



Designing Cisco ONS 15454 MSTP Optical Solutions

Length
2 days

Format
Lecture/lab

Track
Design

Version
1.0

DMSTP

Course Description

This course provides an introduction to designing optical multiservice transport (MSTP) networks with the Cisco ONS 15454 platform. You will learn about the architecture and configurations that are possible with the ONS 15454 platform, focusing on multiservice aggregation, layered TDM and WDM configurations, and next-generation management tools.

In the hands-on labs, you will learn how to simplify and accelerate the design of MSTP networks using Cisco MetroPlanner, how to implement and turn up the network, and how to manage the network.

Who Should Attend

This course provides an introduction to Cisco MSTP solutions for customer pre-sales engineers, system engineers, network engineers, and technical decision makers who need to design and architect MSTP solutions.

Recommended Prerequisites

You will gain the most from this course if you have some experience designing or implementing SONET or SDH solutions.

Related Training

- Cisco ONS 15454 MSTP Turn Up, Test, Provisioning, and Operation (OMSTP)
- Cisco ONS 15454 SONET Turn Up, Test, Provisioning, Basic ML, and Operation (OCPTO)

Learning Objectives

After you complete this course, you will be able to:

- Describe metro DWDM usage and typical solutions in today's market
- Describe how intelligent features of the MSTP address challenges of DWDM
- Design and implement basic DWDM network topologies
- Identify the shelf layout and line cards for the ONS 15454 MSTP
- Describe the key elements of DWDM network design
- Design DWDM network topologies using MetroPlanner
- Identify the steps used to turn-up a network and create DWDM circuits with Wave Path Provisioning
- Perform node turn-up, optical verification, create network connections and provision circuits
- Identify the basic MSTP protection schemes and explain how to build multi-layer redundancy
- Explain how the CTC and CTM are used as end-to-end network management tools for the ONS 15454
- Monitor performance and optical power information





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Course Outline

Module 1: Introduction to Metro DWDM Solutions

Lesson 1: Overview of Metro DWDM Today

A Brief History of DWDM
The Metro DWDM Market
Key Metro DWDM Drivers

Lesson 2: Building Intelligent DWDM Solutions

Consolidating WAN Services
Data Centers - WAN/SAN Extension and the Relevance of DWDM
Clustering and Large Computer Interconnect
IP over DWDM (IPoDWDM)
DWDM Solutions to Customer Needs
Benefits of an MSTP Solution
DIY vs. Managed Services

Module 2: Designing DWDM Solutions

Lesson 1: ONS 15454 MSTP Platform Overview

Cisco ONS 15454 MSTP Architecture
DWDM Components

Lesson 2: ONS 15454 Line Cards

ONS 15454 MSTP Shelf Layout
ONS 15454 MSTP Common Control Cards
ONS 15454 MSTP Optical Layer Cards
ONS 15454 MSTP Service Cards

Lesson 3: MSTP Network Design

MSTP Network Topologies
Optical Fiber Characteristics
MSTP Network Design using the Metro Planner

Lesson 4: MSTP Node Provisioning and Network Turn-up

Using the Cisco Transport Controller (CTC)
MSTP Node Provisioning
MSTP Network Turn-up
Creating DWDM Circuits on the MSTP

Lesson 5: MSTP Protection Schemes

MSTP Protection Schemes
MSTP Multi-Level Redundancy

Lesson 6: Managing the ONS 15454 MSTP

Network Management on the MSTP
Performance Monitoring on the MSTP
Typical Management Tasks

Lab 1: Cabling and Signal Flow
Lab 2: Designing a Simple Ring Topology with MetroPlanner
Lab 3: Provisioning a 3-Node Ring with Two Un-Protected Channels
Lab 4: Provisioning a 3 Node Ring with Two Y –Cable Protected Channels
Lab 5: Performance Monitoring and Optical Power Measurements on the MSTP

Course Labs



Learning Solutions