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FlexOS™
Window Manager Guide
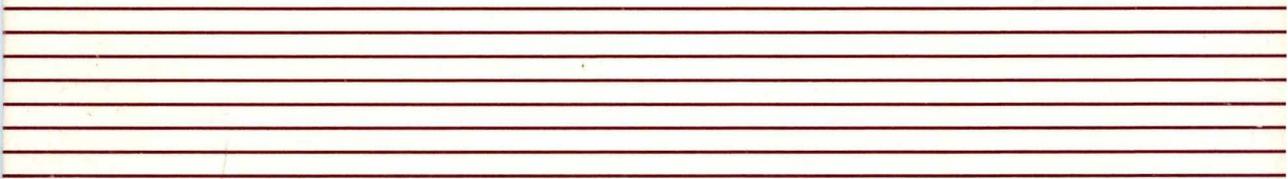
FLEXOS™

WINDOW MANAGER GUIDE

First Edition: August 1987

Software Version: FlexOS 386 1.4

Foreword

This book describes the Window Manager provided by Digital Research[R] as part of FlexOS[TM], the real-time, multitasking operating system designed for single-user and multiuser microcomputer systems. The Window Manager allows you to designate areas of your terminal screen where you can display and monitor output from running programs.

What You Need To Know

This book assumes you are already familiar with personal computers, including the general terminology used to describe hardware and software. You should read and be familiar with the documentation that accompanies your system before proceeding.

User Input and FlexOS Output

In this book, user input is in **boldface** type and FlexOS system output, including the system prompt A>, is in regular type. The following example illustrates the convention:

```
A>DIR | FIND "ACCOUNTS PAY"

ACCOUNTS PAY          1429    8-18-86    1:42P
```

In this example, user input is all uppercase letters. However, you can enter commands in uppercase, lowercase, or a combination of the two.

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FlexOS Windows

Windows are areas of your terminal's screen that can be used to display and monitor output from running programs. Since FlexOS is a multitasking operating system, several application programs can run simultaneously, each in its own full-screen window.

Each user can have up to six windows running at the same time, but you can work in only one window (the current window) at a time. However, while you are working in the current window, programs in other windows can continue to perform tasks or wait for further user input. You do not have to exit a program just because you aren't using it at the moment. You create the windows for the programs you're using. When you are finished with a program, you can start another program in the same window or you can delete the window.

1.1 Windowing Keys

FlexOS uses several key combinations for various windowing operations. To produce these key combinations, hold down the Alt or Ctrl key and then press the other key named.

WINDOW (Alt-plus)

        Displays the Status Window, described below.

NEXT (Ctrl-plus)

        Switches to the next higher window number. If you are already in the highest window number, pressing NEXT switches you to the lowest window number.

PREV (Ctrl-minus)

        Switches to the next lower window number. If you are already in the lowest window number, pressing PREV switches you to the highest window number.

HELP (Ctrl-Insert)

        Displays information on how to use windows.

You can use all three key combinations from the Message Window (described later) or from the system prompt. You can also use the PREV (Ctrl-plus) and NEXT (Ctrl-minus) keys from the Status Window.

Note: The key combinations described here are for the IBM PC/AT^R or Compaq^R-style keyboard. Check your computer's documentation if your keyboard is different.

1.2 Status Window and Message Window

In addition to the six windows you can create, the Window Manager has two permanent windows: the **Status Window**, designated as Window 1, and the **Message Window**, designated as Window 2. Their function is to provide you with information and help.

These windows overlay (but do not change) the information in the current window. When you are through with the Status or Message Windows, you are automatically returned to the underlying window.

1.2.1 Status Window

To display the Status Window, press the WINDOW key combination, described previously.

Figure 1-1 shows a sample Status Window.

```
============= [S T A T U S   W I N D O W]  ============
#                                                      #
# WNDW#  FMYID  Process ID    Command Line             #
# ====== ====== ==========    ==========================#
#    3      5          2      COPY CON FILE1.TXT        #
#    4      6          4      COPY CON FILE2.TXT        #
#======================================================#
# Commands:    C - CREATE Window                       #
#              D - DELETE Window                        #
#           HELP - HELP INFORMATION                     #
#       <number> - Window number to select             #
#                                                      #
# Command?_                                            #
=======================================================
```

Figure 1-1.   FlexOS Status Window

The Status Window has three parts: status lines, a command menu, and a command prompt.

