success is having not just tools, but also strong process disciplines for discovery, performance management, configuration management, patch management, service-level management, provisioning, disaster recovery" and more, the report reads.

10. Does virtualization help you address business objectives? Perhaps the "most overlooked factor in the rush to virtualization" is aligning the technology implementation with specific business goals, EMA says. To measure the success of a virtualization rollout, enterprise IT shops must first know their desired results before deploying the technology. EMA recommends IT managers plan for long-term strategic results and not use virtualization as a quick fix for a pressing pain point. For instance, while many organizations may consider cost savings a result of virtualization, EMA reports that is not often the case.

"Overall, cost savings is not always the most likely outcome -- in fact, reduced costs (software, hardware and floor space) are the least expected outcomes. Despite the touted cost benefits of server consolidation, for example, it delivers only one-off cost savings, and the additional costs -- especially of software -- are often considerable," the report reads.