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Debugging 128-Port Remote

Special Notices

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> **Note:** The information in this document has **not** been verified for AIX 4.1.

About This Document

This document applies to AIX versions 3.2.3 and 3.2.5.

INFORMATION NEEDED FOR DEBUGGING

Important: Users should NOT be logged in on any device on the 128-port RANs while doing the following diagnostics.

1. Are all the needed 128-port PTFs installed? _____
2. How many 128-port controllers are installed in this system? _____
3. Are there any local RANs (these are NOT connected over modem or DSU)? _____
4. If there are local RANs, do they work correctly? _____
5. Was this configuration working previously? _____
6. What is displayed on the remote RANs LED display (P0,P1,P2,P4,AC)? _____
7. Is the last remote RAN terminated? _____
8. Are the RAN node numbers set correctly? _____
9. Is the line set for 232 or 422 sync? _____
10. Is cabling 8 wire? _____
11. Has cabling been checked? If not, use figures in the next section._____
12. Are DSUs or modems being used? _____

13. Are all DSUs/modems the same type and model? _____
14. Who is the manufacturer and what is the model type of each?

    _____
15. Do the transmit (TD) and receive (RD) data lights flash on the remote RAN?_____

    NOTE: Packet information from the 6000 should be received by the RAN and acknowledgment sent back from the RAN. This is the reason for the flashing TD and RD lights.
16. If only one of the RANs TD or RD lights is flashing, which one is it? _____
17. Does the DSU/modem flash the same TD and RD lights? ____

    NOTE: Some modems may show an SD or TxD light instead of TD. They may also display an RxD or something similar in place of RD.
18. Is this a leased-line phone connection or a regular carrier? _____
19. What speed is the leased line (phone line) set for? The 128-port line speed should be set the same as the leased- line speed._____

    EXAMPLE: Digital leased-line speed is 57.6 128-port line "1" speed should also be 57.6
20. If the phone line is suspect, has it been checked by the local phone company? _____
21. In "smit chg128psync" output, what is the Line 1 and Line 2 setup? See configuration information later in this document to compare your configuration to the examples. (Include this information on another page when sending in.)

    To resend the initialization string to the remote RANs, press the Enter key on the "Change/Show Characteristics of a 128-Port Async Adapter" screen. Observe the LED on the remote RAN.
22. What happens when the command "cfgmgr -v" is issued? View the output on the terminal screen and observe the RAN's LED display. RANs change?

    _____

Eight-Wire Synchronous Modem Wiring

Eight-Wire Synchronous Modem wiring allows RANs to be installed in remote locations and connected to the host adapter via RS-232 or RS-422 synchronous modems. The IBM 128-Port Host Adapter and the RAN have been designed so that the synchronous ports can support either RS-422 or RS-232 line levels. To connect host adapters and RANs to RS-232 synchronous modems, use the special cables shown in the diagram below. Note that only the negative lead for each RS-422 signal is used in this configuration. The positive lead is left "floating".

```
============================================================
FIGURE 1    RS232 Synchronous Modem Cable Specs.
============================================================
(LOCAL)           (REMOTE)
128-Port Controller    RS-232             RS-232
Synchronous   Synchronous    Synchronous       Concentrator
   Port          Modem          Modem             "IN" Port
RxD  1 .......3  RxD            3  RxD            6  RxD
RxC  4 ......17  RxC           17  RxC            9  RxC
TxD  6 .......2  TxD            2  TxD            1  TxD
TxC  9 ......15  TxC           15  TxC ...........4  TxC
GND 12 ...... 7  SG             7  SG  ..........12  GND
              4  RTS            4  RTS
              5  CTS            5  CTS
              6  DSR            6  DSR
             20  DTR           20  DTR
GND (shell)....... 1  GND          1  GND ..... (shell) GND
(Cable Shield)                                (Cable Shield)
(HD-15 Male)    (DB-25 Male)  (DB-25 Male)    (HD-15 Female)
============================================================
============================================================
FIGURE 2    RS422 Synchronous Modem Cable Specs.
============================================================
(LOCAL)      (REMOTE)
128-Port Controller      RS-422        RS-422
Synchronous      Synchronous   Synchronous      Concentrator
Port                 Modem         Modem         "IN" Port
RxD - 1 ..........  6 - RD        6 - RD ......... 6 - RxD
RxD + 2 .......... 24 + RD       24 + RD ......... 7 + RxD
RxC - 4 ..........  8 - RT        8 - RT ......... 9 - RxC
RxC + 5 .......... 26 + RT       26 + RT ........ 10 + RxC
TxD - 6 ..........  4 - SD        4 - SD ......... 1 - TxD
TxD + 7 .......... 22 + SD       22 + SD ......... 2 + TxD
TxC - 9 ..........  5 - ST        5 - ST ......... 4 - TxC
TxC + 10 ......... 23 + ST       23 + ST ......... 5 + TxC
GND   12 ......... 19  GND       19  GND ........ 12   GND
(HD-15 Male)   (DB-37 Male)  (DB-37 Male)   (HD-15 Female)
============================================================
```

