SOFTWARE RELEASE BULLETIN

NOS/BE 1.4 (LEVEL 518)

SMD110066

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1.0 INTRODUCTION

1). The NOS/BE 1.4 level 518 system includes new features and corrective code for the operating system and product set. This release contains the following release materials:

- o New PLs for the product set
- o Batched Corrective Code (BCC) tape
- o Coldstart Deck

NOS/BE 1.4 level 518 operating system must be installed from level 508 release PLs and the BCC tape to upgrade them to level 518. The product set at level 518 must be installed from the release PLs being included with this release.

2). Basic to the completion of a successful installation of the NOS/BE operating system and product set is a thorough study of this document and the NOS/BE Installation Handbook (60494300N). The introduction section in the Installation Handbook provides information useful in planning the system build procedures and the Part I chapters describe the details of installing the individual components of the system. It is strongly recommended that the user library approach be used to build the system.

3). Following completion of the installation processes and generation of a deadstart tape, the new system may be deadstarted and subjected to a validation exercise by selecting and executing verification jobs contained on the third file (Installation Decks PL) of the Batched Corrective Code tape. Methods of extracting these jobs (PL1AV through PL82V) and information regarding their applicability are in the NOS/BE 1.4 Installation Handbook.

4). This release was tested in an environment containing controlwares of the following descriptions:

CONTROLWARE TYPE	EQUIPMENT TYPE	CONTROLWARE LEVEL	DECK	CONTROLWARE PART NUMBER
Mass Storage	7155-885/844	A03	0SJ	53695294
Mass Storage	7154-844	A05	0SZ	24616082
Mass Storage	7054-844	A13	0SY	52706607
TAPE	7021-66X	A14	0MT	52653361
CYBER 18-05	2780-MD427	A02		66279600B
CYBER 18-05	3780-MD428	A02		66279700B
CYBER 18-05	200ut-MD426	A03		66279500C
CYBER 18-05	200ut-MD426	A02		66279500B
734 MSBT	2780-MD415	A05		66300056
734 MSBT	3780-MD416	A03		66300885
734 MSBT	200ut-MD414A	A04		66300030
731-12 LSBT	MD401	F01		66240400

5). The NOS/BE operating system and product set PSRs included in this release are also included in the 518 PSR summary.

6). Level A04 or A05 7154-844 0SZ controlware is required to run the full track 7154 controller on the NOS/BE Level 499/498 system and above.

7). The DDS product was previously withheld from the NOS/BE Level 508 release. The DDS tape (level 107C) included with the Level 518 release materials will also operate correctly with NOS/BE Level 508.

2.0 NEW FEATURES AND PRODUCTS

1). The following decks have been added in this release:

ELM, DLL, ECSTEXT, COMCECS, COMCECM, BCLOAD, INTECS. All these decks are on PL1A.

2). New features added in this release are:

- NOS/BE 1.4 Operating System:

  Enhanced ECS Error Recovery and Logging.
  Downline Load of Controlware.
  CYBER 176/819 FNT supplement removal.

- INTERCOM 5/Communications Control Program for INTERCOM (CCI 3):

  INTERCOM 5 Remote Batch Accounting.

- COBOL 5:

  AUDIT

2.1 Enhanced ECS Error Recovery And Logging

1). Description

This feature implements a common and enhanced recovery algorithm when addressing ECS via the DDP or CPU. The reporting of ECS errors is enhanced to allow failure isolation down to the word and bit level. User programs which utilize direct access ECS may employ the recovery algorithm and logging of ECS errors through newly provided ECS access macros. Reference the new Appendix E in the NOS/BE Reference Manual.

2). Installation Information

The NOS/BE Version 1 Installation Handbook is updated to include a new parameter in the EST entry for the ED type equipment. This new parameter allows for definitions of the DC135 DDP and the parity enhanced DC145 DDP.

ECS error recovery will not function properly unless the correct DDP type is specified in the EST entry.

2.2 Downline Load of Controlware

1). Description

The downline load controlware feature provides the capability of reloading controlware for the 7021, 7054, 7152, 7154, and 7155 controllers. The feature is implemented as a system procedure, BCPROC, which may be called by the operator or from a batch job when the operating system is in engineering mode. Controlware may be loaded from tape, a sequential Mass Storage file, input, or the system file ZZZZZ04.

2). Compatibility

The BCLOAD and DLL programs available in previous releases are not compatible with this feature.

3). Notes and Cautions

Since the autoload function clears all reserved units on the channel for the access, reloading controlware in an active system can create broken interlocks. Units reserved by the alternate access are not affected.

The controlware binary loaded from BCFILE or INPUT must be the unprefixed controlware binary. The format of this binary differs from the controlware binary on the system file, ZZZZZ04. System file ZZZZZ04 contains a copy of the deadstart tape. The controlware binary in the deadstart records has a one word prefix table containing the controlware deckname. (e.g. 0MT, 0SY, etc...)

2.3 CYBER176/819 FNT Supplement Removal

1). Description

- This feature reduces the space needed in the FNT for 819 files. 819 supplements (type 0302) have been replaced with a new table in LCM allowing the space previously used for supplements to be used for new FNT entries.

