VideoStream

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and 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 module.

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

Information about VideoStream

The IEEE 802.11 wireless multicast delivery mechanism does not provide a reliable way to acknowledge lost or corrupted packets. The multicast frame packets are sent at a predetermined rate irrespective of the wireless client optimal data rate. As a result, if any multicast packet is lost in the air, it is not sent again which may cause an IP multicast stream unviewable. Also if the packets are delivered faster, the packets get congested.

The VideoStream feature makes the delivery of the IP multicast stream reliable over air, by converting the multicast frame to a unicast frame over the air. Each VideoStream client acknowledges receiving a video IP multicast stream.

Prerequisites for VideoStream

- Make sure that the Multicast feature is enabled. We recommend that you configure IP multicast on the controller in multicast-multicast mode.

- Check for the IP address on the client machine. The machine should have an IP address from the respective VLAN.
- Verify that the access points have joined the controllers.

Restrictions for Configuring VideoStream

IGMP snooping is required to switch ON for this MC2UC feature to be functional.

How to Configure VideoStream

Configuring Multicast-Direct Globally for Media Stream

Procedure

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 2	**wireless multicast**	Enables multicast for wireless forwarding.
Step 3	**ip igmp snooping**	Enables IGMP snooping on a per-VLAN basis. If the global setting is disabled, then all the VLANs are treated as disabled, whether they are enabled or not.
Step 4	**ip igmp snooping querier**	Configures a snooping querier on an interface when there is no multicast router in the VLAN to generate queries.
Step 5	**wireless media-stream multicast-direct** **Example:** `(config)#wireless media-stream multicast-direct`	Configures the global multicast-direct on the controller.

Step 6	**wireless media-stream message**
	Example:
	`(config)#wireless media-stream message ?`
	`  Email  Configure Session Announcement Email`
	`  Notes  Configure Session Announcement notes`
	`  URL  Configure Session Announcement URL`
		Configures various message-configuration parameters such as phone, URL, email, and notes. That is, when a media stream is refused (due to bandwidth constraints), a message can be sent to the corresponding user. These parameters configure the messages that are to be sent to the IT support email address, notes (message be displayed explaining why the stream was refused), URL to which the user can

	Command or Action	Purpose
	phone Configure Session Announcement Phone number <cr>	be redirected, and the phone number that the user can call about the refused stream.
Step 7	**wireless media-stream group** *name startIp endIp* **Example:** (config)#**wireless media-stream group grp1 231.1.1.1 239.1.1.3** (config-media-stream)#**?** avg-packet-size Configures average packet size default Set a command to its defaults exit Exit sub-mode max-bandwidth Configures maximum Expected Stream Bandwidth in Kbps no Negate a command or set its defaults policy Configure media stream admission policy qos Configure Over the AIR QoS class, <'video'> ONLY <cr>	Configures each media stream and its parameters such as expected multicast destination addresses, stream bandwidth consumption, and stream-priority parameters.
Step 8	**end** **Example:** Device(config)# **end**	Returns to privileged EXEC mode. Alternatively, you can also press **Ctrl-Z** to exit global configuration mode.

Configuring Media Stream for 802.11 Bands

Procedure

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** Device# **configure terminal**	Enters global configuration mode.
Step 2	**ap dot11 {24ghz | 5ghz} media-stream multicast-direct** **Example:** Device(config)#**ap dot11 24ghz media-stream multicast-direct**	Configures whether media stream (mc2uc) is allowed for the 802.11 band.
Step 3	**ap dot11 {24ghz | 5ghz} media-stream video-redirect** **Example:**	Configures the redirection of unicast video traffic to the best-effort queue.

