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## Chapter 2

### INSTALLATION

BGii is designed to run on a wide variety of CP/M computers. This chapter provides instructions to enable you to install BGii in a basic configuration and start using it for regular computing. Once you've become acquainted with BGii's operation, you will probably want to further customize some of its features. Further details on configuration are covered in Chapter 9. There is quite a bit of information here, but you are unlikely to need all of it, and most of the installation steps need to be done only once.

#### 2.1 BEFORE YOU BEGIN

##### 2.1.1 Backing Up BGii

Before installing BackGrounder ii, you should make a working copy of your BGii distribution disk(s). If you own a floppy-based system, you will need to construct a working diskette in the largest capacity format your computer accepts. After formatting a fresh disk, copy all files onto it using PIP, a similar file transfer program or, if appropriate, a disk copy program. You will probably also want to SYSGEN a bootable system onto this disk.

If you own a hard disk, copy the distribution disk into an empty user area using a file transfer program such as PIP. At this point you do not need to copy any files to A0.

You should then store your master BackGrounder ii disk in a safe place.

##### 2.1.2 Last-Minute Information

We know that material may be added to BackGrounder ii after this manual is printed. To check for any additions, please print out a copy of the file RELEASE.NOT from the working BGii disk. It contains the latest information and any changes, and should be

referred to as you install BGii.

### 2.1.3 Installation Outline

You are now ready to install BGii. The following steps are required:

1. Run SETTERM to install the terminal definitions of your computer into the BGii programs. This is a one-time step.
2. Run SETBG to configure BGii to your own and your computer's requirements. Initially, only a bare minimum of options are set. A full chapter is devoted later in this manual to all possible configuration options.
3. Run PUTBG to create a swap file. This swap file is your "virtual memory" while BGii is running. Again, this is a one-time step, except when the swap file is placed on a ramdisk that loses its contents with power down.
4. Run LOADBGM to load BackGrounder ii into memory (and the swap file). This step is done each time you start up your machine.

## 2.2 TERMINAL CONFIGURATION

Terminals come in about as many different flavors as printers, each with its own idea of "standard" control sequences for positioning and moving the cursor, clearing the screen, and deleting regions. Two BGii programs (SETBG and LOADBGM) require cursor addressing, home cursor, clear to end-of-screen, clear to end-of-line, insert and delete line functions. You will use SETTERM to install your terminal's particular control codes into these BGii programs.

SETTERM obtains its information for most popular terminals from the terminal database file TERMBASE.DAT. Most likely, your terminal is already on the list (or emulates one that's there). If so, just select that terminal number and tell SETTERM to configure both files (SETBG and LOADBGM). If not, you can create a new terminal definitions or modify an existing one to match your terminal's characteristics. Having done that, you can install the definitions in the programs.

Instructions for all cases are given below.

### 2.2.1 Installing a Terminal from the Library

To run SETTERM, simply type

## SETTERM

The program will ask for the drive containing TERMBASE.DAT and then display a menu of the available terminals. If your terminal is in this menu, enter the number of the terminal you wish to use. You will not need to further review or edit the terminal definition.

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You should then answer Y when prompted to install the definitions  
1  
for your terminal into the BGii programs SETBG and LOADB. Follow the on-screen prompts, answering Y when asked

Ok to update (y/n)?

Once finished, type Q to quit. The BGii utilities are now permanently configured to run with your terminal.

### 2.2.2 Editing an Existing TerminalEntry

If your terminal emulates closely, but not completely, a terminal in the library, you may wish to edit that library entry to your exact requirements rather than define a new terminal. In this case you would answer Y to the question

Review or edit the terminal definition?

asked just after you load SETTERM. The contents of the database for that terminal will then be displayed, and you will be given the opportunity to change any entries.

After editing them to your requirements, you will then be asked whether you wish to install the new terminal characteristics into the utilities. If the answer is Y, proceed as in the previous section.

### 2.2.3 Defining a New Terminal Entry

If your terminal isn't like one of those on the list, you've probably had experience in configuring it for another program. SETTERM lets you define a new terminal entry to enter your terminal characteristics. Just type

SETTERM

and answer Y to the question

Review or edit the terminal definition?

You should then give appropriate answers to the on-screen prompts. Two editing screens will be displayed -- one for cursor addressing data, and the other for terminal control strings. After filling in all the relevant information (this should be in the user's guide for your terminal), you can then go on to install your terminal's characteristics into the BGii programs as described above.

-----

1. SETTERM is a generic program that is also used with Plu\*Perfect Systems' DateStamper. Ignore these other utility programs that are listed by SETTERM.

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If you've done your own configuration for your terminal, you may later find that a sequence or two was mis-entered. SETTERM can be easily reused to edit and update the definitions. Rerun SETTERM, select the number of the terminal you defined, and edit as necessary. (When BGii is running, the TYPE command makes a good test instrument.)

We and future users will appreciate it if you would also send us the definitions you work out. We can then include them in the database for future releases.