- Idents NB0D728, NB0D728A through NB0D728H, NB0D728J, NB0D728K, NB0D729, NB0D729A, through NB0D729C, NB0D730, IN5A369, IN5A369A, and IN5A369B, add code to various parts of the NOS/BE system to accomplish the following changes:

  - Do not generate or use FNT supplements for 819 files.

  - Create a new table in the paged area of LCM to keep TBT addresses for all 819 files.

  - Change the FLUSH function processing and PP interface to flush LCM buffers for 819 files.

2). Notes And Cautions

INTERCOM 4 does not support this change. Any site using INTERCOM 4 on a CYBER 176 with 819s should yank all the NB idents listed above.

2.4 INTERCOM 5 Remote Batch Accounting

1). Description

The INTERCOM 5 Remote Batch Accounting feature accumulates counts of cards read, cards punched, and lines printed at remote batch terminals supported by CCI. An accounting dayfile message is issued to the system dayfile each time a file is initiated, completed, or interrupted (put back in a queue). The interruption and completion messages contain counts of cards read, punched, or lines printed.

2). Compatibility

The format of the current BEG and END batch accounting messages are changed to include counts and more data about the terminal. The new format of the batch accounting messages is:

```
hh.mm.ss. JOBNAME.$ END LPn TID= xx ee/ppp/sss
nnnnnnnn
```

Where:

END is replaced by BEG when a file is first started or by INT if a file is interrupted
LPn = line printer n (it may also be CRn or CPn)
xx = terminal or user id
ee = EST ordinal of the 2550
ppp = Port address
sss = site address
nnnnnnnn = count of lines printed or cards read or punched.

New commands are added to CCI to accumulate accounting data.

The INTERCOM feature code is downward compatible with earlier versions of CCI. However, the CCI feature code requires the corresponding INTERCOM code at level 518.

2.5 COBOL 5 Audit Feature

1). Description

A new parameter ANSI=AUDIT is added to the COBOL 5 control card. Specification of this parameter has the following effects:

- o ANSI=NOEDIT is selected.
- o ANSI=77 is selected.
- o Non-ANSI reserved words are not recognized as reserve words.
- o If a group item containing a variable occurrence data item is used as a receiving item, only that part of the item that is within the range of the value of the DEPENDING ON item is changed.
- o The collating sequence for an indexed file is the program sequence.

This change will be documented in the PSR summary.

3.0 BATCHED CORRECTIVE CODE TAPE CONTENT AND STRUCTURE

The level 518 Batched Corrective Code tape has the following structure:

File 1:

File 2: Files 1 and 2 are reserved for corrective and/or critical code for the NOS/BE 1.4 system. File 1 applies to the operating system and file 2 applies to the product set members. The 518 release contains corrective code plus critial code for the operating system package. All other members must be installed from release PLs at level 518 as there is only an empty deck to avoid defining BASE.

This code exists on files 1 and 2 as an UPDATE program library employing a slash (/) as the master control character. These decks include /CALL directives for relevant common decks. A /COMPILE on a specific deck may be used to extract the corrective and/or critical code for the NOS/BE 1.4 operating system and product set.

File 3: An installation and verification job deck UPDATE program library employing the equal sign (=) as the master control character. Various options are embedded in the job decks on this file. Definitions of these options and a list of the decks affected may be obtained by executing the job sequence described in Section 4.1 (1).

File 4: PSR index pertaining to NOS/BE 1 and product set. Record 1 of this file contains a transaction log pertaining to PSRs published since the Level 508/508 release. Record 2 contains entries for all PSRs published since Level 508/508 release relating to NOS/BE 1 operating system and product set, sorted by routine affected. Record 3 contains the same data as record 1 sorted by submitting site within each product identifier. The method used to obtain a listing of the contents of file 4 is described in Section 4.1 (5) of this document.

File 5: This file contains source for suggested code. A list of the contents of file 5 is contained in Section 9.0 of this document.

File 6 This file contains binary decks for the controlware tested with this release.

Record 1.	Level A03	7155-885/844	0SJ	53695294
Record 2.	Level A05	7154-844	0SZ	24616082
Record 3.	Level A13	7054-844	0SY	52706607
Record 4.	Level A14	7021-66X	0MT	52653361

Note: These records can be copied from file 6 and used as input to COPBC for use on a deadstart tape. This is explained in the NOS/BE Installation Handbook (60494300N).

3.1 CHANGE CODE ON OPERATING SYSTEM PLs

The following PLs contain as the last file of each PL, the source code added to the PL since the last release:

PL	LAST FILE NUMBER
PL1D	7
PL1H	3
PL12	5
PL14	5

4.0 BATCHED CORRECTIVE CODE TAPE INSTALLATION NOTES

4.1 CRITICAL NOTES TO BATCHED CORRECTIVE CODE TAPE

1). The following corrections are necessary to be implemented against the decks PL on the BCC.

```
=IDENT any unique identifier
=INSERT PL70I.71
/D CCL.2
=C PL70I
=D PL5B.21
=D VEE030480.1
=D VEE030380.28
=I PL1AI.191
*P NB0D611
*P NB0D629
*P NB0D576
*P NB0D648
=C PL1AI
=I PL1BI.249
*P *C508*
*P C7515LA2
=C PL1BI
```

The =C maybe removed if a full UPDATE is performed to CATALOG the DECKS PL.

