0821b668-0

COLLABORATORS

	TITLE : 0821b668-0	

ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY		November 2, 2022	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

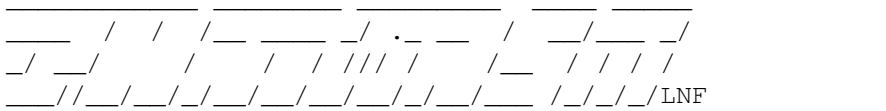
Chapter 1

0821b668-0

1.1 PackDev

PackDev
A Device Packer With XPK Support
V 1.6
by Christian Wasner
03-Sep-95

---- ANOTHER FINE PHANTASM TOOL ----



1.2 Legal Stuff

Disclaimer

The author cannot be held liable for the suitability or accuracy of this manual and/or the program(s) it describes. Any damage directly or indirectly caused by the use or misuse of this manual and/or the program it describes is the sole responsibility of the user her/him self.

Copyright/Distribution

These programs are FREEWARE, so no financial donations are required (but welcome). They may be freely distributed as long as all files remain unchanged and are included with the distribution. Distribution on disks or CDs is permitted only on the disks or CDs from Fred Fish or the Aminet CDs. Electronical distribution (e.g. by Aminet, mailboxes, modems) is allowed. Inclusion into freeware software packages is allowed, inclusion into other packages must be expressly allowed by me in written form.

The following files should come along:

PackDev (24216 bytes)
PackDev.guide (32088 bytes)

1.3 Introduction

With this program you can read or write data directly from/to a disk. The blocks of the disk are read and stored into a file. When reading from a DOS disk, only the blocks that are used are archived. When writing an archive to a disk, only the blocks are written that are stored in the archive. Optionally the data read from a disk can be packed with an xpk packer. The program currently only has a shell interface, but it won't crash if started from workbench.

All this sounds like "Oh no, yet another DMS clone", but this program can handle any device with a filesystem (e.g. DHx:, DFx:, a RAD: of any size etc.), DMS can only handle floppy disks or devices with the size of floppy disks. Even Non-DOS disks can be handled (but then all blocks are read). Another advantage of PackDev is that is doesn't use stolen code like the authors of DMS do (see below). PackDev supports the xpk packer system, so

```
it’s  much  more  flexible  than DMS.  You can use any
                xpk
                 packer you like,
i.e.   you  can  use a packer suited to the type of data on the disk.  When
comparing  size,  you  see that PackDev is only 22 KB long.  If you pack it
with PowerPacker, it would be less than 12 KB !

A disk is read as follows:

   1. Read
                device
                 data from DOS and the disk bootblock
   2. Check  if  the
                filesystem
                  of  the disk is supported (currently OFS,
      FFS,  OFS  International,  FFS International, OFS Directory Dache and
      FFS Directory Cache are supported)
   3. Inhibit
                device
                   If the
                filesystem
                 is supported and the ALL keyword is not set:

   4. Read root block (contains location of block allocation map = BAM)
   5. Read BAM and store it (after packing, if specified)
   5. Read used blocks and store them (after packing, if specified)
   6. Quit

   If the
                filesystem
                 is not supported or the ALL keyword is set:

   4. Read all blocks and store them (after packing, if specified)
   5. Quit

Writing functions similarly.

When  writing  to  a
                filesystem
                , DevPack will only allow
                filesystems
                 that
are  exactly  of the same partition size, block size and number of reserved
blocks.   If the disk should be formatted, the track size of the disk (e.g.
11 blocks for a floppy disk) must currently be equal, too.
```

