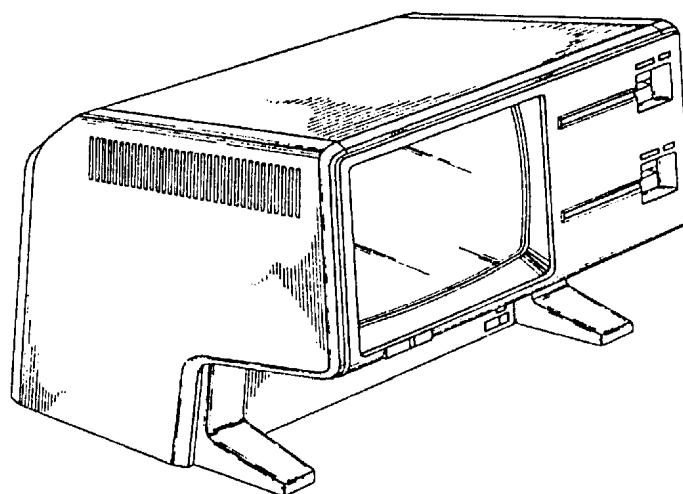


Apple Lisa Computer Disk Deserialization Information



Compiled by
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Lisa Computer Tool Deserialization Documents

Apple Lisa 7/7 Tool Deserialization
David Craig • 1988 • 4 pages

Unprotecting Apple Lisa Office System Tool Files
David Craig • 1993 • 1 page

Deserializing the Lisa Office System 3.0 Disk 1
David Craig • 1993 • 3 pages

To Deserialize 7/7 Applications
Author? • Date? • 2 pages

*LISA COMPUTER OFFICE SYSTEM
2.0 DISK DESERIALIZATION
DTC • SEP 98 • 3 PAGES*

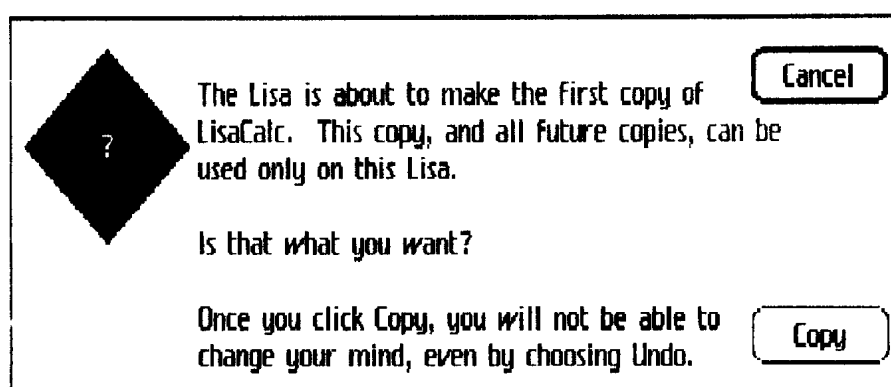
DAVID T. CRAIG

Apple Lisa 7/7 Tool Deserialization

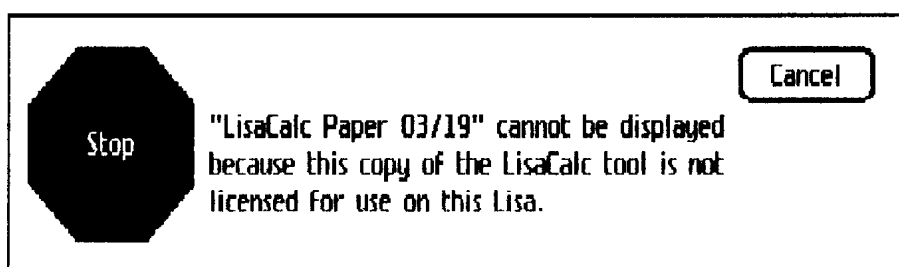
David Craig [736 Edgewater, Wichita Kansas 67230]

