

# CommScope Vertasent: Smart switching to optimize video bandwidth

Interested in freeing up to 80 percent of your dedicated linear broadcast bandwidth for OTT? Our Vertasent solution allows you to do just that. Vertasent manages edge network and QAM RF bandwidth—providing the system control plane for session control of services such as switched, video-on-demand and third-party services. By transmitting services only when requested by a set-top box, this solution frees significant RF bandwidth for services such as OTT, IPTV/IPVOD, VoIP and high-speed data. Freeing bandwidth traditionally reserved for video broadcast makes it possible to meet fast-growing user demands while maintaining legacy investment in set-top topology without making huge investments.

## Vertasent provides bandwidth savings:

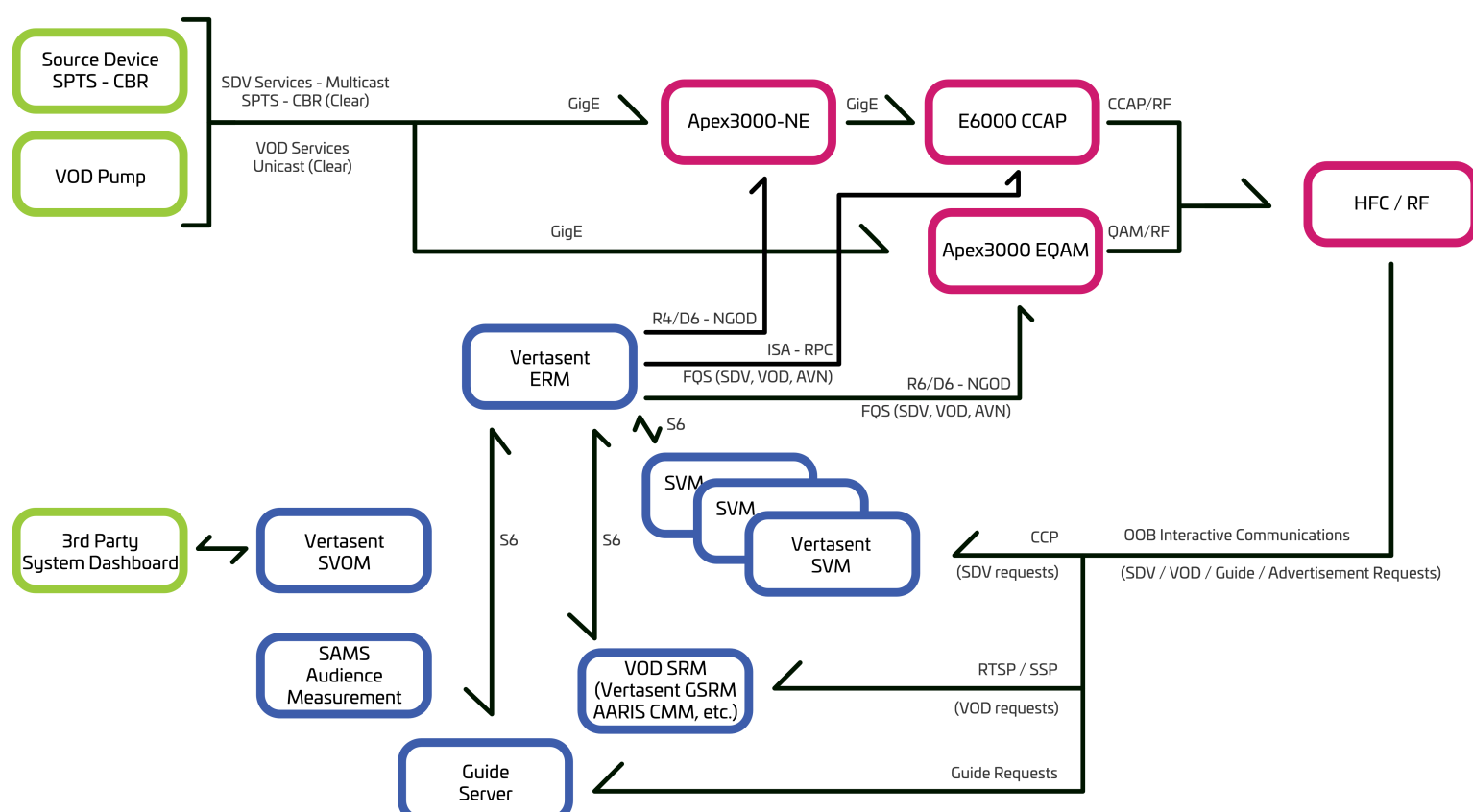
- Linear broadcast QAM video services are converted to switched digital video services that only stream on request
- Full QAM sharing (FQS) allows different types of QAM video services (VOD, SDV, Guide) to share narrowcast QAMs
- RF spectrum can be freed for more HSD, OTT and IPTV services

## Vertasent provides bandwidth management:

- Stream lower-bandwidth MPEG4 video when possible, and MPEG2 video only when necessary
- Easily and quickly “dial back” bandwidth assigned to legacy QAM video node by node as set-tops transition from QAM to IP
- Make more efficient use of GigE streaming network and RF spectrum for service delivery

## Vertasent provides scalability:

- The Vertasent solution allows operators to easily scale to head-end topologies while minimizing the need for additional compute resources.
- Always-on functionality reduces operator complexity in converting entire broadcast lineups to switched services
- LSM/VUE functionality allows DTA broadcast services to be collapsed into switched service groups
- Third-party dashboards can access Vertasent system topology and configuration and remote monitoring of session activity and bandwidth usage



## Edge Resource Manager (ERM)

The ERM is the heart of the Vertasent system—managing the QAM and network bandwidth for video delivery.

