

White paper

The role of **VMware NSX** in Virtual Cloud Networking



Introduction

In this new era where hybrid working and large-scale cloud adoption is the norm, the race towards new application architectures is on. Work environments are no longer single campuses or semi-isolated branch locations but include any space in which employees have a reliable internet connection. More often than not, formerly on-premises data parks and server rooms are extending into multi-cloud and edge computing environments.

This new IT reality introduces a whole new level of complexity; an often troublesome reality for traditional networks not designed to deal with these modern challenges. The solution? virtual cloud networking. A virtual cloud network (VCN) is a system that links devices, virtual machines, servers, and data centres using wireless technology and software. Virtual cloud networking allows organisations to rapidly expand networks as they see fit.

VMware NSX Data Center is one of the best and most popular VCN platforms in the current IT landscape. In this paper, we will take a closer look at NSX and explain why your organisation needs it to take enterprise networking to the next level.

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VMware NSX and the promise of virtual cloud networking

A traditional network manages data over physical routers and switches. The router gets a signal and subsequently passes this on to the device and system. Switches are responsible for sending the data to different areas of the network. The main weakness in this type of setup is the heavy reliance on physical connections.

When you use a virtual cloud network, connections are made using software instead of physical components. Virtual LANs (VLANs) facilitate all connections using software rather than physical devices. Using a VCN has several benefits. The main ones are:

- Eliminating the majority of physical devices and connections, including the cabling. Saving money and space.
- Centralised control of a network. Leading to simpler and more cost-effective management processes.
- Increased flexibility when configuring network and routing connections. You also have greater control over how the information flows through the network.
- Easier scalability for businesses; updates and new technologies are deployed in an automated and virtualised manner.

VMware NSX Data Center is a popular and sophisticated virtualisation and security platform that enables a software-defined approach to networking for a VCN approach. NSX brings networking and security closer to your applications (wherever they are running). Like the operational model of VMs, networks can be provisioned and managed independent of underlying hardware. NSX Data Center reproduces the entire network model in a software-based version.

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Features and functionalities

NSX Data Center provides several interesting and exciting functionalities. Here is a quick glance at the most important features.

- **NSX's Edge Gateway** service interconnects logical networks with physical networks.
- **Logical routing** enables a hypervisor to learn and route between different logical networks by limiting the north-south direction of traditional data centre routing.
- **NSX** is easily extendable since you can seamlessly integrate third-party VMware partner solutions into the platform.
- VMware NSX Data Center contains a **proxy mode** and **inline load balancer**. They distribute incoming requests among multiple servers to allow for the proper and optimal distribution of workloads.
- Network segmentation, micro-segmentation and logical firewalls deliver granular protection and build a **strong security framework** that is built on zero-trust principles. NSX also offers a VPN service that allows the creation of encrypted connectivity for end users to their applications and workloads hosted in both private and public cloud environments.
- A **dynamic host configuration protocol (DHCP)** (DHCP) service allows for IP address pooling and static IP assignments. Thanks to NSX, an administrator can rely on the DHCP service to manage all IP addresses in an environment rather than having to maintain a separate DHCP service.
- NSX enables you to **manage containerised apps and microservices**, like virtual machines (VMs), with integrated, full-stack security and networking. You can leverage end-to-end observability for microservices and native container networking for Kubernetes.



What VMware NSX can do for you

network flexibility by delivering agility through automation. NSX Data Center enables the automation of native networking and security services for containers and microservices; this helps organisations deliver the speed and agility that new apps require. It also leads to the creation of user-based self-service capabilities, this improves business responsiveness and relieves IT networking teams from a lot of repetitive tasks.

From a security viewpoint, NSX allows you to support zero-trust policies for applications in both public and private environments. Locking down critical applications? Creating a logical demilitarised zone (DMZ)? Or reducing the attack surface of a virtual desktop environment? NSX Data Center does it all by defining and enforcing network security policies at the individual workload level.

Integration is another benefit of implementing VMware NSX. The solution natively integrates with numerous cloud management platforms and other automation tools, allowing you to provision, deploy, and manage apps at the speed of changing and newly arising business demands.

NSX Data Center also gives you the opportunity to cut costs. **According to IDC**, winning more business and increasing user productivity by having the flexibility to better address more business opportunities and providing a better user experience, results in higher revenues and user productivity. This is worth an average of \$306,100 per year (\$7,306 per 1,000 users). NSX also reduces the potential costs of operational risks, as well as optimising networking costs.

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Learn how to install, configure and manage VMware NSX

The five-day, comprehensive and fast-paced training course “**VMware NSX: Install, Configure, Manage**” presents VMware NSX as a part of the software-defined data centre and teaches you everything that you need to know about this exciting platform. You will learn how to use logical switching in VMware NSX to virtualise your switching environment. The course also details logical routing to enable you to dynamically route between different virtual environments.

You will also learn how to use gateway services, firewall configurations and security services to help secure and optimise your VMware NSX environment. After this course, you will have the necessary expertise on topics such as NSX architecture, NSX infrastructure preparation, NSX logical routing, NSX Edge and security services, NSX L2 bridging and NSX logical switch networks. Access to a software-defined data centre environment is provided through hands-on labs. This type of learning will reinforce the many skills and concepts presented in the course.

More information

Would you like to know more about the basics and finer details of VMware NSX Data Center? Then **contact us** or book **our exciting course “VMware NSX: Install, Configure, Manage”** to get started with this top-notch visualisation and security platform.

[CONTACT US](#)

www.globalknowledge.com
info@globalknowledge.co.uk
0118 912 1929

