Release Notes for Cisco Enterprise Network Function Virtualization Infrastructure Software, Release 4.16.x

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About Cisco Enterprise NFVIS

Note To achieve simplification and consistency, the Cisco SD-WAN solution has been rebranded as Cisco Catalyst SD-WAN. In addition, from Cisco IOS XE SD-WAN Release 17.12.1a and Cisco Catalyst SD-WAN Release 20.12.1, the following component changes are applicable: **Cisco vManage** to **Cisco Catalyst SD-WAN Manager**, **Cisco vAnalytics** to **Cisco Catalyst SD-WAN Analytics**, **Cisco vBond** to **Cisco Catalyst SD-WAN Validator**, **Cisco vSmart** to **Cisco Catalyst SD-WAN Controller**, and **Cisco Controllers** to **Cisco Catalyst SD-WAN Control Components**. See the latest Release Notes for a comprehensive list of all the component brand name changes. While we transition to the new names, some inconsistencies might be present in the documentation set because of a phased approach to the user interface updates of the software product.

Find all the information you need about this release—new features, known behavior, resolved and open bugs, and related information.

What's New

New and Enhanced Features for Cisco Enterprise NFVIS Release 4.16.1

Feature	Description
Datapath Over LTE Cellular Interface on Cisco Catalyst 8200 UCPE	The Datapath Over LTE Cellular Interface feature on the Cisco Catalyst 8200 UCPE facilitates traffic routing through an LTE cellular interface. This feature allows both control connection and virtual machine data traffic to be routed via the cellular interface, providing redundancy and an alternative path for wired connections..

Resolved and Open Bugs

About the Cisco Bug Search Tool

Use the Cisco Bug Search Tool to access open and resolved bugs for a release.

The tool allows you to search for a specific bug ID, or for all bugs specific to a product and a release.

You can filter the search results by last modified date, bug status (open, resolved), severity, rating, and support cases.

Resolved and Open Bugs for Cisco Enterprise NFVIS Release 4.16.1

Resolved Bugs for Cisco NFVIS Release 4.16.1

Bug ID	Description
CSCwm35139	vBranch: Loss control connection after upgrade NFVIS from 4.12.4 to 4.15.1
CSCwk94510	nfvis control connection down after single ip failver by stopping vm
CSCwm57108	ucpe8200 4.15.1-40 to 4.16.1-14 upgrade rollback
CSCwn07046	uCPE8300 hostaction restore fail with portchannel
CSCwn10439	Fan Failure Notification Missing on EUT and Remote Monitoring Systems
CSCwm41527	Script to recover when CPU goes into sleep mode after a BIOS capsule upgrade.

Open Bugs for Cisco NFVIS Release 4.16.1

Bug ID	Description
CSCwn41495	ucpe8300-1n20 failed to boot NFVIS and stuck at BIOS only
CSCwn09006	Fail to fresh install NFVIS image on C8300-UCPE platform

Important Notes

- Starting from Cisco NFVIS Release 4.13.1, install Cisco NFVIS using a smart license on Cisco UCS C M6 Rack Servers.

- Starting from Cisco NFVIS Release 4.10.1, the guest VNF settings are automatically preserved from the previous release version, when you upgrade to a newer release version. You don't have to reinstall NFVIS to update the guest VNF settings. For more information see, Upgrade Cisco NFVIS.

- Starting from Cisco NFVIS Release 4.10.1, Cisco NFVIS is based on open source AlmaLinux distribution. In Cisco NFVIS Release 4.9.x and earlier releases, Cisco NFVIS was based on CentOS Linux distribution which is now end-of-life. The support for CentOS Linux distribution will be discontinued in June 2024.

- If you are using I-350 based Network Interface Cards (NICs) that use IGB drivers, the Virtual Router Redundancy Protocol (VRRP) is not supported due to a limitation of MAC addresses that can be used in your network.

Software Upgrade

The Cisco Enterprise NFVIS upgrade image is available as *.iso* file. Currently, downgrades are not supported.

For more details on the software upgrade, see the Upgrading Cisco Enterprise NFVIS section in the Cisco Network Function Virtualization Infrastructure Software Getting Started Guide.

System Requirements

The following resources are required for a standalone Cisco Enterprise NFVIS:

- For a system that has 16 or less CPU cores, one CPU core is reserved for NFVIS. For a system that has more than 16 CPU cores, 2 CPU cores are reserved for NFVIS except C8300-UCPE. C8300-UCPE-1N20 (20 cores system) will reserve 1 CPU core for NFVIS.

