May/June 1991 Edition

RUN Programs on Disk

For the C-64 and 128

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Introduction

May/June 1991 ReRUN

WELCOME TO THE MAY/JUNE 1991 edition of ReRUN. As you are well aware, these are not the best of economic times (except, possibly, for some people on Wall Street—a place that's about as predictable as the wind). Disposable income is scarce and few folks want to make major purchases these days. At the risk of sounding like a Republican candidate for next year's elections, I'd like to let readers know that I'm privileged to witness the rare benefits of these "economic downturns" (to coin a bureaucratic phrase).

One benefit is that many talented programmers are looking for additional income . . . and contributing to *RUN*. What's more, many people are keeping their inexpensive Commodore 64s and 128s rather

than paying for those high-priced dream computers.

What does this all mean to ReRUN? First and foremost, look for even more high-quality programs in ReRUN for many months to come. And don't be surprised to see renewed consumer interest in 8-bit computers as alternatives to the expensive machines. If my prophecies stand true, ReRUN customers will continue to enjoy a steady stream of new first-rate programs.

Speaking of first-rate programs, the first program found in this edition of ReRUN can help you weather the bleak economic storms ahead. Noted programming expert and 128 Mode columnist Mark Jordan decided to share some of his programming efforts to help get

would-be authors on the top-ten best-seller list.

Mark's program, **BookDisk**, accompanies "It Was a Dark and Stormy Night," from the May/June issue of *RUN*. BookDisk is a high-speed machine language program that lets you load in chapters from your word processing files, and creates what is, essentially, a book on disk. Mark is also offering his services to help authors get the word out about their book(s) through *RUN*'s Writing Contest. A word of caution: BookDisk requires a few extra steps of preparatory action, so read the instructions carefully for best results.

That surely could keep you busy for a while, but when you tire of analyzing chapters, use the next program, **Profiler 64**, to analyze your Basic programs. Profiler will time your programs and tell you which lines are slowing you down. Two sample programs, Examples A and



B, are included for demonstration purposes.

Bomb Squad, a strategy game for the C-64, offers some light deviation from the serious programs listed above. In this action-packed, multilevel program you have to gather four keys and disarm a bomb before the clock runs out.

Next on the list is **Scaling Metric**, also known as Convert, a program for both the 64 and the 128 that converts measurements of weight, distance and volume between the U.S. and metric systems. Convert is followed by this issue's 128 Mode program, **Missile-Buster**. Because of the Gulf War, nearly everyone above the age of three knows about the U.S. army's defensive missiles. Missile-Buster is a computer graphics depiction of that defense system in action.

Scoreboard is next on the list. A score-keeping program, Scoreboard lets you record your two highest scores and levels for up to 15 of your favorite games. Be sure to save your high scores to a work disk for safekeeping.

If you're a computerist, chances are very good that you own a VCR. C-128 users who own VCRs are in luck, because **Movie Phile 128**, better known as Video Datafile, lets you use your C-128 to keep track of the movies on each of your VCR tapes. I know that I have a hard time keeping track of which tape has which movies, and where those movies start and end on the tape. Video Datafile allows you to input all of that information for quick reference.

Finally, there's **Wild Eights**, a C-128 version of the card game Crazy Eights. You play against the computer for the lowest score. It's fast, colorful, a lot of fun and a must for collectors of computerized card games.

That'll do it for this edition of ReRUN. I'll be back with another exciting episode in about eight weeks. Until then, enjoy the spring.

Technical Manager RUN Magazine

Directory

PAGE	DOCUMENTATION	DISK FILENAME	FILE TYPE
		MENU 128 MENU 64	BASIC BASIC
1	IT Was a Dark and Stormy Night (C-64)	BOOKDISK SETUP BOOKDISK 64 BOOKDISK TEST CR.TEST	ML BASIC
6	On Your Mark (C-64)	PROFILER 64 EXAMPLE A EXAMPLE B	BASIC
7	BOMB SQUAD (C-64)	BOMB SQUAD.HEX BOMB SQUAD	BASIC ML
8	Scaling Metric (64 & 128)	CONVERT	BASIC
8	128 Mode (C-128)	MISSILE	BASIC
9	Scoreboard (C-64)	SCOREBOARD ————————————————————————————————————	ML
10	Movie Phile 128 (C-128)	VIDEO DATAFILE VIDEO MOVIE.STARTUP	BASIC
12	WILD EIGHTS (C-128)	WILD EIGHTS	BASIC

How to Load

LOADING FROM THE MENU

To get started, C-64 users should type LOAD "MENU 64",8 and press the RETURN key. When you get the Ready prompt, the menu is loaded and you should type RUN to see a list of the programs on your disk. C-128 users need only press the SHIFT and RUN-STOP keys. When all the programs are displayed on the screen, you can run the one you select by pressing a single key.

