

PC2Amiga

COLLABORATORS

	<i>TITLE :</i> PC2Amiga		
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REVISION HISTORY

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Chapter 1

PC2Amiga

1.1 main

PC <--> AMIGA TRANSFERER
VERSION 2.4
USER DOCUMENTATION

- About (Purpose)
- Requirements
- Files in the package
- Instalation
- Running program
- PC Programs notes
- Controlling program
- Configuring program
- Used conversions
- Using PC's printer
- Tips and hints
- Known bugs & problems
- Planes for future
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1.2 purpose

PROGRAM PURPOSE & ABOUTS

Have you ever transfered something between Amiga and PC? You have three ways how to do it:

- 1) "floppy net" - copy file to a DD disk in the MS-DOS format and read it by the Amiga
 - 2) Use TWIN. But TWIN has a big disadvantage - it can transfer file, but it does not allow applications on Amiga to directly access PC's drives - it's not a filesystem.
 - 3) Use terminal programs and ZMODEM (or another) file transfer protocol. Disadvantage? As above.
-

So I decided to write my own filesystem with this feature.

This program uses the master-slave technique (Yes, PC is the slave :-). Transfers are fully independent, so if you write "type pc:c/LongFile.txt" and after some time reset PC and run the PC part again, the text will continue scrolling.

P.S.: Feel free to mail me your opinions and/or bugreports and/or suggestions and/or greetings - I would appreciate some feedback :-)

1.3 requirements

REQUIREMENTS

An Amiga with system V 2.0 or higher, a PC with MS-DOS version 3.1 or higher. Both computers must have serial ports connected with the null-modem cable ↔

1.4 files

PACKAGE TREE

```
PC2Am (dir)
  C (dir)
    PopPC2Am
  L (dir)
    pc2am-handler
  DEVS (dir)
    DosDrivers (dir)
      PC
      PC.Info
  PutToPC (dir)
    PC2AMIGA.COM
    PC2AM_NR.COM
  Install
  Install.Info
  PC2Am.guide
  PC2Am.guide.info
  PC2Am.Info
```

1.5 instalation

HOW TO INSTALL THE PROGRAM

Run the install program (Installer required) or copy the files to your directories. But in both cases you have to copy a PC part to PC by floppy , Twin or a terminal program . See PC part notes for more info about PC part files.

This program uses usual null-modem cable connected to serial ports. But the DTR/DSR signals are not used and CTS/RTS should not be required, so you can try it with just the 3-wire cable (GND, RxD, TxD).

1.6 howtostart

HOW TO START

Run program on PC and mount device on Amiga. Now you can access PC drives via logical device "PC:" (or else, if you rename it). In the main PC: directory are PC devices stored as directories. So if you want to type file "autoexec.bat" on your PC's C: drive, write "type pc:c/autoexec.bat".

When you want to access PC devices directly, you may create assigns e.g., "assign PCC: PC:C". (But you must remove them before you exit the handler.)

See also PC part notes for info about PC and Instalation for instalation details.

1.7 pcnotes

PC part notes

There are two copies of the PC software (PC2AMIGA.COM & PC2AM_NR.COM). First is resident but is not able to remove itself (yet, I will do it). The PC2AM_NR.COM file is not resident but may be quit by pressing the BREAK combination or quitting the Amiga part - see Controlling program .

Unfortunately both PC2AMIGA.COM and PC2AM_NR.COM are worthless under Windows . They run fine but when their window is not active, they stops responding untill the window is activated again. What a stupid system. (Windows) Maybe I'll have a look on it, do special W's version or so...

1.8 control

When you press CTRL-E in the output window, the '>' prompt appears and you can enter one single-letter command. (If you have closed the window, run the PopPC2Am program which will pop it.) List of possible commands (case is ignored):

? (Help) - Gives list of commands with short description

C (Cancel action) - Use it when it seems to be impossible to transfer the packet. **WARNING:** This command is supposed to be safe only when canceling the attempt of establishing connection. Cancel when doing some action (opening, reading) may cause unpredictable results. (But does not in the most of cases.)

