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Basic-2C is now supported in the following environments:

Single-User MS-DOS Systems

AMSTRAD PC1512	HONEYWELL PC AP	NEC APC IV
* ARCHE/RIVAL - 286	HP VECTRA	SPERRY PC, PC/IT
* AST PREMIUM 286	*+ IBM PC, XT, AT	TANDY 3000
AT&T 6300, 6300 PLUS	* IBM PC XT 286	TELEVIDEO TELE-PC
COMMODORE PC-10, PC-20	* IBM PS/2 MODELS 30,50,60,70,80, 30/286, 50S, 70Z/386	TELEVIDEO TELE-XT
COMPAQ DESKPRO	ITT XTRA XP	* TI BUSINESS PRO
COMPAQ PLUS	* KAYPRO 1610	* TOSHIBA T3100, T3200
COMPAQ PORTABLE	* KAYPRO 16/E	TULIP COMPACT
* COMPAQ PORTABLE III	* KAYPRO PC, PC10, PC30	* UNISYS PW2/500-12
* COMPAQ 286 DESKPRO	* KAYPRO 286i	UNISYS PW2-800
* COMPAQ 386 PORTABLE	* KAYPRO 386	* WANG PC, APC
* COMPAQ 386 DESKPRO	* KAYPRO 2000+	* WANG PC280
* COMPAQ 386/S DESKPRO	LEADING EDGE PC (D)	* WANG PC380
* COMPAQ 386/20E DESKPRO	MAI/BASIC4 PC	*+ WYSE PC, PC286, 2108, 2200 3216, 3225
+ COMPAQ 386/25 DESKPRO	* MULTITECH LAN 500 (ACER)	XEROX 6060PC
* COMPAQ LAPTOP SLT/286	*+ MULTITECH 700, 710 (ACER)	XEROX 6065
COMPUTERLAND PC	*+ MULTITECH 900, 910 (ACER)	ZENITH 150 SERIES
DEC VAXMATE	* MULTITECH 1100 (ACER)	ZENITH 248 SERIES
* DELL SYSTEM 220/286	NCR PC6	* ZENITH SUPER SPORT/286
EPSON EQUITY, I, II, III		

* Tested and passed for 2.01. Note - to date no previously approved compatible has failed the 2.01 compatibility testing.

+ Tested and passed for Release 3.0.

Multi-User Shared Logic Systems Computer

ALTOS 686, 886, 1086, 2086, 3086
ALTOS SERIES 2000
ALTOS 500, 1000, 2000
DEC MICROVAX II
DEC VAX 3500
DEC VAX 8000 SERIES
HONEYWELL XPS-100
IBM AT & IND. STANDARD 286
IBM, PC, XT, AT
IBM PS/2 SERIES
INDUSTRY STANDARD 386
NEC ASTRA-XL SERIES
WANG 280
WANG 380
WANG APC
WANG APC
WYSE PC 286 SERIES
WYSE PC 386 SERIES

Operating System

XENIX 3
XENIX V
SYSTEM V
VMS
VMS
VMS
UNIX V
SCO XENIX V 286 AT
SUPERDOS
SUPERDOS
SCO XENIX V 286 AT
ASTR-IX
SCO XENIX V 286 AT
SCO XENIX V 386 AT
XENIX 3.0
XENIX V
SUPERDOS
SUPERDOS

Multi-User Distributed Logic Systems (Networking)

NOVELL ELS I
NOVELL ELS II
NOVELL ADVANCED NETWARE 286
NOVELL E/TI NETWORKING
SPERRY USERNET
IBM & ALL APPROVED
COMPATIBLES
(SEE SINGLE USER MS/DOS)

General News

Who's Who at Niakwa?

Recent additions and changes at Niakwa have made it appropriate to update our "Who's Who at Niakwa" list.

