



# CHAPTER 2

## Preinstallation

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This chapter contains the following sections:

- [Hardware and Software Prerequisites, page 2-1](#)
- [Install and Configure Prerequisite Hardware and Software Solution Components, page 2-2](#)

## Hardware and Software Prerequisites

Your system must have the following hardware and software before installing the Cisco VAMS 3.0 software package:



### Note

See the “[Install and Configure Prerequisite Hardware and Software Solution Components](#)” section on [page 2-2](#) for detailed installation procedures.

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### Hardware Installation

- The core network elements of the video transport network:
  - Cisco 7600 Series routers
  - Cisco ASR 9000 Aggregation Services Routers
  - Cisco Catalyst 6500 Series switch
  - Cisco CRS-1
  - Cisco Catalyst 4948 Series switch
- Management server for the ROSA NMS
- Headend equipment
  - Digital Content Managers (DCMs)
  - HD Encoders
  - SD Encoders
- Management servers for Cisco Active Network Abstraction (ANA) 3.7 (includes gateway, unit, and client installation).
- Management servers for Cisco Multicast Manager (CMM) 3.1.
- (optional) IneoQuest Video Management System (iVMS).

- Third-party video probes:
  - Bridge Technologies VB Series
  - IneoQuest Singulus G1-T, G10, and IQ Cricket probes
  - Mixed Signals Sentry Digital Content Monitor
- Management servers for the Cisco Info Center/Netcool Suite.

#### Software Installation

- The IPTV-enabled IOS software versions:
  - 12.2(33)SREV on the Cisco 7600 Series router
  - 12.2(33)SXI on the Cisco Catalyst 6500 Series switch
  - IOS-XR 3.9 on the Cisco CRS-1
  - IOS XR 3.9 on the ASR 9000
  - 12.2(46)SG on the Cisco Catalyst 4948 Series switch
- Cisco ANA 3.7 (includes gateway, unit, and client installation).
- Cisco Multicast Manager (CMM) 3.1.1 software on dedicated server.
- Cisco ROSA video network management hardware and software, as required.

## Install and Configure Prerequisite Hardware and Software Solution Components

Before installing the Cisco VAMS 3.0 software package, you must install the prerequisite hardware and software for the solution. The main steps are:

- [Install and Configure the Required Cisco Hardware, page 2-3](#)
- [Install the Cisco ANA Software, page 2-6](#)
- [Install the Cisco Multicast Manager Hardware and Software, page 2-6](#)
- [Install iVMS and Third-Party Video Probes, page 2-7](#)
- [Install the ROSA Hardware and Software, page 2-8](#)

## Install and Configure the Required Cisco Hardware

Complete these steps to install and configure the required Cisco hardware.

- Step 1** Install the Cisco 7600 Series routers, Cisco ASR 9000 routers, Cisco Catalyst 6500 switches, Cisco CRS-1, and Cisco Catalyst 4948 Series switches for the supported architecture.
- See the following installation guides for more information:
- Cisco 7600 Series installation guides, viewable online at:  
[http://www.cisco.com/en/US/products/hw/routers/ps368/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/routers/ps368/prod_installation_guides_list.html)
  - Cisco ASR 9000 installation guides, viewable online at:  
[http://www.cisco.com/en/US/products/ps9853/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9853/prod_installation_guides_list.html)
  - Cisco Catalyst 6500 Series installation guides, viewable online at:  
[http://www.cisco.com/en/US/products/hw/switches/ps708/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps708/prod_installation_guides_list.html)
  - Cisco CRS-1 installation guides, viewable online at:  
[http://www.cisco.com/en/US/products/ps5763/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps5763/prod_installation_guides_list.html)
  - Cisco Catalyst 4948 installation guides, viewable online at:  
[http://www.cisco.com/en/US/docs/switches/lan/catalyst4900/4948-10ge/4948\\_10.html](http://www.cisco.com/en/US/docs/switches/lan/catalyst4900/4948-10ge/4948_10.html)
- Step 2** Configure the Cisco 7600 Series routers, Cisco ASR 9000 routers, Cisco Catalyst 6500 Series switches, Cisco CRS-1, and Cisco Catalyst 4948 Series switches for the supported architecture.
- See the following configuration guides for more information:
- Cisco 7600 Series configuration guides, viewable online at:  
[http://www.cisco.com/en/US/products/hw/routers/ps368/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/routers/ps368/products_installation_and_configuration_guides_list.html)
  - Cisco ASR 9000 configuration guides, viewable online at:  
[http://www.cisco.com/en/US/products/ps9853/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9853/products_installation_and_configuration_guides_list.html)
  - Cisco Catalyst 6500 Series configuration guides, viewable online at:  
[http://www.cisco.com/en/US/products/hw/switches/ps708/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps708/products_installation_and_configuration_guides_list.html)
  - Cisco CRS-1 configuration guides, viewable online at:  
[http://www.cisco.com/en/US/products/ps5763/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps5763/products_installation_and_configuration_guides_list.html)
  - Cisco Catalyst 4948 configuration guides, viewable online at:  
<http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/12.2/25ewa/configuration/guide/conf.html>
- Step 3** Install the following multicast-enabled IOS images<sup>1</sup>:
- Cisco 7600 Series routers with 12.2(33)SREV image
  - Cisco ASR 9000 routers with IOS XR 3.9.1 image
  - Cisco Catalyst 6500 Series switches with 12.2(33)SXI image
  - Cisco CRS-1 with IOS-XR 3.6.1.12 image
  - Cisco Catalyst 4948 Series switches with 12.2(31)SGA1 image

