Headend Optics Platform (CH3000)
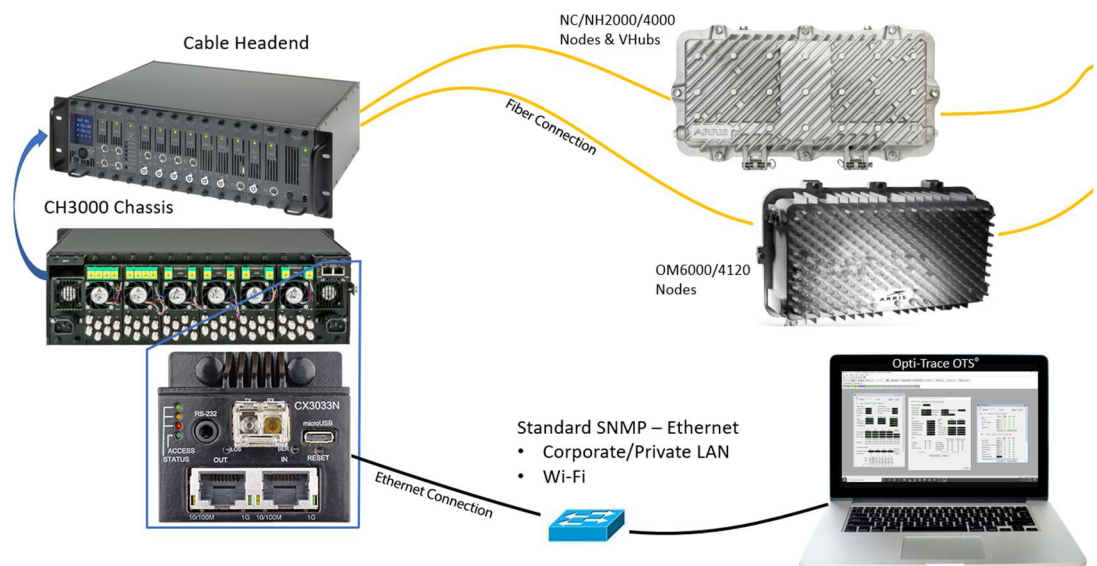
Opti-Trace® Management Software
for CH3000 Chassis and Compatible Node/ VHub-based HFC/RFoG Modules

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FEATURES

- Enables local and global topology configuration, fault, and security management for inside plant and outside plant HFC/RFoG products equipped with digital return communications
- Supports CH3000 Chassis and remote NC2000, NC4000, VHub, UVHub, and Opti Max OM4120/OM6000 optical nodes
- Windows PC-based application with extensive and intuitive user-friendly Graphical User Interfaces
- Remotely launched and operated through standard web browsers and SNMP wired/wireless networks
- Three Management Options:
    - Local serial (RS232)/USB craft interface (CMS)
    - Full suite remote to single shelf (OTS)
    - Full suite remote enterprise (EMS)

Opti-Trace is CommScope's Windows-based Element Management System software for local and remote management and monitoring of optical transmitters, receivers, EDFAs, switches, and transponders installed in CommScope CH3000 Chassis and NC2000, NC4000®, VHub, UVHub, Opti Max® OM4120®, and OM6000® optical nodes.

The Opti-Trace management software simplifies operations, helping operators to quickly provide enhanced services and optimization of the overall subscriber experience.

Three software packages are offered. Limited monitoring and management is accomplished via a wired RS232 or USB connection between various chassis or node-based modules and a PC/Laptop using the Opti-Trace Craft Management Software (CMS). CMS is typically used for initial and incremental in-field local (not remote) module setup and adjustments.

The extensive full suite of remote monitoring and management capabilities for all modules installed in a CH3000 chassis and NC2000, NC4000, VHub, UVHub, and Opti Max OM4120/OM6000* nodes is accomplished via an SNMP (Ethernet) connection between a PC/Laptop installed with Opti-Trace Shelf (OTS) and the target CH3000 chassis. Opti-Trace Element Management Software (EMS) is used in conjunction with OTS to provide global/enterprise network views and management of multiple CH3000 networks and connected nodes. OTS/EMS connections can be as simple as a minimal wired or wireless Ethernet connection between the Opti-Trace equipped PC and the CH3000 chassis of interest, or as comprehensive as a centrally located back-office wide distribution multi-hub/multi-node system connected through the Internet or private network. Web/internet-based connection and management is also supported by simply entering the IP address of the target CH3000 chassis CX3003C enhanced communications module or CX3033N enhanced network management and communications module into the OTS/EMS User Interface.

Opti-Trace CMS, OTS, and EMS software applications provide an extensive offering of graphical user interfaces (GUIs) to drill down to the module level whether they are transmitters, receivers, amplifiers, switches, or node modules to monitor events, configure/manage/set parameters, thresholds, set and monitor alarms, provide firmware updates, and troubleshoot systems.