Technical Support

Kevin Brownell - Product Manager
 Kurt Skaronea - Senior Product Analyst
 Barbara Chiprin - Product Analyst

Sales and Marketing

Jennifer Mondy - Account Representative
 Cyndee Philyaw - Account Representative

Administration

Mary Vogt - Office Manager
 Lesslee Dort - Administrative Assistant - order processing
 Jim Smith - Administrative Assistant - shipping and production
 Kathy Bradley - Secretary
 Ann Lomonte - Receptionist

Research and Development

Marvin Ben-Ari - Systems Programmer
 Jeff McGregor - Systems Programmer
 Wayne Morris - Systems Programmer
 Patrick Niesink - Systems Programmer
 Dana Schwartz - Systems Analyst
 Pat Legg - Senior Systems Programmer/
 Consultant

Management

Dick Drew - General Manager
 Harry Cohn - Manager of Research and Development

Niakwa continues to strengthen its team with additions at our Winnipeg Research and Development facility:

Marvin Ben-Ari

Marvin has recently joined our R & D staff as a systems programmer. He holds a B.S. in Civil Engineering from the University of Manitoba. For the last eight years he has worked as a software engineer in Israel where he led a

team of programmers in the development of a cerebral function monitor, the Cerebro Trac 2500. He has experience with mainframes, INTEL microprocessors and numerous PC applications.

Patrick Niesink

Patrick joins us with 13 years industry experience and a B.C.S. (Honors) and an M.S. in computer sciences from the University of Manitoba. His experience includes the design and development of turnkey systems, language design, operating systems and consulting.

Additions at our Mundelein office are:

Lesslee Dort

Originally from Alpena, Michigan, Lesslee obtained her B.S. degree from Lake Superior State University, in Sault Ste. Marie, Michigan. Part way through her undergraduate education, she reports marrying her bestfriend, Bryan. They recently moved to the Chicago area to begin their careers.

Lesslee recently joined Niakwa as Administrative Assistant responsible for accepting phone and facsimile orders, license renewals and other sales-related duties.

Jim Smith

Jim Smith joined Niakwa in May 1989 as an Administrative Assistant responsible for shipping and producing Basic-2C software products. He is currently enrolled at the College of Lake County, pursuing his degree in Computer Science. Jim has been married one year to wife Dawn who is an elementary teacher.

Jerry Dederich and Darrell Lynds, Niakwa's former owners, are currently on sabbatical. They set Basic-2C in the direction of hardware independence and instilled a commitment to the Basic-2C language that all of us at Niakwa firmly believe in. It's a strategy that our extreme capable and larger staff will enthusiastically build upon.

Basic-2C and SuperDOS SDRAM Disk

The availability of RAM Disk in SuperDOS 5.0 is a significant feature that can be utilized by Basic-2C applications to improve performance, in some cases substantially.

How does RAM Disk work?

RAM Disk is an area of memory that is treated as a virtual disk. That is, this area of memory can be accessed by the application using traditional disk I/O statements. The advantage of RAM disk is that response time for disk operations directed to RAM disk is much faster than for operations directed to a real disk. The disadvantage of RAM disk is that all data stored there is lost whenever the machine is turned off or when power is otherwise interrupted. Therefore RAM disk should not be utilized for actual user data. However, use of RAM disk to store Basic-2C program diskimages and work files is entirely appropriate and can result in very significant performance improvements.

Under SuperDOS 5.0, RAM disk can be easily configured by adding a 114 line to the CONFIG.S or CONFIG.P files. This line allows specification of both the size of the SDRAM disk and the SuperDOS drive designation assigned to it (for example, '6:'). Multiple RAM disks may be defined. Once the RAM disk is defined, it may be accessed like any other physical drive from both SuperDOS and Basic-2C.

Note that for RAM disks larger than 64k, use of Protected Mode will usually be required since with the RTPSHARE task loaded there typically will not be very much space available in base memory for a larger RAM Disk and in Real mode the largest task size in expanded memory is 64k. Please refer to SuperDOS documentation for further details in configuring RAM disk.

