AppleTalk over IP Tunnel adev

The *IPTnnl* adev allows a Macintosh with MacTCP 2.0.2 (or later) and an external IP connection (via Ethernet, SL/IP or PPP) to access remote AppleTalk services using an AppleTalk encapsulation system that is compatible with the UNIX™ AppleTalk Router (UAR) "tnnl" interface.

IPTnnl can be used to connect Macintoshes to a UNIX™ host that is running UAR or to other Macintoshes which also have *IPTnnl* installed (in which case the use of UAR is not required).

Notice

Bugs to `djh@munnari.OZ.AU`

Shareware

Please note that this adev is released under the shareware system. The cost for personal use on a single Macintosh is US$10 or the approximate equivalent in your local currency. The fee for use on 2-5 Macintoshes for academic or personal use is US$25. A site licence, or the fee for use in a commercial environment may be negotiated by sending email to `uar@munnari.OZ.AU` or by writing to the address below.

Please send shareware payments via cheque or postal order to

IP Tunnel ADEV
Department of Computer Science
The University of Melbourne
221 Bouverie Street
Carlton 3053
Victoria
Australia

ARNS

The *IPTnnl* adev should normally be used to provide a semi-permanent AppleTalk connection to Macintoshes on IP-only subnets, that is, where an EtherTalk connection is not available. It is not designed for casual connections; for this purpose you should use the *IPRemoteAT* adev and UNIX™ server from the *ARNS* package (see below).

Network Control Panel

IPTnnl is a client of the *Network* Control Panel. If your Macintosh does not have it already, *Network* must be installed from the 'Network Software Installer' disk. The latest version of the NSI disk is available via anonymous FTP from `ftp.support apple.com` in the directory `"apple_sw_updates/US/Macintosh/Networking & Communications/Network Software Installer"` as the file `NSI_ZM-1.5.hqx`. You will also need a version of *DiskCopy* to create an 800k disk from this image file. The use of system software version 6.0.5 or later is highly recommended, but System 7 is preferred because of the amount of system heap memory required.

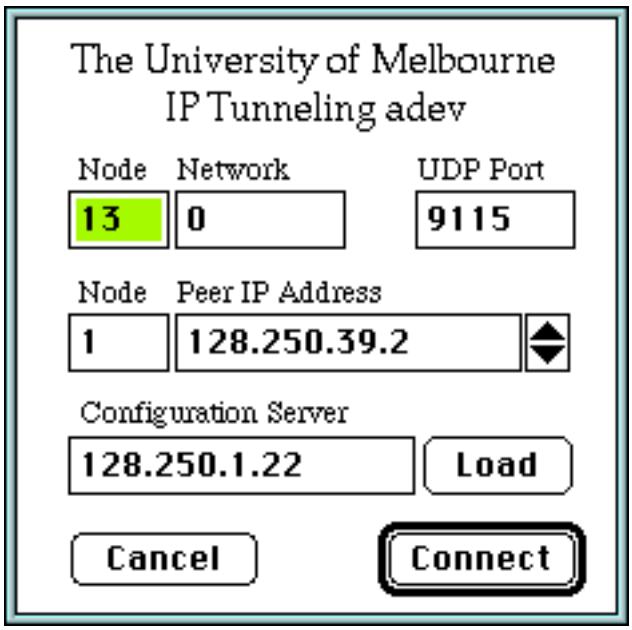
The *Network* Control Panel lists the available alternate AppleTalk connections. In this example, the *IPTnnl* adev icon is highlighted indicating that it is currently active:

To change the network connection, click on the icon that represents the service to be used. An alert box will appear requesting confirmation of the change ...

Since there is no **Obviously** button, click on **OK**.

Configuration

Selecting the *IPTnnl* adev icon in the *Network* Control Panel allows the link details to be configured. Note: after the initial configuration, selecting the icon does not display the dialog box unless the SHIFT key is simultaneously depressed.



The **Node** field is the AppleTalk node number for this Macintosh. Node numbers are chosen (at random) by the UAR or AppleTalk network administrator and are uniquely assigned to the IP addresses of Macintoshes running *IPTnnl* or UAR "tnnl" interfaces. Valid node numbers lie in the range 1 - 253.

The **Network** field is the AppleTalk network number assigned to a UAR "tnnl" or zero for *IPTnnl* connected Macintoshes where UAR is not used (must be zero for this case, you have been warned!).

The **UDP Port** field is the service port assigned to UAR "tnnl"s (as set by a `tnnl` entry in the file `/etc/services`), or chosen by the local network administrator. The default value is `9115`.

The **Node** and **Peer IP Address** scrolling fields contain the mapping between AppleTalk node numbers and the IP addresses of other Macintoshes running *IPTnnl* or UAR "tnnl" interfaces. The up and down arrows scroll through the 253 available addresses. Holding down the SHIFT key scrolls by 10 at a time. At least one participating machine must have all peer address mappings set by hand (see below).

The **Configuration Server** field contains the IP address of a Macintosh running *IPTnnl* or a UNIX™ host running UAR that can download configuration settings to the local Macintosh when the **Load** button is selected. Requests for configuration data from Macintoshes whose IP address is not already listed as a peer are silently ignored.

> Note: The UDP Port field value used by the server must be entered before configuration data can be downloaded.

The **Connect** button saves any *IPTnnl* configuration changes and completes the change in network connection. The **Cancel** button discards any changes and returns the network connection to the previously selected method.

MacTCP

IPTnnl requires MacTCP version 2.0.2 or later (the support in version 1.1 is broken). For reasons that should hopefully be obvious, MacTCP should be configured to send IP packets over Ethernet, SL/IP or PPP rather than via LocalTalk or EtherTalk.

The *IPTnnl* adev contains code to adjust AppleTalk timeouts for slow IP links but this is only effective if the MacTCP mdev (SL/IP or PPP etc.) correctly sets the line speed (in the `LAPStats.ifSpeed` field). It is not currently known which of the existing mdevs comply with this requirement.

Availability

The *IPTnnl* adev and this document are available via FTP from `munnari.OZ.AU` as the file

```
mac/iptnnladev.1.0.sit.hqx.Z
```

See Also

The *ARNS* and *atalkad* packages and*IPTalk* adev which are available via anonymous FTP from `munnari.OZ.AU` as the files

```
mac/arns.tar.Z
mac/atalkad.1.25.shar.Z
mac/iptalkadev.1.0.sit.hqx.Z
```