LOADING FROM THE KEYBOARD

If you do not wish to use the menu program, follow these instructions.

C-64: To load a C-64 program written in Basic, type: LOAD "DISK FILENAME",8 and then press the RETURN key. The drive will whir while the screen prints LOADING and then READY with a flashing cursor beneath. Next type RUN and press the RETURN key. The program will then start running. Type LOAD"DISK FILENAME",8,1 to load a C-64 program that is written in machine language (ML).

C-128: All C-64 programs can be run on the C-128 as long as your computer is in C-64 mode. All C-128 programs are clearly labeled on the directory page. Your C-128 must be in C-128 mode to run these programs. To load a C-128 mode program, press the F2 key, type the disk filename and then press the RETURN key. Type RUN once the program has loaded.

MAKING COPIES OF RERUN FILES

Many programs on your ReRUN disk have routines that require a separate disk onto which the program writes or saves subfiles. To use these programs, you must first make a copy of the original program onto another disk that has enough free space on it to hold these newly written subfiles.

It's simple to make a copy of a Basic program. Just load it into your computer as outlined above, and then save the program back onto a separate disk that has plenty of free space for extra files.

Copying an ML program is not so simple. You cannot simply load and save an ML program; you'll need to use a disk-backup utility program, such as the one on your Commodore Test Demo disk.

It Was a Dark and Stormy Night

By Mark Jordan

WHY HAVEN'T YOU written that book yet? You have what it takes: ideas and expertise, a good computer and word processor, and a desire to communicate with the world. The answer is simple: It's too difficult to get published. But what if you change your definition of "book" to include media other than paper and ink. I'm sure I don't need to tell you what "other media" I'm talking about—disks! That's right, bookdisks, an idea whose time has come. To write your own book, all you need is an idea, some time and effort, and the BookDisk program.

BookDisk is the interface others will use to read your book, so it must go on each bookdisk you produce. The program is a lightning-fast machine language file reader, and features word counting, printing, a bookmark, a file loader, a handy help screen, and more.

A CHALLENGE

RUN is going to hold a contest for bookdisk writers who participate by sending in their finished works. Winners will be selected in various categories and awarded cash, hardware and software prizes. A follow-up article will be published that lists and perhaps reviews the winning entries, and they will be marketed on a special disk. So, all you need to do is write your book and send it in. (For details, check out p. 5.)

All? . . . Just write a book?

Okay, so it's a big job. But writing a bookdisk is no different than any other big job. . . . just break it into smaller tasks and do them one by one. Before you know it, your book will be done. So, let's look at the steps in the process.

STEP 1: GETTING READY

The ReRUN disk contains a program called BookDisk Setup that you will use to generate the BookDisk 64 program. Your first task is to type two Poke commands in direct mode: POKE 44,32: POKE 8192,0.

If these commands aren't entered, you won't be able to use BookDisk Setup. When done, save BookDisk Setup on one of your work disks.

Bookdisk Setup will prompt you to enter two important numbers when you run it. The first is the ASCII value your word processor uses to designate carriage returns. The second has to do with the way the word processor saves characters. To determine what numbers you need, see page 3, "Tailoring BookDisk to Your Word Processor."

That done, you need to format a new disk—your publication

bookdisk. Name it whatever you plan to name your book.

Now, put your ReRUN disk back in the drive, reload BookDisk Setup and run it. If you've done anything wrong up to this point, you'll be stopped. Otherwise, in about two minutes you'll be prompted to

type in those two values you looked up earlier.

After that, you'll be prompted to put your publication disk—the one you just formatted—in the drive. Do so, and follow the screen prompt by pressing S. The drive will work, saving BookDisk 64 to your new disk. Basic's pointers will be restored, and then you can run the program. However, at this point you'll have no files on your publication disk for BookDisk to use. To see BookDisk in action, insert one of your present word processing data disks and run the program.

