

TECHNICAL NEWSLETTER

for the

IBM RT PC

Personal Computer AT Coprocessor Services User's Guide

**(Part Number 55X8904)
(Part Number 55X8903)**

-OVER-

Perform the following:

Remove Pages

3-5 through 3-8

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A-5 and A-6

B-11 and B-12

C-1 through C-6

C-11 and C-12

Insert Update Pages

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A-5 and A-6

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List of Prompts

All of the prompts for the Coprocessor refer to values in the customization profile. In many cases, which prompts appear and the order in which they appear depend on the what is available with your system. For example, if your system does not have an IBM Personal Computer Display, you do not see a prompt for the IBM Personal Computer Display.

The descriptions of these prompts assume that the defaults are the same as those provided to you by IBM.

If you make an invalid response to a prompt, the prompt is repeated.

The prompts can be divided into a few major categories. The categories are:

1. Memory
2. Displays
3. Communications
4. Minidisks
5. Devices.

In addition to these groups, there are two more prompts at the end. These last two prompts allow you to save the values you enter and start running the Coprocessor.

Note: The replies to many of the following prompts are y for **yes** and n for **no**.

Description of Coprocessor Prompts

The prompts are described below:

1. Memory

Memory size?

Default value: 256

Optional value: Any number over 256, in multiples of 32.

Description: Memory size is specified in units of 1K bytes. You can specify any value over 256 if it is available. The number must be a multiple of 32. If the AT 512 KB Memory Expansion Option is not large enough (or if it is not installed), additional memory comes from the system memory.

2. Displays

The order in which the display prompts appear depends on the customization of your system. For instance, if the primary system display uses the IBM Personal Computer Enhanced Color Display, the prompt for that display appears first. The default is *y* for the first display prompt only and *n* for any others. If the primary system display is dedicated to the Coprocessor, other displays cannot be shared. You do not see prompts for displays not connected to the system.

The display prompts are:

Use IBM Personal Computer Display?

Default value: *y*

Optional value: *n*

Description: You can use the IBM Personal Computer Display with the Coprocessor.

Use IBM Personal Computer Enhanced Color Display?

Default value: y

Optional value: n

Description: You can use the IBM Personal Computer Enhanced Color Display with the Coprocessor.

Use IBM Advanced Monochrome Graphics Display?

Default value: y

Optional value: n

Description: You can use the Advanced Monochrome Graphics Display with the Coprocessor.

Dedicate this display to the Coprocessor?

Default value: n

Optional value: y

Description: You can elect to *share* the system display with your system, or *dedicate* it to the Coprocessor.

When sharing the display with the system, you can return to the AIX Operating System at any time by pressing the **Alt-Action** keys.

When a system display that is being used by the AIX Operating System is dedicated to the Coprocessor, you must stop the Coprocessor to return to the AIX Operating System by pressing the **Ctrl-Alt-Action** keys.

If the Advanced Monochrome Graphics Display is the only display you are using with the Coprocessor, choose **n** for this prompt because it must be shared with the system.

Use this display as the primary display for the Coprocessor?

Default value: n

Optional value: y

Description: If you use more than one display with the Coprocessor, you can choose any one of them to be the primary display. If you use the Advanced Monochrome Graphics Display, and you chose **y** for the previous prompt, you do not see this prompt.

Note: When dedicating a display connected to the IBM PC Enhanced Graphics Adapter, the primary Coprocessor display is determined by the switch settings on the adapter, not by the answer to this prompt. For more information about display adapters, see the *IBM Personal Computer AT Technical Reference*.

Emulate the IBM Personal Computer Color Display?

Default value: n

Optional value: y

Description: You can emulate the IBM Personal Computer Color Display by choosing **y**. If you choose **y**, then you cannot also use the IBM Personal Computer Enhanced Color Display.

3. Communications

Redirect communications ports to serial ports for printers, communications, networks, and other applications. Redirection allows you to emulate the serial port functions of the Personal Computer AT Serial/Parallel Adapter on either serial port. The Model 10 does not show prompts for communications.

The communications prompts are:

Redirect primary communications port?

Default value: n

Optional value: y

Starting the Coprocessor without Prompts

You can include optional values, known as flags, on the command line when you use the **pcstart** command. To do this, type the flags along with the **pcstart** command.

You see prompts for flags you do not enter unless you also include **-np** (for *no prompt*).

The flags can be divided into a few major categories. The categories are:

1. Memory
2. Displays
3. Communications
4. Minidisks
5. Devices.

In addition, there are three other groups of flags. These flags determine if prompting occurs, if the changes you make are saved, and if the Coprocessor runs.

