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## Cisco ROSA Video Service Manager (VSM) Version 05.03



The Cisco<sup>®</sup> ROSA<sup>®</sup> Video Service Management (VSM) system provides service providers with a complete, powerful solution for the management of the digital content delivery platform for broadcast over satellite, terrestrial, DSL, and cable networks. The system supports a diverse range of applications that allows the operators and engineers with a service-oriented management front-end to operate and manage video signals in today's digital video processing headend applications.





The ROSA VSM system delivers a complete video network management solution. Rather than focusing on individual network components, it operates at a higher level to deliver a service-oriented view of the network. The system's feature-rich set of tools can monitor and manage digital video and audio, as well as the devices through which the services flow. This offers the operators rapid access to the status of critical revenue-generating video, audio, and interactive services.

## Services Oriented Management for Cisco Digital Media Processing Devices

The ROSA VSM system integrates the Cisco Digital Media Processing and Videoscape Acquisition and Origination Suite devices, providing user-friendly and uniform support for configuration and monitoring. ROSA VSM supports control of encoders (e.g. Cisco D9036 Modular Encoding Platform), the digital content manager (Cisco Digital Content Manager), third-party baseband video routers and switches, and a variety of other<sup>1</sup> video processing

<sup>&</sup>lt;sup>1</sup> Contact your local Cisco account representative for details.

devices. It allows operators and engineers to easily control and monitor the streams and channels through the devices in Cisco IP headend architectures.

# Integrated with the ROSA Network Management System (ROSA NMS) and ROSA Element Management System (ROSA EM)

The ROSA VSM system can optionally be deployed together with the ROSA NMS system to leverage the complete feature set of the ROSA Suite Management Software. ROSA NMS supports a broad range of devices for alarms, configuration, and redundancy management control. Each device supported in the ROSA NMS layer is automatically supported in the ROSA VSM for device alarming and access to the graphical user interface (GUI) or other ROSA NMS GUI controls.

The ROSA EM solves the device redundancy in the Acquisition and Origination type video processing platform, such as the Cisco Reference Architecture of the D9036 – DCM – Statmux Compression System.

## System Description

The ROSA VSM system allows you to easily map all monitored devices into the ROSA VSM topology views. This provides a clear, easy-to-use, and intuitive user interface. The ROSA VSM Topology Manager allows graphical creation and set-up of the equipment topology, providing an easy interface to select devices from the 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. The ROSA VSM excels in its support for various devices and service redundancy through its close interaction with the underlying ROSA NMS and ROSA EM system.

Service Configuration and Lineup Management is an application used by service providers and operators that manage linear-live content that needs to be processed in order to fit into the appropriate delivery network. Through lifetime management of the content, operators perform frequent configurations and re-configurations of multiple devices throughout their video processing platforms.

ROSA VSE Lineup Manager and Bandwidth Manager are tools that help solve both the engineering and operational complexity. These tools help operators to perform quick service changes and modification, and automate changes through scheduling. The tools also provides the ability to prepare service configurations offiline, without accessing each individual device GUI, eliminating the need for additional training.

ROSA VSM provides premium support for Cisco Reference Architecture (Blueprint designs). For example, Cisco D9036-based Video Compression Platform, Encoder, Statmus, and DCM Service Level Configuration Management.

Event (or Session) management is an application typically used by operators to manage live content transported from one location to another or other multiple locations. Managing this type of application, also called Contribution Management, allows the operators and engineers to focus on service definitions, rather than opening each individual device user interface.

The definition and configuration of the services over the system topology is provided by the ROSA VSM Session Builder and Event Manager. This allows the user to configure devices for the configured topology. For each event (or session) on the platform, you can configure service settings over the Device Configuration Profiles.

Each event that is defined on the platform can be activated by the user or scheduled over the ROSA VSM Event Scheduler.

The ROSA VSM Event Scheduler provides a graphical timeline scheduler that provides the user a graphical overview of the running state of the different sessions, as well as the capability of inserting sessions for an individual group of sessions.

