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Configuring a Token Ring Network Adapter for DIGITAL UNIX Users

EK-TKRNX-CL. A01

Dear Customer,

Thank you for purchasing the Token Ring Network Adapter (PBXNP-AC) from DIGITAL. Part 1 of this letter contains information on existing patch kits for Bug Fixes, while Part 2 advises you of the important steps and changes needed to be made to support the Token Ring Network Adapter on your DIGITAL UNIX system.

Part 1 - Patch Kits for Bug Fixes

Patch kits for DIGITAL UNIX V3.2G, V4.0, V4.0A and V4.0B are currently available through the Customer Service Center (with a support contract) or by visiting the public access area at **http://www.service.digital.com/html/patch_public.html.**

You can find these patches by using the "Search and Download" option.
Choose "DIGITAL_UNIX_Readmes" and enter the patch kit identifier number in the Query box to locate the patch. (Example: DUV40AAS00002-19970505)

Patch Identifiers

- DIGITAL UNIX V3.2G Patch Kit = DUV32GAS00001-19970501

  The specific patch for fixing a Token ring transmission timeout is Patch ID: 58 (osf375-058).

- DIGITAL UNIX V4.0 Patch Kit = DUV40AS00002-19970501

  The specific patch for fixing a Token ring transmission timeout is Patch ID: 136 (OSF400-136).

- DIGITAL UNIX V4.0A Patch Kit = DUV40AAS00002-19970505 (~21MB)

  The specific patch for fixing a Token Ring transmission timeout is Patch ID:43 (OSF405-043).

- DIGITAL UNIX V4.0B Patch Kit = DUV40BAS00003-19970425 (~27MB)

  The specific patch for fixing a Token Ring transmission timeout is Patch ID:60 (OSF410-4050043).

- DIGITAL UNIX V4.OC does not require installation of a patch kit.

Part 2 -The New Token Ring Network Adapter:

Changing the Kernel Configuration

A change to the DIGITAL UNIX kernel *is required* for V3.2G, V4.0, V4.0A, V4.0B, V4.0C and systems to support the PBXNP-AC (PCI) Token Ring adapter.

Note: The PBXNP-AC vendor ID is 0x10EF and the PCI Device ID is 0x8154.

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V4.0, V4.0A, V4.0B and V4.0C Systems

The /etc/sysconfigtab file contains the bus specific definitions used by the operating system to match devices to device drivers. To support the Token Ring Network Adapter (PBXNP-AC), you will need to add another line to the file that includes the data for the 'tra:' device. This operation is done fairly simply (see awk command below). A new 'PCI_Option' line must be created under the 'tra:' section. This is done easiest by copying the line for the TCC 4048 (search for '0x10DA'). After you make a copy of this line, you need to change the 'Vendor_Id' field to 0x10EF, and then change the 'Device_Id' field to 0x8154.

The resulting line should contain the following (***the actual line in the file should be one line -- not multiple lines as shown here***).

```
PCI_Option =  PCI_SE_Rev - 0x210, Vendor_Id - 0x10EF, Device_Id
- 0x8154, Rev - 0, Base - 0, Sub - 0, Pif - 0,Sub_Vid - 0,
Sub_Did - 0, Vid_Mo_Flag - 1, Did_Mo_Flag - 1, Rev_Mo_Flag - 0,
Base_Mo_Flag - 0, Sub_Mo_Flag - 0, Pif_Mo_Flag - 0,
Sub_Vid_Mo_Flag - 0, Sub_Did_Mo_Flag - 0, Driver_Name - tra,
Type - C, Adpt_Config - N
```

Caution: Option lines in /etc/sysconfigtab are very long. There is no way to break the line up in the file. The lines must remain in their long form.

Using the 'awk' script for editing the /etc/sysconfigtab file

The following awk command will edit the /etc/sysconfigtab file for you. Before you try this command, it would be wise to copy /etc/sysconfigtab to /etc/sysconfigtab.old.

```
sh
    awk '
    {
      print $0;
      if ($0 ~ /0x10DA/) {
        sub(/0x10DA/,"0x10EF");
        sub(/0x0508/,"0x8154");
        print $0;
      }
    }' < /etc/sysconfigtab > /etc/sysconfigtab.new
```

Check the contents of /etc/sysconfigtab.new (via diff utility or through a file editor), and if the one line change looks correct, copy /etc/sysconfigtab.new to /etc/sysconfigtab.

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Rebuilding the kernel

Shutdown the system (`shutdown -h now`), and then boot genvmunix in single user mode (`>>>boot -fi genvmunix -fl ""`). As the system is coming up, you should notice the system recognizing the Token Ring adapter. After the system comes up, you need to rebuild your kernel so that support for the new Token Ring adapter is included (doconfig accepting the same options that were previously configured). Copy the resultant kernel to /vmunix, and reboot the system (via reboot command).

V3.2G Systems

The file /sys/data/pci_option_data.c needs to be modified to include support for the Token Ring Network Adapter's PCI vendor and device identification. This can be done by duplicating the entire record (enclosed within the '{' and '}' characters) of the TCC4048 (search for TCC_ID), and changing the Vendor ID to 0x10EF and Device ID to 0x8154. The line to be added looks like the following;

{ 0x210, 0x10EF, 0x8154, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, "tra", 'C', 0} ,

Using the 'awk' script for editing /sys/data/pci_option_data.c file

The following awk command will edit the /sys/data/pci_option_data.c file for addition of the

Token Ring Network Adapter's PCI Vendor ID and Device ID. Before you try this command, it would be wise to copy /sys/data/pci_option_data.c to /sys/data/pci_option_data.c.old.

```
sh
awk '
{
  if ($0 ~ /TCC_ID/) {
    print "{ 0x210, 0x10EF, 0x8154, 0, 0, 0, 0, 0, 0,";
    print "  1, 1, 0, 0, 0, 0, 0, 0,";
    printf " \"tra\", %cC%c, 0},\n", 39, 39;
  }
  print $0;
}' < /sys/data/pci_option_data.c > /sys/data/pci_option_data.c.new
```

Check the contents of /sys/data/pci_option_data.c.new (via diff utility or through a file editor), and if the changed entry looks correct, copy /sys/data/pci_option_data.c.new to /sys/data/pci_option_data.c.

(continued)

Rebuilding the kernel

Shutdown the system (`shutdown -h now`), and then boot genvmunix in single user mode (`>>>boot -fi genvmunix -fl ""`). After the system comes up, you need to rebuild your kernel so that support for the new Token Ring adapter is included. First edit the kernel configuration file to include support for the new Token Ring adapter. The file is in `/sys/conf/<systemname>` , and you need to add the following line;

```
controller tra0 at *
```

Then execute `doconfig` to create the new kernel. Copy the kernel to `/vmunix` after complete, and reboot the system (via reboot command).

Note: **If you already have Token Ring devices on your system, then use 'tra1' or 'tra2' for our controller line in the kernel configuration file. Each Token Ring adapter unit requires a 'controller' line in the kernel configuration file.**

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