1.4 Documentation

```
                Program:  PackDev

Template: FROM/O,TO/O,P=PACK/K/O,XB=XPKBUFSIZE/K/N/O,M=MEMTYPE/K/O,
          CU=CLRUNUSED/S/O,ETDF=ETDFORMAT/S/O,TDF=TDFORMAT/S/O,
          TDFL=TDFLABEL/S/O,NVF=NOVERIFY/S/O,ALL/S/O,NV=NOVERBOSE/S/O,
          Q=QUIET/S/O,NC=NOCONFIRM/S/O,VIEWFILE/K/O,VIEWFILESYS/K/O,
```

```
          TESTFILE/K/O,BLOCKLIST/K/O,PASSWORD/K/O,TN=TRUENAME/S/O

Purpose:  Reading/writing  data  directly from/to
              filesystems
               with
              xpk
                        support.

          The following parameters are supported:


               FROM, TO

               PACK (or P)

               MEMTYPE (or M)

               CLRUNUSED (or CU)

               ETDFORMAT (or ETDF)

               TDFORMAT (or TDF)

               TDFLABEL (or TDFL)

               NOVERIFY (or NVF)

               ALL

               NOVERBOSE (or NV)

               QUIET (or Q)

               NOCONFIRM (or NC)

               VIEWFILE

               VIEWFILESYS

               TESTFILE

               BLOCKLIST

               PASSWORD

               TRUENAME (or TN)

               FORCE (or F)

               Examples for usage
```

1.5 Packers

XPK packers and their efficiency with PackDev

All packers were used with an efficiency of 100. The source disk was the Workbench 3.0 disk from which devs#?, install#? prefs#?, system#? and libs#? were deleted in order to get a slightly fragmented disk that is app. 50% full. the test computers were an A500 with a 030 board (25 MHz) along with the disk in DF0: (a typical usage with an average-speed CPU) and an A4000/060 along with the disk in RAD: (one of the fastest Amigas along with one of the fastest device). The data on disk was 422400 bytes. Only packing was tested.

		A500/030/DF0:				A4000/060/RAD:				
Vers.	Packer	Time	Size	Bytes/s	Gain/s	Time	Size	Bytes/s	Gain/s	
1.98	MASH	44.4	201516	9500	4977	5.0	201520	84800	44353	+
1.2	CBR1	23.2	365012	18200	2473	0.4	365012	1056000	143470	
1.0	ACCA	23.8	261604	17750	6761	0.6	261604	728250	277234	
36.1	LHLB	80.3	215996	5250	2569	8.1	215996	52100	25481	
1.10	SQSH	41.6	229820	10150	4631	3.7	229820	114750	52331	
1.0	SMPL	25.5	372960	16550	1937	0.8	372960	555750	65052	
2.0	SHRI	84.9	191300	4950	2723	7.6	191304	55400	30327	+
1.2	RLEN	23.9	358232	17600	2680	0.4	358232	960000	145836	
3.3	RDCN	23.6	264364	17900	6707	0.5	264360	782200	292666	+
1.0	NUKE	31.1	220136	13550	6499	2.1	220136	201100	96316	
1.0	NONE	22.6	436396	18650	-618	0.4	436396	1056000	-34990	#
1.0	IMPL	136.7	214756	3050	1518	17.8	214756	23650	11639	
1.0	IDEA	27.4	436520	15350	-514	0.9	436520	449350	-15021	*
0.63	HUFF	27.4	317788	15350	3812	1.2	317788	357950	88654	
1.36	HFMN	24.1	315188	17500	4452	0.5	315192	782200	198533	+
1.3	FEAL	35.7	436512	11800	-395	1.7	436512	245550	-8204	*
1.6	FAST	33.5	250536	12600	5136	2.0	250536	215500	87685	
1.2	ENCO	23.3	436288	18100	-595	0.4	436288	1056000	-34720	*
0.1	DLTA	23.2	436180	18150	-593	0.4	436180	1056000	-34450	%
0.58	DHUF	23.1	436228	18250	-598	0.4	436228	1056000	-34570	$
1.0	CBR0	23.5	365012	17900	2437	0.4	365012	1005700	136638	
3.0	BLZW	25.1	262112	16800	6375	0.9	262116	459100	174221	+
1.6	RAKE	26.5	212108	15900	7935	1.1	212112	398450	198384	+
1.0	PWPK	65.0	223624	6500	3059	7.0	223628	60150	28315	+

