Apple Business Systems
Technical Notes

Product Technical Support

AWS15 : Proper reconfiguration of bnet for AppleTalk support

Written by : Sandhya Vora & Antonio Ordonez November, 1993
Modified by : Benjamin B. Beasley December, 1993

Network protocols, like TCP/IP and AppleTalk, must be configured into the A/UX kernel before they can be used. To add networking capability through the Ethernet port, you must add a low-level driver to the kernel along with TCP/IP and AppleTalk Support This can be done by typing the following command in a CommandShell window ,

```
newconfig bnet appletalk
```

This will create a new kernel that will include the necessary modules for Ethernet (ao, as or ae6), TCP/IP and AppleTalk support. It is important to note that the appletalk kernel module has certain dependencies on the bnet module and therefore both modules must be included in the kernel if support for AppleTalk is desired.

The user may decide to reconfigure the kernel that does not include the AppleTalk, TCP/IP and NFS modules. This can be done by typing the following command in a CommandShell window,

```
newconfig nonet
```

If the user decides later on to add support for AppleTalk, *newconfig appletalk* is not sufficient to configure the A/UX kernel. As mentioned before, the appletalk kernel module has certain dependencies on the bnet module, this makes it necessary to configure the kernel to include bnet. If the you attempt to build a kernel with appletalk support without the bnet module being included, the *newconfig* command will report an error. For example:

```
auxtest.root 9 # newconfig appletalk
newconfig: Making backup copies of /etc/inittab /etc/passwd /etc/group.
newconfig: Preparing
 to build a new kernel.
newconfig: Building a new kernel (this may take several minutes).
newconfig: *** PROBLEMS BUILDING A NEW KERNEL. ***
newconfig: You might try running newconfig with the -v flag.
/tmp/ncErr11168:Autoconfig error: Kernel link failed
Driver startup files in /etc/startup.d may not match kernel!
Run newunix(1m) to restore previous configuration
newconfig: Restoring saved /etc/inittab /etc/passwd /etc/group.
```

Running the *newconfig* command with the -v option, reveals that the kernel could not be linked because of undefined symbols in the elap module. These symbols are part of the bnet module.

```
ld warning: file /tmp/kernAAAa01368 has no relocation information
undefined first referenced
```

```
 symbol in file
probing /etc/boot.d/elap
ld fatal: Symbol referencing errors. No output written to /tmp/kernBAAa01368 Autoconfig error:
Kernel link failed
```

The correct way to include AppleTalk support back in the kernel after removing all network support is to include both the appletalk and bnet modules. This can be done by typing the following command in a CommandShell window:

```
newconfig bnet appletalk
```

On the other hand, creating a kernel which just includes the bnet module does not provide support for AppleTalk.

If you go to the Chooser and try to set AppleTalk to active, it will present you with the following dialog,

```
Please make sure that you are connected to an AppleTalk network
```

Followed by:

```
AppleTalk cannot be opened
```

If you go into the Network Control Panel and try to select EtherTalk, the following dialog will be displayed,

```
Please be sure you are connected to an AppleTalk network
```

If you click the OK button, the dialog will appear again. At this point, the only option available to exit the Macintosh Environment is to use Ctrl-Command-E.

To correct this situation, a new kernel that includes both the bnet and appletalk modules should be created. This can be done by typing the following command in a CommandShell window,

```
newconfig bnet appletalk
```

Note: To make use of the new kernel, you must reboot the system each time following the *newconfig* command. For more information on the newconfig details, refer to the on-line man page for *newconfig*.