



Cisco Nexus 1000V for Microsoft Hyper-V Release Notes, Release 5.2(1)SM3(1.1)

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This document describes the features, limitations, and caveats for the Cisco Nexus 1000V for Microsoft Hyper-V Release 5.2(1)SM3(1.1) software. It also provides information about how to find information about open and closed caveats. Use this document in combination with the documents listed in the [Related Documentation](#).

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Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Introduction

The Cisco Nexus 1000V provides a distributed, Layer 2 virtual switch that extends across many virtualized hosts. The Cisco Nexus 1000V manages a data center. Each server in the data center is represented as a line card in the Cisco Nexus 1000V and can be managed as if it were a line card in a physical Cisco switch.

When server virtualization is implemented, the edge of the network is pushed from the traditional network access layer, which is implemented in physical switches, to the virtual network access layer that is implemented through the software in the Server Hypervisor. The Cisco Nexus 1000V is an intelligent virtual network access layer switch that runs Cisco NX-OS, which is Cisco's data center operating system common to all of Cisco's data center products.

Operating inside the Microsoft Hyper-V Hypervisor, the Cisco Nexus 1000V supports the Cisco Virtual Network-Link (VN-Link) server virtualization technology to provide the following:

- Policy-based Virtual Machine (VM) connectivity
- Mobile VM security and network policy
- Nondisruptive operational model for your server virtualization and networking teams

Data center virtualization servers and VMs are not managed the same way as physical servers. Server virtualization is treated as a special deployment, leading to longer deployment time, with a greater degree of coordination among server, network, storage, and security administrators. With the Cisco Nexus 1000V, you have a consistent networking feature set and a configuration and provisioning model for both the physical and the virtual networks.

VM networks can use the same network configuration, security policy, diagnostic tools, and operational models as physical server deployments that are connected to physical switches. This unified approach to quicker deployment and troubleshooting makes virtualization environments no different from nonvirtualized deployments.

Developed with Microsoft, the Cisco Nexus 1000V is Microsoft certified and integrates with the Windows Server and Systems Center Virtual Machine Manager (SCVMM).

The Cisco Nexus 1000V consists of two basic components:

- Virtual Supervisor Module (VSM), also known as the Control Plane (CP). The VSM acts as the supervisor and contains the Cisco command-line interface (CLI), configuration, and high-level features.
- Virtual Ethernet Module (VEM), also known as the Data Plane (DP). The VEM acts as a line card and runs in each Hyper-V virtual switch to handle packet forwarding and other localized functions.

Hyper-V Webinar

Cisco offers a Cisco Nexus 1000V for Microsoft Hyper-V webinar as either a video demonstration or a PDF download. In the webinar, you can learn how the Cisco Nexus 1000V virtual access/distributed switch can simplify your Hyper-V virtual environment through a nondisruptive operational model, policy-based provisioning, and a strong services ecosystem. You can also learn about the Cisco Nexus 1000V architecture, how it integrates with Microsoft SCVMM, and the networking capabilities it brings to Hyper-V environments.

Administrative Model

The Cisco Nexus 1000V for Microsoft Hyper-V consists of two distinct administrative entities that manage the environment on the same set of hardware. Each entity has its own separate goals, abilities, and responsibilities.

Server and VM policies can be set only by the server administrator through SCVMM or its management tools. Network policies can be set only by the network administrator through the VSM or its management tools.

Network and server administrators cannot make administrative changes to the system at the same time. Operations such as deployment, upgrade, configuration, and troubleshooting can be carried out in an asynchronous fashion by administrators.

If the network administrator has set up appropriate policies, the server administrator can add, remove, and move both physical hosts and VMs, as well as install physical interfaces in hosts and add virtual interfaces to VMs.

Software Compatibility with Microsoft Servers

Ensure that the servers that run the Cisco Nexus 1000 VSM and VEM are in the Hardware Compatibility list.

This release of the Cisco Nexus 1000V supports the following server:

- Microsoft Windows Server 2012 R2

For additional compatibility information, see the *Cisco Nexus 1000V and Microsoft Hyper-V Compatibility Information, Release 5.2(1)SM3(1.1)*

Software Compatibility with the Cisco Nexus 1000V

This release supports upgrades from Release 5.2(1)SM1(5.1) and later. For information about the upgrade procedure, see the *Cisco Nexus 1000V for Microsoft Hyper-V Installation and Upgrade Guide, Release 5.2(1)SM3(1.1)*.