1. Download the Cisco IOS software from <http://www.cisco.com/public/sw-center/index.shtml>.

See the following release notes for more information:

- Cisco 7600 release notes, viewable online at:  
[http://www.cisco.com/en/US/products/ps6922/prod\\_release\\_note09186a00806c096f.html](http://www.cisco.com/en/US/products/ps6922/prod_release_note09186a00806c096f.html)
- Cisco ASR 9000 Release Notes, viewable online at:  
[http://www.cisco.com/en/US/products/ps9853/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps9853/prod_release_notes_list.html)
- Cisco Catalyst 6500 release notes, viewable online at:  
[http://www.cisco.com/en/US/products/hw/switches/ps708/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps708/prod_release_notes_list.html)
- Cisco CRS-1 release notes, viewable online at:  
[http://www.cisco.com/en/US/docs/ios\\_xr\\_sw/iosxr\\_r3.4/general/release/notes/reln\\_342.html](http://www.cisco.com/en/US/docs/ios_xr_sw/iosxr_r3.4/general/release/notes/reln_342.html)
- Cisco Catalyst 4948 release notes, viewable online at:  
[http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/release/note/OL\\_9592.html](http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/release/note/OL_9592.html)

## Configure Cisco 7600 and ASR 9000 Routers for VidMon

In order to configure VidMon thresholds on a per flow basis in CMM, you must configure the VidMon devices (Cisco 7600 series routers and Cisco ASR 9000 series routers) for VidMon monitoring.

Complete the following general steps to configure the VidMon devices:

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- Step 1** Create ACLs on the devices.
- Step 2** Create a class-map, which must use type *traffic* or type *performance-traffic* and one ACL per class.
- Step 3** Create a policy-map, which must use type *performance-traffic*.  
The policy map configuration four parts: 1. Class, 2. Monitor param, 3. Monitor metric, 4. React.



### Note

The router supports many React statements. The Cisco 7600 supports MDI:DF, MDI:MLR, MDI:MDC, IP-CBR-MRV, IP-CBR-DF, and MSE. The ASR-9000 supports MRV, delay-factor, media-stop, packet-rate, and flow-count. CMM 3.1 only supports polling of the VidMon statistics and does not support any SNMP traps or syslogs from the router. However, CIC does support React statements via syslog alerts directly from the router.

- Step 4** To apply the policy to the interface code a *type performance-traffic* line.  
[Example 2-1](#) shows a sample configuration for a Cisco 7600 device and [Example 2-2](#) shows a sample configuration for a Cisco ASR 9000 device.

