

NAME

ipheth - USB Apple iPhone/iPad tethered Ethernet driver

SYNOPSIS

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

```
if_ipheth_load="YES"
```

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

```
device uhci
device ohci
device usb
device miibus
device uether
device ipheth
```

DESCRIPTION

The **ipheth** driver provides support for network access through Apple iPhone and iPad devices, often referred to as USB tethering.

ipheth should work with any Apple iPhone or iPad device. In most cases this must be explicitly enabled on the device first.

For more information on configuring this device, see ifconfig(8). The device does not support different media types or options.

HARDWARE

The following devices are supported by the **ipheth** driver:

- Apple iPhone tethering (all models)
- Apple iPad tethering (all models)

EXAMPLES**Example 1: Manual Configuration**

The following example shows how to manually configure network access on a device that is not automatically recognized.

First, load the driver and find out the unit and the address of the USB Apple device:

```
# kldload ipheth
# usbconfig | grep Apple
ugen0.2: <Apple Inc. iPhone> at usb0, cfg=0 md=HOST spd=HIGH (480Mbps) pwr=ON (500mA)
```

In this example, the unit and the address of the device is 0.2 ("ugen0.2"), and its configuration index is 0 ("cfg=0").

Secondly, check what other configurations are available for the device:

```
# usbconfig -d 0.2 dump_all_config_desc | grep -E '^ Conf|iConf'
Configuration index 0
  iConfiguration = 0x0005 <PTP>
Configuration index 1
  iConfiguration = 0x0006 <iPod USB Interface>
Configuration index 2
  iConfiguration = 0x0007 <PTP + Apple Mobile Device>
Configuration index 3
  iConfiguration = 0x0008 <PTP + Apple Mobile Device + Apple USB Ethernet>
```

In this example, there are 4 different configurations available. The configuration with index 3 seems to be related to Ethernet. It is time to configure the device:

```
# usbconfig -d 0.2 set_config 3
# usbconfig | grep 'Apple.*cfg=3'
ugen0.2: <Apple Inc. iPhone> at usb0, cfg=3 md=HOST spd=HIGH (480Mbps) pwr=ON (500mA)
```

At this point the Apple device should ask whether the FreeBSD machine can be trusted ("Mobile Data" has to be on).

A new *ue* USB Ethernet interface should become available:

```
# dmesg | grep 'ue[0-9]'
ue0: <USB Ethernet> on ipheth0
ue0: bpf attached
ue0: Ethernet address: 4e:7c:5f:2c:5f:7a
```

At this point it might be necessary to run `usbmuxd(1)` (available in `ports(7)` at `comms/usbmuxd`):

```
# usbmuxd --enable-exit --foreground --user root --verbose
```

Now it is time to configure the network interface:

```
# sysrc ifconfig_ue0="SYNCDHCP"  
ifconfig_ue0: -> SYNCDHCP  
# service netif restart ue0
```

That is it. The machine should now be connected to the network via USB tethering.

SEE ALSO

arp(4), cdce(4), cdceem(4), intro(4), netintro(4), urndis(4), usb(4), ifconfig(8), usbconfig(8)

HISTORY

The **ipheth** device driver first appeared in FreeBSD 8.2.

AUTHORS

The **ipheth** driver was written by Hans Petter Selasky <hselasky@FreeBSD.org>.

BUGS

Some devices are not recognized automatically and may need to be manually configured to use an alternative configuration with the `usbconfig(8)` utility. See *EXAMPLES* for workarounds.