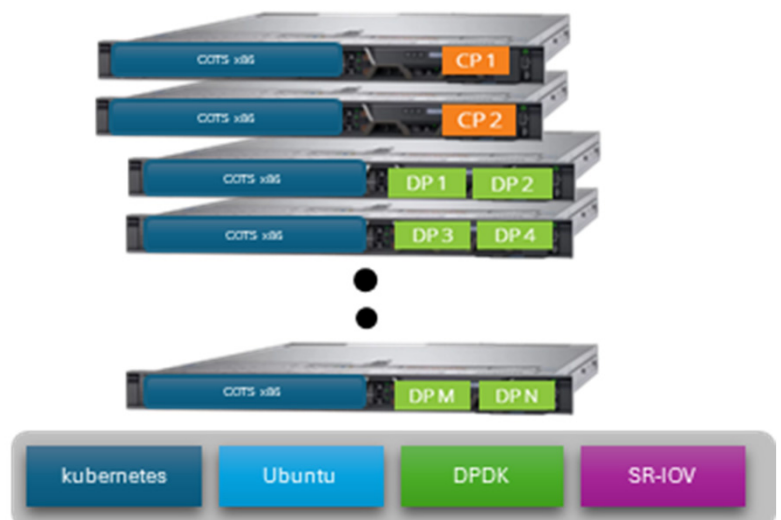


FEATURES

- **Full CCAP Functionality from CCAP Experts:** Designed to deliver the same functionality as C100G I-CCAP including CLI/OSSI matching plus the same Routing and Forwarding capabilities.
- **Flexible Design:** Allows Control and Data Plane Separation or converged deployment with separate HA schemes.
- **Open Interfaces:** CommScope vCCAP Evo supports the CableLabs® YANG models that allow third-party solutions to provision and monitor DAA nodes.
- **Interoperability:** vCCAP Evo complies with CableLabs standards, including those for interoperability with Distributed Access Architectures. CommScope is constantly demonstrating this interoperability at CableLabs and Excentis events.
- **Cloud-Native:** Deployable on bare metal Kubernetes, providing the flexibility to migrate towards cloud/orchestration environments in the future.
- **High Performance:** CommScope's CNFs are optimized for a virtual compute environment where they deliver industry-best DOCSIS® throughput per RU.
- **Simplified Operations:** vCCAP Evo and DAA hardware solutions provide customers with flexibility, programmability, along with simplified operations.
- **High Availability:** Design offers seamless protection against pod and server failures as well as protection against TOR/Management switch failures. Disaster Recovery/Geo-redundancy is planned for 2025.

For MSOs ready to take the next step in evolving their cable access networks, the CommScope® vCCAP Evo delivers a web-scale solution, cost savings, and service flexibility. Similar to CommScope's C100G, vCCAP Evo provides full CCAP functionality, allowing MSOs to easily deploy it without any loss in functionality or heavy routing investments as they migrate their networks. Developed from the ground up for the cloud, vCCAP Evo is designed as an open solution that supports full interoperability to third-party orchestrators and Distributed Access Architecture (DAA) nodes. CommScope ensures that moving to a virtualized CCAP solution is a smooth transition and puts MSOs on the right path.

CommScope has been at the forefront of the cable access network evolution for over a decade and continues the leadership our customers expect with the next generation of innovations for cable networks. Today, as networks undergo a fundamental technology and architectural shift toward software-defined, distributed, virtualized, and converged networks, service providers demand greater service agility and operational simplicity. CommScope has technologies that can help step up the potential of any broadband network, no matter where it is on the transformation curve.