NOTE: There may be delay between this command and the "CANCELING ACTION" message because handler takes a care of it only when it starts reading from the serial.

I (Print info) - Shows current configuration and a transfer statistics.

H (Help) - Gives a list of commands with short description

X (Exit handler) - Will quit handler. All locks to it must be unlocked. After successful 'death' run the 'assign pc: dismount' command to unmount device. Then you can mount it again (e.g., when you have changed the configuration).

NOTE: There may be delay between this command and real quit because handler takes a care of it only when it waits for the packet from DOS.

1.9 config

Amiga
PC

1.10 confamiga

Amiga handler is configured via mount receipt in the DEVS:Dosdrivers/PC file. Field meaning is following:

```
FileSystem Standart handler mount field - do not change
Stacksize  --- || ---
Priority    --- || ---
GlobVec    --- || ---
```

```
Device      Device to be used (usually serial.device)
Unit        Unit of the device, usually 0
Flags       Flags for the OpenDevice function, usually 0
Baud        Speed to communicate on. Be sure you have set the same
            speed for both PC and Amiga.
```

```
MaxTransfer Specifies maximal length of packet to be transfered. All
            values between 128 and 8192 (inclusive) are accepted. Usual
            values are 2048, 4096 or 8192.
```

```
Surfaces    Has meaning different from the name. This value is timeout
            in the TENTHS of second. Set it according to the Baud and
            MaxTransfer values. Specifying this value too small may
            cause that communication will not work. When it is too big
            there will be too big delays when an error occurs.
            NOTE: Timeout is used twice. First is between completeing
            sending packet and receiving something and the second one
            between the beginning and the end of receiving. There is
            only one value for both cases. Maybe it will change in
            future.
            NOTE 2: If you put here zero, no timeouts will be
            performed. (Not wise...)
```

```
BlocksPerTrack
```

Specifies progress indication method. Now only 0 (NONE) and 1 (LED) are supported.

LowCyl Just for satisfying the mount command, maybe it will be used for some config purposes in future, so leave it 0.
HighCyl --- || ---

1.11 confpc

PC has no config file, it is configured via command line params. There are two options (which can be combined):

S (Speed)

Usage: 'pc2amiga sN' where N is number from 0 up to 7 specifying speed:

N Speed (baud)

0	1200
1	2400
2	4800
3	9600
4	19200
5	38400
6	57600
7	115200

C (COM)

Usage: 'pc2amiga cN' where N is number of the comm port (1 through 4).

Defaults are 6 (57600) for speed and 1 (COM1) for port.

Example: When you run 'pc2amiga s3 c2', it will communicate on 9600 bauds via COM2.

1.12 conversions

Filename conversion

Protection bits conversion

Date conversion

Error conversion

1.13 filenameconv

FILENAME CONVERSION

First part of filename (till first . or /) will be truncated to eight chars if it's longer. Last file of name (after last ., if it exists) will be truncated to three chars.

Example: filename "blablabla.ugh.woodpecker" will be converted to "blablabl.woo"

Note: filenames that don't have the first part (most usual ".backdrop")

will not be converted and open or lock call will fail. This is because of PC's impossibility to have file with empty first part of name.

1.14 protbitsconv

PROTECTION BITS CONVERSION

PC -> Amiga conversion.

R - converted to W and D amiga flags, because it has both effects on PC

H - This flag is converted to Amiga's H flag, although it has no effect.

S - Ignored

A - Converted to A

Amiga -> PC conversion

H - Converted to H

S - Ignored

P - Ignored

A - Converted to A

R - Ignored

W - Converted to R

E - Ignored

D - Ignored, because MESS-DOS is unable to make writable but not deletable file.

