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Gemini 80-Bus System

Welcome, john newcombe.

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21st Jul 2019, 11:08 pm

#181

# john newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107



### Re: Gemini 80-Bus System

Been trying to set up T-Net but have not had a lot of success. I have the fileserver running with the following config...

### Code:

#XBEAVER network server configuration file

#Define as a server file - eg no main processor activity cpuclock 0

board 0x00 serial extloop 9600 trace tty tty /dev/ttyS0 bvrnet /home/john/Dropbox

echo

echo byrnet file server running - use t-net on the clients to connect

With the permissions set correctly on /dev/ttyS0, the server reports as follows...

### Code:

Trace tty : Baudrate requested 9600 set 9600

Trace tty : Modem control RTS:1 DTR:1 byrnet file server running - use t-net on the clients to connect

On the gemini I execute t-net n which returns the A:> prompt as expected and I can switch drives to drive N:. However, a DIR on drive N: reports a Network error.

On the server I see multiple trace messages like the one below...

### Code:

```
Trace tty > 00:00
```

Using a breakout box I can see that the null modem configuration looks good and that serial data is being sent and received, this is also the case if I simply execute a DIR of the local disk A: on the Gemini.

I wonder if you have any ideas?









22nd Jul 2019, 1:35 am

#182

# <u>JohnBHanson</u>

Hexode

Join Date: Aug 2009 Location: Worthing, Sussex,

UK.

Posts: 393

### Re: Gemini 80-Bus System

What is the trace when you type dir n: - that might provide some clues. In the trace the lines have either > or < for tx/rx.

- 1. WhIe the server is runing type stty -F /dev/ttyS0 -a and check the port is set for 8 bits no parity (it should be). Also check the baud rate
- 2. Double check your serial lead
- 3. Make sure you are not using the serial port for CP/M eg CP/M itself is not outputting to the serial port.

The log should show something like

### Code:

```
Trace tty < 00: 00
Trace tty > 00: 01
Trace tty < 00: 02
Trace tty > 00: 25 11 a2 01 00 01 3f 3f
Trace tty > 20: 20 00 00 00 00 00
Trace tty < 00: a4 00 00 a2 01 3f 3f
Trace tty < 20: 00 00 00 00 00 43 48 55 47 20 20 20 20 4c 53
```

```
Trace tty < a0: 00 00 00 00 00
```

Note this is with the simulator - so < and > maybe reversed on your trace. I have attached a working disk image with t-net. This works with the xbeaver emulator which should give you a basis for comparison. The same disk image should work with your real hardware

use the command "t-net n" to start t-net.

your server configuration file looks ok. If you still have problems please post the entire console log when trying dir n: and I can see what causes the error. Usually it is a failure of the initial handshake

### Code:

```
Trace tty < 00: 00
Trace tty > 00: 01
Trace tty < 00: 02
```

### - Attached Files -

Last edited by JohnBHanson; 22nd Jul 2019 at 1:53 am.









22nd Jul 2019, 6:47 pm

# iohn newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107

### Re: Gemini 80-Bus System

sudo stty -F /dev/ttyS0 -a returns the following...

### Code:

[john@mopsie xbeaver]\$ sudo stty -F /dev/ttyS0 -a speed 9600 baud; rows 24; columns 80; line = 0;

```
intr = ^C; quit = ^\; erase = ^?; kill = ^U; eof = ^D; eol = <undef>; eol2 =
susp = ^Z; rprnt = ^R; werase = ^W; lnext = ^V; discard = ^O; min = 1; time = 0;
-parenb -parodd -cmspar cs8 hupcl -cstopb cread clocal -crtscts
-ignbrk -brkint -ignpar -parmrk -inpck -istrip -inlcr -igncr -icrnl -ixon -ixoff
opost -olcuc -ocrnl onlcr -onocr -onlret -ofill -ofdel nl0 cr0 tab0 bs0 vt0 ff0
-isig -icanon -iexten -echo -echoe -echok -echonl -noflsh -xcase -tostop -echoprt
```

I run the server on the linux machine e.g.

### Code:

```
[john@mopsie xbeaver]$ ./xbeaver fileserver.cfg
Trace tty : Baudrate requested 9600 set 0
Trace tty : Modem control RTS:1 DTR:1
bvrnet file server running - use t-net on the clients to connect
```

I have run T-NET N on the Gemini and followed that with DIR N: e.g...