The PURGE is necessary as these were critical code mods automatically installed at level 508.

CCL installation will abort without the change to PL70I.

4.2 GENERAL NOTES

1). Execute a job of the following form to get a list of the installation jobs:

```
CCT,T0,MT01.
REQUEST(CCT,HY) ASSIGN BATCHED CORRECTIVE CODE TAPE
SKIPF(CCT,2,17) SKIP CODE FILES
UPDATE(*==,F,R,C=O,P=CCT,L=A7)
UNLOAD(CCT)
7/8/9/
6/7/8/9
```

The output from this job will be a deck list itemizing the installation jobs on file 3 of the corrective code tape plus a discussion of the various options embedded within those decks.

2). Execute a job of the following form to select an installation deck from file 3 of the BCC tape:

```
AUTO,T0,MT01.
REQUEST(CCT,HY) ASSIGN BATCHED CORRRECTIVE CODE TAPE
SKIPF(CCT,2,17)
REQUEST(COMPILE,*Q)
UPDATE(*==,Q,R=C,P=CCT,D,8)
ROUTE(COMPILE,DC=IN)
7/8/9
=DEFINE x
=C y
6/7/8/9
```

Where x is an option or combination of options described in the listing of DECK REASON obtained from Section 4.1 (1); y is a deck name contained on this PL.

3). One may punch installation decks by executing a job of the form:

```
DECKS,T0,MT01.
REQUEST(CCT,HY) ASSIGN BATCHED CORRECTIVE CODE TAPE
SKIPF(CCT,2,17)
UPDATE(*==,Q,R=C,P=CCT,D,8,C=PUNCH)
UNLOAD(CCT)
7/8/9
=DEFINE x
=C y
6/7/8/9
```

Where x is one or more of the options available on the installation decks file and y is one or more of the job decks on the same file.

4). The program library on file 1 or 2 of the Batched Corrective Code Tape contains a deck named DOLLAR which can be used to list the code ident, HISTORY information, card count, and routines modified from that file. To obtain such listings for file 1 or 2 run a job of the following form:

```
JOB,T0,MT01.
REQUEST(CCT,HY) ASSIGN BATCHED CORRECTIVE CODE TAPE
SKIPF(CCT,1,17) ONLY FOR FILE 2
COPYBF(CCT,OLDPL) COPY FILE 1 OR FILE 2
```

```
UPDATE(*=/,Q,D)
UNLOAD(CCT)
FTN(I=COMPILE)
UPDATE(F,*=/)
LGO.
REWIND(TAPE2)
COPYCF(TAPE2)
7/8/9
/C DOLLAR
7/8/9
//GENERATE FULL COMPILE FILE-OPERATING SYSTEM CODE
7/8/9
Data Card
6/7/8/9
```

The data card places page heading information on TAPE2. This data card should be of the form:

columns	1-8 Date
	11-49 Page title

5). To obtain a listing of the NOS/BE Lower CYBER PSR index as described in Section 3.0 of this document, execute the following job sequence:

```
JOB,T0,MT01.
REQUEST(CCT,HY) ASSIGN BATCH CORRECTIVE CODE TAPE
SKIPF(CCT,3,17)
COPYBR(CCT,OUTPUT) LIST NUMERIC SORT TRANSACTION LOG
COPYBR(CCT,OUTPUT) LIST SITE CODE SORT TRANSACTION LOG
COPYBR(CCT,OUTPUT) LIST FULL INDEX SORTED ON ROUTINE
UNLOAD(CCT)
6/7/8/9
```

6). AUTOMAT Procedure

Effective with the 481/477 release, there are no job cards embedded in the installation decks. The job cards were removed to simplify the installation decks and to facilitate tape scheduling by density. All installation decks (except COMDECKS) should begin with a call to the ACCOUNT comdeck. The method of extracting jobs from the installation deck OLDPL need not change from that of previous levels if the following modification is made:

```
=ID JOBCARD
=D ACCOUNT.2
JOB,T0,MT1.
```

This change would give all jobs the same identifier. A unique identifier can be obtained by using the AUTOMAT procedure which is cataloged by the following job:

```
AUTOM,T10.
REQUEST(AAA,SN,*PF)
COPYBR(INPUT,AAA)
CATALOG,AAA,AUTOMAT,ID=INSTALL,XR=XYZ,PW=XYZ.
7/8/9
.PROC,AUTOMAT,DECK,TD=HY,OPTION1.
IFE,$TD$=$HD$,TRK7.
UPDATE,Q,D,8,*==,I=DIREC7.
ELSE,TRK7.
UPDATE,Q,D,8,*==,I=DIREC9.
ENDIF,TRK7.
.DATA,DIREC7.
=ID JOBCARD
=D ACCOUNT.2
DECK,T0,MT1.
=DEFINE TD,OPTION1,OPTION2
=DEFINE (Put invariant defines here, e.g., perhaps
         ULIB; or defines that are either always
         used or irrelevant, perhaps 0F7.)
=COMPILE DECK
.DATA,DIREC9.
=ID JOBCARD
=D ACCOUNT.2
DECK,T0,TD=1.
=DEFINE TD,OPTION
=DEFINE (Put invariant defines here, e.g., perhaps
         ULIB; or defines that are either always
         used or irrelevant, perhaps 0F7.)
=COMPILE DECK
6/7/8/9
```