Accessing RAM Disk

Accessing RAM Disk from a Basic-2C application is very easy. Typically the only statements that will have to be changed will be the \$DEVICE statements assigning the Basic-2C disk address to the SuperDOS file. For example, assuming that SuperDOS drive 6 has been defined as a RAM disk:

```
$DEVICE(/D21)="6:0:PLATTER1.BS2"
```

would define Basic-2C address D21 as diskimage file PLATTER1.BS2 residing in user group 0 on the SDRAM disk.

Some additional logic may be needed to copy the Basic-2C programs or work files into the RAM disk. This logic could be structured so that the first terminal to log in will create the proper files in RAM disk. Subsequent terminals would then detect the existence of the files in RAM and would skip the file creation step. The simplest technique would be to have all files that you intend to place in RAM disk in one or more separate diskimages on the hard disk and then simply copy them to RAM disk during the start up routines. Should the RAM disk not be available, program operation could still continue using the hard disk based files.

Note that the program creates the diskimage file in RAM disk should check for errors during file creation (insufficient space for example) and remove any partial diskimage file created.

Use of RAM Disk to functionally replace Global Partitions

One of the more common uses of the global partition on the Wang 2200 is to store record-locking information or other types of variable data that must be accessed by all terminals. For applications like this, RAM disk provides an excellent functional alternative to the global partition.

The basic technique for converting these applications to Basic-2C is to use a disk file to store the common data that must be accessed by all terminals. This does require programming modifications, but these changes are generally not too extensive. The major concern with this type of application in the past has been performance. The additional disk I/O required to read/write this common information has sometimes caused overall performance of the application to degrade. Use of SDRAM disk to store the file containing the common information will resolve all performance issues relating to this technique. When SDRAM disk is used, the disk I/O used to read/write this common information now become memory transfer operations and performance will be comparable to use of a global subroutine. Note that applications that are converted to this technique will work well on Basic-2C platforms where SDRAM disk is not supported - they just won't work as fast.

Supported Wang Terminals

Currently Niakwa supports the following Wang 2200/CS terminals:

Wang 2236DE
Wang 2236DW
Wang 2336
Wang 2446

Use of these is currently limited to systems operating under SuperDOS and Altos 1000 systems operating under Unix. Refer to the appropriate Basic-2C Supplement for details on terminal characteristics. Note that earlier model Wang terminals such as the Wang 2236D are NOT supported for use with Basic-2C.

Wang PC 280/380 Certified for SCO Xenix

Niakwa is pleased to announce the successful testing of Basic-2C running on the Wang PC 280/380 systems under SCO Xenix. The Wang PC 280 was tested running SCO Xenix System V/286AT revision 2.2. The Wang PC 380 was tested running SCO Xenix System V/386AT revision 2.3.

American Express?

Some of our customers have expressed an interest in using American Express cards as an alternate method of payment for orders. To obtain an accurate picture, we need more information. If your company would like Niakwa to expand its payment methods to include the use of American Express, please call Ann Lomonte and express your views.

New Platforms Under Evaluation

The next few months may see several exciting new platforms supported by Basic-2C. We are currently evaluating:

Sun 386i engineering workstations.

Apollo 68030 based engineering workstations.

NCR Tower (68000 based Unix V).

Banyan/Vines networking for MS-DOS.

We stress the word **evaluating**, not announcing these platforms. Do not sell Basic-2C for these platforms until Niakwa makes the official announcements, as some platforms may not pass the evaluation or we may not reach a porting agreement with all of these manufacturers. Please refer to Section 6.2 of the Basic-2C Support and Distribution License Agreement for your specific duties regarding this matter.

If you are interested in one or more of these platforms, please call our Sales Department. Watch for specific product announcements and status reports in forthcoming newsletters.