Using BookDisk requires very little explanation. The eight function keys, the CURSOR keys, the BACK-ARROW key and the HOME key are all you need. F1 brings up a simple help screen. The other function-key options are: F2, load; F3, mark your place; F4, retrieve your place; F5, change the character colors; F6, change the screen color; F7, print;

and F8, exit to Basic.

CURSOR-UP and -DOWN scroll through the text, while CURSOR-LEFT and -RIGHT jump a whole screen forward or backward. HOME jumps to the top of the text, and BACK-ARROW quits various activities. Play around with the program for a while, then press F8.

Once back in Basic, type LIST to see what's there. You'll find a single-line program, 10 SYS 2061, that's written like Basic to let you load

and run BookDisk like any other program.

STEP 2: WRITING YOUR BOOK

Where do you begin? First things first: Decide what you're going to write about. Chances are you have an area of expertise or special interest. Maybe that should be your first project. How-to books are the most straightforward kind.

However, don't limit yourself to nonfiction. Why shouldn't we Commodore authors crank out some short stories or a novel? You've got

approximately 30,000 words available on a single-sided 1541-formatted disk, double that if you flip the disk over and use the back side. A 1581 disk can hold more than 130,000 words, enough space to create

one mighty long epic poem.

Space limitations prevent me from giving much advice on the actual writing process. There are hundreds of books and articles on that topic. The important thing would-be authors should remember is that the purpose of all writing is to transmit ideas from the writer's head to the reader's. If you know what you want to say, know your audience, and try to hurdle any natural barriers to communication that appear, you'll have done your job well.

You should write your book on a work disk, saving the publication disk until later. Also write it in chapters, not only to help break your idea into manageable units and make file-handling easier, but as a favor to your readers. It's a big relief to a reader to see a logical sequence of sections, and loading long files can be almost as annoying as reading them. BookDisk lets you fill up memory with a file, so anything your word processor can handle will work. However, files under 70 blocks (about 3000 words) are best.

Tailoring BookDisk to Your Word Processor

If your word processor is listed below, just type in the numbers next to its name at the BookDisk prompt. If it isn't listed, you'll need to do a little investigating.

Start by booting your word processor and typing the line !A! and then return. Be sure to type it exactly, including the exclamation points. Now save the line to a work disk with the filename CR.TEST. Then exit the word processor and run the BookDisk Test program on the ReRUN disk.

Run the test with the disk containing the CR.TEST file in the drive, and the numbers you need will print to the screen. One caveat: If your word processor attaches a prefix to filenames, change line 10 to include the prefix.

Word Processor	Carriage Return	Filetype
RUN Script	159	1
VizaWrite .	220	1
Speedscript	31	1
The Write Stuff	31	1
BrainPower	186	0

Copy-editing, the chore of removing errors and poor phrasing, may inhibit some would-be writers. The practical solution is having a wordwise friend read your bookdisk and make suggestions and corrections. Of course, use a spell-checker first, if you have one. They aren't perfect, but will catch many typos.

Even with the most careful copy-editing, errors will inevitably make their insidious way into the final copy, and readers will take great glee in pointing them out. Traditional publishers have to wait until the next printing to correct those errors, but with electronic publishing you can

do it immediately.

STEP 3: PRINTING YOUR BOOK

Finally, the day comes when you've written all the chapters and it's time to copy your book from your work disk to the publication disk. You can use a file copier or save the chapters one by one from within your word processor (or use any other convenient method). Be certain to copy the files in the order you want them to appear in the table of contents. To help your readers, name them numerically—as you would name chapters in a conventional book—like this:

1. Dark and Stormy Nights

2. Lost at Sea

3. Johnny's Dream

If your word processor attaches prefixes to filenames and you'd like to remove them, use a file utility to rename your files after they're in place on the publication disk.

It's highly advisable to put a publication-data file before or after the other files on your disk. In it, include the publication date, your name, the company (invent a name—mine is Country Road Press), a fore-

word, a preface, a brief author's biography, and so on.