*: These libraries are crypters, they don't pack
#: This is a do-nothing library, it obviously doesn't pack
$: This library seems to be nonfunctional
+: The archive sizes are different on different systems. I assume that these packers need a minimum input buffer size, and when the disk is completely read and the buffer is not filled with enough data, the packer packs also the remaining space of the buffer which contains random trash. Perhaps someone knows better.
%: This is a packer specialized in sounds

Note that I cannot get the packer libraries xpkCRMS.library and xpkCRM2.library opened (yes, I have the CrM.library), so their specs are missing here.

1.6 Compatibility

This program needs OS V2.0+ to run. If you want to use xpk packers (very likely), you need the xpkmaster.library and some packer sublibraries (I suggest SHRI, MASH, NUKE, RAKE, RDCN or ACCA). The xpk package and some more sublibraries should be present in any good pd mailbox and in the Aminet. They are not included here because it's much larger than the PackDev package.

1.7 Bugs

If the disk should be formatted, the track size of the disk (e.g. 11 blocks for a floppy disk) must currently be equal to the track size of the disk from which the file is read. This is not necessary, but coding the thing this way is easier and faster.

Should you detect a bug, please tell me (email or phone). Be as specific as you can.

1.8 Future

What may be done in the future:

Support of ProfessionalFileSystem and MS-DOS filesystem
GUI (yes, really, I will do it...tomorrow :-))

Device that treats an archive like a disk
Built-in packer

What will not be done in the future:

DMS compatibility (see below)

Localization (I hate those zillions of useless files, there is no support for people who cannot speak English. This sounds arrogant, but I think, this tool should not be used by inexperienced users anyway)

Versions for each type of processor (I made the experience that doing this causes a negligible speedup that is not worth even writing this sentence, but perhaps there will be a C compiler that can do better...)

1.9 History

```
Aug-14 1994 V1.0 - Initial release, never released I think...

Aug-18 1994 V1.1 - Minor bugs fixed

Apr-16 1995 V1.2 - Problems  with  OFS disks fixed (PackDev didn't know the
                   number of free/used blocks)
                 - ALL, NOVERBOSE, QUIET and NOCONFIRM keyword added
                 - Doc file corrected and improved
                 - Filesystem  type  is  now  read  from block 0 instead of
                   reading  it from the DOS node, because the latter always
                   contains DOS\0 for Amiga floppies
                 - Minor bugfixes

Apr-30 1995 V1.3 - If the partition with LIBS: on it is to be handled,
                   PackDev could not open XPK (sub-)libraries, fixed
                 - Minimum XPK buffer size corrected
                 - TESTFILE parameter added
                 - Checksums installed, in case an xpk packer doesn't keep
                   them..
                 - Argument handling changed (you got me, Christian...)
                 - BLOCKLIST parameter added
                 - PASSWORD parameter added

Jul-02 1995 V1.4 - OS 2.0 workaround: Filesystems cannot be inhibited if
                   the DosList is locked. Now it is unlocked before
                   inhibiting (Thanks, Golly).
                 - Bugfix: DosList was locked with LDF_READ|LDF_DEVICES,
                   but unlocked with LDF_READ|LDF_VOLUMES.
                 - Minor docfile editing

Aug-17 1995 V1.5 - Read/write error output/user interaction was only done
                   if QUIET or NOCONFIRM were set. This must be vice versa,
                   of course (Thanks Dirk)
                 - Documentation is now in Amigaguide format (Thanks to
                   Edd Dumbill, the author of Heddley, a great Amigaguide
                   editor)

Sep-03 1995 V1.6 - Added new parameters: TDFLABEL, NOVERIFY, TRUENAME
                 - TDFORMAT does no longer write label buffers, use TDFLABEL
                   for this in future
                 - XPK timing docs revised
                 - Guide file improved
                 - The guide became longer than the executable :-)

Sep-17 1995 V1.7 - Filename handling bug when reading fixed
                 - On an 68000 packdev crashed when writing to a disk
                   (casted a char * to long *; reading a longword
                   from an uneven address crashes 68000/68010 systems)
                 - Stupid bug with format options fixed (any specification
                   if disk formatting was rejected)
                 - FORCE keyword added
                 - Minor guide file editing
                 - Thanks to Bosch and Dirk for reporting the bugs
```

