

Cisco Remote PHY Deep Dive (R-PHY)

COURSE OVERVIEW:

Remote PHY (R-PHY) is a key component in the cable industry's adoption of a Distributed Access Architecture (DAA). This Deep Dive course examines Cisco's deployment of R-PHY architecture and devices.

Remote PHY (R-PHY) is a key component in the cable industry's adoption of a Distributed Access Architecture (DAA). DAA and R-PHY are foundational technologies for future innovative network architectures such as Virtual CMTS (vCMTS), Cloud Native Broadband Router (cnBR), and Full-duplex DOCSIS. R-PHY enables the migration of physical layer (PHY) functions (such as RF Spectrum generation) from the Headend to the network edge - leading to more robust RF networks. The deployment of DAA/R-PHY, coupled with DOCSIS 3.1, allows cable operators to deliver ultra-broadband services with maximum downstream/upstream speeds approaching 10 Gbps/1 Gbps respectively.

WHO WILL BENEFIT FROM THIS COURSE?

This course is designed for technical professionals who need to know how to deploy Cisco Remote PHY and associated equipment.

The primary audience for this course includes:

- Cable Operator Network Operation Center personnel
- System Engineer/ Integrator/Solutions support personnel
- HFC Maintenance technicians
- Channel partners, resellers

PREREQUISITES:

Following are the strongly recommended prerequisites for this cable training course:

- Students should have foundational knowledge and/or experience with:
- DOCSIS principles of operation
- CMTS/CCAP platform – headend functions
- Cisco IOS Command Line Interface (CLI)

COURSE OBJECTIVES:

You will learn the Remote PHY architecture, Remote PHY Device (RPD) installation, CLI commands used for verification and monitoring, deployment best practices, and perform key R-PHY configuration tasks during hands-on labs.

COURSE OUTLINE:

Distributed Access Architecture Concepts

- Use cases for DAA
- Cisco R-PHY network components
- The Evolution of PHY
- Maintaining network 'time'

Remote PHY Architecture

- Headend architecture
- Supported devices
- Node and Shelf Installation

Deployment Considerations/Options

- DAA architecture components
- CIN design
- Timing considerations

RPD Initialization

- Communication protocols
- Initialization process
- Clock synchronization process
- Lab – PTP Clock Initialization

R-PHY Configuration and Monitoring

- Interface
- Lab – DPIC Port Connectivity
- Controller profiles
- Lab – RPD Configuration
- Fiber Node
- Lab – Wideband Interface and Fiber Node
- Verification using CLI Commands
- CCAP
- RPD

Advanced Deployment Options

- BEST practices and optimization
- New technology/features
- Video and Out-of-band support
- Lab – Implementing R-PHY Video
- Smart PHY

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