Also include the following copyright information: the word "Copyright," the year of first publication, and your name. For example: "Copyright 1991 by John Jones." Put this notice in every file on the disk. End the file with the phrases "All Rights Reserved," "Printed in the United States of America" and "First Printing." This constitutes a valid, if somewhat informal, copyright. To officially register your book, contact the United States Copyright Office, Library of Congress, Washington, D.C. 20559, and ask for Form TX. The cost is \$10.

Once you've got the publication disk completed, make a backup copy. Then you can use a disk-copy program to make as many copies

of your book as you want.

One last point: People do judge books by their covers. It's fine to use



inexpensive disks with plain white sleeves for your copies, and it's no problem if you mail them in generic mailers, but use attractive disk labels. You can use your computer and printer to create them, or have a local printing firm make some (they're inexpensive). On the labels put the title, the copyright information, your name, and a brief set of instructions (such as "Type load "*",8:run; press f1 for help"). At any rate, don't use handwritten, scratched out or misaligned labels.

STEP 4: GOING PUBLIC

Your book is written, published and ready to move. Now's the time to send a copy to *RUN*'s Writing Contest. See below for the address and contest instructions.

Entering RUN's Writing Contest!

You can enter submissions in any of the following categories:

Poetry (any word length)

• Fiction (short story—5000 words or less)

• Fiction (novel—5000 to 10,000 words)

• Nonfiction (5000 words or less)

• Nonfiction (5000 to 10,000 words)

There will be 15 winners (three in each category), and one of them could be you! First-place winners will receive \$100; second-place winners, \$75; and third-place winners, \$50. In addition, a grand-prize winner (for best entry in any category) will win a Commodore 128D computer! Other prizes will include a 1670 modem, 1700 and 1764 RAM expansion units and Commodore software, including GEOS accessory software and *RUN* productivity and entertainment software.

Winning entries will also be mentioned in *RUN* magazine, and a collection of them will be marketed by the magazine as a special bookdisk.

Send us your bookdisk by September 1, 1991, in either 5½ or 3½-inch format. With your submission be sure to include its category and title; name, address and telephone number of the author (that's you!); and a brief, 50-word (or less) description of your story.

Send your entries to: Writing Contest, c/o RUN Magazine, 80 Elm St., Peterborough, NH 03458.

Entries will be judged on the quality of writing, interest level and originality.

On Your Mark!

By Ward Shrake

PROFILER PROGRAMS, ALSO called execution-time analyzers, have long been used by professional programmers to keep their programs running quickly and efficiently. Now you can run a profiler on your C-64. Profiler 64 finds and reports the slow parts of a Basic program,

showing where you can take steps to speed things up.

Think of Profiler 64 as a stopwatch that times each line in a section of code. It then creates a bar chart showing how long each line took to execute compared to the other lines. Each line is compared to the others rather than to some set amount of time, so the true relationships between the lines can be seen easily. If the comparison were done any other way, the chart could be misleading.

To use Profiler, just follow the prompts. First, you must prepare to analyze a program. When the computer is ready, clear memory by typing NEW. Then load and list the Basic program you want to analyze—but don't run it yet. Just before the first line you want to time, insert

the following line:

SYS 703:START TIMING HERE

This tells Profiler to start its timer. Just after the last line to be timed, insert this line line:

SYS 716:STOP TIMING HERE

This tells Profiler to stop timing. (Don't forget to remove the lines when you're done.) Examples A and B are included on the ReRUN disk to demonstrate how this is done.

Now run your Basic program. As it's running, Profiler will collect the information it needs with little fanfare. Then type NEW and load Profiler again. Run it, and select the command that displays the results. You will have the choice of sending the results to the printer or viewing them on the screen. Be sure to use a printer if the Basic program you analyzed was lengthy.

The line numbers on the chart correspond to the line numbers in your Basic program, and the bars represent the relative time each line

took. It's common to see radical differences in bar length, and you may be surprised at which lines are slowest.

The reasons for their slowness may be readily apparent, as when you've crunched more than one statement into a line. On the other hand, they may be hard to spot. Look for unnecessary spaces and parentheses, numeric constants where variables could be used, and REM statements within often-repeated loops. For more hints, see Stéphane Dirschauer's "Breaking the Basic Speed Limit," in RUN's January/February 1991 issue, where program modifications are discussed in detail.

You can, of course, profile a Basic program again and again, until you've squeezed out all the performance possible. If you take speed very seriously, you can also fine-tune programs with Profiler, then compile them using any Basic compiler program.