1.10 Author

Christian Wasner

Phone ++49-40-7236349

Email: wasner@ifmsun1.ifm.uni-hamburg.de (or wasner@ifm.uni-hamburg.de)
u241045@niesel.dkrz.d400.de
CRISI@BLACKBOX.SHNET.ORG

If possible, use email. If you phone me, please do it from 8pm to 10pm and don't forget that I have Central European Time here, so 8pm for you may not mean 8pm for me !

Everybody who reports a bug via email, receives the next (bugfixed) version directly via email.

1.11 FROM, TO

These parameter specifies the source data and the destination data. The source is specified first and the destination second. Either both or none of these two keywords must be set. If the one parameter is a filesystem the other one must be a file and vice versa. If both parameters are specified along with their keywords, they can be placed anywhere and in any order of the command string. If VIEWFILE, VIEWFILESYS or TESTFILE is set, FROM and TO must not be used.

File names will be handled the following way: When writing to the file, a suffix ".pkd" will be added to the file name if it's not present. When reading from it and the file name doesn't contain the ".pkd" suffix, it's checked first if there is a file <name>.pkd. If this file doesn't exist then the original file name is used. Note that this can be switched off with the TRUENAME parameter.

Note that copy-protected disks (i.e. with a custom track format) cannot be handled.

Examples:

DH0: foobar	Read data from DH0: and write it to foobar.pkd foobar
DH0:	Read data from foobar.pkd (foobar if not present) and write it to DH0:
TO foobar FROM DH0:	Read data from DH0: and write it to foobar.pkd, other parameters can be placed anywhere between, before or after them.

1.12 PACK (or P)

```
                This parameter is optional, but strongly suggested.  It ↩
                   may only be
specified along with a READ action, because when writing to a disk, the
packer type of the archive is automatically recognized.  Along with PACK an

                xpk
                  packer name and the efficiency can be specified (separated by a ↩
                      ".").
Note that some
                xpk
                  packers ignore the efficience value. A discussion of
packer speed is found in v).

When comparing with DMS, a general rule is : The less full a disk is, the
slower is DMS because DMS always reads all blocks, even if they are not put
into the archive (maybe ParCon is afraid of "lamers" who think, DMS forgets
to read these blocks :-).

Examples:

PACK NUKE    (Use NUKE packer with default efficiency)
P SHRI.75    (Use SHRI packer with efficience 75)
```

1.13 MEMTYPE (or M)

```
                This parameter is optional.  It specifies the memory type that is ↩
                    used for

                device
                 buffers.  Some older
                devices
                  may require chip memory for their
buffers.  For example, under 1.3 the
                trackdisk.device
                  needed chipmem
because it used the blitter to decode the data (not because the disk DMA
functions with chipmem only).  Possible values are CHIP, FAST, ANY.  Under
2.0+ trackdisk doesn't need chipmem any longer. Default is ANY.

Examples:

M CHIP (chipmem will be used or program fails)
M FAST (fastmem will be used or program fails)
M ANY  (default: highest-priority memory will be used)
```

1.14 CLRUNUSED (or CU)

This optional parameter is allowed only when writing to a disk. If set, all unused blocks are overwritten with zeroes. This has the disadvantage that the write operation becomes slower, but has the advantage that tools like DiskSalv ((C) by Dave Haynie) don't find old file fragments when trying to undelete an accidentally deleted file (deleted after usage of PackDev, of course). This parameter is unset by default.

