Understand AP Radio Reset Codes

Contents

Introduction

This document describes Radio Reset Codes for the Access Point (AP).

Background Information

This article pertains to Cisco IOS$^{®}$ APs running 8.5.135.0 / 15.3(3)JF8 and earlier.

In 8.5.140.0 / 15.3(3)JF9 and later, the Radio Reset Codes were changed; see the article Cisco Access Point Radio Reset Code Reference for the current behavior.

The Radio Reset Code can be seen from the AP CLI with these commands: **show controller dot11radio 0** or **show controller dot11radio 1**.

At the end of the output, the Radio Reset Code helps you to identify the reason for the radio reset.

Here is an example:

```
<#root>

AP#

show controllers dot11Radio 0 | i reset


Driver TX blocks: in use 0, high 0, at reset 0, fail 0 drop 0

Last radio reset code: 37


Radio resets - total:8 retries:0 failed:0

AP#

show controllers dot11Radio 1 | i reset


Driver TX blocks: in use 0, high 0, at reset 0, fail 0 drop 0

Last radio reset code: 37


Radio resets - total:8 retries:0 failed:0
```

Detailed Radio Reset History

To see the radio reset history, enter these privileged exec mode commands on the AP:

```
<#root>

ap#

show trace dot11_rst display time format local


ap#

show trace dot11_rst
```

Compare the radio reset history with the general AP log (**show ap log** command) to determine what went on around the time of the resets and how long the radios were unavailable.

Table of Radio Reset Codes

Reset Code #	Reset Code	Radio Reset Reason
1	RADIO_FC_FLASH	The radio has failed to respond to the "dot11 flash" command. Not applicable for 802.11n radios.
2	RADIO_FC_RESET	The radio has failed to respond to a request to reset the interface.
3	RADIO_FC_START	The radio failed to start.
4	RADIO_FC_CLIENT_FREE	The radio or radio driver was unable to completely remove a client that is no longer serviced by the radio.
5	RADIO_FC_TX_STATE	A completed packet transmission resulted in an unexpected status code from the hardware. This failure automatically results in a radio coredump written to the flash filesystem.
6	RADIO_FC_TX_STOPPED	One or more packets have been submitted to the radio to be transmitted, but have not been reported as completed for 60 seconds.
7	RADIO_FC_TX_STUCK	--not used--
8	RADIO_FC_TX_RING_ADDR	A packet that has completed transmission is reported with an invalid internal memory address. Not applicable to 802.11n radios.
9	RADIO_FC_TX_ACTIVE_Q	A transmit packet is attempted to be removed from an empty queue.
10	RADIO_FC_TX_INPROG	The driver attempts to free a packet that the radio still has in progress.
11	RADIO_FC_TX_REF_CNT	Memory for a completed transmission is attempted to be released twice.
12	RADIO_FC_TX_AMSDU_STATE	The status of a transmitted Aggregation MAC Service Data Unit (AMSDU) packet is indeterminate.

13	RADIO_FC_BA_LOST	An 802.11n Block Ack packet is assembled for a client that does not exist.
14	RADIO_FC_CMD_TIMEOUT	A command from the AP to the radio has taken 12 seconds without a response.
15	RADIO_FC_CMD_FAILED	The radio reported that a command from the AP has failed to execute.
16	RADIO_FC_CMD_BUSY	A command from the AP to the radio does not appear to complete. Not applicable to 802.11n radios.
17	RADIO_FC_BAP_ERR	A PCMCIA timeout occured when a radio register is accessed. Does not apply to 802.11n radios.apply to 802.11n radios.A PCMCIA timeout occured when a radio register is accessed. Does not apply to 802.11n radios.A PCMCIA timeout occured when a radio register is accessed. Does not apply to 802.11n radios.A PCMCIA timeout occured when a radio register is accessed. Does not apply to 802.11n radios.
18	RADIO_FC_LOAD_TIMEOUT	The AP timed out when it attempted to load the radio firmware.
19	RADIO_FC_LOAD_FAIL	The copy of radio firmware from the AP to the radio completed, but was not accepted by the radio.
20	RADIO_FC_RX_PTR	A received packet points to an invalid area of memory.
21	RADIO_FC_BUS_RESET	An unexpected radio reset occurred in a four-radio system.
22	RADIO_FC_GET_CODE	The AP was unable to find or load an appropriate radio firmware file to load into the radio. This could occur if the firmware image is corrupted or not present.
23	RADIO_FC_TX_JAMMED	The radio hardware transmitter-watchdog detected a stuck packet and a reset of only the hardware transmitter was unsuccessful .
24	RADIO_FC_CLIENT_STUCK	Client packets cannot be transmitted. Client packet stuck in radio for more than 60 seconds.
25	RADIO_FC_SPECTRUM	Spectrum Firmware, from Clean Air module, requires a radio reset.
26	RADIO_FC_RX_RING_ADDR	There is a problem in the Radio packet receive buffer. Bad RX Ring Address.
27	RADIO_FC_NDP_STUCK	--not used--
28	RADIO_RC_RF_MON	The radio goes into or out of monitor mode, due to the CLI enabled the Radio Frequency (RF) monitor/store mode.
29	RADIO_RC_RF_MON_PROM	The radio goes into or out of promiscuous monitor mode, due to turn on/off RF monitor promiscous mode.
30	RADIO_RC_TRACE	Radio debug tracing is turned on or off, due to start or stop all Dot11 driver tracing.
31	RADIO_RC_PCI_RESET	Hardware radio reset. PCI bus reset.
32	RADIO_RC_ANT_ALIGN	Start radio in special mode for directional antenna alignment.
33	RADIO_RC_DFS_NON_ROOT	Dynamic Frequency Selection reset for non-root radio.
34	RADIO_RC_DFS_NO_CHAN	Dynamic Frequency Selection reset due to no channels available.
35	RADIO_RC_DFS	Dynamic Frequency Selection channel change.
36	RADIO_RC_DFS_CHAN_WAIT	Dynamic Frequency Selection reset waits for available channel.
37	RADIO_RC_IDB_RESET	Radio interface reset.

