

HOTLINE!

Bulletin 9
December 18, 1987

The offices of Xerox Artificial Intelligence Systems in Pasadena will be closed starting Friday, December 25th and will reopen on Monday, January 4, 1988. From December 28th to December 31st, the answering machines will be available to you from both toll-free numbers. Urgent problems will be handled as soon as possible. Please be sure to leave complete information about where and when we should return your call.

All of us in AIS Customer Support would like to wish you a Happy Holiday Season!

-- Martha Burmeister, Ron Clarke, Judy Dering, Larry Harada, Lorraine Kiewiet, Marty Raim, Hugo Tafel, Susan Trautz, Greg Wexler

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Terminology

Terminology used in this *HOTLINE!* bulletin:

- UG - Users' Guide
- AR - Action Request, a Xerox problem tracking number (e.g. AR 8321)
- IRM - Interlisp Reference Manual

Cannot boot Lisp volume after erasing Lispfiles

Release 1186 Koto and Lyric

Keywords MP 199, Booting Lisp, System Tool, Lisp microcode

Problem Cannot boot Lisp volume from boot icons or System Tool after erasing Lispfile volume.

Background On the 1186, the Lisp microcode file Lispdove.db is stored on the Lispfiles volume and is used during booting of a Lisp volume. If you have erased the Lispfiles volume from the System Tool because of hard disk errors or other reasons, this file will also be deleted and you will not be able to boot any Lisp volume. You will need to reinstall the Lisp microcode on the Lispfiles volume in order to boot Lisp again

Symptom Attempting to boot Lisp volume from boot icons hangs at MP 199. Attempts to boot Lisp volume from System Tools results in message "No microcode found on Lispfiles." In addition, if you select Lispfiles from the Volume Menu in the System Tool and look at the Volume Boot File entry you will not see the entry "(System Files #1) Lispdove.db (filedate/time)."

Workaround F2 boot the Installation Utility floppy. Select the option "Install Lisp Microcode Only" and you will then be prompted to insert the appropriate System Files floppy that contains Lispdove.db. If you are a Prolog user you must choose the menu option "Install Prolog Microcode!" after installing the Lisp microcode. Again, you will be prompted for the correct floppy. After the microcode has been loaded you will now be able to boot your Lisp volumes.

References 1186 Users' guide, Lyric release - Software Installation, Reinstalling Microcode, pages 60-61

Lyric doesn't immediately release files on NS servers

Release Lyric

Keywords NS Server, CLOSEF

Problem Lisp maintains a cache of handles on files it has dealt with recently, so as to expedite subsequent operations, e.g., an INFILEP immediately followed by an OPENSTREAM for the same file. As long as Lisp has the handle, the file cannot be moved or deleted from another workstation.

Symptom Write a file to an NS file server (e.g. COPYFILE, MAKEFILE, etc.) and try to move or delete this file from another 1108 or 1186 using File Browser. Upon expunging the file, the system will take a while and a message appears at the FileBrowser prompt window:

```
Couldn't expunge
  {File Server:Domain:Org}<Directory>filename
  No file expunged.
```

After a Timeout period, the user can access the file.

Workaround If you don't want to wait for the timeout period, before trying to manipulate the file from elsewhere, at the IL exec call: (BREAK.NSFILING.CONNECTION host).

References AR 9414

XCL:storage-exhausted error

Topic XCL:storage-exhausted error and running out of symbol space

Release Lyric

Keywords storage-exhausted, 9322, symbol space

Discussion The XCL:storage-exhausted error message does not necessarily indicate that there is no storage space remaining and virtual memory is full. This error can occur when there are free pages left in the main data space, but pages allocated to the litatom (or symbol) space are all used.

The current limit on the number of symbols is 65,535. When this limit is reached, a 9322 error will occur. Prior to the 9322, the user is warned with a continuable error under \DOSTORAGEFULLINTERRUPT. The message "Serious condition XCL:storage-exhausted occurred" will be posted in the break window.

The InterLisp function IL:STORAGE.LEFT can be used to determine the cause of the storage-exhausted error. This function returns how much storage is left in the major data areas in the virtual address space. The last two numbers returned indicate the number of free pages left in the litatom space and the fraction of the total litatom space that is free.

Users should note that symbols are generated during macro expansion. While running interpreted, generating thousands of SETFs in a loop can result in the symbol table filling up. If the code is compiled, the macro is expanded only once at compile time, and the symbol table will not grow noticeably.

References IRM 22.2 - 22.5

Saving BITMAPS

Release Lyric

Keywords BITMAP, VARIABLES, VARS

Problem BITMAPS cannot be saved with VARIABLES file manager command.

Example In the XCL exec do the following:

```
(DEFPARAMETER XXX (IL:BITMAPCREATE 50 50))
```

Then call the bitmap editor, modify and save the contents of the bitmap.

```
(IL:EDITBM XXX)
```

When you call (IL:FILES?) you will be prompted to save XXX as a Common Lisp variable. When you call IL:MAKEFILE, the expression (DEFPARAMETER XXX (IL:BITMAPCREATE 50 50)) will be written to the file, but the contents of the bitmap will not be saved.

