

NIAKWA

NIAKWA MANAGEMENT SERVICES OF AMERICA INC.
3000 Dundee Road, Suite 301, Northbrook, Illinois 60062
Telephone (312) 291-0850 Telex 3719965 NIAK UB
FAX (312) 291-0948

Newsletter

NUMBER 5 - AUGUST 30, 1986

IN THIS ISSUE

1000+ AWARD TO S.C.I.A. BELGIUM
MULTI-USER RUNTIME PACKAGES
SOFTWARE SECURITY
IBM SYSTEM/36 UPDATE
RELEASE II UPGRADE INFORMATION
NEWLY APPROVED COMPATIBLES
MULTI-USER PC'S AND BASIC-2C
BASIC-2C QUESTIONS AND ANSWERS

BASIC-2C PRODUCT STATUS

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

MULTI-USER XENIX SYSTEMS

ALTOS 886*
ALTOS 1086*
ALTOS 2086*
WANG APC

NETWORKED MS-DOS SYSTEMS

NORTH STAR DIMENSION SERIES
NOVELL NETWORKING
NOVELL E/TI NETWORKING
(Texas Instruments)
SPERRY USERNET
TELEVIDEO PERSONAL MINI

SINGLE USER MS-DOS SYSTEMS

AT&T 6300
AT&T 6300 PLUS
COMMODORE PC-10
COMMODORE PC-20
COMPAQ DESKPRO
COMPAQ 286 DESKPRO
COMPAQ PLUS
COMPAQ PORTABLE
COMPAQ 286 PORTABLE
COMPUTERLAND PC

EPSON EQUITY I
EPSON EQUITY II
EPSON EQUITY III
IBM-PC
IBM-PC-AT
IBM-PC-XT
ITT XTRA XP
KAYPRO 1610
LEADING EDGE PC (D)
MAI/BASIC 4 PC
NCR PC6

SPERRY PC
SPERRY PC IT
TANDY 3000
TELEVIDEO TELE-PC
TELEVIDEO TELE-XT
TI BUSINESS PRO
WANG PC
WANG APC
WYSE PC
ZENITH 150 SERIES

*in Beta

RELEASE II UPGRADE KIT

Basic-2C Release II will be available shortly. As of this date all Niakwa licensees should have received an upgrade kit in the mail for the purpose of upgrading all your Basic-2C Development Packages and RunTime Packages to Basic-2C Release II. Please return the upgrade kit as soon as possible as orders will be processed in the order received. If you have not received your upgrade kit by now please call Niakwa at (312)291-0850.

Basic-2C Rev. 1.03 Development Packages and RunTimes will not be available after October 1, 1986.

MULTI-USER RTP'S ANNOUNCED

At the request of our Basic-2C licensees, Niakwa is announcing Multi-User RunTime Packages. The Multi-User RunTime Packages will be available initially for Novell Networking, the Wang APC, and the Altos family (886, 1086, and 2086).

The RunTime Packages will be available to support the following number of users 1-4, 1-8, 1-16, 1-32, 1-64, and 1-64+.

Pricing of these new RTP's will be mailed to you shortly. Niakwa will be offering a 100% upgrade credit for upgrades from one multi-user RTP to an RTP supporting additional users.

S.C.I.A. S.V. HITS THE 1250 MARK!

Niakwa is proud to recognize Scientific Applications Group (S.C.I.A.) of Belgium for having installed over 1250 RunTime Packages since they became a Basic-2C licensee. S.C.I.A. is the first Niakwa distributor to accomplish this notable achievement. Dr. J.P. Rammant, Director, of S.C.I.A. was presented with a special award during his recent visit to the United States by Jerry Dederich, Niakwa President.

CROSS-LICENSING OPPORTUNITY

The following company is looking to cross-license Basic-2 application and system software and become the sole distributor of it to New Zealand. If you have software that you would like to promote internationally this may be an excellent vehicle for that. Please contact them directly:

Dr. J.F. Anthoni
Managing Director
Anthoni Computer Automations Consulting LTD.
Goat Island Road, New Zealand
Telephone 0846 26212

IBM SYSTEM/36 UPDATE

Following is a technical summary of our evaluation of the IBM System/36. In general, the machine is designed using very old architecture. There are several major stumbling blocks that will prevent us from implementing a native mode Basic-2C compiler on the IBM System/36.

-Screen management is in block mode versus serial which means that the KEY IN statement can not be supported.

