

These notes accompany the Carol Release of Interlisp-D. They describe changes made since the Fugue.4 Release of October, 1983 and the Fugue.6 Release of April, 1984. The most prominent feature is support for the Xerox 1108 local file system. A new release of TEdit provides a powerful, menu-driven interface. Xerox 1100 and 1132 users can now initialize Interlisp-D from disk partitions other than the currently booted partition.

Important features of the Carol release

- <1> Local File System for the 1108
- <2> 1108 Two-button Mouse: Left-right Chord Acts Like the Middle Button on the Three-button Mouse
- <3> New 1108 Microcode
- <4> New TEdit Package
- <5> New Lisp.Run Allows Sysin from Other Partitions
- <6> New User Packages
- <7> System Files
- <8> Carol Release Kits

<1> Local File System for the 1108

The 1108 hard disk file system is designed to provide Interlisp-D users with a flexible mechanism for storing and accessing files. Like the file systems for the 1100 and 1132, the 1108 file system supports features like random access and version numbers on files. In addition, the 1108 local file system supports hierarchical naming structures for files.

For information on repartitioning the disk, see the Xerox 1108 Users Guide on using the Installation Utility.

<2> 1108 Two-button Mouse: Left-right Chord Acts Like the Middle Button on the Three-button Mouse

Most 1108's have a two-button mouse. In place of the middle button, it was necessary to use the "Center" function key above the main keyboard. In Carol, the middle mouse button can be simulated by "chording" the left and right buttons.

Specifically, if Interlisp-D sees LEFT and RIGHT go down simultaneously, it considers that to be MIDDLE, rather than either LEFT or RIGHT. Middle is considered to be down until *both* LEFT and RIGHT come up.

For more information, see the Xerox 1108 Users Guide.

<3> New 1108 Microcode

Small changes: The start-up procedure in the 1108 microcode has been altered so that the 1108 screen stays blank until the Interlisp-D screen is displayed, rather than momentarily showing random "snow." Also, the MP display is now set to "1108" while Interlisp-D is running.

The microcode includes fixes to a few obscure bugs that caused intermittent system failures. In addition, there have been some performance improvements. The speed of interpreted code has been increased by putting EVAL and STKSCAN in microcode. The speed of some arithmetic operations has been increased by putting GREATERP and small negative arithmetic operations into microcode. The NIL cases of CAR and CDR are now taken care of in microcode.

<4> New TEdit Package

This release includes a much-improved version of the TEdit text editor. Innumerable mis-features have been fixed. Highlights:

- TEdit no longer causes interrupt characters (control-D, control-E, etc.) to be disabled outside of the TEdit process.
- Changing the "Margin Bar" in one TEdit menu no longer changes the margin bars in other separate TEdit menus.
- The EXTENT window property is always set for TEdit windows so the scroll bar is never brought up blank (with no shaded region).

- TEdit menu operations no longer prevent the user from using the mouse while an operation is in progress.
- TEdit does not reset the cursor shape during "Put," "Get," etc. operations.
- Multiple TEdit hardcopies can happen simultaneously.
- Closing a TEdit window with the RIGHT-button menu will do a "Quit."
- When Quitting from a TEdit window, when it asks if you really want to quit, you should respond with a mouse confirm (click LEFT for yes, RIGHT for no), rather than typing "YES" or "NO."
- TEdit will ask for a confirmation before Quitting from a TEdit window brought up empty, into which the user has typed.
- TEdit now uses the ATTACHEDWINDOW package to put a small prompt window above every TEdit window. This window is used instead of the main prompt window for printing prompts and all other interactions with the user.
- Applying SETFILEPTR to a text stream displayed in a TEdit window does not move the caret on the screen.
- Shrinking a TEdit window produces a distinctive icon.
- TEdit is much more careful not to leave files open, such as "Include"ed files.

The TEdit extended menu is now a legitimate, supported part of TEdit. As mentioned above, TEdit uses the latest version of the ATTACHEDWINDOW package, which must be loaded for TEdit to run. The TEdit code has been broken up into a number of parts. TEDIT.DCOM will now load the following files:

```
TEXTOFD TEDITHCPY TEDITFIND TEDITLOOKS TEDITMENU  
TFBRAVO TEDITABBREV IMAGEOBJ TEDITHISTORY  
TEDITSCREEN TEDITFILE TEDITCOMMAND TEDITWINDOW  
- TEDITSELECTION ATTACHED WINDOW
```

The TEdit documentation has also been revised. It now includes information on using the TEdit Extended Menu.

<5> New Lisp.Run Allows Sysin from Other Partitions

The new version of Lisp.run allows 1100 and 1132 users to SYSIN from other disk partitions. You can load a new sysout from another partition on the same machine as well as from

a PUP fileserver. The syntax is the same as from within Lisp, e.g., you can type to the Alto Executive:

```
>Lisp {DSK5}FOO.SYSOUT
```

or even

```
>Lisp {DSK3}Lisp.virtualmem
```

The latter command effectively provides a checkpoint/restore capability by using the Lisp.virtualmem on a second partition as the checkpoint image. As within Lisp, the partition number requested must be less than or equal to 7.