#### Code:

```
A:> T-NET N
A:> DIR N:

T-NET V2.2
Network Error
```

Nothing is shown on the server console. However, when I issue the command

### Code:

```
A:> DIR A: (note A: not N:)
```

I see the following on the Linux Console

### Code:

```
Trace tty < 00: 00 00
Trace tty > 00: 00
Trace tty < 00: 00 00
Trace tty > 00: 00
```

Trace tty < 00: 00 00 Trace tty > 00: 00Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Trace tty > 00: 00 Trace tty < 00: 00 Traco ++17 > 00. 00









#184

# 22nd Jul 2019, 9:57 pm JohnBHanson

Hexode

Join Date: Aug 2009

Location: Worthing, Sussex, UK.

Posts: 393

# Re: Gemini 80-Bus System

Please try with my disk image that is posted - as I have checked that on the simulator.

I notice in the log you have 00 00 00 00 on one line. That should not be happening.

How have you connected the serial cable.

Can you still use the serial setup with your serial version of CP/M?











22nd Jul 2019, 10:18 pm #185

# JohnBHanson

Hexode

Join Date: Aug 2009 Location: Worthing, Sussex,

UK. Posts: 393

# Re: Gemini 80-Bus System

If you have two serial ports on the Linux box try running an emulator with the serial port mapped to another serial port eg change the line in gemini2.cfg to

if V board 0xb8 serial\_8250 trace tty tty /dev/ttyS1 which will create an 8250 emulated uart based at port address 0xb8 to ttyS1.

Connect a null modem cable between ttyS0 and ttyS1

then start your t-net server on Linux

and in another terminal window start the Gemini emulation with

xbeaver gemini2.cfg -o V

And then see if T-NET works with that.

If that works (it does on mine) then try using the disk image in the previous post on your Gemini system.

Please try all this with the disk image in tnet\_eumulator.zip in post 182 Let me know the results.

Last edited by JohnBHanson; 22nd Jul 2019 at 10:27 pm.







#186



23rd Jul 2019, 12:15 pm

# john newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107



# Re: Gemini 80-Bus System

Thanks, I will try the disk later today once I have coverted it to IMG.

Alas only one serial port on my linux box but could add a USB one I guess.

Many thanks John









\(\Delta\)









Re: Gemini 80-Bus System

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107



The symptoms are exactly the same with the disk you posted, when I get chance I will set up the emulator as you suggest.







#188



JohnBHanson

Hexode

Join Date: Aug 2009 Location: Worthing, Sussex,

UK.

Posts: 393



Re: Gemini 80-Bus System

Another useful test 1st run telnet A0>T-NET N

and then remove it A>T\_NET R

and then run gemdebug A0>Gemdebug Gemdebug....

Run a terminal program on the windows/linux box

The following sends character 41 on the serial port -ob8 41

And the command

-ab8

Will display the last character received on the serial port.

This will check the serial link including the cable and uart.







#189



\( \lambda \)

24th Jul 2019, 6:57 am

john newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107



Re: Gemini 80-Bus System

Thanks, that is very useful. I am away for a few days now but will try this at the weekend when I return.









#190

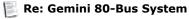
# <u>john newcombe</u>

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107





Just updated the Gemini Resource Page just in case it helps anyone.

https://glasstty.com/wiki/index.php/...0-Bus Resource







#191

27th Jul 2019, 10:14 am

# iohn newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107

# Re: Gemini 80-Bus System

### Quote:

Originally Posted by **JohnBHanson** 

Another useful test 1st run telnet A0>T-NET N

and then remove it A > T NET R

and then run gemdebug A0>Gemdebug Gemdebug....

Run a terminal program on the windows/linux box

The following sends character 41 on the serial port

-ob8 41

And the command

-ab8

Will display the last character received on the serial port.

This will check the serial link including the cable and uart.

Using Gemdebug showed that T-Net failed miserably on the built in serial port, however, a USB Serial adapter on the Linux machine worked a treat, thank you, I now have a very useful system. I will update the blog with this new info.

Whilst I was away, I started looking in more detail at the various bios sources you sent me. As you know I have updated the Gemini bios to support ODDS disks now and this works rather well. I started to wonder how hard it would be to add the necessary to support my SASI emulator. I am keen to keep as near to the original Gemini setup as I can (I have no idea why, it just feels right for me) so whilst I have the CCPZ, BDOSZ and TBIOS, I really wanted to add Winchester support to the Gemini Bios. It's all about the journey, right?

I have started to read everything I can find on CP/M modification, and I have the various specs for the controller etc. and of course the source you sent.

Am I mad?

