NOVADYNE™

Technical Operations
ON-LINE

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Bert Novack

Welcome to Novadyne Computer Systems, Inc.

Look at the pictures of our new Corporate Headquarters. They illustrate how large we are under one roof. Our new address and telephone numbers are:

Novadyne Computer Systems, Inc.
1700 E. St. Andrew Place
Santa Ana, CA 92705-6560

714-566-2000 (Main telephone number)
714-259-7607 (Main Fax Number)

Mark these numbers down to be sure any correspondence is correctly addressed to the Editor.

Our new Corporate Headquarters include the following:

The third floor houses Central Dispatch, Credit and the Corporate Officers (see Bert Novak at the front of our building).

the Field Engineers and on the third floor there is one classroom for the customers.

The first floor houses the Manufacturing department and our Repair and Spare Parts Center.

We tried to make the move as transparent as possible, but if you experienced any difficulties in reaching anyone or in having something done for you we apologize and thank you for your understanding. We are excited by the ability to serve you better in the coming years and proudly present our new building.

- Editor

LOGON:

Diagnostic Modems

Does your system have a dedicated dial-up modem on port 0 for system troubleshooting? If not, Novadyne Catalog Sales is offering a special discount on any one modem listed in the current catalog if ordered from October 1991, to December 31, 1991. This is to encourage everyone to have a diagnostic modem for use in addressing system problems.

Most Operating System problems can be resolved quickly and efficiently if the Central Support Analyst is able to dial into the system. This is especially true when dealing with Group Format Errors, hangs, and aborts. Having a modem may also mean the difference between being able to correct a problem and having to do a full AF restore!

To place an order or to receive a catalog, just call 1- 800-632-2667.

- Steve Gill

Highlights inside ON-LINE

MARKETING

Second Annual ISO Conference Big Success

June was a very important time for Novadyne. The month saw the kickoff of Novadyne's National ISO Conference which was filled with intensive sessions designed to help grow their business in an atmosphere of fun.

At the three-day conference, ISOs learned Novadyne's strategic plans along with its current and future product and support offerings. They learned new ways to increase their business and market share from special guest speakers and hard hitting workshops such as: Planning Strategies, Ninety Days to Sales Productivity, Recruiting, Motivating and Managing Sales People, and Empower You and Your People.

Although leisure time was sprinkled throughout the three days, the focus was on presenting information, as well as sharing information on Novadyne's current management team and plans for the future.

Sessions called "Knowledge Seminars" were also offered on subjects such as: Leasing Strategies for the 90's, Protecting Your Software, UNIX Introduction, Network Strategies for the 90's Customers, ProMark II Statistical Comparisons Between PICK Hardware Platforms. Feedback has been substantive and attendees from Novadyne as well as the ISO's who participated, report a clear sense of accomplishment.

- Pat Dwight

Jim Presley Appointed Director Of ISO Sales

Jim Presley joined Novadyne on April 30, 1991 as the Director of the Independent Sales Organization (ISO) and reports to Vice President of Sales and Marketing, Bob Garbutt.

In Presley's new role, he is directly responsible for managing Novadyne's network of value added resellers and integrators, as well as overseeing the company's reseller recruitment program.

Presley's long experience in computer system reselling adds a new dimension to Novadyne's growing systems business. And as Novadyne

expands its line of RISC-based products, as well as systems based on the REALITY Operating System, Presley will help engineer and support the best possible network of reseller partners.

Prior to joining Novadyne, Presley was Western Regional Sales Manager for Costa Mesa, California-based Archive Technology, where he oversaw recruitment and development of resellers integrating computer-grade digital audio tape (DAT) drives into PC's, workstations, minicomputers and networks.

- Pat Dwight

STARPOWER

SHUTDOWN, FLUSH ... What do we really mean when we ask you to do these things?

Often when speaking to analysts in the Central Support group they may ask if you performed a SHUTDOWN prior to a COLDSTART or any other boot operation. Often people don't know what we are referring to and this article is intended to shed some light on what a SHUTDOWN or FLUSH is and why it is so important.

When an item is read from a file, the Operating System first checks to see if the data required is already in main memory. If it is not, then the required data is read into memory from disc. When changes are made to this data it is not necessarily written immediately back out to disc but is flagged as write required. The frequency of memory writes to disc is determined by how the user has set the forced writes of memory to disc with the "SET-WRITES"verb and the current load on the system.

At any time, depending on the amount of memory in the system, there can be several thousand write required memory buffers that need to be written to disc. If the system is COLDSTARTed before these buffers are written logically back to disc, the results would very likely be numerous group format errors (GFEs) and system table corruption. In order to avoid these situations, the following simple procedures should be followed.

