Telnet port Troubleshooting

Purpose

Telnet ports are used to link a specific desktop terminal to a PIB (port) within Hospital Management. If a telnet port fails Hospital Management will not work on that desktop.

These notes assist with a general understanding of the association between telnet ports, PIBs & ports under Hospital Management. Other technical notes are available which go into more detail concerning the set up within Hostaccess.

A telnet port is a unique number that allows a network based or Windows 'socket' connection to D3/NT. Hostaccess uses telnet ports in this way. D3/NT provides the telnet server component that 'listens' on nominated telnet ports for a telnet client (Hostaccess or other telnet based application). When the client & the server connect properly, then the user is presented with the D3 logon screen.

When the D3/NT service starts, it reads the Windows NT registry to determine which telnet port associations to make. D3 provides a Windows based utility to simplify the creation of the Windows registry settings.

Although not used, it is possible to create temporary telnet associations via the TCL command dev-make. Therefore, these commands could be placed in the user-coldstart along with the printer startup commands. That method is not recommended.

To determine the cause of telnet-related problems, it is best to firstly verify that the D3 set up of telnet is correct. To do this, logon to Hospital management as usual using a working terminal. Go to TCL by using F5. At the TCL prompt, type in

Dev-list Telnet ***<Enter>***

The system will respond with a report showing the Telnet associations. The report will be broken into 3 sections.

```
Seq Typ Ref# Device-Type        Device-Desc
=== === ==== ================  ========================================
  1  T     - TELNET (SERVER)    TCP port 9999   (Special Server)
  2  T     - TELNET (SERVER)    TCP port 23   (Main Server)
  3  T     2 TELNET (Server)    TCP port 1024
  4  T     3 TELNET (Server)    TCP port 1026
  5  T  *  2 TELNET (Client)    IP addr 192.168.0.2:3252
```

The first section contains two lines that represent the D3 server facilities; and can be safely ignored for our purposes.

The next section lists all of the connections that D3 started. Normally these are the ones that were started as a result of reading in the Windows registry, but could also include those started manually. These can be recognised by the column "Device-Type", which in this case are "TELNET (Server)". The important columns for this section is the Ref# column and the Device-Desc column. The ref# is the PIB or port number that has been associated with the TCP port listed in the Device-Desc column. These associations must be unique. That is, a given ref# in this section must be associated with one & only one TCP port; and vice versa. That is, a given TCP port number must be associated with one & only one ref#. If this area shows inconsistencies; then remedial action needs to be taken via the D3 device manager. Problems have been shown to exist if telnet port numbers in the range 1020 & above have been used. Telnet ports in the range 22000 and above are unlikely to conflict with other Windows applications & utilities.

The last section shows the clients that are connected to the servers for each port. These can be recognised by the Device-type of TELNET (Client). If everything is set up correctly, then the Ref# for a given line is this section must agree with a ref# in the second section. This

indicates a connection between the client & the pre-defined server. If there is not a match, then this indicates that the client has not connected on the correct telnet port & has been allocated a port by the telnet server.
Inconsistencies such as this indicate telnet, network or other connection problems and should be addressed.

The best way to resolve these issues is to document exactly what telnet number each terminal is to have, the port number that represents that terminal and a suitable description for each.

Within Hospital Management is a documentary tool that describes, among other things, the description or name associated with each port. The description is then used when performing the /LISTU command and assists the operator by providing a meaningful description of who is logged on. Of course, if the system is not correctly set up, then the /LISTU command may be meaningless.

