Cisco Networking Capabilities for Medianet

Product Overview

A medianet is an end-to-end architecture for a network comprising advanced, intelligent technologies and devices in a platform optimized for the delivery of rich-media experiences. A medianet has the following characteristics:

- Media-aware: Can detect and optimize different media and application types (telepresence, video surveillance, desktop collaboration, and streaming media) to deliver the best experience
- Endpoint-aware: Automatically detects and configures media endpoints
- Network-aware: Can detect and respond to changes in device, connection, and service availability

With the increasing adoption of new video and rich-media applications, medianet technologies become critically important to address challenges associated with the transmission of video and rich media over the network, including ensuring predictability, performance, quality, and security.

By accelerating deployment of applications, minimizing complexity and ongoing operational costs, and helping to scale the infrastructure for the best quality of experience (QoE), medianet technologies help address these challenges.

Capabilities and Benefits

Cisco® Networking Capabilities for Medianet extend the boundary of networks to the endpoints, creating tight integration between intelligent network services and the rich-media applications delivered over a variety of endpoints. Cisco endpoints are equipped with the Media Services Interface (MSI), a software component that enables endpoints to consistently take advantage of intelligent network services. MSI helps the network to be media-aware and media applications and endpoints to be network-aware.

Cisco Networking Capabilities for Medianet provides capabilities across a range of network and endpoint devices to enable a medianet system to send, deliver, and optimize rich-media applications. These capabilities are enhanced over time as the technology matures and is implemented in medianet-ready products. Cisco Networking Capabilities 2.1 for Medianet focuses on reducing IT costs and the complexity of deploying video as well as improving the video experience. Table 1 describes the capabilities, components, benefits, and features of Cisco Networking Capabilities 2.1 for Medianet. The appendix discusses Cisco Networking Capabilities 1.0 for Medianet.

Table 1. Cisco Networking Capabilities 2.1 for Medianet: Capabilities, Benefits, Features, and Components

Capabilities and Components	Benefit	Features
Autoconfiguration of video endpoints: • Auto Smartports • Location • Cisco AutoQoS • Media Services Interface	Helps simplify the deployment and reduce the ongoing operational costs of rich-media applications and endpoints	• Automates network configuration using Auto Smartports • Provides built-in recommended configurations for a variety of device types that are automatically applied when the device is plugged into the switchport • Simplifies access switch quality-of-service (QoS) deployment • Automates physical location configuration and enables device asset tracking • Automates device configuration and registration to simplify management and equipment moves, adds, and changes
Extension of medianets to wired or wireless IP surveillance cameras: • Cisco VideoStream	Extends IEEE 802.11n support to enable enterprise-class, wireless Cisco Video Surveillance IP Cameras and other live video streams	• Includes Cisco Compatible Extensions to provide optimal network performance and video quality • Adds resilient wireless IP Multicast support to ensure reliable delivery of mission-critical live video stream traffic

Capabilities and Components	Benefit	Features
Configuration and management of endpoints: • CiscoWorks LAN Management Solution (LMS)	Simplifies the configuration and management of endpoints	• Simplifies the configuration, administration, monitoring, and troubleshooting of borderless networks • Offers medianet "plug-in" for CiscoWorks LMS that provides workflows for provisioning autoconfiguration and location settings and tracking of medianet endpoints

Network Requirements

Tables 2 and 3 list the switches and routers, respectively, and minimum Cisco IOS® Software release requirements for autoconfiguration (Auto Smartports, location, and Cisco AutoQoS). Table 4 lists the devices and requirements for Media Services Interface, Table 5 lists the requirements for Cisco VideoStream.

Table 2. Switches and Minimum Cisco IOS Software Release Requirements for Autoconfiguration (Auto Smartports, Location, and Cisco AutoQoS)

Platform	Minimum Cisco IOS Software Release	Package
Cisco Catalyst® 3750, Catalyst 3750-E, Catalyst 3750-X, Catalyst 3560, Catalyst 3560-E, and Catalyst 3560-X Series Switches	12.2(55) SE or later	LAN Base

Table 3. Routers and Minimum Release Requirements for Autoconfiguration (Auto Smartports, Location, and Cisco AutoQoS)

Platform	Switch Blade	Switch Image	Minimum Cisco IOS Software Release
Cisco 3900 Series Integrated Services Routers (ISRs)	SM-D-ES3G-48-P	12.2(55)EX	15(0).1M or later
	SM-D-ES3-48-P		
	SM-D-ES2-48		
	SM-ES3G-24-P		
	SM-ES3-24-P		
	SM-ES2-24-P		
	SM-ES2-24		
	SM-ES3G-16-P		
	SM-ES3-16-P		
	SM-ES2-16-P		
	NME-16ES-1G-P	12.2(55)EZ	
Cisco 2900 Series ISRs[1]	SM-ES3G-24-P	12.2(55)EX	
	SM-ES3-24-P		
	SM-ES2-24-P		
	SM-ES2-24		
	SM-ES3G-16-P		
	SM-ES3-16-P		
	SM-ES2-16-P		
	NME-16ES-1G-P	12.2(55)EZ	

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[1] Cisco 1800 and 1900 Series and Cisco 2801 and 2901 ISRs do **not** support these switch blades.