IBM 128-Port Controller Remote RAN Configurations

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These configurations were tested with the following hardware and software:

- IBM RISC System model 520
- AIX 3.2.3 Extended with all necessary 128-Port PTFs applied
- One 128-Port Controller and four (4) RANs

- Two 232 Sync modems
- 128-Port lines configured for a speed of 14.4K
- Eight-wire cabling

The "T" in these figures represents a terminator plug. To change the 128-port controller settings, use the command "smit chg128psync".

Note: After making changes to 128-port lines via the above SMIT command,you should issue the "cfgmgr -v" command on the command line. RANs may not show as "available", otherwise.

```
128-port          232 Sync
Controller -------| Modem |----
/      232/Sync
-----| Modem |-------- NODE 1 ----- T
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                   [232_modem]
Node 2 Comm Mode                   [232_modem]
Node 3 Comm Mode                   [direct]
Node 4 Comm Mode                   [direct]
=========================================================
128-port          232/Sync
Controller -------| Modem |----
/     232/Sync
-----| Modem |------- NODE 1 ----- NODE 2 ---- T
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                   [232_modem]
Node 2 Comm Mode                   [direct]
Node 3 Comm Mode                   [232_modem]
Node 4 Comm Mode                   [direct]
=========================================================
128-port          232/Sync
Controller -------| Modem |----
/     232/Sync
-----| Modem |------- NODE 1 ----- NODE 4 ---- T
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                   [232_modem]
Node 2 Comm Mode                   [direct]
Node 3 Comm Mode                   [232_modem]
Node 4 Comm Mode                   [direct]
=========================================================
```

```
128-port          232/Sync
Controller -------| Modem |----
/     232/Sync
-----| Modem |-------- NODE 4 ----- T
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                  [232_modem]
Node 2 Comm Mode                  [232_modem]
Node 3 Comm Mode                  [direct]
Node 4 Comm Mode                  [direct]
128-port                      232/Sync
Controller ---- NODE 1 ------| Modem |----
/     232/Sync
-----| Modem |-------- NODE 2 ---- T
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                  [direct]
Node 2 Comm Mode                  [232_modem]
Node 3 Comm Mode                  [232_modem]
Node 4 Comm Mode                  [direct]
=========================================================
128-port                      232/Sync
Controller ---- NODE 1 ------| Modem |----
/     232/Sync
-----| Modem |-------- NODE 4 ---- T
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                  [direct]
Node 2 Comm Mode                  [232_modem]
Node 3 Comm Mode                  [direct]
Node 4 Comm Mode                  [232_modem]
=========================================================
```

```
128-port                      232/Sync
Controller ---- NODE 1 ------| Modem |----
/     232/Sync
-----| Modem |-------- NODE 2 -----
|
|
T ----- NODE 3 -----
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                  [direct]
Node 2 Comm Mode                  [232_modem]
Node 3 Comm Mode                  [direct]
Node 4 Comm Mode                  [232_modem]
=======================================================
128-port                      232/Sync
Controller ---- NODE 1 ------| Modem |----
/     232/Sync
-----| Modem |-------- NODE 3 -----
|
|
T ----- NODE 4 -----
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                  [direct]
Node 2 Comm Mode                  [232_modem]
Node 3 Comm Mode                  [direct]
Node 4 Comm Mode                  [232_modem]
=======================================================
128-port                                 232/Sync
Controller ---- NODE 1 ---- NODE 2 ----| Modem |-----
/    232/Sync
-----| Modem |---- NODE 3 --
|
|
T ----- NODE 4 --
Line 1 Cable Type                    [ 8 ]
Node 1 Comm Mode                  [direct]
Node 2 Comm Mode                  [direct]
Node 3 Comm Mode                  [232_modem]
Node 4 Comm Mode                  [direct]
```

Suggested Reading: "AIX Version 3.2 System Management Guide: Communications and Networks" (GC23-2487-00)

Reader's Comments

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END OF DOCUMENT (128-Port.RAN.debug.zap,)