Example:

CU (PackDev overwrites unused tracks with zeroes)

1.15 ETDFORMAT (or ETDF)

This parameter is optional. It should be set if you want to ↩
write to an
unformatted floppy disk which is to be accessed by
trackdisk.device
. It
may not function if you write to disks that are accessed by other
devices
,
because this parameter causes PackDev to use a system format routine that
functions with floppy disks (DFx:), but may not function with other
devices
(like scsi
devices
and especially replacement
devices
for flppies). The
advantage of this format routine is that
label buffers
can be written with
it in one row (Filenotes are NOT stored here, I told this in an earlier
version of the doc file... but nobody noticed it/everybody believed it).
TDFORMAT will ignore
label buffers
and TDFLABEL will start an extra run for
writing them the
label buffers
. For experts: This causes PackDev to
format with ETD_FORMAT. Note that always the complete disk is formatted,
not only the tracks with data from the archive, so avoid formatting if not
necessary. ETDF is unset by default.

Example

ETDF (enhanced format routine for floppies)

1.16 TDFORMAT (or TDF)

```
                This  parameter  is optional.  It should not be set if you want to ↩
                    write to
an  unformatted floppy disk with
                trackdisk.device
                 (i.e.  DFx) because these
support  ETDFORMAT  (see  above).   It will function if you write to a hard
disk,  RAD:,  FFx:,  diskspare.device  disks  etc.,  because this parameter
causes  PackDev to use the general format routine that should function with
any  disk
                device
                  that  is supported by DOS.  The drawback of this general
system format routine (TD_FORMAT, to be specific) is that it does not write
the
                label  buffers
                  (don't  ask  my  why,  I don't know).  If you write an
archive  to  disk  that  has data in its
                label buffers
                 and needs them (some
non-dos  disks  with trackloaders) then use TDFLABEL (see below).  Standard
disks  with a
                filesystem
                 (i.e.  "dir" etc.  works with them) normally don't
store data within the
                label buffers
                , except there are stupid executables on
them, but this is not very probable.  I don't suggest to use this parameter
for  hard  disks,  RAD:   etc.  because  their  tracks  don't  need  to be
Amiga-formatted.   It  is  implemented because there may exist some
                devices
                that  need  formatting  but  don't support the enhanced routine.   ↩
                   Note that
always  the  complete disk is formatted, not only the tracks with data from
the  archive,  so  avoid  formatting  if  not  necessary.   TDF is unset by
default.

Example

TDF  (standard format routine)
```

1.17 TDFLABEL (or TDFL)

```
                With  this parameter set the same is done as with TDFORMAT (see  ↩
                   above), but
the
                label buffers
                 are also written.  Because this must be done in an extra
run,  TDFLABEL  is  twice  as slow as TDFORMAT.  Use this parameter only if

                label  buffers
                 need to be written (some trackloader disks may use them) and
something  other  than  a disk written to by
                trackdisk.device
                 (DFx:) is the
```

target. Note that always the complete disk is formatted, not only the tracks with data from the archive, so avoid formatting if not necessary.

Example

```
TDFL  (standard format routine with extra write run for
               label buffers
               )
```

1.18 NOVERIFY (or NVF)

This parameter switches verifying off when writing to a disk. ↩ Use it with RAD:, but all other disks (especially floppies) tend to be unreliable, so disks that are not for one-shot usage should always be verified when written to. Note: The NOVERIFY abbrevation is NVF because NV is the abbrevation for NOVERBOSE, which was implemented before.

Example

```
NVF  (No verify)
```

1.19 ALL

This parameter can be used when reading from a device. If set, PackDev reads all blocks from the device, no matter if the filesystem is known or not. This is useful for all these poor demo disks that have a filesystem on it, but also raw data on blocks that are not used by the filesystem. I hesitated before implementing this parameter because I HATE disks of this kind, but SiliconSurfer insisted on it. Come on boys, stop these lame combination of DOS and trackloaders...