38	RADIO_RC_IOS_RELOAD	Radio reset prior to Cisco IOS® software reload.
39	RADIO_RC_IOS_IP_ADR_CHG	Radio reset due to Cisco IOS® IP address change.
40	RADIO_RC_REFLASH	Radio reset prior to the radio reflash.
41	RADIO_RC_CCK_TX	CCK transmit on dual antennas enable or disable.
42	RADIO_RC_WME	Enable or disable World Mode IE.
43	RADIO_RC_FCC_TST_STOP	Stop FCC compliance test mode.
44	RADIO_RC_FCC_TST	Start FCC compliance test mode.
45	RADIO_RC_CAR_BUSY_TST	Carrier busy test via the CLI.
46	RADIO_RC_DRIVER_CHK	Reset if radio becomes disabled.
47	RADIO_RC_COMP_MODE	FCC test mode interface reset.
48	RADIO_RC_CONFIG	Radio reset due to configuration change.
49	RADIO_RC_MESH_BACKHAUL	Clear mesh backhaul.
50	RADIO_RC_MESH_LISTEN	Set as mesh listener. Radio reset due to enable/disable listening to broadcast on 802.11b (for mesh APs).
51	RADIO_RC_RST_TX_COMP	Reset on transmit completion.
52	RADIO_RC_DFER_MCAST	Reset on completion of deferred multicast packets.
53	RADIO_RC_IDB_ENABLE	Radio interface has been enabled.
54	RADIO_RC_IDB_SHUTDOWN	Radio interface has been shutdown.
55	RADIO_RC_DOT11_GO_DN	Cisco IOS® software interface goes down.
56	RADIO_RC_ETHER_GO_DN	Cisco IOS® ethernet link goes down.
57	RADIO_RC_IF_GO_UP	Cisco IOS® software interface comes up.
58	RADIO_RC_UPLINK_CLNT_DN	Uplink client goes away.
59	RADIO_RC_UPLINK_CLNT_UP	Uplink client comes up.
60	RADIO_RC_SET_CONFIG	Radio configuration change.
61	RADIO_RC_UPD_PHON_SUP	Symbol phone extension support has been enabled or disabled.
62	RADIO_RC_SET_CHANNEL	Radio channel set. Reset while channel from Control and Provisioning of Wireless Access Points (CAPWAP) is set.
63	RADIO_RC_HANDLE_UA	Universal Access (Mesh) is disabled.
64	RADIO_RC_RLDP_START	Rogue Location Discovery Protocol start.
65	RADIO_RC_RLDP_START	Rogue Location Discovery Protocol stop.
66	RADIO_RC_DFS_DEBUG	Dynamic Frequency Selection debug mode. Reset due to test Dynamic Frequency Selection (DFS) command.
67	RADIO_RC_HOSTNAME_CHG	Hostname change after association.
68	RADIO_RC_CMD_ROUTINE	Radio interface reset from command routines. Reset while station_role/beamforming/Space-Time Block Coding (STBC) CLI commands are configured.
69	RADIO_RC_EXIT_LOW_PWR	Radio exits inline Cisco Discovery Protocol (CDP) low power mode holddown.
70	RADIO_FC_FREQ_CMD_TO	Frequent command timeouts occur on the radio. Radio command timeouts are more than threshold [10 timeouts].
71	RADIO_RC_NO_REPORT	Indicates that while the radio state is updated on controller, no reset is reported.
72	RADIO_RC_INIT	--not used--

73	RADIO_FC_TX_DONE	Bad Tx done (or) bad off channel done.
74	RADIO_FC_RX_INPROG_PTR	Bad receive in progress pointer when you receive a packet from radio.
75	RADIO_RC_PROM_SERV	Reset while promiscous mode serving channel is set.
76	RADIO_FC_BAD_TXE_PTR	Bad Tx pointer.
77	RADIO_FC_RX_RING_INDEX	Bad Rx ring index.
78	RADIO_FC_TX_STUCK_462	--not used--
79	RADIO_FC_IFACE_BUS_DOWN	Radio interface bus down.
80	RADIO_FC_TX_CMPL_PAK	Wrong freeing of Tx completed packet.
81	RADIO_RC_RST_OFFC_COMP	Offchannel in prog is completed [zero] while radio waits to be stoppped.
82	RADIO_FC_PAK_POISON	--not used--
83	RADIO_FC_EU_STUCK_738	Encryption engine stuck specific to 8864 radio chipset.
84	RADIO_FC_BEACON_STUCK	Beacons not transmitted for last 10 minutes.
85	RADIO_FC_BAD_DTX_IN_Q	Bad packet in transmit queue.
86	RADIO_FC_INFINITE_LOOP	Debug code reset [Cisco bug ID CSCul63678]- infinite loop detected with Tx requeue client.
87	RADIO_FC_PREFETCH	DMA engine locked [War for Cisco bug ID CSCui54586 / BZ868].
88	RADIO_RC_DEAUTH_COMPL	Deauth client completed.