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Mac OS 7.6: About Open Transport 1.1.1 Read Me (1/97)

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TOPIC --------------------

This article is the About Open Transport 1.1.1 ReadMe file which comes with Mac OS 7.6.

DISCUSSION --------------------

Introduction

This document contains information about Open Transport compatibility, add-on software, and solutions to known problems with third-party software. For instructions about how to use the Open Transport control panels (AppleTalk and TCP/IP), see the networking topics in Macintosh Guide, available in the Guide menu when the Finder is active. For additional technical information about Open Transport, see the "Open Transport Technical Info" file.

Contents

Network interface options

Open Transport 1.1.1 supports PCI bus, NuBus, communications slot, and PC Card network interface cards, as well as built-in LocalTalk, Ethernet, and Token Ring network adapters. For computers without expansion options, Open Transport 1.1.1 also supports a SCSI-attached network adapter. Third party network interface

options available for Open Transport include Fast Ethernet, ATM, and FDDI.

General compatibility

Open Transport is compatible with:

- existing applications that use AppleTalk as specified by Apple Computer, Inc.
- existing applications that use MacTCP as specified by Apple Computer, Inc.
- existing devices (such as printers) that you select in the Chooser
- existing NuBus network interface cards for the Mac OS

Computers running Open Transport can be added to an existing AppleTalk or TCP/IP network without upgrading other computers on the network.

Apple product compatibility update

- At Ease version 2.x or 3.x may encounter problems when starting up with Open Transport. Apple has released an updater utility ("At Ease Basic OT Updater") on Apple Software Update sites on the Internet and selected online services. If you are using At Ease for Workgroups, you should upgrade to version 3.0.2.

- The Apple PCI Token Ring Card (M3904Z/A) requires Open Transport 1.1 or later. The Apple PCI Token Ring card is compatible with Power Macintosh 7500, 8500 and 9500 computers; it is not compatible with 7200/75 and 7200/90 computers.

- Apple LaserWriter Bridge and LocalTalk Bridge versions 2.1f2 or later are compatible with Open Transport.

- Apple Internet Mail Server 1.1 or later software is compatible with Open Transport 1.1 and later.

- Apple Remote Access (ARA) Multiport Server 2.1, ARA Client 2.0.1, and ARA Personal Server 2.0.1 are compatible with Open Transport 1.1 and later.

- Apple PCI-based Workgroup servers (Application, AppleShare, and Internet) are compatible with Open Transport 1.1.

- Computers running the current versions of Apple IP Gateway and AppleTalk Internet Router must not be updated to Open Transport; these products are based on classic networking. These products do, however, interoperate with computers using either classic or Open Transport networking. Apple has not yet announced plans regarding future versions of these products.

- Apple's MacTCP Ping is not compatible with Open Transport; no update is planned. MacPing from Dartmouth, available at <ftp://ftp.dartmouth.edu>, OTTool from Neon Software, available at <ftp://ftp.neon.com> and Mac TCP Watcher v2.0 from Peter N. Lewis & Stairways Software available at <ftp://ftp.share com> are Open Transport-compatible alternatives.

- ZapTCP is not compatible with Open Transport.

Dialup network connectivity - TCP/IP

To connect to TCP/IP networks (including the Internet) using a modem, Open

Transport supports extensions known as "MDEVs." Serial Line Interface Protocol (SLIP) and Point to Point Protocol (PPP) connectivity are provided in this manner. Not all versions of all MDEVs are compatible with Open Transport 1.1 and later.

An Apple version of PPP 1.0, designed specifically to work with Open Transport, is provided with Mac OS 7.6. The following third-party MDEVs are also compatible with Open Transport. When properly installed, these MDEVs appear in the "Connect via" pop-up menu in the TCP/IP control panel.

• FreePPP - version 1.0.5 or later
FreePPP is shareware and can be found on the Internet, typically at "info-mac" mirror sites in the comm/tcp/conn directory. A list of info-mac mirror sites can currently be found at:

<http://www.pht.com/info-mac/mirror-list.html>

Some sites where FreePPP can be found currently include:

<ftp://mirrors.aol.com/pub/info-mac/comm/tcp/conn/>, and
<ftp://mirror.apple.com/mirrors/Info-Mac.Archive/comm/tcp/conn/>.

