



Synamedia Video Service Manager Overview

The Video Service Manager (VSM) is the Media Plane Management solution, enveloping a powerful set of tools for configuring, monitoring and managing Synamedia's Video Processing Solutions for Service and Media Provider's Streaming, Satellite, Cable and Telco distribution video and audio systems.

VSM deploys, configures and monitors unified media workflows for the Synamedia's Media Plane Products and Applications.

The system supports a diverse range of applications that allow operators and engineers with a service-oriented workflow management front end to operate and manage video signals in today's digital video processing headend applications.

Video Service Management (VSM) for deploying, configuring and monitoring unified media workflows.....



Service-Oriented Management for Synamedia Video Processing Devices, Appliances and Applications

The Synamedia VSM system integrates the Synamedia Video Processing range of Application for Video Distribution providing user-friendly and uniform support for configuration, resiliency management and monitoring. VSM supports control the applications for Encoding, Transcoding, Multiplexing, Scrambling, Packaging, exposing a system-oriented view on managing the individual instances of Synamedia Digital Content Manager (DCM), Virtual Digital Content Manager (vDCM), Encoder D9036 and IRD D9800 series. VSM also control third-party baseband video routers and switches, and a variety of other¹ video processing devices. VSM allows operators and engineers to easily control and monitor the Workflows of the streams and channels through the devices and applications in Synamedia Media Plane Solutions , such as:

- Live Linear Streaming Pipeline², consisting of vDCM xCoding, vDCM Packaging and DRM for ABR live streaming delivery
- Broadcast³ Statmux for Cable, DTH and Terrestrial delivery
- Broadcast³ CBR for IPTV delivery
- Broadcast³ Linear TS processing, where MUXing, FEC, CA, Source Protection, DPI, LSS are key use cases processed by DCM and vDCM.

Available for both traditional hardware-based infrastructures, virtualized and container type environments.

VSM allows users to easily modify and deploy new channel lineups on the fly with minimal disruption.

Reconfiguration, Adding or Removing services is fast, easy and error-free. Templating, wizards, consolidated data views and powerful copy-and-paste operations are exposed in the VSM User Interface.

VSM is designed for 24x7 management of Synamedia DCM, vDCM, D9036 Video Processing use cases for encoding, transcoding, TS processing.

Main Features

- Service-oriented to work the way operators work
- “Input to output” User Interface and REST API
- Template and wizard-based system setup
- Scalable and High Available
- Manages traditional hardware-based, virtualized and containerized video processing deployments

¹ Contact your local Synamedia account representative or distribution partner for details.

² Managed using the VSM Web UI

³ Managed using the VSM RCP Client

- Centralized management of geographically distributed systems
- Flexible redundancy schemes by VSM Pool Resource Management
- Easy lineup changes using any-to-any technology
- User administration/security
- Advanced scheduling engine
- Channel Status Monitoring

VSM System Description

The VSM system allows you to easily map all monitored appliances or software instances of for instance DCM, vDCM, etc. into the VSM topology views. This provides a clear, easy-to-use, and intuitive user interface. The VSM Topology Manager allows graphical creation and setup of the equipment topology, providing an easy interface for selecting devices from inventory. The Topology Manager provides an immediate overview of the device alarms present on the topology, allowing the user to visually correlate alarms on channels that are present on the platform.

Service configuration and lineup management applications are used by service providers and operators that manage linear-live content that must be processed to fit into the appropriate delivery network. Through lifetime management of the content, operators perform frequent configurations and reconfigurations of multiple devices throughout their video processing platforms.

The VSM Lineup Configuration Manager and Bandwidth Manager are tools that help solve issues of engineering and operational complexity. These tools help operators to perform quick service changes and modification, and automate changes through scheduling. The tools also provide the ability to prepare service configurations offline, without accessing each individual device GUI, eliminating the need for additional training.

VSM provides premium support for Synamedia reference architectures (blueprint designs), such as the vDCM Live Linear Push Streaming Pipeline, Broadcast Statmux, Broadcast CBR and various other use cases around Broadcast Linear TS processing where video compression (encoding, transcoding), statmux, and other key (v)DCM Videp Processing use cases.

VSM pool resource application provides a flexible way to manage resiliency and resource allocation.

