Release Notes for Cisco NCS 2000 Series SVO, Release 12.3

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The Cisco Network Convergence System 2000 sets the industry benchmark for dense wavelength-division multiplexing (DWDM) solutions. It delivers the touchless programmability, massive scale, and ultra-long-haul performance necessary for tomorrow's converged network architectures.

The Cisco Network Convergence System (NCS) 2000 platform is enhanced with the introduction of programmability onto the network with the inclusion of NETCONF interface and YANG models automating the network turn-up, operation, and maintenance. The NCS 2000 Shelf Virtualization Orchestrator is available with a server on a blade encasing a high-speed processor with virtualized instances of multiple Reconfigurable Optical Add/Drop Multiplexer (ROADM), Optical Line Amplifier (OLA), and Dynamic Gain Equalizer (DGE) sites of the network. An SVO line card along with the application software provides functionality-based licenses for alarm correlation, performance monitoring, connection verification, and Optical Time Domain Reflectometry (OTDR).

Cisco NCS 2000 Shelf Virtualization Orchestrator supports the following modes of deployment in the optical network:

- SVO line card equipped inside the NCS 2000 chassis

- SVO application software hosted on an external server

The SVO web user interface (UI), also called the nodal craft, is designed to manage the NCS 2000 network elements and replaces CTC. The SVO web UI runs on the browser without the need to download any JAR or Java files. The SVO web UI can be used across multiple operating systems and browsers.

The SVO web UI performs the following functions:

- Manages the chassis, cards, and passive devices

- Manages alarms, faults, and conditions

- Manages users and user profiles

- Administers devices

- Troubleshoots issues

- Provides a seamless user experience with Cisco Evolved Programmable Network Manager (EPNM)

Software and Hardware Requirements

Before you use the SVO web user interface, ensure your system meets the following minimum software and hardware requirements:

- Hardware—Intel Core i5, i7, or faster processor. A minimum of 4 GB RAM, 100 GB hard disk with 250 MB of available hard drive space

- Operating System—Windows 10; macOS Mojave (10.14) and later

- Browsers—Mozilla Firefox 71 and later; Google Chrome 78.0 and later

What's New in NCS 2000 Series, Release 12.3

Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements. It also includes links to detailed documentation, where available.

Feature	Description
Cisco NCS 2000 Series SVO	
Hardware	
RMN-CTP-CL Card	The RMN-CTP-CL card is a RAMAN amplifier card that provides optical amplification of the wavelengths by counter-propagating Raman pumping. The card operates for both C and L bands of the optical spectrum. The card occupies one slot in NCS 2006 and NCS 2015 chassis.
6AD-DD-CFS Card	The new NCS 2000 6-port add/drop card supports multiplexing and amplification of wavelengths from interfaces with ZR+ pluggables for colorless transmission over ROADM nodes in the network. The card can be installed in NCS 2006 and NCS 2015 chassis.
PSM	The PSM card performs splitter protection functions and supports the standalone protection configuration. The card provides channel protection for the 100G-LC-C, 100G-CK-C, 100GS-CK-LC, 200G-CK-C, and 400G-XP-LC cards. It also provides channel protection for alien wavelengths.
40-SMR1-C or 40-SMR2-C Cards	The 40-channel single-module ROADM with integrated optical pre-amplifier (40-SMR1-C) combines the OSC add/drop filter, a pre-amplifier, and a 2x1 wavelength selective switch (WSS)-based ROADM core into a single-slot unit. This unit is optimized for Degree-2 reconfigurable nodes. The 40-channel single-module ROADM with integrated optical pre-amplifier and boost amplifier (40-SMR2-C) includes the OSC add/drop filter, pre- and boost amplifiers, and a 4x1 WSS-based ROADM core. This unit provides an effective way to support multi-degree nodes up to Degree-4, allowing in-service upgrade from Degree-2 up to Degree-4 at a very competitive price point. Both cards optimize and increase the MSTP's throughput density.
NCS2K-MF-8x10G-FO	The MPO-12 to 8-LC fan-out module is a double slot module with two MPO-12 connector (COM) and eight LC duplex connectors (Port-i-TX/RX). It contains 16 photodiodes to monitor the power of the channel input ports.

