Etherbridge_Device_Guide

Heiko Prüssing

COLLABORATORS			
	TITLE : Etherbridge_Device_Guide		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Heiko Prüssing	April 15, 2022	

REVISION HISTORY			
NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

Etherbridge_Device_Guide

1.1 Etherbridge Device Instruction...

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                                Etherbridge V1.2 (05.06.1999)

                           Instruction

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```

1.2 Disclaimer...

```
IMPORTANT:
==========

I'm in no way responsible for any damage which is produced by the use of this ↩
   software.
```

1.3 Description...

```
Description
===========

With this package it is possible to use a PC Network card with your Amiga.
You only need an Commodore Bridgeboard (A2088, A2286 or A2386) witch transports
the hole packet traffic from to/from the ISA PC Network card.

The Device is SANA2/R2 compatible, so that the
network cards can be used with the most Amiga TCP-Stacks (Miami, AmiTCP...).
Now it's possible to use cheap PC network cards for your Amiga...

The software consists of an Amiga Sana2 Device for the Amiga side and
a small PC Server Program  for the PC side of the bridgeboard.
The PC server communicates over a MSDOS Device Driver with the network card.
The two sides (Amiga and the PC) exchange their data with help of the
Janus-Software over the Dual-Ported-Ram of the bridgeboard.
The Amiga-Device has the possibility to start the PC-Server and package driver
automatically on the PC side.

The Packet Driver must be a PCTCP compatible DOS driver. These comes along with
the most PC Network cards. If you have no driver look at "ftp.ftp.com".
I have include drivers for a NE2000 and a 3com509 in this archive.


The archive consists of the following files:

etherbridge.device: Amiga  SANA2/R2 compatible device driver
```

```
EBSERVER.EXE      : PC servers on the bridgeboard side
NE2000.COM        : PC network card driver for a NE2000
3C509.COM         : PC network card drivers for a 3Com509
EtherPrefs        : MUI Preferences program for etherbridge
```

1.4 Requirements...

```
Requirements:
=============

 - Amiga-OS >= V2.0

 - a Commodore Bridgeboard A2088, A2286 or A2386 (A2088 not tested!)

 - PC network card with a PCTCP compatible PC driver

 - Janus.library V36 (Janus2.1)

 - Amiga network software (AmiTCP, Miami, Genesis, ...)

 - MUI 3.8 (only for configuration with EtherPrefs)
```

1.5 Installation...

```
Installation
============

The installation is simple:

Please copy:

etherbridge.device => "devs:networks/"
etherbridge.config => "env:sana2/" and "envarc:sana2/"
EBSERVER.EXE       => "c:\..." (somewhere on the bridgeboard (PC side))
EtherPrefs         => "sys:Prefs"
a package-driver   => "c:\..." (somewhere on the bridgeboard (PC side))


To configure the Device please use the program EtherPrefs.
It supports the following attributes:


DOS Driver:
   Please select here the used MSDOS packet driver.
   With a mouse click on Edit you can edit the driver properties.
   It open a window with the following fields:

         Alias Name:
            This is a name for the driver (for example "My NE2000").
```

```
         Driver:
            Please type here the path and filename of the DOS driver.
            This is an MSDOS path! Don't forget to use backslash!
            (for example "c:\program\ebserver.exe").


         Parameter:
            The exact command line of the packet driver. Mostly an
            NE2000 has the following syntax:

               "0x60 <Interrupt No.> <IO-Base>"

            For example my NE2000 needs the parameter "0x60 4 0x320". This means:
            Soft interrupt 0x60, network card interrupt 4 and IO address of 0x320,

            Please read the manual of your network card to get the right parameter ↩
                .



PCSERVER:
   This is the path and name of the PC Servers on the bridgeboard in MSDOS
   notation (for example "c:\dos\ebserver.exe"). Don't forget
   the file extension (".exe")!!!!


Mode:
   Communication mode to the PC side. Since the bridgeboard
   A2088 and A2286 has speed problems with the interrupt signaling
   the etherbridge device provide the following modes:

         A2386:
            This use interrupts for the communication. The fastest mode on an  ↩
               A2386.


         A2088/A2286:
            Only for the A2088/A2286. This use a mix of
            Interrupt and polling functions for the communication.
            This method is faster with these bridgeboard types.



Transmit Buffer:
   Number of the used transfer buffers to the bridgeboard
   Normally this should be 2.

Device Task Pri:
   Task priority of the Device Task. Should be 0.

Packet Tracer:
   Packet protocol function. It's possible to log all in and out going packets
   to a file or console.

Tracefile:
   filename or Consolename in which the output should be written.
```

```
You can test your Network card on the side Interface Test.
Press "Start" Button to send some packets on the wire and press "Stop" for  ↩
    stopping this test.




Using with AmiTCP
==================

If you want to use the Device with AmiTCP the file
"AmiTCP:db/interfaces " must contains the following line:


----cut----

etherbridge DEV=DEVS:Networks/etherbridge.device UNIT=0

----cut----

Now you can reach the Device with "etherbridge".
(for example: Shell> online etherbridge)
More information about the configuration of devices can be taken from the  ↩
    documentation of AmiTCP.




Using with Miami
================

If you use Miami I have included my config file from Miami3.2
in "Miami/My.config".
```

1.6 Properties of the Etherbridge.device

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Propoerties of the Etherbridge.device
=====================================

- SANA2 Release 2 compatible
- supports the "New Style Device" command (NSD)
- start the server on PC side automatically if needed
- packet protocol function to log in and out going packets




