

Understanding Virtualization's Limitations - IO



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Just about everybody agrees that server virtualization is a good idea, since the practice leads adopters to improved efficiency, increased availability and lower costs. But as enterprises large and small leap into the virtualization pool, some are doing so with unrealistic expectations, perhaps misled by over-enthusiastic colleagues and gushing news reports.

Whether you're a virtualization pro, just beginning a virtualization project, upgrading an existing deployment or still sitting on the sidelines, it's important to understand and stay within the technology's boundaries to create a server environment that will meet your needs today and for years to come. To help you better understand virtualization's real world applications, here are six popular myths about the technology debunked:

1. Virtualization eliminates service outages. By "spreading the risk" among multiple machines, virtualization can help reduce the likelihood of a total outage. On the other hand, virtualized servers require more and stronger redundant services than their traditional counterparts, since the failure of even a single virtualized server is more likely to affect multiple applications and services than the collapse of a traditional server. Carefully consider this point when looking for a place to locate virtualized servers, paying particular attention to available power, cooling, network and security resources.

2. Virtualization can be deployed without a storage area network (SAN). While this may be technically true, it's not necessarily a good idea. The applications and databases running on each virtualized physical server are likely to require more storage capacity than the machine's hard drive can provide. In any case, running a virtualized environment without a SAN isn't very efficient or cost-effective.

3. Virtualization significantly cuts security requirements. Actually, the opposite is true. To prevent threats to the entire server environment, access to virtualization software must be tightly controlled. Understand that it's possible for someone with access to a virtual machine to download an

application that launches an attack on the virtual “walls” that separate individual virtual machines.

4. Data centers that embrace virtualization need fewer staff members. Virtualization usually has little or no impact on staff size requirements. While the quantity of physical servers is reduced in a virtualized environment, the total number of machines (in virtual form) typically increases. Whether physical or virtual, servers need to be managed, monitored, updated, patched, troubleshooted and generally tended to, and that’s where most of the real work lies. Hardware-oriented service demands (like replacing a blown power supply) usually consumes only a small fraction of overall staff time.

5. Virtualization cuts software licensing costs. It seems obvious that server consolidation via virtualization would either stabilize or lower software licensing expenses. But this assumption fails to recognize the law of unintended consequences. With a seemingly unlimited number of virtual machines suddenly at their disposal, business managers begin asking for more computing resources for their departments. To cope with these requests, and given the fact that resource requests once granted are not easily revoked, many data center managers actually find themselves eventually adding more physical servers simply to keep pace with spiraling demands for virtual resources. Therefore, to stay on the safe side, make sure that your data center can support future server expansion.

6. Blade servers can be used successfully in a virtualized environment. Using blades in virtualization can be risky, since the approach requires placing multiple virtual eggs into a condensed server basket. If you decide to use blades (and there are some good reasons to do so), make sure that your installation is supported by adequate backup and redundancy services. Remember that the failure of a tightly-packed blade installation can result in the simultaneous loss of numerous applications and services.

Tags: blade servers, data centers, virtualization

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