* OM4120 and OM6000 node connections require a DT7x30 Digital Transmitter in the node with a DR3450N connection to the CH3000 Chassis. Functionality is limited to node monitoring only. Contact Technical Support for Opti-Trace and firmware version requirements.

OTS Chassis and Installed Module Views

Opti-Trace Craft Management Software (CMS)

CMS supports local monitoring and management of modules installed in a CommScope CH3000 chassis, optical HFC nodes, VHubs or UVHubs connected to the CH3000 chassis. With CMS, modules are accessed using an RS232 serial cable (or USB Cable for newer modules) that is connected between the PC where CMS is installed and the craft port of a PS3xxx CH3000 chassis-based power supply module. CMS supports local monitoring and management of these modules using an RS232 serial cable or USB cable that is connected between the PC or a Digital Transmitter (DT4xxxN or DT7x30N) module in slot A of the optical node.

CMS also monitors (but does not manage or configure) certain RF Return Transceivers installed in OM4120 and OM6000* Node platforms, through a DR3600N or DR3450N Universal RF Receiver module sitting in the CH3000 chassis.

CMS allows you to:

- Locally monitor and manage modules in a CH3000 chassis, specifically the status, alarms, and settings.

- Locally monitor and manage external node-based modules reported through a Digital Transmitter (DT4xxxN/DT7x30N) in the node with a Digital Receiver connection to the CH3000 chassis.

- Perform firmware upgrades on active modules installed in the CH3000 chassis with a PC connected to a PS3xxx in the CH3000 chassis, and installed in NC2000, NC4000 nodes, VHubs, or UVHubs with a connection to a Digital Transmitter (DT4xxxN/DT7x30N) module in slot A of the optical node. Perform firmware upgrades on Digital Receiver (DR3xxxN) modules installed in CH3000 chassis, with a direct USB connection to a DR3xxxN.
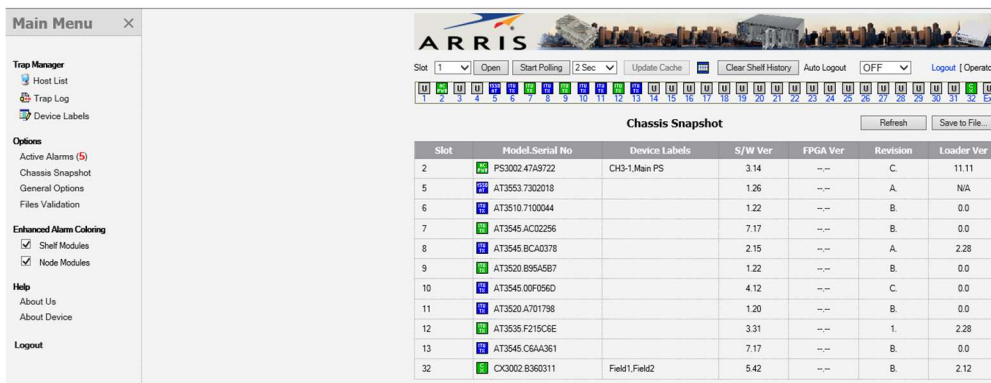
Opti-Trace Shelf Management Software (OTS)

OTS is an SNMP-enabled application that is used to monitor, configure, and manage up to 32 modules installed in a CH3000 Chassis (called a "shelf" that includes a single chassis and all installed modules). In a typical headend installation, multiple "shelves" of the CH3000 chassis are used to serve the exterior cable plant, distribution network, and subscriber base. OTS enables independent management of shelves via the unique IP address of the resident CX30x3 Communications Module in each chassis. OTS also provides monitoring and management of modules that are installed in certain CommScope nodes and VHubs, accomplished via a DR3xxx Digital Receiver in the chassis and connected DTxxxxN Digital Return Transceivers installed in the node. Multiple digital receivers installed in that chassis and consequently multiple nodes connected to them can be managed or monitored by OTS. All information is displayed via a set of intuitive and comprehensive GUI screens available for each module.

OTS supports:

- SNMP-based connectivity via a standard SNMP (Ethernet) network, including wireless and Web browser/internet access.

- Individual shelf views showing up to 32 slots of installed modules, including module level alarm indicators.

- Remote management/monitoring of modules installed in the CH3000 chassis and optical nodes connected through the DR3xxx Digital Receivers installed in this chassis. User can only monitor (cannot manage or configure) the optical nodes NC2000, NC4000, VHubs, UVHubs, OM4120 and OM6000* connected through DR3xxxx Digital Receivers installed in this chassis.

- Set up trap receiver lists on shelves, view traps received, and view storage and retrieval of trap history.

