

Hands-On

# Cisco ONS 15454 SDH Turn Up, Test, Provisioning, and Operations



## Course Description

The Cisco ONS 15454 SDH is a fast and powerful, yet easy to use optical platform that lowers the cost and increases the efficiency of bandwidth delivery within optical transport networks.

The Cisco ONS 15454 SDH Provisioning and Operation Training (OSTPO) provides instructor-led training that enables the student to learn how to operate the ONS 15454 SDH through classroom instruction and hands-on training on an ONS 15454 SDH system.

The students complete a wide range of tasks covering many system features and functions. Lab exercises rely on the ONS 15454 SDH user documentation for references to specific procedures. Each student has the opportunity to participate in every lab.

## Students Will Learn

- Identify laser, fiber optic, electrical, and electrostatic discharge (ESD) safety topics associated with the ONS 15454 SDH
- Identify the major components of optical fiber cables and connectors
- Identify the major steps required to properly clean optical fiber cables and connectors
- Install and provision common control, electrical, optical and Ethernet cards
- Identify types of IP addressing and common IP addressing scenarios
- Perform system setup and login
- Use the Cisco Transport Controller software
- Set up timing
- Create protection groups
- Provision a point-to-point network
- Create SDH circuits and tunnels
- Create sub-network connection protection (SNCP)
- Create a multiplex section shared protection ring (MS-SPRing)
- Add a node to an MS-SPRing
- Drop a node from an MS-SPRing
- Perform basic troubleshooting procedures
- Use Bridge and Roll feature

## Target Audience

Managers, engineers, planners, and installers wanting to broaden their view of the ONS 15454 SDH capabilities, and communicate system needs to others. Individuals responsible for day-to-day operations, maintenance, and provisioning of ONS 15454 SDH Systems.

## Prerequisites

SONET/SDH payload and overhead  
Topologies UPSR, SNCP, BLSR, Ms-SPRing, Linear, Point to Point.  
Protection 1+1, 11, 1N. Recommended basic digital telephony prerequisites

Architecture and framing DS-0, DS-1, DS-3, E-0, E-1, E-3.  
SONET/SDH architecture EC-1, OC-3, STM-1, OC-12, STM-4, OC-48, STM-16, OC-192, STM-64.  
Concatenation Basic Ethernet concepts.  
Basic Dense Wavelength division Multiplexing

## Course Outline

- ONS 15454 SDH Product Overview
  - Synchronous Digital Hierarchy Overview
- Safety
- Optical Fiber
- ONS 15454 SDH Documentation
- ONS 15454 SDH Shelf Layout and Components
- ONS 15454 SDH Shelf Installation
- Lab: ONS 15454 SDH Shelf Installation
- Lab: ONS 15454 SDH Card and Fiber-Optic Cable Installation
- ONS 15454 SDH System Set-Up
- Lab: ONS 15454 SDH System Set-Up and Login
- ONS 15454 SDH Timing
- Lab: Set up ONS 15454 SDH Timing
- ONS 15454 SDH Protection Groups
- Lab: Create ONS 15454 SDH Protection Groups
- ONS 15454 SDH Point-to-Point and Linear Configurations
- Lab: ONS 15454 SDH Provision and Test a Point-to-Point Network
- ONS 15454 SDH Circuits and Cross-Connections
- Lab: Create ONS 15454 SDH VC-4 Circuits
- ONS 15454 SDH Sub-Network Connection Protection (SNCP)
- Lab: Provision and Test an ONS 15454 SDH SNCP
- Lab: Create ONS 15454 SDH VC-12 Circuits
- ONS 15454 SDH Multiplex Section Shared Protection Ring (MS-SPRing)
- Lab: Provision and Test an ONS 15454 SDH Four-Fiber MS-SPRing
- ONS 15454 SDH Maintenance and Performance Monitoring
- Loopbacks
- Dense Wavelength Division Multiplexing and the ONS 15454 SDH
- Ethernet

- ONS 15454 SDH Multi-Service Over SONET/SDH Applications
- Lab: Create ONS 15454 SDH Ethernet Circuits
- Lab: Basic Troubleshooting
- Remove an ONS 15454 SDH MS-SPRing Node
- Lab: Remove an ONS 15454 SDH MS-SPRing Node
- Add an ONS 15454 SDH MS-SPRing Node
- Lab: Add an ONS 15454 SDH MS-SPRing Node
- Bridge and Roll Feature Using ONS 15454

## Delivery Method

Instructor-Led with numerous Hands-On Labs, case-studies, and exercises.

## Equipment Requirements

**(This apply's to our hands-on courses only)**

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

## Course Length

4 Days