Fastlane+

Information About Fastlane+

IEEE 802.11ax allows scheduled access-based uplink transmissions by periodically collecting buffer status reports from clients. The Fastlane+ feature improves the effectiveness of estimating the uplink buffer status for clients, thereby enhancing the user experience for latency-sensitive applications. The Fastlane+ feature can be enabled or disabled on a per-WLAN basis. Support for this feature is indicated in the beacons and probe responses transmitted by an AP.

Note This feature works only if Protected Management Frame (PMF) is configured as optional or mandatory for a WLAN.

Configuring an Fastlane+ on a WLAN (CLI)

Procedure

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 2	**wlan** *profile-name wlan-id SSID_Name* **Example:**	Configures a WLAN and enters WLAN configuration submode.

	Command or Action	Purpose
	`Device(config)# wlan wlan-test 3 ssid-test`	**Note** If you have already configured a WLAN, enter the **wlan** *profile-name* command.
Step 3	**scheduler asr** **Example:** `Device(config-wlan)# scheduler asr`	Configures Fastlane+ feature on a WLAN.

Configuring an Fastlane+ on a WLAN (GUI)

Procedure

Step 1 Choose **Configuration > Tags & Profiles > WLANs**.

Step 2 Select a WLAN.

Step 3 Click **Advanced** tab.

Step 4 Check the **Advanced Scheduling Requests Handling** check box to enable the feature on a per-WLAN basis.

Step 5 Click **Update & Apply to Device**.

Monitoring Fastlane+

Procedure

Step 1 Choose **Monitoring >Wireless > Clients**.

Step 2 Click a client name from the client list.

The **Client** window with multiple tabs is activated.

Step 3 Click **General** tab.

Step 4 Click **Client Statistics** tab.

The most recent uplink latency statistics received from the client is displayed in the **Uplink Latency Distribution** section.

Step 5 Click **Client Properties** tab.

The Fastlane+ feature-related client capabilities information is displayed at the bottom of the window.

Verifying Fastlane+

The following example shows how to verify whether Fastlane+ is enabled or disabled for a WLAN:

```
Device# show wlan 2 | include ASR

Advanced Scheduling Requests Handling : Enabled
```

The following example shows how to verify Fastlane+ capability information and the most recent client uplink latency statistics:

```
Device# show wireless client mac-address f45c.89b0.xxxx detail
.
.
.
Regular ASR support: : ENABLED
Non-default Fastlane Profile: : Active
Range Voice Video Background Best-Effort
----------------------------------------------------------------------------------------
[0-20ms] 400 300 200 100
[20-40ms] 401 301 201 101
[40-100ms] 402 302 202 102
[>100ms] 403 303 203 103
```

The following example shows how to verify Fastlane+ statistics along with Fastlane+ capability and uplink latency statistics for all the Fastlane+ clients on a WLAN.

Note **show interfaces dot11radio asr-info all** is an AP command, and does not work on the controller.

```
Device# show interfaces Dot11Radio 1 asr-info all

[*10/12/2020 18:45:21.0149]
[*10/12/2020 18:45:21.0150]  Client-MAC:[26:52:CF:C8:D0:1C] AID:[3] ASR-Capability:[0x1]
[*10/12/2020 18:45:21.0150]  BE- LAT[0-20]:[267] LAT[20-40]:[57] LAT[40-100]:[32]
LAT[>100]:[26]
[*10/12/2020 18:45:21.0150]  BK- LAT[0-20]:[0] LAT[20-40]:[0] LAT[40-100]:[0] LAT[>100]:[0]
[*10/12/2020 18:45:21.0150]  VI- LAT[0-20]:[0] LAT[20-40]:[0] LAT[40-100]:[0] LAT[>100]:[0]
[*10/12/2020 18:45:21.0150]  VO- LAT[0-20]:[2222] LAT[20-40]:[409] LAT[40-100]:[224]
LAT[>100]:[163]
[*10/12/2020 18:45:21.0150]
[*10/12/2020 18:45:21.0206] HTT_PEER_DETAILS_TLV:
[*10/12/2020 18:45:21.0206] peer_type = 0
[*10/12/2020 18:45:21.0206] sw_peer_id = 98
[*10/12/2020 18:45:21.0206] vdev_id = 25
[*10/12/2020 18:45:21.0206] pdev_id = 0
[*10/12/2020 18:45:21.0206] ast_idx = 1187
[*10/12/2020 18:45:21.0206] mac_addr = 26:52:cf:c8:d0:1c
[*10/12/2020 18:45:21.0206] peer_flags = 0x200006f9
[*10/12/2020 18:45:21.0206] qpeer_flags = 0x8
[*10/12/2020 18:45:21.0206]
[*10/12/2020 18:45:21.0206] HTT_STATS_PEER_ASR_STATS_TLV
[*10/12/2020 18:45:21.0206] asr_bmap: 0x8
[*10/12/2020 18:45:21.0206] asr_muedca_update_cnt: 1
[*10/12/2020 18:45:21.0206] asr_muedca_reset_cnt: 1
[*10/12/2020 18:45:21.0206] asr_ul_mu_bsr_trigger: 2376
[*10/12/2020 18:45:21.0206] asr_min_trig_intv- BE:0         BK:0 VI:0 VO:19
[*10/12/2020 18:45:21.0206] asr_max_trig_intv- BE:0         BK:0 VI:0 VO:20
[*10/12/2020 18:45:21.0207] asr_min_alloc_rate- BE:0         BK:0 VI:0 VO:12
[*10/12/2020 18:45:21.0207] asr_ul_su_data_ppdu_cnt- BE:0         BK:0 VI:0 VO:2149
```

```
[*10/12/2020 18:45:21.0207] asr_ul_su_data_ppdu_bytes- BE:0         BK:0 VI:0 VO:757546
[*10/12/2020 18:45:21.0207] asr_ul_mu_trig_ppdu_cnt- BE:0         BK:0 VI:0 VO:5002
[*10/12/2020 18:45:21.0207] asr_ul_mu_trig_ppdu_bytes- BE:0         BK:0 VI:0 VO:2400960
[*10/12/2020 18:45:21.0207] asr_ul_mu_data_ppdu_cnt- BE:0         BK:0 VI:0 VO:2134
[*10/12/2020 18:45:21.0207] asr_ul_mu_data_ppdu_bytes- BE:0         BK:0 VI:0 VO:736578
[*10/12/2020 18:45:21.0207] asr_ul_mu_data_padding_bytes- BE:0         BK:0 VI:0 VO:2953488
```