1. Use the SET-WRITES verb to force the system to write the memory buffers out to disc as frequent as possible. There is no ideal number to use, but be aware that the smaller the number, the more frequently the system is forced to write the write-required memory buffers out to disc. This may cause the system to run a bit slower. Check the Programmers Reference Manual for more information on the use of this verb.
2. Always perform either a SHUTDOWN or FLUSH prior to COLDSTARTing, ABS loading or completely shutting the system down. SHUTDOWN is a PROC used when users are on the system to inform them that the system will be shutting down. It also displays a list of users that are still logged on to the system, and it flushes memory to disc. FLUSH is the verb that SHUTDOWN uses to FLUSH the memory, and it may be used on its own if there is no one on the system.
3. Lastly, if the system hangs entirely and it is not possible to perform either the SHUTDOWN or FLUSH, call Software Support for assistance in performming an emergency flush. This is a procedure that is done on port zero through the system's firmware debugger and can normally be run even though port zero appears to be hung with the rest of the ports. The only time that an emergency flush cannot be performed is when the system has aborted with a firmware abort which is evidenced by a right arrow ">" prompt on port zero, or when there may have been a hardware failure that would impede the procedure. Even in this case it would be wise to place a support call to see if there might be a workaround so that the data on the system can be saved from corruption.

- Mike Bingman

PGM

Accessing Specific Multivalues in ENGLISH

There is a feature hidden in the Operating System that only a few people know about. This feature enables one to access a specific multivalue

in ENGLISH. Since it is not documented and many people have asked for this as a new feature to be added to the Operating System, it seems appropriate to let everyone else in on this feature. To access the fourth multivalue in field number 2, create a dictionary item as follows:

```
    MV4
001 A
002 0
003
004
005
006
007
008 Tfilename;X4;;2
009 L
010 20
```

Where "filename" is the file being accessed. To access the second multivalue, change the "X4" to an "X2". Simple but very effective. The following article on the POINTER- FILE gives a concrete example of its use.

- Frank DiCarlo

POINTER-FILE Changes for 7.0 or How to find out about a cataloged program

REALITY 7.0 has brought with it many new and exciting features. Many of those features have been accomplished by making changes to the way things were on earlier releases. These changes can render old methods of determining things about a cataloged BASIC program useless. Several programmers have asked how to find out when and where a cataloged program was compiled. Since the POINTER FILE on 7.0 is now in binary format, it is necessary to do the following:

1. Add to the dictionary of the POINTER-FILE the following:

```
  ACCOUNT
001 A
002 0
003 Cataloged from account
004
005
006
007
008 G0*1
009 L
010 20
```

```
  PGM
001 A
002 0
003 Program name
004
005
006
007
008 G2*1
009 L
010 25
```

```
  FN
001 A
002 0
003 Program was compiled in file
004
005
006
007
008 TPOINTER-FILE;X1;;1]T460,20]G0 1
009 L
010 20
```

Note - Line 8 the "]" that appears twice is a multi-value mark!!!

```
  DATE
001 A
002 0
003 Date compiled
004
005
006
007
008 TPOINTER-FILE;X3;;1
009 L
010 25
```

Note - This item may still exist. If it does just replace it with this one. (The old one doesn't work anymore!)

```
  TIME
001 A
002 0
003 Time compiled
004
005
006
007
008 TPOINTER-FILE;X4;;1
009 L
010 20
```

```
  COMPILER
001 A
002 0
003 Compiler used
004
005
006
007
008 TPOINTER-FILE;X5;;1
009 L
010 20
```

2. Next type the following ENGLISH sentence (assuming that you are looking for the program called "TEST"):

```
:LIST POINTER-FILE WITH PGM =
"TEST" ID-SUPP ACCOUNT PGM FN DATE
TIME COMPILER
```

3. The following output is an example of what will be shown:

```
PAGE 1          09:32:42          01 AUG 1991

Cataloged from account    MIKE
Program name      TEST
Program was compiled in file    MBBP
Date compiled     22 FEB 1990
Time compiled     12:45:29
Compiler used     1 DATA/BASIC ROS 7.0

Cataloged from account     LUCY
Program name      TEST
Program was compiled in file     LUCY.BP
Date compiled      08 FEB 1988
Time compiled      10:33:59
Compiler used      SEQUEL 5.2 / SPIRIT 2.2
2 items listed
```

This tool will be very helpful to programmers, so please share this information with them.

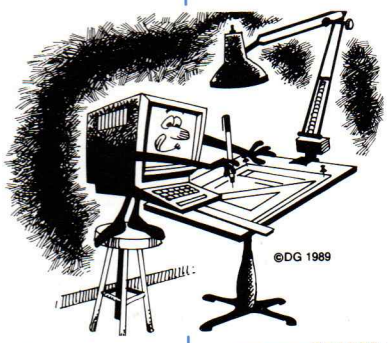
- Frank DiCarlo

DATA/BASIC and 7.0

This is the third article in a series about the new and/or enhanced DATA/BASIC statements and functions contained in Operating System release 7.0.

In this issue we will explore Interprocess Communication. Interprocess Communication is a network facility design for communication between two or more REALITY processes or a REALITY process and some other manufacturer's system. A set of DATA/BASIC commands provides a means for programs to communicate. They can even be used to communicate between programs on the same system.

The Session Manager sets up connection between two communicating processes. The processes being a client program and server program, where the client initiates the connection and the server is the process to which connection is requested.



The 7.0 DATA/BASIC manual provides an application example of client and server programs. The following program can be found in the back of the manual under programming hints and examples. In the example, an orders program needing information connects to an orders server. This second program retrieves the needed information and sends it back to the client. In this example the client and server programs are on separate machines connected by an S-LAN. In this way, data is retrieved from another system without the need for the first system to have direct access to those files.