Read the following pages for more information about the flags.

Description of Flags

In the following description of the flags, note that **-n** preceding a value means *no*. Conflicting flags are ignored. Incorrect flags may cause the **pcstart** command to start prompting.

1. Memory

If you do not use this flag, the value defined in the customization profile remains in effect. The memory flags are:

-k256 Use 256K bytes of memory. This is the default value provided by IBM.

-knumber You can choose any number over 256 in multiples of 32. If the AT 512 KB Memory Expansion Option is not large enough (or is not installed), the Coprocessor uses system memory.

2. Displays

Which flags are available depends on your system. For instance, you cannot use flags for displays not connected to the system.

Also, using some values prevents the use of others:

- Only one system display can be shared.
- Only one system display can be designated the primary display.
- When emulating the IBM Personal Computer Color Display on the Advanced Monochrome Graphics Display, you cannot also use the IBM Personal Computer Enhanced Color Display.

- When emulating the IBM Personal Computer Display on the Advanced Monochrome Graphics Display, you cannot also use the IBM Personal Computer Display.
- If the primary system display is dedicated to the Coprocessor, other displays cannot be shared.
- If you want to use more than one system display, only one of them can be used by the AIX Operating System.

The flags for displays are:

- nm** Do not use the IBM Personal Computer Display.
- md** Use the IBM Personal Computer Display, and dedicate it to the Coprocessor.
- mD** Use the IBM Personal Computer Display, and dedicate it to the Coprocessor as the primary display.
- ms** Use the IBM Personal Computer Display, and share it with the system.
- mS** Use the IBM Personal Computer Display, and share it with the system as the primary Coprocessor display.

- ne** Do not use the IBM Personal Computer Enhanced Color Display.
- ed** Use the IBM Personal Computer Enhanced Color Display, and dedicate it to the Coprocessor.
- eD** Use the IBM Personal Computer Enhanced Color Display, and dedicate it to the Coprocessor as the primary display.
- es** Use the IBM Personal Computer Enhanced Color Display, and share it with the system.

- eS** Use the IBM Personal Computer Enhanced Color Display, and share it with the system as the primary Coprocessor display.

- ng** Do not use the Advanced Monochrome Graphics Display.

- gd** Use the Advanced Monochrome Graphics Display, and dedicate it to the Coprocessor.

Note: You can use any of the other display flags, or use this flag plus other display flags. If the Advanced Monochrome Graphics Display is the only display you are using with the Coprocessor, do *not* use this flag. Improper use of this flag stops the system.

- gm** Use the Advanced Monochrome Graphics Display to emulate the IBM Personal Computer Display, and share it with the system.

- gM** Use the Advanced Monochrome Graphics Display to emulate the IBM Personal Computer Display, and share it with the system as the primary Coprocessor display.

- gc** Use the Advanced Monochrome Graphics Display to emulate the IBM Personal Computer Color Display, and share it with the system.

- gC** Use the Advanced Monochrome Graphics Display to emulate the IBM Personal Computer Color Display, and share it with the system as the primary Coprocessor display.

3. Communications

Redirect communications ports for printers, communications, networks, and other applications. Communications ports cannot be redirected on the Model 10.

The flags for communications are:

- n1** Do not redirect the Coprocessor primary communications port.
- 11, -12** You can redirect the Coprocessor primary communications port to either serial port.
- n2** Do not redirect the Coprocessor secondary communications port.
- 21, -22** You can redirect the Coprocessor secondary communications port to either serial port.

Note: You cannot redirect both Coprocessor communications ports to the same serial port.

4. Minidisks

The Coprocessor does not directly access a fixed disk. However, you can assign up to two minidisks to the Coprocessor.

For more information about the **minidisks** command, see *Installing and Customizing the AIX Operating System*. The flags for minidisks are:

-nc Do not assign a minidisk to drive C.

8. Remove the Personal Computer AT Coprocessor Services Licensed Program Product diskette from the diskette drive.

When installation is complete, you see the following message:

```
The installation process has completed.  
The system will now shut down. After the  
system has shut down, you may restart it  
by pressing the Ctrl-Alt-Pause keys.
```

9. After you press the **Ctrl-Alt-Pause** keys, the operating system reloads.

You can now begin using the Personal Computer AT Coprocessor Services.

Return Codes

If installation fails, you see error message 048-015 directing you to look at a history file (**/usr/lpp/coprocr/lpp.hist**). This history file records the cause of the failure as a return code from 1 to 7. The return codes are defined below:

- 1 Prerequisite check failed.
- 2 Backup of existing files failed.
- 3 The **restore -x** command failed.
- 4 Trace update failed.
- 5 Error update failed.
- 6 Rebuilding kernel failed.
- 7 The **/usr/lpp/coprocr/lpp.bios** file initialization failed.