### 2.3 INITIAL CONFIGURATION OF BGii

BGii can be readily configured with a wide variety of options, using the SETBG program. In this section we will cover only those settings that are necessary to get BGii up and running. You can later rerun SETBG to change these settings and take  
2  
advantage of the other options.

To use SETBG, just type

SETBG

The program will first ask if it is correctly configured for the terminal you are using. If not, exit and use SETTERM as described in the previous section.

SETBG operates by offering you menu choices. The menus are organized in a tree-like structure, beginning at the main menu,

which looks like this:

0. exit to CP/M
1. change parameters
2. update file with new or changed parameters
3. print parameters

You first select option 1, which will display the following parameter menu:

-----

2. A full chapter is devoted later in this manual to the SETBG options.

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- |              |  |
|--------------|--|
| 0. main menu |  |
| 1. hardware  | -- drivers/ speed/ overlay address                         |
| 2. control   | -- password/ drives/ directories/ path                     |
| 3. display   | -- prompt/ separator/ printer-test/<br>DIR and DATE format |
| 4. keys      | -- suspend/ alternate/ delay/<br>remapping                 |
| 5. zcpr3     | -- command-run/ use of memory                              |
| 6. start up  | -- auto-execute command                                    |

Again, you should select option 1 to reach the hardware menu, which looks similar to the following:

- |                    |               |
|--------------------|---------------|
| 0. previous menu   |               |
| 1. terminal:       | Kaypro '83    |
| 2. screen driver:  | NOT INSTALLED |
| 3. fn.key driver:  | NOT INSTALLED |
| 4. cpu speed (mhz) | 4             |
| 5. overlay at:     | 4000H         |

### 2.3.1 Hardware Options

#### 2.3.1.1 Terminal

You should first verify that item 1 (terminal) corresponds to your terminal. This will have been set by SETTERM. If it is not, exit SETBG and run SETTERM to install your terminal characteristics into SETBG.

#### 2.3.1.2 Screen driver

Next select the screen driver option (2), answering Y and entering the drive and user area of the BGii working files when prompted. This will list the available screen drivers. Check the names of the screen drivers against the list in the BGii RELEASE.NOT file. If your terminal or computer is one of these

3

listed, select it; if not, enter 0.

#### 2.3.1.3 Function Key Driver

The third option to check is the function key driver (3). After typing 3, enter Y and the drive/user area of the BGii working files when prompted. This will list the available function key

-----

3. If there is not a screen driver for your machine, some BGii features will not be available to you. This manual contains an appendix on writing your own screen driver. If you are not able to write your own screen driver or otherwise procure one, you should pay careful attention to the section in Chapter 6 on incorporating a "redraw" string into your key definitions.

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drivers. Check these filenames against the corresponding list in RELEASE.NOT, and make the appropriate choice, entering 0 if a

4

driver for your computer is not present.

#### 2.3.1.4 CPU Speed

If the displayed CPU speed is not correct, select option 4 to change it.

#### 2.3.2 Control Options

You should now return to the parameters menu by typing 0 and select the control option (2). A menu similar to the following will appear:

- |                     |          |
|---------------------|----------|
| 0. previous menu    |          |
| 1. password         | PASSWORD |
| 2. password for all | N        |
| 3. swap drive       | A:       |

4. max. drive	G:
5. max. user	15
6. HELP directory	D15:
7. JOT directory	D0:
8. path	\$\$:, \$0:, A0:, D0:

At this time, only the swap drive and help directories need to be set.

#### 2.3.2.1 Swap File Drive (Option 3)

Enter the drive letter that you plan to use for your swap file. Be sure to be consistent with your usage when running PUTBG (see the next section in this chapter). This should be your fastest drive with at least 100K of free space on it. If possible, use a hard disk or ramdisk drive.

#### 2.3.2.2 Help Directory (Option 6)

The help directory contains BGii's two supplied help files. This may be any convenient drive and user area on a permanently available drive. If you are specifying a ramdrive, you will need to copy the help files to the ramdisk on start-up each day.

#### 2.3.3 Installing Your Selections

You should now return to the Parameters Menu (0) and then to the main menu (0). The defaults for the remaining options are

-----

4. Without a function key driver, you may not be able to attach definitions to the function keys on your keyboard or use the SHIFT command. Appendix C gives instructions on writing a function key driver.

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adequate for this time. Now you are ready to write out the configured file, by selecting option 2, sub option 1 (update existing file) and option 0 (main menu). When finished, select option 0 from the main menu to return to CP/M.

## 2.4 CREATING AND ARRANGING FILES

This section deals mainly with the swap file, help files, and files used to load BackGrounder ii. For a full list of files and their functions, see Appendix J.



#### 2.4.1 Creating The BGii Swap File

The final step, before loading BGii, is to use the PUTBG program to create the BGii swap file. The swap file requires about 100K. The exact amount depends on the size of your operating system,<sup>5</sup> and will automatically be determined by PUTBG.