Note

If you are upgrading from Release 5.2(1)SM1(5.1) to Release 5.2(1)SM3(1.1), and you have the permanent or evaluation license installed, see the *Cisco Nexus 1000V for Hyper-V License Configuration Guide, Release 5.2(1)SM1(5.2)*.

New Software Features

The following software features were added in Cisco Nexus 1000V for Hyper-V Release 5.2(1)SM3(1.1):

- [VXLAN 1.0, page 4](#)
- [Hyper-V Network Virtualization, page 4](#)

VXLAN 1.0

A VXLAN uses an IP multicast network to send broadcast, multicast, and unknown unicast flood frames. Each multicast mode VXLAN has an assigned multicast group ID address. When a new VM joins a host in multicast mode VXLAN, VEM joins the assigned multicast group ID address by sending IGMP join messages. Flood traffic—broadcast, multicast, and unknown unicast—from the VM is encapsulated and is sent using the assigned multicast group IP as the destination IP address. Packets sent to known unicast MAC addresses are encapsulated and sent directly to the destination server VTEP IP addresses.

Hyper-V Network Virtualization

Hyper-V Network Virtualization (HNV) provides a virtual network similar to how server virtualization (hypervisor) provides virtual machines to the operating system. Network virtualization decouples virtual networks from the physical network infrastructure and removes the constraints of VLAN and hierarchical IP address assignment from virtual machine provisioning. This flexibility makes it easy to move to IaaS clouds and efficient for hosts and data center administrators to manage their infrastructure, while maintaining the necessary multitenant isolation, security requirements, and supporting overlapping virtual machine IP addresses.

Limitations and Restrictions

This section describes the limitations and restrictions of the Cisco Nexus 1000V for Hyper-V, Release 5.2(1)SM3(1.1).

Configuration Limits

Table 1 shows the Cisco Nexus 1000V configuration limits.

Table 1 Cisco Nexus 1000V Configuration Limits

Component	Per VSM	Per VEM
Access control lists (ACLs)	128	—
ACL instances	2048	216
Active VLANs	2048	—
Application Control Engines (ACEs) per ACL	128	—
Hosts	64	
MAC addresses per VLAN	4096	32000
MAC addresses per DVS	32000	—
Multicast groups	512	64
NetFlow interfaces	2048	216
NetFlow policies	64	64
Physical trunks	512	—
PNICs/hosts	32	—
Port channels	256	8

Table 1 Cisco Nexus 1000V Configuration Limits (continued)

Component	Per VSM	Per VEM
Port profiles	1000 dynamic port profiles (vEthernet) 64 uplink dynamic port profiles	—
Port security	2048	216
Private VLANs (PVLANS)	512	—
Quality of service (QoS) class maps	128	128
QoS instances	2048	216
QoS policy maps	128	16
Network segment	2048	—
Switched Port Analyzer (SPAN)/Encapsulated Remote SPAN (ERSPAN) sessions	64	4
System network segments	32	—
System profiles	32	—
Virtual Ethernet (vEthernet) trunks	Not supported	—
vEthernet interfaces per port profile	1024	—
vEthernet interfaces	2048	216
Reserved-ip per ip pool template	128	—
Netbios-name-server per ip pool template	16	—
DNS-server per ip pool template	16	—
DNS-suffix per ip pool template	16	—

Open Caveats

The following are descriptions of the open caveats in Cisco Nexus 1000V Release 5.2(1)SM3(1.1). The IDs are linked to the Cisco Bug Search tool.

Table 2 Open Caveats in Cisco Nexus 1000V for Hyper-V Release 5.2(1)SM3(1.1)

Category/Bug ID	Description
Cisco	
Management	
CSCur66138	The module from a VSM can go offline if you try to change an active VSM to VEM directly.
Platform	
CSCur97927	During an upgrade from release 5.2(1)SM 1(5.1) and later to release 5.2(1)SM3(1.1), the VXLAN IP pool created on the VMM is not published to the VSM.
CSCup54800	When you perform a network migration of vNIC after the SCVMM is upgraded to R2, the VEM is not migrated to a new network, although the SCVMM shows that the operation has been completed.
VSG and VEM Interaction	
CSCup34712	Jumbo packets of size greater than 4014 get dropped for a Linux VM.