RUN it right: C-64; joystick

Bomb Squad

By Robert Cook

A BOMB IN THE outer wall of a building will explode in three minutes, and only you can prevent it! It's your job to retrieve five keys from various locations in the building's maze of hallways, then find your way to the bomb and disarm it. There's no time to lose. Are you ready? Then plug your joystick into port 2 and run Bomb Squad.

As you collect the keys, they'll appear at the top of the screen. When you've got them all, hurry to the bomb and push the joystick in the bomb's direction to disarm it. The all-clear siren will announce your success.

Three grenades are also hidden within the maze. You can use them to break through walls when you get stuck. To blast through a wall, push the joystick in the direction of that wall and press the fire button.

Bomb Squad offers four challenging levels of play. The difference between them is in the size of the window through which you view the maze. The largest window is 38 columns by 22 rows, the smallest is 10 columns by 6 rows. The whole maze is 55 columns by 35 rows, so even the largest window doesn't reveal all of it at once. As you move through

the halls, the maze will scroll through the window, revealing the rest. You'll find the higher levels easier to play if you learn the layout of

the maze by playing at lower levels first.

At the end of each game, the level of the maze and the high score for that level (the greatest amount of time left on the timer) will be displayed. Choosing a new maze resets the high scores for all four levels to zero.

RUN it right: C-64; C-128 (40/80 column mode)

Scaling Metric

By Jeff Koester

DO YOU EVER NEED to convert temperature, weight, length or volume from metric to English, and vice versa? Metric Converter will do it for you. Temperature conversions are between Fahrenheit and Celsius; weight between pounds and kilograms, and ounces and grams; length between miles and kilometers, and inches and centimeters; and volume between gallons and liters, and fluid ounces and milliliters. To use Metric Converter, just follow the prompts.

RUN it right: C-128

Missile-Buster

By Mark Jordan

THE HIGH-TECH WEAPONRY in the opening days of the Persian Gulf war fascinated the public. In particular, how were certain missiles able to detect and shoot down others? I went to my C-128 for the answer. The result is Missile-Buster, not a shoot-'em up game, but a simulation that suggests the kind of computer brainwork involved in some of our smart weapons.

One of your roles in Missile-Buster is that of the antagonist. You're



the launcher who determines how fast and at what angle the incoming missile will fly. After loading Missile-Buster, set the speed by pressing the 1–9 keys, 1 being the slowest. Set the angle by pressing the CURSOR-UP and -DOWN keys. Then press the RETURN key to fire.

Your other role is that of student. By pressing 0 before RETURN, you'll get a stop-action view of the attack and counterattack. The screen will pause when the defensive missile's radar senses the offender, then it will show you the angle of intercept (which the defensive missile has laboriously calculated) and approximately where it plans to zap the incoming bomb.

Because the algorithms I used in this program are more practical than precise, accuracy still isn't perfect and, as in the real world, occasionally on incoming missile.

casionally an incoming missile will get by.

I wrote this program for its educational value, rather than for a bit of entertainment. Smart weapons do use processes similar to those we can explore with our "smart machines," that is, our home computers. These days I find myself turning to my C-128 more and more to understand the real world.

RUN it right: C-64; printer optional

Scoreboard

By Gary Noakes

WITH SCOREBOARD, AVID GAMERS can record and view achievement information for as many as 15 games. The information it saves includes your current score, current level, previous score and previous level.

When run, Scoreboard displays the file template. Pressing the letter adjacent to a blank field brings up the Add Games Editor. Follow the prompts to enter and review new game information. Typing A will abort the operation and return you to the main screen.

When you've finished entering new information, Scoreboard will automatically save it as a sequential file with the name Scorecard. Be sure

to have a formatted work disk handy to save your scores on.

Pressing a letter adjacent to a game name brings up the Score and Level Editor, which lists the game name, previous score and level, current score and level, and a prompt asking if you wish to edit the entry. Choose to edit with caution: The current score and level data automatically moves to the previous fields, and the current field is erased to make room for new information.

RUN it right: C-128 (in 80-Column mode); printer optional

Movie Phile 128

By Barbara Craig

WHEN YOU RECORD two or three movies on the same videotape, like me you probably have trouble keeping track of them. Movie Phile 128 will organize your flicks by tape number and let you keep records of up to four movies per tape, including fields for title, rating, category, and location (counter number) on the tape.