I have found a chap who has the Gemini Multi Format Bios (MFB) which is awesome but is circa 1985 so a little newer than my system, I have not had too much luck so far in getting in touch with him anyway. Also there is Tony on this forum who may be able to help but is very busy with other things at the moment.

So I wonder, how hard can it be? Probably beyond me but I just thought I would mention it.



UK.

Posts: 393

27th Jul 2019, 6:03 pm

Join Date: Aug 2009 Location: Worthing, Sussex,





JohnBHanson Hexode

I am pleased that you have t-net running - I find it invaluable, indeed the simulator uses it to access host directories!

T-NET was originally used between CP/M machines. When I wrote the xbeaver emulator I included a C version of the server. It took quite some investigation to get PIP to work as it does some undocumented tricks with the file control blocks but all happy now.

Note: If you want to run it without trace omit the "trace tty" from the configuration line. Also upto 4 directories can be specified on the command line (Use & at the end of a line to continue on the next line), printf % strings such as %d etc can be used in the filename to include the user number. There are 16 user numbers (0 to 15) per drive letter and combined with symlinks these can be any linux directory - hence upto 64 directories can be accessed using 4 drive letters and the 16 user areas via t-net.







Quote 2





#193

john newcombe

Pentode

Join Date: Apr 2019

Re: Gemini 80-Bus System

T-Net is awesome, thank you, but...

Location: Skipton, North

Yorkshire, UK. Posts: 107

I have now started work in adding Winchester support to the bios. I am adding it to version 1.4 of the CP/M 2.2 64K bios (this is the version I modified for the GEMODDS 788k floppy). In order to give me some working room I have shifted CP/M down a couple of pages to...

### Code:

A> MAPMEM S Return Address E25F CCP Address DB00 BDOS Address E306 BIOS Address F100

It may be that, given time I may be able to claw back some of this memory, however, for now at least, T-NET no longer works. I am guessing that I need a new build of T-NET to work with this new configuration, would that be correct?









# JohnBHanson

Hexode

Join Date: Aug 2009 Location: Worthing, Sussex,

UK. Posts: 393





# Re: Gemini 80-Bus System

t-net should work with the new configuration or indeed any size cp/m version. It automatically relocates itself. However try using ccpz rather than the standard cp/m processor.







#195

# 7th Aug 2019, 5:05 pm

# john newcombe Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107

# Re: Gemini 80-Bus System

I was hoping to use the original CP/M as it is this that I am updating, although I have the source you sent so could try it.

With the Gemini CP/M, when I run **t-net n** I see;

### Code:

T-NET V2.2

T-NET: Please run ledit

The N: drive is connected to something as dir n: returns one file when there are many on the network drive. I am assuming there is something amiss with my modified CP/M. I will look into this some more and perhaps try the CCPZ as you suggest.

Thanks.











#196

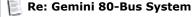
# JohnBHanson

Hexode

Join Date: Aug 2009 Location: Worthing, Sussex,

UK.

Posts: 393



Yes - if you just get one file you have a version without a conditional set.or an older version. The new version is compatable with standard cp/m (although I have not run it a lot with real cp/m).

Please use attached and let me know.

Attached Files –

<u>t-net.zip</u> (2.0 KB, 2 views)











7th Aug 2019, 7:35 pm

#197

# iohn newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107





Re: Gemini 80-Bus System

Will do, thanks.









#198

# john newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107



Re: Gemini 80-Bus System

Perfect, the new T-NET works a treat, thank you.

Just in case it is of any interest, I have been updating the article re: my progress with adding Winchester support at...

https://glasstty.com/wiki/index.php/...inchester Disk.











#199



Yesterday, 5:52 am

Hexode

Join Date: Aug 2009 Location: Worthing, Sussex,

UK. Posts: 393



### Re: Gemini 80-Bus System

The following is an extraction of the bios used on xbeaver. You will need to merge this into your bios and include the disk tables required for the hard disk.

Note that the data on the hard disk is stored inverted. This is because the gemini floppy disk controllers inverts the data on read/write.

Also you might like to give some consideration to allowing space for the os on the hard disk rather than having to boot of floppy.



<u>indio.zip</u> (1.8 KB, 1 views)

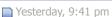








#200



# iohn newcombe

Pentode

Join Date: Apr 2019 Location: Skipton, North

Yorkshire, UK. Posts: 107



### Re: Gemini 80-Bus System

Thank you, that is a big help.

I have been spending time reading old issues of Byte magazine and have found a series of articles relating to adding Winchester support to S100 systems, these have also given me some inspiration.

I will keep the blog updated on day to day progress with the odd post here if I reach any significant milestones.











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