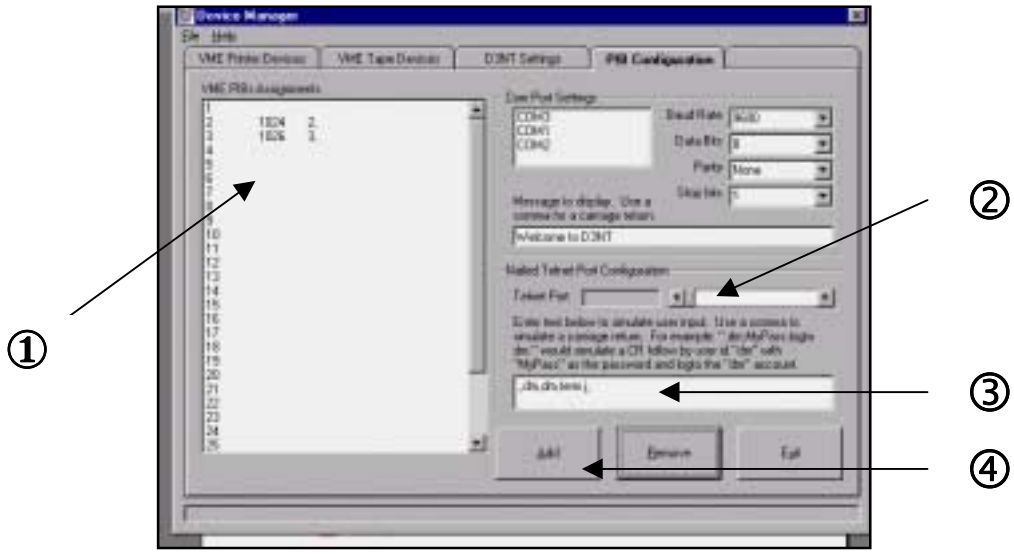
To access this tool, logon as usual and type in **/TERM.CONFIG** and press <***Enter***>. This will bring up a screen showing the port numbers on the left & the description associated with that port on the right. Care should be taken when changing this screen. For our purposes here we wish to use this screen only to determine the port number for each screen on your system. Changes should not be necessary. Note down the details from this screen, and press <Esc> to return to Hospital Management.

Then, on the NT server, logon to NT as an administrator, and access the D3/NT configuration tool. This is found via Start → Programs → D3 utilities (or D3) → Device Manager.

On the **PIB configuration** tab of this screen, you can create the associations between PIBs (ports) and telnet ports. Before you start, note down *all* of the settings on this screen. Then using the **D3NT Settings** tab, look for and check the option “Check to remove all nailed telnet” and click Update. This removes all the entries in the Windows registry, and should have cleared all of the settings on the PIB configuration screen. NB: It may have also cleared the serial (modem) connection as well. Do not forget to recreate that as well as the telnet PIB’s otherwise your modem will not work.

Clearing the settings from the registry will clean up any inconsistencies found in section two of the dev-list report performed earlier.

Now you can create new pIb to Telnet port associations. This is done by (1) clicking to mark



the pib or line number(s) you want,

(2) using the slider to assign the first number in the range (The range 22000 upwards has been shown to be stable. It is recommended that the last digit(s) correspond to the PIB number. Eg: 22005 be assigned to pib 5); press <Tab> to move to position (3) and delete ***all*** of the characters in this area, then (4) click Add. This should put entries into each marked line. If necessary, in a similar way, assign the modem pib to the appropriate serial port (COM1: or COM2:), with the appropriate baud rate, parity etc. The most common baud rate to use is 19,200 or 38,400. For modem sessions remove the "Message to display" as well as the term setting shown as step (3) in the diagram.

If you get lost in this process, start again by "Removing all nailed telnet sessions" as before.

Once you have this screen the way you want it, click **Exit**. Verify that the changes have 'taken' by going back into the Device manager to make sure all is correct. Log off from NT.

Now that you have decided upon each port's correct telnet session number, the next step is to go to each & every desktop and verify that HostAccess is configured to use the correct telnet port. At each & every desktop, start up Hospital Management, but do not log on. From the top menu click Configure → Session → Properties. Make the port the appropriate telnet number, and click Ok, then Ok on the next screen. Click File → Save to make the changes permanent. Exit out of Hostaccess.

Repeat this step for each & every desktop on your system.

Leaving all screens logged off and without Hostaccess running; go back to the NT server and log back on to NT. Go into Services either via the desktop shortcut (if one exists) or via My Computer → Control Panel → Services. Click and mark "D3 Virtual Machine", and click Stop. Follow the onscreen prompts & wait for the service to stop. Leaving the D3 Virtual Machine Environment marked, now click Start; and wait for the service to start.

Once restarted, close the Services window and log off from NT. This process of stopping & starting the D3 VME would have caused the changes made in the D3 Device Manager to take effect. Everything should now line up.

Test each desktop by going back into Hospital Management. It should connect and once logged on the port number in the top left hand corner of the screen should be the one you expect for that desktop. Also check that the dev-list command by repeating the command as described at the beginning of this document. Lastly, with all the screens logged on, run the command /LISTU <Enter> using one of the screens. This will show who is logged on & where. The details should be correct & match what you have set up.