

NAME

udbp - USB Double Bulk Pipe driver

SYNOPSIS

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

```
device udbp
```

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

```
udbp_load="YES"
```

DESCRIPTION

The **udbp** driver provides support for host-to-host cables that contain at least two bulk pipes (one for each direction). This typically includes cables branded for use with **Windows USB Easy Transfer**, and many cables based on the Prolific PL2xx1 series of USB bridge chips. A useful (but non-comprehensive) list of compatible USB host cables is listed in the *SEE ALSO* section below.

It requires netgraph(4) to be available. This can be done either by adding **options NETGRAPH** to your kernel configuration file, or alternatively loading netgraph(4) as a module, either from */boot/loader.conf* or from the command line, before the **udbp** module.

EXAMPLES

```
options NETGRAPH
device udbp
```

Add the **udbp** driver to the kernel.

```
kldload netgraph
kldload udbp
```

Load the netgraph(4) module and then the **udbp** driver.

```
ngctl mkpeer udbp0: eiface data ether
ifconfig ngeth0 ether aa:dd:xx:xx:xx
ifconfig ngeth0 inet 169.254.x.x/16
```

Create a new Ethernet network interface node and connect its ether hook to the data hook of the **udbp** driver.

This enables FreeBSD to communicate with a Linux peer (e.g. using the **plusb** driver). The Linux node should be configured to prefer link-local IPv4 addresses (e.g. using Network Manager in Debian and Red Hat derived distributions).

Whilst both FreeBSD and Linux are able to interoperate by loosely following CDC EEM 1.0 in their behaviour, neither implementation has been expressly designed to follow its specification.

SEE ALSO

netgraph(4), ng_iface(4), ohci(4), uhci(4), usb(4), ngctl(8)

Universal Serial Bus: Communications Class Subclass Specification for Ethernet Emulation Model Devices, USB Implementers Forum, Inc., Revision 1.0,

http://www.usb.org/developers/docs/devclass_docs/CDC_EEM10.pdf, February 2, 2005.

Total Commander: Supported cables for USB cable connection, Ghisler Software GmbH.,

<https://www.ghisler.com/cables/index.htm>.

CAVEATS

The point-to-point nature and additional latency of USB host-host links makes them unsuitable as a "drop-in" replacement for an Ethernet LAN; for a USB 3.0 SuperSpeed cable, latency is comparable to 100BaseTX Ethernet (but often worse), with throughput comparable to 2.5GBASE-T.

However, their energy efficiency makes them attractive for embedded applications. A Plugable PL27A1 cable claims 24mA of USB3 bus power, as compared to 150mA for a typical USB 3.0 to Gigabit Ethernet interface.

HISTORY

The **udbp** driver first appeared in FreeBSD 5.0.

BUGS

The **udbp** driver does not support the special packets described in section 5.1 of the CDC EEM specification.

AUTHORS

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