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DOS Compatibility Card: Using Microsoft's TCP/IP-32 IP (4/95)

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TOPIC -----

This article provides information on using Microsoft's TCP/IP-32 IP with the DOS Compatibility Card for the Power Macintosh.

DISCUSSION -----

Introduction

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This document assumes a working knowledge of DOS and Windows. This document will focus on aspects of network software installation that deviates from normal DOS/Windows installations. This document is not a substitute for and should be used in conjunction with product documentation!

Simultaneous Macintosh and DOS networking

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Your Power Macintosh 6100 DOS Compatible can have simultaneously active connections in both environments, provided different networking protocols are used. You cannot have two identical protocols running in both environments. If identical protocol support in both environments is needed, the only solution at this time is to encapsulate one protocol inside a different protocol, referred to as "tunneling". For example, there are various options to have TCP/IP active on both the Macintosh and the DOS side; They all require some form of gateway to either route IP encapsulated in AppleTalk, or IP encapsulated in IPX. One solution is to set MacTCP for EtherTalk and put an Apple IP Gateway on the network.

DOS networking and Memory

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If you will be using the Power Macintosh 6100 DOS Compatible networking functions, it is recommended that you maximize conventional memory by removing unnecessary device drivers and TSRs. Also, load the remaining device drivers and TSRs high if possible. Windows for Workgroups 3.11 requires greater than 540K of conventional memory for it's Browser to function properly.

Windows for Workgroups: Installation considerations

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If you will be installing Windows for Workgroups 3.11, the Novell Netware client, AND TCP/IP support, install the NetWare client first, Windows for Workgroups 3.11 second, and the IP stack third.

ODI to NDIS translation issues

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Novell provides an ODI to NDIS translator called "ODINSUP.COM", which is copied to the same directory as the client software. This allows ODI drivers to be used in an NDIS environment. When using ODINSUP.COM, you must specify an interrupt in the NET.CFG file. Use the statement:

INT 6

in the Link Driver section of the NET.CFG file. Failure to do this results in the following error message:

"ERROR: "First Mac ODI MLID does not conform to the latest ODI MLID specification. Call adapter manufacturer and request a newer MLID that preserves the PIC mask bit."

For a complete discussion of ODINSUP.COM and configuration information for it, please contact Novell.

Windows for Workgroups 3.11

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If Windows for Workgroups 3.11 is to be installed, it is recommended that you become familiar with the protocol.ini file, which Windows for Workgroups 3.11 uses for setting up the networking environment. Without the proper entries in this file, Windows for Workgroups 3.11 networking will not function properly. The installer for Windows for Workgroups 3.11 does NOT modify the PROTOCOL.INI or NET.CFG file correctly, which means they must be manually edited. A suggested resource is the Windows for Workgroups 3.1 Resource Kit, available from Microsoft.

MACODI

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MACODI.COM is located on the DOS Compatibility Card Installer Disk for DOS Environment.

It is important to note that the Power Macintosh 6100 DOS Compatible does not require any special settings where networking is concerned. The DOS side functions as would any DOS machine using ODI drivers. The only special

consideration is to be sure the same protocols are not running in both environments unless tunneling is used.

Binding TCP/IP protocols in NET.CFG

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For any TCP/IP setup, you MUST bind IP and ARP in the NET.CFG file. The only notable exception to this that we know of is FTP Software's PC/TCP. If the IP protocol stack you use requires RARP, you MUST bind this also. The entries that bind IP, ARP, and RARP will ALWAYS be the same, unless you are binding to a frame type other than Ethernet_II, which is unlikely. This is the standard IP, ARP, and RARP listing that MUST be in the NET.CFG file for IP support:

Link Driver MACODI

```
Frame Ethernet_II
Protocol IP 800 Ethernet_II
Protocol ARP 806 Ethernet_II
Protocol RARP 8035 Ethernet_II
```

As a general rule, do not add PORT or INT statements to the NET.CFG file. ODI drivers do not necessarily require them, and MACODI does not use interrupts. If using odinsup.com for NDIS compatibility, set the INT value to 10.

