



I D C A N A L Y S T C O N N E C T I O N



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Reducing Infrastructure Management Challenges with Converged Systems

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The use of converged systems as an alternative to traditional procurement and delivery models will continue to be one of the most important developments in the evolution of the IT infrastructure market. End users and service providers alike will rely heavily on suppliers to offer converged systems, which encapsulate server, storage, networking, and management software into tightly integrated and more efficiently and easily managed infrastructure solutions. IDC forecasts that overall spending on converged systems will grow at a compound annual growth rate (CAGR) of 54.7% from \$2.0 billion in 2011 to \$17.8 billion in 2016.

The following questions were posed by Cisco Systems to Carl Olofson, research vice president of IDC's Application Development and Deployment practice, on behalf of Cisco's customers.

Q. What are the major challenges facing application datacenter organizations in terms of IT infrastructure as they relate to mission-critical applications like SAP?

A. One of the major challenges with mission-critical applications like SAP is the complexity of the infrastructure necessary to support them. Such applications typically involve a collection of servers — some of which are specialized to run the applications and others that are specialized to run the associated databases. These servers are linked with storage through a network; all of these components make for a very complicated combination of servers, storage, and networking, and as application use grows over time, the complexity of that configuration grows as well.

Q. What are the key factors contributing to inefficiencies in IT system administration of mission-critical applications and management?

A. A significant factor is that IT administrators need to manage a variety of different storage and networking systems. This is because the infrastructure for mission-critical applications tends to be standardized. As a result, administration and maintenance are segregated by server and by application. This is inefficient because the same, repetitive maintenance work has to be done for every server over and over again. In addition, organizations commonly build an infrastructure that consists of a combination of servers, storage, and networking for each application that they deploy. This infrastructure is in itself very inefficient.



Q. How can converged systems ease system deployment? Is deployment any quicker or more efficient with the various hardware platforms?

A. Converged systems ease system deployment by eliminating much of the setup work required with more traditional systems. Converged systems are designed to work for a particular database or application; they are already configured correctly for the specific use case at the factory, resulting in less initial setup work at the datacenter. Over time, converged systems also tend to require much less effort to maintain because they are more self-managing to begin with. To the extent that converged systems need maintenance, the tasks are streamlined to suit the workloads that run on those systems. This is in contrast to maintaining systems that are configured for various workloads in-house, where it is up to the datacenter administrators to figure out how to manage those systems and set up a maintenance schedule.

With converged systems, the overall deployment is quicker, yet there's a trade-off. For example, if an organization developed a converged system that is completely self-contained, then the system — the servers, network, and storage — is managed according to all of its own management processes and techniques. However, if an organization has a storage standard in place and already has an efficient mechanism for managing the storage, it may be better to use the converged system, which can be connected to that storage system. This is because storage is often deployed as a common resource across the datacenter, whereas servers specialize in particular workloads.

Q. Given that a greater number of workloads are deployed in a virtual environment rather than in a physical environment, how does system design affect virtualization performance?

A. In the virtualized environment, it is critical to have systems that can share resources efficiently so that an organization can virtualize those resources and move them around easily. Therefore, the systems need to be set up with a certain degree of homogeneity in order to move resources in a way that ensures predictable performance results throughout the process.

Q. Since time to deploy systems and applications is a key focus for many enterprises, how can the application datacenter accelerate the provisioning of systems?

A. There are two possible approaches to this problem. One is to virtualize all the resources in the datacenter so that when new workloads come along they can be assigned as virtualized resources dynamically to the workload. There's a lot of work involved in this approach, however, and an organization has to be confident that the entire portfolio of physical resources is appropriate and adequate for all of the workloads that will eventually be introduced.

The other possibility is to go with more of an appliance approach or a converged system approach. With this approach, let's say that an application vendor or a database vendor has the specification and the hardware partner that allow deployment of resources or workloads in a preconfigured environment. An organization can reduce the complexity of the work required to configure systems by implementing those preconfigured environments. In the case where converged systems are available, particularly for applications that have very specific requirements, it's often a better option to go with a preconfigured system than attempting to put applications into a generalized, virtualized environment. Additionally, many integrated systems utilize provisioning templates or profiles to speed time to deploy new applications. These profile templates, developed from vendor expertise and best practice, enable quick deployment of infrastructure while minimizing human error.

ABOUT THIS ANALYST

Carl Olofson performs research and analysis for IDC's Information Management and Data Integration Software service within the Application Development and Deployment research group. Mr. Olofson's research involves following sales and technical developments in the information and data management (IDM) markets and database management system (DBMS) markets; data movement and replication software, data management software, and metadata management software; and vendors of related tools and software systems.

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