### Example 2-1 Sample VidMon Configuration for a Cisco 7600 Device

```
ip access-list extended spts-cbr-sd-mpeg4-232-1-1-11
permit ip any host 232.1.1.11
!
ip access-list extended uncompressed-sdi-232-150-1-1
permit ip any host 232.150.1.1
!
class-map match-all spts-cbr-sd-mpeg4-232-1-1-11
match access-group name spts-cbr-sd-mpeg4-232-1-1-11
!
class-map match-all uncompressed-sdi-232-150-1-1
match access-group name uncompressed-sdi-232-150-1-1
```

```

!
policy-map type performance-traffic vidmon-to-9K-IQ
class uncompressed-sdi-232-150-1-1
monitor parameters
interval duration 10
history 5
timeout 5
monitor metric ip-cbr
rate layer3 packet 134859 pps
react 11 media-stop
alarm severity critical
!
class spts-cbr-sd-mpeg4-232-1-1-11
monitor parameters
interval duration 10
history 5
timeout 5
monitor metric mdi
rate media 20424 kbps
react 1 media-stop
alarm severity critical
!
interface TenGigabitEthernet4/1
service-policy type performance-traffic output vidmon-to-9K-IQ
!
interface TenGigabitEthernet4/3
service-policy type performance-traffic input vidmon-to-9K-IQ

```

### **Example 2-2 Sample VidMon Configuration for an ASR 9000 Devised**

```

ipv4 access-list spts-cbr-hd-mpeg2-232-1-1-11
permit udp any host 232.1.1.11
!
ipv4 access-list uncompressed-sdi-232-150-1-1
permit ip any host 232.150.1.1
!
class-map type traffic match-any uncompressed-sdi-232-150-1-1
match access-group uncompressed-sdi-232-150-1-1
end-class-map
!
class-map type traffic match-any spts-cbr-hd-mpeg2-232-1-1-11
match access-group spts-cbr-hd-mpeg2-232-1-1-11
end-class-map
!
policy-map type performance-traffic VAMS-vidmon
class type traffic uncompressed-sdi-232-150-1-1
monitor parameters
interval duration 10
history 20
timeout 5
!
monitor metric ip-cbr
rate layer3 packet 143272 pps
!
class type traffic mpts-sd-mpeg2-232.1.1.1
monitor parameters
interval duration 10
history 20
timeout 5
!
monitor metric ip-cbr
rate layer3 packet 1899 pps

```

```
!
interface TenGigE0/0/0/6
service-policy type performance-traffic input VAMS-vidmon
```

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## Install the Cisco ANA Software

Install the ANA Gateway and the ANA Unit on supported hardware devices. For detailed installation instructions, see *Install the ANA Gateway and the ANA Unit on supported hardware devices*. For detailed installation instructions, see the *Cisco Active Network Abstraction Installation Guide 3.7*, viewable online at:

[http://www.cisco.com/en/US/docs/net\\_mgmt/active\\_network\\_abstraction/3.7/installation/guide/37\\_installation\\_guide.html](http://www.cisco.com/en/US/docs/net_mgmt/active_network_abstraction/3.7/installation/guide/37_installation_guide.html)

Complete these steps to install the Cisco ANA software on supported hardware devices:

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- Step 1** If it is not already installed, install Solaris 10 on the ANA Gateway and ANA Unit devices. Solaris 10 is available from the Sun Microsystems download site at the following URL:
- <http://www.sun.com/software/solaris/get.jsp>
- Step 2** Install required Solaris 10 patches on the ANA Gateway and ANA Unit devices. For information on the required patches, see the *Cisco Active Network Abstraction Installation Guide, 3.7* at
- [http://www.cisco.com/en/US/docs/net\\_mgmt/active\\_network\\_abstraction/3.7/installation/guide/37\\_installation\\_guide.html](http://www.cisco.com/en/US/docs/net_mgmt/active_network_abstraction/3.7/installation/guide/37_installation_guide.html)
- Step 3** Install Oracle 9.2.0.1 on the ANA Gateway device. See “Oracle Requirements and Installation” in the *Cisco Active Network Abstraction Installation Guide 3.7* for general steps. This document is viewable online at:
- [http://www.cisco.com/en/US/docs/net\\_mgmt/active\\_network\\_abstraction/3.7/installation/guide/37\\_installation\\_guide.html](http://www.cisco.com/en/US/docs/net_mgmt/active_network_abstraction/3.7/installation/guide/37_installation_guide.html)
- Step 4** Upgrade the Oracle installation on the ANA Gateway to Oracle 9.2.0.8.
- Step 5** Install the Active Network Abstraction (ANA) 3.6 Gateway, ANA Unit, and ANA client on the supported hardware devices, as described in: the *Cisco Active Network Abstraction Installation Guide 3.7*, viewable online at:
- [http://www.cisco.com/en/US/docs/net\\_mgmt/active\\_network\\_abstraction/3.7/installation/guide/37\\_installation\\_guide.html](http://www.cisco.com/en/US/docs/net_mgmt/active_network_abstraction/3.7/installation/guide/37_installation_guide.html)
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## Install the Cisco Multicast Manager Hardware and Software