Commands available are as follows;

ACCEPT	Declares availability of the server to the session manager, or accepts connection to a client who has requested connection.
CONNECT	Establishes connection between client and server programs.
DISCONNECT	Terminates client server session.
RECEIVE	Inputs data sent by communicating program.
RECWAIT	Waits for data sent by communicating program.
SEND	Sends data to communicating program.

The CONNECT and ACCEPT statements are issued by the client and server processes respectively. CONNECT establishes a connection to the server and the server accepts the connection by issuing an ACCEPT statement. Once the connection is established, data can be sent, received or terminated by either process by using the statements RECEIVE, RECWAIT, SEND and DISCONNECT.

The following two programs further illustrate how client and server programs interact. The first program is the client and the second is the server. The client program connects, specifying the system "SYS" to connect to, the account "SYSPROG" on which the server is located, the server program "SERVER.PROG" and a variable "VAR" which identifies the session within the program. The server program accepts connection and issues a command to wait for data from the client. The client then sends the data; and the server, upon recieving the data, concatenates a string and sends the data back to the client.

The client program concludes receiving the data from the server.

```
CONNECT "SYS":AM:"SYSPROG":AM:"SERVER.PROG" TO VAR TIMEOUT 1 ELSE STOP
SEND "THIS IS A TEST" TO VAR ELSE PRINT "DATA NOT SENT"
RECWAIT RESPONSE FROM VAR ELSE STOP
```

The client program:

And the server program:

```
ACCEPT "SERVER.PROG" VAR TIMEOUT 1 ELSE STOP
RECWAIT VAR3 FROM VAR THEN NULL
VAR3 = VAR3:" AND ADD THIS"
SEND VAR3 TO VAR ELSE STOP
```

- Gary Moote

Utility to Maintain the POINTER-FILE

One of the largest files on the system is probably the POINTER-FILE. It contains all cataloged DATA/BASIC programs and all cataloged lists that have been saved over time. Most people do not clean up the POINTER-FILE. This can cause system degradation which should be avoided at all costs.

One way to accomplish this (and save some disk space) is to clean up the POINTER-FILE. The following utility will help do just that in one of two ways. It will clear either lists or programs or both from the POINTER-FILE based on either a specific account name or through an option that checks for accounts that are no longer on the system.

BE CAREFUL WITH THIS OPTION! SOME SOFTWARE LOADS FROM ONE ACCOUNT AND THEN DELETES THAT ACCOUNT AND HAS USERS RUN ON ANOTHER ACCOUNT. OLDER VERSIONS OF WORDMATE DID THIS VERY THING!!! IF UNCERTAIN, CHECK WITH THE PEOPLE WHO WROTE THE SOFTWARE. ANOTHER WAY TO CHECK AHEAD OF TIME IS TO RUN THE UTILITY FOR LISTING THE POINTER FILE FROM THE SYSPROG ACCOUNT CALLED "LISTPF". IT CAN BE SENT TO THE PRINTER BY ADDING "LPTR" AFTER IT.

The utility consists of a PROC and a DATA/BASIC program. It is run by calling the PROC. Remember to modify the program if it is to ignore any accounts that are no longer on the system!!!

The PROC is as follows:

```
CLEARPF
001 PQN
002 C REVISED 4/5/89
003 C REVISED 9/4/90
004 1 T C,
005 (15,2),"UTILITY TO CLEAR THE POINTER-FILE OF UNUSED ITEMS",
006 (0,6),"1. CLEAR LISTS/PROGRAMS FOR A PARTICULAR ACCOUNT",
007 (0,8),"2. CLEAR ALL ACCOUNTS NO LONGER ON THE SYSTEM",
008 (0,10),"3. EXIT",
009 (0,11),"ENTER SELECTION ",+
010 IP=%1
011 IF %1 = 1]2]3 GO F
```

NOTE - The above "]" are multivalue marks

```
012 GO 1
013 M
014 IF %1 = 3 RTN
015 M
016 IF %1 = 2 GO 5
017 T (0,15),"DO YOU WANT TO DELETE (L)ISTS, (P)ROGRAMS OR (B)OTH ",+
018 IP=%5
019 IF %5 = L]P]B GO F
```

NOTE - The above "]" are multivalue marks

```
020 GO B
021 M
022 T (25,16),"ACCOUNT NAME ",+
023 IP=%1
024 IF %5 = L GO 3
025 RO
026 T (0,18),"SEARCHING FOR CATALOGED PROGRAMS FOR ACCOUNT = ",%1
027 HSELECT DICT POINTER-FILE =
```

NOTE - Add one blank after the "=" above

```
028 MV #5 "'"*%1*"*C*]'"
```

NOTE - The above "]" is just a bracket

```
029 STON
030 HPQ-SELECT 1
031 P
032 IF E = 401 GO 3
033 T (0,19),"DELETING CATALOGED PROGRAMS FOR ACCOUNT = ",%1
034 2 RO
035 HDELETE-CATALOG
```

NOTE - Add one blank at the end of the line above

```
036 MV %2 !1
037 IF # %2 GO 3
038 S2
039 IH%2:G2*1:
040 MV #2 %2,%1
041 P
042 GO 2
043 3 IF %5 = P GO F
044 RO
045 T (0,18),"SEARCHING FOR LISTS FOR ACCOUNT = ",%1
046 HSELECT DICT POINTER-FILE =
```