VSM Scrambling Configuration and EIS (Event Information Scheduler) performs conditional access (CA) criteria provisioning on the (v)DCM Digital Video Broadcasting (DVB) Simulcrypt-compliant scrambler. Conditional access criteria management is part of the VSM Lineup Configuration management, allowing the engineer to manage conditional access configurations in a service-oriented context.

Event (or session) management is an application typically used by operators to manage live content transported from one location to another or to other multiple locations. Managing this type of application, also called

contribution management, allows operators and engineers to focus on service definitions, rather than opening each individual device user interface.

Key Highlights

The Video Service Manager offers:

- Centralized Management
- Service Oriented Operations
- Manages and Controls both appliance (hardware), virtual and container video infrastructures
- Rich API to integrate with other system
- Powerful Resiliency and Redundancy control
- System Oriented UIs
- Templates for Encoding, Transcoding, Packaging, DRM and Service Protection
- Internal Advanced Scheduler allows for dynamic configuration changes
- Wizard type Workflow User Interface offering easy way to configure complete flow over the solution

Features

VSM Web UI

- Since introduction of VSM 9.2, a Web Based User Interface has been introduced.
- The Web Based User Interface focusses in the Configuration and Management of the ABR type applications of the Synamedia Video Processing solutions for Live Linear Streaming Pipeline.
- The User Interface allows the VSM user and operators to
 - Create Configurations over the Lineups Control
 - Create Workflows for Live Linear xCode and xCode-Packaging and DRM Use Cases
 - Add Source (inputs) inventory of channels
 - Create and Assign Templates to Live Linear Workflows

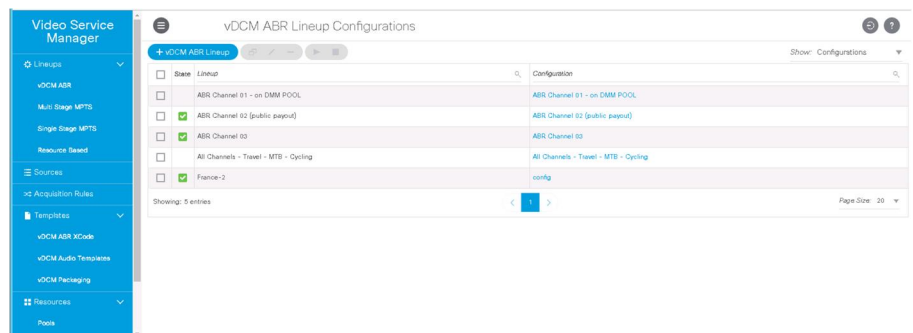


Figure 1: VSM Workflow View

VSM Topology Manager

- VSM Topology Manager supports creation of a network topology by entering devices from inventory and assigning the interconnection between the devices.
- It exposes to the operator a consistent overview of alarm status, mirror, and redundancy state.
- The user can create and model a headend topology where devices are interconnected through links connected to the individual device ports.
- It provides hierarchical grouping of devices in locations and sublocations.
- Multiple views can be open at the same time.
- Views are updated across multiple clients.
- The user can add background images.

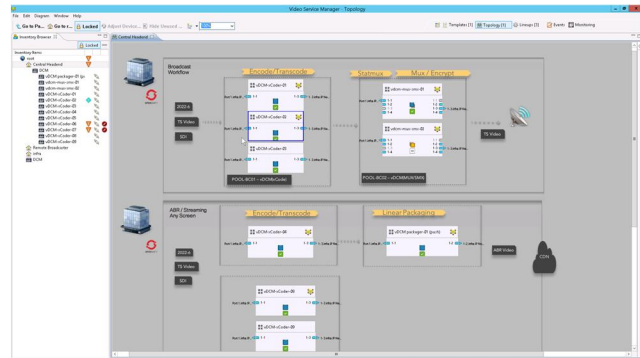


Figure 2: VSM Topology View

Lineup Configuration Management

- VSM Lineup Configuration Management is typically used to manage a group of Broadcast Live Linear channels in distribution networks such as Cable, Satellite or Terrestrial. A lineup is used to keep an overview of services at system level
- Service configurations are listed in the Lineup Configurations tab.
- The lineup Configuration Management GUI allows the operator to perform various configuration actions in or over lineups:
 - Activating and scheduling configurations
 - Duplicating lineups and configurations
 - Enabling lineup test mode (which allows engineers to perform configuration changes on a backup chain of devices)