7). Alternatively, the procedure could be read in as an input record.

```
JOB,T10.
ATTACH,OLDPL,DECKS,ID=INSTALL.
ATTACH,AUTOMAT,ID=INSTALL.
AUTOMAT,deck,density,option.
REWIND,COMPILE.
COPYBF,COMPILE,PUNCH.
6/7/8/9
```

Option: Any appropriate deck option specified in Deck Option section (but not tape density) and not defined in the AUTOMAT procedure.

density: HY, HD, or PE tape density

deck: One of the decks available on the Installation deck PL.

The call to AUTOMAT would change for each job but all other cards remain the same.

Please note that only UPDATE defines can be passed in the AUTOMAT procedure defined above. Therefore, variables such as Type 1 CCI (PL99) variables must be changed by replacing or adding cards directly into the appropriate job deck. Also, some jobs require many more defines so more options may be added by using the following AUTOMAT control card:

```
AUTOMAT,deck,density,$option1,option2,...option$.
```

or like this if many options are needed:

```
AUTOMAT,deck,density,
$option1,option2,...,option$.
```

5.0 INSTALLATION NOTES AND CAUTIONS

1). The NOS/BE 1.4 level 518 operating system can only be installed using the BCC tape and release level 508 PLs. The Product Set must be installed from level 518 PLs. The user library method is recommended to avoid impact on current system users.

2). Any suggested code which is selected from file 5 of the Batched Corrective Code tape must be installed in the correct installation sequence. This is required so that all dependent products are correctly installed. Encapsulation of routines has eliminated the need for much of this modset interdependency, but it is still a good practice to follow.

3). Installation decks PL50I, PL50C, and PL50V have been modified to select the 125K PASCAL compiler and the 135K PASCAL XREF binary by default. To obtain the 77K version of the PASCAL compiler it is necessary to define NOCCP. Users should note that the 77K PASCAL compiler will take an inordinate amount of computer time to install either CCP or CCI.

4). A deck named LIBS has been implemented which establishes the permanent file environment for the user library approach of building systems. This deck must be run prior to the installation of COMPASS when the user library approach is selected.

5). The following installation parameters have been tested at Level 518/518.

PL1A

IP.SRMS	1
IP.STEX	1
IP.LINK	3
IP.ACNT	1
IP.ECSB	1
IP.IQD	10B
IP.LVF	20B
IP.US	20D
IP.MCPU	2
IP.MPPU	20D
IP.MECS	1200B (C176) 64B (Non C176)
IP.MFL	350000B
IP.SPR	3
IP.MPR	5
IP.MMS	5000B
IP.XJ	1
IP.1ZZ	1
IP.IUSID	2RBA
IP.OPRI	1
IP.POSFL	4
IP.SPT	1
IP.LERNT	0
IP.MSET	0
IP.819	1
IP.C176	1
IP.SCHDE	1
MODEL	176
IP.ELIB	125B
IP.ERES	1
IP.ECSLK	1
IP.LNKBF	2
IP.ECLNK	1
L.EST	120B
N.SBSYS	14B
N.RBR	10D
N.SPRPP	4
N.SD	30D
N.VDDT	10B
L.APF	300D

```
L.SEQ       20B
L.FNT       2654B
N.SETS      10
N.DEVICE    6
N.ESD       64D
N.RBTC      192D
L.ITABL     100D
L.INS       22D
IP.TDEN     2
IP.TSG      16017B
BASE        300000B
CMRSIZE     33000B
IRADR       BASE-33000B
XOPTION     1
BREAKPT     1
IP.7LNK     1
IP.INT5     1
```

PL1D

```
LICRBUF     205B
LRGBUF      440B
NMF         3
SYNTAXSIZE  193D
```

PL12

```
IP.PRIX     0
IP.IGS      1
IP.IGCON    24
IP.IND      5
IP.FTNTS    1
```

PL14

```
IP.IND      2
IP.FTNTS    1
IP.IDFLE    20
```

6). Communications Control INTERCOM 3.0 (CCI for INTERCOM 5)

a). The CCI 3.0 build process produces a listing for the MPLINK/MPEDIT runs. These listings should be sent along with any dumps a user may submit via the PSR mechanism.

b). During any phase of a CCI build an erroneous MPLINK dayfile message may appear indicating that errors have been detected during execution. The appropriate MPLINK listing should be examined to verify if errors are indeed present.

c). Building CCI.

1). Run PL99AI1. This will produce a new PL99A tape. If more variants are to be built, run PL99AVI. Each PL99AVI will produce a new PL99B tape. PL99AI3 will purge extraneous files. If the ULIB approach is being used, define CCI2550 when extracting DST1. If ULIB is not defined, then each module is editlibed into the running system as it is created.