FreePPP versions prior to 2.5 may experience problems when running with virtual memory turned on (including RAM Doubler). If you have problems using FreePPP with virtual memory, either update to FreePPP 2.5 or turn virtual memory off when using FreePPP. The current version of FreePPP is 2.5rf.

• MacPPP - version 2.1.4 or later (MacPPP 2.5 is recommended)
MacPPP versions prior to 2.5 may experience problems when running with virtual memory turned on (including RAM Doubler). If you have problems using MacPPP with virtual memory, either update to MacPPP 2.5 or turn virtual memory off when using MacPPP.

• InterPPP - version 1.2.9 or later; InterPPP II - version 1.1 or later
InterPPP and InterPPP II are commercial software products. For availability and ordering information in the U.S., contact InterCon Systems at 800-468-7266 or 703-709-5500.

• MacSLIP - version 3.0.3 or later
MacSLIP is commercial software developed by Hyde Park Software. For availability and ordering information in the U.S., contact TriSoft at 800-531-5170 or 512-472-0744. For more details see the MacSLIP Web page at <http//www.zilker.net/~hydepark/>

• Sonic PPP - version 1.0.2 or later
SonicPPP is commercial software developed by Sonic Systems, Inc. For availability and ordering information in the U.S., contact Sonic Systems at 408-736-1900 (voice) 408-736-7228 (fax). For more details see the Sonic Systems Web page at <http//www.sonicsys.com/>

• NTS PPP - 2.0 or later
NTS PPP is commercial software developed by Network Telesystems, Inc. For availability and ordering information in the U.S., contact Network Telesystems

at 408-523-8100 (voice) 408-523-8818 (fax). For more details see the Network Telesystems Web page at <http//www.ntsi.com/>

• SAT/SAGEM PPP - 1.02b1 or later
SAT/SAGEM PPP is commercial software developed by SAT/SAGEM. For availability and ordering information in the US, contact SAT/SAGEM at 408-446-8690 (voice) 408-446-9766 (fax). For more details see the SAGEM Web page at <http//www.satusa.com/>

• LeoTCP - 2.0.1 or later
LeoTCP is commercial software developed by Hermstedt GmbH. For availability and ordering information in the U.S., contact Hermstedt USA at 1-800-828-5522 (voice). In Europe contact Hermstedt GmbH at +49 621-76500 (voice) +49 621-7650100 (fax).

• T-Online CSLIP - version 1.0.3 or later
T-Online CSLIP is commercial software developed by Computer Consulting GbR. For availability and ordering information in Europe, contact format network & communication at 49 2206 95840. For more details, contact format network & communication at info@format.de.

• University of Michigan ISDN PPP - 2.0.6 or later

• OT/PPP - version 1.0f1c9 or later

In addition to these, there are a number of other MDEVs (examples include those from Pacer, FCR, and Tribe) which are indistinguishable from one another to Open Transport. When installed, these appear in the "Connect via" pop-up menu as "TCP/IP PPP."

Tips for SLIP and PPP configurations

• Some MDEVs are known to be incompatible with other MDEVs. If you experience problems, remove unused MDEVs so that only one MDEV is installed on your computer at a time.

• Users who dial into a TCP/IP network or Internet Service Provider (ISP) may have been assigned a router (gateway) address that is not a part of their local subnet. This was an accepted but technically invalid configuration for MacTCP. Open Transport users should not enter a value for the router address or subnet mask; Open Transport/TCP generates correct values for these fields automatically. In unusual circumstances, you can override the supplied values using the Administration mode of the TCP/IP control panel.

• If BootP is used over SLIP or PPP for interface configuration, and if BootP returns additional default router addresses, Open Transport will automatically add those addresses to the list of default routers.

• When Open Transport is installed on a computer that previously had MacTCP configured for a server configuration, the initial configuration method -- the selection in the "Configure" pop-up menu in the TCP/IP control panel -- is set for the use of a BootP server. This default may not be the appropriate choice for you; please verify.

• If your computer was previously configured for MacTCP "server" addressing and you experience connection difficulties using PPP or SLIP after installing Open Transport, follow these steps:

1) Open the TCP/IP control panel.
2) Choose Using PPP Server or Using SLIP from the Configure pop-up menu.
3) Close the TCP/IP control panel and save changes when prompted.
4) Try connecting again.

