

**NAME**

**iw**x - Intel WiFi 6 IEEE 802.11ax wireless network driver

**SYNOPSIS**

**device iw**x

**device wlan**

In rc.conf(5):

**devmatch\_blocklist="if\_iwlwifi"**

**kld\_list="if\_iwx"**

In sysctl.conf(5):

**dev.iwx.?.debug=1**

**DESCRIPTION**

The **iw**x driver supports the Intel Wi-Fi 6 series of M.2 wireless network adapters. If the appropriate hardware is detected, and iwlwifi(4) is blacklisted in rc.conf(5), the driver will be automatically loaded with devmatch(8). The **iw**x driver can be configured at runtime with ifconfig(8) or at boot with rc.conf(5).

These are the modes the **iw**x driver can operate in:

**station mode** This is used when associating with an access point, through which all traffic passes. Background scanning is supported in this mode, see ifconfig(8). Station mode is the default.

**monitor mode**

In this mode the driver is able to receive packets without associating with an access point. This disables the internal receive filter and enables the card to capture packets from networks which it wouldn't normally have access to, or to scan for access points.

**HARDWARE**

The **iw**x driver supports the following M.2 wireless network adapters:

- ◆ Intel Wi-Fi 6 AX200
- ◆ Intel Wi-Fi 6 AX201 CNVi
- ◆ Intel Wi-Fi 6 AX210
- ◆ Intel Wi-Fi 6 AX211 CNVi

**SYSCTL VARIABLES**

The **iw**x driver supports the following sysctl(8) variables:

*dev.iwx.?.debug* Specify debug level as a bitmask. Default '0'.

## FILES

The **iwx** driver requires firmware from *ports/net/wifi-firmware-iwlwifi-kmod*. This firmware package will be installed automatically with *fwget(8)* if the appropriate hardware is detected at installation or runtime.

## DIAGNOSTICS

**iwx0: device timeout** A frame dispatched to the hardware for transmission did not complete in time. The driver will reset the hardware. This should not happen.

**iwx0: fatal firmware error** For some reason, the firmware crashed. The driver will reset the hardware. This should not happen.

**iwx0: radio is disabled by hardware switch** The radio transmitter is off and thus no packet can go out. The driver will reset the hardware. Make sure the laptop radio switch is on.

**iwx0: could not read firmware ... (error N)** For some reason, the driver was unable to read the firmware image from the filesystem. The file might be missing or corrupted.

**iwx0: firmware too short: N bytes** The firmware image is corrupted and can't be loaded into the adapter.

**iwx0: could not load firmware** An attempt to load the firmware into the adapter failed. The driver will reset the hardware.

## SEE ALSO

*intro(4)*, *iwlwifi(4)*, *iwlwifw(4)*, *wlan(4)*, *networking(7)*, *fwget(8)*, *ifconfig(8)*, *wpa\_supplicant(8)*

## HISTORY

The **iwx** device driver first appeared in OpenBSD 6.7, Haiku R1/beta4, and FreeBSD 15.0.

## CAVEATS

The **iwx** driver does not support hardware encryption offload.

The **iwx** driver does not support 802.11ax. Additional work is required in *ieee80211(9)* before those features can be supported.