Example

```
ALL  (All blocks are read)
```

1.20 TRUENAME (or TN)

If this parameter is set, the archive file name is used exactly as specified, i.e. no .pkd stuff is done with the filename (see FROM, TO). This parameter can only be set if an action is specified that involves an archive, of course.

Example

TN (Use file name exactly as specified)

1.21 NOVERBOSE (or NV)

NOVERBOSE (or NV)

This parameter suppresses the output of the blocks currently worked on. This is useful when the output is redirected to a file. It's disabled by default.

Example

NV (no output of blocks currently worked on)

1.22 QUIET (or Q)

If this parameter is set, nothing is written to the standard output and nothing is read from the standard input. This means that Packdev will always abort if there are any problems (read/write error, ^C pressed, write to existing file etc.) and reports no error text. It's disabled by default.

Example

Q (No input and output)

1.23 NOCONFIRM (or NC)

If this parameter is set, PackDev will never ask for user input, i.e. it will immediately start with the specified action without waiting for confirmation. When errors occur, PackDev will always abort (see also QUIET). The difference between QUIET and NOCONFIRM is that NOCONFIRN doesn't disable output, but QUIET does. This is useful when starting PackDev with a file as standard input or when starting it from another program. It's disabled by default.

Example

NC (No input)

1.24 VIEWFILE

This keyword will make PackDev output a file's filesystem information. It must be specified along with a file name and nothing else.

Example

```
VIEWFILE foo.bar
```

1.25 VIEWFILESYS

This keyword will make PackDev output some information about a filesystem. It must be specified along with a filesystem name and nothing else.

Example

```
VIEWFILESYS DH0:
```

1.26 TESTFILE

if PackDev is started with this parameter, along with a file name, the complete archive is read for testing purposes. It must be specified along with a file name and nothing else.

Example

```
TESTFILE foo.bar
```

1.27 BLOCKLIST

If this parameter is set along with a file name, an ASCII block list is generated, one line for each block with the block number in decimal nad hexadecimal notation. This parameter cannot be set along with VIEWFILE and VIEWFILESYS.

Example

```
BLOCKLIST foobar
```

1.28 PASSWORD

Setting this parameter allows usage of the XPK packers that are able to crypt the data. It can be used in combination with creating an archive if an xpk packer is used that supports crypting. When extracting or testing a crypted archive you must specify the password or decrypting will fail. Also note that there are countries where crypting data is not allowed or restricted. So if you live e.g. in the Iran, be careful that your head isn't chopped off...

Example

```
PASSWORD YouWillNeverGuessThis
```

1.29 FORCE (or F)

If this keyword is set, Packdev overwrites an existing file without asking for confirmation. This functions only when an archive is written to, of course

1.30 Examples

Reading the disk in DF0: and storing the data into RAM:disk.pkd, packing it with the SHRI algorithm with best efficiency:

```
    PackDev DF0: RAM:disk P SHRI.100
```

Reading the disk in DF0: and storing the data into RAM:disk.pkd, packing it with the SHRI algorithm with default efficiency:

```
    PackDev DF0: RAM:disk P SHRI
```

Crypting DF0: to RAM:Secret.pkd, using the IDEA algorithm:

```
    PackDev DF0: RAM:Secret P IDEA.100 PASSWORD StupidPassword
```

Decrypting RAM:Secret.pkd to df1:, a password is assumed to be needed:

```
    PackDev RAM:Secret DF0: PASSWORD StupidPassword
```

Writing data from DH0:dh1data.pkd to DH1:

```
    PackDev DH0:dh1data DH1:


Writing  data  to  an  unformatted  floppy disk (DF1:), not asking for user
input, nonstandard parameter order, creating a block list file.

    PackDev ETDF NI FROM DF1: TO DH0:disk BLOCKLIST ram:disk.blocks


Viewing the header of a .pkd file (ram:abc.pkd; not present: ram:abc):

    PackDev VIEWFILE ram:abc


Viewing
                device
                 information of DH0:

    PackDev VIEWFILESYS DH0:


Testing archive integrity of foobar.pkd, an encrypted archive

    PackDev TESTFILE foobar PASSWORD YohMan
```