Example Installation and Settings Files

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The following are some examples of networking configurations on the Power Macintosh 6100 DOS Compatible. Note that for all of these installations, Novell Netware was loaded. Also note that defaults were selected in all of these scenarios, which may not be valid for your environment. These are included as examples only. In some situations, the installer may not respond as outlined due to differences in files loaded into memory at the time of the installation. If that occurs, proceed per the software's documentation for using the software with ODI drivers. For the sake of brevity, only portions of files specific to the discussion will be listed. For further help in setting up the various networking environments, please contact the vendor of your network operating system.

Microsoft's TCP/IP-32 IP Protocol stack

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You must have successfully installed the ODI drivers and Windows for Workgroups 3.11 before performing this step. "Successfully" means you are able to connect to a server and you are able to run Windows for Workgroups 3.11. If you are not able to connect to a server, check your files against those listed above. Make sure all of the programs needed (called) are in the proper location. Also, make sure you don't have networking software loaded on the Macintosh that would cause a conflict, such as MacIPX. Once you have successfully connected to a server, follow these steps to load Microsoft's TCP/IP-32 IP protocol stack into Windows for Workgroups 3.11. Again, only the steps that deviate from standard

installations will be thoroughly outlined. It is advisable that you be thoroughly familiar with the entries in the protocol.ini before editing it. See the Windows for Workgroups 3.1 Resource Kit for a complete discussion of the protocol.ini file and its entries.

Step 1

Before beginning the installation, you will need to have the following information:

IP ADDRESS:

SUB-NET MASK:

DEFAULT ROUTER IP ADDRESS:

DOMAIN NAME:

DOMAIN NAME SERVER IP ADDRESS:

(If DNS services will be used)

Step 2

Follow the directions in Microsoft's documentation for installing the IP networking protocol. Once you have installed TCP/IP-32, Windows for Workgroups 3.11 will prompt you to restart. Don't, because you will need to edit the NET.CFG and PROTOCOL.INI files.

Step 3

Listed below are the NET.CFG and PROTOCOL.INI files for TCP/IP-32 support. Notice that IPX is also loaded. Edit your files to look similar to these, depending on your configuration. Note that the TCP/IP-32 installer cannot detect what ODI driver is being used, so it inserts "XXXX" for the driver name. Remove any redundant entries, and change "XXXX" to "MACODI".

NET.CFG

Link Driver MACODI

Frame Ethernet_802.2

Frame Ethernet_802.3

Frame Ethernet_II

Frame Ethernet_SNAP

PROTOCOL IPX E0 ETHERNET_802.2

PROTOCOL IP 800 ETHERNET_II

PROTOCOL ARP 806 ETHERNET_II

PROTOCOL RARP 8035 ETHERNET_II

LINK SUPPORT

Max Boards 4

Buffers 4 1500

MemPool 4095

PROTOCOL.INI

[network.setup]
version=0x3110
netcard=ms\$odimac,1,MS\$ODIMAC,4
transport=ms\$nwlinknb,NWLINK
transport=tcPIP-32n,MSTCP32
lana0=ms\$odimac,1,ms\$nwlinknb
lana1=ms\$odimac,1,tcPIP-32n

[net.cfg]
PATH=C:\NWCLIENT\NET.CFG

[MS\$ODIMAC]

[Link Driver MACODI]
data=Frame Ethernet_SNAP
data=Frame Ethernet_802.2
data=Frame Ethernet_II
data=Frame Ethernet_802.3
data=Link Driver MACODI

[NWLINK]

BINDINGS=MACODI
FRAME=ETHERNET_802.2

[MSTCP32]
BINDINGS=MACODI
LANABASE=1

For further help with installing Microsoft's TCP/IP-32, please call Microsoft.

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29 Jun 1995 - Corrected spelling.
19 Apr 1995 - Corrected INT setting.

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