



# Cisco NCS 2000 Deploying 96-Channel Flex Spectrum (OPT201) v3.0

## What you'll learn in this course

The Cisco NCS2000 Deploying 96-Channel Flex Spectrum (OPT201) v3.0 course shows you how to plan, configure, and control optical networks using the Cisco® Network Convergence System (NCS) 2000 series Flex Spectrum platform.

The course teaches you how to design Flex Spectrum networks with multi-degree Reconfigurable Optical Add-Drop Multiplexer (ROADM) multi-shelf nodes using the Cisco Transport Planner (CTP) software.

You'll learn how to:

- Install the Cisco NCS 2000 series hardware
- Configure an optical network and circuits using the Cisco Transport Controller (CTC) software
- Learn which components and configurations take advantage of and/or are required for the Flex Spectrum 96-channel feature
- Configure optical networks with multidegree ROADM multishelf nodes
- Configure optical networks with colorless, contentionless, omnidirectional, and MPO cross-connect advanced features
- Describe and configure the NCS 2000 400-Gbps Xponder line card

## Course duration

- Instructor-led training: 3 days in the classroom with hands-on lab practice
- Virtual instructor-led training: 4 days web-based classes with hands-on lab practice

## How you'll benefit

This course will help you:

- Gain an in-depth understanding of how to install, deploy, and maintain a Cisco Optical Networking Services (ONS) 15454 Multiple Spanning Tree Protocol (MSTP) network
- Practice what you learn through hands-on labs

## Who should enroll

This course is designed for technical professionals who need to know how to deploy a Cisco NCS 2000 Series Dense Wavelength-Division Multiplexing (DWDM) network with Flex Spectrum.

The primary audience for this course includes:

- Designers
- Systems engineers and implementation staff
- Network operations center personnel
- Technical support personnel who are involved with the deployment, operations, and maintenance of the Cisco NCS 2000 Series
- Channel partners and resellers

## Technology areas

- Optical
- Routing and Switching

## Course details

### Objectives

After taking this course, you should be able to:

- Describe the hardware and components required and used with the Flex Spectrum feature
- Design optical networks in the Cisco Transport Planner software
- Install the hardware, including multishelf nodes
- Perform node turn-up and create circuits using the Cisco Transport Controller software
- Configure optical networks with multidegree ROADM multishelf nodes
- Configure optical networks with colorless, contentionless, omnidirectional, and MPO cross-connect advanced features
- Describe and configure the NCS 2000 400-Gbps Xponder line card
- Add a node to an existing DWDM ring
- Describe the NCS 2000 Troubleshooting Guide
- Use the features and documentation with Transport Controller to perform maintenance, testing, and basic troubleshooting

### Recommended knowledge and training

To fully benefit from this course, you should first complete the Cisco Fundamentals of Fiber Optics Technology (FFOT) video training course, or have an equivalent level of knowledge and skills.

## How to enroll

To enroll in the OPT201 course or explore our larger catalog of courses on Cisco Digital Learning, contact us at <training@fastlane-mea.com>

### Outline

- DWDM and Flex Spectrum Foundation
- NCS 2000 Chassis and Cards
- Design ROADM Networks with CTP
- Hardware Installation and Multishelf
- Node Turn-Up and Circuit Creation
- Advanced Feature Networks and Circuits
- Testing, Maintenance, and Basic Troubleshooting
- Spectrum Switched Optical Network

### Lab outline

- Cisco Transport Controller
- Cisco Transport Planner
- Adding a Node to Existing DWDM Ring Network
- Optical Channel Network Connection (OCHNC) Circuits
- Optical Channel Client Connection (OCHCC) Circuits
- Colorless Ports and Circuits
- Contentionless Circuits
- Connection Verification
- Performing the Optical Time Domain Reflectometer (OTDR) Test
- Maintenance and Performance Monitoring
- MSTP Troubleshooting
- Configuring the 400XP card