• If your computer was previously configured for MacTCP "manual" addressing and you experience connection difficulties using PPP or SLIP after installing Open Transport, follow these steps:

1) Open the TCP/IP control panel.
2) Choose Manual from the Configure pop-up menu.
3) Verify that the correct IP address is entered in the Address field.
4) Close the TCP/IP control panel, and save changes when prompted.
5) Open the configuration utility supplied with your SLIP or PPP software, and verify that it also reflects the correct IP address in the appropriate location. Refer to the documentation supplied with your SLIP or PPP software for further information on how to enter an IP address, and how to save an updated configuration.
6) Try connecting again.

Note: In MacPPP's ConfigPPP control panel, this setting is entered in the IPCP dialog box. Refer to the documentation that came with MacPPP or FreePPP for additional information.

What's new in Open Transport 1.1.1 - general

• Memory management is improved. On PowerPC-based computers, memory is no longer fragmented. On 68030 or 68040 computers that turn on the "Load only when needed" option, memory will not unfragment for 2 minutes after a TCP application completes.

• Performance enhancements for opening and closing endpoints have been added. This is particularly visible on Mac OS computers that are busy Web servers.

• Open Transport now registers and unregisters CRM serial drivers.

• The NuBus version of the DOS Compatibility Card is compatible with Open Transport 1.1.1.

• Infrared-compatible versions of LocalTalk drivers are now installed on all models. Previously these drivers were only installed on portable computers.

What's new in Open Transport 1.1.1 - AppleTalk

• AppleTalk now properly handles Phase I RTMP packets on LocalTalk. This was causing problems using EtherPrint, TeleBridge, and other third-party forwarding technologies.

• Fixed a problem on a PowerBook Duo where AppleTalk would awaken from sleep on the wrong port when docking with an Ethernet MicroDock.

• Fixed a problem in ARA compatibility where Open Transport would sometimes not get the complete zone list from the server.

• Fixed some problems in ARA compatibility where a packet would not get routed properly, causing computers attached to the local cable of the server not to be visible to the ARA client.

• When using ADEVs, Open Transport requests a specific address from the ADEV. Some ADEVs return no error, but modify low memory locations to indicate a different address than that requested. Open Transport now picks up that different address and uses it (however, if the User Defined option is turned on, AppleTalk will not open).

• Some Ethernet-ISDN bridges used for remote LAN-to-LAN connectivity drop the connection when there is no active data transfer, and dial on demand when there is information to be transferred. If a user's local network does not include an AppleTalk router, a message appears each time the connection is dropped. Use the AppleTalk Options control panel to fix the problem. Open the control panel, turn on the "Suppress router-related alerts" option, then close the control panel.

What's new in Open Transport 1.1.1 - TCP/IP

Server-specific fixes and enhancements

- The performance of opening and closing TCP endpoints has been improved. This improvement will be most noticeable on servers with a high volume of short-duration connections (such as Web servers).

- In OT 1.1, sometimes TCP connections could not be reused. Eventually a server application would not be able to accept incoming connections. This has been fixed.

- Fixed a problem where busy TCP servers sometimes accepted no new inbound connections for about 30 seconds every 4 minutes.

- Fixed a memory leak which occurred when Hosts files were used and TCP/IP was set to "load only when needed." Previously, Hosts file entries were not properly deleted from memory when TCP/IP unloaded.

- Introduced a better DNR cache limitation algorithm. Entries that haven't been used for 15 minutes can now be flushed whenever the DNR is heavily used.

Other TCP/IP fixes and enhancements

- Open Transport's MacTCP compatibility now honors the pushFlag parameter to TCPSend call. This is required for some legacy applications to correctly communicate with older, nonconforming hosts. However, no direct control of the TCP pushFlag is or will be provided through the native OT API.

- Entries in the Address and Alias caches now flush when they reach

their "time-to-die," and not when they exceed it. TCP/IP also no longer caches resource records with a 0 time to live.

- The DNR now more robustly supports service load-balancing strategies. It no longer maps directly between an alias and the IP address of the host being aliased.

- When dealing with DHCP servers, Open Transport now tries "full-size" packets first, then falls back to "short" packets.

- Fixed a problem with timer overflow on long DHCP leases. Previously, if the lease exceeded 24 days, then TCP/IP connectivity would be lost in a matter of hours.