Focus on Release III

Release III Status

R & D has been hard at work implementing Release III for Xenix, Unix (68000) and VMS. The preliminary schedule for these releases is:

Release III for Xenix - 4th Quarter, 1989

Release III for Unix/68000 - 1st Quarter, 1990

Release III for VMS - 3rd Quarter, 1990

Release III is currently available for:

MS-DOS
Novell
SuperDOS

Licensees that are interested in becoming beta test sites for any of these products should contact Niakwa Technical Support. Applications for beta test status for Release III for Xenix are currently being taken.

Release III for Xenix will include the following features:

A true 386 version will be available for use under Altos System V on the Altos 386 series.

Use of SCO Xenix versions for the IBM PS/2 will be supported.

SCO version 3.2 (merged Unix/Xenix) will be supported.

All Release III features, including external calls and larger partition sizes, will be fully supported.

For application protection, an 'install' based security system similar to that used on MS-DOS/Novell will be implemented. Note, no modification of the Xenix kernel will be required.

Release III Bug Corrections

Since the initial release of Release III, a few bugs have been found. These bugs are described in bug report #2 which was sent to all existing Release III distributors in mid-July and is included in all Technical Reference Guides shipped after July 12.

Although most applications would not be affected by these bugs, a field level patch file has been distributed which will correct the bugs. This patch file was distributed to existing Release III distributors in mid-July. This patch file should be installed on all end-user systems that have Release III RunTimes shipped prior to July 12. The new patch file is included with all new RunTimes and all Upgrade RunTimes shipped after July 12. Please refer to documentation included with the special patch distribution diskette or with your Release III Supplements for information on installation of the patch file.

With the new patch file properly installed, the revision level of the Release III RunTime displays as 3.00.02.04x (where x indicates the operating system version).

Please contact Niakwa technical support if you have any questions.

Release III Training Workshop

Niakwa, in conjunction with Tim VeArd of VCR, Inc., Austin, Texas, is pleased to offer Basic-2C licensees the opportunity to expand their programming knowledge.

Tim VeArd (formerly of AIMS + PLUS) will conduct a three day training workshop this Fall in Chicago. The workshop dates are flexible and dependent upon the availability of those interested participants.

The 'SAVE-A-SECOND' workshop will teach you...

- the fundamentals of program structure
- how to structure Basic-2C programs for maximum efficiency
- to configure hardware, data and users for maximum throughput
- how to extend the useable life of hardware and increase its performance
- how to use add-on peripherals to improve speed
- to write code that floats and migrates to other CPU's
- ways to implement box graphics, keyboards, printer and disk routines
- useable \$GIO routines and other special tricks
- subroutines that will help you write more efficient code

Please contact Jennifer Mondy at Niakwa with your interest and preferred workshop dates. If enough interest is generated, multiple workshops may be scheduled.

Success Stories in the Making

Release III has been available since May 15, 1989, and it has already had a strong impact for many Basic-2C Distributors.

Release III was designed to put a powerful development tool in the hands of Basic-2C programmers, with ease of use and good documentation. The end result is that Basic-2C Distributors can now meet the rising demands of existing customers, and be well equipped to compete in new markets. These benefits are evidenced in the following Basic-2C Distributors highlights.

Knopf Data Systems (KDS)

Bill Knopf has a software package geared specifically to law enforcement. KDS has upgraded three customers to Release III, and all of his new purchases have been Release III. Features he has used to enhance his package are:

External Calls for Improved Security

His program makes calls to directly access Novell Netware's own security, thus eliminating the need for a special password to access KDS's particular program. However, the option is available to require a password at critical phases in the program logic as needed. For example, Purchase Order approval requires a special password for access to meet a particular user's needs for file security.

Another improvement is that after a user leaves a terminal unattended for a specified period of time, it will automatically go blank, freeze up, and require a password entry. If the incorrect password is entered, the terminal will lock up. This eliminates the security problem when a confidential file is accessed, and the operator walks away. No other person can access those files which were last used, and confidential information will remain confidential.

Color on Novell

This is an instant benefit to using Release III which took no time at all to incorporate, and is required for certain KDS applications.