- The ERM manages overall utilization of edge device QAM RF output bandwidth and network input bandwidth.
- Session managers (SDV, VOD and third-party) connect to the ERM over industry standard NGOD S6 interface.
- The ERM manages edge devices using both the EDIS (RPC) and the NGOD R6 protocols.
- The ERM uses the NGOD R4 protocol to manage the encryption of VOD services when needed.
- The ERM manages QAM RF output, edge device input bandwidth, bandwidth used for VOD encryption, MPEG program number details, and session control for multicast and unicast session delivery.
- The ERM implements and enforces operator-defined QAM policies. These policies allow for both bandwidth reservations and bandwidth caps for different types of services such as SDV, VOD, Guide, and third-party services such as advertisement sessions.
- The ERM also provides detailed statistics, including timing of session setups and teardowns.

## Switched Video Manager (SVM)

The SVM session manager for switched digital video manages set-top requests for video delivery.

- The SVM communicates with the SDV clients in set-top boxes using NGOD and CCMIS channel change protocols.
- The SVM allows for very flexible switched channel lineups, allowing different lineups for different service groups.
- The SVM implements bandwidth reclamation algorithms for reclaiming switched video sessions when viewers may no longer be watching. The operator can select the conditions under which this occurs and how aggressive the reclamation should be.

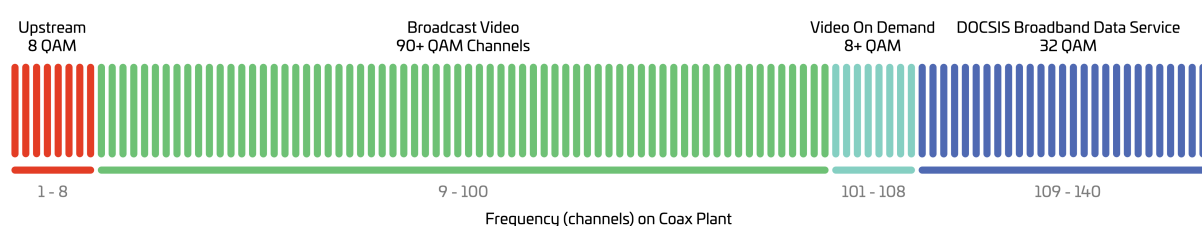
- The SVM implements several diagnostic features, including the ability to manually start services in individual service groups, sophisticated message logging, timing statistics and real-time monitoring of STB activity.
- The SVM also supports the TW Log2 specification where both real-time and file-based information are available for every channel change and every session setup and teardown as well as error conditions.

## Switched Video Operations Manager (SVOM)

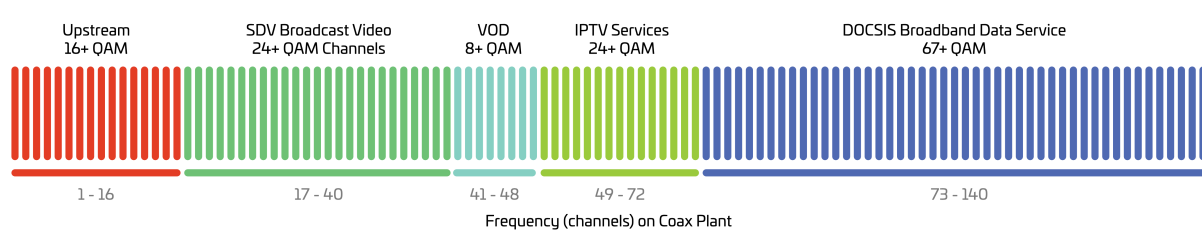
The Switched Video Operations Manager is the central point for configuration and monitoring of the Vertasent application servers and overall control plane topology.

- Configuration can be accomplished via the user interface or, in the case of larger systems, by importing topology configuration from an Excel workbook. A combination of both techniques can be used.
- The GUI allows for “bulk editing” to make common changes to a large topology simple.
- The configuration is loaded into the SVOM and pushed to other Vertasent applications via a “send config” operation.
- The SVOM provides a system monitoring dashboard to review the health of the Vertasent applications and controlled devices such as edge devices and network encryptors.
- Current bandwidth utilization information is available on the SVOM, along with SDV-specific reports.
- Detailed information on set-top boxes and tuners is available, including the ability to display set-tops and tuners registered in any given service group along with their latest tuning activity.
- System licensing is accomplished via the SVOM GUI, with license status and limits readily available.
- A separate user activity log captures all configuration changes made to the Vertasent system.

Current State Of Bandwidth on the Cable Plant



With Switched Digital Video



- Traditionally, huge amounts of bandwidth are reserved for broadcast video, and broadband downstream and upstream are limited.
- Digital Video Switching frees up vast amounts of bandwidth while maintaining the broadcast video experience for customers.
- That means new IPTV services, significantly more upstream capacity – great for videoconferencing – and a huge boost for broadband capacity!

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