Feature	Description
_15216-PP-4-SMR	The _15216-PP-4-SMR patch panel connects upto four 40-SMR2-C cards in a four-degree mesh node. The optical splitters inside the patch panel forward the output signal (EXP-TX port) of the 40-SMR2-C card on each side of the mesh node to the input port of the 40-SMR2-C cards on the other three sides of the mesh node.
OPT-AMP-17-C and OPT-BST-E Cards	The OPT-AMP-17-C card can be used as a preamplifier or as a booster amplifier, providing a total output power of 17 dBm. It integrates an optical service channel splitter and combiner to allow the OSC to be sent to and received from the OSCM card. It employs a single-stage amplifier design to optimize the noise figure and operates with a fixed gain of 17 dB. The OPT-BST-E card amplifies the outgoing composite DWDM signal to overcome the attenuation of the fiber network, providing a total output power of 20 dBm. It integrates an optical service channel splitter and combiner to allow the OSC to be sent to and received from the OSC-CSM card and/or the OSC derived from the control cards.
Software	
Admin Plane Enhancements	The following admin plane enhancements are done to improve the user experience: • **Statistics** menu is introduced to present the memory details of the SVO instances in a table. The **SVO Instances Statistics** page contains **SVO Instance Memory Statistics** icon to view the memory details and **Download Memory Statistics** icon to download the memory details. • **SVO Instance Details** page is updated with **Restart SVO Container**, **Force local SVO Container**, and **Delete SVO Container** icons to troubleshoot both the local and remote SVO instances. • **Certificates** page is updated with **Upload Certificate** button. The **Upload Certificate** button can be used to upload a customized certificate by providing Key and Certificate files in .PEM format. • **Scripts** menu is introduced to upload custom scripts provided by Cisco. The custom scripts provides access to a few object models of the application.
Auto negotiation Support on Ethernet Ports	Autonegotiation is supported for CRAFT, EMS, and UDC ethernet ports. You must choose AUTO for **Speed** or **Duplex** parameter to enable auto negotiation between the current node and peer node.
Blinking Alarm of a Card	You can view alarms blinking on a card in the rack, chassis, and card view. By default, the blinking alarms are enabled.
Card Controller Software Package	Card Controller software package includes all packages specific to the SVO card.
Cisco ONP Configuration File Import Enhancement	SVO automatically redirects you to the Device Configuration page too add the device, if the device corresponding to the imported device configuration is not present in the system.

Feature	Description
Cisco SVO Installation	The following installation methods are introduced to ease SVO installation: • The `svoTools-12.3.sh` script is introduced to simplify system deployment in the server. You can use the script to install, uninstall, extract, and load the SVO images. • IPv4 Port Forwarding allows to save one IPv4 address of the management network for each running Admin Plane. When Port Forwarding is enabled, Admin Plane can share the same IPv4 address assigned to the host NIC. • Standalone configuration enables you to install the SVO instances in standalone mode for lab and development usage.
Device Synchronization and Alarm Status Icon	The device synchronization and alarm status icon indicates the status of the device and alarm synchronization with varying colors. The colors in the synchronization status icon are: • Green • Orange • Red
Functional Module Group Stepper	The Functional Module Group stepper enables you to configure a card mode for a primary card when adding the primary card to the chassis. You can configure the compatible peer cards, pluggables and sub modes for the primary card.
Licensing Support for NCS 2000 Cards in SVO	This feature describes a basic understanding of licensing, the supported line cards, and the set of licensing operations to achieve the desired license information through WEBUI.
OC192 and STM64 Payload Support for MR-MXP Card	OC192 and STM64 payloads are now supported on the MR-MXP card. This feature allows you to: • Provision SONET/SDH interfaces. • Provision SONET/SDH trace monitoring parameters for OC192 and STM64 payloads. • Provision SONET/SDH thresholds.
Reposition a Chassis	This topic describes the procedure required to reposition a chassis in a rack.
Role Based Access Control	The Role-Based Access Control (RBAC) feature allows the users belonging to the Editor and Viewer groups to access and operate only some of the SVO panes.
Selective FPD Upgrade Support	You can select any DCO port for the FPD upgrade, based on the requirement.
Support for 6x100G Operation Mode	The 1.2T-MXP card supports the 6x100G operation mode that enables 100GE clients over 6 QSFP28 ports, when the trunk is at 200G rate.