Expanded User Partition Size for Larger Accounts

This improvement, along with External Calls to the Btrieve file manager, makes it possible to handle larger accounts. One current prospect has a 500+ meg data base.

Niakwa '88

Niakwa '88, independently owned and specializing in Client Accounting applications, is also using Release III to do a major program revamping. In fact the enhancements are so significant, that they have put together a fifteen page softcover binder/information packet, outlining fifteen program enhancements they can now offer as a result. Some of the highlights include:

External Calls

Improvements include:

- System speed increases up to forty percent.
- File naming now matches the well understood DOS conventions.
- Improved network performance and report generation.

Expanded User Partition Size

Client file size is now dynamic, thus eliminating time and errors associated with expanding files while minimizing reserved disk space.

Input Screen/Print Screen

Now the input screens will be more attractive as well as functional, and present a more up-to-date appearance.

The Slims Corporation

The Slims Corporation has a software package which meets the specific needs of various financial institutions. This program contains more than 20 calculation type modules including arithmetic functions, logical comparisons, table entry retrievals, annual percentage rates, cash flows, and more. Prior to Release III, only one of these calculation modules could be held in memory at one time due to the memory constraints. And then came Release III.

Expanded User Partition Size for Increased Speed

This one implementation has had a very significant impact on program speed and performance. Now with increased memory utilization several of the most used modules can reside in CPU memory for very quick access, thus eliminating the passing of hundreds of lines of code in and out each time a new calculation function is performed.

The end result is increased speed and performance ranging from 22 to 69%, depending on the operation, with an average transaction speed increase of 36%!

Northwest Source Group (NSG)

NSG has two new products it has developed using the Niakwa Basic-2C environment. Both of these products take advantage of the new features of Basic-2C Release III. These products are as follows:

NSG Word is a word processor. It uses the 'C' language interface to access the 80,000 word Webster dictionary/spell-checker/thesaurus licensed from Proximity.

FourD is a 4GL application development tool. This product has an expected fall 1989 release date. FourD is being completely developed using Release III, taking advantage of the many enhancements to Basic-2C. Because of Release III, this product out performs similar Basic products by three to five times. Some of the major new features of Basic-2C used by FourD are:

- Expanded memory which NSG believes is the most significant enhancement of the Release.
- Multi-sector read/write that results in a two-five fold increase in disk access speed.
- DO/END DO allows programs to be more structured which ultimately increases program efficiency and decreases debug time. It also allows programs to use less line numbers.
- Color
- Expanded DEFFN' subroutine calls (to 65500)
- Expanded device table (to 255)

FourD allows development of fully integrated applications while providing extensive data handling capability.

Technic Corporation

Vince Russoniello, President, upgraded a large client to Release III, with SuperDOS 5.0, and gained a significant system performance increase. The overall speed is 30 to 50% faster than before, with the end result a very happy customer!

According to Vince, certain CPU functions are actually slower, but the disk I/O more than makes up for it, allowing the software to visually "seem faster". In actuality, one task was reduced from 25 minutes to 10 minutes.

How difficult was moving up to Release III? "Very easy, good documentation", stated Vince.

What's next? Technic is anxiously awaiting SuperLAN, Bluebird's answer to the increasing demand for

networking. SuperLAN will enable multiple multi-user CPU's to be networked together sharing one common database.

Release III Ordering Questions & Answers

Q: Why do I need to upgrade my Release III Development Package before purchasing Release III RunTime Packages?

A: With all of the new features in Release III, the associated Supplements will be necessary to provide full support for Release III. The revised supplements describe the installation and operation of Basic-2C on specific machines, and provide indepth documentation of all machine specific functions. You will also need the newly revamped Technical Reference Guide containing the Basic-2c Programmer's and Operations manual, and Basic-2C Statements manual.

Q: What if I am not ready to use any Release III features, but I still want to provide my user with the latest RunTime version?