- For a system that has 32 GB or less of RAM, 3 GB is reserved for NFVIS. For a system that has more than 32 GB of RAM, 4 GB is reserved for NFVIS.

- 20 GB storage.

- For NFVIS portal, the minimum supported version of browsers are:

    - Mozilla Firefox 66

    - Google Chrome 71

    - Windows 10 Edge

    - MacOS 10.15 Safari

- Starting from Cisco NFVIS Release 4.14.1, the following are the system requirements for Cisco NFVIS devices that have more than 128 GB RAM:

    - For a Cisco Catalyst Edge uCPE 8300 on numa node 0, 16 GB is reserved. A total of 16 GB is reserved .

- Starting from Cisco NFVIS Release 4.14.1, the following are the system requirements for Cisco NFVIS devices that have more than 64 GB RAM:

    - For a Cisco Catalyst Edge uCPE 8300 on numa node 0, 13 GB is reserved. A total of 13 GB is reserved .

    - For a UCS M6, numa node 0 reserves 11 GB and numa node 1 reserves 2 GB, totaling 13 GB. For other NFVIS devices, 11 GB is reserved on numa node 0, totaling 11 GB.

- Starting from Cisco NFVIS Release 4.14.1, the following are the system requirements for Cisco NFVIS devices that have more than 32 GB RAM:

    - For a Cisco Catalyst Edge uCPE 8300 on numa node 0, 8 GB is reserved. A total of 8 GB is reserved .

    - For a Cisco UCS C M6 Rack servers on numa node 0, 11 GB is reserved and 1 GB is reserved on the numa node 1. A total of 12 GB is reserved.

    - For other Cisco NFVIS devices on numa node 0, 5 GB is reserved and 1 GB on the numa node 1 is reserved (if applicable).

- Starting from Cisco NFVIS Release 4.14.1, the following are the system requirements for Cisco NFVIS devices that have less than 32 GB RAM:

    - For a Cisco Catalyst Edge uCPE 8300, 8 GB on numa node 0 is reserved. A total of 8 GB is reserved .

    - For a Cisco UCS C M6 Rack servers, 7 GB is reserved on numa node 0 and 1 GB is reserved on the numa node 1. A total of 8 GB is reserved.

- For other Cisco NFVIS devices on numa node 0, 5 GB is reserved and 1 GB on the numa node 1 is reserved (if applicable).

- Starting from Cisco NFVIS Release 4.14.1, the following are the system requirements for Cisco NFVIS devices that have less than 16 GB RAM:

  - For a Cisco Catalyst Edge uCPE 8300, 8 GB on numa node 0 is reserved and 1 GB is reserved on the numa node 1. A total of 9 GB is reserved .

  - For other Cisco NFVIS devices on numa node 0, 5 GB is reserved and 1 GB on the numa node 1 is reserved (if applicable).

- Starting from Cisco NFVIS Release 4.14.1, the following are the system requirements for Cisco NFVIS devices that have 8 GB RAM:

  - 3 GB is reserved for the Cisco NFVIS devices.

Note More memory and disk space are required to be added to the system, depending on VM deployments.

Supported Programs and Platforms

Supported Programs

The Cisco Meraki vMX solution is supported on Cisco's Enterprise NFV Infrastructure Software (NFVIS). For more information see, vMX Setup Guide for NFVIS.

Supported Platforms

The following table lists the only supported platforms and firmware for Cisco ENFV

Table 1: Supported Platforms, Firmware, and Version

Platform	Firmware	Version
C8200-UCPE-1N8	BIOS	C8200-UCPE_1.04.103020201614
	MCU	240.52
C8300-UCPE-1N20	BIOS	C83uCPE_BIOS_1.05.SPA
	CIMC	CIMC_4.15.0.2R.bin
UCS C-Series M6 Rack Servers	BIOS	C240M6.4.3.2c.0.0726232000
	CIMC	HUU version 4.3(2.230207)

Note The last supported software release for ENCS5400 will be NFVIS 4.15 and Cisco IOS XE Catalyst SD-WAN Release 17.15.1a. For more information, see, ENCS 5400 EOL

Guest VNFs

This section provides support statements for different guest Virtual Network Functions (VNFs) that you can run on Cisco Routing virtual platforms that are enabled by the Cisco NFVIS Release 4.16.1.

Cisco Router VNFs

Note
- Cisco provides deployment and configuration support for the VNF versions listed below, when these VNFs are deployed on Cisco Routing virtual platforms that are enabled by Cisco NFVIS Release 4.16.1.

- Cisco provides support on a case-by-case basis for unlisted combinations of Cisco NFVIS releases and VNF version combinations.