#### Features

**Topology Manager** 

- Topology Manager allows for creation of network topology by entering devices from the 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 via links connected to the individual device ports.
- Hierarchical grouping of devices in location and sub locations.
- Multiple views can be open at the same time.
- Views are updated across multiple clients.
- Ability to add background images.

Figure 2. Topology Manager: Example DCM-G Application



Lineup Configuration Management

- Lineup Configuration Management is typically used to manage a group of linear channels in distribution type networks. A lineup is used to keep an overview of services in a multiplexed transport stream.
- Service configurations are listed in the Lineup Configurations tab.
- The lineup Configuration Management GUI allows the operator to perform various actions on configuration in or over lineups.
  - · Activation and Scheduling of Configurations
  - Duplicating Lineups and Configurations
  - Enabling Lineup Testmode (allows engineers to perform configuration changes on backup chain of devices)



#### Figure 3. Lineup Configuration GUI: Example of Lineups and Configurations in the Lineup Manager

Quick Configuration support for Cisco Reference (Blueprint) architectures

- The Quick Config assistant is an easy to use tabular configuration assistant that guides the engineer in configuration of Cisco Blueprint Architectures.
- The user only has to enter key service related parameters while VSM completes the configuration of all devices in the system.
- The VSM ensures that all the encoder resources, encoder configurations, DCM multiplexer, and statmux settings are configured, following the Cisco Reference Architecture and taking into account the system redundancy of the system.

Figure 4. Quick Configuration GUI: Example for the D9036-DCM Statmux Platform

Ser	vices 🕂	-															
		DCM						D9036									
	Service	Device		Out Port			Out Stream	In Board	Device		Out Port		Out Stream	SID			
$\checkmark$	S1_HD	TRAINING CLASS.DC	M_MA	AIN 3 - 1 'I/O 3',	'Port 1'	[ETHERNET]	232.2.2.2:500	0 3'1/03'	TRAINING	CLASS.D9036_MAIN	6 - 1 'Port	1' [ETHERNET]	232.0.0.0:49410	53301			
1	S2_HD	TRAINING CLASS.DC	M_MA	AIN 3-1 'I/O 3',	'Port 1'	[ETHERNET]	232.2.2.2:500	0 3'I/O 3'	TRAINING	CLASS.D9036_MAIN	6 - 1 'Port	1' [ETHERNET]	232.0.0.1:49410	50105			
$\checkmark$	S4_HD	TRAINING CLASS.DC	M_MA	IN 3-1 1/03',	'Port 1'	[ETHERNET]	232.2.2.2:500	0 3'I/O 3'	TRAINING	CLASS.D9036_MAIN	6 - 1 'Port	1' [ETHERNET]	232.0.0.3:49410	53010			
$\checkmark$	S3_HD	TRAINING CLASS.DC	M_MA	IN 3-1 1/03',	'Port 1'	[ETHERNET]	232.2.2.2:500	0 3'I/O 3'	TRAINING	CLASS.D9036_MAIN	6 - 1 'Port	1' [ETHERNET]	232.0.0.2:49410	50108			
~		Coding Type		Input Video/Au	udio L-R	Input Audio	C-LFE	Input Audio	Ls-Rs	Input Audio Data							
		Video HD AVC	100	1 [SDI]		Input Audio	o C-LFE	Input Audio	Ls-Rs	Input Audio Data							
V	S1_HD	Video HD AVC Audio MPEG Layer II	100 101	1 [SDI] 1 [SDI] Packet 1		Input Audio	C-LFE	Input Audio	Ls-Rs	Input Audio Data							
	S1_HD	Video HD AVC Audio MPEG Layer II Video HD AVC	100 101 200	1 [SDI] 1 [SDI] Packet 1 2 [SDI]	Pair 1	Input Audio	C-LFE	Input Audio	Ls-Rs	Input Audio Data							
s s	S1_HD S2_HD	Video HD AVC Audio MPEG Layer II	100 101 200 201	1 [SDI] 1 [SDI] Packet 1 2 [SDI]	Pair 1	Input Audio	o C-LFE	Input Audio	Ls-Rs	Input Audio Data							
s s	S1_HD S2_HD	Video HD AVC Audio MPEG Layer II Video HD AVC Audio MPEG Layer II	100 101 200 201 400	1 [SDI] 1 [SDI] Packet 1 2 [SDI] 2 [SDI] Packet 1 4 [SDI]	. Pair 1 . Pair 1	Input Audio	o C-LFE	Input Audio	Ls-Rs	Input Audio Data							
\$ \$ \$ \$ \$	S1_HD S2_HD S4_HD	Video HD AVC Audio MPEG Layer II Video HD AVC Audio MPEG Layer II Video HD AVC	100 101 200 201 400 401	1 [SDI] 1 [SDI] Packet 1 2 [SDI] 2 [SDI] Packet 1 4 [SDI]	. Pair 1 . Pair 1	Input Audio	> C-LFE	Input Audio	Ls-Rs	Input Audio Data							