Tool Theft Protection Introduction

The Apple Lisa computer provides a mechanism to hinder software piracy of Lisa tools. This mechanism, known as software serialization, utilizes the unique serial numbers which are built into every Lisa. The first time a tool is to be used on a Lisa the user must install the tool. Installation involves inserting the diskette with the tool into the Lisa's diskette drive and duplicating the tool icon onto the Lisa's hard disk. When the duplication action begins the following dialog appears (for a LisaCalc installation);



If the Copy button is selected, then the tool will be made into a Master tool. Copies of the master tool will work only on the first Lisa that was used to make the copy of the master. The master tool diskette itself will function on any Lisa. Each Lisa requires its own master tool to make copies and backups. If a user attempts to use a tool which was previously used on a different Lisa, then the following dialog appears;



(1988)

Apple Lisa 7/7 Deserialization

1 of 4

(Internal Drive)									
Buff:	0000								
Sect:	0020								
Tags:	0002	0100	FFF5	0000	07FF	07FF			
0000:	077B	5433	7D6F	626A	0000	0000	0000	0000	..(T3)obj.....
0010:	0000	0000	0000	0000	0000	0000	0000	0000	.....
0020:	00F7	9CF9	BA2F	0501	00A8	0015	0E00	9CF9/.....
0030:	B503	A40C	160C	9CF9	BB2C	0000	0000	0000,.....
0040:	0000	0000	0000	0000	0101	0000	0000	0000	.....
0050:	0000	0000	0000	0000	0000	5403	5400	0000	.....T.T...
0060:	0000	0000	0000	0000	0000	0000	0000	0000	.....

Tool information block before installation

The bytes in positions \$42-\$45 contain the serial number of the Lisa on which the tool was installed. The above figure contains a serial number of 0 (zero). When the tool is installed on a Lisa, the Lisa's serial number will be stored in the tool information block at position \$42-\$45. After installing LisaCalc on my computer, the tool information block changed as follows;

(Internal Drive)									
Buff:	0000								
Sect:	0020								
Tags:	0002	0100	FFF5	0000	9E68	86E0			
0000:	077B	5433	7D6F	626A	0000	0000	0000	0000	..(T3)obj.....
0010:	0000	0000	0000	0000	0000	0000	0000	0000	.....
0020:	00F7	9CF9	BA2F	0501	00A8	0015	0E00	9CF9/.....
0030:	B503	A40C	213A	9CF9	BB2C	0000	0000	0000,.....
0040:	0000	0001	1517	0000	0101	0000	0000	0000	.....
0050:	0000	0000	0000	0000	0000	5403	5400	0000	.....T.T...
0060:	0000	0000	0000	0000	0000	0000	0000	0000	.....

Tool information block after installation

My Lisa has the serial number 70,935 which is equivalent to \$00011517. When a Lisa attempts to use a tool it first checks the tool's serial number from the tool information block against the Lisa's unique serial number. If the serial numbers match, then the tool can be used. If the serial numbers do not match then the Lisa informs the user with a dialog that the tool is not licensed for this Lisa.

Let's say you have a Lisa with the serial number 75,536 (\$0001253B). To find the serial number of your Lisa, select the Preferences tool icon and select the File/Print menu command "Attributes of ...". The serial number will be shown in the Information box. Use FEdit to modify positions \$42-\$45 to your hexadecimal serial number. After

writing the modified block to your diskette you can now install the tool on your Lisa. For serial number 75,536 the modified block appears as follows;

(Internal Drive)									
Buff:	0000								
Sect:	0020								
Tags:	0002	0100	FFF5	0000	9E68	86ED			
0000:	077B	5433	706F	626A	0000	0000	0000	0000	..(T3)obj.....
0010:	0000	0000	0000	0000	0000	0000	0000	0000	.....
0020:	00F7	9CF9	BA2F	0501	00A8	0015	0E00	9CF9/.....
0030:	B503	A40C	213A	9CF9	BB2C	0000	0000	0000!.....
0040:	0000	0001	2538	0000	0101	0000	0000	0000	.....
0050:	0000	0000	0000	0000	0000	5403	5400	0000	.....T.T...
0060:	0000	0000	0000	0000	0000	0000	0000	0001	.....n.....
0070:	0000	0000	0000	0000	0000	0000	0000	0000	.....

