COURSE DESCRIPTION
DATA OVER CABLE SERVICE INTERFACE SPECIFICATION (DOCSIS) 3.1
HIGHLIGHTS

- Highly focused and in-depth training from the experts - including relevant updates from Informa’s extensive research team
- PACE enabled training to maximise competency development and application of learning
- Trainers and programme directors that are experts, industry experienced, and highly accomplished training professionals
- Training outcomes and competency development designed to meet industry and organisational requirements

COURSE SUMMARY

This Data Over Cable Service Interface Specification (DOCSIS), Instructor Led course covers key standards and concepts from DOCSIS 1.x through to 3.1. It provides hands-on DOCSIS experience and establishes important foundational knowledge needed for configuring bi-directional channel bonded services and other advanced-service features. While examples of implementing DOCSIS services on the Cisco cBR-8 may be used in this course, most of the learning experiences also apply to other CMTS platforms. The current DOCSIS 3.1 specification supports speeds of 10 Gigabits per second (Gbps) in the downstream and 1 Gbps upstream. The course includes lab activities and/or demonstrations.

COURSE PREREQUISITES

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

- Students should have knowledge and experience with the Cisco IOS Command Line Interface (CLI)

COURSE GOAL

You will learn the DOCSIS 3.1 architecture, deployment best practices, migration strategies, security features, and identify key configuration tasks.

OUTCOMES & COMPETENCY DEVELOPMENT

After completing this course, the student should be able to:

- Describe RF Networking Concepts when applied to the MSO environment
- Explain and observe DOCSIS modem registration
- Identify the current DOCSIS 3.0 technology and deployment as the foundation for DOCSIS 3.1 downstream channel bonding
- Use lessons learned from earlier worldwide channel bonding deployments to describe how DOCSIS 3.1 channel bonding enables additional advanced services
- Describe the component parts of the DOCSIS 3.1 specification set and explain the primary aspects in functional block-diagram form
- Explain modular and integrated CMTS concepts and how they relate to DOCSIS 3.1
- Relate channel bonding terms and acronyms to available Cisco cBR-8 downstream channel bonding hardware and software releases
- Use new Cisco cBR-8 features and featurettes for best system performance in mixed DOCSIS 1.x/2.0/3.0 and DOCSIS 3.1 channel-bonded environments
- Identify necessary third-party DOCSIS 3.1 components such as the Symmetricon DTI server and gain knowledge necessary to recognize the role of any third-party components in a customer’s design

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RF PRIMER

DOCSIS REVIEW

- DOCSIS 1.0 and Best Effort Service
- DOCSIS 1.1 and QOS
- DOCSIS 2.0 and RF Changes
- DOCSIS 3.0 features – focused on channel bonding

DOCSIS 3.1

- Physical layer, Modulation QPSK, QAM OFDM
- MAC and Upper Layer
  - Overview and Theory
  - MAC Specification
  - Frame Formats
  - MAC Management Messages
  - Timing
  - UCD, MAP and MDD
  - Registration
- MAC Protocol Operation
  - Timing and SYNC
  - US Data Transmission
- Channel Bonding DS and US
- Data Forwarding
- CMTS CM Interaction – Bandwidth Optimization
- Dynamic Operations
  - Load Balancing
  - Dynamic Bonding
  - DS and US Channel Changes

3.1 MIGRATION STRATEGIES

OTHER DOCSIS 3.1 SPECIFICATIONS

- Security
- Cable Modem Customer Interface
- OSSI

End of two-day DOCSIS 3.1 specific content...

Platform-specific (UBR 10K or cBR-8) architecture, functionality, and configuration may follow – an additional 2 or 3 days of training content
OUR TRAINING SERVICES

TELECOMS ACADEMY STRUCTURE

Our training programmes are delivered worldwide as part of the training and development plans of many operators, vendors, and service providers. The programmes cover a wide range of competency development requirements.

To ensure we meet the training needs of the industry as effectively as possible, we operate three schools:

School of Telecoms Management
Business training tailored to the telecoms industry, ranging from the intensive 5-day Telecoms Mini MBA to specialist leadership and marketing training.

School of Advanced Communication Technologies
Covering a multitude of technologies, these courses range from overviews aimed at nontechnical staff to in-depth engineering training.

Distance Learning
Our comprehensive suite of Distance Learning programmes provide an excellent opportunity to expand knowledge and build confidence.

PACE ENABLED TRAINING

Our programmes are PACE Enabled – a training method that optimises both training value and student engagement. It delivers highly efficient competency development that is focused squarely on practical application in the work place. It is simple in concept and comprises four key elements:

- Preparation – Pre-course preparation in order to “hit the ground running”
- Application – Applied Learning that focuses on practical application in order to maximise both training value
- Consolidation – Post-course continuing competency development, access to resources and on-going support
- Experience – An outstanding end-to-end training experience designed to develop competences as effectively as possible

OUR TRAINERS

We only use trainers and programme directors that satisfy the following three criteria:

- Experts in their field
- High level of Industry Experience
- Expert facilitators and training professionals.

All our trainers have undergone a rigorous election process and are subject to continuous monitoring and evaluation. Each trainer is accredited for specific courses or topic areas. Whether engineers or business experts, all our trainers are required to continue their own development within their specialist areas, and to broaden their Industry view of trends, best practice and technology.

This is achieved by our on-going work with many tier 1 operators and vendors, and by full exposure to Ovum research and KNect365 TMT worldwide events.

UNIVERSITY ACCREDITATION

Some of our programmes have been accredited by the University of Derby Corporate; a UK-based university highly acclaimed in the area of employer engagement. They are at the forefront of the drive to integrate highly focused industry-led training with the academic rigor and quality control of university-based education. Our comprehensive Advanced Telecoms Management Series have been accredited Post-Graduate Level, with our extensive suite of Distance Learning at Undergraduate Level.

We would be happy to discuss extending accreditation to tailored ATMS or programmes based on our Distance Learning modules. Although accreditation is specific to these programmes, the work we do with the University of Derby enable us to develop and apply best practice across our portfolio.

CUSTOMISED IN-HOUSE TRAINING

Telecoms Academy has worked with countless companies to deliver customised training programmes. We take time to understand your requirements, you’ll work with our specialist training team to ensure that we deliver your perfect training programme for your business.

A customised training programme from Telecoms Academy ensures you get a course that precisely matches your organisation’s needs, presented by a first-rate training organisation, with access to all the latest industry research and analysis.

Why choose in-house training from Telecoms Academy?

- Content can be customised to focus on the issues you want – work with us to develop the training course to match the exact needs.
- Unique industry research – from Ovum’s team of industry leading analysts
- Expert trainers – our team of versatile trainers have the knowledge and experience to deliver a highly effective learning experience
- The most efficient way to train your staff – at the time and location to minimise disruption
- Flexible delivery options – with a range of instructor led, distance learning and virtual classroom formats available you can build a blended solution to maximise training effectiveness over the long term
- Pre and post course assessment – can be included in programmes to measure competencies and check on the required progress.

Contact us to discuss how we can build your perfect programme.