	Command or Action	Purpose
	`Device(config)#ap dot11 24ghz media-stream video-redirect`	
Step 4	**ap dot11 {24ghz | 5ghz} media-stream multicast-direct admission-besteffort** **Example:** `Device(config)#ap dot11 24ghz media-stream multicast-direct admission-besteffort`	Configures the media stream to be sent through the best-effort queue if that media stream cannot be prioritized due to bandwidth-availability limitations. Run the **no** form of the command to drop the stream, if the media stream cannot be prioritized due to bandwidth-availability limitations.
Step 5	**ap dot11 {24ghz | 5ghz} media-stream multicast-direct client-maximum** [*value*] **Example:** `Device(config)#ap dot11 24ghz media-stream multicast-direct client-max 15`	Configures the maximum number of allowed media streams per individual client. The maximum is 15 and the default is 0. The value of 0 denotes unlimited streams.
Step 6	**ap dot11 {24ghz | 5ghz} media-stream multicast-direct radio-maximum** [*value*]	Configures maximum number of radio streams. The valid range is from 1 to 20. Default is 0. The value of 0 denotes unlimited streams.
Step 7	**ap dot11 {24ghz | 5ghz} cac multimedia max-bandwidth** [*bandwidth*] **Example:** `Device(config)#ap dot11 24ghz cac multimedia max-bandwidth 60`	Configures maximum media (voice + video) bandwidth, in percent. The range is between 5-85%.
Step 8	**ap dot11 {24ghz | 5ghz} cac media-stream multicast-direct min_client_rate** [*dot11_rate*] **Example:** `Device(config)#ap dot11 24ghz cac media-stream multicast-direct min_client_rate`	Configures the minimum PHY rate needed for a client to send a media stream as unicast. Clients communicating below this rate will not receive the media stream as a unicast flow. Typically, this PHY rate is equal to or higher than the rate at which multicast frames are sent.
Step 9	**ap dot11 5ghz cac media-stream** **Example:** `Device(config)#ap dot11 5ghz cac media-stream`	Configures Call Admission Control (CAC) parameters for media stream access category.
Step 10	**ap dot11 5ghz cac multimedia**	`Device(config)#ap dot11 5ghz cac multimedia` Configures CAC parameters for media access category: used for voice and video.
Step 11	**ap dot11 5ghz cac video**	`Device(config)#ap dot11 5ghz cac video` Configures CAC parameters for video access category: used for voice signaling.
Step 12	**ap dot11 5ghz cac voice**	`Device(config)#ap dot11 5ghz cac voice`

	Command or Action	Purpose
		Configures CAC parameters for voice access category.
Step 13	**end** **Example:** `Device(config)# end`	Returns to privileged EXEC mode. Alternatively, you can also press **Ctrl-Z** to exit global configuration mode.

Configuring a WLAN to Stream Video (GUI)

Procedure

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 2	**wlan** *wlan_name* **Example:** `(config)#wlan wlan50`	Enters WLAN configuration mode.
Step 3	**shutdown** **Example:** `(config-wlan)#shutdown`	Disables the WLAN for configuring its parameters.
Step 4	**media-stream multicast-direct** **Example:** `(config)#media-stream multicast-direct`	Configures the multicast-direct on media stream for the WLAN.
Step 5	**no shutdown** **Example:** `(config-wlan)#no shutdown`	Enables the WLAN.
Step 6	**end** **Example:** `Device(config)# end`	Returns to privileged EXEC mode. Alternatively, you can also press **Ctrl-Z** to exit global configuration mode.

Deleting a Media Stream

Before you begin

The media stream should be enabled and configured for it to be deleted.

Procedure

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 2	**no wireless media-stream group** *media_stream_name* **Example:** `Device(config)#no wireless media-stream grp1`	Deletes the media stream that bears the name mentioned in the command.
Step 3	**end** **Example:** `Device(config)# end`	Returns to privileged EXEC mode. Alternatively, you can also press **Ctrl-Z** to exit global configuration mode.

Monitoring Media Streams

Table 1: Commands for monitoring media streams

Commands	Description
show wireless media-stream client detail *group name*	Displays media stream client details of the particular group.
show wireless media-stream client summary	Displays the media stream information of all the clients.
show wireless media-stream group detail *group name*	Displays the media stream configuration details of the particular group.
show wireless media-stream group summary	Displays the media stream configuration details of all the groups.
show wireless media-stream message details	Displays the session announcement message details.
show wireless multicast	Displays the multicast-direct configuration state.
show ap dot11 24ghz | 5ghz media-stream rrc	Displays 802.11 media Resource-Reservation-Control configurations.