Note: The root directory may be too full. The history files may be too large. You can delete these files using the **rm** command. A history file usually consists of **/unix** followed by the last two digits of the year and the Julian date. For example, **/unix86137** could be the name of the history file created on May 17, 1986.

Customizing the Coprocessor

To customize the Coprocessor so that DOS loads each time you enter the **pcstart** command, see “Initial Customization Procedures” on page 2-5.

Find the **Num Lock** key above the number 7 on the numeric keypad. Find the numeric keypad on separate keys to the right of the cursor movement keys.

Appendix C. Messages

023-001 **The system will now prompt you for missing customization values. Press Enter to accept the displayed default value, or type a different value and press Enter.**

Cause: You see this message when using the **pcstart** command with prompts, or if you enter a value that is not valid when using the **pcstart** command without prompts.

Action: Press the **Enter** key to accept the default value following each prompt, or type a different value and press the **Enter** key.

023-002 **You entered a memory size that is less than 256 or is not a multiple of 32.**

Cause: You chose a number less than 256 or that is not a multiple of 32.

Action: When you see the prompt `Memory size?`, enter a number that is equal to or greater than 256 and is a multiple of 32. The **pcstart** command starts prompting, if it is not already doing so.

023-003 You tried to share or dedicate displays in a combination that is not valid.

Cause: The combination of display values you entered is not valid.

Action: The **pcstart** command starts prompting, if it is not already doing so. Respond to the prompts as they appear. For more information, read about displays in "Starting the Coprocessor without Prompts" on page 3-15.

023-004 You tried to assign drive D without assigning drive C.

Cause: If you want to use only one minidisk, you must choose drive C. If you want to use drive D, first choose drive C, then choose drive D.

Action: Verify the minidisk and drive assignments. The **pcstart** command starts prompting, if it is not already doing so.

023-006 You tried to use the same serial port for both the primary and secondary communication ports.

Cause: You tried to assign both the Coprocessor primary and secondary communications ports to the same serial port.

Action: Use a different serial port for each Coprocessor communications port. The **pcstart** command starts prompting, if it is not already doing so.

023-007 You tried to prevent device "*device name*" from being allocated, but the device was not listed for allocation in the customization profile.

Cause: You typed a `-u` to bypass allocation of a device listed in the customization profile, but the device you chose is not listed for allocation in the customization profile.

Action: Verify the device name, and try again. The `pcstart` command starts prompting, if it is not already doing so.

023-008 You tried to allocate more devices than the system allows. You may allocate up to 32 devices.

Cause: You tried to allocate more devices to the Coprocessor than the system allows.

Action: Do not allocate devices that you do not need. You may need to release some devices. The `pcstart` command starts prompting, if it is not already doing so.

023-009 You specified "`-na`", "`-nk`", or "`-nu`". These flags are not valid.

Cause: You typed `-n` with `-a`, `-u`, or `-k`.

Action: The `pcstart` command starts prompting, if it is not already doing so.

023-010 You entered a value other than "`y`" or "`n`". Please enter "`y`" for yes or "`n`" for no.

Cause: You entered a value other than `y` or `n` in response to a system prompt.

Action: Enter a `y` or an `n`.

023-011 **The "pcstart" command did not complete because the flag you specified is not valid.**

Cause: One or more of the flags you entered was incorrect.

Action: The **pcstart** command starts prompting, if it is not already doing so.

023-012 **The system cannot find the minidisk "*minidisk name*" that you specified. Try "pcstart" again with a correctly spelled minidisk name. Or, create the minidisk and try "pcstart" again.**

Cause: You chose a minidisk that has not been created, or you misspelled the minidisk name.

Action: Verify the minidisk name. Create the minidisk or restart the **pcstart** command with the minidisk name spelled correctly.

023-013 **The system cannot find the device "*device name*" that you specified. Try "pcstart" again with a correctly spelled device name. Or, use "devices" to define the device and try "pcstart" again.**

Cause: You chose a device not previously defined in the AIX Operating System.

Action: Verify the device name. Use the **devices** command to define the device, or restart the **pcstart** command with the device name spelled correctly.

023-014 **The system cannot read the customization profile "*pcprofile*". Either you do not have read permission to the file or the file does not exist.**

Cause: The customization profile has not been created in the current directory or is not readable.

Action: Return to the directory which contains your version of the **pcprofile** file. Try the **pcstart** command again.

