VMware NSX is the VMware SDN network virtualization and security platform that emerged from VMware after they acquired Nicira in 2012.

This acquisition launched VMware into the [software-defined networking (SDN)](https://www.sdxcentral.com/networking/sdn/definitions/what-the-definition-of-software-defined-networking-sdn/)  and [network functions virtualization (NFV)](https://www.sdxcentral.com/networking/nfv/definitions/whats-network-functions-virtualization-nfv/) world.

The Impact of Virtualization

The solution decouples the network functions from the physical devices, in a way that is analogous to decoupling virtual servers from physical servers. In order to decouple the new virtual overlay network from the traditional physical network, NSX natively re-creates the traditional network constructs in a virtual space — these constructs include ports, switches, routers, and [firewalls](https://www.sdxcentral.com/security/definitions/what-is-next-generation-firewall-ngfw/).

In the past, it was possible to see and touch the switch port that a server connected to, but now, this isn’t possible. Fundamentally, these constructs still exist with VMware NSX, but it is no longer possible to touch them. This is why the virtual network is sometimes harder to conceptualize.

There are two different product editions of NSX: [NSX for vSphere](https://www.vmware.com/support/pubs/nsx_pubs.html) and[NSX for Multi-Hypervisor (MH)](https://my.vmware.com/web/vmware/info/slug/networking_security/vmware_nsx/4_x). It’s speculated they will merge down the road, but for many users of NSX, it doesn’t matter, because they are used to having support for different use cases. NSX for vSphere is ideal for VMware environments, while NSX for MH is designed to integrate into cloud environments that leverage open standards, such as OpenStack.

Another product that is integrated with OpenStack is the Juniper Networks Contrail Controller, an [SDN controller](https://www.sdxcentral.com/networking/sdn/definitions/what-is-sdn-controller/) designed to work with [the cloud](https://www.sdxcentral.com/cloud/definitions/what-is-cloud/).

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VMware NSX for vSphere

The most talked about and documented version of VMware NSX is purpose-built for vSphere environments, otherwise referred to as NSX for vSphere. NSX for vSphere will be deployed 90% of the time, as it has native integration to other VMware platforms, such as[vCenter](https://www.vmware.com/products/vcenter-server) and[vCloud for Automation Center (vCAC)](https://www.vmware.com/products/vcloud-automation-center). NSX for vSphere offers logical switching, in-kernel routing, in-kernel distributed firewalling, and [edge](https://www.sdxcentral.com/edge/definitions/what-multi-access-edge-computing-mec/)-border L4-7 devices that offer VPN, load balancing, dynamic routing, and firewall capabilities.

The product is the culmination of the original networking solution from VMware, vCloud Networking and [Security](https://www.sdxcentral.com/security/definitions/what-is-software-defined-security/) (vCNS), and the [Network Virtualization](https://www.sdxcentral.com/networking/virtualization/definitions/whats-network-virtualization/) Platform (NVP) from Nicira. In addition, NSX acts as a platform and integrates with third parties, such as Palo Alto Networks and F5.

The second edition of VMware NSX is the next-generation NVP product that initially emerged out of Nicira. NSX for MH has no native integration with vCenter because it was purpose-built from the ground up to support any cloud environments, such as OpenStack and CloudStack. As an example, NSX for MH offers native integration into OpenStack, by supporting the OpenStack Neutron APIs. This means OpenStack could be deployed as the cloud management platform (CMP), but NSX will take responsibility for creating and configuring logical ports, logical switches, logical routers, security groups, and other networking services.

While there isn’t native integration with vCenter, it does still, in fact, support vSphere,[KVM](https://www.sdxcentral.com/open-source/definitions/what-is-kvm/), and XEN hypervisors, though it contains less features than NSX for vSphere, from a networking perspective. There isn’t so-called native integration because a user would not be configuring NSX-MH through a GUI. It’s meant to be API-driven from a cloud platform.

VMware NSX and VMware SDN: Key Takeaways

1. VMware NSX is a network virtualization and security platform that was designed after VMware acquired Nicira in 2012.
2. The platform decouples the network functions from the physical devices, in a way that is analogous to decoupling virtual servers (VMs) from physical servers.
3. VMware NSX is also the next-generation Network Virtualization Platform product that initially emerged out of Nicira.
4. NSX for Multi-Hypervisor was purpose-built from the ground up to support any cloud environment, such as OpenStack and CloudStack.