NAME

ae - Attansic/Atheros L2 FastEthernet controller driver

SYNOPSIS

To compile this driver into the kernel, place the following lines in your kernel configuration file:

```
device miibus
device ae
```

Alternatively, to load the driver as a module at boot time, place the following line in loader.conf(5):

```
if_ae_load="YES"
```

DESCRIPTION

The **ae** device driver provides support for Attansic/Atheros L2 PCIe FastEthernet controllers.

The controller supports hardware Ethernet checksum processing, hardware VLAN tag stripping/insertion and an interrupt moderation mechanism. Attansic L2 also features a 64-bit multicast hash filter.

The **ae** driver supports the following media types:

autoselect Enable autoselection of the media type and options. The user can manually override the autoselected mode by adding media options to rc.conf(5).

10baseT/UTP Select 10Mbps operation.

100baseTX Set 100Mbps (FastEthernet) operation.

The **ae** driver provides support for the following media options:

full-duplex Force full duplex operation.

half-duplex
Force half duplex operation.

For more information on configuring this device, see ifconfig(8).

HARDWARE

The **ae** driver supports Attansic/Atheros L2 PCIe FastEthernet controllers, and is known to support the following hardware:

- ASUS EeePC 701
- ASUS EeePC 900

Other hardware may or may not work with this driver.

LOADER TUNABLES

Tunables can be set at the loader(8) prompt before booting the kernel or stored in loader.conf(5).

hw.ae.msi_disable

This tunable disables MSI support on the Ethernet hardware. The default value is 0.

SYSCTL VARIABLES

The **ae** driver collects a number of useful MAC counter during the work. The statistics is available via the *dev.ae.%d.stats* sysctl(8) tree, where %d corresponds to the controller number.

DIAGNOSTICS

ae%d: watchdog timeout. The device has stopped responding to the network, or there is a problem with the network connection (cable).

ae%d: reset timeout. The card reset operation has been timed out.

ae%d: Generating random ethernet address. No valid Ethernet address was found in the controller NVRAM and registers. Random locally administered address with ASUS OUI identifier will be used instead.

SEE ALSO

altq(4), arp(4), miibus(4), netintro(4), ng_ether(4), vlan(4), ifconfig(8)

HISTORY

The **ae** driver and this manual page was written by Stanislav Sedov <*stas@FreeBSD.org*>. It first appeared in FreeBSD 7.1.

BUGS

The Attansic L2 FastEthernet controller supports DMA but does not use a descriptor based transfer mechanism via scatter-gather DMA. Thus the data should be copied to/from the controller memory on each transmit/receive. Furthermore, a lot of data alignment restrictions apply. This may introduce a high CPU load on systems with heavy network activity. Luckily enough this should not be a problem on modern hardware as L2 does not support speeds faster than 100Mbps.