Hybrid's Next Phase: Mixing Physical and Digital Worlds

DESPITE THE STEADY ADVANCES OF CLOUD IN THE ENTERPRISE, MANY COMPANIES CONTINUE TO WORK IN FITS AND STARTS WHEN MOVING TO THE CLOUD FROM TRADITIONAL ARCHITECTURES.

WHY HAVEN'T THEIR EFFORTS QUITE MATCHED EXPECTATIONS? Some are finding it difficult to virtualize workloads that aren't ready to leave physical data centers and non-virtualized infrastructure just yet. Often, these are mission-critical applications that simply can't compromise on performance.

Organizations also may have significant investments in physical appliances, such as application accelerators or load balancers, and are still awaiting ROI for those purchases. It's hard to justify moving the applications for which those appliances were purchased. Fortunately, businesses still can make progress integrating physical infrastructure with a virtual cloud platform to attain enterprise-class managed application services. Consider this an extension of the hybrid cloud traditional integration of private and public cloud environments.

"The concept of fitting physical workloads into this world constitutes another leg of hybridity," explains Thomas Warnock, director of cloud technology at managed hosting solutions and application services provider NaviSite.

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One situation where businesses can leverage traditional physical infrastructure and virtual cloud services involves a database cluster, running on bare-metal servers in a hosted data center, while the web/application tier utilizes cloud elements. By bridging a large bare-metal database with applications running in the cloud, the enterprise gains the advantages of big iron performance with the cloud's benefits of agility, rapid deployment, scalability and consumption-based billing.

"A database cluster is powerful, but big and expensive, and IT wants to reduce the cost of that and add some agility," says Warnock. Creating a Layer 2 bridge between a logical switch and a VLAN enables IT to connect physical devices and virtual workloads with ease.

Another strong use case for marrying physical infrastructure and virtual cloud services is disaster recovery and business continuity. The flexibility of the cloud makes it easier for enterprises to test replication of dedicated on-premise systems to a virtual environment, giving them greater confidence that the solution will work as planned should a crisis occur. That's in contrast to the state of many existing DR/BC efforts: There's too much fear that conducting failover tests across physical sites will disrupt operations, so they're rarely done.

A business may also be eyeing the cloud for a certain type of scaling, such as adding more app servers for workload bursts, but is struggling with limited time and resources to redesign the whole application for the cloud. "They might have to move specific application tiers over from the on-premise infrastructure," Warnock says. Providing a seamless physical-to-cloud hybrid connection allows businesses to address scaling issues without forcing fast, wholesale redesigns for which they may not be prepared.

"What's important about NaviCloud Director is the breadth of services it enables," says Warnock.

CONNECTING THE TWO WORLDS

NaviSite has positioned itself as a partner to enterprises in helping them meet these types of migration needs. As part of its Managed Application Services (MAS) solution for Oracle, for example, an Oracle RAC database cluster runs on bare metal in a NaviSite data center to ensure that the

underlying application infrastructure is running at peak performance. Layered on top is the NaviCloud platform, which enables organizations to leverage the cloud to deliver Oracle applications in a secure, scalable, and cost-efficient way.

"We understand the ins and outs of virtualization and physical infrastructure and how to connect those together," Warnock says.

NaviSite also partners with VMware to bring even more value to the hybrid solutions it provides to customers. For example, NaviSite can tap into VMware's NSX L2 bridging capabilities, which allows VMs to be connected at Layer 2 to a physical network for linking bare-metal devices and virtual cloud infrastructure workloads.

"NSX brings us that linkage to other worlds and gives us a lot of flexibility about how we connect in," says Warnock. Other capabilities include advanced security by way of micro-segmentation.

VMware vCloud Director also forms the foundation of NaviSite's NaviCloud Director cloud solution, which includes disaster-recovery technology for replicating virtual machines between these environments or from a customer's dedicated on-premise or virtual IT environments.

The NaviCloud Director platform is a foundational component of NaviSite's cloud and hybrid cloud strategy, according to Warnock. Designed for self-service customers, NaviCloud Director blends the scalability and rapid provisioning of a cloud computing platform with enterprise-level architectures. This enables organizations to rapidly roll out and scale cloud-based applications and business models, while integrating physical workloads into a hybrid cloud.

"What's important about NaviCloud Director is the breadth of services it enables," says Warnock. Those services range from replication to simplified migration and integration of cloud-based services with premises-based VMware infrastructure. NaviSite also brings the ability to service customers from both ends of the physical-virtual hybrid connection. For instance,

it can serve as the hosting/cloud partner to manage customers' physical servers and associated applications within their data centers. NaviSite also has the expertise to manage pieces of an application or an entire application environment that has been migrated to the cloud. Indeed, one of its core strengths lies in its flexibility to pull multiple services together to meet business' hybrid cloud needs.

And many of those needs remain unmet, Warnock says. "Helping businesses deal with integrating physical workloads into the cloud is a subject overlooked by many cloud purists," he explains. "But to the end of this decade at least, businesses will still have challenges working through these issues and getting applications into the cloud."

For more on NaviSite's enterprise-class managed applications and cloud services, visit NaviSite.com