

AmiCDFS

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Contents

1	AmiCDFS	1
1.1	AmiCDFS-Guide Main	1
1.2	Introduction to AmiCDFS	1
1.3	How to install AmiCDFS	2
1.4	Disclaimer	3
1.5	Details	3
1.6	Important Changes	3
1.7	The Mount File	5
1.8	Audio Disks	7
1.9	Hybrid Disks	7
1.10	Benchmarks	8
1.11	Technical Details	8
1.12	Bugs & Quirks	9
1.13	Legal	10
1.14	Author	11
1.15	History	12
1.16	Credits	13

Chapter 1

AmiCDFS

1.1 AmiCDFS-Guide Main

AmiCDFS (AmiCDROM) 2.21 (06.06.96)

by Martin Berndt

The ultimate Amiga CD-ROM Filing System

This old goodie by Frank Munkert has been reworked to be the fastest and most compatible CD-ROM Filesystem for the Amiga!

Just give it a try, and you will never want to be without it again!

Introduction
How to install AmiCDFS
Details
Bugs & Quirks

Legal Stuff
Who did it?
History
Credits

Read old Manual

!!! AmiCDFS 2.21 is SHAREWARE !!!

1.2 Introduction to AmiCDFS

Introduction

AmiCDFS 2.21 is a CD-ROM disk filing system for the Amiga. It supports the ISO-9660 standard (single and multiple sessions), the Rock Ridge Interchange Protocol and the Macintosh HFS format.

The old and obsolete HighSierra Protocol is NOT supported!

The CD-ROM drive is mounted as a DOS device (e.g. CD0:). You can access files and directories on a CD-ROM disk by the usual syntax, e.g. "type cd0:foo/readme.txt".

AmiCDFS 2.21 has been developed with kind permission of Frank Munkert using his old AmiCDROM 1.15 source files, and would have never been possible without his great work. Nevertheless it was a lot of hard work, and so I think it's fair enough to ask you for a small amount of money for MY work. If you agree pay the share, otherwise just let it be, but don't expect any support from me.

AmiCDFS 2.21 is more compatible and faster than any other CD-ROM filing system for the Amiga including commercial ones, so I really think it's worth this small amount of money...

The future of this product depends on YOU !!!

1.3 How to install AmiCDFS

How to install AmiCDFS 2.21

- Step 1: Copy the supplied Mount and SetPatch commands to C:.
Read the Disclaimer notice!
- Step 2: Copy AmiCDFS to L:. If you own a 68020 or better copy AmiCDFS.030 instead and rename it.
- Step 3: Copy the CD0: mount entry file to DEVS:DOSDrivers/ and edit it as described in the next section.
- Step 4: Copy def_CDDAdisk.info to ENVARC:sys/ if you wish to use CDDA disks. Set the Default Tool as described in a later section of this manual.
If you are still using Kickstart 2.x copy WBStart-Handler to L:, else copy wbstart.library to LIBS:.
- Step 5: Copy MCDPlayer wherever you want.
- Step 6: Reboot your machine.
-

1.4 Disclaimer

Disclaimer

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Mount 40.4 (c) Copyright 1990-1995, Escom AG. All Rights Reserved.

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1.5 Details

Details

Important Changes

The Mount File
Audio Disks (CDDA)
Hybrid Disks

Benchmarks
Some Technical Details

1.6 Important Changes

Important Changes

- "cdrom-handler" has been renamed to "AmiCDFS"
 - Many obsolete features and parameters have been removed.
 - The "Startup" field has been replaced by "Control" (needs Mount v39+).
-

New template: LC=LOWERCASE/S,TD=TRACKDISK/S,
BL=BUFFERLINES/K/N,FB=FILEBUFFERS/K/N,
DC=DISKCHANGE/K/N,TDC=TDCHANGE/S,
TOSHIBA/S,OLDMODE/S

- The mount files have changed significantly, so it's better to delete the old ones before installing AmiCDFS 2.21.
- The code is fully reentrant now, and will only be loaded once as long as the DosType is the same.
- AmiCDFS has a real LRU-Cache now!

The standard buffers ("Buffers" entry in mount file) are split into BufferLines. One BufferLine will always be read completely (Prefetch). If you do not specify BufferLines or set it to 1 the Buffers are handled as before.

Example: Buffers = 64 and BufferLines = 8 results in
8 Caches with 8 Blocks (8*2048 Bytes) each.

