AmiCDFS

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	TITLE : AmiCDFS		
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	REVISION HISTORY		
NUMBER	DATE	DESCRIPTION	NAME

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AmiCDFS

1.1   AmiCDFS-Guide Main

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                    AmiCDFS (AmiCDROM) 2.40 (14.12.97)

                            by Martin Berndt

              The ultimate Amiga CD-ROM Filing System
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```

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
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                          Read old Manual


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                  !!! AmiCDFS 2.40 is SHAREWARE !!!
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1.2   Introduction to AmiCDFS

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                            Introduction
```

AmiCDFS 2.40 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 2.40 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 2.40 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 2.40

Step 1:   Copy the supplied Mount and SetPatch commands to C:.
                Read the Disclaimer notice!

Step 2:   Copy SetCDFS to your C: drawer.

Step 3:   Copy AmiCDFS to L:. If you own a 68020 or better copy
                AmiCDFS.030 instead and rename it.

Step 4:   Copy the CD0: mount entry file to DEVS:DOSDrivers/ and
                edit it as described in the next section.

Step 5:   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 6:   Copy MCDPlayer wherever you want.

Step 7:   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

                             Mount File
                           SetCDFS Command
                          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,CS=CASESENSE/S,
                HF=HFSFIRST/S,TD=TRACKDISK/S,
                BL=BUFFERLINES/K/N,FB=FILEBUFFERS/K/N,
                DC=DISKCHANGE/K/N,MT=MOTORTIME/K/N,
                SD=STARTDELAY/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 2.40.

– 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, replaced by SetCDFS command.

– 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 temporary toggles
  the HFSFIRST option.

- Fixed Lock/Unlock routines and structures.

- DosList handling rewritten to prevent deadlocks.

- Implemented a special DOSPacket for remote control.

- Removed some obsolete vendor specific routines.

- Included a bugfixed version of MCDPlayer.

- Replaced some routines by fast assembler code.

- Created 68030/68060 versions.

- Recompiled with SAS/C 6.58.

1.7 The Mount File

                              The Mount File

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

```
        /* $VER: CD0 2.40 (14.12.97)
         *
         * 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            = 0x7ffffff                            5)
```

```
        GlobVec         = -1
        Priority        = 10
        DosType         = 0x43444653
        StackSize       = 600
        Mount           = 1

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

        /* Control field template:
         *
         * LC=LOWERCASE/S,CS=CASESENSE/S,
         * LN=LONGNAMES/S,HF=HFSFIRST/S,TD=TRACKDISK/S,
         * BL=BUFFERLINES/K/N,FB=FILEBUFFERS/K/N,
         * DC=DISKCHANGE/K/N,MT=MOTORTIME/K/N,
         * SD=STARTDELAY/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 "0xffffff" 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   Map ISO 9660 names to lower case.
        LOWERCASE

        CS   Handle RockRidge names case-sensitive.
        CASESENSE

        LN   Allow longer filenames than 30 chars for
        LONGNAMES   RockRidge protocol
                        (AmigaDOS still only supports 30 chars!)

        HF   Mount HFS part when inserting a ISO/HFS hybrid,
        HFSFIRST   without this option the ISO part would be
                        mounted.

        TD   Use trackdisk commands instead of SCSI-direct
        TRACKDISK   calls. Only needed for VERY bad device drivers
                        and most often AmiCDFS 2.40 will detect these

automatically.

BL   Sets the number of lines for the LRU-Cache.
BUFFERLINES   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.

                    Example:

                    Buffers = 64 and BL = 8 results in
                    8 caches with 8 blocks (8*2048 Bytes) each.

FB   Sets the number of buffers for file operations
FILEBUFFERS   using the AmigaDOS Read() call.

DC   Enables old diskchange polling, set it to 3 or
DISKCHANGE   any other useful value if your device does not
                    recognize diskchange interrupts.

MT   Sets MotorOff timeout in seconds for some rare
MOTORTIME   drives which do not switch off their motors
                    automatically. Default is 2 seconds, setting
                    this parameter to 0 switches off MotorControl.

SD   Some devices need a short delay while mounting
STARTDELAY   the filesystem if a CD is already inserted.
                    Only try to use this option if you get "NDOS"
                    disks when booting up with a disk in your drive.
                    Default value is 1 second.

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 SetCDFS

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                          SetCDFS Command
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The supplied SetCDFS command enables you to change some of AmiCDFS'
parameters while up and running.

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```

Syntax: SetCDFS DRIVE/A,LC=LOWERCASE/S,CS=CASESENSE/S,HF=HFSFIRST/S,
            LONGNAMES/S,QUIET/S,DEBUG/S

The parameters are:

        DRIVE   The drive which options shall be changed

        LOWERCASE or LC   Toggle LOWERCASE option

        CASESENSE or CS   Toggle CASESENSE option

        HFSFIRST or HF   Toggle HFSFIRST option

        LONGNAMES or LN   Toggle LONGNAMES option

        QUIET   Just change the options, no output

        DEBUG   Some special debug information, report them
                           if you have any trouble with AmiCDFS

Output format:

        cd0: using AmiCDFS v2.40   <- just some infos

        Current Protocol: RockRidge   <- current protocol being used

        LOWERCASE ON
        CASESENSE OFF   <- new settings AFTER SetCDFS
        HFSFIRST OFF
        LONGNAMES OFF

        DEBUG: 01010100   <- debugging information

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```

1.9 Audio Disks

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                          Audio Disks (CDDA)
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```

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.