vCCAP Evo Solution

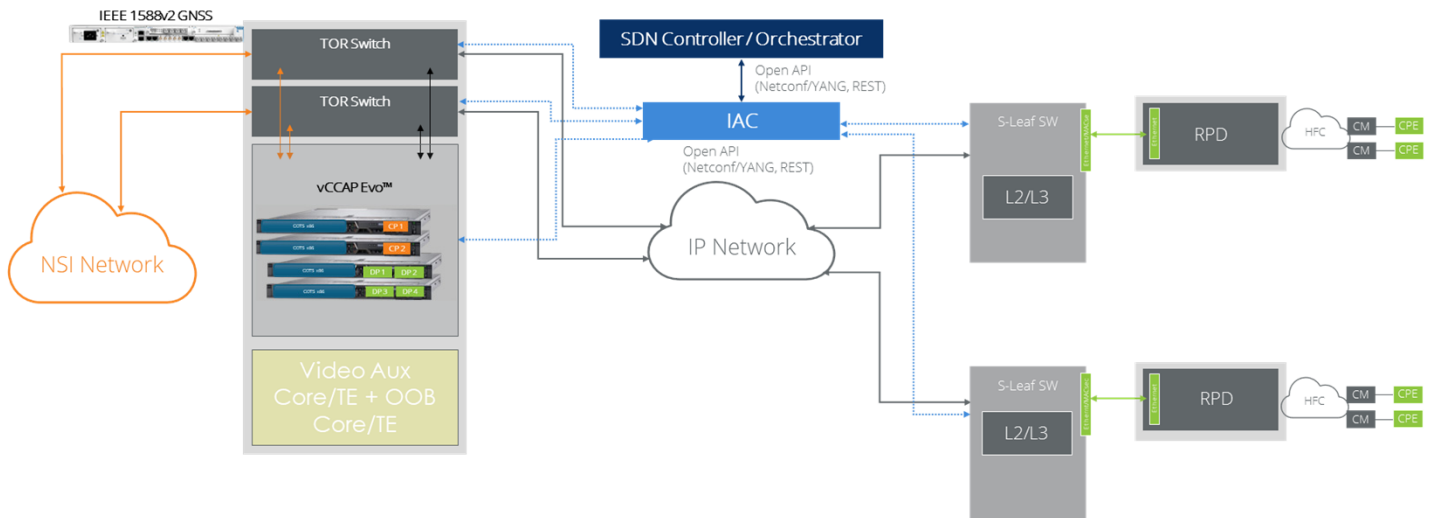
The CommScope vCCAP Evo solution offers maximum flexibility for operators. It enables them to build the best and most cost-effective cluster layout using only the necessary server hardware for each site, while ensuring that additional DP capacity can be added later at any time as bandwidth demands grow. This DP expansion can be achieved without impacting other customers.

CP and DP can be deployed either on non-converged (separate) servers (see example below) or a hyper-converged server. An external GNSS device is required to synchronize DP pods and R-PHY Nodes.

vCCAP Evo can handle pre-encrypted legacy video. However, if this is insufficient or if a separate video core is desired from an architectural standpoint, it can be configured as the principal DOCSIS core and integrated with an auxiliary video core product, such as VUE.

Figure 2: Logical Layout of a possible vCCAP Evo™ deployment using a non-converged approach with CP and DP on separate servers. An auxiliary video core is shown here for cases where video services are handled outside of vCCAP. An example of this is CommScope's VUE product.

NOTE: Clusters can vary from simple 1+1 setups to large 2 CP + 8 DP server setups. Shown here is a 2 CP + 2 DP starter kit which can be expanded as needed.