Perfomance
==========

So far, I have done better experiences with the speed of AmiTCP as of Miami.
```

Unfortunately packetes sometimes get lost with Miami (ringbuffer overflow)!
Generally, Miami seems to be slower!

Here are some few transfer-values (approximately):

TCP/IP-Stack	protocol	send Amiga	receives Amiga	answer-time
AmiTCP 4.0d	ftp	335KB/s	226KB/s	
	Samba	160KB/s	209KB/s	
	ping	---	---	3/4ms
Miami3.2	ftp	190 KB/ses	240KB/s	
	Samba	133 KB/ses	166KB/s	
	ping	--	--	5/6ms

These values refer to following installation:

AMIGA4000: CybPPC604 with MC68040/25MHz, 80MB Fast-RAMs,
A2386: 8MB-RAM, 20MHz, NE2000, A2386_PS2-Ram-Adapter

PC: K6/2 300MHz, 64MB-Ram, NE2000-Netzwerkkarte, Windows95

Something about the A2286/A2088:
==========

Don’t expect to much speed with these cards! My old Amiga 2000 (MC68000)
with an A2286 bridgeboard and a 3com509 network card reaches
about 40-50 kbs!!!! With another processor this may be a little bit more...

If you want to use the A2088 you must get an PC packet driver witch
supports 8 bit to the network card. (because of the XT-Bus)
The included NE2000 driver doesn´t seem to support this but the driver for
the 3COM works fine in 8 bit mode.
Possible there are other NE2000 driver witch support 8 bit mode. Please
have a look at "ftp.ftp.com" to get PCTCP drivers...

This things are not yet implementated:
==========

- SANA2R2/R3 Multicasts
- SANA2R2 Packet Tracking
- Raw Packets
- Even more speed...

```
- Extension of EtherPrefs:
    - Performance tests
    - Display Device and PCTCP driver properties

- perhaps an Install-Script
```

1.7 History

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History
==========

V0.1 22 Mays 1997

  - start device developing


...


V1.0   10 Aug 1998

  - first public release


V1.01  16 Aug 1998

  - added the default config file "etherbridge.config"


V1.1   18. Dec. 1998 (not published)

  - support of MSDOS driver (PCTCP compatible)
  - remove some little bugs
  - support of Device flag PROMISC
  - rework of the EBSERVER.EXE
  - support for A2088 and A2286
  - startup busy Windows


V1.2   6. Jul. 1999

  - config keys changed
  - configuration program "EtherPrefs" added
  - speed optimations
  - bug removed in buffermanagement handling
  - finished the english manual
```

1.8 The author himself...

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The author
==========
```

Currently I study computer science at the FH-Gießen-Friedberg and
that´s why the development is very very slow at this moment. Sorry!

My address:

Heiko Prüssing
Altenburgstraße 1
34599 Neuental-Römersberg
Phone: ++49 - (0) 6693/1358 or
       ++49 - (0) 6693/919290
(Germany)

EMail: Heiko.Pruessing@t-online.de
       Heiko.Pruessing@mni.fh-giessen.de
       pruessing@sma.de

Homepage:
       http://homepages.fh-giessen.de/~hg6256

I really hope there are not too many mistakes in this manual...

If you have bugs, improvements or comments to the "etherbridge.device"
please let me know!!!!

My Computer configuration:

- AMIGA 4000 (in the even adapted tower)
- Processors: MC68040/25, PPC604/200
- AMIGA-OS3.0/NetBSD1.x
- 80 MByte Fastmem
- Cybervision64 2MByte
- CyberPPC604/200
- Monitor AcerView 56L and Scandoubler
- SCSI - Controller: CyberSCSI
  connected:
    Quantum LT730,
    IBM DFRS 2.2GB,
    CDROM Sony CDU55S (2fach),
    CDROM Toshiba 5701B (16fach)
    Scanners Paragon 800II-SP
- AMIGA-ISDN-Karte ISDN-Master II
- A2386-Brückenkarte (20Mhz / 8MB-RAM)
  - with adapter (Zip -> PS2-Ram)
  - ISA PC-chart-fix " SpeedStar SVGA "
  - ISA NE2000 Ethernet card
- Seagate IDE-130MByte (only for NetBSD!)
- Eagle Bus Board (8 ZORRO III + 5 PC-ISAS + 2 videos)
- Printer HP Deskjet 850C
- Modem 14400bps

1.9 Copyright...

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Copyright
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The software is Freeware. You may distribute this manual as long as no file were  ↩
    changed.

Copyright for this software remains Heiko Pruessing.
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1.10 Other projects...

```
Other projects of me:


A2386_PS2:   Using PS2 SIM Ram
             on an Commodore Bridgeboard A2386
             Aminet: hard/hack/A2386_PS2_V1_3.lha "
```

1.11 Thanks go to...

```
I wish to thank...

My Amiga

  who tolerated the many changes
  I made to him (her) without grumbling too much...


Phase 5

  for the great CyberPPC board


Commodore

  for the first multimedia computer on earth
  (You were great!)


Remi Lenoir

  for very helpful information about the Janus software
```

all beta tester

  of etherbridge software

all employees of
  SMA-Regelsysteme

  in Kassel,
  specially the software department,
  who are not yet convinced about
  UNIX/Linux or Amiga.
  (I'm working on it....)

all fellow students and profs

  of the Computer Science Study
  at FH Gießen-Friedberg