

HP Converged Infrastructure: the Solution to Sprawl



For years, IT organizations have been adding servers, storage and networking devices to keep pace with applications and the terabytes of data they generate. Over time, these IT resources have become locked up in countless technology silos, each devoted to a particular application.

To ensure service level agreements, these silos have created overprovisioning and underutilization, and have become difficult to manage. The result is more budget spent on operations and an inability to deploy new services quickly. The sprawl of underutilized IT resources leads to diminished productivity, lack of space, complex networking and unnecessary facility costs.

An Impending Breaking Point

To counter sprawl, IT organizations are dramatically expanding server virtualization. IDC reports that 6.3 million virtual machines were deployed in 2008, with the number of virtual servers expected to surpass the number of physical servers in 2010. Virtualization greatly speeds up server deployment and application growth, but removing these bottlenecks to application deployment leads to acceleration in data growth and network traffic. As a result, storage and networking infrastructures can't keep pace with server virtualization.

Most of today's storage environments have been associated with specific application implementations from their original date of deployment. The deployment method has hardwired



The converged infrastructure is able to adapt to a wide variety of demands in the most efficient way possible to meet different requirements for performance, resiliency and overall efficiency.

storage to servers and trapped capacity throughout the infrastructure.

Typical companies use a multi-tiered infrastructure that relies on centralized core switches at the top, aggregation/distribution switches in the middle and access switches at the bottom at the network edge. This infrastructure requires that most data

must be sent to the mid-level and upper-level switches to reach their destination. These network switches are intelligent—performing decision-making processes—but they are not high performance. Virtualized



environments require a higher performance network infrastructure with intelligence moved closer to the edge of the network.

The 70/30 Spending Ratio

A recent InformationWeek survey found that IT organizations are typically spending up to 70% of their budgets on operations and maintenance. That leaves just 30% for business innovation, such as the deployment of new applications and services. On the business side, executives are looking for improved outcomes, with application owners needing quicker ROIs and higher service levels from IT. But on the IT side, there is tremendous pressure to contain costs and gain more value from existing investments. Too often, IT managers cannot meet the business

organization's needs, because they are confined by the sprawl of technology silos.

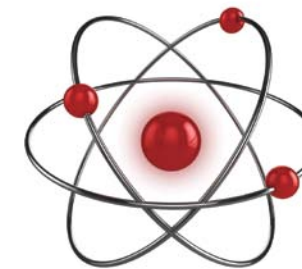
A Converged Infrastructure Offers Innovation, Insight & Elasticity

The solution to sprawl is to break down the technology silos and bring all IT resources together into adaptive pools of assets that can be shared by many applications and managed as a service. This converged infrastructure brings together management tools, policies and processes so resources can be managed in a holistic, integrated manner. It also brings together power and cooling practices so systems and facilities work synergistically to extend the life of the data center.

What is a converged infrastructure? In the most basic sense, it's a truly service-centric model of IT, not one that is system-centric. The idea is to merge computer, storage and networks with facilities into a single environment.

All resources and processes are controlled by a shared-services engine that provisions application workloads to instantly respond to business demands. As a result, service delivery is faster, repeatable, predictable and more efficient.

The converged infrastructure creates a foundation to gain more potential from top IT trends, such as cloud computing, green IT and virtualization. Rather than relying on inefficient, short-sighted, point solutions to accommodate changing business needs, the converged infrastructure is built to change along with your



business. Convergence is less about making quick new purchases today, and more about planning for the future. The following are five main characteristics of a truly converged infrastructure.

- **Virtualized**
Heterogeneous resources are separated from underlying hardware making it easier to reallocate resources.
- **Resilient**
Integrates nonstop technologies and high availability policies.
- **Orchestrated**
An application-aligned infrastructure that can be scaled up or down and centralizes resource pool management.

- **Optimized**
Self-optimizing for any workloads on either physical or virtual machines.
- **Modular**
Open and interoperable standards for integrating new technologies with existing investments.

Bottom-Line Benefits

By aggressively converging IT systems, management tools and facilities into a simplified architecture and toolset, the HP Converged Infrastructure matches resource supplies with application demand. By transitioning away from a product-centric approach to shared-service management, your organization can accelerate standardization, reduce costs and maximize results.



The converged infrastructure is built on modular design principles based on open and interoperable standards. A modular approach allows IT to integrate new technologies with existing investments without having to start over and gives IT the ability to extend new capabilities and scale capacity over time.