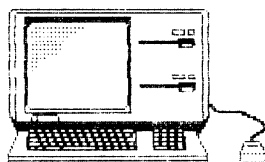
Tool information block after serial number modification

To make a deserialized master tool diskette modify the serial number positions to all zeros (\$00000000).

This document in no way advocates the use of deserialization to steal Lisa software. This information should only be used on tools which you own. I have used this information on a Lisa 7/7 package which I bought, but which had been used on another Lisa which was sold back to Apple in a trade-in program. After deserializing this 7/7 package I could use the tools on my Lisa.

ΩΩΩ The End ΩΩΩ

🍏 Apple Lisa Computer Information 🍏



Apple Lisa Personal Computer
1983 - 1985

Unprotecting Apple Lisa Office System Tool Files

David T. Craig - 21 February 1993
736 Edgewater, Wichita, Kansas 67230

This document contains some technical information relating to the Apple Lisa personal computer. The information in this document describes a procedure that unprotects a protected Lisa tool program. For an earlier discussion of this topic see my document **Apple Lisa 7/7 Tool Deserialization** (1988).

A protected Lisa tool is a tool that can not be copied nor opened on another Lisa except by the Lisa Office System's Desktop Manager which created the "protected master". Even the Lisa Workshop development environment can not open a protected tool file.

WARNING

The following procedure may be hazardous to the health of the disk on which it is applied. As such, backup the disk first, then follow this procedure on the COPY, not the original.

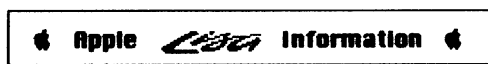
The easiest way to unprotect a tool is to modify an certain area of its floppy disk. The Macintosh program FEdit is very handy for this process. The disk modification applies to a disk area containing the tool's file system information. A tool has a name with the format "{Tx}OBJ" where "x" is a number (eg: LisaWrite has the name "{T1}OBJ"). The tool's name must begin at the beginning of a sector (preceeded with a length byte). Basically all you need to do is:

1. Mount the Lisa tool disk with FEdit on a Macintosh.
2. Locate the area holding the tool name and its file system information.
3. Tell FEdit to let you modify a disk section.
4. Clear (ie set to ZERO) aournd 40 bytes after the tool name.
5. Save the changes to the modified disk sector.
6. On a Lisa, run the Workshop (or Office System) and SCAVENGE the disk [OPTIONAL].

You should now have an unprotected disk copy of a Lisa tool disk.

--- End of Document ---

*This info should
also work for LOS 2.0
disks. -DTC/03Sep1998
(see last page)*



Apple Lisa Personal Computer
1983 - 1985

Deserializing the Lisa Office System 3.0 Disk 1

David T. Craig - May 1993

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This document describes how to deserialize the Lisa computer's Office System disk number 1. This disk is used by Lisa computer owners to install Apple's Office System software, release 3.0 which is also called "Lisa 7/7". Deserializing a disk makes the disk usable on Lisas other than the original Lisa which was first used to install the Office System software.

I used the Macintosh application FEdit 3.0 to deserialize the Office System disk 1.

WARNING

You should make a copy of the Office System disk 1 before attempting this deserialization since this document describes a technique that can easily damage the Office System disk beyond all hope. A good Macintosh application that copies Lisa disks is Apple's "Disk Copy 4.2" application (dated 1991).

The deserialization technique basically consists of changing several bytes on the Office System disk so that the disk appears to the Lisa as a "virgin master". A virgin master disk can be installed on any Lisa. But once installed a virgin master becomes a "serialized master" which can only be used on the Lisa which installed it first. A serialized master has the Lisa's unique serial number written to it (see the last page for Lisa serial number information).