1.15 dateconv

DATE CONVERSION

Works, but there are little problems with Amiga files dated between 1-Jan-76 and 1-Jan-80, because PC cannot have file with this date.

1.16 errconv

ERROR CONVERSION

Error codes are slightly incompatible, so don't wonder when you get inadequate error message. When a drive on PC is empty or unreadable, the DOS error requester will appear in both cases. This happens because it is almost impossible to recognize whether the drive is empty or the disk in it is unreadable without direct drive access (reading a track). Write protected floppies causes usual error requester.

1.17 hints

TIPS AND HINTS

- If you mount device automatically at startup, it is a good idea to

set the ACTIVATE tooltype and the Activate entry in the mountlist to 0. It will cause system to load and run handler when it is used for the first time and not when it is mounted.

- If you turn off PC, disconnect computers or exit device on Amiga and type the "avail flush" command unless your system will become slow. It is "feature" of serial.device, not mine.
- If you can't get connection, try at slower speeds 9600, check cable (run terminal programs on both sides and try if computers can see each other by typing anything).

1.18 bugs

KNOWN BUGS AND PROBLEMS

- Renaming directories does not work - MS-DOS is unable to do it.
- Cannot be used with the 'baudbandit.device', because it doesn't support SCMD_BREAK. (Resourced it and added the "break" command. But it is still not able to work on 115200 on A500 - just 57600.)
- Notification does not work with DirectoryOpus. It seems OK from me, but I'll have a look at it again.
- Returned disk size (and free bytes) is inadequate (it's always the same).
- Error requesters (Disk is write-protected etc.) doesn't work when PC side ran as a TSR. I suppose it will never work (MS-DOS is very dirty system).
- Printing redirection does not work well with Amiga TeX.
- You cannot lock "pc:prn" etc., so you can't "copy" anything to it (just "type", but it damages binary files).

1.19 planes

PLANES FOR FUTURE

General:

- Write communication routines using parallel.

Amiga:

- Write my own serial routines that will be able to transfer 10 KB/s on A500.
- Add more options according to suggestions
- Add another kind of indicator (like Gopher ones)

PC:

- Make program working under Windows
-

- Learn resident to quit
- Test if resident is already installed
- Configurable buffer size (file will not contain 17KB of junk).

1.20 legal

LEGAL STUFF

This product is freely distributable as long as the archive goes unchanged. It can be included in any non-profit shareware or similar program package without specific permission from the author.

The program is provided AS IS, without warranty of any kind, all use is at YOUR OWN RISK. Author is not responsible for ANY data lost or damaged by this software.

1.21 author

AUTHOR

Michal Kara
Krosenska 543
Praha 8 - Troja
181 00
Czech Republic

E-Mail: lemming@k332.feld.cvut.cz

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1.22 windows

Taken from The Big Webster's Dictionary of Computing:

WINDOWS (n.) The worst windowing system ever.

1.23 poppc2am

Writes a text to PC2Amiga handler's console so that the console will open up if closed.

1.24 pc2am-handler

This is the main part - filesystem. Written in pure asm.

1.25 mountreceipt

Tells the mount command how to mount the device. Also used for configuration purposes - see Config/Amiga .

1.26 pc2amiga.com

Resident PC 'slave' program. See also PC part notes .

1.27 pc2am_nr.com

Not resident PC 'slave' program. See also PC part notes .

1.28 installscript

Script for the CBM's Installer . See also Instalation .

1.29 installer

An instalation utility by Commodore. Can be got from any aminet site e.g., ftp.luth.se.

1.30 history

Version 2.4 (4-May-95) (public release)

- Bug that caused impossibility of reading from write-protected files fixed.
 - Locking using the exclusive mode no longer sets file size to 0 (This most often happend when adding to an archive on the PC by LHA)
 - Now programming also FIFO register on PC, so I think problems with impossibility to get connection after running TWIN (and other too) are solved.
-

Version 2.3 beta (internal release)

- More than one char device names on PC allowed - now you can use pc:prn for printing via PC.