1.2.2 Status Lines

The status lines display a line of information for each window currently running on your system. This section has the following components:

WNDW#   Window number. Each window is identified by a number. You can switch windows by entering the appropriate window number.

FMYID   Family identifier. All the programs in a window share a common Family ID number, including those programs invoked by batch files. Programs running in other windows have different Family IDs.

Process ID   A unique process identifier for each program. If you run several programs sequentially in the same window (as when you chain commands together), each has its own Process ID.

Command Line
              The last command line you entered in the window.

The Family ID, Process ID, and window number fields can all be used with the CANCEL command to stop running programs. For more information on the CANCEL command, see the User's Reference Guide.

If the Status Window does not have enough space to show all your status lines, FlexOS displays the line "...more... (type M to see more)". Type M to view the status of additional windows. If you press M when the status of the last window is displayed, the status of the first window is redisplayed.

1.2.3 Command Menu

The command menu has four commands:

- C (Create Window) – Creates a window, gives it the lowest available window number, and automatically switches you to the new window. When the C command is finished, the system prompt appears in your new window.

- D (Delete Window) – Deletes a window. After you enter the D command, the following prompt appears:

  ```
  Select a Window Number to Delete:_
  ```

  When you enter a number, the program or command running in that window is immediately stopped, the file is closed, and you are automatically returned to the previous window. Changes to your file may or may not be saved, depending on the program or command.

  The remaining windows are not renumbered, but the Status Window is updated to show that a window has been deleted.

- HELP – Displays information on how to use windows. When you enter Ctrl-Ins, the Message Window (described below) appears.

- <number> – Switches you to the specified window number. <number> can only be used from the Status Window. For example, to switch from Window 1 to Window 4, press WINDOW to display the Status Window and then, once you are in the Status Window, press 4 to switch to Window 4.

Note: If the Status Window indicates there is an active Message Window, you can switch to it using the PREV and NEXT keys and the <number> command.

1.2.4 Command Prompt

Type your window menu commands at the command prompt.   Press Enter to execute the commands.

1.2.5 Message Window

FlexOS uses the Message Window to display help information and to notify you of situations that require your immediate attention.   The Message Window displays information about any process that has a problem, not just the process in the current window. The Message Window "pops up" when a problem is detected.

Figure 1-2 shows the Message Window that appears when you select Help Information from the Status Window.

```
============ [M E S S A G E   W I N D O W]  ===========
#                                                      #
#    After selecting a window, the PREV, NEXT          #
#    and WINDOW keys can be used as follows:           #
#                                                      #
#      PREV select the next lower Window Number        #
#      NEXT select the next higher Window Number       #
#    WINDOW return to the Status Window                #
#                                                      #
#                                                      #
#  Press Enter to acknowledge:                         #
# Press WINDOW to delay answer.                        #
========================================================
```

Figure 1-2.   Help Information Message Window

The following example illustrates how the Message Window informs you of an error situation. Suppose you are updating CALENDAR.TXT in Window 1 while you have programs running in other windows. FlexOS detects a problem and displays the following:

```
My appointments for this week:

Monday, 9:00 - Staff Meeting
Monday, 3:00 - Meeting with Marketing Department

============ [M E S S A G E   W I N D O W]  ===========
#    Message from PAYROLL.BAS in Window 5:            #
#                                                      #
#        *** Printer device not currently available*** #
#        Send listing to output file (Y/N)?_          #
#                                                      #
#    (Press WINDOW to delay answering this question)   #
########################################################
```

The Message Window indicates which window has the problem, and the nature of the problem.   In this example, the printer is not available to print the results of your payroll program. The Message Window also offers you a solution: You can send the listing to an output file instead of waiting for the printer.

