



Verified Scalability Guide for Cisco Nexus 1000V for KVM Release 5.2(1)SK3(1.1)

July 31, 2014

This document describes the verified configuration limits for Cisco Nexus 1000V for KVM software. The following is the change history for this document.

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Introduction

Cisco Nexus 1000V for KVM is a distributed virtual switch that works with the Linux Kernel-based virtual machine (KVM) open source hypervisor. In addition, Cisco Nexus 1000V for KVM uses OpenStack as its cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter.



The networking function of OpenStack is controlled and managed by a process called Neutron on the network controller. Neutron has been extended in a such a way that the Cisco Nexus 1000V for KVM can now provide the networking capabilities to the compute nodes and the virtual machines (VMs). As Neutron creates and configures its networks for its environment, this configuration is passed to the Cisco Nexus 1000V for KVM switch.

Using OpenStack, you create VM networks and subnets on the Cisco Nexus 1000V for KVM, by defining components such as the following:

- Tenants
- Network segments (subnets), such as VLANs, VLAN trunks, and VXLANs
- IP address pools

Using the Cisco Nexus 1000V for KVM VSM, you create policy profiles (called port profiles on the VSM), which define port classification information, such as security settings (ACLs and so on).

When a VM is deployed, a port profile is dynamically created on the Cisco Nexus 1000V for KVM for each unique combination of port classification, VM network, and VM subnet. All other VMs deployed with the same policy to this network reuse this dynamic port profile.



Note

You must consistently use OpenStack for all VM network and subnet configuration. If you use both OpenStack and the VSM to configure VM networks and subnets, the OpenStack and the VSM configurations can become out-of-sync and result in faulty or inoperable network deployments. For information about OpenStack, see the *Cisco Nexus 1000V for KVM Virtual Network Configuration Guide*.

Configuration Limits for Cisco Nexus 1000V for KVM

Table 1 lists the supported configuration limits for the Cisco Nexus 1000V for KVM components.

Table 1 Supported Configuration Limits

Cisco Nexus 1000V for KVM Components	Supported Configuration Limits
Hosts	128
Virtual machines	4,000
vEthernet interfaces	990 per host
vEthernet interfaces	8,000 per DVS 990 per host
Port profiles	6,000
Network profiles	2,000
Policy profiles	512
Active VLANs	2,000
Active VXLANs	2,000
MAC addresses	4,096 per VLAN per host
Physical trunks	128
Physical NICs	6 per host

Table 1 Supported Configuration Limits (continued)

Cisco Nexus 1000V for KVM Components	Supported Configuration Limits
vEthernet trunks	8
ACLs	128
ACEs	128 per ACL
ACL interfaces	4,000 per DVS 990 per host
Netflow policies	64 per DVS 64 per host
Netflow interfaces	4,000 per DVS 990 per host
Port channel	128 per DVS 4 per host
VXLAN Gateway ¹	8 pairs, 256 mappings
Multicast groups	1,000 groups
Tenants	512
IP pools	4,000

1. Cisco Nexus 1110 platform only.

Related Documentation

This section lists the documents used with the Cisco Nexus 1000V for KVM.

General Information

Cisco Nexus 1000V for KVM Release Notes

Install and Upgrade

Cisco Nexus 1000V for KVM Software Installation Guide

Cisco Nexus 1000V for KVM Software Installation Video

Cisco Nexus 1000V for KVM Software Installation Workflow

Configuration Guides

Cisco Nexus 1000V for KVM High Availability and Redundancy Configuration Guide

Cisco Nexus 1000V for KVM Interface Configuration Guide

Cisco Nexus 1000V for KVM Layer2 Configuration Guide

Cisco Nexus 1000V for KVM License Configuration Guide

Cisco Nexus 1000V for KVM Port Profile Configuration Guide

Cisco Nexus 1000V for KVM REST API Configuration Guide

Cisco Nexus 1000V for KVM Security Configuration Guide

Cisco Nexus 1000V for KVM System Management Configuration Guide

Cisco Nexus 1000V for KVM Verified Scalability Guide

Cisco Nexus 1000V for KVM Virtual Network Configuration Guide

Cisco Nexus 1000V for KVM VXLAN Configuration Guide

Reference Guides

Cisco Nexus 1000V for KVM Command Reference

Cisco Nexus 1000V for KVM OpenStack API Reference Guide

Troubleshooting, Password Recovery, System Messages Guides

Cisco Nexus 1000V for KVM System Messages Guide

Cisco Nexus 1000V for KVM Troubleshooting Guide

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

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