

mac80211 subsystem (advanced)

Information contained within this part of the book is of interest only for advanced interaction of mac80211 with drivers to exploit more hardware capabilities and improve performance.

LED support

Mac80211 supports various ways of blinking LEDs. Wherever possible, device LEDs should be exposed as LED class devices and hooked up to the appropriate trigger, which will then be triggered appropriately by mac80211.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 17)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    ieee80211_get_tx_led_name
    ieee80211_get_rx_led_name
    ieee80211_get_assoc_led_name
    ieee80211_get_radio_led_name
    ieee80211_tpt_blink
    ieee80211_tpt_led_trigger_flags
    ieee80211_create_tpt_led_trigger
```

Hardware crypto acceleration

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 30)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:doc: Hardware crypto acceleration
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 33)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    set_key_cmd
    ieee80211_key_conf
    ieee80211_key_flags
    ieee80211_get_tkip_plk
    ieee80211_get_tkip_plk_iv
    ieee80211_get_tkip_p2k
```

Powersave support

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 45)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:doc: Powersave support
```

Beacon filter support

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 51)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:doc: Beacon filter support
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 54)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions: ieee80211_beacon_loss
```

Multiple queues and QoS support

TBD

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 62)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions: ieee80211_tx_queue_params
```

Access point mode support

TBD

Some parts of the if_conf should be discussed here instead

Insert notes about VLAN interfaces with hw crypto here or in the hw crypto chapter.

support for powersaving clients

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 78)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:doc: AP support for powersaving clients
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 81)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    ieee80211_get_buffered_bc
    ieee80211_beacon_get
    ieee80211_sta_eosp
    ieee80211_frame_release_type
    ieee80211_sta_ps_transition
    ieee80211_sta_ps_transition_ni
    ieee80211_sta_set_buffered
    ieee80211_sta_block_awake
```

Supporting multiple virtual interfaces

TBD

Note: WDS with identical MAC address should almost always be OK

Insert notes about having multiple virtual interfaces with different MAC addresses here, note which configurations are supported by mac80211, add notes about supporting hw crypto with it.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 103)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    ieee80211_iterate_active_interfaces
    ieee80211_iterate_active_interfaces_atomic
```

Station handling

TODO

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 113)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    ieee80211_sta
    sta_notify_cmd
    ieee80211_find_sta
    ieee80211_find_sta_by_ifaddr
```

Hardware scan offload

TBD

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 125)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions: ieee80211_scan_completed
```

Aggregation

TX A-MPDU aggregation

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 134)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: net/mac80211/agg-tx.c
:doc: TX A-MPDU aggregation
```

RX A-MPDU aggregation

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-

```
master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api)
(80211)mac80211-advanced.rst, line 142)
```

Unknown directive type "kernel-doc".

```
.. kernel-doc:: net/mac80211/agg-rx.c
:doc: RX A-MPDU aggregation
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-
master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api)
(80211)mac80211-advanced.rst, line 147)
```

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions: ieee80211_ampdu_mlme_action
```

Spatial Multiplexing Powersave (SMPS)

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-
master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api)
(80211)mac80211-advanced.rst, line 153)
```

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:doc: Spatial multiplexing power save
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-
master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api)
(80211)mac80211-advanced.rst, line 156)
```

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    ieee80211_request_smgs
    ieee80211_smgs_mode
```

TBD

This part of the book describes the rate control algorithm interface and how it relates to mac80211 and drivers.

Rate Control API

TBD

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-
master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api)
(80211)mac80211-advanced.rst, line 171)
```

Unknown directive type "kernel-doc".

```
.. kernel-doc:: include/net/mac80211.h
:functions:
    ieee80211_start_tx_ba_session
    ieee80211_start_tx_ba_cb_irqsafe
    ieee80211_stop_tx_ba_session
    ieee80211_stop_tx_ba_cb_irqsafe
    ieee80211_rate_control_changed
    ieee80211_tx_rate_control
```

TBD

This part of the book describes mac80211 internals.

Key handling

Key handling basics

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 190)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: net/mac80211/key.c
   :doc: Key handling basics
```

MORE TBD

TBD

Receive processing

TBD

Transmit processing

TBD

Station info handling

Programming information

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 214)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: net/mac80211/sta_info.h
   :functions:
       sta_info
       ieee80211_sta_info_flags
```

STA information lifetime rules

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 222)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: net/mac80211/sta_info.c
   :doc: STA information lifetime rules
```

Aggregation Functions

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\driver-api\80211\linux-master) (Documentation) (driver-api) (80211)mac80211-advanced.rst, line 228)

Unknown directive type "kernel-doc".

```
.. kernel-doc:: net/mac80211/sta_info.h
   :functions:
       sta_ampdu_mlme
       tid_ampdu_tx
       tid_ampdu_rx
```

Synchronisation Functions



TBD

Locking, lots of RCU

