Packet writing

Getting started quick

- Select packet support in the block device section and UDF support in the file system section.
- Compile and install kernel and modules, reboot.
- You need the udftools package (pktsetup, mkudffs, cdrwtool). Download from https://github.com/pali/udftools
- Grab a new CD-RW disc and format it (assuming CD-RW is hdc, substitute as appropriate):

```
# cdrwtool -d /dev/hdc -q
```

- Setup your writer:

```
# pktsetup dev_name /dev/hdc
```

- Now you can mount /dev/pktcdvd/dev_name and copy files to it. Enjoy:

```
# mount /dev/pktcdvd/dev_name /cdrom -t udf -o rw,noatime
```

Packet writing for DVD-RW media

DVD-RW discs can be written to much like CD-RW discs if they are in the so called "restricted overwrite" mode. To put a disc in restricted overwrite mode, run:

```
# dvd+rw-format /dev/hdc
```

You can then use the disc the same way you would use a CD-RW disc:

```
# pktsetup dev_name /dev/hdc
# mount /dev/pktcdvd/dev_name /cdrom -t udf -o rw,noatime
```

Packet writing for DVD+RW media

According to the DVD+RW specification, a drive supporting DVD+RW discs shall implement "true random writes with 2KB granularity", which means that it should be possible to put any filesystem with a block size >= 2KB on such a disc. For example, it should be possible to do:

```
# dvd+rw-format /dev/hdc   (only needed if the disc has never
                            been formatted)
# mkudffs /dev/hdc
# mount /dev/hdc /cdrom -t udf -o rw,noatime
```

However, some drives don't follow the specification and expect the host to perform aligned writes at 32KB boundaries. Other drives do follow the specification, but suffer bad performance problems if the writes are not 32KB aligned.

Both problems can be solved by using the pktcdvd driver, which always generates aligned writes:

```
# dvd+rw-format /dev/hdc
# pktsetup dev_name /dev/hdc
# mkudffs /dev/pktcdvd/dev_name
# mount /dev/pktcdvd/dev_name /cdrom -t udf -o rw,noatime
```

Packet writing for DVD-RAM media

DVD-RAM discs are random writable, so using the pktcdvd driver is not necessary. However, using the pktcdvd driver can improve performance in the same way it does for DVD+RW media.

Notes

- CD-RW media can usually not be overwritten more than about 1000 times, so to avoid unnecessary wear on the media, you should always use the noatime mount option.
- Defect management (ie automatic remapping of bad sectors) has not been implemented yet, so you are likely to get at least some filesystem corruption if the disc wears out.
- Since the pktcdvd driver makes the disc appear as a regular block device with a 2KB block size, you can put any filesystem you like on the disc. For example, run:

```
# /sbin/mke2fs /dev/pktcdvd/dev_name
```

to create an ext2 filesystem on the disc.

Using the pktcdvd sysfs interface

Since Linux 2.6.20, the pktcdvd module has a sysfs interface and can be controlled by it. For example the "pktcdvd" tool uses this interface. (see http://tom.ist-im-web.de/linux/software/pktcdvd)

"pktcdvd" works similar to "pktsetup", e.g.:

```
# pktcdvd -a dev_name /dev/hdc
# mkudffs /dev/pktcdvd/dev_name
# mount -t udf -o rw,noatime /dev/pktcdvd/dev_name /dvdram
# cp files /dvdram
# umount /dvdram
# pktcdvd -r dev_name
```

For a description of the sysfs interface look into the file:

Documentation/ABI/testing/sysfs-class-pktcdvd

Using the pktcdvd debugfs interface

To read pktcdvd device infos in human readable form, do:

```
# cat /sys/kernel/debug/pktcdvd/pktcdvd[0-7]/info
```

For a description of the debugfs interface look into the file:

Documentation/ABI/testing/debugfs-pktcdvd

Links

See http://fy.chalmers.se/~appro/linux/DVD+RW/ for more information about DVD writing.