- CDControl will no longer work.
 - DosPacket handling routines have been completely rewritten and should be much more compatible now.
 - "AddBuffers" now returns the number of StdBuffers + FileBuffers.
 - FileBuffer routines rewritten, should be much faster now with very large files.
 - The FileBuffer is a Circular Cache now and though able holding more than one file at a time.
 - Implemented motor control code for some bad device drivers.
 - Diskchange polling is no longer needed with hostadaptors which support diskchange interrupts (like A3000, Mastercard MC702 etc.). If your hardware does not support these you should set DC=3.
 - Diskchange polling may optionally be done using trackdisk commands.
 - The CDDA icon is loaded as "ENV:sys/def_CDDAdisk.info" now. Its Default Tool is the command to be executed if the user doubleclicks the CDDA icon. If you put a "#" in front of the command it will be executed as a WB application (WBStart-Handler).
 - Added a nice 256 color icon for CDDA, normal and NewIcon type. Copy it to "ENVARC:sys/" and set your Default Tool.
 - Improved handling of Audio/Data Hybrid CD's.
 - Extension for HFS resource forks always is ".rs" now.
 - Improved HFS character conversion.
-

- Holding the CONTROL key while inserting a medium replaces old HFSFIRST option.
- Fixed Lock/Unlock routines and structures.
- DosList handling rewritten to prevent deadlocks.
- Removed some obsolete vendor specific routines.
- Included a bugfixed version of MCDPlayer.
- Replaced some routines by fast assembler code.
- Created 68030 version.
- Recompiled with SAS/C 6.56.

1.7 The Mount File

The Mount File

Your CD-ROM Mount file (e.g. DEVS:DosDrivers/CD0) should look like this:

```

/* $VER: CD0 2.15 (23.04.96)
 *
 * CD-ROM filesystem mount entry
 */

Device          = scsi.device          1)
Unit            = 1                    2)
FileSystem      = L:AmiCDFS
Flags          = 0
BlocksPerTrack = 32
BlockSize      = 2048
Reserved       = 0
LowCyl         = 0
HighCyl        = 11000
Surface        = 1
Buffers        = 64                    3)
BufMemType     = 1                    4)
Mask           = 0x7fffffff           5)
GlobVec        = -1
Priority        = 10
DosType        = 0x43444653
StackSize      = 600
Mount          = 1

Control        = "BL=8 FB=32"         6)

/* Control field template:
```

```

*
* LC=LOWERCASE/S,TD=TRACKDISK/S,
* BL=BUFFERLINES/K/N,FB=FILEBUFFERS/K/N,
* DC=DISKCHANGE/K/N,TDC=TDCHANGE/S,
* TOSHIBA/S,OLDMODE/S
*/

```

- 1) Insert your Device name here, e.g. "MASOBOSHI.device".
 - 2) Insert the Unit number of your CD-ROM drive here.
 - 3) Number of Standard Buffers (LRU-Cache).
 - 4) Memory type for SCSI Transfers:

1	means all Public Memory
3	means Public Chip Memory only
5	means Public Fast Memory only

DO NOT USE ANY OTHER VALUES !!!
 - 5) Set the Mask to "0xffffffff" if your Device is only able to do transfers to 24Bit DMA Memory. You needn't care about alignment, because all buffers are always Quad Longword aligned.
 - 6) The following options may be used:

LC LOWERCASE	Map ISO 9660 names to lower case.
TD TRACKDISK	Use trackdisk commands instead of SCSI-direct calls. Only needed for VERY bad device drivers and most often AmiCDFS 2.21 will detect these automatically.
BL BUFFERLINES	<p>Sets the number of lines for the LRU-Cache. The Standard Buffers are split into BufferLines, and one line will always be read completely. This will speed up all operations significantly! If you don't specify a value or set it to 1 the Buffers are handled as before.</p> <p>Example:</p> <p>Buffers = 64 and BL = 8 results in 8 caches with 8 blocks (8*2048 Bytes) each.</p>
FB FILEBUFFERS	Sets the number of buffers for file operations using the AmigaDOS Read() call.
DC DISKCHANGE	Enables old diskchange polling, set it to 3 or any other useful value if your device does not recognize diskchange interrupts.
TDC	Use trackdisk instead of SCSI direct calls for
-

TDCHANGE	all diskchange scans. Some devices may work better using this option, but you should only try it if you have weird problems with diskchanges.
TOSHIBA	Some Toshiba drives have difficulties switching between Data and XA-Mode. If you encounter any problems with PhotoCDs try setting this switch.
OLDMODE	Some very old SCSI Host-Adaptors do not work correctly with CMD_READ and blocksizes above 512 bytes. If this option is set AmiCDFS does all reading via SCSI-Direct calls, just like the old AmiCDROM. But this switch should only be used if nothing else works!

DO NOT TRY TO USE ANY OTHER OPTION !!!

1.8 Audio Disks

Audio Disks (CDDA)

Whenever an audio disk is inserted in your CD-ROM drive, an AppIcon will be displayed on your Workbench screen. If it exists the iconfile ENV:sys/def_CDDAdisk.info will be used.