Table 2: Software Download Links

Product Homepage	Software Download
Cisco Catalyst 8000V Edge Software	17.16.1
	17.15.1
	17.12.4
	17.12.3
	17.12.2
	17.12.1
	17.11.1
	17.10.1
	17.9.3
	17.9.1
Cisco vEdge	20.9.1
	20.9.3
	20.6.5
	20.3.7
	20.8.1
	20.7.1

Table 3: Supported Linux Drivers for SR-IOV Acceleration

Platform	NIC Type	VM OS Kernel Driver Version	VM OS DPDK Version
Cisco Catalyst 8200 Series Edge uCPE	Intel 1350 for GEO-2 and GEO-5	2.3.9.6 or higher (igbvf)	DPDK 19.11 or higher
	Intel-l X553 1GbE for GEO-0 and GEO-1	4.9.3 or higher version (ixgbevf)	DPDK 19.11 or higher
Cisco Catalyst 8300 Series Edge uCPE	Intel E810 GEO-0 to GEO-6	iavf 4.18.7 or Higher	DPDK 21.11.2 or higher
Cisco UCS C M6 Rack Servers	Intel X550 LOM GE0-0 & GE0-6	4.9.3 or higher version (ixgbevf)	DPDK 19.11 or higher
Cisco UCS C M6 Rack Servers	UCSE-PCIE-1D 10GF (Intel X710-DA4 Quad port 10 GB)	iavf 4.5.3 or higher	DPDK 19.11 or higher
Cisco UCS C M6 Rack Servers	Intel i350 Quad Port 1 GB Adapter	2.3.9.6 or higher (igbuf)	DPDK 19.11 or higher

Note The last supported software release for ENCS5400 will be NFVIS 4.15 and Cisco IOS XE Catalyst SD-WAN Release 17.15.1a. For more information, see, ENCS 5400 EOL

Other Cisco Owned VNFs

Note
- Limited testing is done to ensure you can create a guest VM instance using the software download image for these versions, as posted on Cisco Software download page.

- For full-support statement see the individual product release documentation.

The following section provides information about generic Linux Distro Images (Ubuntu 22.10 & Alma 8.6 or similar) that can be deployed on Cisco NFVIS Release 4.13.1. See the above table for details on the SRIOV driver that is required on the guest Linux VM based on the platform.

Table 4: Software Download Links

Product Homepage	Software Download
Security VNFs	
Cisco NGFW (FTDv)	6.6.1-91
	6.6.0-90

Product Homepage	Software Download
Cisco ASAv	9.14.2
	9.14.1
WAN Optimization VNFs	
Cisco vWAAS	6.4.5a-b-50
	6.4.5-b-75
	6.4.3c-b-42

Non-Cisco Vendor Owned VNFs

You can run VNFs owned by various vendors on Cisco's NFV platforms enabled by NFVIS . Formal support for these VNFs requires a joint effort between Cisco and the VNF vendor.

Cisco offers VNF vendors a "for-fee" NFVIS 3rd-party certification program to test and certify their VNFs on Cisco's virtualized platforms. After testing and certification is complete, the results are published on this page- Cisco Enterprise NFV Open Ecosystem and Qualified VNF Vendors.

For more specific support details about VNF versions and test compatibility matrix with NFVIS releases, see the VNF release documentation on the vendor support site.

As a NFVIS customer, if you need a unique combination of NFVIS release and a specific VNF version, you may submit your certification request to Cisco at nfv-ecosystem@cisco.com or reach out to the VNF vendor support team asking them to initiate a certification on the Cisco platform.

Related Documentation

- Cisco Network Function Virtualization Infrastructure Software Getting Started Guide
- API Reference for Cisco Enterprise Network Function Virtualization Infrastructure Software
- Cisco Enterprise Network Function Virtualization Infrastructure Software Configuration Guide, Release 4.x
- Cisco Enterprise Network Function Virtualization Infrastructure Software Command Reference
- Release Notes for Cisco NFV SD-Branch features in Cisco vManage Release 20.12.x
- Design and Deployment Guide of Cisco NFVIS SD-Branch using Cisco SD-WAN Manager
- Cisco Catalyst 8200 Series Edge uCPE Data Sheet
- Cisco Cloud Services Platform 5000 Series Data Sheet
- Cisco 5400 Enterprise Network Compute System Hardware Installation Guide
- Cisco 5400 Enterprise Network Compute System Data Sheet
- Configuration Guide for Cisco Network Plug and Play on Cisco APIC-EM, Release 1.5.x
- Cisco SD-WAN Controller Compatibility Matrix and Recommended Computing Resources, Cisco SD-WAN Release 20.12.x