Document Generated: 11/06/2026

Learning Style: On Demand

Technology: Cisco

Difficulty: Intermediate

Course Duration: 40 Hours

Cisco Optical Technology Advanced (OPT200) v3.0 - On Demand



About this course:

The Cisco Optical Technology Advanced (OPT200) v3.0 course gives you the skills you need to deploy advanced features of the Cisco Optical Networking Services (ONS) 15454 Multiservice Transport Platform (MSTP) and Cisco Network Convergence System (Cisco NCS) 2000 Series.

In this course you'll learn to how to use the Cisco Transport Planner Design Tool to create network topologies and advanced network topologies. You will learn how to use advanced dense wavelength division multiplexing (DWDM) features such as G.709 encapsulation, generic framing protocol G.7041, Layer 1 circuits, quality of service (QoS), crossponder networks using T1 over Ethernet, and encryption.

Course Objective:

After taking this course, you should be able to:

- Perform the ONS 15454 MSTP node turn-up procedure
- Describe first generation mesh topologies
- Describe the Optical Channel Network Connection (OCHNC) prerequisite requirements for provisioning circuits in an ONS 15454 MSTP network
- Describe the ONS MSTP advanced protocols
- Describe the OCHNC circuit provisioning for Single Module (SM) Reconfigurable Optical Add-Drop Multiplexer (ROADM) rings
- Describe the Any-Rate Muxponder Crossponder (AR MXP/XP) cards
- Describe how the Pseudo Command Line can be used to configure muxponder cards
- Identify the advantages G.709 encapsulation brings to optical transponder cards
- Install and provision the Any Rate cards
- Describe the 100-Gbps and 200-Gbps cards
- Describe the Cisco NCS 2000 400-Gbps Xponder line card and how it is configured
- Describe the SM ROADM (SMR)-based configurations
- Describe the 10-Gbps transponder and muxponder cards
- List the 10GE_XP and GE_XP card options
- Describe ingress policing and basic egress queuing strategies, and implement the customer QoS scheme into the ONS 15454 crossponder network
- Identify the principles of Ethernet related to the operation of Cisco optical networking products

- Configure the 10GE_XP/XPE and GE_XP/XPE cards, install Layer 1 circuits, and read the performance counters for Layer 1 Gigabit Ethernet circuits
- Turn up an encrypted network and test to ensure that information being passed is secure
- Add a node to an existing DWDM ring
- Describe problems with interconnecting circuits between rings, the ONS 15454 MSTP 80-channel manual Multiring feature, and hardware components
- Describe the ONS 15454 MSTP Troubleshooting Guide

Audience:

- System installers, integrators, and administrators
- Network administrators
- Solution designers

Prerequisite:

To fully benefit from this course, you should have the following knowledge and skills:

- Basic knowledge of optical transport and protocols
- Basic knowledge of data network principles

Course Outline:

- **Module 1. Cisco Transport Planner (CTP) Design Tool**
- **Module 2. Cisco Transport Controller (CTC) Operations**
- **Module 3. WSS- and WXC-Based Mesh Networks**
- **Module 4. Node Turn-Up: 40/80 WXC Mesh Technology**
- **Module 5. Install Circuits and View Power Levels in WSS and WXC Networks**
- **Module 6. SMR-Based Network and Node Turn-Up**
- **Module 7. Install Circuits and View Power Levels in SMR1 and 2 Networks**
- **Module 8. G.709 Encapsulation and 10G Transponders and**

Encapsulation Options

- **Module 9. 10 Gigabit Transponders**
- **Module 10. Generic Framing Protocol G.7041 and 10G Data Multiplexer Enhanced Cards and Encapsulation Options**
- **Module 11. Any-Rate Muxponder and Crossponder Cards**
- **Module 12. Ethernet and VLANs**
- **Module 13. 10 GE-XP and GE-XP Enhanced Cards, Settings, and Circuits Layer 1**
- **Module 14. Quality of Service**
- **Module 15. Layer 2 XP-E Cards Protected Ring, CoS Marking by Port, Customer VLAN, and QoS**
- **Module 16. T1 over Ethernet in Crossponder Network**
- **Module 17. 100G Transponder and Muxponder Installation and Circuits**
- **Module 18. 10G Encryption Card**
- **Module 19. Add-a-Node Design and Installation**
- **Module 20. ONS 15454 MSTP Troubleshooting**

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