Cisco ROSA Video Service Manager (VSM) Version 05.03

The Cisco® ROSA® 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.

Figure 1. ROSA VSM Graphical User Interfaces

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[1] video processing

[1] 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.

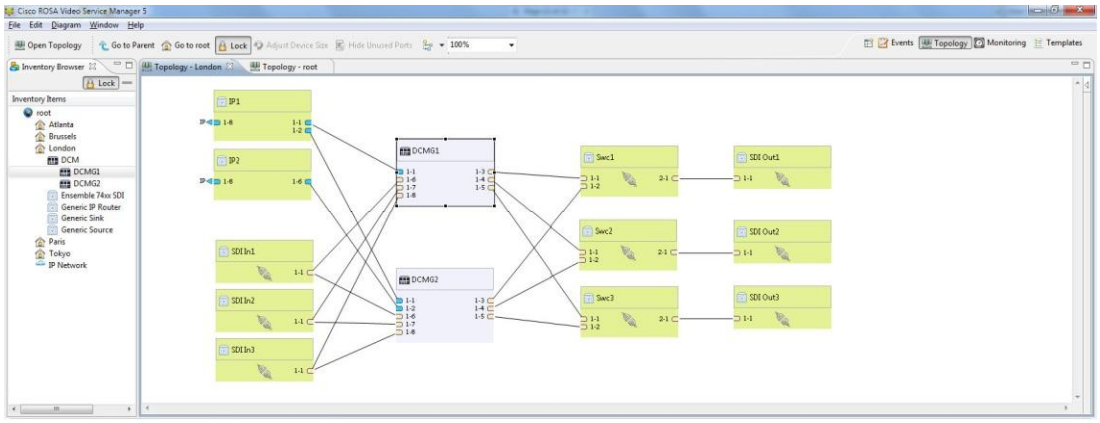
The ROSA VSM Event Scheduler provides a graphical timeline scheduler that provides the user a graphical overview of the running state of the different sessions, as well as the capability of inserting sessions for an individual group of sessions.

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.

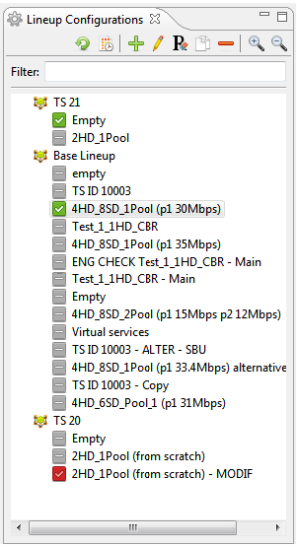
Figure 2. Topology Manager: Example DCM-G Application



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)

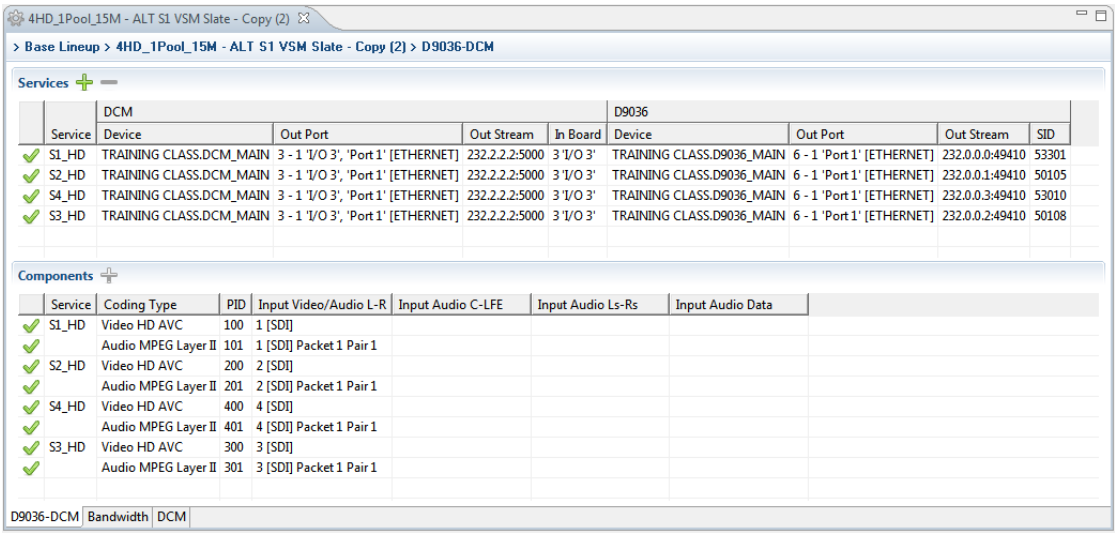
Figure 3. Lineup Configuration GUI: Example of Lineups and Configurations in the Lineup Manager