#### Bandwidth Manager

The Bandwidth Manager is used to configure bandwidth of transport streams, statmux pools, constant bit rate services, and a combination of statmux pools and constant bit rate services from a single GUI panel.

- Support for auto calculation of default bit rates in statmux environments
- · Serves as a tool for optimizing bandwidth usage

Figure 5.	Bandwidth Manager GUI:	Example for D9036-DCM	Statmux Pool Configuration

ndwi	dth gro	ups												
Bandwidth group a		Туре	Calculated	Total Rate	Reserved	Rate	Allo	ated Rate	pare Rate					
. 🗸	TS Bas	e.DCM MAIN	[3-1]/23	2 Multi group		31 Mbps	0 Mbps		31 N	1bps 0	Mbps			
	V Oth	er –		Fixed		0 Mbps	0 Mbps		0 M	bps 0	Mbps			
	🖌 stat	mux1		D9036-DCM-SMX	( O	31 Mbps	0 Mbps		30.9	02 Mbps 0	008 Mbps			
▼ D9		her CM-SMX: sta ux Controller		DCM MAIN							Override	e maximum number (	of VSEs to 12	
	Туре	Service	Cal	Default Rate (ES)	Min Rate (	Max Rate (ES)	Priority	Delay	G	Audio 1 Rate (ES)	VBI Rate	Reserved Rate (TS)	Total Rate (TS)	TS Overhead Rate (TS
<b>√</b>		Service HD_AVC1	Cal	Default Rate (ES) 4.862 Mbps	Min Rate ( 0.165 Mbps	Max Rate (ES)	Priority 3	Delay Good VQ	G	Audio 1 Rate (ES) 192 Kbps	_	Reserved Rate (TS) 0 Mbps	Total Rate (TS) 5.302 Mbps	TS Overhead Rate (TS 0.249 Mbps
	AVC (D)					Max Rate (ES) 24.34 Mbps					_			
	ANC (D)	HD_AVC1	~	4.862 Mbps	0.165 Mbps	Max Rate (ES) 24.34 Mbps	3	Good VQ		192 Kbps	_	0 Mbps	5.302 Mbps	0.249 Mbps
V	ANC (D) ANC (D) ANC (D)	HD_AVC1 HD_AVC2	<b>v</b>	4.862 Mbps 4.862 Mbps	0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.34 Mbps	3 3 3	Good VQ Good VQ		192 Kbps 192 Kbps	_	0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps	0.249 Mbps 0.249 Mbps
V	AVC (D) AVC (D) AVC (D) AVC (D)	HD_AVC1 HD_AVC2 HD_AVC3	<b>v</b> <b>v</b>	4.862 Mbps 4.862 Mbps 4.844 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.32 Mbps 24.322 Mbps	3 3 3 3	Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps
>>>>	ANC (D) ANC (D) ANC (D) ANC (D) ANC (D)	HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4	<b>Y</b> <b>Y</b> <b>Y</b>	4.862 Mbps 4.862 Mbps 4.844 Mbps 4.844 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.34 Mbps 24.322 Mbps 24.322 Mbps 24.322 Mbps	3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.266 Mbps
>>>>	ANC (D) ANC (D) ANC (D) ANC (D) ANC (D) ANC (D) ANC (D)	HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4 SD_AVC1	Y Y Y Y	4.862 Mbps 4.862 Mbps 4.844 Mbps 4.844 Mbps 0.869 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.34 Mbps 24.322 Mbps 24.322 Mbps 12.105 Mbps	3 3 3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 1.223 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.266 Mbps 0.266 Mbps 0.162 Mbps
>>>>	ANC (D) ANC (D) ANC (D) ANC (D) ANC (D) ANC (D) ANC (D) ANC (D)	HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4 SD_AVC1 SD_AVC2	Y Y Y Y Y Y	4.862 Mbps 4.862 Mbps 4.844 Mbps 4.844 Mbps 0.869 Mbps 0.869 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.322 Mbps 24.322 Mbps 24.322 Mbps 12.105 Mbps 12.105 Mbps	3 3 3 3 3 3 3 3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 1.223 Mbps 1.223 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.266 Mbps 0.162 Mbps 0.162 Mbps