- Fixed a problem that occurred when one end of a connection closes a "tcp" endpoint, while the other end simultaneously aborts the connection.

- Fixed a problem where a DNR SysInfo request will sporadically fail when a valid reply is mistakenly treated as having been truncated.

- Fixed a hang that occasionally occurred when flushing the DNR address cache.

- Fixed a problem where resolving a bad name sometimes returned no error, when in fact an error occurred.

- Fixed a hang that occurred with applications that use the TCPNoCopyRcv call through the MacTCP compatibility interface. This hang occurred when the MacTCP compatibility interface ran out of memory, either due to being given a small buffer by the application, or by receiving enough inbound data to fill most of the inbound buffer space.

- Fixed a memory leak when opening the resolver in MacTCP emulation mode.

- Open Transport 1.1.1 is compatible with NuBus Token Ring adapters. To ensure compatibility with existing NuBus Token-Ring drivers, Open Transport TCP/IP artificially imposes a MTU of 1500 bytes. This limit should be addressed in a future release.

- Open Transport's MacTCP emulation can now abort a connection where the underlying stream is blocked due to flow control. Applications using the native Open Transport API will have to issue an I_FLUSH ioctl before sending a disconnect when they want to disconnect/abort a flow-controlled connection.

- A new traceroute program for Open Transport/TCP, called "WhatRoute," is now available at <http://crash.ihug.co.nz/~bryanc/>. The latest version of Mac TCP Watcher (v2.0) <ftp://ftp.share.com/peterlewis/> also now supports traceroute.

Known limitations and other issues

• The AppleTalk control panel displays separate printer and modem ports on the PowerBook 190. LocalTalk will only work correctly when the modem port is selected in the AppleTalk control panel.

• The software that dims the screen of PowerBook Duo computers when the PowerBook is docked and idle is not compatible with Open Transport. Use a third-party screen saver instead of the Apple-provided module.

• In some cases, on a PowerBook 190 configured to use the infrared port in the AppleTalk "Connect via" pop-up menu, networking services may become disabled following a sleep/wake or restart. If this happens, try putting the computer to sleep and waking it up again, or use the AppleTalk control panel to temporarily select the modem/printer port before switching back to the infrared port.

• On a IIfx or a Quadra 950, Open Transport can only use the "compatible mode" setting in the Serial Switch control panel. Don't use the "faster mode" setting with LocalTalk.

• On 68030 and 68040 computers, changes in AppleTalk configurations can cause systems running Meeting Maker 3.5 or 3.5.1 to crash. This can occur when changing AppleTalk links, turning AppleTalk off, or bringing Apple Remote Access connections up or down. This problem will occur on classic networking as well. Apple is working with ON Technology to resolve this problem.

• Open Transport generally requires more memory (RAM) than MacTCP. To conserve memory, you might try some of the following:
- Rename or re-order one or more third-party system extensions (INITs), to change the order in which memory is allocated when your computer starts up. If you use extensions from Global Village, try renaming those extensions so that they load last.
- Especially on PowerPC-based computers, turn on virtual memory.

• When TCP/IP is set to "Load only when needed" (in the control panel's Options window), "pinging" an Open Transport workstation will fail if TCP/IP is not currently being used. To make sure your computer is "pingable" at all times, turn off the "Load only when needed" option (open the TCP/IP control panel and click the Options button, then click the "Load only when needed" checkbox to remove the X) and restart your computer.

• When TCP/IP is set to "Load only when needed" (in the control panel's Options window), the first TCP/IP application opened will cause Open Transport to load into memory. Some older applications don't cause Open Transport to load, and then report errors similar to those encountered when MacTCP is not installed. If this is a problem, turn off the "Load only when needed" option (open the TCP/IP control panel and click the Options button, then click the "Load only when needed" checkbox to remove the X) and restart your computer.

• The TCP/IP control panel is able to obtain and utilize multiple gateway and name server addresses from DHCP and BootP servers. However, it will currently display only the first one. This should be addressed in a future release.

• Generally, you should turn on the "Load only when needed" option in the TCP/IP

control panel when using a modem. If TCP/IP is always loaded, your modem may attempt to initiate a dialup connection at startup. Some MDEVs require more system heap memory than is available at startup, which may cause the computer to hang. Also, some Internet service providers charge by connect time, so you may be charged for the connection, even if you weren't using it.