If the Default Tool of the icon contains a command name, then AmiCDFS will try to start that program (which should be a CDDA Player) when double-clicking the AppIcon. Otherwise the disk simply starts playing from track 1.

If the first character of the Default Tool entry is a # (Hash) symbol, the according program will be started as a Workbench application using wbstart.library (OS 3.x) or L:WBStart-Handler (OS 2.x).

A bugfixed version of MCDPlayer by Boris Jakubaschk is included in the AmiCDFS 2.21 distribution archive.

These features are not available if the TRACKDISK option is selected or the drive doesn't support the needed commands.

1.9 Hybrid Disks

Hybrid Disks

Sometimes disks are dual-format (ISO-9660 and HFS). In this case the ISO-9660 part will always be preferred. If you wish to force mounting the HFS part of such a disk, simply hold the CONTROL key pressed while inserting the disk in your CD-ROM drive.

If a Sound & Data (ISO-9660 or HFS) hybrid disk is inserted, two icons will be placed on your Workbench. You can access the data part like usual while using the audio part with a CDDA Player program.

1.10 Benchmarks

Benchmarks

The following benchmark script has been used to evaluate several Amiga CD-ROM filing systems:

```
c:makedir ram:tools
c:date
c:copy AMINET9:Tools ram:tools all quiet
c:date
c:delete ram:tools all quiet
```

The benchmark system configuration:

```
Amiga 2000 ECS, 68030-50, 68882-50
2 MB ChipRAM, 20 MB 32Bit FastRAM
Masoboshi MC702 with SANYO CRD-254SH QuadSpeed CD-ROM
AmigaOS 3.1, Kickstart 40.70, Workbench 40.42
```

Results:

AmiCDROM 1.15	AmiCDFS 2.21	AsimCDFS 3.5	CacheCDFS 2.6
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72 sec	32 sec	56 sec	44 sec
--------	--------	--------	--------

1.11 Technical Details

Technical Details

The whole code is fully reentrant now, so that it may be shared among multiple instances of the filing system as long as the DosType is identical.

AmiCDFS 2.21 is now able to read any type of physical device, so it may be used to read Macintosh HFS floppy disks as well.

The drivers task stack is handled by the filing system code itself now to make sure that it is always big enough. So AmiCDFS 2.21 could even be installed as part of a Rigid Disk Block (RDB).

All DOS packet handling code has been rewritten in order to eliminate problems with unknown packet types and to allow implementation of some extra functions. Packets like ACTION_MORE_CACHE now return valid results even if they do nothing.

1.12 Bugs & Quirks

Bugs & Quirks

No real bugs are known, yet!

AmiCDFS 2.21 has been tested on many different hardware configurations, including IDE/ATAPI drives, PCMCIA adaptors and several SCSI drives.

If you encounter any difficulties, please check the following topics:

- Are you using a IDE/ATAPI CD-ROM drive?

Every device has to emulate a SCSI-2 drive, so everything depends on how good this emulation is. Try setting "TD" in Control field if nothing seems to work.

- Diskchanges are not recognised properly?

It is possible that your device driver does not support diskchange interrupts. Report it to the manufacturer and try setting "DC=3" and/or "TDP" in Control field.

- PhotoCDs are not recognised properly on a Toshiba drive?

Try setting the "TOSHIBA" switch in Control field.

- All data CDs are "NDOS" and cannot be read?

If you are using a very old SCSI Host-Adaptor (HardFrame, Supra etc.) try setting the "OLDMODE" switch in Control field.

- Are you using any bad software?

If you're using very nasty hacks or programs like MCP, please don't report any bugs. It is useless to expect any program to work properly while trashing important functions of your Operating System!

- Anything else?

Send me a mail describing your problems and your configuration!

1.13 Legal

Legal Stuff

AmiCDFS 2.21 is SHAREWARE !!!

If you use it permanently please send me a donation of US\$ 15 (DM 20).
Please add \$5 when you send me a cheque to cover clearing charges.

Bank Account for money transfer (German users only):

R.Berndt Konto 393439-438 BLZ 36010043 Postbank Essen

THANK YOU FOR YOUR SUPPORT !

Copyright

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Disclaimer

The author is in no way liable for any changes made to any part of the program, or consequences thereof as he is in no way liable for damages or loss of data directly or indirectly caused by this software.

Distribution

Neither fees may be charged nor profits may be made by distributing this piece of software. Only a nominal fee for costs of magnetic media may be accepted, the amount of US \$5 shouldn't be exceeded for a disk containing AmiCDFS. CD Manufactures are specifically granted the right to include this program on CD collections, as long as they are for the Public Domain. But the user still has to pay the Shareware fee!