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>		HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4 SD_AVC1 SD_AVC2 SD_AVC3 SD_AVC4 SD_AVC5	<b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b>	4.862 Mbps 4.862 Mbps 4.844 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.34 Mbps 24.322 Mbps 24.322 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.266 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>		HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4 SD_AVC1 SD_AVC2 SD_AVC3 SD_AVC4	<b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b>	4.862 Mbps 4.862 Mbps 4.844 Mbps 4.844 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.34 Mbps 24.322 Mbps 24.322 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ		192         Kbps           192         Kbps	_	0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.266 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps
*****		HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4 SD_AVC1 SD_AVC2 SD_AVC3 SD_AVC4 SD_AVC5	<b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b>	4.862 Mbps 4.862 Mbps 4.844 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps	0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.34 Mbps 24.322 Mbps 24.322 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.266 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps
******		HD_AVC1 HD_AVC2 HD_AVC3 HD_AVC4 SD_AVC1 SD_AVC2 SD_AVC3 SD_AVC4 SD_AVC5 SD_AVC6	<b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b> <b>Y</b>	4.862 Mbps 4.862 Mbps 4.844 Mbps 4.844 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps 0.869 Mbps	0.165 Mbps 0.165 Mbps	Max Rate (ES) 24.34 Mbps 24.32 Mbps 24.322 Mbps 24.322 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps 12.105 Mbps	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ Good VQ		192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps 192 Kbps	_	0 Mbps 0 Mbps	5.302 Mbps 5.302 Mbps 5.302 Mbps 5.302 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps 1.223 Mbps	0.249 Mbps 0.249 Mbps 0.266 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps 0.162 Mbps

#### Lineup Scheduler

The lineup Scheduler allows for time scheduled activation of configuration lineups and provides the operator with a clear indication of the running configuration on the platform.

For example, it is typically used in the following:

- Time Switched Service Activation (for example, Alternate Service Scheduling)
- Scheduled re-configuration of Service Lineup
- Automatic re-allocation of bandwidth across services in a Statmux Pool

Figure 6. Lineup Scheduler GUI

🖶 Lineup Schedul	er 🛛			€ €	) √ 7   0 %	9 🛨 🖪 P 🗄	🖟 🗹 📑
Scale of Time Line:	1 hour	- 🔍 🔍 侯 💆	03/09/2	012 🔻 06:52:17 🊔 🄶	Auto Scroll		
Lineup		CEST 06:40:00	06:50:00	07:00:00	07:10:00	07:20:00	07:30:00
Base Lineup	tşt	empty		41	ID_8SD_1Pool (p1 3	30Mbps)	
TS 20	25	8		2HD_1Pool			
TS 20-Test	<b>V</b>			2HD_1Pool			
TS 21	100			Empty			

Lineup Service

The Lineup Service has a consistent read-only overview of the key parameters in services over multiple lineups and configurations.