Run FEdit on your Macintosh and perform the following steps:

- 0) Press the mouse button in FEdit's introduction window to remove the window from the screen.
- 1) Insert the Office System 1 disk into a Macintosh disk drive. FEdit displays a dialog stating that the disk is not a Macintosh disk and asks if the disk should be mounted or ejected. Select the MOUNT button.
- 2) Select OPEN VOLUME from the FILE menu. Press the dialog's DRIVE button until the "internal drive" message appears. Select the dialog's OPEN button. You should see a window titled "internal drive" and showing a bunch of stuff in the window.
- 3) Select DISPLAY SECTOR IN HEX from the DISPLAY menu. The "internal drive" window should now show an orderly arrangement of numbers 0 to 9 and letters A to F on the left (I call this the "hex area" since it contains hexadecimal numbers) with characters on the right (called the "character area"). See the attached screen image at the end of this document for a sample of this window. Note that the window's top contains several lines, one of which reads "Sect: 0". This means sector 0.
- 4) Select the window's horizontal scrollbar "page right" arrow until the SECTOR information at the top of the window changes to "1C" (hex for 28).
- 5) Select HEX MODIFY from the EDIT menu. "**** Hex modify active ****" should appear in the menubar.
- 6) Use the mouse to click on byte at location \$CC (hex) in the window. This byte will be located in the row labeled C0 and four bytes from the right of the window's hex area edge. In the sample window figure this byte contains the value 00, the three bytes to its right contain 011517 (hex).
- 7) Change the bytes at locations \$CC to \$CF to be all zeros. Just type the zeros using the Macintosh keyboard.
- 8) **Verify very carefully that you have only changed the four bytes.** If you change any other bytes by mistake quit FEdit and start over.
- 9) Select WRITE SECTOR in the EDIT menu. Answer in the affirmative to FEdit's question about writing the sector back to the disk.
- 10) Quit FEdit using the QUIT command in the FILE menu.

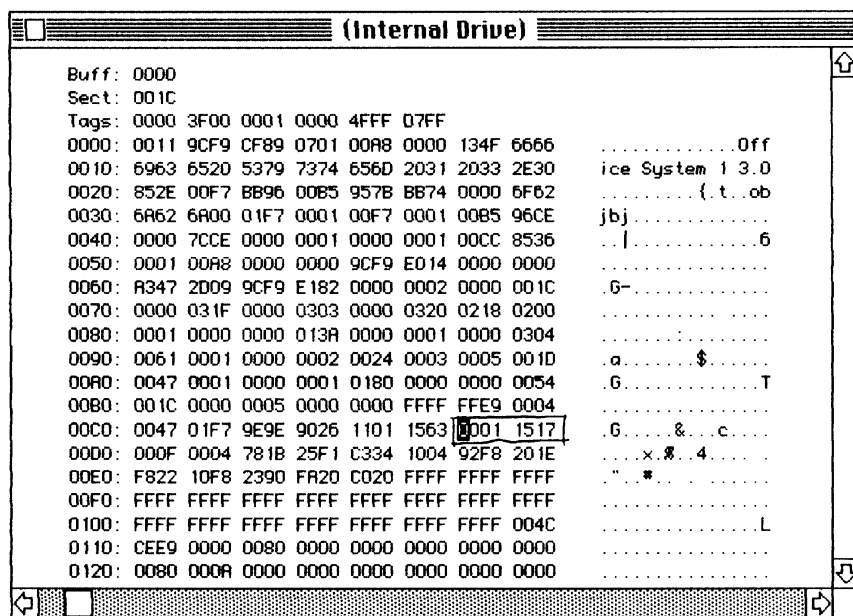
Now you should have an Office System disk that can be used to install the Lisa Office System on your Lisa.

NOTE : The numbers at locations \$CC-\$CF contain the serial number of the Lisa which was used first to install the Office System software. My Lisa has serial number 70,935 which is the same as the hex number \$00011517. In general, the serial number at locations \$CC-\$CF should be below 100,000 (around hex \$00012000) since Apple never produced more than 100,000 Lisa computers.

NOTE : This technique can also be applied to the Lisa Workshop 3.0 disk 1 which also contains the originally installed Lisa's serial number in sector \$1C.

NOTE : From the Lisa Office System you can determine your Lisa's serial number using the "Attributes" command in the File menu after selecting the Lisa's Preferences tool.