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

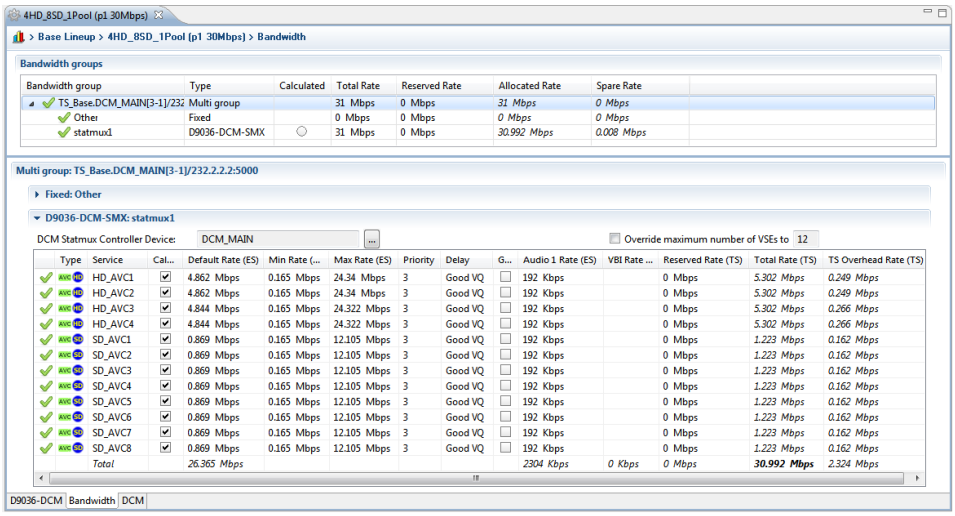


Bandwidth Manager

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



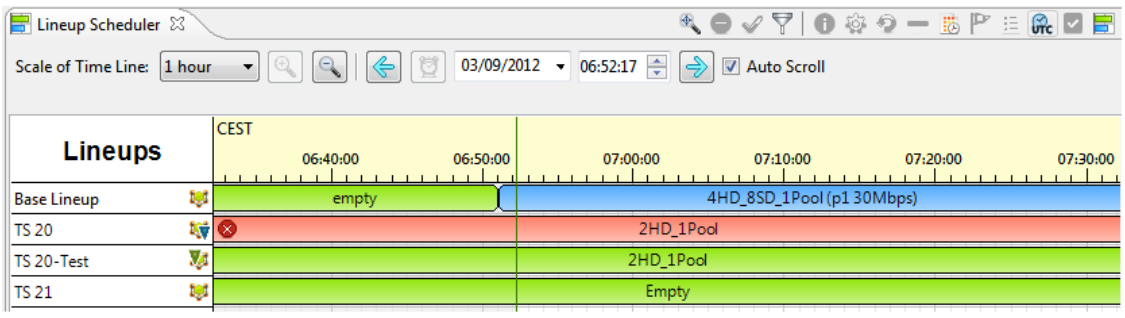
Lineup Scheduler

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

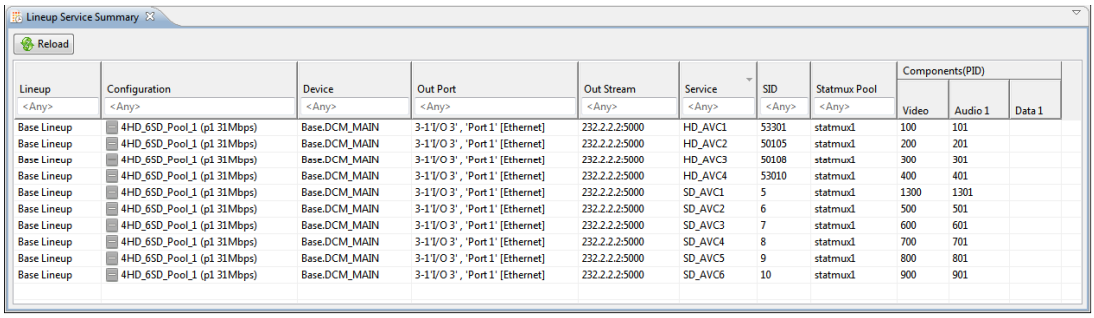


Lineup Service

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.