NOTE - Add one blank after the "=" above

```
047 MV #5 "'"*%1*"*L*]'"
048 STON
049 HPQ-SELECT 1
050 P
051 IF E = 401 GO F
052 T (0,19),"DELETING LISTS FOR ACCOUNT = ",%1
053 4 RO
054 HDELETE-LIST
```

NOTE - Add one blank at the end of the line above

```
055 MV %2 !1
056 IF # %2 GO F
057 S2
058 IH%2:G2*1:
059 MV #2 %2,%1
060 P
061 GO 4
062 M
063 T "HIT RETURN TO CONTINUE",B,D,+
064 IP %3
065 GO 1
066 5 C PROCESS ITEMS WHOSE ACCOUNT IS NO LONGER ON THE SYSTEM
067 RO
068 HRUN BP CLEARPF.PGM
069 P
070 T "HIT RETURN TO CONTINUE",B,D,+
071 IP %3
072 GO 1
```

The DATA/BASIC program is as follows:

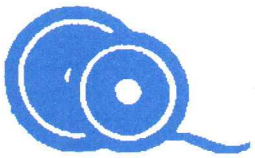
```
CLEARPF.PGM
001 OPEN 'DICT','POINTER-FILE' TO PF.FILE ELSE PRINT "CAN'T OPEN POINTER-
    FILE";INPUT ANS;STOP
002 OPEN 'DICT','SYSTEM' TO SY.FILE ELSE PRINT "CAN'T OPEN SYSTEM";INPUT
    ANS;STOP
003 STMT="SELECT DICT POINTER-FILE"
004 PERFORM STMT RTNLIST
005 10 READNEXT ID ELSE GOTO 99
006 ACCT=FIELD(ID,"*",1)
007 FLAG=FIELD(ID,"*",2)
008 NAME=FIELD(ID,"*",3)
009 REC.SY=""
010 READ REC.SY FROM SY.FILE,ACCT ELSE GOTO 20
011 GOTO 10
012 20 IF FLAG="L" THEN GOTO 30
013 REM DELETE CATALOGED PROGRAM
014 PRINT @(0,20):"DELETING PROGRAM ":NAME:" ":ACCT:@(-4):
015 STMT="DELETE-CATALOG ":NAME:" ":ACCT
016 PERFORM STMT
017 GOTO 10
018 30 REM DELETE CATALOGED LIST
019 VAR=NAME:" ":ACCT
020 PRINT @(0,20):"DELETING LIST ":VAR:@(-4):
021 DELETELIST VAR
022 GOTO 10
023 99 STOP
024 END
```

This utility will work on operating system releases 2.3, 5.3, 6.0 and 7.0 ONLY.

- Frank DiCarlo

"ROS"

Current OS Releases And Patches



The following table contains the most current Operating System (OS) revisions and patch levels for each supported system. Novadyne Computer Systems, Inc. has assumed responsibility for installing all patch tapes for Dealer/VAR and branch customers. If you do not have the current patch tape installed for your particular Operating System, please contact your Field Engineer (FE) through Central Dispatch to schedule a time for installation.

Series	Release	Patches (PP=Paper Patches)
4700	4.3RevD	PP1-2
6000	2.3RevD	RevC Tape (Includes PP 1-175)
	1.1RevD	RevB Tape
	7.0RevP	Block Tape 3
6000 Enhanced	2.4RevA	RevA Tape (Includes PP 1-175)
	7.0RevP	Block Tape 3
9000	5.3RevD	RevD Tape (Includes PP 1-157)
	1.3RevC	RevA Tape
18	6.0RevF	RevC Tape (Includes PP 1-165)
	7.0RevP	Block Tape 3

- Mike Bingman

Local Area Networking On REALITY 7.0

Most of you have probably heard of "Local Area Networks" (LANs) as they pertain to connecting several personal computers (PCs) together to share data files and peripherals. S-LAN, together with the Reality 7.0 Operating System, offers these same capabilities (and more) to the Series 6000 and Series 18 minicomputers.

Using S-LAN, it is possible to connect up to 16 systems together over a new or existing ETHERNET network. The Series 6000 or Series 18 systems can also communicate with PCs, SUN Unix workstations, and certain DEC systems on the same network. Other types of computers may also co-exist on the network, however the S-LAN will ignore them.

Capable of running on a 10mb/sec Ethernet network, S-LAN provides two primary functions: Remote Logon, and Remote File Access.

Remote Logon provides the capability of logging on to an account that actually resides on a different system. For instance, even though a terminal may be physically connected to System A, it can still logon to an account that resides on System B.

At this point, any processing initiated on that terminal will be done exclusively by the CPU resources of System B. This can be most advantageous when it comes to efficient distribution of CPU intensive jobs.

It is, therefore, advisable to strategically spread accounts among several systems, but still allow particular users to access these accounts no matter which system they are physically connected to.

For instance, security considerations may make it desirable to put all corporate financial accounts on one system, and put all word processing, order entry, etc., on another system. People who need to access accounts on both systems will be able to do so simply by logging on to the desired account. The users do not need to know which computer contains which accounts. The new security features of 7.0 will help prevent unauthorized file and account access.