Complete these steps to install Cisco Multicast Manager 3.1:

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- Step 1** Install the Cisco Multicast Manager (CMM) 3.1 software on dedicated servers. See the following installation guide for more information:

*Cisco Multicast Manager Installation Guide, 3.1* viewable online at:

[http://www.cisco.com/en/US/products/ps6337/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6337/prod_installation_guides_list.html)

**Step 2** Complete the following steps to download the CMM 3.1.1 patch.

- a. Create a */tmp* directory on the target CMM host.
- b. Go to the following URL on Cisco.com:  
<http://www.cisco.com/en/US/products/ps6337/index.html>
- c. Click the **Software Download** link.
- d. Log in to cisco.com.
- e. Click the **Cisco Multicast Manager 3.0** folder link.
- f. Click the **Latest Releases > 3.1.1** link.

The patch release is contained in the following distribution files:

- **Solaris:** *cmm311\_solaris.tar.gz*
- **Linux:** *cmm311\_linux.tar.gz*

- g. Choose the file for your operating system and click **Download Now**.
- h. Enter the following commands to extract the file to a temporary directory:

```
# cd /tmp
# gunzip -c cmm311_solaris.tar.gz | tar xvf - (for Solaris)
# tar -xzf cmm311_linux.tar.gz (for Linux)
# ./install_patch.sh
```

- i. When the *install\_patch* script prompts you to continue, enter **y**.

The installation script installs the patch, stops the CMM processes, and then restarts them.

## Install iVMS and Third-Party Video Probes

Install one of the following:

- IneoQuest Video Management System (iVMS)
- Third-party video probes for Bridge Technologies, IneoQuest, and Mixed Signals

Or if you are using both iVMS and other third-party video probes, install iVMS and also install the third-party video probes for Bridge Technologies and Mixed Signals, as required.

**Step 1** If you are using iVMS, install iVMS 4.1 on a Microsoft Windows Server 2003 platform. For installation instructions, see the iVMS documentation.

**Step 2** Install the video probes that you want to use to monitor your video network.

For a list of the documentation for the video probes used with Cisco VAMS 3.0, see the *Documentation Guide for Cisco Video Management Solution, 3.0*, viewable online at:

[http://www.cisco.com/en/US/docs/net\\_mgmt/cisco\\_video\\_assurance\\_mgt\\_solution/3.0/roadmap/vams20dg.html](http://www.cisco.com/en/US/docs/net_mgmt/cisco_video_assurance_mgt_solution/3.0/roadmap/vams20dg.html)

## Install the ROSA Hardware and Software

Complete these steps to install the Cisco ROSA hardware and software:

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**Step 1** (Optional) Install the ROSA Element Management System (ROSA EM).

The ROSA EM is an embedded rack-mounted hardware platform that is preinstalled with the ROSA EM software.

For installation and configuration instructions, see the documentation provided with the ROSA EM device.

**Step 2** Install the ROSA Copernicus Network Management System (ROSA NMS).

The ROSA NMS is provided:

- As a dedicated server that is preinstalled with the ROSA Copernicus NMS software.
- As a software version that runs on Microsoft Windows servers, Microsoft Windows XP, or Windows vista. The software version is available in three versions:
  - ROSA Client
  - ROSA Single User
  - ROSA Device Configuration Shell

For installation instructions, see:

- The README file for the ROSA Copernicus NMS. This file launches automatically when you insert the ROSA NMS installation CD in your Windows server or Windows workstation.
- The *ROSA Network Management System User's Guide, Version 3.0 Build 18*. This document is provided in PDF format on CD 1 of the ROSA NMS installation media.

**Step 3** Install the SNMP agent on your ROSA Copernicus NMS server.

For detailed installation instructions, refer to “Installing the SNMP Agent Task Driver” in the SNMP Agent Users Guide, Task Driver for ROSA 3.0. This document is provided on the Documentation CD for the ROSA Copernicus Network Management System server.

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