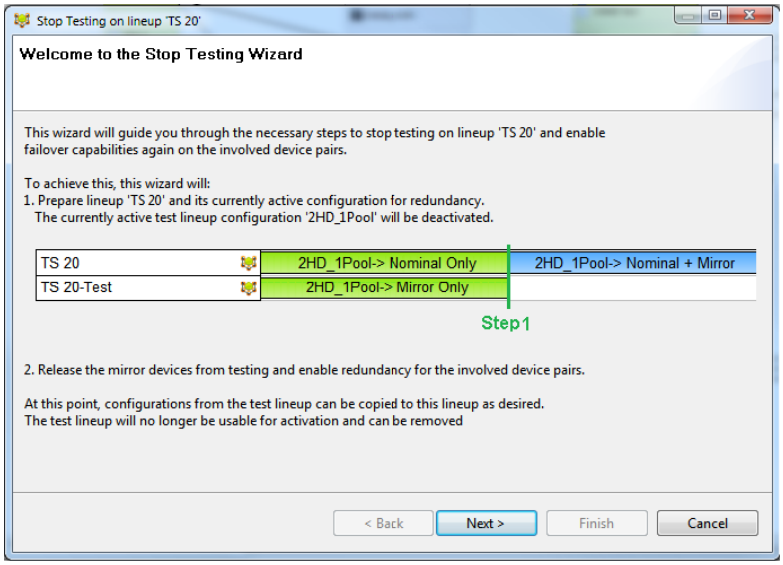
Figure 7. Lineup Service Summary



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.

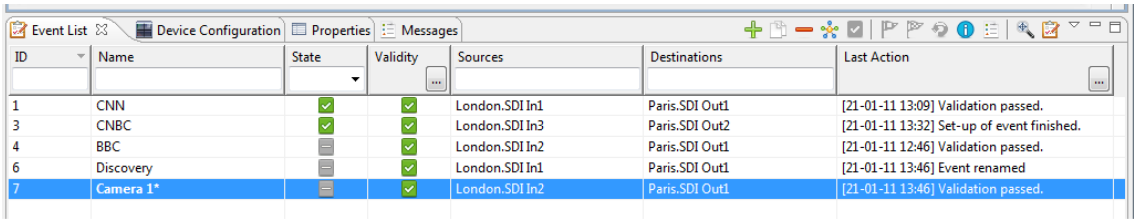
Figure 8. Lineup Testmode Wizard



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

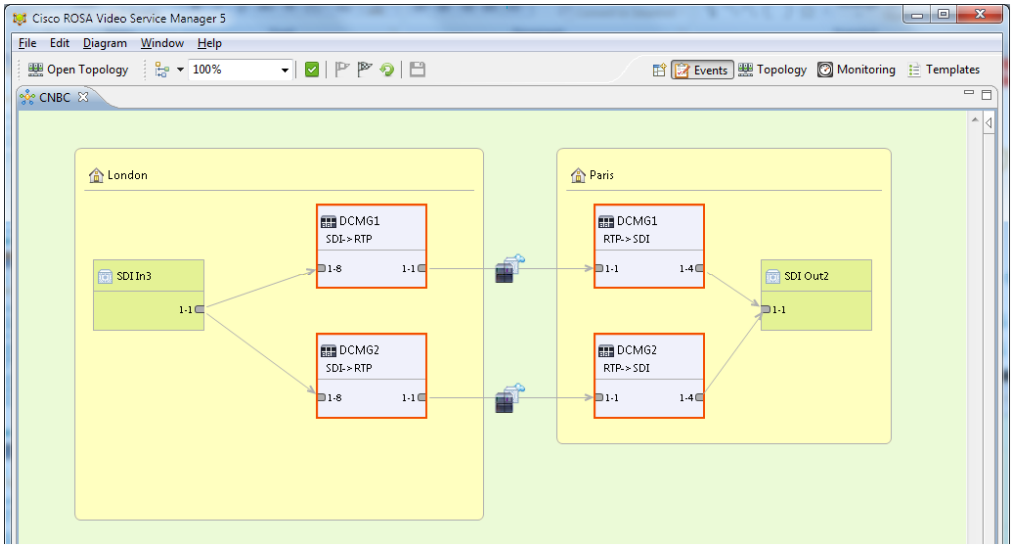
Figure 9. Event Manager: GUI – Example of events present in the Event Manager



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.

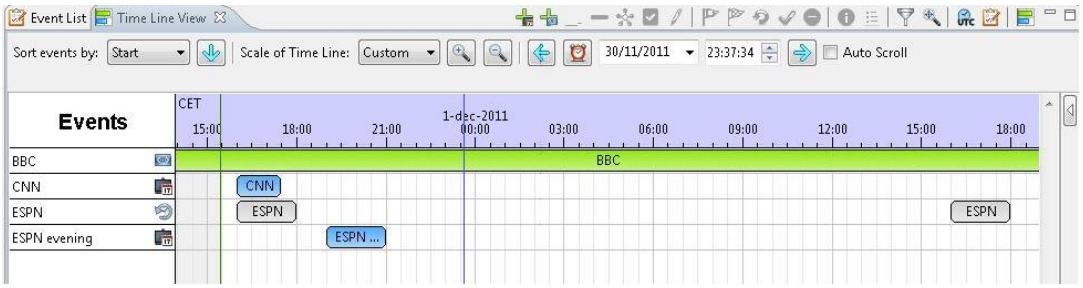
Figure 10. Session Builder – Example of events present in the Event Manager



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.