1.31 Label Buffers

```
                Label  buffers  are  an extra storage space on disks that are  ↩
                   accessed with

                trackdisk.device
                .   Each  block  on  such a disk is associated with a label
buffer  that  can  hold  16  bytes.  As far as I know label buffers are not
needed  to  be  implemented  into other disk
                devices
                 which are to work with

                filesystems
                 (i.e.  diskspare, scsi etc.).  It seems that it's not necessary
to  bother about label buffers when writing to something else than standard
floppies  (i.e.   with
                trackdisk.device
                ), but special label buffer handling
is supported by PackDev nevertheless.
```

1.32 Devices, Handlers, Filesystems

```
                What are devices, handlers and filesystems ?
```

The name "device" has a twofold meaning. First, all hardware drivers (virtual or not) named xxx.device are called device. They are not controlled by DOS, but by exec.library, the hard core of the Amiga OS, and are closest to the actual hardware (there are also resources which are even closer, but this topic is meaningless here, and so they are treated as nonexistant in this context). Second, DOS filesystems (e.g. DF0:), handlers (e.g. PRT:), volumes (i.e. disk names) and assigns (e.g. LIBS:) are also called devices. Because PackDev only supports (exec-) devices that can be accessed by a standard set of

trackdisk.device
commands

and that have a filesystem on top of it. Only DOS-devices that represent a filesystem are needed and these DOS-devices are called filesystems in this guide.

A filesystem is a link between DOS and block-based devices. It is like a database that generates a kind of tree with directories as branches and files as leaves. Most filesystems support links which can be roughly described as ropes that are tied to a branch and point to a leaf or a branch elsewhere, even on another tree (i.e. another filesystem). There currently are 3 basic filesystems for the Amiga: OldFileSystem (FS), FastFileSystem (FFS) and FastFileSystem with directory caching (DCFS) . You may have also heard of Internatinal filesystem. This could be interpreted as a subspecies of the three basic filesystems which support correct upper-/lowercase handling of non-US letters, e.g. Umlauts or accented letters for names of files, directories or links.

Below is a simple representation of how DOS communicates with several types of I/O devices and device-like (in DOS terms) I/O drivers PackDev supports any filesystem that is marked with an asterisk (*). Note that CD0: and RAM: are not supported because they are special cases of devices with a filesystem and they don't communicate with DOS in the way mentioned above.

```
          DOS-device          Handler

     |--- Filesystem DF0: ---
                trackdisk.device
                , unit 0             (*)
     |
     |--- Filesystem DF1: ---
                trackdisk.device
                , unit 1             (*)
     |
     |--- Filesystem DH0: --- scsi.device                          (*)
     |
     |--- Filesystem RAD: --- ramdrive.device                      (*)
     |
     |--- Filesystem FF0: --- fmsdisk.device                       (*)
     |
     |--- Filesystem RAM: --- RAM (ram-handler for Kick up to 1.3)
     |
DOS -|--- Filesystem CD0: --- cdrom-handler
     |
     |       etc.
     |
     |--- Handler CON: ------ console.device
     |
```

```
     |--- Handler SER: ------ serial.device
     |
     |--- Handler PAR: ------ parallel.device
     |
     |--- Handler PRT: ------ printer.device
     |   (port-handler)
     |
     |       etc.
```

1.33 trackdisk.device

```
               This  is  the  standard
               device
                for Amiga floppies.  It represents the way a
track-based
               device
                 has to behave with a set of basic commands.  It is the
only
               device
                 that is guaranteed to support
               label buffers
               .  That means that

               filesystems
                 don't  use
               label-buffers
               ,  they are probably interesting when
considering trackdisk.device.
```