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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 2.40 distribution archive.

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

1.10 Hybrid Disks

                              Hybrid Disks

Sometimes disks are dual-format (ISO-9660 and HFS). In this case the
ISO-9660 part will always be prefered. 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 or use the HFSFIRST option.

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.

1.11 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 2.40     AsimCDFS 3.8     CacheCDFS 2.6
-----------------------------------------------------------------------------


        72 sec          32 sec           56 sec          44 sec


-----------------------------------------------------------------------------
```

1.12 Technical Details

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                            Technical Details
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```

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 2.40 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 2.40 could even
be installed as part of a Rigid Disk Block (RDB).

All DOS packet handling code has been rewritten in order to eleminate
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.

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1.13 Bugs & Quirks

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                              Bugs & Quirks
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```

                    No real bugs are known, yet!

AmiCDFS 2.40 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.

– CDs are "NDOS" when already inserted while booting your machine?

  Try setting "SD=3" 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!

1.14 Legal

                              Legal Stuff

                    AmiCDFS 2.40 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:

 Martin Berndt   Konto 4185180009   BLZ 35060386   Vereinsbank Duisburg

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THANK YOU FOR YOUR SUPPORT !

1.15 Author

                              Author

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

----

      Version 2.40   13-Dec-97   (C) 1997 by Martin Berndt

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                      Login: MBS

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


    AmiCDFS 2.40 was developed using SAS/C 6.58 by SAS Institute
         SetCDFS was developed using DevPac 3.14 by HiSoft

----------------------------------------------------------------------

 SetPatch 40.16 (c) Copyright 1990-1995, Escom AG. All Rights Reserved.
   Mount 40.4 (c) Copyright 1990-1995, Escom AG. All Rights Reserved.
         WBStart-Handler 1.4 Copyright (C) 1993 Stefan Becker
         wbstart.library 2.2 Copyright (C) 1996 Stefan Becker

----------------------------------------------------------------------
                    Have you tried MultiCX already ?
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```

1.16 History

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                              History
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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)      - 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)      - 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)      - fixed potential problem with illegal sector
                        accesses

2.4  (10-Mar-96)      - fixed problems with CDDA AppIcon handling

2.5  (13-Mar-96)      - removed some more obsolete routines
                      - easier access to Support BBS

2.6  (15-Mar-96)      - added support for wbstart.library (OS 3.x)
                      - changed format of version string

2.7  (24-Mar-96)      - removed MOTORCONTROL flag, will be handled
                        automatically now
                      - added TOSHIBA switch to avoid problems with
                        PhotoCDs on Toshiba drives
```

```
2.8  (27-Mar-96)        - fixed small bug in SCSI classification code
                        - the FileBuffer is a Circular Cache now

2.9  (30-Mar-96)        - added OLDMODE switch to support some very
                          old SCSI Host-Adaptors (HardFrame, Supra etc.)

2.10 (07-Apr-96)        - 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)        - 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)        - 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

2.22 - 2.29             internal test versions

2.30 (15-Jul-96)        - implemented some Rockridge extensions
                        - implemented support for muFS Protection bits
                        - implemented MOTORTIME

2.31 (16-Jul-96)        - fixed bug in Protection bits handling
```

```
2.32 (20-Jul-96)        - fixed small bug in Rockridge extensions

2.33 - 2.34             internal test versions

2.35 (18-Aug-96)        - included new SetCDFS command
                        - implemented CASESENSE
                        - implemented HFSFIRST
                        - implemented STARTDELAY

2.36 (22-Aug-96)        - fixed deadly bug in DosList handling

2.37 (06-Sep-96)        - improved SetCDFS command
                        - improved Audio/Data hybrid handling
                        - removed some dead code

2.38 (13-Nov-96)        - some code cleanup
                        - recompiled with SAS/C 6.57
                        - changed account number for money transfer

2.39 (20-Aug-97)        - optimised some routines
                        - included 68060 version
                        - recompiled with SAS/C 6.58
                        - changed account number for money transfer

2.40 (13-Dec-97)        - fixed bug in fib_NumBlocks calculation
                        - implemented LONGNAMES for RockRidge
                        - extended SetCDFS command


------------------------------------------------------------------------
                        IMPORTANT NOTICE !

    SetPatch and Mount are missing in Aminet release due to some new
            upload restrictions. So please don't complain...
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1.17 Credits

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                              Credits
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The following persons deserve special thanks from me as they made a
significant contribution to the development of AmiCDFS 2.40:

- 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

- Angela Schmidt   for some technical support

```
- Ralph Babel               for the Amiga Guru Book

- Stefan Becker             for WBStart-Handler and wbstart.library

- all my Beta-Testers       for reports and constructive criticism

- Mike Oldfield             for the best music on this little planet

- the TNG crew              for the greatest adventures in universe

- my girlfriend Heike       for everything and for just being there

- my sons Daryl and Joey    for moral support

- my coffee machine         for coffee support   ;-)

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