Remote File Access enables a process residing on one system to access files which reside on other systems on the LAN. This is accomplished by creating Q-Pointers to the remote files in much the same way as Q-Pointers are used in a local environment. As a result, it is possible to read and write to remote files, use them in ENGLISH statements, etc.

This arrangement lends itself well to customers who do a lot of their own application development. A main production system, such as a Series 18, may be used for all the normal, day-to-day processing while a Series 6000, for example, can be used for program development. By networking the two systems together and establishing all the necessary Q- Pointers, the software programmers can write and test their applications on the development system, using "real" data from the remote system, but writing only to "test" files on the local system.

Once the application is tested, it can easily be copied to the main system for use. Modifications can be performed from the development system with a Q-pointer to the main system. Even though the program is on the main system, the program is compiled using the CPU of the development system! The main system will not be slowed by this CPU intensive task.

S-LAN also allows one to create a large computer system out of smaller building blocks. It is possible to start with a single Series 6000 or Series 18, and as computing needs or disk requirements grow, simply add another Series 6000 or Series 18. Then move some accounts onto the new system, and voila!, you have increased computing power and increased disk capacity. End users will notice the power increase, but they don't have to know they are on separate computers.

- Richard Yeh

THINK TANK

Transaction Logging For The 7.0 REALITY Operating System (V2.0)

Transaction Logging is an Operating System feature which gives the customer resilience. 'Resilience' as defined in Webster's Dictionary is "an ability to recover from or adjust easily to misfortune or change." Transaction Logging allows customers to easily recover data which, for one reason or another, has been lost or damaged due to inadvertent deletion of files, GFE's, or hardware problems such as disc crashes.

Transaction Logging on the REALITY Operating System is made up of three major components: The Transaction Handler, the Transaction Logger, and the Transaction Logger Restore. We have discussed the Transaction Handler and the Transaction Logger in previous issues of *ON-LINE*. In this third and final article we will focus on Transaction Logging Restore and the Transaction Logging Internals.

Transaction Logging Restore

The Transaction Logging Restore process is an English-like process which takes a Transaction Logger tape and restores all items on the tape which meet the user specification. For instance, should I

need to restore the RECEIVED file from the INV account, I would mount the tape and type:

When an item is found on the tape fitting the

```
TL-RESTORE TL-LIST IF ACCOUNT-NAME = "INV" AND FILE-NAME = "RECEIVED"
```

selection criteria, an "*" is displayed. Note the file specification "TL-LIST"; this file is supplied with the system, and has the predefined dictionary items that match the tape record information, which I used above. If there was NO selection criteria, each record on the tape would have been restored. The TL-LIST's data section also serves as the statistics file for the restore process (including Logto Database's). Each record successfully restored has the record header (the part with the account info, file info, etc. NOT the item body!), logged to the TL-LIST file.

If the record on the tape meets the selection criteria, but for some reason is not restored, the record header is logged to a system supplied file named TL-REJECT, along with the reject code as to why it was not restored; such as the file, where the item was to be restored, did not exist. For each item restored an "*" is displayed, should the item be rejected, the reject code will be displayed.

Both the statistics file and the reject files may be changed by the user to another file if desired. The statistics file will only keep the last 'n' records, as specified by the user, and defaults to keeping 2000 log entries. The reject file will keep every reject logged to it. Both files are cleared whenever a TL-RESTORE is started.

There are also other actions the user can do to the Transaction Logging tape other than restore the records. The user can LIST the Transaction Logging tape with or without selection criteria to see what was put onto the tape. The user may also SUM, SELECT, STAT, and ISTAT the records on the tape. There may only be one restore process running at a time on each machine. The logto Database counts as a restore process. This is done to maintain a consistent database. Competing updates to the same file may not give the user the latest update to the file.

Operationally, most Transaction Logging sites keep the Transaction Logging tapes in addition to the last file-save tapes, so that should the system need to be AF restored unexpectedly during the middle of the day due to a disc crash, the Transaction Logging tapes may be restored to bring the system back to moments before the system failed. Processes that were in the middle of a Transaction when the machine failed, will automatically have the transaction rolled back when the restore ends (i.e., where the machine crashed), leaving the database in a consistent state. By viewing the TL-LIST and TL-REJECT files, the user is able to determine what was committed to the database and what transactions were not committed.

Transaction Logging Internals

Transaction Logging has several workspaces associated with each log process and with each process executing transactions markers. For each process, there is a TLSR pointer which points (in part) to the internal table where the item images are stored while the process is inside of a transaction. This table is referred to as the 'BEFORE-IMAGE TABLE' or the 'BIT'. This space is set up at logon time, and contains the action code, item id, and the item body. When rolling back a transaction, the action code is used to determine what to do so that the item can be restored to the database.

Each Log process has its own workspace in which it keeps pointers to the save table so it knows where to get the next item. Each record built has an entry pointing to the actual data record. When each log process is done with its current entry in the save table, it marks it as completed. If the log process is the last log process that needs to look at it, it will take the record out of the save table and return the space. The workspace also has the log processes status flags indicating activity, shutting down, starting up, etc. For example, these flags are accessed for the TL-STATUS program, and the log process display screen.