A: You can purchase a new or upgrade Release III RTP, but you will still need to have the Release III Supplement and Technical Reference Guide to refer to should any errors occur on the system. You should keep in mind that Release III is slightly slower than Release 2.01 on some functions. There is also the increase memory requirements of Release III, a minimum of 348k physical memory is recommended. For this reason, we are offering Release 2.01 for new RTP purchases through December 31, 1989.

Q: Can I upgrade my customers on Release 2.00 to Release 2.01 instead of Release III (until December 31)?

A: NO. We are only offering "new" RTP purchases through December 31, not "upgrade" RTP purchases. A Release III RTP will contain all the features found in Release 2.01, and that way the customer will have the latest release. Remember, after December 31, all MS-DOS, Novell and SuperDOS RTP's will be Release III.

NOTE: Niakwa support its Release for two years following the introduction of a new Release. Niakwa's support of Revision 2.00.04 will end on July 15, 1990. Niakwa's support of Revision 2.01.20 will end December 31, 1991 for MS-DOS, Novell, and SuperDOS.

Focus on Release III Features

This section highlights several features introduced into Release III.

More extensive information can be found in the Basic-2C Technical Reference Guide.

Background Partitions

One of the most powerful new features of Release III is support for Background Partitions. The background partition support is very operating system specific because they can only be supported on operating systems with multi-tasking capabilities. Currently background partitions are supported only on SuperDOS. In the future, they will also be supported on other operating systems that support multi-tasking capabilities such as Xenix, Unix, and VMS (with possible limitations due to specific operating system features).

The implementation of background partition support in Basic-2C Release III for SuperDOS provides capabilities previously not present in Basic-2C. Some of the features of this enhancement are:

Basic-2C support of background partitions is highly compatible with the Wang 2200/CS implementation. Most applications which utilize background partitions on the Wang 2200/CS will run with little or no modification. In particular, TOM SPEED I support of background partitions works well with two minor program changes (see the Basic-2C SuperDOS Release Notes in the Basic-2C Release III Supplement for SuperDOS for details).

Under Basic-2C, if a background partition writes to the screen, the information is buffered for display when the background partition is switched to foreground and the background partition does NOT go into a wait state. This enhancement over the Wang 2200/CS is particularly useful in that applications that were not originally designed to run in background partitions on the Wang 2200/CS may be more easily adapted to use background partitions under Basic-2C.

Background partitions are very easy to configure under SuperDOS.

There are a few limitations to be aware of:

Printing to a local printer from a background partition is not supported. However, printing to a system printer or ASCII file is fully supported.

Unlike Wang 2200/CS, background partitions must be assigned to a specific terminal.

Background partitions do count towards the Basic-2C user limit.

Refer to section 9.3 of the Basic-2C Release III Supplement for SuperDOS for complete technical information about background partition support.

Memory Management

Some developers have reported difficulty with intermittent A01 errors with a message 'handle table full' when operating under Release III. The problem here is that Release III internal memory allocation works quite a bit differently than under prior releases. The most important difference relating to this particular problem is that the memory required by a particular program or function within the application may actually vary from one execution to the next based on what other modules may have been previously executed. This is due to the presence of a new internal table in Release III - the 'handle table'.

The 'handle table' is a table used internally by the RunTime to maintain track of the addresses of variables and line numbers in memory. Because this table is dynamic in size, situations can arise where the handle table needs to be expanded to accommodate the number of variables and line numbers used by the new program. If the program in memory is close to using the full size of the available partition, there may be insufficient space for the RTP to perform the expansion of the handle table. This is what results in the A01 error with the message 'handle table full'.

The solution to this problem depends on the nature of the application and the operating environment:

1. For applications that use SPACE to dimension variables, some adjustment to the calculation which determines the size of the variables may be required. Calculations involving SPACE should be adjusted to leave about 10K of the partition unused so that handle table expansion can occur without causing an error.