The following examples show how to verify scheduling statistics along with capability and uplink latency statistics for a given client on a WLAN:

Note The **show interfaces dot11radio asr-info** is an AP command and it will not work on the controller.

```
Device# show interfaces Dot11Radio 1 asr-info 26:XX:CF:XX:D0:XX

[*10/12/2020 18:45:21.0149]
[*10/12/2020 18:45:21.0150]  Client-MAC:[26:52:CF:C8:D0:1C] AID:[3] ASR-Capability:[0x1]
[*10/12/2020 18:45:21.0150]  BE- LAT[0-20]:[267] LAT[20-40]:[57] LAT[40-100]:[32]
LAT[>100]:[26]
[*10/12/2020 18:45:21.0150]  BK- LAT[0-20]:[0] LAT[20-40]:[0] LAT[40-100]:[0] LAT[>100]:[0]
[*10/12/2020 18:45:21.0150]  VI- LAT[0-20]:[0] LAT[20-40]:[0] LAT[40-100]:[0] LAT[>100]:[0]
[*10/12/2020 18:45:21.0150]  VO- LAT[0-20]:[2222] LAT[20-40]:[409] LAT[40-100]:[224]
LAT[>100]:[163]
[*10/12/2020 18:45:21.0150]
[*10/12/2020 18:45:21.0206] HTT_PEER_DETAILS_TLV:
[*10/12/2020 18:45:21.0206] peer_type = 0
[*10/12/2020 18:45:21.0206] sw_peer_id = 98
[*10/12/2020 18:45:21.0206] vdev_id = 25
[*10/12/2020 18:45:21.0206] pdev_id = 0
[*10/12/2020 18:45:21.0206] ast_idx = 1187
[*10/12/2020 18:45:21.0206] mac_addr = 26:xx:cf:xx:d0:xx
[*10/12/2020 18:45:21.0206] peer_flags = 0x200006f9
[*10/12/2020 18:45:21.0206] qpeer_flags = 0x8
[*10/12/2020 18:45:21.0206]
[*10/12/2020 18:45:21.0206] HTT_STATS_PEER_ASR_STATS_TLV
[*10/12/2020 18:45:21.0206] asr_bmap: 0x8
[*10/12/2020 18:45:21.0206] asr_muedca_update_cnt: 1
[*10/12/2020 18:45:21.0206] asr_muedca_reset_cnt: 1
[*10/12/2020 18:45:21.0206] asr_ul_mu_bsr_trigger: 2376
[*10/12/2020 18:45:21.0206] asr_min_trig_intv- BE:0         BK:0 VI:0 VO:19
[*10/12/2020 18:45:21.0206] asr_max_trig_intv- BE:0         BK:0 VI:0 VO:20
[*10/12/2020 18:45:21.0207] asr_min_alloc_rate- BE:0         BK:0 VI:0 VO:12
[*10/12/2020 18:45:21.0207] asr_ul_su_data_ppdu_cnt- BE:0         BK:0 VI:0 VO:2149
[*10/12/2020 18:45:21.0207] asr_ul_su_data_ppdu_bytes- BE:0         BK:0 VI:0 VO:757546
[*10/12/2020 18:45:21.0207] asr_ul_mu_trig_ppdu_cnt- BE:0         BK:0 VI:0 VO:5002
[*10/12/2020 18:45:21.0207] asr_ul_mu_trig_ppdu_bytes- BE:0         BK:0 VI:0 VO:2400960
[*10/12/2020 18:45:21.0207] asr_ul_mu_data_ppdu_cnt- BE:0         BK:0 VI:0 VO:2134
[*10/12/2020 18:45:21.0207] asr_ul_mu_data_ppdu_bytes- BE:0         BK:0 VI:0 VO:736578
[*10/12/2020 18:45:21.0207] asr_ul_mu_data_padding_bytes- BE:0         BK:0 VI:0 VO:2953488
```