PROFESSIONAL SERVICES

DOCSIS 3.1 Transition Services

Stay focused on business as usual while CommScope develops and executes a detailed plan for implementing DOCSIS 3.1

COMMSCOPE®

Service Overview

A DOCSIS 3.1 network offers significant increases in subscriber bandwidth and enhanced operations. Never before has a standard come with so many new features and brought so many changes to broadband delivery. These include a new frequency multiplexing scheme, new methods of error correction, expanded frequency ranges and, of course, new CPE. The path to realizing the full benefits of DOCSIS 3.1 will require significant change throughout operators' networks: the Wide Area Network (Core and Backhaul), Distribution Hub or Headend, Operations Support Systems, Physical Layer and CPE devices. CommScope recommends a multi-phased approach that begins with analysis and audit of the existing network. CommScope's expertise builds on decades of experience with cable network upgrades and consolidation. With CommScope as a partner, operators can map out and execute a logical plan to design, deploy, verify, and document their DOCSIS 3.1 network and get ready for the next wave of subscriber demands and new service offerings.

MULTI-PHASED APPROACH

The conversation around DOCSIS 3.1 has quickly moved from "What is it all about?" to "How do I make sure we're ready?" And just as the benefits of DOCSIS 3.1 are many, so too are the steps it takes to prepare. These steps include creating a strategy for headend evolution, verifying the capacity of the optical network, validating that RF signals are within an acceptable range and gathering data about deployed CPE – to name a few. Since DOCSIS 3.1 impacts so many points in the cable network, the task of making preparations can be daunting. It is critical to take a step-by-step approach, managed by a disciplined Program Manager to develop and execute a plan that ensures service continuity, maximizes bandwidth gains, and minimizes costs.

STEP 1: ANALYSIS AND AUDIT

- Establish current system parameters through targeted review of the existing network
- Core network side interface – capacity audit and modeling
- Hub or Headend – CMTS audit, Inside Plant design and optimization
- Physical layer (TX/RX, HFC) – bandwidth, performance, links, amp spacing, tap RF levels, cable, spectrum usage
- CPE – Quality of service, signal performance, installation validations, MOCA usage
- OSS – fault, configuration, accounting, performance and security management

STEP 2: DESIGN AND ENGINEERING

- Network planning and system migration
- Pre-engineering sample designs
- Drop-in design - module swaps, relocation engineering
- Capacity engineering/managing service groups – de-clustering, node segmentation, wavelength planning

STEP 3: DEPLOYMENT

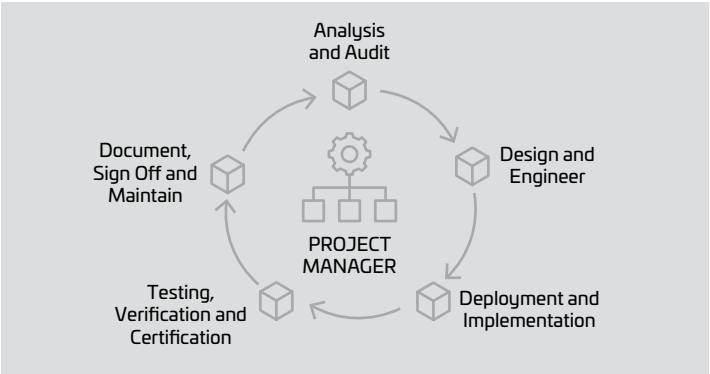
- Construction management – hub builds, Rack and Roll*, rack/stack/wire projects
- Material staging & logistics – add efficiency through on-time delivery, loss reduction and decommissioning
- Installation management – available for all hardware required for D3.x upgrades. CommScope skilled technicians install, configure and test.

STEP 4: TESTING AND CERTIFICATION

- Test device upgrades or replacements
- Functional testing
- Compliance testing
- Performance testing
- Quality of service
- Reporting

STEP 5: DOCUMENTATION AND SIGN OFF

- CommScope provides documentation of every process and task with recommendations for improvement.
- Transformation plan (phasing, materials, PM, build)
- Playbooks (design, engineering, deployment, certification, maintenance)



DOCSIS 3.1 Services

CommScope Professional Services offers a wide range of services that can be provided a la carte or as part of a complete transition program.

LAB VALIDATION OF 3.1 EQUIPMENT

Making the best selection of DOCSIS 3.1 equipment relies heavily on your own validation of how that product performs in your environment. CommScope offers vendor-neutral lab validation services for the DOCSIS 3.1 roll out.

DOCSIS 3.1 WORKSHOPS

The onsite workshop is focused on the DOCSIS 3.1 specifications, with the intention of educating the key decision makers within the company to fully understand the capabilities of DOCSIS 3.1, and how to best prepare for deployment of DOCSIS 3.1 technology. Other areas covered in the workshop include the evolution of the Cable Access Network, New Technologies, New CCAP Architectures and New Network Architectures.

SYSTEM READINESS AUDIT

CommScope provides an audit and review of the existing DOCSIS network and technical operations, allowing you to concentrate your resource efforts and validate your network readiness (and people) in preparation for DOCSIS 3.1. The audit can be system-wide or targeted to a sample area.

OUTSIDE PLANT OPERATIONAL PLAYBOOKS

Make sure the RF Network is ready for DOCSIS 3.1 implementation and operations. Each Playbook is tailored per system and provides detailed set-up guides for all active devices for forward and return. Provides a consistent guide for technicians across all markets.

PROGRAM MANAGEMENT

Managing complex coordination of critical maintenance window activity, constructions crews, sweep and balance crews, customer notification, design coordination and material logistics.

TECHNICAL CONSULTING

Analyze RF and IP networks, practices and personnel to develop a strategy to smoothly transition to 3.1. CommScope RF and Data Engineers have years of experience with HFC operators.

HEADEND AUDIT

Make sure the headend is ready for 3.1. Manage the alignment of video and high speed data service group sizing. CommScope Video and DOCSIS experts can create a strategy to properly size the number of service groups, and plan the number of QAMs required for CER deployment.

OUTSIDE PLANT DESIGN

HFC drop-in upgrade design, recalculating forward and return path to support 3.1 operating levels (5-85 or 12-204). Node segmentation and node splitting design.

INSIDE PLANT DESIGN

Leveraging CommScope's history in designing for and deploying high density solutions, CommScope can architect solutions to reduce power and cooling needs, and 'wire once' to match new OSP requirements. Modular "Rack and Roll"* solutions can be built off site to minimize impact on business as usual.

DEPLOYMENT

CommScope Professional Services engineers lead the industry in a vendor agnostic approach to DOCSIS solutions. CMTS/CER hardware upgrades to next generation technologies, device configuration and software upgrades are planned in a way to maximize the customer experience.

DAY 2 SERVICES

Leveraging CommScope's history in designing for and deploying high density solutions, CommScope can architect solutions to reduce power and cooling needs, and 'wire once' to match new OSP requirements. Modular "Rack and Roll"* solution can be built off site to minimize impact on business as usual.

FACTORY UPGRADES

As applicable, CommScope can manage a program to provide seed stock, return units from the field and perform factory upgrades to support DOCSIS 3.1 requirements.

*Rack and Roll= An approach to implementing a new headend architecture that is planned, built offsite, and delivered and integrated into your operations.

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com

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Visit our website or contact your local CommScope representative for more information.

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