<6> New User Packages

- GRAPHCALLS (C. D. Lane, Stanford University)

GRAPHCALLS is an extended graphical interface for Interlisp-D program development. It allows fast graphing of the calling hierarchy of both interpreted and compiled code, whether or not the source code is available, thus allowing examination of both user and system functions.

- SPY (L. Masinter, Xerox PARC)

SPY is a tool to help make programs run faster. It provides a picture of where the program is spending its time. Just as Masterscope and Browser give an interactive picture of the static structure of the program, SPY gives an interactive picture of the dynamic structure.

<7> System Files

The following files are available on [Maxc] <XSIS>:

- Lisp memory images files:

Lisp.sysout	standard release virtual memory image
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- Initialization for 1100 (Dolphin) and 1132 (Dorado):

Lisp.run

Lisp.syms

- Microcode for 1100 (Dolphin) [unchanged]:

DolphinLispMC.eb	for 3MB Ethernet
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XMBDolphinLispMC.e for 10 MB Ethernet

X3DolphinLispMC.eb 3 and 10MB Ethernet (no color, floating point)

AltoD0MC.eb Alto emulator code

- Microcode for 1132 (Dorado) [unchanged]:

DoradoLispMC.eb

AltoD1MC.eb

- Initial microcode for 1108

Lisp10SAX000Initial.db

<8> Carol Release Kits

The Carol release kit for the Xerox 1108 consists of the following components:

- Xerox 1108 Users Guide

An operational description of the 1108. Describes software installation, the file system, the floppy disk, RS232 connection, running machine diagnostics, and maintenance panel codes.

- Lisp Package Update

Describes the Lisp Library and User packages which accompany the Carol release.

- The Carol Release Notes

A description of the major features of the Carol release.

- Lisp.sysout floppies

A 3-floppy set comprising the Interlisp-D sysout. The sysout includes Lisp microcode and the initial Interlisp-D virtual memory image.

- Installation Utility floppy

Provides a menu of operations for partitioning the 1108 rigid disk, erasing the file storage volume {DSK}, installing Interlisp-D sysouts recorded on floppies, and booting an Interlisp-D volume, and the program which installs the Lisp Installation Tool.

- Diagnostics Files floppy

Contains non-Lisp utility software for managing the Xerox 1108: tools for setting the user profile, installing sysouts from remote file servers, copying one Lisp partition to another, etc. This floppy also contains the Initial Lisp microcode.

- Lisp Packages Floppy

Contains the Lisp Library and User packages which accompany the Carol release. This floppy includes all the subordinate files on which the packages depend.

Carol Release Kit for the Xerox 1100 and 1132 consists of the following components:

- The documents comprising the 1100 and 1132 kits include The Carol Release Notes and Lisp Package Update.
- A magnetic tape, written in a format compatible with the user's host machine, includes the following files:
 - Lisp.sysout
 - Lisp.run
 - Lisp.syms
 - DolphinLispMC.eb
 - XMBDolphinLispMC.eb
 - X3DolphinLispMC.eb
 - AltoD0MC.eb
 - DoradoLispMC.eb
 - AltoD1MC.eb
- Also included is a complete set of Lisp Library and Lispusers packages. Consult the directory listing which accompanies each magnetic tape for a complete list of packages.
- Standalone 1100 users should contact the Interlisp-D support team to make arrangements for shipment of their disks for the installation of Carol.

KNOWN PROBLEMS WITH THIS RELEASE

- The function (FLOPPY.COMPACT) asks the user to verify the request to compact the floppy currently in the drive. If you respond "no," compaction proceeds anyway. To abort floppy compaction, type Control-D.
- If the user calls RAID on the 1108 by typing Control-C (the maintenance panel code will display 9915) you cannot exit by pressing the red STOP key. Although the MP code will change to 1108 the system will "freeze", no type-in will be accepted and the mouse will not track. At this point Interlisp-D software must be reloaded. You can successfully exit from RAID by entering Teleraid (press the UNDO key) and then type Control-D.

- Only the Installation Utility floppy can be used to partition the local disk in a rather stylized way. There is currently no Lisp utility which allows the user to declare the name and size for each logical volume.
- A sysout generated on an 1108 cannot be installed on an 1100.
- If you LOGOUT while some other process is actively writing a file, it is not guaranteed that anything reasonable happens to the file. The process system allows processes to prevent LOGOUT before completion (by using a BEFOREEXIT DON'T process property), but not all system facilities have been modified to use this mechanism.
- The caret is still global, rather than being a part of the window structure. This means that there are times where a caret gets left up in a window when it should have come down.
- The swapping file on the 1100 and 1132 (Lisp.VirtualMem) must be a small number (optimally 1) of disk segments, or swapping performance will degrade drastically. To create a (nearly) contiguous swapping file, use the Alto Exec command CREATEFILE.RUN on a newly-installed disk. The maximum size is 16,000 pages; this will guarantee that Lisp.VirtualMem will not become fragmented.
- Most system packages were written before multi-processing was added to Interlisp-D; some of these packages rely to some extent on there being only one process running, and access and alter global state accordingly. We have corrected many of these conflicts but have not yet completed this task. Avoid running more than one instance (from different processes) of DEdit, EMPRESS (hardcopy), MAKEFILE, the compiler, or Masterscope.