-The maximum program size is 64K. The RunTime Package needs at least 128K.

Of lesser importance, but indicative of the machine:

-The System/36 has no multiply function.

-A character of the display must be reserved at the start of each field. This means fields with different display attributes (i.e.: underlined and not underlined) may not be adjacent.

-The native character set of the IBM System/36 is EBCDIC which means that output directed to spool type files will need translation. Any interface from native system files may require a built-in conversion routine.

-There is no stack mechanism. Subroutine calls and return addresses must be handled by the program itself.

Even if we are able to work around these problems, the resulting native mode Basic-2C Compiler would not offer acceptable performance. The instruction set is designed to get optimum performance from COBOL programs. Basic-2 programs will not be efficient.

As a result Niakwa has no plans at this time to release a Basic-2C Compiler for the IBM System/36.

NEWLY APPROVED COMPATIBLES

IBM PC and Approved Compatibles

Epson Equity I
Epson Equity II
Epson Equity III
Wyse PC
Computerland PC*
ITT PC Xtra XP*
TI Business Pro
MAI/Basic 4 PC
T.H.E. Computer

Networked MS-DOS Systems

Sperry USERNET
TI E/TI Networking
(Texas Instruments)

*Niakwa would like to thank Mr. Henry Nishimoto of Computerland of Northbrook for making several PC's available for Basic-2C evaluations. They carry a large selection of PC's and related equipment and can distribute nationwide. They can be contacted at (312)272-4703.

BASIC-2C SUPPORT FOR MULTI-USER ENVIRONMENTS

Basic-2C supports multi-user capabilities ONLY on the specific hardware/operating systems listed on the front page of the newsletter. As of this date, this includes 286 Xenix on the Wang APC, Novell networking software on the IBM and compatible PC's (this includes support of certain OEM versions of Novell - North Star Dimension and Televideo Personal Mini), Altos and Wang L10 on Wang PC's. Attempts to use Basic-2C for multi-user applications in any other environment may appear to work, but may eventually cause serious data integrity problems! Note that most responsible "multi-user" operating systems (Multi-Link, for example) do contain a warning to the effect that unless applications utilize the file sharing calls provided, attempting to share data may result in damage to the data. In the case of Basic-2C applications, it is the RTP which must perform the file sharing logic, not your Basic-2C application.

The problem is that multi-user capabilities REQUIRE that Basic-2C make appropriate "calls" to the operating system to provide for data integrity when two or more users are referencing the same diskimage file. These "calls" are highly specific to the operating system being used. The following features are accommodated by these "calls":

1. A unique terminal number is assigned to each terminal using Basic-2C. This is necessary for application record locking logic to work. Yes, this can be worked around by your application, but the other critical features listed below can NOT be worked around.
2. Diskimage files are opened in "shared" mode. Note that some multi-user operating systems always open files in "shared" mode, so this is not always a problem.
3. Application disk hogging via \$OPEN and diskimage release via \$CLOSE are supported. This is critical for applications which must ensure that data in different locations is updated consistently. \$OPEN and \$CLOSE work ONLY on multi-user operating systems supported by Niakwa! Under single user MS-DOS, \$OPEN and \$CLOSE are ignored on multi-user operating systems not recognized by Basic-2C (Basic-2C does not know what the proper "LOCK" call is)!

In addition to the application consideration, there are two system level considerations:

1. Basic-2C must be able to identify the multi-user operating system being used so it can use the correct system "calls".
2. In addition to disk image file "LOCKING" required by an application, Basic-2C must perform its own low level diskimage "LOCKING" on most disk operations. This is because a single Basic-2C statement may involve multiple disk operations and Basic-2C must ensure that no one else can update the diskimage until all operations are complete.

Under MS-DOS, the logical sector size is 512 bytes. Therefore whenever a simple DATA SAVE BA statement is executed, the actual low level operations may be broken down into three steps:

READ the 512 byte sector

Modify the correct 256 byte portion

Write the modified 512 byte sector.

This is necessary to maintain the information in the other 256 byte portion.

In a multi-user environment, the operating system has to have some method of inter-leaving I/O requests from multiple terminals. This means that at ANY point, the original request may be suspended and a request from another terminal may be processed. Let's see what can happen:

Assume that:

One terminal is requesting a write operation to sector 0.

A second terminal is requesting a write operation to sector 1.

Sector 0 and sector 1 are in the same MS-DOS 512 byte sector.

