



Evolving IT Infrastructure

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A Change is Coming

We are on the cusp of a major shift in enterprise computing which will change the IT infrastructure forever. It is now clear how a product like VMware changed server computing from physical to virtual and overhauled the makeup and footprint of the server room. This revolutionary change in server computing, though epic, was focused in scope and only affected a single segment of the IT infrastructure. Leveraging this momentum, the next wave of change in IT infrastructure will trigger a transition from physical to virtual, hardware-driven to software-driven and in-house to the Cloud.

Transition to the Cloud

Over the last few years, the Cloud has become an over-hyped, over-used term. For those of you who have lost faith in the Cloud, do not be fooled; it will continue to gain momentum and will shine bright once in full swing. Looking forward, enterprises will move their servers, storage and backups to the Cloud, whether it be public or a purpose build hybrid cloud. Offering agility, scalability and cost benefits, the **IaaS cloud delivery model** will continue to be the platform of choice. Compliance and security will be addressed as cloud providers are gearing up their toolset to provide higher levels of security in order to meet compliance concerns. In the meantime, sensitive data can be stored locally as part of the hybrid cloud model. No longer will IT have to go through the lengthy, time consuming and cumbersome process for server or storage requisition, a process that could easily span 30-90 days from inception to implementation. The Cloud can provide a new server or additional storage in minutes, greatly increasing the ability and perception of IT.

Another use case for the Cloud gaining traction is Disaster Recovery as a Service (DRaaS), due part and parcel to its cost effectiveness. Providers of DRaaS leverage server virtualization technologies to reduce their cost, sharing storage and networking components across many customers, making their economics almost untouchable by the typical enterprise. The upside of this new service is that many smaller companies who were unable to afford disaster recovery in the past can now not only afford it, but also enjoy its near real-time replication and recovery offerings.

Physical to Virtual and Hardware Driven to Software Driven

Another component of the evolving IT infrastructure is the movement from a hardware-driven IT environment to a software-driven data center. Though hardware will always be required as software can only run on hardware, the role of hardware will diminish as the intelligence is removed from the hardware devices and centralized in software devices.



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es separated from the hardware it controls. As server virtualization allowed a single physical server to be carved into multiple, compartmentalized 'virtual servers,' all running on and sharing the resources of the single physical host, other virtualization technologies are also gaining traction and are all driven by software.

Software Defined Networks move the control plane, the decision-making software, from the network switch to a common management platform that controls the entire network. This puts decision-making control closer to the traffic flow while allowing for new features unavailable before. This trend is slow moving in the enterprise, but is being adopted more rapidly by cloud providers because of its advanced feature set, ability to automate provisioning and cost effective management. Cloud providers will jump start enterprise adoption as these companies build their hybrid clouds with integrations into both public and private cloud services.

Another trend that will affect the IT infrastructure is storage virtualization, or Virtual SANs, which have been around for a while now. Most of these solutions contain a hardware device that sits in front of disparate storage devices and makes them appear to servers and applications as a single pool of storage. What I am referring to is the newer concept of leveraging a heterogeneous storage pool of solid state, SAS and SATA drives combined with management software to build a virtual SAN capable of greater scalability than current SAN units. These virtual SANs do not face the same throughput limitation of the existing controller based SANs. Again, this technology is driven by cloud providers looking to build massively scalable storage solutions to cost effectively meet the needs of their customers. Once common place in the cloud, enterprises will feel comfortable deploying to their internal hybrid cloud platform and these enterprises will never return to the traditional controller based SAN currently deployed.

Software to the Cloud

Another movement gaining traction is the Software as a Service (SaaS) Cloud delivery model. The days of IT deploying, managing and maintaining all their software applications is dwindling. There is already a large movement of enterprise applications that have traditionally been housed internally to the Cloud. I personally have seen many of our clients move their email and office suite applications to the Cloud by leveraging Microsoft Office 365 or Google Apps for the enterprise. This greatly reduces the time IT needs to devote deploying, upgrading and maintaining these applications.

SaaS is also gaining momentum with other mission critical applications such as SAP and CRM which traditionally required expensive hardware and specially trained administrators to run and support. Moving forward, the breadth of applications available via SaaS will be fueled by companies such as Microsoft, IBM and others whom are committed to making their entire application portfolio available via a SaaS delivery model.

In Conclusion

IT departments will be a shadow of their former self as a result of the latest evolution of IT infrastructure. This evolution includes shifting from delivery of IT services to managing and monitoring the process, moving from being in direct control to managing the partners and vendors that are responsible for delivery and an emphasis on partnering with internal business units to improve process with less emphasis on where or how the technology is implemented. This evolved IT infrastructure will allow IT to spend time on the important aspects of business as the more mundane task are moved to the Cloud—which ultimately leads to a clear win-win for all.

