Driver for active AVM Controller.

The driver provides a kernel capi2.0 Interface (kernelcapi) and
on top of this a User-Level-CAPI2.0-interface (capi)
and a driver to connect isdn4linux with CAPI2.0 (capidrv).
The lowlevel interface can be used to implement a CAPI2.0
also for passive cards since July 1999.

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The command avmcapictrl is part of the isdn4k-utils.
t4-files can be found at ftp://ftp.avm.de/cardware/b1/linux/firmware

Currently supported cards:
        B1 ISA (all versions)
        B1 PCI
        T1/T1B (HEMA card)
        M1
        M2
        B1 PCMCIA

Installing

You need at least /dev/capi20 to load the firmware.

```
mknod /dev/capi20 c 68 0
mknod /dev/capi20.00 c 68 1
mknod /dev/capi20.01 c 68 2
.
.
.
mknod /dev/capi20.19 c 68 20
```

Running

To use the card you need the t4-files to download the firmware.
AVM GmbH provides several t4-files for the different D-channel
protocols (b1.t4 for Euro-ISDN). Install these file in /lib/isdn.

if you configure as modules load the modules this way:

```
insmod /lib/modules/current/misc/capiutil.o
insmod /lib/modules/current/misc/b1.o
insmod /lib/modules/current/misc/kernelcapi.o
insmod /lib/modules/current/misc/capidrv.o
insmod /lib/modules/current/misc/capi.o
```

if you have an B1-PCI card load the module b1pci.o
```
insmod /lib/modules/current/misc/b1pci.o
```
and load the firmware with
```
avmcapictrl load /lib/isdn/b1.t4 1
```

if you have an B1-ISA card load the module b1isa.o
and add the card by calling
```
avmcapictrl add 0x150 15
```

```
and load the firmware by calling
avmcapictrl load /lib/isdn/b1.t4 1

if you have an T1-ISA card load the module t1isa.o
and add the card by calling
avmcapictrl add 0x450 15 T1 0
and load the firmware by calling
avmcapictrl load /lib/isdn/t1.t4 1

if you have an PCMCIA card (B1/M1/M2) load the module b1pcmcia.o
before you insert the card.

Leased Lines with B1
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Init card and load firmware.
For an D64S use "FV: 1" as phone number
For an D64S2 use "FV: 1" and "FV: 2" for multilink
or "FV: 1,2" to use CAPI channel bundling.

/proc-Interface
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/proc/capi:
  dr-xr-xr-x   2 root     root            0 Jul  1 14:03 .
  dr-xr-xr-x  82 root     root            0 Jun 30 19:08 ..
  -r--r--r--   1 root     root            0 Jul  1 14:03 applications
  -r--r--r--   1 root     root            0 Jul  1 14:03 applstats
  -r--r--r--   1 root     root            0 Jul  1 14:03 capi20
  -r--r--r--   1 root     root            0 Jul  1 14:03 capidrv
  -r--r--r--   1 root     root            0 Jul  1 14:03 controller
  -r--r--r--   1 root     root            0 Jul  1 14:03 contrstats
  -r--r--r--   1 root     root            0 Jul  1 14:03 driver
  -r--r--r--   1 root     root            0 Jul  1 14:03 ncci
  -r--r--r--   1 root     root            0 Jul  1 14:03 users

/proc/capi/applications:
   applid level3cnt datablkcnt datablklen ncci-cnt recvqueuelen
        level3cnt: capi_register parameter
        datablkcnt: capi_register parameter
        ncci-cnt: current number of nccis (connections)
        recvqueuelen: number of messages on receive queue
   for example:
1 -2 16 2048 1 0
2 2 7 2048 1 0

/proc/capi/applstats:
   applid recvctlmsg nrecvdatamsg nsentctlmsg nsentdatamsg
        recvctlmsg: capi messages received without DATA_B3_IND
        recvdatamsg: capi DATA_B3_IND received
        sentctlmsg: capi messages sent without DATA_B3_REQ
        sentdatamsg: capi DATA_B3_REQ sent
   for example:
1 2057 1699 1721 1699

/proc/capi/capi20: statistics of capi.o (/dev/capi20)
    minor nopen nrecvdropmsg nrecvctlmsg nrecvdatamsg sentctlmsg sentdatamsg
```

```
        minor: minor device number of capi device
        nopen: number of calls to devices open
        nrecvdropmsg: capi messages dropped (messages in recvqueue in close)
        nrecvctlmsg: capi messages received without DATA_B3_IND
        nrecvdatamsg: capi DATA_B3_IND received
        nsentctlmsg: capi messages sent without DATA_B3_REQ
        nsentdatamsg: capi DATA_B3_REQ sent

   for example:
1 2 18 0 16 2

/proc/capi/capidrv: statistics of capidrv.o (capi messages)
    nrecvctlmsg nrecvdatamsg sentctlmsg sentdatamsg
        nrecvctlmsg: capi messages received without DATA_B3_IND
        nrecvdatamsg: capi DATA_B3_IND received
        nsentctlmsg: capi messages sent without DATA_B3_REQ
        nsentdatamsg: capi DATA_B3_REQ sent
   for example:
2780 2226 2256 2226

/proc/capi/controller:
   controller drivername state cardname   controllerinfo
   for example:
1 b1pci      running  b1pci-e000       B1 3.07-01 0xe000 19
2 t1isa      running  t1isa-450        B1 3.07-01 0x450 11 0
3 b1pcmcia   running  m2-150           B1 3.07-01 0x150 5

/proc/capi/contrstats:
    controller nrecvctlmsg nrecvdatamsg sentctlmsg sentdatamsg
        nrecvctlmsg: capi messages received without DATA_B3_IND
        nrecvdatamsg: capi DATA_B3_IND received
        nsentctlmsg: capi messages sent without DATA_B3_REQ
        nsentdatamsg: capi DATA_B3_REQ sent
   for example:
1 2845 2272 2310 2274
2 2 0 2 0
3 2 0 2 0

/proc/capi/driver:
   drivername ncontroller
   for example:
b1pci                           1
t1isa                           1
b1pcmcia                        1
b1isa                           0

/proc/capi/ncci:
   apllid ncci winsize sendwindow
   for example:
1 0x10101 8 0

/proc/capi/users: kernelmodules that use the kernelcapi.
   name
   for example:
capidrv
capi20
```

Questions

Check out the FAQ (ftp.isdn4linux.de) or subscribe to the
linux-avmb1@calle.in-berlin.de mailing list by sending
a mail to majordomo@calle.in-berlin.de with
subscribe linux-avmb1
in the body.

German documentation and several scripts can be found at
ftp://ftp.avm.de/cardware/b1/linux/

Bugs

If you find any please let me know.

Enjoy,

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