2). PL99E editlibs CCI binaries into the running system. This job is usually necessary if ULIB is not defined when extracting the PL99 installation decks. If CCI2550 is defined, PL99E will ask for one PL99A tape and one PL99B tape and then ask if there are any more PL99B tapes. Give the job an N.GO. if there are more PL99B tapes, else type N.DROP.

d). CCI 3.0 installation using variant decks has an unresolved problem when using a 473/472 system as base and using the user library method. PL99AI1 and PL99AI2 assemble properly but under certain unknown conditions the PL99AVI variant jobs fail. Since all variants can be built using the PL99AI2 job, it is recommended that PL99AI2 be used to prevent the problem.

Users will be notified as soon as a solution to this problem is found.

7). The installation parameter IP.BCFAP has had its default value changed from 2 to 9. This change was made because the increased use of CEFAP buffers caused by the ECS error logging feature. The value nine was chosen to ensure that there would be enough buffers to span a full ECS word.

8). A new installation parameter IP.CERNT has been added to the system. Its value is defined to be the maximum number of CERFILE entries a user can log. The default value is the same as that for the installation parameter IP.MSCT.

9). The EST configuration macro in CMR has been expanded to include specification of the DDP type device attributes D135 and D145. When defining a DDP entry one of the DDP types must be specified. D135 specifies DDP type DC135. D145 specifies DDP type DC145. When defining a DDP entry during deadstart, the DDP type must be specified using the EST reconfiguration parameter D (type DC135) or I (type DC145). In addition, the DDP type will appear in the EST display. The DDP mnemonic, ED, will be followed by the letter D if DDP type DC135 or I if DDP type DC145.

Example:

```
ED EST CH=22,EQP=5,MOD=(OFF,D145)
```

10). Deadstart Panel Setting (60X/65X Tape)

Deadstart operations from 3000 type tape subsystems (60X/65X) require a unique deadstart panel setting with the requirement that the deadstart device be on channel 0, 12B, 13B, 32B, or 33B.

```
0001 = 75cc
0002 = 77cc
0003 = e0uu
0004 = 77cc
0005 = 0010
0006 = 77cc
0007 = 1400
0010 = 74cc
0011 = 71cc
0012 = 7301
0013 = PPPP
0014 = e0uu
```

cc	=	deadstart channel
e	=	equipment
uu	=	unit number
PPPP	=	is not common between OS and MS. This word must be changed when going from an operating system deadstart to a maintenance system deadstart.

11). Express Dump with 60X /65X Tape Units

For those systems using 60X/65X tape units and desiring to execute an express deadstart dump follow the instructions on page 2-19 of the NOS/BE Operators Guide with the following exception. Use a value of 3 when indicating the controller type (parameter C).

6.0 OPERATING SYSTEM NOTES AND CAUTIONS

6.1 INTERCOM Notes

- When dialing into INTERCOM and using Mode 3 (TTY) auto-detect lines, the user should wait about 3 seconds after receipt of the audible tone to press the carriage return key. This time is needed by the 2550 to stablize the line and recognize the carriage return type-in. Otherwise, two or more carriage returns are required before the INTERCOM banner is sent to the terminal.

- On Mode 4A and Mode 4C hard-wired auto-detect lines, some performance degradation may be noticed if the line is configured with dummy cluster (site) addresses. (The installation might configure lines this way to enhance the use of the auto-detect feature to avoid resetting ASCII, BCD Mode 4A and Mode 4C terminals to the same site address.) The degradation is caused by the 2550 inoperative terminal timer being set very low, in the order of 1 to 30 seconds. The 2550 will try to poll the dummy site addresses and wait for a response when it could be using this time to send data to the operative terminal. The solution is to change constants VM4FAIL and VM4CFAIL as documented in the Installation Handbook, Section II-29.

- An INTERCOM RESTART is likely to occur whenever the system goes into STEP mode. The 2550 driver (1ND) has a timer which may time-out if it has to wait an inordinate amount of time for a monitor function to be honored. This condition should not cause concern and affects INTERCOM 5 only.

- INTERCOM RESTARTS can also occur at other times if the INTERCOM driver overlays 2ND through 8ND are not CM resident. This can happen because of a hardware channel timeout if the driver overlays are not loaded quickly enough to continue communications across the channel. The symptom when this problem occurs is a channel error 6 or channel error 3, although these two errors can also occur if the system is in step mode. It is highly recommended that driver overlays 2ND through 8ND be CM resident to prevent these problems.

- Two INTERCOM installation parameters, IP.IIBMN and IP.IIBMX regulate the number of empty buffers that are reserved by INTERCOM. It was discovered that the values of IP.IIBMN and IP.IIBMX resulted in poor data throughput rates, especially for higher speed terminals, as INTERCOM frequently ran out of buffers. This problem is corrected in this release by PSR IN50026 which increases the default values for IP.IIBMN and IP.IIBMX. With this change, a performance improvement should be noted and on the average additional INTERCOM memory of about 700B words will be used. Of course, a site may change these values as desired.

- Previously, peripherals on a batch terminal halted by the WAIT command were restarted by almost any batch command, such as BSP or END. As stated in the INTERCOM 5 Reference Manual, the GO command should be the only command allowed to resume operations on a device halted by the WAIT command. PSR IN50148 included in this release requires that the GO command be used to resume operation on a device halted by the WAIT command.