NOTE : See my earlier paper titled "Apple Lisa 7/7 Tool Deserialization" (1988) for details about how to deserialize specific Lisa tools (eg LisaCalc).



```

Buff: 0000
Sect: 001C
Tags: 0000 3F00 0001 0000 4FFF 07FF
0000: 0011 9CF9 CF89 0701 00A8 0000 134F 6666 .....Off
0010: 6963 6520 5379 7374 656D 2031 2033 2E30   ice System 1 3.0
0020: 852E 00F7 BB96 00B5 957B BB74 0000 6F62   .....{.t.ob
0030: 6A62 6A00 01F7 0001 00F7 0001 00B5 96CE   jbj.....
0040: 0000 7CCE 0000 0001 0000 0001 00CC 8536   ...|.....6
0050: 0001 00A8 0000 0000 9CF9 E014 0000 0000   .....
0060: A347 2D09 9CF9 E182 0000 0002 0000 001C   .G-.....
0070: 0000 031F 0000 0303 0000 0320 0218 0200   .....
0080: 0001 0000 0000 013A 0000 0001 0000 0304   .....
0090: 0061 0001 0000 0002 0024 0003 0005 001D   .a.....$.
00A0: 0047 0001 0000 0001 0180 0000 0000 0054   .G.....T
00B0: 001C 0000 0005 0000 0000 FFFF FFE9 0004   .....
00C0: 0047 01F7 9E9E 9026 1101 1563 0001 1517   .G.....&...c.
00D0: 000F 0004 781B 25F1 C334 1004 92F8 201E   ....x.%.4...
00E0: F822 10F8 2390 FA20 C020 FFFF FFFF FFFF   ."*.
00F0: FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF   .....
0100: FFFF FFFF FFFF FFFF FFFF FFFF FFFF 004C   .....L
0110: CEE9 0000 0080 0000 0000 0000 0000 0000   .....
0120: 0080 000A 0000 0000 0000 0000 0000 0000   .....

```

THE BOUNDED NUMBERS SHOULD BE ZERO AFTER DESERIALIZATION

Diagram of Fedit window showing Office System Disk 1 sector \$1C BEFORE deserialization

--- End of Document ---

Original author : ?

Modified by : David Craig, 736 Edgewater, Wichita KS 67230

To de-serialize 7/7 Applications:

Clear byte 42 (hex) in each Tool directory entry. (Tools are named [T1]obj, [T2]obj, etc.) I use FEdit. These directory entries follow a condensed directory which just list file names. These are one sector per tool, with the desk-top name later in the bottom half of the sector. As you can see, LisaWrite ~~is~~ should be on sector 45 (2D hex). Need I say, make XLCopy copies of these guys BEFORE doing anything, and de-serialize the COPY ONLY!!

I have tried to include some other fields that I can ID. DO you know more?

Flags - ?1st bit Master	Orig sys Ser #
Time Stamp	
Name len	
"Before" Install.	
	Time Stamps
005A00: 02FB 5431 706F 626A 007B 5F62 5A78 2E74	.(T1)obj.)objx.t
005A10: 6578 7400 0000 0800 0000 0000 0000 0000	ext.....
005A20: 0000 9CF9 BA2F 1401 00A8 0815 0E00 9CF9/.....
005A30: 84BC 9CFD C4D1 9CF9 BCBD 0000 0000 0000	.....
005A40: 0000 0000 0000 0000 0101 0000 0000 0000	.....
005A50: 0000 0000 0000 0000 0C00 5403 5400 0C00	.....T.T...
005A60: 0000 0000 4E56 FEFC 206E 000C 0000 0001	.....NU.. n.....
005A70: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005A80: 0000 00EB 0009 0001 0000 010F 00EB 0000	.....
005A90: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005AA0: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005AB0: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005AC0: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005AD0: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005AE0: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005AF0: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005B00: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005B10: 0000 0000 0000 0000 0000 0000 0000 0000	.....
005B20: 0000 0000 0000 0000 0000 0000 0000 0000	.....