Platform	Switch Blade	Switch Image	Minimum Cisco IOS Software Release
Cisco 3800 Series ISRs	NME-16ES-1G-P	12.2(55)EZ	
	NME-X-23ES-1G	12.2(55)SEC	
	NME-X-23ES-1G-P	12.2(55)EZ	
	NME-XD-24ES-1S-P		
	NME-XD-48ES-2S-P		
Cisco 2800 Series ISRs[1]	NME-16ES-1G-P		
	NME-X-23ES-1G	12.2(55)SEC	
	NME-X-23ES-1G-P	12.2(55)EZ	

Note: NME-16ES-1G-P and NME-16ES-1G are supported with SM-NM-ADPTR on Cisco 2900 and 3900 Series ISRs.

Table 4.   Devices and Requirements for Media Services Interface

Devices	Software Version
Cisco Digital Media Player 4310G	5.2.2

Table 5.   Requirements for Cisco VideoStream

Platform	Software Version
Cisco 5508 Wireless LAN Controller	7.0
Cisco Aironet® 1250 Series Access Points	7.0
Cisco Aironet 1260 Series Access Points	7.0
Cisco 1140 Series Access Points	7.0
Cisco 3500 Series Access Points	7.0

For more information about Cisco VideoStream, please visit:
http://www.cisco.com/en/US/partner/prod/collateral/wireless/ps6302/ps8322/ps10315/ps10325/white_paper_c11-577721.html.

CiscoWorks LAN Management Solution

For more information and specific requirements for CiscoWorks LMS and the medianet plug-in, go to:
http://www.cisco.com/go/lms.

Cisco Services

Cisco offers a Medianet Readiness Assessment (MRA) service to help you better prepare for the evolution into supporting a rich-media environment. The Cisco MRA analyzes the existing infrastructure against business solutions you want to implement. It provides a documented recommendation for the delta between "now" and "required". These professional services can be extended beyond prepare, plan, and design to full implementation, operation, and optimization - enabling a successful and stepwise migration to a medianet. For more information on the Medianet Readiness Assessment service:

White Paper: http://www.cisco.com/en/US/services/ps6887/ps10672/docs/mra_white_paper.pdf.

Data Sheet: http://www.cisco.com/web/solutions/medianet/docs/MRA_DataSheetv30_0804.pdf.

For More Information

For more information about Cisco Networking Capabilities for Medianet, please visit:
http://www.cisco.com/go/medianet or contact your local Cisco account representative.

Appendix: Cisco Networking Capabilities 1.0 for Medianet

The first step toward a medianet is a converged network for voice, video, and data. Cisco Networking Capabilities 1.0 for Medianet establishes a foundation for medianets. Recommendations for a foundation architecture are available in the Medianet Reference Guide:
http://www.cisco.com/en/US/docs/solutions/Enterprise/Video/Medianet_Ref_Gd/medianet_ref_gd.html.

Table 6 lists the capabilities, features, and benefits of Cisco Networking Capabilities 1.0 for Medianet.

Table 6.   Capabilities, Features, and Benefits of Cisco Networking Capabilities 1.0 for Medianet

Capabilities	Benefits	Features
Video-optimized technologies: • Cisco Performance Routing (PfR) • QoS • IP Multicast • Cisco Wide Area Application Services (WAAS)	Reduce traffic and server load and optimize the use of the network to achieve successful end-to-end video streaming	• Improve application performance and availability with Cisco Performance Routing by selecting the best path for each application based upon advanced criteria (delay, loss, jitter, etc.) • Maximize existing network resources with Cisco Performance Routing by using all possible paths without compromising performance • Reduce traffic and server loads using IP Multicast to simultaneously deliver a single stream of information to thousand of users • Deliver truly differentiated services for media applications using QoS • Use WAN optimization technologies such as Cisco WAAS to improve performance and "reduce bandwidth footprint" of certain applications and create bandwidth media applications
Visibility: • Network-Based Application Recognition (NBAR) • NetFlow	Obtain end-to-end visibility to meet expanding and changing business needs	• Automatically discover media applications running on the network with NBAR so that appropriate network policies can be applied • Achieve better visibility of what applications are running on the network with NBAR and NetFlow integration to support business goals; for example, understanding the growth and patterns of network and media usage to allow for better planning and control of the network resources

For information about each of the technologies, please visit the following links:

- Cisco Performance Routing (PfR):
  http://www.cisco.com/en/US/partner/products/ps8787/products_ios_protocol_option_home.html

- Cisco Wide Area Application Services (WAAS):
  http://www.cisco.com/en/US/partner/products/ps6870/index.html

- IP Multicast: http://www.cisco.com/en/US/partner/products/ps6552/products_ios_technology_home.html

- Quality of service (QoS):
  http://www.cisco.com/en/US/partner/products/ps6558/products_ios_technology_home.html

- Network-Based Application Recognition (NBAR):
  http://www.cisco.com/en/US/partner/products/ps6616/products_ios_protocol_group_home.html

- NetFlow: http://www.cisco.com/en/US/partner/products/ps6601/products_ios_protocol_group_home.html

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