- Easy setup and clearing of alarms and alarm history of the entire shelf, nodes, and individual modules.

- Easy configuration for various features and for software update on the CX30x3 that OTS is connected to.

- Utilization of a Batch Configuration Utility to configure multiple devices simultaneously.

* OM4120 and OM6000 node connections require a DT7x30 Digital Transmitter in the node with a DR3450N connection to the CH3000 Chassis. Functionality is limited to node monitoring only. Contact Technical Support for Opti-Trace and firmware version requirements.

Opti-Trace Element Management Software (EMS)

EMS allows for the local or remote monitoring and configuration/management of large-scale networks consisting of multiple CommScope CH3000-based Optical Transport System Headend equipment. EMS provides a highly detailed global or enterprise network view and management of a network of CH3000 chassis-based shelf networks plus connections to their respective NC2000, NC4000, VHub, UVHub, and OM4120/OM6000 nodes when implemented with CommScope Optical Digital Return Transmitter technology. When used with Opti-Trace Shelf (OTS), the complete visual identification, location, and "drill down" into networks including their respective component modules in wide geographic and global areas for monitoring and management can be achieved, as long as they reside in the same connected IP network, such as the internet or private network.

EMS supports:

- Creation and display of a hierarchy (topological view) of multiple connected CH3000 chassis shelves and respective connected nodes within segmented and global enterprise networks.

- Drilling down to manage connected Headend/Hub shelves and node modules (via OTS) such as transmitters, receivers, switches, and more.

- Direct configuration and management of parameters and events (alarms, traps, etc.) within modules.

- Alarm notifications visible through the system hierarchy.

- Administration of firmware updates for NI3030 Network Interface and CX3003C Enhanced Communications Module, or for the CX3033N Enhanced Network Interface, Management and Communications module (that replaces NI3030 functionality).

EMS and OTS communicate with the CH3000 chassis shelf via an installed CX30x3 Enhanced Communications/Network, Management and Communications Module using SNMPv1 (Simple Network Management Protocol version 1) commands. Each shelf requires one CX3003C Enhanced Communications or CX3033N Network, Management and Communications Module. Access via a web browser/Internet is also supported.

SPECIFICATIONS

Characteristics	Specification
Minimum System Requirements	Applies to latest software versions. Check the CMS, OTS, EMS User Guide for the specific CMS/OTS/EMS version used to learn the specific requirements and features for each release.
Operating System	Windows 10
Processor	Intel Quad Core i5 processor and higher
Memory	4 Gigabytes of RAM or more
Available Disk Space	CMS: 30 MB; OTS: 20 MB; EMS: 20 MB
Network Interface	10/100/1000 Ethernet Adapter, standard Wi-Fi and web browsers, SNMP v1
Monitor	16-bit SVGA
Hardware Support (Headend)	CH3000-based modules; OTS and EMS requires one CX3003C Enhanced Communications Module or one CX3033N Enhanced Network Interface, Management and Communications Module; CMS requires CH3000 PS3xxx or module serial/USB interface
Hardware Support (Remote)	NC2000, NC/NH4000 node, VHub, UVHub platform with DT4xxx Digital Return Transceiver to DR3xxx Digital Return Receiver to CH3000 chassis; OM4120, OM6000 Opti Max node platform with DT7x30 Digital Return Transceiver to DR3450N Digital Return Receiver connection to the CH3000 chassis

ORDERING INFORMATION

Model Name	Description
Opti-Trace Craft Management Software (CMS)	Local RS232/USB-based management of CH3000 and node modules
Opti-Trace Shelf Management Software (OTS)	Local/remote SNMP-based management of single CH3000 chassis and node modules
Opti-Trace Element Management Software (EMS)	Local/remote SNMP-based management of multiple CH3000 chassis and node modules OTS must be installed with EMS for shelf access/view. One OTS installation manages multiple active CH3000 shelves and modules.

NOTE:

Nodes must be outfitted using CommScope Optical Digital Return Transmitter modules in order to monitor/manage node modules.

Contact your local CommScope Sales Representative to obtain CMS, OTS, and EMS software. Opti-Trace CMS, OTS, EMS are only available by download. You must have an account on the CommScope software download system.

RELATED PRODUCTS

CX3003C and CX3033N Enhanced Communication Modules	HT3xxx Transmitters, DR3xxx Digital Receivers, FA3xxx Amplifiers
NC2000, NC/NH4000, VHub, UVHub, OM4120, OM6000 Platforms	DT4xxx, DT7x30 Digital Transmitters, OR4xxx Optical Receivers, FA4xxx Amplifiers

Contact Customer Care for product information and sales:
- United States: 866-36-ARRIS
- International: +1-678-473-5656

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