You must respond to this Message Window before you can continue your work. When you do, the Message Window disappears. You remain in the window where you were updating your appointment calendar.

If you are not sure how to respond to the Message Window, you can press WINDOW to look at the Status Window and evaluate the status of your windows. In this case, the Status Window looks like this:

```
=============  [S T A T U S   W I N D O W]  ============
#                                                       #
# WNDW#    FMVID   Process ID    Command Line           #
# ======   ======  ==========    =========================#
#    5        1         3        COPY CON CALENDAR.TXT   #
#    4        2         6        PRINT FORMLETR.PRN      #
#    3        3         7        RUN PAYROLL.BAS         #
#    1        -         -        Active Message Window   #
#========================================================#
# Commands:    C - CREATE Window                         #
#              D - DELETE Window                         #
#           HELP - HELP INFORMATION                      #
#       <number> - Window number to select              #
#                                                        #
# Command?_                                              #
========================================================
```

The Status Window shows that Window 4 is using the printer to print a form letter. If you would rather print your payroll program, you can do the following:

1. Enter D to delete Window 4. This cancels the PRINT command, and FORMLETR.PRN is filed away. The printer is now available to the payroll program.

2. Enter 1 to return to the Message Window. The error message and prompt are still there.

3. Type N next to the prompt and press Enter. Your problem is resolved and the Message Window disappears. Your payroll program starts to print and you can go back to your work in Window 5.

Your response to the Message Window prompt can be up to one line long.

1.3 Windows Example

The following example shows you how to create, work with, and delete a window. This exercise assumes that you are starting with a single window; there are no other windows active.

1. Enter the following command line in the current window and press Enter:

   A>**COPY CON CALENDAR.TXT**

2. Type the following and press Enter:

   My appointments for this week:

3. Press the WINDOW key to display the Status Window. Your screen should
   look like this:

```
============== [S T A T U S   W I N D O W]  ============
#                                                         #
# WNDW#    FMYID  Process ID    Command Line              #
# ======  ======  ==========    =========================#
#    3       4           6   COPY CON CALENDAR.TXT     #
#=========================================================#
# Commands:   C - CREATE Window                           #
#             D - DELETE Window                           #
#          HELP - HELP INFORMATION                        #
#      <number> - Window number to select                 #
#                                                         #
# Command?_                                               #
=========================================================
```

```
A>COPY CON CALENDAR.TXT
My appointments for this week:
```

4. Type C at the command prompt and press Enter to create a new window.
   FlexOS automatically switches you to the new window.

5. Create a new file in this window using the **COPY CON** command as you did in
   step 1:

   A>COPY CON NOTES.TXT
   This is my second file. This file
   appears in its own window.

6. Use the PREV key to switch back to CALENDAR.TXT in Window 3.

7. Type another line of text and press Enter:

   Monday, 9:00 - Staff Meeting

8. Use the NEXT key to switch to Window 4 and confirm that NOTES.TXT is still
   there.

9. Press the WINDOW key to look at the Status Window. It lists two windows:

```
============== [S T A T U S   W I N D O W]  ============
#                                                         #
# WNDW#    FMYID   Process ID  Command Line               #
# ======  =====    ==========  =========================#
#    3       4           6  COPY CON CALENDAR.TXT      #
#    4       5           7  COPY CON NOTES.TXT         #
#=========================================================#
# Commands:   C - CREATE Window                           #
#             D - DELETE Window                           #
#          HELP - HELP INFORMATION                        #
#      <number> - Window number to select                 #
#                                                         #
# Command?_                                               #
=========================================================
```

```
This is my second file. This file
appears in its own window.
```

10. To delete Window 4, type D at the command prompt and press Enter. When you are prompted for the window number, type 4 and press Enter. Window 4 is deleted and since NOTES.TXT is an open file, it is deleted. If you had closed this file, it would have been saved.

11. FlexOS automatically returns you to Window 3. To file away CALENDAR.TXT, type Ctrl-Z and then Enter. Window 3 displays the system prompt. You are back where you started. The file CALENDAR.TXT has been saved.

End of Section 1

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