1.14 Author

Author

Version 1.15 03-Nov-94 (C) 1993,1994 by Frank Munkert

Version 2.21 06-Jun-96 (C) 1996 by Martin Berndt

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1. Support BBS: WANDERER +49-211-9215517

Login: MBS

Use 'download <number>' to get the archive you want

2. Support BBS: KSB +49-2151-974740
 +49-2151-974758
 +49-2151-974923
 +49-2151-974961

Login: GAST

Online-Menu: Support-Area

AmiCDFS 2.21 was developed using SAS/C 6.56 by SAS Institute

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WBStart-Handler 1.4 Copyright (C) 1993 Stefan Becker
wbstart.library 2.0 Copyright (C) 1996 Stefan Becker

Have you tried MultiCX already ?

1.15 History

History

1.0 - 1.15	old AMICDROM versions by Frank Munkert
2.0 (14-Feb-96)	first public release of new AmiCDFS
2.1 (01-Mar-96)	<ul style="list-style-type: none"> - fixed serious bug in Prefetch code - fixed problems with uncleared buffers - fixed Control field template - implemented MOTORCONTROL - implemented TDPOLLING - improved some routines
2.2 (04-Mar-96)	<ul style="list-style-type: none"> - fixed some small bugs in Cache handling code - removed all old vendor specific routines - fixed bug in SCSI classification code
2.3 (05-Mar-96)	<ul style="list-style-type: none"> - fixed potential problem with illegal sector accesses
2.4 (10-Mar-96)	<ul style="list-style-type: none"> - fixed problems with CDDA AppIcon handling
2.5 (13-Mar-96)	<ul style="list-style-type: none"> - removed some more obsolete routines - easier access to Support BBS
2.6 (15-Mar-96)	<ul style="list-style-type: none"> - added support for wbstart.library (OS 3.x) - changed format of version string
2.7 (24-Mar-96)	<ul style="list-style-type: none"> - removed MOTORCONTROL flag, will be handled automatically now - added TOSHIBA switch to avoid problems with PhotoCDs on Toshiba drives
2.8 (27-Mar-96)	<ul style="list-style-type: none"> - fixed small bug in SCSI classification code - the FileBuffer is a Circular Cache now
2.9 (30-Mar-96)	<ul style="list-style-type: none"> - added OLDMODE switch to support some very old SCSI Host-Adaptors (HardFrame, Supra etc.)
2.10 (07-Apr-96)	<ul style="list-style-type: none"> - AmiCDFS now really works with HFS floppy disks and HFS harddisk partitions - included example mount file for MAC0 - fixed some small bugs
2.11 (10-Apr-96)	<ul style="list-style-type: none"> - improved and bug-fixed HFS handling routines - DosEnvec will now always have valid entries if SCSI_ReadCapacity was successful - LineCache will be switched off when mediumsize cannot be determined or when using a SCSI device in Trackdisk mode
2.12 (13-Apr-96)	<ul style="list-style-type: none"> - fixed bug in Symbolic link handling

- fixed bug in SCSI_ReadCapacity
- 2.13 (16-Apr-96)
 - implemented support for Protection bits
 - improved Symbolic link handling
- 2.14 (20-Apr-96)
 - DosList handling completely rewritten in order to prevent deadlock problems
- 2.15 (24-Apr-96)
 - improved Diskchange routines
 - replaced TDPOLLING switch by TDCHANGE
- 2.16 (25-Apr-96)
 - LineCache Prefetch will be switched off on Audio/Data hybrid disks now to avoid illegal sector accesses
 - improved LineCache efficiency
- 2.17 (05-May-96)
 - hopefully fixed a problem with some device drivers causing a disk to become NDOS when it was already inserted while mounting
- 2.18 (27-May-96)
 - improved and optimised Cache routines making AmiCDFS another 10% faster
- 2.19 (29-May-96)
 - added character conversion for RockRidge file names containing colons
 - small improvements in startup code
- 2.20 (30-May-96)
 - fixed serious bug in DosList handling
- 2.21 (06-Jun-96)
 - improved routine for initial media check

1.16 Credits

Credits

The following persons deserve special thanks from me as they made a significant contribution to the development of AmiCDFS 2.21:

- Frank Munkert for his wonderful AmiCDROM 1.15
 - Nicola Salmoria for some good ideas in AmiCDFS v37
 - Boris Jakubaschk for MCDPlayer 1.0
 - Olaf "Olsen" Barthel for his good advice in many cases
 - Ralph Babel for the Amiga Guru Book
 - Stefan Becker for WBStart-Handler and wbstart.library
 - all my Beta-Testers for reports and constructive criticism
-

- the MCP authors for the worst programming example ever
 - Mike Oldfield for the best music on this little planet
 - the TNG crew for the greatest adventures in universe
 - my son Daryl for moral support
 - my coffee machine for coffee support ;-)
-
-