Table 2 Open Caveats in Cisco Nexus 1000V for Hyper-V Release 5.2(1)SM3(1.1)

Category/Bug ID	Description
HNV	
CSCuo33922	When using HNV with Cisco Nexus 1000V, if a virtual network adapter with a dynamic MAC is attached to Cisco Nexus 1000V, SCVMM tries to change the MAC address to a static address.
Microsoft	
Virtual Machine Manager	
CSCup54800	VM-network migration of vNIC does not work after an SCVMM upgrade.
Windows Server	
CSCuj33348	WS 2012 R2 enters a crash loop when a logical switch is created on the management NIC with VMQ. See the following article: http://support.microsoft.com/kb/2913659
CSCuq98489	Switch deletion gets stuck when a scaled host has 200/205 vEths, including VMs and host vNIC.
CSCur77715	The host crashes with Broadcom BCM5709C NetXtreme II GigE NICs and VSG-protected vEths.
CSCuf09114	Bulk vEthernet flaps fail with a Sequence Timeout error for DHCP.

Using the Bug Search Tool

Use the Bug Search tool to search for a specific bug or to search for all bugs in a release.

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- Step 1** Go to <http://tools.cisco.com/bugsearch>.
- Step 2** At the Log In screen, enter your registered Cisco.com username and password; then, click **Log In**. The Bug Search page opens.
-  **Note** If you do not have a Cisco.com username and password, you can register for them at <http://tools.cisco.com/RPF/register/register.do>.
-
- Step 3** To search for a specific bug, enter the bug ID in the Search For field and press **Return**.
- Step 4** To search for bugs in the current release:
- In the Search For field, enter **Cisco Nexus 1000V** and press **Return**. (Leave the other fields empty.)
 - When the search results are displayed, use the filter tools to find the types of bugs you are looking for. You can search for bugs by modified date, status, severity, and so forth.



Tip To export the results to a spreadsheet, click the **Export Results to Excel** link.

MIB Support

The Cisco Management Information Base (MIB) list includes Cisco proprietary MIBs and many other Internet Engineering Task Force (IETF) standard MIBs. These standard MIBs are defined in Requests for Comments (RFCs). To find specific MIB information, you must examine the Cisco proprietary MIB structure and related IETF-standard MIBs supported by the Cisco Nexus 1000V.

The MIB Support List is available at the following FTP site:

<ftp://ftp.cisco.com/pub/mibs/supportlists/nexus1000v/Nexus1000VMIBSupportList.html>

Documentation Feedback

To provide technical feedback on this document or report an error or omission, please send your comments to:

nexus1k-docfeedback@cisco.com

We appreciate your feedback.

Related Documentation

This section lists the documents used with the Cisco Nexus 1000V for Microsoft Hyper-V and available at the following URL:

[Cisco Nexus 1000V for Microsoft Hyper-V Documentation](#)

General Information

Cisco Nexus 1000V for Microsoft Hyper-V Release Notes

Install and Upgrade

Cisco Nexus 1000V for Microsoft Hyper-V Installation and Upgrade Guide

Configuration Guides

Cisco Nexus 1000V for Microsoft Hyper-V High Availability and Redundancy Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Interface Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Layer 2 Switching Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V License Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Network Segmentation Manager Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Port Profile Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Quality of Service Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V Security Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V System Management Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V VXLAN Configuration Guide

Cisco Nexus 1000V for Microsoft Hyper-V HNV Configuration Guide

Programming Guide

Cisco Nexus 1000V for Microsoft Hyper-V REST API Guide

Reference and Troubleshooting Guides

Cisco Nexus 1000V for Microsoft Hyper-V Command Reference

Cisco Nexus 1000V for Microsoft Hyper-V Troubleshooting Guide

Nexus 1000V Documentation

[Cisco Nexus 1000V for VMware vSphere Documentation](#)

Cisco Virtual Security Gateway Documentation

[Cisco Virtual Security Gateway Documentation](#)

Cisco Prime Network Services Controller Documentation

[Cisco Prime Network Services Controller Documentation](#)

Cisco Virtual Wide Area Application Services (vWAAS) Documentation

[Cisco Virtual Wide Area Application Services Documentation](#)

Cisco ASA 1000V Cloud Firewall Documentation

[Cisco ASA 1000V Cloud Firewall Documentation](#)

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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