There is a program called TL-RESET which is documented in the Transaction Logging manual. Basically, TL-RESET gives the system manager the ability to set and reset certain flags which will change the status of a log process or change the status of a process in a transaction. This utility program should only be used by someone who is experienced in using it. Misuse of the program may cause damage to log processes, which in turn will cause the system to behave incorrectly, sometimes requiring drastic action, including full restores to recover the system. YOU HAVE BEEN WARNED!

Conclusion

Transaction Logging gives the customer the advantage of recovering data which might otherwise be lost due to human or hardware errors. Transaction Logging also allows customers to run a fail-safe environment, giving the customer 100% uptime, and at the same time to keep a tape copy as an archive, or to be used as an audit trail. The overall impact of Transaction Logging is stated somewhere around 10% overhead to the system. Some users will find it to be less than 2%, while others will be nearer to the 10% figure. It depends on how the

applications were written. To most users who have and depend on Transaction Logging, the overhead is worth it.

- Larry Wisneski Staff Software Engineer
  McDonnell Douglas Information Systems International (MDISI)

APPS

Current Application Overlays

The following matrix provides you with the release level of Application Overlays required by each supported Series and OS. It is important that you know which Overlay you should obtain prior to a planned upgrade . For example, if you are upgrading a Series 9000 from 5.1 to 5.3, which uses REALCALC, then you will need to obtain the corresponding Overlay release (REALCALC 2.1C) before upgrading.

Application Overlay	Series 4700	Series 6000	Series 9000	Series 18	Series 14/100
A*L*L 1.1	4.3	1.1	1.3	N/A	N/A
A*L*L 1.2 (Paper Patches 1-59)	N/A	2.3	5.3	6.0	2.3 D.4
PCmicroREALITY 2.1	4.3	2.3	1.3,5.3	6.0	N/A
REALCALC 2.1C	4.3	1.1,2.3	1.3,5.3	6.0	2.3 D.4
REALGRAPH 1.0C	4.3	1.1,2.3	1.3,5.3	6.0	2.3 D.4
REALLINK 2.1 Rev. 4	N/A	2.3	5.3	6.0	N/A
REALISM					
DEVELOPER 1.0A	N/A	2.3	5.3	6.0	2.3 D.4
SHELL 1.0A	N/A	2.3	5.3	6.0	2.3 D.4
REALITY Integrated Office 2.3 (Overload Patch Tape Rev B -- 2.3, 5.3 and 6.0 O/S only)	4.3	1.1,2.3	1.3,5.3	6.0	N/A
WORDLINK 1.4C	N/A	2.3	1.3,5.3	6.0	N/A
WORDMATE 2.1C (Overload Patch Tape Rev A and Paper Patches 1-7) (Overload Patch Tape Rev B -- 2.3, 5.3 and 6.0 O/S only)	4.3	1.1,2.3	1.3,5.3	6.0	2.3 D.4
TRANSACTION LOGGING 1.2	N/A	2.3	5.3	6.0	N/A

- Janet Altman

WORDMATE Tips On 7.0

Saving Data During a WORDMATE Abort

You are now on the 7.0 Operating System and are enjoying all that it has to offer. You are editing a document in WORDMATE and for some reason you find you have an abort and you are sitting with the debug prompt (!) staring you in the face. You think you remember an ON-LINE article that talked about a command of G1111.7 which ables you to save all your changes. You think, Yes, that's it! I'll just type G1111.7 and be able to save everything. Oh no, it just keeps giving me the (!). Now I guess I will just have to go back into the document and redo all the changes and hope that I won't forget some of the ones I already did.

OK, I won't drag this out any longer. There is a command for 7.0 that works. At the debug prompt (!) type:

```
G1111.A
```

This will bring the document back up in the edit mode so that it can be filed. If you are on an earlier system (2.3, 5.3, 6.0, etc.) please reference the article in ON-LINE Vol.2 No.1 page 6, for more information.

- Terry Smithton

REALLINK

A few questions have been raised as to how to get a file from the virtual disk to the PC. The following example explains what steps need to be taken. The manual explains the virtual disk process, but doesn't give an example of the usage of the WS-COPY verb. It is very simple once it is broken down with an example. Let us call the drive for the virtual disk 'D' and the PC drive 'C'. We will use the Host file name of TEST.DAT and the DOS file will be named TEST2.DAT. Are you ready?

```
WS-COPY D:TEST.DAT C:TEST2.DAT
        (from)     (to)
```

That's right! That is all there is to it! Just be sure to remember that if the destination is in a different place than the root directory you will need to include the path (\).

- Terry Smithton

14/100

14/100 Bulletin Board Has A New telephone Number.

Please make a note of the change in the phone number. The BBS has been changed from (216)779-4043 to (804)794-7063.

Running Out Of Hardware interrupts?

In preparation for the Spectrum show in April, the 14/100 product needed to accommodate an additional Ethernet LAN card to communicate with a Series 18/600 host. Since interrupts 3,4,5 and 7 were dedicated to add-in boards (i.e. COM1, COM2, Tape Controller and 8-ways), interrupt 2 was selected for the additional LAN card.