023-015 **The system cannot read the "file name" file. Make sure that the file exists and you have read permission to the file, then try "pcstart" again.**

Cause: You cannot read the file because you do not have read access, or because of an I/O error.

Action: Get read access to the *file name* file. Try the **pcstart** command again.

023-016 **The system cannot access the Coprocessor manager because the Personal Computer AT Coprocessor Services Licensed Program Product may not have been installed correctly. Please reinstall the Personal Computer AT Coprocessor Services Licensed Program Product.**

Cause: The Coprocessor program is installed incorrectly.

Action: To install the Coprocessor program correctly, follow the steps in Appendix A, "Installing the Personal Computer AT Coprocessor Services Licensed Program Product" on page A-1.

023-017 **The "pcstart" command cannot complete because there is not enough memory currently available. Try "pcstart" again and specify less memory. Or, increase the amount of available system memory, then try "pcstart" again.**

Cause: You chose an amount of memory greater than that which is available on your system.

Action: Request less memory, or create more memory. You can create more memory by physically installing it

or by reducing the number of programs running on the IBM RT PC system at the same time as the Coprocessor.

023-018 You cannot redirect communication port "*port name*" because it is already in use. Try "**pcstart**" again later, or cancel the process that is using the port and try "**pcstart**" again.

Cause: The adapter you tried to use for redirection is not available, probably because another program is using it.

Action: Wait for the adapter to be available, or cancel the program that is using it to make it available. Try the **pcstart** command again.

023-019 You cannot use device "*device name*" because it is already in use. Try "**pcstart**" again later, or cancel the process that is using the device and try "**pcstart**" again.

Cause: You chose to use a device allocated to some other process.

Action: Wait for the other process to end, or free the device. Try the **pcstart** command again.

023-020 The system cannot initialize BASIC and BIOS. You may have specified too much memory for the Coprocessor, or you do not have permission to read the "*file name*" file. Check your memory usage and access permission.

Cause: BASIC and BIOS could not be initialized, either because of insufficient system memory or an error in reading the *file name* file.

Action: Verify that enough system memory is available to start the Coprocessor. Or, get read access to the *file name* file. Try the **pcstart** command again.

023-036 **The "pcstart" command cannot complete because the "device name" device is already allocated. Check in "/etc/system" file for any devices that have the same IODN as device "device name". Use "devices" to delete all devices with identical IODNs, and add them again.**

Cause: Some devices have the same IODN. Each device must have a unique IODN.

Action: Use a text editor to search the /etc/system file. Make a note of all devices that share an IODN. Use the **devices** command to delete those devices and add them back. The IBM RT PC system automatically assigns a different IODN for each device you add. Then, try the **pcstart** command again.

023-037 **You cannot use minidisk "minidisk name" because it is already in use. Try "pcstart" again later, or cancel the process that is using the minidisk and try "pcstart" again.**

Cause: The *minidisk name* is being used by another process on the IBM RT PC system.

Action: Wait for the process that is using *minidisk name* to finish, or cancel the process that is using it. Then try the **pcstart** command again.

023-038 **The "pcstart" command cannot complete because the same minidisk has been allocated to both drive C and D. Allocate different minidisks for each drive, or use only drive C. Refer to your messages reference book for more information.**

Cause: You assigned the same minidisk to both drive C and drive D, or the minidisks you assigned to drive C and drive D have the same IODN.

Action: Try the **pcstart** command again, and use different minidisks for drive C and drive D. Or, allocate

a minidisk to drive C only. If you use two different minidisks and get this message, take the following steps:

1. Backup each minidisk.
2. Use the **minidisks** command to delete each minidisk.
3. Use the **minidisks** command to create two new minidisks.
4. Restore the information you copied in step 1 to each minidisk.

023-039 The "pcstart" command cannot complete because the IODN for minidisk "*minidisk name*" is not valid. Try "pcstart" again specifying a different minidisk. Or delete minidisk "*minidisk name*", create a new one and try "pcstart" again.

Cause: The IODN for *minidisk name* is not valid.

Action: Use the **pcstart** command again and assign a different minidisk (or no minidisk). If you need to correct the existing minidisk, use the following steps:

1. Backup the minidisk.
2. Use the **minidisks** command to delete the minidisk.
3. Use the **minidisks** command to create a new minidisk.
4. Restore the information you copied in step 1 to the minidisk.

023-040 The "pcstart" command cannot complete because a disk I/O error was detected while trying to allocate minidisk "*minidisk name*". Try the command again. If you get this message again, run system diagnostics.

Cause: The IBM RT PC system encountered a disk I/O error. It may be a temporary problem or the result of physical damage.

Continued in back of
book "Messages" @ "