Short Directory Entry Format:

- File name length (1 byte : 0-31)
- File name bytes (31 bytes)
- Unknown (2 bytes)
- Time stamp 1 (24 bytes)
- Flags (?) (1 byte)
- Original system serial # (3 bytes)
- Unknown (4 bytes - 2 fields)
- Time stamp 2 (4)
- Time stamp 3 (4)
- Time stamp 4 (4)
- Unknown (8)
- Serial # of installed system (4)

Buffer:	0000	FEdit screen of "after" LisaWrite install.									
Sector:	002D										
Tags:	0002	0100	FFF5	0000	9AC4	260B					
005A00:	077B	5431	7D6F	626A	007D	6F62	6A78	2E74	. (T1)obj.)objx.t		
005A10:	6578	7400	C000	0000	0000	0000	0000	0000	ext.....		
005A20:	0000	9CF9	EA2F	1401	00A8	0015	0E00	9CF9/.....		
005A30:	84BC	A0FB	7B7E	9CF9	BCBD	0000	0000	0000(.....		
005A40:	0000	0001	253B	0000	0101	0000	0000	0000%;.....		
005A50:	0000	0000	C000	0000	0C00	5403	5400	0C00	.....T.T...		
005A60:	0000	0000	4E56	FEFC	206E	000C	0000	0001	....NU.. n.....		
005A70:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005A80:	0000	00EB	C009	0001	0000	010F	00EB	0000	.....	
005A90:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005AA0:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005AB0:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005AC0:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005AD0:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005AE0:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005AF0:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005B00:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005B10:	0000	0000	C000	0000	0000	0000	0000	0000	.....	
005B20:	0000	0000	C000	0000	0000	0000	0000	0000	.....	

Zero out this field
(Ser # of sys in-
stalled on.)



Lisa Computer Office System 2.0 Disk Deserialization

Written by David T. Craig
71533.606@compuserve.com
07 September 1998

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- 1.0 DESERIALIZING LISA OFFICE SYSTEM 2.0 DISK 1
- 2.0 DESERIALIZING LISA OFFICE SYSTEM 2.0 TOOLS

1.0 DESERIALIZING LISA OFFICE SYSTEM 2.0 DISK 1

The information in the document "Deserializing the Lisa Office System 3.0 Disk 1" should also work for Disk 1 of the Lisa Office System 2.0. I have looked at a LOS 2.0 disk 1 and the serial number information appears to be in the same location as for the LOS 3.0 disk 1.

WARNING

Make Certain you have made a backup copy of any Lisa disks that you plan to change with a block editor such as the FEDIT program. Apple's Macintosh program DISK COPY can make backup copies of Lisa disk images (this program may have trouble with 400K disks with Mac OS 8 since this OS is not user friendly when it comes to 400K disks -- Apple assumes that nobody today has such disks except for ancient Lisa computer owners :-)

Here's a FEDIT window of LOS 2.0 Disk 1 showing the serial number area that should be cleared. Figure 1 shows that this LOS has been used on a Lisa with serial number 00011563.