Even though hardware interrupt level 2 (assigned to the coprocessor) cannot be relocated, it can be bypassed without affecting the operation of the 14/100 coprocessor. Simply unjumper J3, (just leave it over one post), address the networking card to interrupt 2, and it will be operational.

The sacrifice made, however, is the diagnostic test feature of the coprocessor, which makes use of this interrupt. Should there be a need to test the board, the above process should be reversed, and the LAN card removed to run diagnostics as detailed below.

How To Run 14/100 Coprocessor Diagnostics.

Prior to the installation of the REALITY software, or any time it is suspected that the coprocessor is having a problem, it is essential to run the hardware diagnostics before a support call is made to Novadyne. Please note that only those customers who have opted to subscribe to a 14/100 Software Support Service should call Novadyne. Those who do not should call the BBS with any questions.

The 14/100 coprocessor board kit is shipped with diagnostics. These are not automatically loaded on the hard disk so as to maximize your disk capacity. To load the diagnostics, log off all users from the system. If REALITY is operational, perform a shutdown followed by a hardware reset (turn AC power off, then on again).

Locate the DOS DRIVERS diskette shipped with the 14/100 kit, (the 7 diskettes should always be accessible), and install it in the (A:) floppy drive. Type CD\DIAGS and enter PROTEST, which will initiate a set of rigorous diagnostic routines to check the on-board RAM of the coprocessor, its associated circuitry, and interface to the 286/386 processor.

An operational coprocessor (configured with the switch settings per the installation manual page 2-6), should display a screen where the cursor is continuously scrolling from the top to the bottom testing various data patterns in and out of memory. Allow it to run at least 10 minutes, then press any key to quit. A hardware reset must be performed to initialize the microcomputer and restart DOS.

If the cursor stops and displays an error message, the board has a problem and must be replaced.

- Ray Van Sluis

SERIES 7000

Reformatting On The Series 7000

Reformatting is the reorganization of data to a different layout after it has been keyed. The data may remain unchanged but in a different order. Items may be duplicated or deleted; or additional material, such as constants, may be inserted. It is primarily used so that data may be keyed as easily as possible regardless of the format that the mainframe expects to find the data.

Some of the things that can be done with reformatting are:

- A field that is used on several levels can be keyed once and inserted wherever else it is needed.
- A sequence number can be inserted and incremented with any starting number you require.
- Justification and fill codes can be changed.
- Text can be inserted.
- Credit overpunch can be moved.
- Outputting of packed decimal is also done with reformatting.

If you have documents that are being keyed twice, such as documents that are accounts payable but also must be keyed for general ledger, the information could be keyed as one long record and output twice, once for accounts payable and once for general ledger. Since keying and handling of documents is what costs the most time, you could realize considerable savings by doing this.

The actual reformatting is performed by the system at the time the data is output to whatever media is used. There is a utility on the system which allows the user to enter, list, alter and compile the reformat. If you key in 'RFM' at the colon prompt, a menu is displayed which steps you through all of these options. Instructions for using the reformatting utility are contained in the *'FORMATTING REFERENCE MANUAL'*.

Reformatting is a powerful tool which can ease the flow of keying and save valuable time. If you have any questions or need help getting started, please call me at (800)678-3399.

- Ann Connelly

COMMS

Current COMMS Releases

Shown below is a Product/Release matrix describing the current release of software for the various communications products.

Any software fixes which may be required will only be produced for the most current release.

If you plan to upgrade your system to the next hardware system or operating system release, contact your local dealer or analyst to make sure you have the required communications software prior to the upgrade. If in doubt, have your dealer or analyst contact the Novadyne Computer Systems, Inc. Communications Support Group at (800) 678-3399.

COMMS PRODUCT RELEASE	Series 4700	Series 6000	Series 9000	Series 14	Series 18
MCC 3.1 (Rev 4)	N/A	1.1	N/A	N/A	N/A
MCC (2.3) 3.1 (Rev 5)	N/A	2.3	N/A	N/A	N/A
MCC (6.0) 3.1 (Rev 3)	N/A	N/A	N/A	N/A	6.0
MCC (7.0) 4.1 (Rev 4)	N/A	7.0	N/A	N/A	7.0
HSCC (SNA) 2.3	N/A	7.0	N/A	N/A	7.0
SLAN (Ethernet)	N/A	7.0	N/A	N/A	7.0
XCC (X.25) 2.0 (Rev 2)	N/A	7.0	N/A	N/A	7.0
FTU 1.2 (Rev I)	4.3	1.1, 2.3	1.3, 5.3	2.3	6.0
FTU 1.3 (Rev G)	N/A	7.0	N/A	N/A	7.0
M3800 (2780) 1.3 (A)	4.3	N/A	1.3, 5.3	N/A	N/A
M3800 (SNA) 5.3 (A)	4.3	2.3	1.3, 5.3	N/A	N/A
5750 (TCL COMMS) Rev 2	N/A	N/A	1.3, 5.3	N/A	N/A
2602 BISYNC	4.3	N/A	N/A	N/A	N/A

NOTES:

The MCC software for 7.0 systems consists of two tapes: 1) MCC software in INSTALL format; 2) 2780-TERMLIB-BASE in ACCOUNT-SAVE format.