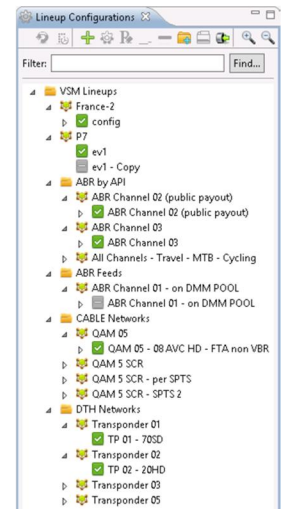


Figure 3 VSM Line-up Configuration

Table 1 lists a summary of VSM features

Table 1. Synamedia VSM Feature Summary

Feature Summary	
	<ul style="list-style-type: none"> • Service Configuration Management for DCM, vDCM, D9036 systems • Central Alarm Collection • Flexible Redundancy Control (1:1, N:M) • Template Management for xCode configuration • Template Management for Channel Protection • Bandwidth Management • Resource Allocation by VSM Pools • CAS – EIS

Automation	
	<ul style="list-style-type: none"> • Built-in Scheduler for Configuration and CA • Event Management for Contribution Use Cases • Operational Ease-of-Use • Mirrored Configurations for Main/Backup Sync • Offline Preparation of target config – prepare before apply
Monitoring and Alarming	
	<ul style="list-style-type: none"> • Built in alarm collection and representation • Service Status representation • Integration into ELK stack • Integration with InfluxDB and Grafana dashboards
Video Processing Systems Support	
	<ul style="list-style-type: none"> • Live Linear Streaming – xCode / Packaging • Broadcast Statmux • Broadcast TS processing • Satellite • Cable • Telco • Mobile • Bare Metal, Virtual or Container System
API and Interfaces	
	<ul style="list-style-type: none"> • REST API for configuration, alarm forwarding, inventory population • SNMP for event and alarms forwarding
System	
	<ul style="list-style-type: none"> • Linux or Windows OS • Standalone or High Availability Deployment • Deployable in OpenShift or K8s Cluster as Containerized Application

VSM Deployment

Standalone (Windows and Linux) or as High Availability Cluster (Linux only).

VSM can be co-deployed with ROSA NMS. In this option, customers can benefit from binding units from NMS to VSM to collect status and alarms.

VSM Redundancy

The VSM High Availability Cluster (HA) provides a full-automatic resilient VSM system.

VSM Client: PC Application

The remote client user interface allows access to all the broadcast type applications.

It can be installed on any PC running Windows 7, Windows 10 or running on the Server in 2012R2 environment.

The VSM Client can be installed and launched from a VSM webstart launch page.

VSM Web User Interface:

For the Video Processing Live Streaming ABR Use Cases, the VSM exposes a Web User Interface.

VSM Server: Server-Side Software and Requirements

Table 2 and 3 summarize the recommended server and client host and Operating System requirements for VSM Server

Table 2. VSM Server Host System⁴ Requirements

Description	Specification
Minimum Host Requirements	4 vCPU, 8 GB RAM, 10 GB of available hard disk space, 10/100 Ethernet Network Adapter
Recommended Host Requirements	8 vCPU, 16 GB RAM, 40 GB of available hard disk space, 10/100/1000 Ethernet Network Adapter

Table 3. VSM Server System Software Requirements

Description	Specification
Linux Operating system (OS)	Minimum CentOS 7.2-1511, recommended CentOS 7.5
Microsoft Windows Operating system (OS)	<ul style="list-style-type: none"> • Microsoft Windows Server 2008 R2 Standard Edition • Microsoft Windows Server 2012 Standard Edition • Microsoft Windows Server 2012 R2 Standard Edition

Ordering Information

To place an order or download software, visit the Synamedia Ordering Portal Home Page

Table 4. Ordering Information

Product Name	Part Number
VSM Software Suite, Licenses and Upgrades	ROSA-LIC-VSM-UPG
VSM Features Pack License Options	
<ul style="list-style-type: none"> • VSM Standard Feature Package (Incl. 250 Monitoring Points) 	LROSA-V-STD
<ul style="list-style-type: none"> • VSM License Upgrade: from Standard to Advanced Package 	LROSA-V-STD2ADV
<ul style="list-style-type: none"> • VSM License Upgrade: from Advanced to Enterprise Package 	LROSA-V-ADV2ENT
VSM High-Availability Deployment Option Licenses	
<ul style="list-style-type: none"> • VSM Deployment (Linux OS): High Availability System (HA) 	LROSA-V-HA
VSM Device Class License Options	

⁴ For VM (Virtual Machine) type deployments.