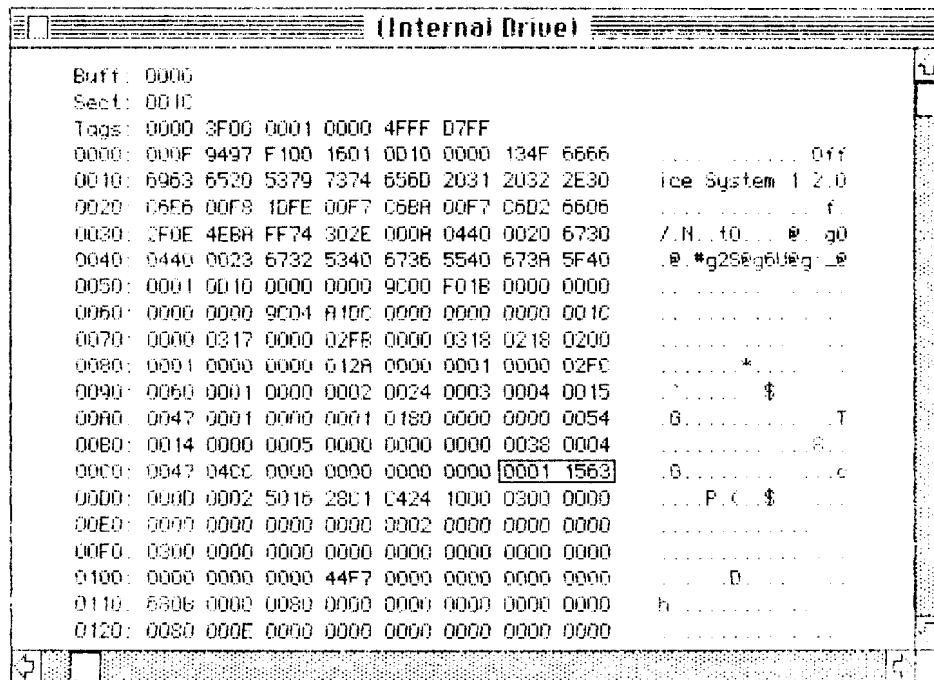


Figure 1
Lisa Office System Disk 1 BEFORE deserialization. The 4 bytes
bounded by the rectangle is this LOS' serial number.

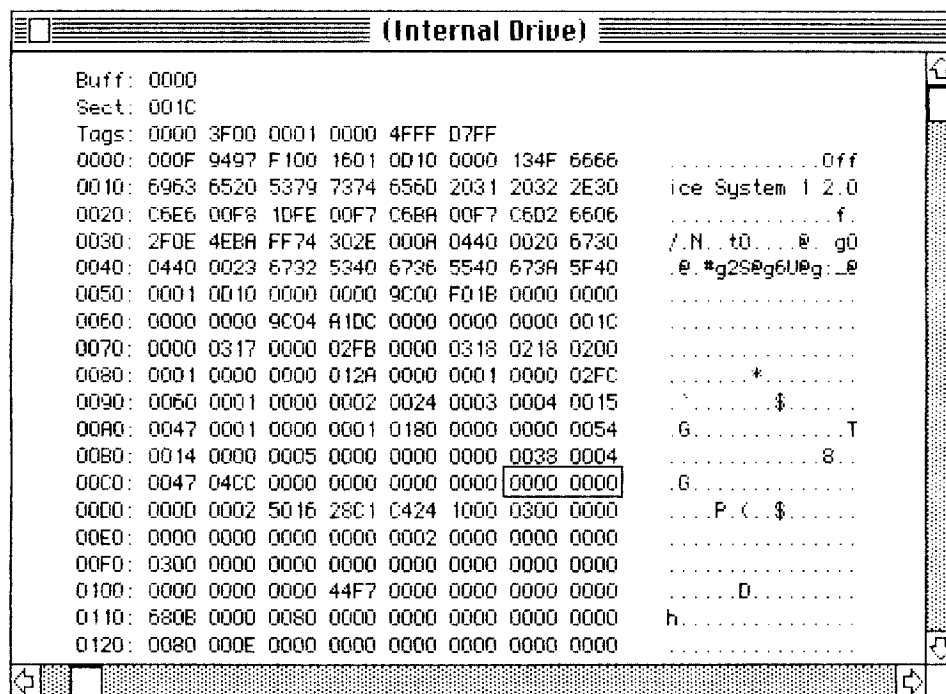


Figure 2

Lisa Office System Disk 1 AFTER deserialization. The 4 bytes bounded by the rectangle contain the LOS serial number and should be all zeros (00000000) when the disk is deserialized.

2.0 DESERIALIZING LISA OFFICE SYSTEM 2.0 TOOLS

I'm not 100% certain if the information in document "Apple Lisa 7/7 Tool Deserialization" applies to LOS 2.0 tools such as LisaWrite. I bet it does but at the moment I don't have my LOS 2.0 tool disks handy (they're in a box that I haven't had the time to open yet). If the appropriate disk block of a LOS 2.0 tool disk looks like the disk block image in the Lisa 7/7 tool document then you should be safe. Remember to make a backup copy of your LOS disks before changing them at the block level. When I look at my LOS 2.0 tool disks I will update this section appropriately.

Special thanks to John Woodall who recently asked me about LOS 2.0 and how to deserialize these disks.