Feature	Description
Support for Hosting SVO Server on Red Hat Enterprise Linux	This feature allows you to host SVO on an external server running Red Hat Enterprise Linux 7.9.
Support for OTN Cross-Connect Operation Mode on 400G-XP Card	The 400G-XP card supports the OTN cross-connect (OTNXC) operation mode. This mode supports ODU4, ODU2, and ODU2e bandwidths. This mode allows ODU switching between client to trunk ports or trunk to trunk ports within a single 400G-XP card for 100G and 200G trunk rates.
View Granular Details of the Card	You can view the granular details of the card, such as port name, admin state, and service state, by hovering the mouse over the ports in the card view.

Caveats

Open Caveats

The following table lists the open caveats:

Caveat ID Number	Description
CSCvz98940	SVO Controller Card: intense disk activity may cause NSO sockets timeout.
CSCwa04585	[OTNXC]:Error Message for ODU connection create/edit.
CSCwa04594	[OTNXC]:Unsupported operation should deny with proper error msg.
CSCwa08373	[OTNXC]:Error message for delete CC.
CSCwa17656	[OTNXC]:All ODU connection parameters are not shown in webui after just create.
CSCwa23205	TNC reboot with WD due to deadlock between corbaSem and nspSideListSem.
CSCwa23430	[OTNXC]: Error message for protected ODU connection.
CSCwa34227	[OTNXC]: Error message for ODU interface edit.
CSCwa36714	Alarm disappear from the \"Alarm Summary\" table even if the \"Auto delete cleared alarms\" option is no.
CSCwa36732	After a user is locked, user is in UNKNOWN group.
CSCwa36914	Invalid view after login in case of onlyPassword user.

Caveat ID Number	Description
CSCwa38116	Entity Status is not updating properly on webui for different switch actions triggered from Netconf.
CSCwa39139	No data found under ODU interface for OTU2XP card in Nodalcraft.
CSCwa39245	Webui Table shows \"fetching data\" for some minutes after NCS2K disconnect or NCS2K full sync.
CSCwa40051	FMG on 1.2T-MXP card is not provisioning.
CSCwa41722	[1.2T-MXP]:Unwanted values are coming for CD High and CD low for all LC cards.
CSCwa42938	Duplex shows as full when autoneg is enabled in nodal craft.
CSCwa45399	[WebUi]:Connection Name Edit should be blocked for protection group under shelf view/Provisioning pa.
CSCwa45556	Random values are displaying for OSNR High/Low in tca.
CSCwa45607	[Corba]:Retrieval of ODU Utilization operation is not supported.
CSCwa46309	Card (controller/line) status not showing properly.
CSCwa46922	[OTNXC]: protection switchover issues with non-default protection group name.
CSCwa48867	webui ppm delete fail with unexpected error message.
CSCwa49579	Clear 1-day PM is not clearing AVG and it is wrongly clearing also previous internval.
CSCwa50892	[OTNXC]: Odu connection notification is available in all cards after just create.
CSCwa37551	Software download is getting failed on standby controller while downloading from L to S package.
CSCwa43110	Current values in ethernet panel not getting auto updated.

Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

Other Important Information and References

Supported Upgrade Paths

The following software releases can be upgraded:

- R10.9.0.2 SSON to R12.3 SSON and R10.9.0.2-NCS-L to R12.3-NCS-L (ANSI and ETSI)

- R11.1.1.2 SSON to R12.3 SSON

- R11.12 SSON to R12.3 SSON and R11.12-NCS-L to R12.3-NCS-L (ANSI and ETSI)

- R12.2 SSON to R12.3 SSON

- R12.2-NCS-L to R12.3-NCS-L (ANSI and ETSI)