The SLAN software is included on the 7.0 Sysgen tape. The software requires a "Virtual Port License" available from your dealer or VAR.

In addition to the software tape, X.25 also requires a "Virtual Port License" available from your dealer or VAR.

5750 Communications Software no longer resides on the Sysgen tapes. If you require this software, have your dealer or VAR contact the Novadyne Computer Systems, Inc. Communications Support Group.

2602 Bisync runs only on Series 4700 systems. The software is included on the Series 4700 4.3 Sysgen tape.

- Richard Yeh

New Manager For Data Communication Support

In April of 1991, Bill Sturm added the Data Communication group to his area of responsibility.

Bill joined McDonnell Douglas Manufacturing & Engineering in 1982 as a Senior Engineer where he installed and maintained a complex network of mini computers.

He became Manager for the National Hardware Support group which handles the CAD/CAM product family in February of 1988. His area of responsibility has grown steadily and now includes support for B.T. Tymnet, DEC, SUN including LX, and the ROS communication group.

Bill brings with him a wealth of knowledge in the communication field, strong management skills, and more importantly, a high sensitivity to the customer's needs.

Bill says he's "Excited to have the opportunity to pull together expertise from many different areas to meet the communication needs of our customers."

If you have any data communication needs, Bill can be contacted at (714) 566-2159.

- Debbi Latorre

CUSTOMER EDUCATION SCHEDULE

		SEP.					OCT.				NOV.				DEC.					JAN.			
	COURSES OFFERED	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27
NOVADYNE	INTRO TO REALITY O/S 5 Days $1000/Person			SA				SA	CH			SA					SA				SA		
	7.0 ROS SYSTEM ADMIN. 4 Days $800/Person							CH					DA			SA				SA CH			
	INTRO TO DATA/BASIC 5 Days $1000/Person						SA																SA
	PROC PROGRAMMING 3 Days $600/Person			SA																		SA	
	ROS SYSTEM ADMIN. 5 Days $1000/Person																SA						
	LX2200/UNIX 5 Days $1000/Person				SA				SA			SA									SA		
	UNIDATA 5 Days $1000/Person					SA							SA										
	UNIX(BSD) 5 Days $1000/Person				SA				SA			SA									SA		
DISCOVERY	INTRO TO PICK/REALITY 4 1/2 Days $900/Person		CI					DC												DC			
	ADVANCED PICK/REALITY 4 Days $900/Person											CI											
	ACCELERATED PICK/REALITY 4 1/2 Days $995/Person						TA																
	SYSTEM INTERNALS 4 Days $995/Person															DC							
	APPLICATION PROGRAMMING 4 Days $900/Person			DC																	DC		
	ADVANCED APP. PROGRAMMING 4 Days $900/Person									DC												AT	
	ACCEL. APP. PROGRAMMING 5 Days $995/Person																						
	ASSEMBLER PROGRAMMING 4 Days $950/Person						DC																
	INTRODUCTION TO UNIX 5 Days $1000/Person												DC										

LOCATION CODES: AT = ATLANTA, GA; CH = CHICAGO; CI = CINCINNATI; DA = DALLAS, TX; DC = WASHINGTON,DC; SA = SANTA ANA, CA; TA = TAMPA, FL.

NOTES: All classes begin on Monday unless otherwise indicated. The following courses are available upon request: ALL 1.2, PCmicro-REALITY, REALCALC, REALGRAPH, REALISM (Shell and Developer), REALLINK, REALITY Integrated Office, WORDMATE, Series 7000 Reformatting and Quickstarts, Series 7000 Basic Programming, Data Communications, and Advanced DATA/BASIC. Please call Jim Lau at (714) 566-2195 for more information.

CUSTOMER ED.

Schedule Changes

There are a number of changes to the schedule since the last publication. As you can see, more classes have been added and two courses have been re-named to more closely reflect the course content which remains unchanged. The two new course names are: 7.0 ROS System Administration and ROS System Administration which replace Reality O/S 7.0 and System Troubleshooting respectively. The UniData® course is no longer limited to our LX series; it is appropriate for users running UniData on any system. The addition is a UNIX (BSD version) course. Also note some date changes in the Discovery schedule.

Practical Training

Too often, training classes include a lot of "nice to know" information that is not necessarily needed to do the job. We feel Novadyne provides the practical training that will help you in your day-to-day work. Consider the following:

> Do you have some files that you would like to have access restricted? For example, you probably do not want just anyone to be able to access the payroll file. Are there some users whom you would like to keep out of certain accounts, or whom you would like to restrict their access to working hours only? Do you know what a transaction is and how do you protect a transaction in the event of a system failure? These are typical real life situations which are covered in our 7.0 ROS System Administration course. Have you ever been told that you cannot recover a print job after the spooler has been cleared? If you answered "yes", you should attend either the 7.0 ROS system Administration or the ROS System Administration course.

These are just a few examples of our emphasis on practical training.

New Location

The Customer Education Department is now located at the Corporate Headquarters at 1700 E. St. Andrew Place, Santa Ana, CA. 92705-6560. Our new Telephone Number is (714)566-2196; our FAX Number is (714)259-1786.

- Jim Lau

GooFiEs

SOMEHOW I KNEW IT WAS JUST A MATTER OF TIME !!!

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