When running SETBG (see previous section), you will have chosen a drive to hold the swap file -- it must have at least 100K free. For fastest performance, a ramdisk is best. Otherwise, a hard disk works well. You can use a floppy disk, but swapping will be slow, and you must keep that disk in the drive as long as BGii is in use.

PUTBG creates a swap file, called !!BG.SWP. Because the swap file must be at exactly the right place in the directory and the disk, PUTBG will first move any files that are in those locations before writing the swap file, and will display messages showing what it has moved.

Now type the following command, substituting for X the letter of the drive that is to have the swap file:<sup>6</sup>

-----

5. The automatic size determination is based on a non-ZCPR3 system. If you are using the option that allows you to overlay some of the ZCPR3 buffer areas then the swap file will be slightly too small to allow full TPA size in the alternate task. Simply use the "-k=nn" parameter of SETBG to increase the swap file size by the amount reported when LOADBG is run.
6. For those who have only limited disk capacity or are using a slow device, the command can have another parameter to limit the size of the swap file produced. By adding "-k=nn" to the command line where nn is the desired file size in Kilobytes a smaller swap file can be produced. A smaller swap file will limit the TPA available to the alternate task. The absolute minimum value is around 45K and this will totally inhibit any task swapping. In practice, do not use a value of less than

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```
PUTBG -d=X
```

When PUTBG is done, you can check the results by typing

```
DIR X:
```

The !!BG.SWP file should be the first or second file listed,

followed by the other files.

If the swap file is on a hard or a floppy disk, it will remain there, write-protected when you turn off your computer. However, if the swap file is on a ramdisk, you will need to rerun PUTBG each time you power up your computer before loading BGii.

#### 2.4.2 Help Files

When you ran SETBG, you designated the drive and user area for BGii to find its help files -- BG.HLP and BGINFO.HLP -- as well

as any BGii help files you may wish to create yourself. You should make sure, before loading BGii, that you have copied the relevant help files to that drive and user number. Should that area be on a ramdisk, you will need to copy the help files to the ramdisk each time you switch your computer on. For optimal arrangement of help files see Figure 2.1 in this chapter.

#### 2.4.3 Arranging Other Files

Permanent arrangement of other BGii files depends on your computer configuration. Suggestions for optimal arrangement of files is shown in Figure 2.1. The only thing to remember is to keep the files LOADB.G.COM and BG.REL together on the same drive and user number. These are the files used to load BGii. Once BGii is loaded, these two files no longer need to be accessible -- i.e. the disk containing them may be removed from your computer.

-----  
about 80K if you plan to use the task swapping features of BGii.

7. See Appendix E.

!!BG.SWP	Not Recommended. On fastest drive, disk must remain mounted.
BG.HLP/BGINFO.HLP	On same drive as swap file.
LOADBG.COM/BG.REL	On start-up floppy disk. Remove after start-up.
Other BGii Files	On working disk located on search path.

#### Hard Disk (No Ramdisk)

!!BG.SWP	On hard disk.
BG.HLP/BGINFO.HLP	On hard disk.
LOADBG.COM/BG.REL	On default hard disk.
Other BGii Files	On hard disk, any DU: on search path.

#### Hard Disk and Ramdisk

!!BG.SWP	On ramdisk.
BG.HLP/BGINFO.HLP	On hard disk.
LOADBG.COM/BG.REL	On default hard disk.
Other BGii Files	On hard disk, any DU: on search path.

#### Ramdisk Only

!!BG.SWP	On ramdisk.
BG.HLP/BGINFO.HLP	On ramdisk.
LOADBG.COM/BG.REL	On start-up floppy. Remove after start-up.
Other BGii Files	On ramdisk if sufficient space, else on working disk on search path.

Figure 2.1: Suggested File Arrangement

## 2.5 LOADING BACKGROUND ii

Now you are ready to start up BackGrounder ii. To do so, log into the drive containing LOADBG.COM and BG.REL and type:

```
LOADBG
```

The program will read the BG.REL file, relocate and install the BGii code, and display a summary of the configured parameters similar to the following:

---

```
-- BackGrounder ii configuration summary --

BGii version: 1.00
  serial #: 12345678
    dos: Standard CP/M 2.2 BDOS
  prompt: > fence: | command separator: ;
  swap file: drive A:, 0340H sectors (104 K)
  terminal: Kaypro '83
  screen driver: Kaypro '83 driver v 1.1
function-key driver: Kaypro 83 & 84 fn.key overlay v. 0.4
  password: PASSWORD
    keys: <1E> for <SUSPEND>, \ for <ALT>
    path: $$:, $0:, A0:, D0:
  directories: D0: for JOTPAD, D15: for HELP

-- memory map --

      tpa: 0100H                CCP entry: DB03H
BackGrounder: D000H            DOS: E306H
  800h buffer: D300H          BIOS: F100H
  280h buffer: D080H
```

---

Below it will be the familiar CP/M prompt for the logged-in drive, plus the user number, e.g. A0>. BackGrounder ii is now running, and the next chapter reviews how it is used.

→ Kaypro '83 driv