• If you use MacSLIP, you should likewise not configure the MacSLIP control panel to initialize MacSLIP at system startup time. As stated above, this may require more system heap memory than is available at startup, which may cause the computer to hang.

• If you are experiencing problems when using MacSLIP with virtual memory on, increasing your virtual memory size may give you better results. (Use the Memory control panel to increase virtual memory.)

• If you are using Netscape, 16 MB or more of built-in memory (RAM) is recommended.

• Some MacTCP-based applications will not function correctly unless the MacTCP DNR file is in its original location at the root level of the System Folder. Do not delete this file when installing or configuring Open Transport.

• You should only specify use of 802.3 framing in the TCP/IP control panel if you have been directed to do so by your network manager, or if you are sure that all other stations on your network segment, including your IP router(s), are also configured to use 802.3 and not Ethernet version 2.0 framing.

• Claris Emailer version 1.1 v3 or later is compatible with Open Transport 1.1.1. Earlier versions of Claris Emailer may not be compatible with Open Transport's "Load only when needed" configuration option. If you experience a system crash 2-3 minutes after quitting Emailer, turn off the "Load only when needed" option. (Open the TCP/IP control panel and click the Options button, then click the "Load only when needed" checkbox to remove the X.)

• The current version of the MacTraceRoute Ethernet LAP does not work on computers running Open Transport.

• NFS/Share versions 1.4.4 or later are compatible with Open Transport.

• When using Netware Client version 5.11 configured for NetwareIP service, the first login may yield a Netware Configuration error message. To avoid this error, open the NetwareIP control panel and change the value under Domain SAP Server (DSS) Retry Attempts from 1 to 2. You can also change Open Transport TCP/IP control panel to always load TCP/IP into memory (open the TCP/IP control panel, click the Options button, and click the "Load only when needed" box to remove the X).

• eXodus 5.2.2 and later are compatible with Open Transport.

• Versions of Anarchie prior to 1.6 have a data corruption problem when used with Open Transport. Make sure you are using Anarchie 1.6 or later.

• If an Apple Remote Access (ARA) user is on a non-routed, extended (Ethernet)

network, and there are devices on the local network with the same network number as devices on the remote network, the user won't be able to see the local devices. This problem can be fixed by installing a router. Another workaround is to clear the PRAM on the ARA computer. (Hold down the Control, Option, and P keys simultaneously while starting up the computer). Clearing PRAM causes the computer to start up with a new network number, which should not conflict with the remote network number.

• Daemon 1.0.0 & Daemon Killer 1.0 are not compatible with Open Transport.

• MudDweller 1.2 is not completely compatible with Open Transport. You can open new connections, but the "reconnect" choice does not work correctly.

• The system will crash during launch of NetPresenz if Open Transport TCP/IP is configured to use MacIP and the selected zone has no MacIP server.

• Current versions of VersaTerm SLIP are not compatible with Open Transport.

• Problems can occur with old versions of the KeyServer package from Sassafras Software when TCP/IP is configured to "Load only when needed" (in the control panel's Options window). Contact Sassafras for the latest revisions at <http://www.sassafras.com>.

• The combination of Open Transport 1.1.1, LocalTalk Bridge 2.1f2, Global Village Toolbox and GlobalFax extensions causes a crash. The workaround is to move the LocalTalk Bridge file to the Extensions folder, renaming it to "aLocalTalk Bridge." You can make an alias and rename the alias as desired. Put the alias wherever you want, including the Control Panels folder. This will allow the LocalTalk Bridge to load before Global Village and avoid the cause of the crash.

• To use the CSI Hurdler serial card with Open Transport, contact CSI to get a copy of their preference file patch. This will enable the card to be compatible with Open Transport 1.1.1.

• After installing Open Transport 1.1.1 over a network while using Classic AppleTalk, open the Open Transport 1.1.1 AppleTalk control panel. If you are not using an infrared device, open the "Connect via" pop-up menu and choose Serial Port.

• The current official release of the MPW shell will hang the system when used with virtual memory and Open Transport. When using the MPW shell and Open Transport, turn off virtual memory. The ETO #21 pre-release MPW shell, version 3.4.2b2, fixes this problem.

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