- Tabular overview of the key Service Lineup Configuration data (Service Names, Audio/Video, PIDs, IP settings).
- Easy comparison of Engineering data, often present in a spreadsheet format.

#### Figure 7. Lineup Service Summary

🛞 Reload										
					-			Compor	nents(PID)	1
Lineup	Configuration	Device	Out Port	Out Stream	Service	SID	Statmux Pool	-	1	
<any></any>	<any></any>	<any></any>	<any></any>	<any></any>	<any></any>	<any></any>	<any></any>	Video	Audio 1	Data 1
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	HD_AVC1	53301	statmux1	100	101	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	HD_AVC2	50105	statmux1	200	201	
Base Lineup	HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2.5000	HD_AVC3	50108	statmux1	300	301	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	HD_AVC4	53010	statmux1	400	401	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	SD_AVC1	5	statmux1	1300	1301	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	SD_AVC2	6	statmux1	500	501	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	SD_AVC3	7	statmux1	600	601	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	SD_AVC4	8	statmux1	700	701	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	SD_AVC5	9	statmux1	800	801	
Base Lineup	4HD_6SD_Pool_1 (p1 31Mbps)	Base.DCM_MAIN	3-1'I/O 3' , 'Port 1' [Ethernet]	232.2.2:5000	SD_AVC6	10	statmux1	900	901	

#### Lineup Testmode

- · Prepare a Service Lineup on backup devices
- In lineup Testmode, VSM allows you to apply a different configuration on the backup chain of a redundant D9036-DCM system.
- It allows the engineers to prepare new configurations on the backup chain of devices, without interrupting the main chain of devices in operation.
- Supports Cisco Blueprint D9036/DCM/Statmux solution.
- Lineup Testmode activation and de-activation steps are guided through a system wizard.

#### Figure 8. Lineup Testmode Wizard

Stop Testing on lineup 'TS 20'		B	
Welcome to the Stop Te	sting Wizard		
This wizard will guide you thro failover capabilities again on th		ry steps to stop testing on lineup 'T :e pairs.	S 20' and enable
	currently active	configuration for redundancy. '2HD_1Pool' will be deactivated.	
TS 20	😻 2	2HD_1Pool-> Nominal Only	2HD_1Pool-> Nominal + Mirror
TS 20-Test	<b>1</b>	2HD_1Pool-> Mirror Only	
2. Release the mirror devices fr	om testing and e	snable redundancy for the involved	
At this point, configurations fr The test lineup will no longer b		p can be copied to this lineup as de vation and can be removed	sired.
		< Back Next >	Finish Cancel

#### Event Manager

- Events are typically used to operate Contribution events. Typically, one event belongs/refers to one
  particular contribution event.
- The Event Manager GUI allows the operator to perform various actions on events.
  - Creating Events
  - Activating / Deactivating Events
  - Duplication of an Event

Figure 9. Event Manager: GUI – Example of events present in the Event Manager

📝 Event	t List 🖾 🛛 🔡 Device Config	guration 🔲 Properties	s 📃 Message	s	+ 🗈	- * 2   🏱 🏱 🦻 📵 🗄   🍕 🕅 🍸 🗆
ID		State	Validity	Sources	Destinations	Last Action
1	CNN		<ul> <li>Image: A set of the set of the</li></ul>	London.SDI In1	Paris.SDI Out1	[21-01-11 13:09] Validation passed.
3	CNBC	<b>~</b>	<b>~</b>	London.SDI In3	Paris.SDI Out2	[21-01-11 13:32] Set-up of event finished.
4	BBC		<b>~</b>	London.SDI In2	Paris.SDI Out1	[21-01-11 12:46] Validation passed.
6	Discovery		<b>~</b>	London.SDI In1	Paris.SDI Out1	[21-01-11 13:46] Event renamed
7	Camera 1*			London.SDI In2	Paris.SDI Out1	[21-01-11 13:46] Validation passed.

