On July 23, 2012, VMware announced that it has signed a definitive agreement to acquire Nicira, a relatively young start-up in the network virtualization and software-defined networking (SDN) space. VMware will acquire Nicira for approximately $1.05 billion in cash plus approximately $210 million of assumed unvested equity awards. The acquisition is subject to regulatory approvals and other customary closing conditions. The parties expect the acquisition to close during the second half of 2012. The acquisition has been approved by the boards of directors of both VMware and Nicira and the stockholders of Nicira. This is the largest amount that VMware has ever paid for an acquisition.

Nicira fits well into VMware’s vision for the software-defined datacenter (i.e., virtualized, programmable pools of compute, storage, and networking) and VMware’s efforts to build out an SDN portfolio for the datacenter.

Nicira’s Network Virtualization Platform (NVP) is a network hypervisor. The network hypervisor is a thin software layer between the physical network and the virtual machine. This design enables network virtualization to work with existing physical datacenter network devices. The Open vSwitch runs natively in the hypervisor and is managed by Nicira. Nicira is attractive in that it is designed to enable any hypervisor on the same logical network, providing a common network experience across the datacenter. The virtual networks bring flexibility and agility to datacenter designs while enabling isolation to support multi-tenancy. Further, the virtual network holds the promise of supporting an evolutionary approach to cloud migration in that it is isolated from the physical network. The virtual network does not disrupt the current network services (firewalls, etc.) deployed in the datacenter, while providing an overlay to existing and future physical network infrastructure.

VMware clearly recognized the need for more advanced networking years ago and has been actively working with its networking partners to advance the network functionality in the virtual datacenter. To date, however, the company has not been perceived as a leading voice in the broader networking community. The acquisition underscores the fact that VMware can no longer rely on partners for networking expertise. Networking is a critical pillar in private cloud delivery, and Nicira gets VMware closer to having a full solution. For VMware, one of Nicira’s key assets is the pedigree of the team. The company’s founders and employees are active in the standards community and have a history of success in the networking industry. Nicira, to its credit, also found success in its outreach and early deployments across a diverse set of customers, which include enterprise and service provider customers. The acquisition gives VMware an immediate leadership position in the emerging and software-defined networking ecosystem.

While VMware is the undisputed leader for server virtualization, at least for now, the hypervisor is commoditizing. With Microsoft and others coming to market with much improved hypervisors, VMware is redrawing the battle lines by not only going up the stack into management and cloud software but also across the infrastructure silos such as storage and networking. As it does this, the functionality it offers can often complement existing storage and networking solutions, and VMware can go to market with partners. The migration to cloud will also create disruption in the market, and VMware offerings will sometimes move the value out of the hardware and into its software platform, creating conflict with entrenched vendors and their market. In the case of Nicira, a virtual network solution will create friction...
with longtime partner and networking giant Cisco, also a key part of the VCE converged infrastructure initiative.

**Why Virtualize the Network Now?**

As enterprise customers move further along the path to private cloud, they are finding they need to rearchitect the network. For most datacenters, the wealth of existing network services, such as security, quality of service, and visibility, is available to a physical server, not to individual virtual servers. As the number of virtual servers explodes compared with virtual servers, datacenter architects are meeting roadblocks on multiple fronts. In order to meet regulatory compliance, design an efficient datacenter, or give hosting customers confidence in an offering, security between virtual machines coupled with dedicated virtual networks is a must-have. Datacenter managers are not able to allocate bandwidth dynamically to each virtual machine or application. More importantly, the inherent static attributes of the network mean that the network has become a bottleneck to new service provisioning. The ability to create virtual networks at the speed of virtual server provisioning is an attractive value proposition meeting time-to-market demands in the new intelligent economy. Customers report to IDC that advanced networking is one of the top three components that must be present for IT delivery infrastructure to be considered a private cloud — an architecture that will allow applications to be more closely aligned with the underlying network.

Nicira’s technology is equally applicable to customers in the service provider space. While Web-scale public cloud providers such as Google and Amazon built modular, flexible, and scalable compute infrastructures, they lack an equally elastic approach to networking, particularly in the areas of network security and feature functionality (i.e., multi-casting and dual stack IPv4/IPv6). Other service providers making plays in the cloud arena (traditional hosters, telcos, IT outsourcers, etc.) also face operational challenges as they combine dynamic cloud-style IT infrastructure with static, manually configured physical networking. Rackspace and NTT, key Nicira customers and OpenStack collaborators, are leveraging the NVP for more efficient scaling of their private cloud offerings, development of differentiated network-dependent services such as enterprise security, disaster recovery, and physical-to-virtual and on-premise-to-service provider workload migration. AT&T, another Nicira service provider customer, is leveraging the technology (along with OpenStack) as part of the developer-centric cloud platform it introduced earlier this year.

IDC believes that the Nicira acquisition opens up a considerable "beyond the hypervisor" opportunity for VMware as "traditional" service providers look to offer portfolios of on-demand, massively scalable cloud infrastructure and application services that often require attachment to various combinations of L2/L3 network connectivity, as well as Layer 4–7 services. Furthermore, Nicira’s overlay approach, which positions the NVP controller as the datacenter network manager, allows service providers to run their cloud environments with less network hardware and, conceivably, with white-box commodity-grade hardware.

The acquisition of Nicira is also the latest sign of the VMware trend of becoming more open. Nicira networking technology is a major part of other hypervisors like Xen and KVM, as well as cloud system software such as OpenStack. VMware has pledged to continue support for other platforms. The recent acquisition of DynamicOps added support for managing competing virtualization and cloud environments as well, which VMware has also pledged to continue to support, as a hybrid and multi-vendor cloud solution. And projects like the Cloud Foundry PaaS are open source and support non-VMware infrastructure. VMware has wisely expanded its network connectivity, as well as Layer 4–7 services. Furthermore, Nicira’s overlay approach, which positions the NVP controller as the datacenter network manager, allows service providers to run their cloud environments with less network hardware and, conceivably, with white-box commodity-grade hardware.

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**Future Outlook**
This announcement from VMware and Nicira, close on the heels of several SDN and OpenFlow announcements, and Cisco’s own SDN strategy rollout a few weeks ago, reiterates the fact that the profile of the network in next-gen datacenter and enterprise rollouts has risen significantly. IDC expects the network to play a “partner” role with compute, storage, and other building blocks as we move closer to the vision of the software-defined datacenter, and IT infrastructure in general.

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