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Snapshot Report

SimpliVity™ gets it: A simplified, virtualized and assimilated data center system

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When you think of converged infrastructure, imagine a rack full of servers, storage, storage switches, IO caching devices, WAN optimization and deduplication appliances all glued together with optional, and often expensive software, that is intended to optimize performance, virtualize resources, improve manageability and protect and deduplicate data assets stored on the rack. You'll see way too many boxes and special-purpose appliances bolted together to make a system, which is available to you at a price point that could break the bank. The system you imagine also isn't accomplishing what you intended it to do – that is simplify the management of your IT environment, protect it and optimize its performance for business-critical applications.

Some vendors have attacked the data center simplification problem by stacking and racking server, storage and networking gear into converged infrastructures that attempt to simplify the IT infrastructure. They've bolted on special-purpose backup and deduplication, WAN acceleration appliances to reduce the amount of data on their networks and to optimize the transfer of data across the WAN and into the cloud. If users want to protect their data and provision across disaster, they've added expensive replication, snapshot and data tiering software to this converged system. The resulting systems these vendors have designed though do just the opposite -- they contribute to the complexity and clutter of the network, they represent inflexible designs that are difficult to change and, they are more expensive.

Enter SimpliVity™, a company founded in 2009 by Doron Kempel, formerly founder of virtual tape library/backup and deduplication appliance startup Diligent (acquired by IBM). He's the energy behind SimpliVity's OmniCube, which natively incorporates all the features and capabilities that these bulky converged infrastructures don't.

The OmniCube™ takes a different approach to solving the problems of today's virtualized and cloud data center infrastructures. Instead of converging a variety of special-purpose appliances, servers and storage -- often from different vendors -- the OmniCube assimilates or integrates the server and storage hardware with deduplication, backup, data tiering, caching, flash, data protection and cloud gateway software to create a single, infinitely scalable stack.

The hard details

Each OmniCube is a 2U (1.75-inch) high, rack-mountable system that contains both standard server and storage resources, in addition to the SimpliVity special sauce: the underlying customized hardware and software that empower the system. Specifically, OmniCube ships with 2 6 core 2.5GHz Intel Sandy Bridge Xeon processors, flash disk, and HDDs. The underlying technology, called OmniStack, combines the OmniCube software with a specialized PCI-e accelerator card responsible for handling processing-intensive algorithms, hardware acceleration and index-related functionality. Two or more OmniCubes are linked with each other via 10GbE to create the Open Federation, a shared pool of resources that enables much of the end-user functionality of the system. Storage is directly attached to servers via internal SAS connections.

OmniCubes are deployed in sets of two or more systems—called the OmniCube Federation--for high availability, and incoming data is written simultaneously to two assimilated appliances within the Federation. OmniCubes can be clustered or federated locally, remotely and across geographically distributed locations, as well as in the cloud for disaster recovery and business continuity.

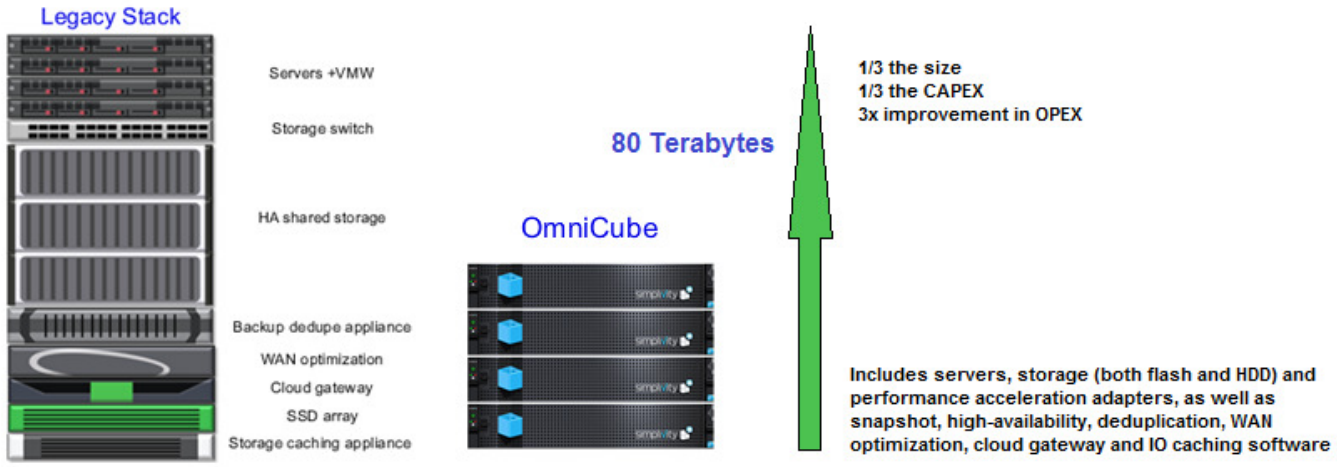

Figure 1. A comparison between legacy converged infrastructures and the OmniCube

Further, OmniCubes are designed to be hypervisor agnostic – SimpliVity's initial offering is for VMware environments with plans to extend support for Microsoft Hyper-V and Citrix XenServer environments. SimpliVity's OmniCube fits well into legacy server environments and their associated storage. Data on legacy servers and virtual machines (VMs) can be migrated to OmniCube just as it would be in traditional storage/server environments, by moving a VM and its associated data to the OmniCube federation.

The software and management works

Unlike other systems, OmniCube data is not tied to the storage hardware, but to the VM itself. Each application or VM knows which data it needs in order to do its job, the OmniCube Federation takes care of the management and protection of the data, and serves it up as needed. This is a key enabler of the simplicity for the VM administrator that OmniCube delivers.

As data is ingested by an OmniCube, it is deduplicated and compressed at inception, and maintained in this fine grained state throughout its lifecycle. This global deduplication and compression yields not only significant capacity savings, but also improves the granularity and efficiency of caching, and optimizes data transport across the WAN.

OmniCube makes virtual machines, the currency of today's data centers, the focal point for management and architecture and empowers the virtualization administrator or server administrator with an integrated stack of nodes, policies and information that can be managed from a single management pane within VMware's vCenter.

From this console, policies can be set by the administrator that control when snapshots are taken, where data is stored, what virtual machines are backed up and what recovery point and recovery time objectives are set for different virtual machines. Included replication technology is available for off-site data protection.

Management of the OmniCube federation is under the control of the administrator responsible for managing the VMs in the environment. Terms used in management of the infrastructure within the OmniCube UI are those familiar to the IT generalist, not the 'LUNs,' 'zones,' or 'RAID groups' familiar to specialized storage administrators.

Our Take

The SimpliVity OmniCube takes the next step in the simplification of the virtual and cloud data center, way past where vendors of converged infrastructures have. The OmniCube is unique in that it combines not only server, storage and virtualization software, but also deduplication, snapshot and data tiering software at a price that is affordable for mid-sized businesses. Unlike converged infrastructures, which cobble together a variety of hardware and virtualization software, SimpliVity's assimilated approach integrates products from the same vendor, ensuring a greater degree of management and support.

Storage Strategies NOW is impressed with the vision of this young company and with the comprehensiveness of its product. The OmniCube, scheduled to be available in the fourth quarter of this year, is a welcome entrant to the assimilated data center.