- The undocumented installation parameter IP.IBBST caused the associated batch buffer statistics code to waste space in 1ND because the code was unused. PSR IN50036 in this release corrects the problem by removing the batch buffer statistics code from 1ND and the related parameter, IP.IBBST. PSR IN50036 should cause no effects in 1ND because the code was not executed.

6.2 Operating System Notes

- It is possible that a non-NOS/BE or non-SCOPE 2 user may destroy the sector headers on the 819s. When this condition occurs, deadstarting NOS/BE with 819s turned on, or turning 819s on after deadstart, will result in the following flashing message on the B-display:

  ERR43 ESTyy CHzz

  where yy is an 819 EST ordinal.

  To recover, maintenance software should be used to write sector headers on the 819s.

- Previously it was required that ASCII print files destined for printing by JANUS have zero in the upper 5 bits of each byte. ASCII print files printed by INTERCOM did not have this restriction. With this release, PSR NB02550 will remove this requirement for JANUS as JANUS will clear the upper 5 bits of each byte before printing.

- GEMINI can no longer be initiated via a batch job. GEMINI must now be initiated via a console command (PSR No. NBOD134).

- Previously during normal multi-mainframe operations, extended periods of time were encountered when disk units and disk controllers were reserved with no external indication of the condition other than that one mainframe appeared hung. With this release two PSRs (NB0D232 & NB0D705) are added to assist the operator in diagnosing this condition. One of two messages will appear on the bottom of the right-screen display to indicate a reserve situation. They are:

  RESERVE CHcc EST eee (unit reserve)
  RESERVE CHcc (controller reserve)

  cc is the channel number and eee is the EST oridinal. This problem can still occur on 7155 controllers but will be corrected on a later release.

- There can be an occasional performance degradation when a 7155 controller is shared between two mainframes or when units on a 7155 controller are shared between two mainframes. This happens because the reserve timing loop in 1SQ is too large. This problem will be fixed in a future CCR by PSR NB0D618. The problem can be fixed by changing line 1SQ.4891 from an LCN 0B to an LDN 77B.

- All block count messages after tape errors are now reported in decimal (PSR NO. NB02298).

- The permanent file RECOVER utility is changed significantly by PSR NB01921. This code makes the following changes:

a) RECOVER modes 0,4, and 5 result in two listings: the regular RECOVER listing which is unchanged and a second listing which contains errors only. This short listing will have SHORTxx as its output file id where xx is the same as the regular RECOVER output.

b) RECOVER modes 0, 1, 2, and 4 will check the RB conflict flag in each file's PFC and clear it if it is no longer valid. When a site finds a crossed RB, the files may be inspected to determine if one of the files is still correct. The other crossed files can then be purged and recovered by other means. It is still recommended that all crossed files be purged and then recreated if possible. The cleared conflict flags will be noted on the RECOVER listings (both the regular listing and the short listing). RECOVER modes 1 and 2 will alert the operator with a flashing B-display message whenever conflict flags are cleared during deadstart.

o Previously, when two files were being compared with the COMPARE command the "GOOD COMPARE" message would be issued even if one file were longer than the other. With this release, PSR NB02223 corrects the problem by issuing the message "FILE LENGTHS DIFFER" when the two files compare correctly but one is longer than the other. This new message will be received for example, if one file has an extra record at the end of it that the other file does not have, even if that record is empty.

o No error message is written to the dayfile for illegal channel and file skip parameters on the BCPROC statement. When specified each of the parameters must be 2 octal digits. If only one octal digit is specified it is considered a parameter error. An undocumented error message is written to the job output file:

ERROR** ADDRESS 30 NOT SET

The solution is to always specify 2 octal digits. Implementing PSR NB0D824 in the next release will ensure the parameter error message is written to the dayfile.

- A DSD assembly error can occur because the size of DSD exceeds PP memory size. The problem occurs when IP.MCPU=1 and the following installation parameters are selected:

```
IP.LINK = 3
IP.STEX =1
IP.7LNK =1
```

The following alternatives offer a temporary solution to the problem.

1) Assemble DSD with IP.MCPU=2 (this will work correctly with a single CPU machine).
2) Assemble DSD with IP.LINK, IP.STEX, IP.7LNK set to zero.
3) Assemble DSD with ident NB02004 yanked.

6.3 Critical Code File

1). Problem:

When the INTERCOM Remote Batch Accounting feature is installed and either FACCTPSR or CCI0265 or both are installed, CCI may fail to send a BACK for a remote batch connection. This problem may manifest itself either of the following ways:

- The cluster may hang with no obvious signs of why it is hanging (i.e. the line will not be marked as down or the UT will not be disconnected).
- lNP itself may hang

Solution:

The solution is to install CCIB214 from File 1 of the BCC. Note that CCIB214 is dependent on CCIB047 and CCI0265, both of which are included with this release.

2). Problem:

A DAM/RBR mismatch on FMDs can occur occasionally during a level 3 deadstart due to IRCP not computing the DAM address correctly.

Solution:

The problem may be corrected by installing NB0D833 from File 1 of the BCC.

6.4 Suggested Code File

1). Problem:

Use of the interpretive ECS macros provided by the ENHANCED ECS ERROR RECOVERY AND LOGGING feature will generate an RA + 1 call to ELM if an ECS error occurs. This may cause ELM to hang in a PP.