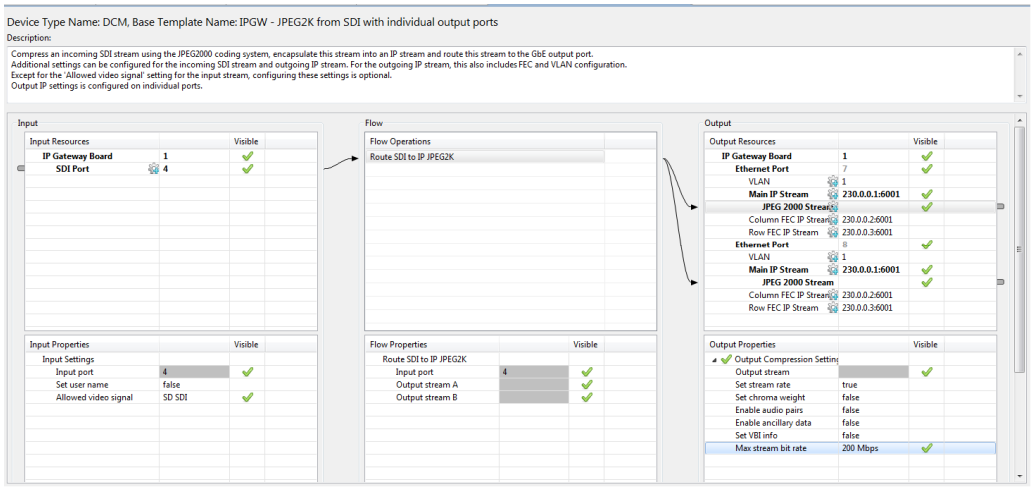
Figure 11. Session Scheduler – Example of events schedule



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

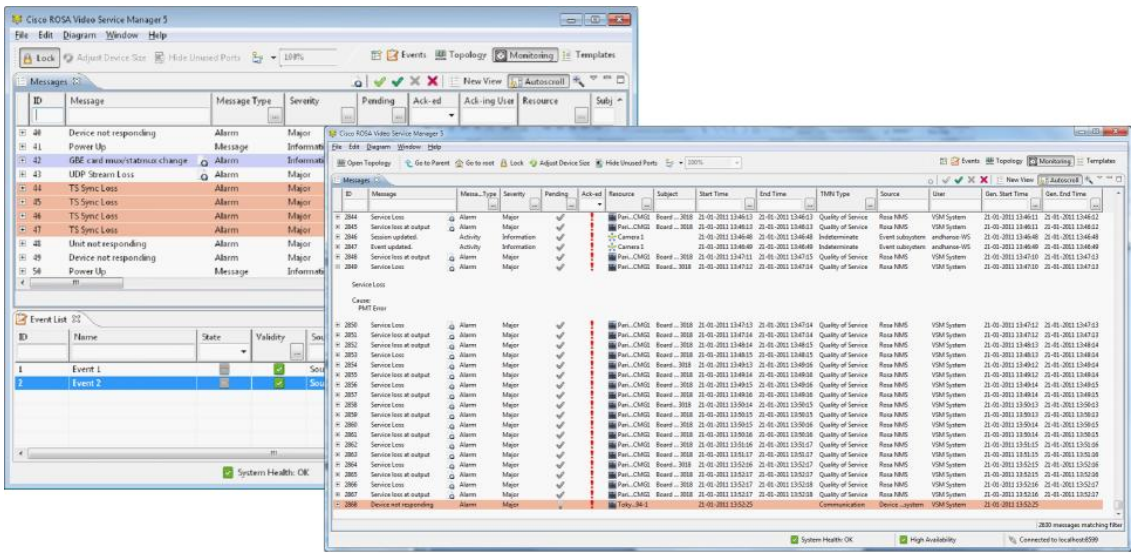
- Creating Events (Full time and Scheduled)
- Enabling / Disabling of Events
- Update Events
- Get full event info
- Redefine timing of an event in the scheduler
- Notification of event state

- 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



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.

Table 3. Ordering Information – Cisco ROSA VSM

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
• VSM Deployment: Upgrade from HA to Disaster Recovery (DR)	LROSA-V-HA2DR
• VSM Deployment: Upgrade from DR to HADR	LROSA-V-DR2HADR
ROSA Co-Deployment License Options	
• VSM co-deploy with NMS: High-Avail System (HA)	LROSA-V-HA-CO
• VSM co-deploy with NMS: Upgrade from HA to DR	LROSA-V-HA2DR-CO
• VSM co-deploy with NMS: Upgrade DR to HADR	LROSA-V-DR2HADR-CO

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

Service and Support

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 http://www.cisco.com/go/rosa or contact your local Cisco account representative.

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