2. For applications which do not perform dynamic dimensioning of variables using SPACE but which operate on fixed task size operating systems such as SuperDOS, the task size may have to be increased slightly. Again, the guideline should be to allow about 10K for potential handle table expansion.

Note that many applications may not be affected by this issue. If you are already using Release III extensively and have not encountered the intermittent A01 error, then you need not be concerned about making adjustments to the application.

Improve Performance with DATA LOAD/SAVE BM

The DATA LOAD BM and DATA SAVE BM statements allow raw unformatted data of any length to be read or written to the specified diskimage. The primary benefit of these statements is that with proper use, disk performance can be improved substantially. The basic principle behind the performance improvement is that disk operations are much faster if the number of bytes being read or written is an even multiple of the physical sector size of the disk in use and the operation starts on a physical sector boundary. A complete technical explanation of the reasons for the performance improvements is contained in the Basic-2C Release III Technical Reference Guide, Statements Manual, pages 58-59 (DATA SAVE BM).

Niakwa has recently performed some tests to see exactly how much performance improvement can be obtained by use of BM operations. For testing purposes we measured DATA SAVE BA versus DATA SAVE BM because the write operations show a better performance gain than read operations.

In the test program, we performed 500 random write operations within a 10,000 sector diskimage file. We executed the test four times using different lengths for the write operation - 1 sector (256 bytes), 2 sectors (512 bytes), 4 sectors (1024 bytes) and 8 sectors (2048 bytes). Each DATA SAVE BA operation consisted of a series of sequential DATA SAVE BA statements - 1 statement for 256 byte length, 2 statements for 512 byte length, and so on. Each DATA SAVE BM operation consisted of a single DATA SAVE BM statement with the length of the variable to be written set to the specified length of the operation. All operations started at an even number sector (to ensure that the operation started at a physical sector boundary - the physical sector size of the systems we tested on is 512 bytes).

We ran the test on two different systems. As can be seen, the results are quite dramatic. All times listed are in seconds.

IBM Model 60 under MS-DOS version 3.3:

	256 bytes	512 bytes	1024 bytes	2048 bytes
BA	37.4	33.6	50.8	84.6
BM	37.0	33.1	26.4	28.0

Wyse 2200 under Protected Mode SuperDOS version 5.0:

	256 bytes	512 bytes	1024 bytes	2048 bytes
BA	23	31	56	106
BM	23	23	15	17

As can be seen, the performance improvement is most substantial with longer block lengths (1024 and 2048 bytes). At 2048 bytes, DATA SAVE BM is three times faster than DATA SAVE BA under MS-DOS and six times faster under SuperDOS.

Please note that these numbers are intended only to show the benefits of a technique and should not be used as an indication of expected performance on any given system. The actual performance you receive may vary widely based on the type of disk used, the disk controller used, the operating system used, and many other factors too numerous to detail.

Keyboard Logging

This new feature will allow for automatic logging of keyboard input to a specified ASCII file. A new statement, SELECT LOG, is used to assign a Basic-2C device address as the log device where the device address used has been defined as an ASCII file by the \$DEVICE statement. Once the LOG device has been defined, keyboard logging may be turned on or off under program control (via \$OPTIONS) or may be turned on or off by the operator (via the Diag screen of the Help Processor). Keyboard logging output is stored in the format utilized by \$DEMO. Keyboard logging can be used in a number of ways:

- generation of \$DEMO script files based on actual operator keystrokes.
- build a keyboard 'remember' facility into the application.

- Diagnosing user problems. That is, if you are having trouble diagnosing a problem, turn on keyboard logging so that you can 'replay' the sequence of events leading to the problem.

For more information regarding keyboard logging, refer to Chapter 9 of the Basic-2C Programmer's Manual.