- VSM Device Driver Pack: Video Standard Convertors (count)
- VSM Device Driver Pack: Multichannel Encoders (count)
- VSM Device Driver Pack: SingleChannel Encoders (count)
- VSM Device Driver Pack: Receivers and Decoders (count)
- VSM Device Driver Pack: Multifunct Devices (count = 1)
- VSM Device Driver Pack: Multifunct Devices (count = 10)
- VSM Device Driver Pack: Multifunct Devices (count = 50)
- VSM Device Driver Pack: Mux/Scrambler Devices (count)
- VSM Device Driver Pack: Probing Devices (count)
- VSM Device Driver Pack: Protect. Switch Devices (count)
- VSM Device Driver Pack: Video Routers (count)
- VSM Device Driver Pack: Satellite Modulator (count)

VSM MPEG TS Channel Count License

- VSM MPEG TS Active Services Lic. : Amount of Channels (1)
- VSM MPEG TS Active Services Lic. : Amount of Channels (10)
- VSM MPEG TS Active Services Lic. : Amount of Channels (50)
- VSM MPEG TS Active Services Lic. : Amount of Channels (100)
- VSM MPEG TS Active Services Lic. : Amount of Channels (250)
- VSM MPEG TS Active Services Lic. : Amount of Channels (500)
- VSM MPEG TS Active Services Lic. : Amount of Channels (1500)
- VSM MPEG TS Active Services Lic. : Amount of Channels (2500)
- VSM MPEG TS Active Services Lic. : Amount of Channels (7500)

VSM ATS Channel Count Licenses

- VSM Adaptive TS Channel Lic. : Amount of Profiles (1)
- VSM Adaptive TS Channel Lic. : Amount of Profiles (10)
- VSM Adaptive TS Channel Lic. : Amount of Profiles (50)
- VSM Adaptive TS Channel Lic. : Amount of Profiles (100)
- VSM Adaptive TS Channel Lic. : Amount of Profiles (250)
- VSM Adaptive TS Channel Lic. : Amount of Profiles (500)

VSM Event Count License Options

- VSM Event Lic: Amount of Concurrent Events

- LROSA-V-CONV
- LROSA-V-ENCM
- LROSA-V-ENCS
- LROSA-V-IRD
- LROSA-V-MFIE
- LROSA-V-MFIE-10
- LROSA-V-MFIE-50
- LROSA-V-MUX/SCR
- LROSA-V-PROBE
- LROSA-V-PROT
- LROSA-V-VRT
- LROSA-V-MOD

- LROSA-V-TS-S1
- LROSA-V-TS-S10
- LROSA-V-TS-S50
- LROSA-V-TS-S100
- LROSA-V-TS-S250
- LROSA-V-TS-S500
- LROSA-V-TS-S1500
- LROSA-V-TS-S2500
- LROSA-V-TS-S7500

- LROSA-V-ATS-S1
- LROSA-V-ATS-S10
- LROSA-V-ATS-S50
- LROSA-V-ATS-S100
- LROSA-V-ATS-S250
- LROSA-V-ATS-S500

- LROSA-V-EVT

Performance Specifications

Tables 5 and 6 list performance specifications for Synamedia VSM

Table 5. Performance Specification: Running a VSM Server as defined in Table 2

Specification	
Maximum number of devices supported	1000
Maximum number of ports (over all devices)	20000
Maximum number of locations supported	50
Maximum number of events supported	5000
Maximum number of devices used in an event	60

Table 6. Performance Specification: Running a VSM Server as defined in Table 2

Specification	
Maximum number of connected VSM clients	20
Minimum required bandwidth between client and server	1 Mbps


For more information

For more information about Synamedia video solutions, visit: www.synamedia.com.

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