Clear prompts will guide you through Movie Phile 128. Press the CURSOR, RETURN, and ESCAPE keys to get around. The UP-ARROW key used to page through the tapes in your file is just left of the RESTORE key.

To delete a tape, use the Update function and press RETURN over the information you want to delete. That tape number will remain empty, ready for future additions.

The status line shows drive number and type, disk errors, status, file-

name and messages.

Begin by creating a file on a formatted work disk. The program will then create two files needed to store listings.

THE MOVIE FILE MENU

Enter Filename—Do this first each time you use the program.

View Tape—Lets you see what's on each tape.

Search Tape—If you don't know the exact title of the movie you need to find, the Search option can work with partial names. To begin the search, enter the starting tape number. The program will search from that tape to the end of the file.

Print—Enter the starting tape number, the ending tape number and the number of lines per page, up to 66. To pause, press the space bar.

To abort, press ESCAPE.

Create a File-Put a formatted disk in your drive (or format one us-



ing the Disk Operations menu discussed below) and follow the prompts.

THE UPDATE TAPES MENU

Add Tapes—When you choose this option, the program will automatically add the new tape to the end of the file and assign it a number. Enter the movie title, rating (G, PG, and so forth), category (such as horror, family, cult) and the counter number where the movie begins on the tape. Follow the prompts to save the new entry.

To correct a mistake, press the LEFT-ARROW key that's above the CONTROL key, then follow the prompts. As always, you can abort adding

to a file at any point by pressing the ESCAPE key.

Change Movies—Simply follow the prompts to make corrections, additions or updates to your movie entries.

THE DISK OPERATIONS MENU

Disk Directory—Select the drive with the UP-ARROW key and press RETURN to view a directory. Hold down the COMMODORE key to slow the listing. To pause the listing, press the NO SCROLL key.

Rename a File—Select the drive and enter the current and new file-

names.

Delete a File—Select the drive number, then follow the prompts.

Format a Disk—Select the drive number of the disk to be formatted. Be careful! All existing data on a disk is lost and unrecoverable when the disk is formatted.

Note: You can abort any operation before the drive starts spinning by pressing the ESCAPE key.

THE OTHER THINGS MENU

Change Colors—Lets you modify the background and text colors. Press RETURN when you have a combination that you like.

Save the Startup—Lets you modify the default drive and colors. Just make your selections and press RETURN.

Quit Program—You can guess what this one means.

RUN it right: C-128 (in 40-Column mode)

Wild Eights

By Henry Langston

IN WILD EIGHTS, YOU and the computer take turns playing cards onto the discard pile. You must play a card of the same suit or value as the top card on the pile. For example, if the Two of Hearts is on

top, you can play any heart or any two.

Make a play by pressing the card's number or the first letter of its type and then the first letter of its suit. A Two of Spades would be 2S, an Ace of Hearts would be AH, and so on. If you can't play, you must draw from the deck until you can. When the deck is gone, you must either play or pass.

The game ends when one player runs out of cards or both players pass. Your score is the face value of the cards you have left in your hand, the lower the better. Face cards are worth 10, aces 1 and eights 50!

The computer takes care of shuffling the standard 52-card deck before each game. It deals the seven-card hands and turns up a card to begin the discard pile. The "dealer" is selected at random at first, then alternates each game.



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8 Programs on this Disk

From the May/June RUN:

- BookDisk
- On Your Mark
- **Bomb Squad**
- Scaling Metric
- 128 Mode: Missile-Buster

Plus: Bonus Programs!

- Scoreboard
- Movie Phile 128
- Wild Eights

If any manufacturing defect becomes apparent, the defective disk will be replaced free of charge if returned by prepaid mail within 30 days of purchase. Send it, with a letter specifying the defect, to:

ReRUN • 80 Elm Street • Peterborough, NH 03458

Replacements will not be made if the disk has been altered, repaired or misused through negligence, or if it shows signs of excessive wear or is damaged by equipment.

ReRUN contains programs taken directly from listings prepared to accompany articles in *RUN* magazine, as well as bonus programs. These programs will not run under all system configurations. As your guide, use the RUN It Right information included with each article.

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