The internal operations could occur as follows:

The "READ" of the 512 byte sector for terminal one occurs.

The "READ" of the 512 byte sector for terminal two occurs.

The "WRITE" of the 512 byte sector for terminal one occurs.

The "WRITE" of the 512 byte sector for terminal two occurs.

But what terminal two is writing is the OLD sector 0 with its modified sector 1. The effect of the WRITE by terminal one is wiped out!

The problem is magnified when multi-sector Basic-2C operations are in effect:

DATA SAVE DC OPEN
DATA SAVE DC
COPY
etc.

In addition, the more terminals active, the more likely this problem is to occur.

The nastiest part of this problem is that there may be no indication that anything has gone wrong until the damaged data has been propagated through many generations of backup. In addition, routine testing will NOT be likely to show any problem. The problems of data integrity will most likely only show up after the system has been in use for a while.

NOVELL NETWARE NETWORKS

The following, published by Novell Inc., lists the 35 networks that run Novell Netware software. Provided the version of Netware is 4.61 (or greater) or Advanced Netware 1.0 (or greater), the Niakwa Basic-2C compiler will operate on these networks. A 5-1/4" diskette drive and MS-DOS would also be required.

The 35 NetWare Supported Networks by Type

Listed Alphabetically by Company

BASEBAND NETWORKS

Bus Networks

AST PCnetII
AT&T StarLAN
Corvus Omninet
Gateway G-Net
IBM PC Cluster
Micom Interlan Ethernet
Networth vLAN
Novell NetWare Etherlink Plus
Novell NetWare G-Net
Orchid PCnet
Quadram Quadnet VI
Racal-Milgo PLANET
Santa Clara Systems PCnet
Sperry USERNET
Texas Instruments EtherLink
3COM EtherLink
3COM EtherLink Plus
Ungermann Bass Net/One
Univation Uninet

Token-Ring Networks

Davong MultiLink
IBM Token-Ring Network
Nestar PLAN 2000
Novell NetWare ARCNET
Novell NetWare ProNet
Proteon ProNet
Quadram Quadnet IX
Standard Microsystems ARCNET
Tiara Systems TiaraLink

Star Networks

Novell S-Net
Televideo Personal Mini

BROADBAND NETWORKS

Bus Networks

IBM PC Network
Sytek System 6000

Token-Ring Network

Allen-Bradley LAN/PC

HIGH-SPEED BUS NETWORKS

North Star Dimension
Molecular System 16/300

BASIC-2C Q & A

Question: Will Basic-2C operate in a network environment using an IBM AT as a nondedicated file server?

Answer: Yes, the IBM AT can be used as a non-dedicated file server. Niakwa supports all hardware configurations in the network environment providing Netware 4.61 and greater or Advanced Netware 1.0 and greater is being used.

Question: When installing Basic-2C on a Wang APC/Xenix, and attempting to invoke the RunTime program, the system generates this message:

```
/dev/niakwa: not installed
```

What does this mean?

Answer: This message indicates that the Niakwa drivers have not been properly installed in the Xenix kernel. Common causes of this problem are:

A. Errors during the setup.xenix shell script. For example, the Xenix Software Development Tools ("soft") were not previously installed. The Software Development Tools are necessary to "remake" the Xenix kernel to include the Niakwa drivers. Solution: xinstall "soft" system before attempting to rerun setup.xenix shell script.

B. After remaking the Xenix kernel, the system was not rebooted. It is necessary to reboot the system after remaking the Xenix kernel in order for the new kernel to take effect. Solution: Reboot!

Question: Are .OBJ files from the IBM AT running under MS-DOS compatible with the Wang APC running under Xenix?

Answer: Yes, .OBJ files created under DOS are compatible with the Xenix version of the RunTime program (and vice versa).

Question: After installing the IBM version of the RunTime program on an IBM AT with a 1.2 meg diskette drive, and attempting to pass security, the message "Please Mount Gold Key Diskette" remains on the screen even when the proper diskette is in the drive. Why?

Answer: This problem is caused by the failure of the RunTime program to advise the AT operating system that a 360K (vs. 1.2 meg) diskette is in the drive during the security check. This can be fixed upon occurrence by listing the directory of the goldkey diskette before executing the RunTime program. A more permanent fix is to be sure that the program GOLDKIBM.COM is executed (with goldkey in drive) prior to executing RTP. Refer to Bug Report 03 (April 15, 1986) problems 5 & 6 for details.