Symptom When the source file is loaded, the variable will be defined as an empty bitmap.

Workaround Use the VARS command to save a Common Lisp variable whose value is a bitmap.

For example, in the XCL exec use:

```
(SETQ IL:FOOCOMS '((IL:VARS XXX)))
```

to save the variable XXX (in the current package) on the file with the rootname FOO.

Reference AR 9390, Lyric Release Notes, page 45.

ADVISE not saved on file

Release Lyric

Keywords IL:ADVISE, ADVICE, XCL:ADVISE-FUNCTION, File Manager

Problem File Manager places ADVISE ahead of FNS, and so loses the advice upon loading file.

Example In the case where you would want to put some advice and the function definition on the same file, (FILES?) prompts first for advice to save, then for FNS and VARS (going in alphabetical order). When MAKEFILE is called and the file is then loaded into a fresh sysout, the ADVICE or ADVISE to the function is installed first, and since there is nothing to advise at that point, it loses. For example:

```
(DEFINEQ(JUNK (X Y){IPLUS X Y]
(ADVISE 'JUNK 'BEFORE '(PRINT "This is my debugging filter
for JUNK"]
```

Then call (FILES?) and MAKEFILE. Load the file and the advice won't work.

Workaround Install the ADVISE as P statement in the COMS, after the FNS definition. For example:

```
(SETQ FOOCOMS '((FNS JUNK) (P (ADVISE 'JUNK 'BEFORE '(PRINT
"ONCE")))))
```

or:

```
(SETQ FOOCOMS '((FNS JUNK)(P (XCL:ADVISE-FUNCTION 'JUNK
'(PRINT "ONCE") '(:WHEN :BEFORE))))
```

Reference AR 9441
IRM Vol.II, 15.11
Xerox Common Lisp Implementation Notes, pages 106-109

Redefinition of an Interlisp function

Release Lyric

Keywords UNSAVEDEF

Example A customer asked the following question: Is the old definition still supposed to be saved on EXPR property if an InterLisp function is redefined?

For example, in InterLisp executive:

```
(DEFINEQ (IL-REDEFINE-EXAMPLE NIL (PRINT "FIRST  
DEFINITION")))
```

and then:

```
(DEFINEQ (IL-REDEFINE-EXAMPLE NIL (PRINT "SECOND  
DEFINITION")))
```

When the user did:

```
(UNSAVEDEF 'IL-REDEFINE-EXAMPLE)
```

it returns:

```
"nothing saved"
```

The DFNFLG was set to NIL. This is a change in behavior from Koto and previous releases.

The user could use the UNDO command to restore the definition.

Workaround Explicitly save the old definition (for example, with SAVEDEF).

Reference AR 9349

DWIMIFY of I. S. OPRS

Release Lyric

Keywords I.S.OPR , DWIMIFY

Topic User-defined I. S. OPRS are not automatically dwimified.

Discussion CLISP infix forms no longer work under Lyric. Using DWIMIFY in Koto on most CLISP code automatically makes the correct translation. However, users that have defined their own I.S.OPRS which use the assignment operator (\leftarrow) must explicitly modify the definitions.

Example In Koto,

```
(I.S.OPR 'IS NIL '(eachtime I.V.  $\leftarrow$  BODY))
```

allows you to write (for A in B as C is (CAR A) do ...).

In Lyric you have to change that to:

```
(I.S.OPR 'IS NIL '(eachtime (SETQ I.V. BODY))
```

The errors which occur from failing to make such a translation can be subtle.

Reference Lyric Release Notes, pages 36-38.

OUTPUT a free variable in Interlisp EXEC

Release Lyric

Keyword IL:OUTPUT

Problem OUTPUT, which was unbound in Koto and previous releases, is now used globally in the InterLisp EXEC and may no longer be used globally by the user.

Example A user has used INPUT and OUTPUT as scratch variables when setting up streams to hand to programs at the EXEC. In Lyric, since OUTPUT is a free variable in the Lyric INTERLISP EXEC (in XCL:EXECA0001) it will cause a number of undesirable side effects if rebound.

Workaround Use other Execs, or choose another scratch variable name.

Reference AR 9432

CL mapping functions

Release Lyric

Keywords cl:mapcar, cl:maplist, cl:mapc, cl:mapl, cl:mapcan, cl:mapcon

Example The Common Lisp mapping functions fail to return if one of the lists given is circular. The expected behavior is that "the iteration terminates when the shortest list runs out, and excess elements in other lists are ignored." CtiL page 128.

In the XCL exec:

```
(SETQ *PRINT-CIRCLE* T)
(SETQ LINEAR-LIST (LIST 'A 'B 'C))
(SETQ CIRCULAR-LIST (NCONC LINEAR-LIST LINEAR-LIST))
(MAPCAR #'(LAMBDA (X Y) (PRINT (LIST X Y)))
        LINEAR-LIST CIRCULAR-LIST)
```

Symptom The system will hang with the cursor indicating intermittent garbage collection.

Workaround A patch file is currently being tested.

Reference AR 9420

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