Version 2.2 (26-Mar-95) (first public release)

Version 2.2 beta (1-Mar-95) (beta release)

- Feature that caused DOpus to re-read directories every time removed
- Notification support added
- Delete and Rename now tests if object is locked
- Minor changes in this guide
- Added progress indicator (LED)
- File transfer slightly rewritten so that you are able to reset PC and re-run PC side when transferring without loosing any data
- Startup packet added
- PC2Amiga's second task's priority is now -1
- Not resident version of a PC software is now quited when you quit Amiga part
- Not resident version lists files as quick as the resident one

Version 2.1 beta (25-Feb-95) (beta release)

- Bug that caused crash when changing date with DOpus fixed (wow !!!)
- Fixed some problems with creating directories

Version 2.0 beta (20-Feb-95) (beta release)

- Written installer script
- Doc rewritten to the AmigaGuide format
- Communication paketized
- Added checksums
- Added timeouts
- Added output window and possibility of controlling from it
- Bug that caused assigns don't work fixed
- PC part made also as a resident
- Configurable (speed and comm) PC part
- Configurable speed, packet size and timeouts

Version 1.1 beta (End of Jan-95, unreleased)

- Added possibility of using another device than serial (via mountlist)

Version 1.0 (Jul/Aug-94, unreleased)

First version: no packets, no timeouts, no chechsums, no config, ...

1.31 copyfloppy

Format a DD floppy disc on the PC ("format A: /F720") and then mount the PC0: device on Amiga. Copy desired file(s) to this device and then read it by PC. You may also use HD disk, but you must have a HD drive in your Amiga.

1.32 copytwin

Download the package (I think it is on the Aminet) and copy it using this program.

1.33 copyterm

Connect PC and Amiga with serial cable and run a terminal program on both machines. Select "download" on PC and then "upload" on Amiga.

NOTE: Be sure you have chosen the same protocol and speed on both machines. And please note that there may be incompatibility between PC and Amiga protocols. (I recommend you ZMODEM, it is the best available protocol I know.)

1.34 cable

SERIAL CABLE:

Cable can be bought in a computer store or made from a 7-wire (or more-wire) cable and 2 connectors. You will find below how the different signals are wired along with the pinout in use on cable connectors having 9 or 25 pins:

=== AMIGA ===		===== PC =====		
25PIN	SIGNAL	SIGNAL	9PIN	25PIN
07	GND	<-> GND	05	07
02	TD	<-> RD	02	03
03	RD	<-> TD	03	02
05	CTS	<-> RTS	07	04
04	RTS	<-> CTS	08	05
06	DSR	<-> DTR	04	20
20	DTR	<-> DSR	06	06

On Amiga there is always 25-pin connector.

On PC you may have either 9-pin or 25-pin connector.

1.35 printing

HOW TO PRINT ON PRINTER CONNECTED TO PC VIA PC2AM

A guy (sorry, I forgot who was it) suggested to lern my "network" to print on printer connected to the remote computer. I didn't want to do this, because PC2Am is filesystem and not real network. But then I realized that it is simple. The solution is to make "devices" on PC such as CON, AUX, COM and PRN accesible from Amiga.

So if you write "Type TextFile.txt to pc:con", you will see the text scrolling on the PC's console. You may even type "Type pc:c/autoexec.bat to pc:con" which will type on PC it's own autoexec.bat. But how to print the files:

If you want to print a text file, type "Type ThatFile to pc:prn".

If you want to print binary file, don't use copy - it will fail. The "pc:prn" device cannot be locked (yet). So the only way how to print something another than a text is to redirect the parallel device using the CMD tool (is on WB disk, call it "sys:tools/CMD parallel pc:prn") and then print it (e.g., from Multiview if you want to print the picture).

WARNING: Don't play with reading from PC devices, it can lock up the PC side (e.g., never type "type pc:aux") !!!