Solution:

To correct this problem install NB0D838 from the Suggested Code File.

2). Problem:

The BCLOAD utility cannot load the 7155 controlware from tape. The LIMIT pointer used in the FET is not large enough to allow the last PRU to be read.

Solution:

The problem can be corrected by installing NB0D843 from the suggested code file. Alternatives are to load from the system file ZZZZZ04, file INPUT, or a sequential mass storage file.

3). Problem:

Mod NB0D441D introduced a bug in dismount processing at NOS/BE LVL508. If a master device uses the last fixed entry in the Dismountable Device Table (DDT), dismounting this master device will cause routine SRCHDDT to compute an incorrect loop count of 7776. The search for members of this device set will extend beyond the DDT resulting in random overwriting of central memory and a system crash.

Solution:

Install the code for PSR NB02692 which is contained on the Suggested Code File.

4). Problem:

After processing a backspace (0.SKB request) the 7155 driver, 1SQ, incorrectly returns an EOR status when for the same conditions 1SP does not.

Solution:

To correct the problem install NB02749 from the suggested code file.

5). Problem:

For 885s LABELMS issues a request to read the factory faw map when it should issue a request to read the utility flaw MAP. In addition a problem exists in SPM which caused the reading of the wrong track for the factory flaw map. Either problem could result in an incomplete set of flaws for the device or a possible controlware hang.

Solution:

To correct this problem install PSR NB0D757 from the suggested code file. This PSR must be applied to PL1A and PL1B. Idents NB0D757 and NB0D757A are for PL1A. Idents NB0D757B and NB0D757C are for PL1B.

6). Problem:

Bit 13 of the JULIAN date (word 20) can be erroneously cleared due to the M.CLRST function from Storage Move being processed for control point zero.

Solution:

To correct his problem install NB0D788 from the Suggested Code File.

7). Problem:

Occasionally a user may hang in LOGOUT due to a busy FNT left by a READ,LFN command.

Solution:

Install IN5A398 from the suggested code file.

8). Problem:

Due to a change in the format of the output of the COBOL 5 compiler, "ERRORS, COBOL" will not print the source lines of errors for COBOL 5.

Solution:

This problem is corrected for both INTERCOM 4 and INTERCOM 5 by code on the suggested code file. To correct the problem install IN5A392 from the suggested code file for INTERCOM 5 or IN4B271 from the suggested code file for INTERCOM 4.

9). Problem:

An INTERCOM Restart caused by a Block Protocol Error 32 can occur. This happens if the INTERCOM driver, 1ND, while in line state 12 (decimal) receives a line operational service message from CCI.

Solution:

To correct this problem install IN5A384 from the Suggested Code File.

10). Problem:

An INTERCOM restart may occur caused by a block protocol error 33. Specifically, this is caused when the INTERCOM driver (1ND) receives an output stopped command from CCI on an idle batch stream.

Solution:

The solution is to install CCIB215 from the suggested code file.

11). Problem:

An INTERCOM Restart (Block Protocol error 33) can occur when printing an empty file with just banner pages.

Solution:

Install CCIB216 from the Suggested Code File.

12). Problem:

An INTERCOM Restart (CCI halt C) occurs when the mode 4 TIP detects a zero buffer address.

Solution:

Install PSRs CCI0291 and CCB0033 from the suggested code file to correct his problem.

13). Problem:

The NPU dies with no halt code. This is seen by the site as an NPU timeout reason 17.

Solution:

Install PSR CCI0281 from the suggested code file to correct this problem.

14). Problem:

When printing at a mode 4 terminal, page ejects are not performed correctly if the data contains a null line (ie. an end of line immediately following another end of line with no data between).

Solution:

To correct this problem, install CCI0275 from the suggested code file. With this correction, the null line will be printed as a blank line and page ejects will be performed correctly.

15). Problem:

When printing at an X780 terminal, a null line, (ie. as end of line immediately following another end of line with no data between) is treated as format control for the next line.

Solution:

To correct this problem install CCI0184 from the suggested code file. With this correction, the null line will cause a blank line to be printed and successive lines to be printed correctly.

16). Problem:

An INTERCOM Restart (CCI Halt E) occurs when the CCI test processing state loops when processing PM messages for X780 terminals. The problem occurs when a PM message crosses a PRU boundary. This causes the X780 tip to backup the source and destination addresses and thus lose the header that was built for transmission. The end result is a violation of the block transmission format for BSC.

Solution:

Install CCIB197 from the suggested code file to correct the problem.

17). Problem:

A CCI Halt code A can occur during initialization if the installation allows more than 32K for CCI buffers or if the CCI buffers start below 7FFF and end after 7FFF.

Solution:

To correct this problem, install idents CCB0049 & SCIB213 from the suggested code file.

18). Problem:

A text processing instruction for X780 in the Remote Batch Accounting feature was inserted one line off.

Solution:

To correct this problem install ident FACCTTP8A from the suggested code file.

19). Problem:

During the MPLINK execution, an out of bounds external reference may be encountered for label QDEBUG.