#### Session Builder

- The Session Builder is the graphical flow designer to help the operator/engineer to quickly create new events.
- It allows for easy pick and place of devices and linking between them to create a complete event.
- The complexity of device configuration is highly reduced by assigning predefined configuration templates, which displays frequently used and variable parameters only.

Figure 10. Session Builder - Example of events present in the Event Manager



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#### Event Scheduler

- Each event present on the ROSA VSM platform is scheduled.
- Support for Fulltime events and time limited and recurring events.
- · Graphical time-oriented view on events in a time line view.

Figure 11. Session Scheduler – Example of events schedule

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#### **Device Configuration Template**

- Device Templates are used in events to apply repeated configurations and fine-tune large previously created configurations.
- Templates are available for each device type/model.
- Graphical representation of operations and an input-flow-output relationship.
- Device templates are typically prepared by the engineers using the VSM platform, while the operator uses the device templates in context of the events to be scheduled.

Figure 12. Device Configuration Template – Example of DCM-G template



#### North bound API

- ROSA VSM API allows the integration of the VSM system with other systems, such as order fulfillment systems and portals.
- The API allows for:
  - Retrieving topology information

- Creating Events (Full time and Scheduled)
- Enabling / Disabling of Events
- Update Events
- Get full event info
- Redefine timing of an event in the scheduler
- Notification of event state
- The API is realized as a XML over HTTP-based protocol.

Alarms and Logging

- ROSA VSM provides powerful alarm and logging management, providing the possibility to guard the health of your application and the correctness of the configured events.
- The Message subsystem is populated with messages coming from devices, messages accompanying events, and messages coming from the ROSA VSM itself.
- The Message viewer, which gives an overview of the messages and provides the necessary tools for message processing, is part of the Monitoring perspective.

Figure 13. Alarms and Logging - Example of ROSA VSM Message Viewer

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## **ROSA VSM Deployment**

ROSA VSM can be deployed as a standalone application or in co-deployment with the ROSA NMS system.

## **ROSA VSM Redundancy**

Cisco ROSA High-Availability Support is supported as a standalone or co-deployment option.

The ROSA VSM High-Availability (ROSA VSM HA) is a heartbeat solution, where two identical ROSA VSM Servers are synchronized over a connection between the two servers.

For more information on ROSA VSM redundancy, contact your local Cisco account representative.

## **ROSA VSM Client – PC Application**

The remote client user interface allows access to all the applications present on the ROSA VSM server platform.

It can be installed on any PC, running a Windows XP, W7 OS. The ROSA VSM Client can be installed/launched from a ROSA VSM Webstart launch page.

## ROSA VSM Server – Server Side Software and Requirements

**Operating System Requirements** 

Windows

- Windows Server 2003 Standard Edition (with Service Pack 2)
- Windows Server 2008 R2 Standard Edition (with Service Pack 1)

#### Oracle

• MySQL Advanced (5.5.8) package (included in ROSA VSM offer)

 Table 1.
 Cisco ROSA VSM 05.03 System Requirements: Minimum Server System Requirements

Microsoft Windows (Memory and Hardware Recommendations) Intel Xeon processor 5400 series , 2 GB RAM, 10 GB free disk space

 Table 2.
 Cisco ROSA VSM 05.03 System Requirements: Recommended Server System Requirements

Microsoft Windows (Memory and Hardware Recommendations)

Intel Xeon processor 5600 series or better, 8 GB RAM, 40 GB free disk space

## Cisco Unified Computing System (UCS) Support

Cisco ROSA VSM 05.03 is supported on the UCS C-series rack C server platform. The server requirements on Cisco UCS servers are the same as specified in Table 1 above for Windows servers. For more information, refer to the appropriate Cisco UCS data sheet in the following link:

http://www.cisco.com/en/US/products/ps10493/products\_data\_sheets\_list.html.

