DANI ALONSO OPTICAL CONNECTIVITY

Configuring optical modules in Cisco

Overview

This chapter describes how to configure the Optical Amplifier Module and Protection Switching Module (PSM).

Key Takeaways

Cisco optical modules require proper compatibility checks, slot configuration, and software provisioning to ensure optimal performance and network reliability.Compatibility Verification

Before configuring an optical module, confirm that the module is compatible with your Cisco device. Cisco provides an Optical Device Compatibility Matrix where you can search by module or host device to verify supported models and minimum software versions (https://tmgmatrix.cisco.com) . Additionally, Cisco-compatible SFP lists for 2026 highlight modules validated for IOS-XE 17.12+ and support for NRZ and PAM4 encoding, ensuring proper DDM telemetry and avoiding port-lockout issues .

Module Installation and Clearing Previous Configurations

When replacing or installing a new optical module, clear any previous configurations on the slot to prevent conflicts. Commands typically include:

• Clearing card parameters configuration

• Clearing OTS controller configuration

• Optionally clearing controller optics configuration if the previous module was an EDFA

Optical Module Configuration

For optical amplifier modules (e.g., NCS1K-EDFA), configuration involves:

• Setting gain range (1–20 dB)

• Managing tilt (20–25 dB uncontrolled)

• Enabling per-channel power monitoring and gain regulation

• Configuring gridless or grid mode for channel frequencies and widths, supporting up to 96 channels For Routed Optical Networking (RON) transceivers:

• Use Crosswork Network Controller (CNC) or Crosswork Hierarchical Controller (HCO) for automated provisioning and performance monitoring

• Configure coherent optics and pluggable amplifiers via templates in CNC 7.1+ for single-port or multi-port deployments

Monitoring and Management

Cisco provides several tools for optical module management:

• Cisco Optical Site Manager (COSM): Aggregates logging, alarms, and performance data at the site level

• Cisco Optical Network Controller (CONC): Monitors SVO-based NCS 2000 installations and provides network-wide optical performance metrics

Best Practices

• Always verify module compatibility and software version before installation

• Use proper safety measures to protect fiber from high output power

• Monitor Bit Error Rate (BER) and ensure robust Clock and Data Recovery (CDR) for PAM4 modules

• Leverage automation tools like CNC and HCO to simplify configuration and reduce human error By following these steps, Cisco optical modules can be configured efficiently, ensuring reliable high-speed optical connectivity across your network.

Article Content

Configuration Guide for Cisco NCS 1001, IOS XR Release 7.1.1

This chapter describes how to configure the Optical Amplifier Module and Protection Switching Module (PSM). When

Configure Optical Modules

This chapter describes how to configure the Optical Amplifier Module and Protection Switching Module (PSM). When you plan to

Cisco Optical Network Planner Configuration Guide, Releases 25

With Cisco ONP, you can create multiple instances of a network, modify various parameters for each instance, and perform

Getting Started with Routed Optical Networking

Routers have direct visibility of optical performance. Note: Routed Optical Networking capacity expansions, i.e., adding new links,

Cisco Optics-to-Device Compatibility Matrix

Comprehensive compatibility information for Cisco optical transceivers and network devices Disclaimer: Cisco makes the data in this

Cisco SFP Commands Cheat Sheet: Check Status & Troubleshoot

Learn how to check SFP module health on Cisco switches. This guide covers essential CLI commands (show inventory, DOM), fixes

Complete Guide to Cisco Optical Transceivers (2026)

Complete guide to Cisco optical transceivers including SFP, SFP+, QSFP28 and 400G modules. Learn how to

View the Optical Module Status on a Switch

This article provides instructions on how to view the Optical Module Status on your switch.

Interface and Hardware Component Configuration Guide for Cisco

The 400G Digital Coherent QSFP-DD optical modules enable wavelength-division multiplexing (WDM) functionality in

View the Optical Module Status on a Switch through the

The Cisco Small Business Series Switches allow you to plug in a Small Form-factor Pluggable (SFP) transceiver in their optical

Configuration Guide for Cisco NCS 1001, IOS XR Release 7.10.x

Configure OTDR Module When you plan to replace a configured optical module with a different type of optical module,

Configure Optical Modules

Configure Optical Modules This chapter describes how to configure the Optical Amplifier Module and Protection Switching Module

How to Check SFP Optical Power Levels on Cisco Switches

Learn how to monitor SFP optical power on Cisco switches, interpret Tx/Rx levels, and troubleshoot fiber link issues. Step-by-step

Cisco Routed Optical Networking

Cisco Routed Optical Networking - Some links below may open a new browser window to display the document you selected.

Interface and Hardware Component Configuration Guide for Cisco

Guide to configuring QDD Optical Line Systems, including operational modes, safety features, and troubleshooting

Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide,

For more information on configuration, see Configuring 400G Digital Coherent Optics on ZR Module section. The following table

Cisco ASR 920 Router Series Configuration Guide, Cisco IOS XE 16

To find detailed interface information on a per-port basis on an optical interface module, use the show interface serial and show

Optics and Hardware Configuration Guide for Cisco 8000 Series

Configure 800G optics Provides instructions for configuring 800 Gigabit Ethernet connectivity using Cisco QSFP

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: https://danialonso.es
Technical inquiry: https://danialonso.es/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.