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Configuring Your RealPort tty Devices

System V, Release 4 SCO UnixWare 2.x

91000725 Rev A

Introduction

This guide will provide the information you need to test and use the serial ports created by the Digi RealPort device driver with PortServer and PortServer II terminal servers.



Except where noted, *PortServer* refers to both PortServer and PortServer II.

Digi TTY Devices

This device driver supports four different devices on each asynchronous line. Two of these devices are tty devices, for use with terminals and modems, and two are transparent print devices for printers connected to terminals. On line “a01,” where “a” refers to PortServer a, and “01” refers to first line (port) on that PortServer, the four devices are named: `/dev/term/a01m`, `dev/term/a01s`, `/dev/prs01s` and `/dev/prs01m`. These devices are described below.

Terminal/Modem Devices

`/dev/term/a01m`

This is the “modem” tty device, used for terminals, modems, printers, laboratory equipment, etc. It is also sometimes referred to as a “dial-in” device.

This device is a traditional Unix port with modem control. It requires Carrier Detect to be high before it will operate. RTS/CTS handshaking is enabled by default.

When used with a modem, the port will wait for carrier before sending out the **login:** prompt, so the user is greeted properly upon making a connection.

When used with a terminal or other device, it is usually wise to wire the Digi DCD signal to the terminal’s DTR (Data Terminal Ready) line. When the terminal is turned on, the system outputs a **login:** prompt. When the terminal is turned off, any associated jobs are killed, and the user is logged out.

`/dev/term/a01s`

Standard device. This is the same as `/dev/term/a01m` with the exceptions that the default handshake method is XON/XOFF, and that Data Carrier Detect need not be present to open the device. *Once a connection is established and DCD becomes active, standard devices behave in the same way as modem devices—subsequent loss of the Data Carrier Detect signal will cause the jobs to be killed and the user will be automatically logged off.*

Transparent Print Devices

```
/dev/pr01s  
/dev/pr01m
```

The “Transparent Print Devices” (DigiPRINT) for use with the auxiliary printer port of a terminal. Output directed to a **pr** device goes out the auxiliary port of a terminal while the user continues to use the terminal normally.

Use **pr01s** if your terminal device is **term/a01s** (standard device); use **pr01m** if your terminal device is **term/a01m** (modem device).

Transparent print devices allow you to use your terminal and a local printer connected to the terminal’s auxiliary port at the same time. The system assumes data you send to the **pr** device is destined for the printer. Before sending data to the printer, the system sends a special control sequence to the terminal to activate the printer port, sends the data, then turns the printer port back off again before sending more data for the terminal.

For correct operation, certain parameters must be provided to the *ditty* program. It is usually best to set these up in **/etc/rc2.d**, since they must be set each time the system is rebooted. See the *RealPort Unix Utilities Guide*.

Note!

Transparent print devices may not be enabled for login.

Testing the Digi Ports

Connect terminals to the ports (using a null modem, if necessary) and test the connections to each terminal by entering the following command for *each* port added:

```
date > /dev/term/a01s
```

(Assuming the terminal is connected to **a01s**.)

Please note that in the above, the “date” command is used as a simple test, to provide text output that can be redirected; there is no other significance to “date” in this test.

Also note that the default settings for the driver are 9600 baud, 8 data bits, no parity and 1 stop bit.

- If the date appears on the terminal’s screen, the device is properly connected.
- If the date *does not* appear on the terminal’s screen, then that terminal is not receiving data; check the power, cables, connections, etc.

- If nonsense characters are printed on the terminal’s screen, check the baud rates, data bits, stop bits, and parity setting on your terminal.

Another test you can perform will verify that a port can both transmit and receive data:

Connect the port’s transmit and receive lines together (pins 2 and 3 of a DB-25 connector, or the middle two pins of an RJ-45 connector), and enter the following commands:

```
cat </dev/term/a01s &  
cat /etc/termcap > /dev/term/a01s
```

The first command runs in the background, and directs all input from **a01s** to **stdout** (your screen). The second command transmits the **termcap** file to **a01s**. If the port is working, the data is sent out the port, received back by the same port and displayed on your screen.

If the port fails, check another port. If more than one port fails, there is probably a driver installation problem (TCP port numbers don’t agree, IP address is invalid, or some other networking problem).

Enabling the Ports for Terminal Logins

Enable RealPort tty devices for login as you would for non networked ttys. Different versions of Unix provide their own utilities for this purpose (sysadm, scoadm, etc.). If you have trouble enabling ttys with the operating system utilities, you can use **pmadm** from the command line. The following example sets up **/dev/term/a01s** for login (this should be entered on one line):

```
pmadm -a -p ttymon3 -s a01s -i root -f u -v  
`ttyadm -V` -m "`ttyadm -d /dev/term/a01s -l  
9600 -s /usr/bin/login`"
```

where **ttymon3** is the tag for the port monitor and **a01s** is the service tag. The **-m** argument is the monitor-specific information, **/dev/term/a01s** is the device with 9600 as the label in **/etc/ttydefs**. Substitute each device name for **a01s** as appropriate.

Important!

Do not enable both modem and standard devices for the same port number (for example, **/dev/term/a01s** and **/dev/term/a01m**).

Do not enable DigiPRINT ports for login.

Refer to your Unix System documentation for more details on how to set up serial ports.

Using Digi Ports with Serial Printers

To set up a printer for use with the print spooler, see the Unix System Administrator’s Guide.

Many applications send printer data directly to the tty port without properly setting the port up first (opening the port, setting parity and framing, etc.). For such applications, it is necessary to open the port and hold it open so that any **stty** or **ditty** options remain in effect from one printing job to the next. Refer to the *RealPort Unix Utilities* manual for complete descriptions of all **ditty** parameters.

To prepare a port for connection to a printer, enter the following command:

```
sleep 999999 < /dev/term/a01s &
```

The command may be placed in **/etc/rc2.d/S99filename** so that it is automatically executed whenever the system is booted (*filename* is a name of your choice, but must be preceded by **S99**).