Standards for DEFFN' usage:

One of the new features of Release III is the extension to the number of DEFFN's supported. Applications may now use DEFFN' numbers up to '65535. Since DEFFN's can now also be utilized by external subroutines, this introduces the possibility that third party 'pre-packaged' external products may be developed for use by existing Basic-2C applications. Therefore, in order to avoid potential compatibility issues in use of DEFFN' numbers, Niakwa recommends that an informal standard DEFFN' usage be established (by 'informal' we mean that any standard would NOT be enforced by Basic-2C). What follows is a proposal for this informal standard. If you have any questions or comments on these proposed standards, please address them to Niakwa R&D, attention Harry Cohn. Watch for further information on this subject in future newsletters.

Proposed standards for DEFFN' Usage:

'256 through '19999

Reserved for use by Basic-2C horizontal products (such as AIMS, Northwest Source Group, TOM SPEED I). In order to avoid potential conflicts between different horizontal products, Niakwa will be willing to publish information about DEFFN' usage by horizontal products should this information be provided by the developer.

'20000 through '29999

Reserved for use by Basic-2C application programs. This is the range that should be used by the application developer.

'30000 through '39999

Reserved for use by future Niakwa products.

'40000 through '65535

Reserved for future allocation.

Tech Corner

Release III Questions & Answers

Q: Why does the RunTime security screen report 61K of available memory? I thought the RunTime was only limited to the amount of memory available to the operating system.

A: The 61K of available memory reported in the RunTime security screen is a known bug and is reported incorrectly only in the security screen. This problem will be corrected in future releases. To determine the actual size of the user partition, divide the value returned by the SPACEW function by 1024. For more information regarding the space functions refer to Chapter 3 of the Basic-2C Programmer's Manual.

Q: Am I still limited to 16 entries in the Device Equivalence Table?

A: No. With the introduction of Release III of Basic-2C you may specify the number of device entries you require (up to 255 or the maximum supported by the host operating system) through the use of a new RunTime startup option "/D". Refer to Chapter 6 of the RunTime Operations Manual for complete details of this new feature.

Q: Will Basic-2C Release 3.0 operate under SuperDOS 4.0?

A: Yes it will. It should be noted that the performance decrease of Release III will be greater under SuperDOS 4.0 as opposed to SuperDOS 5.0. The reason for this is that SuperDOS 5.0 has improved disk I/O performance over 4.0. Secondly, SuperDOS 5.0 provides you with the ability to run your applications from a RAM DISK (SD RAM) which would provide a tremendous boost in performance. See the article regarding SD RAM disk in this newsletter.

Q: Even though I have the PATCH.TBL file on the system in the /BASIC2C directory, the revision level on my security screen still displays as 3.00.02.00.I. What could be the problem?

A: This problem will occur in the event that the /BASIC2C directory is a "sub-directory" of another directory. The self patching mechanism will only work when the PATCH.TBL file is contained in the /BASIC2C directory and /BASIC2C is a root level directory.

Q: I have installed Release III on a system using an Upgrade RunTime. Due to a problem with the system the security has been lost. Do I need to order a new Upgrade RunTime?

A: No. If you lose security on a system that was updated by a Basic-2C Upgrade RunTime you will need to order a regular Release III RunTime replacement.

Q: Do I need both the 2.01 RunTime and 3.0 Upgrade RunTime diskettes after I have successfully installed the Upgrade RunTime?

A: Yes. The Release III RunTime is tied to the 2.01 Gold Key by the Upgrade procedure.

Q: Can I edit my existing programs using Release III of the Basic-2C and still run them under previous versions of the RunTime?

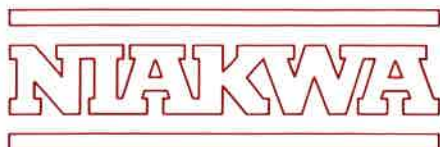
A: Yes you can. As long as you do not incorporate any Release III features into your existing applications you will maintain downward compatibility with Release 2.0 of Basic-2C.

If you are encountering a problem or have any general questions concerning a specific Basic-2C feature or statement, feel free to drop us a line at Tech Corner, c/o Niakwa Technical Support. We look forward to hearing from you.

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