SPECIFICATIONS

Characteristics	Specification
System	<ul style="list-style-type: none">• Three (3) different x86 server types that can be used as building blocks to design cost-optimized solutions for any site bandwidth requirements• Runs on x86 COTS servers, no custom hardware is involved; specifications can be shared for direct sourcing of servers, for example, Dell, HPE, Cisco, etc. by MSO• CPU: Intel Gen4 is recommended due to Quick-Assist Technology (QAT) support, which enables hardware offloading of BPI• OS: Ubuntu 22.04• Kubernetes: 1.20.11• DPK: 22.11.1• Control Plane (CP) and Data Plane (DP) separation is supported. CP pods can be deployed on separate servers or converged onto Data Plane Server based on MSO architecture preference.
Management	<ul style="list-style-type: none">• CLI (ported from the CommScope C100G) allows seamless transition for operators familiar with this type of DOCSIS management.• SNMP, IPDR, and NetConf/YANG matching C100G I-CCAP capabilities and allowing seamless OSS integration.• CLIPS (CLI for Platform Services) allows operators to avoid direct interaction with Linux and kubernetes commands by running common cluster management operations directly from the new CLIPS entry point.
DOCSIS Features	<ul style="list-style-type: none">• Full DOCSIS 3.0, DOCSIS 3.1, DOCSIS 3.1E compliance and channel bonding• Full EuroDOCSIS 3.0 compliance• DOCSIS 3.0 upstream channel bonding up to 8 Channels• DOCSIS 3.0 AES encryption/decryption DOCSIS 3.0 IPv6• DOCSIS 3.0 Multicast• Complete DOCSIS/EuroDOCSIS 1.1 features• DOCSIS/EuroDOCSIS 2.0• A-TDMA (standard) PacketCable 2.0 compliant• PacketCable MultiMedia (PCMM) I06 DSG• BSoD L2VPN• TaFDM• Integrated with Viavi and Kronback for Spectrum analysis• Low-Latency DOCSIS (LLD/L4s)• PMA APIs• Dynamic IUC• Virtual Splitting and Combining• DLM (DEPI Latency Measurements)
High-Availability	<ul style="list-style-type: none">• CP (1+1) and DP (N+M) configurable via vCCAP CLI with separate HA schemes. Up to 16 DP pods are supported which translates to 8 physical dual-NUMA servers for DP operation using a single vCCAP instance. This will protect against pod failures and complete server failures with no significant impact on service.• Link-Aggregation on dual-port CP and DP NICs connected to pairs of TOR switches allows protection against TOR switch failures. Management switches can be protected in the same manner if separate.• N+1 Disaster-Recovery/Geo-Redundancy will protect against complete site failure, coming in 2025.
IP Features	<ul style="list-style-type: none">• OSPF v2 and OSPF v3• IS-IS (IPv4 & IPv6)• RIPv2 and RIPng• BGP (IPv4 & IPv6)• PIM-SM• IGMP snooping• IGMP v2 and v3• Static IP routing• DHCP Relay and option 82• DHCPv6• DHCP prefix delegation• Multiple DHCP servers• Proxy ARP• IP subnet bundling• Multiple default routes• Access Control Lists• L2 MPLS• L3 MPLS• L2VPN VLAN Tagging• IPFIX• PTP Boundary Clock (coming in 2025)
Video Features	<ul style="list-style-type: none">• Pre-encrypted QAM Video• NDF/NDR support via external OOB Core/Traffic Engine such as Kronback Tracers
Scaling	<ul style="list-style-type: none">• 3 server profiles can be used to build a system based on location requirements• Limits (R10.8.1)<ul style="list-style-type: none">• 2 CP and 16 DP pods max per vCCAP instance• 252 RPDs per vCCAP instance or 64 per DP pod• 252 Mac Domains• 504 US SG (1x2 SG)• 65,536 CMs per vCCAP instance or 30,000 per DP pod• 156 Gbps on large DP server (78 Gbps per NUMA) <p>(More detailed scaling data and assistance with site modeling is available by CommScope)</p>

ORDERING INFORMATION

Model Name	Description
AXC-VCCAP-LC-SUB	vCCAP per subscriber software license
AXC-VCCAP-LC-SG	vCCAP, per SG License DOCSIS 3.1
AXC-VCCAP-LC-SG-600	vCCAP, per SG License for 600 MHz addition
AXC-VCCAP-LC-DR	VCCAP Disaster Recovery License (per protected cluster)

RELATED PRODUCTS

RD1 Series RPD	CommScope HLX™ Domain Manager
RD1 Series Remote PHY Shelf	RD1 Series HD Remote PHY Shelf
RD3 Series RD2322 RPD	RD4 Series RD1424-M4 RPD
E6000® Converged Edge Router (CER)	RD3 Series RMD
C100G Converged Cable Access Platform (CCAP)	C40G Converged Cable Access Platform (CCAP)
Intelligent Access Controller (IAC)	

Contact Customer Care for product information and sales:

- United States: 888-944-4357
- International: +1-215-323-2345

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vCCAP_Evo-DS_RevA