## **Ordering Information**

Cisco ROSA VSM 05.03 is available for purchase through regular Cisco sales and distribution channels worldwide. To place an order, visit the Cisco Commerce Workspace.

Description	Part Number
ROSA VSM Software Suite, Licenses and Upgrades	ROSA-LIC-VSM-UPG
ROSA VSM Deployment License Options	
VSM Deployment: High-Availability System (HA)	LROSA-V-HA
<ul> <li>VSM Deployment: Upgrade from HA to Disaster Recovery (DR)</li> </ul>	LROSA-V-HA2DR
VSM Deployment: Upgrade from DR to HADR	LROSA-V-DR2HADR
ROSA Co-Deployment License Options	
<ul> <li>VSM co-deploy with NMS: High-Avail System (HA)</li> </ul>	LROSA-V-HA-CO
<ul> <li>VSM co-deploy with NMS: Upgrade from HA to DR</li> </ul>	LROSA-V-HA2DR-CO
<ul> <li>VSM co-deploy with NMS: Upgrade DR to HADR</li> </ul>	LROSA-V-DR2HADR-CO

#### Table 3. Ordering Information – Cisco ROSA VSM

ROSA VSM Features Pack License Options	
VSM License Package: Standard Feature Package	LROSA-V-STD
VSM License Upgrade: from Standard to Advanced Package	LROSA-V-STD2ADV
VSM License Upgrade: from Advanced to Enterprise Package	LROSA-V-ADV2ENT
ROSA VSM Device Class License Options	
VSM Device License Pack: Video Standard Convertors (count)	LROSA-V-CONV
VSM Device License Pack: Multichannel Encoders (count)	LROSA-V-ENCM
VSM Device License Pack: SingleChannel Encoders (count)	LROSA-V-ENCS
VSM Device License Pack: Receivers & Decoders (count)	LROSA-V-IRD
VSM Device License Pack: Multifunct Devices (count)	LROSA-V-MFIE
VSM Device License Pack: Mux/Scrambler Devices (count)	LROSA-V-MUX/SCR
VSM Device License Pack: Probing Devices (count)	LROSA-V-PROBE
VSM Device License Pack: Protect. Switch Devices (count)	LROSA-V-PROT
VSM Device License Pack: Video Routers (count)	LROSA-V-VRT
ROSA VSM Event Count License Options	
VSM MPEG TS Active Services Lic. : Amount of Channels (1)	LROSA-V-TS-S1
VSM MPEG TS Active Services Lic. : Amount of Channels (10)	LROSA-V-TS-S10
• VSM MPEG TS Active Services Lic. : Amount of Channels (50)	LROSA-V-TS-S50
VSM MPEG TS Active Services Lic. : Amount of Channels (100)	LROSA-V-TS-S100
VSM MPEG TS Active Services Lic. : Amount of Channels (250)	LROSA-V-TS-S250
VSM MPEG TS Active Services Lic. : Amount of Channels (500)	LROSA-V-TS-S500
ROSA VSM Event Count License Options	
VSM Event Lic.: Amount of Concurrent Events	LROSA-V-EVT
ROSA VSM Software Upgrade	
VSM SW Upgrade option to V5X	LROSA-V-UP-V5X-K9

## Performance Specifications

 Table 4.
 Specification based on specs above and running a 64-bit VSM server

Specification	Value
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 5. Performance Specification - General

Specification	Value
Maximum number of connected ROSA VSM Client	20
Minimum required bandwidth between Client and Server	1 Mbps

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

## For More Information

For more information about Cisco ROSA Management and Control Solutions, visit <u>http://www.cisco.com/go/rosa</u> or contact your local Cisco account representative.



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