RSVP-Based Video on Demand Support Over DOCSIS

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The Cisco universal broadband router supports Video on Demand (VoD) over DOCSIS (Data Over Cable Service Interface Specification) services using a Resource ReSerVation Protocol (RSVP) bandwidth request from the VoD server. RSVP is used by the Cable Modem Termination System (CMTS) to request video data from the network for specific application data flows.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://tools.cisco.com/ITDIT/CFN/. An account on http://www.cisco.com/ is not required.

Contents

Prerequisites for Configuring RSVP-Based Video on Demand Support Over DOCSIS

The table below shows the hardware compatibility prerequisites for RSVP-Based video on demand support over DOCSIS.

Table 1: Cable Hardware Compatibility Matrix for RSVP-Based Video on Demand Support Over DOCSIS

CMTS Platform	Processor Engine	Cable Interface Line Cards
Cisco uBR10012 Universal Broadband Router	Cisco IOS Release 12.2(33)SCB and later releases • PRE2 • PRE4 Cisco IOS Release 12.2(33)SCH and later releases • PRE5	Cisco uBR10-MC5X20S/U/H

The software prerequisites for the RSVP-based video on demand support over DOCSIS are:

• This feature does not require DOCSIS3.0 setup.

• The cable modems should be compliant with DOCSIS 1.1 or higher.

• The **ip rsvp bandwidth** command on the cable bundle interface should provide actual reserved bandwidth available.

• This feature is supported on all CMTS platforms.

• The **ip rsvp bandwidth** command should be configured on the WAN interface on the CMTS.

• IP routing is configured on CMTS so that the bundle interface can be reached from the video source.

Restrictions for Configuring RSVP-Based Video on Demand Support Over DOCSIS

• RSVP implementation supports IPv4 only.

• Upstream service flow creation is not supported.

• RSVP receiver proxy supports controlled-load service only.

• RSVP over MPLS VPN is not supported.

Information About RSVP-Based Video on Demand Support Over DOCSIS

RSVP is used by a host to request specific quality of service (QoS) from the network for particular application data streams or flows. RSVP is used by the CMTS to deliver video requests along the data path of the flows and maintains the state to provide the requested service. RSVP requests generally result in resources being reserved in each node along the data path.

Figure 1: Configuring RSVP-Based Video on Demand Support Over DOCSIS
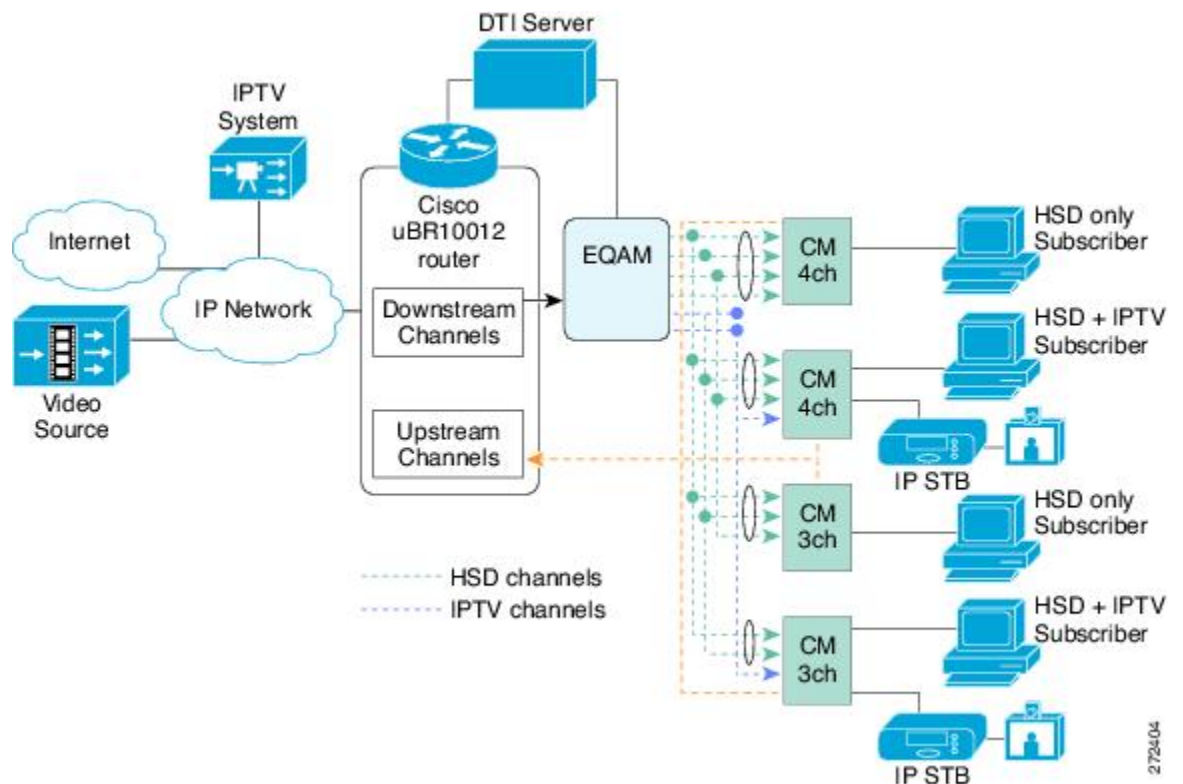
The following process is used to reserve DOCSIS resources on CMTS based on RSVP:

1 The CMTS intercepts the RSVP requests that are intended for the set-top boxes in the CMTS service area and reserves DOCSIS resources.
2 When a path message reaches the CMTS, it determines the DOCSIS resources required.
3 The CMTS creates a service flow and classifier to the cable modem.
4 The CMTS responds with a RSVP reserve message in the direction of the streamer.

How to Configure RSVP-Based Video over DOCSIS

This section describes the configuration tasks that are performed when using the RSVP-based video over DOCSIS feature on the Cisco CMTS platforms. You can use the command-line interface (CLI) commands to complete the configuration.

Configuring the RSVP Service Class

To specify the default service class for RSVP, use the **cable rsvp default-scn** command in global configuration mode. This command is used to specify DOCSIS service flow parameters such as activity time-out and service-flow attribute mask.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** Router> **enable**	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# **configure terminal**	Enters global configuration mode.
Step 3	**cable rsvp default-scn** *service-class name* **Example:** Router(config)# **cable rsvp default-scn RSVPClass**	Specifies the default service class for RSVP. • *service-class name*— The DOCSIS service class name.

Displaying the RSVP-DOCSIS Flow Data

The RSVP-DOCSIS flow data contains details of the RSVP session and DOCSIS service flow identifier data structure.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** Router> **enable**	Enables privileged EXEC mode. Enter your password if prompted.

	Command or Action	Purpose
Step 2	**configure terminal** **Example:** Router# **configure terminal**	Enters global configuration mode.
Step 3	**show cable rsvp flow-db** [*mac-addr*] **Example:** Router(config)# **show cable rsvp flow-db**	Displays contents of the RSVP to DOCSIS service flow mapping database. • *mac-addr*—(Optional) The MAC address of the specific cable modem in hexadecimal format.

Additional References

The following sections provide references related to configuring RSVP-based Video over DOCSIS.

Related Documents

Related Topic	Document Title
CMTS cable commands	*Cisco IOS CMTS Cable Command Reference* http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html
Cisco uBR10012 Universal Broadband Router Documentation	*Cisco uBR10012 Universal Broadband Router Hardware* http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/installation/guide/hig.html *Cisco uBR10012 Universal Broadband Router Software Configuration Guide* http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/configuration/guide/scg.html Cisco uBR10012 Universal Broadband Router Release Notes http://www.cisco.com/en/US/products/hw/cable/ps2209/prod_release_notes_list.html

Standards and RFCs

RFC	Title
RFC 2205	Resource ReSerVation Protocol

RFC	Title
RFC 2210	The Use of RSVP with IETF Integrated Services

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/support

Feature Information for RSVP-Based Video over DOCSIS

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://tools.cisco.com/ITDIT/CFN/. An account on http://www.cisco.com/ is not required.

Note The below table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 2: Feature Information for RSVP-Based Video over DOCSIS

Feature Name	Releases	Feature Information
RSVP-Based Video on Demand Support Over DOCSIS	12.2(33)SCB	The Cisco universal broadband router supports VoD over DOCSIS services using a RSVP bandwidth request from the VoD server. RSVP is used by the CMTS to request video data from the network for specific application data flows. The following sections provide information about this feature: • Configuring the RSVP Service Class, on page 4 • Displaying the RSVP-DOCSIS Flow Data, on page 4