Solution:

If the CCI accounting code is installed, this problem is already corrected. If the accounting code is not installed, this problem can be corrected by installing ident CCB0027 from the suggested code file. Note that this is identified as CCI PSR CCIB211.

20). Problem:

A CCI halt code 05 is reported for a CIB error instead of a halt code 06.

Solution:

Install ident CCB0048 from the suggested code file. Note that this PSR is identified as CCIB212.

21). Problem:

In the event that bad cables are installed in a 255X it is possible that CCI will falsely detect a duplicate CLA address during initialization and cause CCI to issue a halt.

Solution:

Install ident CCB0024 from the suggested code file. Note that this PSR is identified as CCIB210.

22). Problem:

Counts for the Remote Batch Accounting feature may be off by as much as plus or minus 127 for output files.

Solution:

To correct this problem, install PSR ident CCIB218 from the Suggested Code file.

7.0 PRODUCT SET NOTES AND CAUTIONS

1). FCL4/FCL5

Problem:

Several PSR's have been written against PMD for numerous errors. The version on CYBER 176 does not work and will produce PP CALL errors in the reloading of the users field length. On lower CYBERS the improperly diagnosed --inexplicable error-- message has appeared.

Solution:

A new version (PMD 1.1) will be released soon. This will replace the first version entirely.

2). DATA CATALOGUE (DC2A007)

Problem:

Following a DCUPD run where an entity is added without categories, the MASTER files information for the entity, and any entities added after it, become inaccessible by any of the Data Catalogue systems.

Solution:

Corrective code is not available at this time but the problem has been reported by the above mentioned PSR (DC2A007). Users may prevent the problem by ensuring that each entity has at least one category.

3). CDCS2 (CD2A221)

Problem:

When CDCS 2.1 is run without any limits on its field length, its memory usage may become so large that there is no memory left for its user jobs. This is particularly true on a 131K central memory computer.

There is an MFL feature that is provided for limiting the CM usage of CDCS. The use of the MFL parameter, however, may cause CDCS to abort.

Solution:

Corrective code is not available at this time. When code is available it will lock the AAM Open/Close capsule. It is sometimes impossible to terminate a user because the Open/Close capsule cannot be loaded. This is not because of insufficient memory, but it is due to memory fragmentation. If the Open/Close capsule is kept in memory, this will also improve performance in many cases.

The following CDCS2 PSR will be required in support of CD2A221: CD2A234.

The following CR, PSRs will be required in support of CD2A221: SW1A483 and AM2A223.

4). CDCS2 (CD2A234)

Problem:

When all other CDCS and CRM memory overflow options have been exhausted, CDCS is intended to abort the user making the current request. The DB$MF1 own code routine will abort CDCS if any CMM memory error flag is present.

Code 3 is the normal memory error flag that is used for the options exhausted exist.

Solution:

Corrective code is not available at this time. When code is available it will correct DB$MFI so it will not abort CDCS on a code 3 CMM exit.

7.1 Suggested Code

1). AAM2/BAM

Problem:

Extended AAM computes the amount of core requred for the buffers in function of the number of files currently opened. This leads to critical CM overflow problems for CDCS that has typically many files opened although only a few of these files are active.

Solution:

Install code idents AM2A210 and SW1A450 from the suggested code file.

2). F45

Problem:

If an UPDATE correction set is produced by F45, it replaces every line instead of only converted lines.

Solution:

Install F45A104 from the suggested code file.

3). FORTRAN 4

Problem:

PSR FCCA473 causes IBL performance degradation. Response time has increased from seven to ten percent. When the listing file is a connected file, FCCA473 causes an unwanted print density carriage control character to be written on the listing file. The degradation is most noticeable when L=0 is specified on the FTN control card.

Solution:

Install FCCA534 from the suggested code file.

8.0 CRITICAL CODE

The critical code is on file one of the BCC and is automatically installed. There is one critical code mod for PL1A and one for PL99 so BASE must not be defined for PL99 if the critical code is to be automatically installed.

PL1A NB0D833
PL99 CCIB214

9.0 SUGGESTED CODE

File 5 of the level 518/518 Batched Corrective Code Tape includes suggested corrective code for some of the problems described in Sections 6 and 7. This code has not gone through the complete cycle of validation and should be installed only if your installation is affected by these problems. Suggested code is included by the following idents.

9.1 NOS/BE OPERATING SYSTEM PLs

IDENT	PLs
NB02692	PL1B
NB02749	PL1A
NB0D757	PL1A
NB0D757A	PL1A
NB0D757B	PL1B
NB0D757C	PL1B
NB0D788	PL1A
NB0D838	PL1A
NB0D843	PL1B

9.2 INTERCOM

IN4B271	PL12
IN5A384	PL14
IN5A392	PL14
IN5A398	PL14

9.3 CCI

CCI0291	PL99
CCB0033	PL99
CCI0281	PL99
CCI0275	PL99
CCI0184	PL99
CCIB197	PL99
CCB0049	PL99
SCIB213	PL99
FACCTTP8A	PL99
CCB0027	PL99
CCB0048	PL99
CCB0024	PL99
CCIB218	PL99
CCIB216	PL99
CCIB215	PL99

9.4 PRODUCT SET SUGGESTED CODE

AM2A210
F45A104
FCCA534
SW1A450