Configuring 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.

Prerequisites for VideoStream

Make sure that the multicast feature is enabled. We recommend configuring IP multicast on the controller with 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.

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

How to Configure VideoStream

Configuring Multicast-Direct Globally for Media-Stream

SUMMARY STEPS

1. **configure terminal**
2. **wireless multicast**
3. **IP igmp snooping**
4. **IP igmp snooping querier**
5. **wireless media-stream multicast-direct**
6. **wireless media-stream message**
7. **wireless media-stream group**<*name*><*startIp*><*endIp*>
8. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Switch# configure terminal`	Enters global configuration mode.
Step 2	**wireless multicast** **Example:**	Enables multicast for wireless forwarding.
Step 3	**IP igmp snooping** **Example:**	Enables IGMP snooping on a per-VLAN basis. If the global setting is disabled, then all VLANs are treated as disabled, whether they are enabled or not.
Step 4	**IP igmp snooping querier** **Example:**	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:**	Configures the global multicast-direct feature for the controller.

	Command or Action	Purpose
	`Switch(config)#wireless media-stream multicast-direct`	

Step 6	**wireless media-stream message**
	Example:
	`Switch(config)#wireless media-stream message ?`
	`  Email  Configure Session Announcement Email`
	`  Notes  Configure Session Announcement notes`
	`  URL  Configure Session Announcement URL`
	`  phone  Configure Session Announcement Phone number`
	`  <cr>`
		Configures various message configuration parameters like phone, URL, email and notes. That is, when a media stream is refused (due to bandwidth constraints), a message can be sent to the user. These parameters configure the messages to send IT support email address, notes (message to display explaining why the stream was refused), URL to which the user can 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:
	`Switch(config)#wireless media-stream group grp1 231.1.1.1 239.1.1.3`
	`Switch(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 like expected multicast destination addresses, stream bandwidth consumption and stream priority parameters.

Step 8	**end** **Example:** `Switch(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

SUMMARY STEPS

1. **configure terminal**
2. **ap dot11 24ghz | 5ghz media-stream multicast-direct**
3. **ap dot11 24ghz | 5ghz media-stream video-redirect**
4. **ap dot11 24ghz | 5ghz media-stream multicast-direct admission-besteffort**
5. **ap dot11 24ghz | 5ghz media-stream multicast-direct client-maximum [<value >]**
6. **ap dot11 24ghz | 5ghz media-stream multicast-direct radio-maximum 20**
7. **ap dot11 24ghz | 5ghz cac multimedia max-bandwidth [<bandwidth>]**
8. **ap dot11 24ghz | 5ghz cac media-stream multicast-direct min_client_rate [<dot11_rate>]**

9. **ap dot11 5ghz cac media-stream**
10. **ap dot11 5ghz cac multimedia**
11. **ap dot11 5ghz cac video**
12. **ap dot11 5ghz cac voice**
13. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Switch# configure terminal`	Enters global configuration mode.
Step 2	**ap dot11 24ghz | 5ghz media-stream multicast-direct** **Example:** `Switch(config)#ap dot11 24ghz media-stream multicast-direct`	Configures if media stream (mc2uc) is allowed for 802.11 band
Step 3	**ap dot11 24ghz | 5ghz media-stream video-redirect** **Example:** `Switch(config)#ap dot11 24ghz media-stream video-redirect`	Configures to redirect unicast video traffic to best effort queue.
Step 4	**ap dot11 24ghz | 5ghz media-stream multicast-direct admission-besteffort** **Example:** `Switch(config)#ap dot11 24ghz media-stream multicast-direct admission-besteffort`	Configures the media stream to still be sent through the best effort queue if a media stream cannot be prioritized due to bandwidth availability limitations. Add **no** in 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:** `Switch(config)#ap dot11 24ghz media-stream multicast-direct client-max 15`	Configures maximum number of allowed media streams per individual client. The maximum is 15 and the default is 0. Value 0 denotes unlimited streams.
Step 6	**ap dot11 24ghz | 5ghz media-stream multicast-direct radio-maximum 20** **Example:**	Configures maximum number of radio streams. The range is from 1 to 20. Default is 0. Value 0 denotes unlimited streams.
Step 7	**ap dot11 24ghz | 5ghz cac multimedia max-bandwidth [<bandwidth>]** **Example:** `Switch(config)#ap dot11 24ghz cac multimedia max-bandwidth 60`	Configure maximum media (voice + video) bandwidth in %. The range is between 5% and 85%.
Step 8	**ap dot11 24ghz | 5ghz cac media-stream multicast-direct min_client_rate [<dot11_rate>]** **Example:**	Configures the minimum PHY rate needed for a client to send media-stream as unicast. Clients communicating below this rate will not receive the media stream as a

	Command or Action	Purpose
	`Switch(config)#ap dot11 24ghz cac media-stream multicast-direct min_client_rate`	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**	Configures CAC parameters for media stream access category.
Step 10	**ap dot11 5ghz cac multimedia**	Configures CAC parameters for media access category, used for voice and video.
Step 11	**ap dot11 5ghz cac video**	Configures CAC parameters for video access category, used for voice signaling.
Step 12	**ap dot11 5ghz cac voice**	Configures CAC parameters for voice access category.
Step 13	**end** **Example:** `Switch(config)# end`	Returns to privileged EXEC mode. Alternatively, you can also press **Ctrl-Z** to exit global configuration mode.

Configuring WLAN to Stream Video

SUMMARY STEPS

1. **configure terminal**
2. **wlan** *wlan_name*
3. **shutdown**
4. **media-stream multicast-direct**
5. **no shutdown**
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Switch# configure terminal`	Enters global configuration mode.
Step 2	**wlan** *wlan_name* **Example:** `Switch(config)#wlan wlan50`	Enters the WLAN configuration mode.
Step 3	**shutdown** **Example:** `Switch(config-wlan)#shutdown`	Disables the WLAN for configuring it parameters.
Step 4	**media-stream multicast-direct** **Example:**	Configures the multicast-direct feature on media-stream for the WLAN.

	Command or Action	Purpose
	`Switch(config)#media-stream multicast-direct`	
Step 5	**no shutdown** **Example:** `Switch(config-wlan)#no shutdown`	Enables the WLAN.
Step 6	**end** **Example:** `Switch(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.

SUMMARY STEPS

1. **configure terminal**
2. **no wireless media-stream group media_stream_name**
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Switch# configure terminal`	Enters global configuration mode.
Step 2	**no wireless media-stream group media_stream_name** **Example:** `Switch(config)#no wireless media-stream grp1`	Deletes the media-stream which bears the name mentioned in the command.
Step 3	**end** **Example:** `Switch(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.