NAME

ukbd - USB keyboard driver

SYNOPSIS

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

> **device ukbd**
> **device hid**
> **device usb**

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

> ukbd_load="YES"

DESCRIPTION

The **ukbd** driver provides support for keyboards that attach to the USB port. usb(4) and one of uhci(4) or ohci(4) must be configured in the kernel as well.

CONFIGURATION

By default, the keyboard subsystem does not create the appropriate devices yet. Make sure you reconfigure your kernel with the following option in the kernel config file:

> options KBD_INSTALL_CDEV

If both an AT keyboard USB keyboards are used at the same time, the AT keyboard will appear as *kbd0* in */dev*. The USB keyboards will be *kbd1*, *kbd2*, etc. You can see some information about the keyboard with the following command:

> kbdcontrol -i < /dev/kbd1

or load a keymap with

> kbdcontrol -l keymaps/pt.iso < /dev/kbd1

See kbdcontrol(1) for more possible options.

You can swap console keyboards by using the command

> kbdcontrol -k /dev/kbd1

From this point on, the first USB keyboard will be the keyboard to be used by the console.

If you want to use a USB keyboard as your default and not use an AT keyboard at all, you will have to remove the **device atkbd** line from the kernel configuration file. Because of the device initialization order, the USB keyboard will be detected *after* the console driver initializes itself and you have to explicitly tell the console driver to use the existence of the USB keyboard. This can be done in one of the following two ways.

Run the following command as a part of system initialization:

    kbdcontrol -k /dev/kbd0 < /dev/ttyv0 > /dev/null

(Note that as the USB keyboard is the only keyboard, it is accessed as */dev/kbd0*) or otherwise tell the console driver to periodically look for a keyboard by setting a flag in the kernel configuration file:

    device sc0 at isa? flags 0x100

With the above flag, the console driver will try to detect any keyboard in the system if it did not detect one while it was initialized at boot time.

DRIVER CONFIGURATION
      options KBD_INSTALL_CDEV

Make the keyboards available through a character device in */dev*.

      options UKBD_DFLT_KEYMAP
      makeoptions UKBD_DFLT_KEYMAP=fr.iso

The above lines will put the French ISO keymap in the ukbd driver. You can specify any keymap in */usr/share/syscons/keymaps* or */usr/share/vt/keymaps* (depending on the console driver being used) with this option.

      options KBD_DISABLE_KEYMAP_LOADING

Do not allow the user to change the keymap.

      options KBD_DELAY1=200

Set the keyboard initial key repeat delay.

options KBD_DELAY2=15

Set the keyboard key repeat delay.

Note that these options also affect the AT keyboard driver, atkbd(4).

SYSCTL VARIABLES
The following variables are available as both sysctl(8) variables and loader(8) tunables:

hw.usb.ukbd.debug
Debug output level, where 0 is debugging disabled and larger values increase debug message verbosity. Default is 0.

FILES
/dev/kbd* blocking device nodes

EXAMPLES
device ukbd

Add the **ukbd** driver to the kernel.

SEE ALSO
kbdcontrol(1), ohci(4), syscons(4), uhci(4), usb(4), vt(4), config(8)

AUTHORS
The **ukbd** driver was written by Lennart Augustsson *<augustss@cs.chalmers.se>* for NetBSD and was substantially rewritten for FreeBSD by Kazutaka YOKOTA *<yokota@zodiac.mech.utsunomiya-u.ac.jp>*.

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