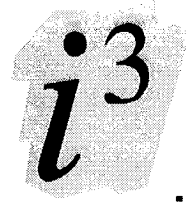# EtherLan Drivers

Virtual Ethernet Interface

EtherH v.4.15 or later

i^3

NET**WORKING**

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Release Note

Overview

Ethernet supports a number of different network protocols, all of which are accepted by the ₁₃ Ethemet cards. However, in some situations a single computer may appear on a network as two different network clients. The situation where this is likely to occur is when the computer is fitted with a PC Card (podule card or PC second processor card). Two complete processing environments are operating side-by-side, under the PC and the RISC OS operating systems respectively. You have two computers operating in a single case, connecting to the Ethernet network through a single interface card. When one or other of these environments is initialised it looks for support for the the network protocols it requires, claiming them from the interface card. Thus the two processors can co-exist side by side provided there is no overlap between the network protocols they wish to use.

Versions of EtherH, the ₁₃ Ethemet driver, from 4.15 onwards, offer the additional feature of Virtual Ethernet Interfaces. This means that the single hardware Ethernet interface card can appear to the network as two distinct connections, and can offer the PC processor and the RISC OS environment independent connections to the network. This means there is no restriction on the networking protocols available to each processor - each of them can use all the protocols. Because virtual interfaces present a small processing overhead (especially on a busy network), and are not needed in all circumstances, the user may configure the feature on or off.

This *Application Note* describes the changes in the Ethernet driver; it updates information provided in the *EtherLan User Guide (Issue 2.0: 10 Jan 1996)* and in the *Application Note: Using a PC card with your* ₁₃ *Ethemet card (Issue 1.0: 21 Feb 1996).*

Applicability

The information given in this release note only relates to the Ethernet driver supplied for use with the E500 series and E600 series EtherLan interface cards; drivers for the E100 and E200 series cards remain as described in the *EtherLan User Guide.* The new driver- EtherH version 4.15 or later - may be provided as part of a Flash ROM upgrade, or may be provided separately for "soft-loading" during a computer's boot sequence.

Commands

The new driver release introduces a single new configuration command, Configure EHVirtual. In addition, when EHVirtual is configured ON the output from the EHTest and EHInfo commands is changed. In all other respects the commands remain as described in the *EtherLan User Guide.*

*Configure EHVirtual

Determines whether or not the virtual Ethernet interface feature is activated.

Syntax

        *configure EHVirtual OnlOff

Use

        EHVirtual is configured On to activate the virtual Ethernet interfaces. Thereafter the interface card will present two Ethemet interfaces (eh0 and eh I) to the computer. The default configuration state is Off, and EHVirtual should only be configured On if there is a PC card (podule card or second processor card) installed in the computer and both that card and the RISC OS environment wish to use the network.

Example

        *configure EHVirtual On

Related Commands

        None

Notes

        As with any configuration command the current EHVirtual configuration can be found by entering:
        *Status EHVirtual
        from the command fine * prompt.

*EhInfo/*EHTest

The syntax and use of these commands remains as described in the *EtherL an User Guide;* please refer to that *Guide* for explanation of these commands. However, with EHVirtual configured On the information returned by the commands will be considerably extended:

Example

*ehinfo	
DCI version	4
Card Info:-	i-cubed ltd, EtherLan 600 Ethemet interface
	Unit 0, slot 8, 16-bit driver.
	Ethernet address=00:0:32:00:16:30
	10Base2 (coax) interface in use.
I/O slats:-	Rxframes=2319, Rxerrs=4, Txframes=55, Txerrs=0, DMAframes=0
	Collisions=4, Rejects=36183
Interface:-	Twisted pair interface:- link is good, polarity is correct
Rx errors	foe=1, crc=4, frl=0, ovm=0
Frame Info:-	Type=IEEE FrmLvl=4 AddrLvl=2 ErrLvl=O Handler=224fb08
	Type=8035 FrmLvl=1 AddrLvl=1 ErrLvl=O Handler=218af0c
	Type= 806 FrmLvl=1 AddrLvl=1 ErrLvl=O Handler=218af0c
	Type= 800 FrmLvl=1 AddrLvl=1 ErrLvl=O Handler=218af0c
Controller Mode:-	Promiscuous, reject frames with errors
Card Info:-	i-cubed ltd, EtherLan 600 Ethernet Virtual interface
	Unit 1, slot 8, 16-bit driver.
	Ethemet address=00:0:32:80:16:30
	10Base2 (coax) interface in use.
I/O Slats:-	Rxframes=954, Txframes=560

Frame Info:-   Type=IEEE FrmLvl=4 AddrLvl=2 ErrLvl=O Handier--2273598
Type=8035 FrmLvl=1 AddrLvl=2 ErrLvl=O Handler=2273598
Type= 806 FrmLvl=1 AddrLvl=2 ErrLvl=O Handier--2273598
Type= 800 FrmLvl=1 AddrLvl=2 ErrLvl=O Handier--2273598
Controller Mode:- Promiscuous, reject frames with errors

Additional Notes

1. The first section of the output, down to and including the Rx errors line, relates to the first virtual interface (Unit 0, or eh0) and to the physical hardware; any Transmit/Receive errors will be reported in this section of the output.

2. The Rx errors line will be absent if there have been no receive errors.

3. There will be an additional line, TxErrors, in the first section of the output, if there have been any transmit errors.

4. The second section of output, starting from the second set of Card Info, relates to the second virtual interface (Unit l, or eh1). This will only show the number of Ethernet frames sent to/from this virtual interface; it cannot have any error/collision/reject information.

5. If no second task has been initialised (e.g. the PC card software has not been started up) then the second section of output will show, after its Card Info:

      1/O Slats: Rxframes=0, Txframes=0
      Frame Info:-   No frame filters setup
      Controller Mode:- Normal, reject frames with errors

6. Frame Type = IEEE was presented as Type = 0 in previous software releases.

Use of the EHVirtual Feature

Setting Up PC Card/Processor Software

This remains exactly as described in the *Application Note: Using a PC card with your* i3 *Ethernet card* except:

•   The Ethernet driver must be identified as eh1 (rather than eh0).

•   There are no possible conflicts in deciding which protocols to claim when RMEnsuring the PCNE2 module.

Note that it remains possible to use the PC Card/Processor with EHVirtual configured Off, in which case the Application note applies "as is", with the driver still being identified as eh0.

Virtual Ethernet Interfaces

With EHVirtual configured On the EtherLan interface card effectively presents two Ethernet connections to the network. Internally, these are identified as eh0 and eh1, with eh0 being claimed by the RISC OS operating system and eh1 being available for a network connection from a PC card.

It may be necessary to configure other software to recognise the two virtual interfaces in the computer. In particular, if both RISC OS and the second process are using TCP/IP then each virtual interface will need to be given its own unique IP address, and both of these addresses should be included in all Host files on the network.

Dealer Stamp

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