Maintenance Panel Error Code Summary for Xerox 1108 Interlisp-D

There are two types of maintenance panel codes: progress codes and error codes. Progress codes are placed in the Maintenance Panel at various stages of initialization. Error codes are traps which freeze or blink the error number in the maintenance panel. All errors except the 9000-range errors are fatal.

Summary of MP code ranges
0000-0499 boot-time diagnostics
0500-0699 IOP code
0700-0899 Pilot microcode
0900-0999 Pilot
1000-6999 tech-rep diagnostics
7000-8887 Star
8888-8888 MP lamp test
9000-9999 Lisp

Boot-time errors

0096	Insufficient real memory (<1MByte) for lisp
0149	Usually right after power-on. Disk not ready. Safe and effective to 0-boot from this state.

0200-0299 Booting phase 2 (Initial microcode)

0200	normal booting phase 2
0201	CP error in reading from boot device
0202	null Mesa germ installed in physical volume
0203	broken rigid disk boot chain (possibly intermittent)
0204	Illegal IOP port command
0205	CP Trap (CS parity or double-bit memory error)
0206	null diagnostic microcode in physical volume
0207	null Pilot/Mesa emulator microcode in physical volume
0208	null Mesa germ installed in physical volume
0217	Inconsistent Virtual Memory. Requires re-installation or try another partition.

0500-0502 Domino progress codes

0500	StartDomino	Domino has started
0501	InitReadTOD	Domino starting to read the TOD clock
0502	InitReadTODdone	Reading of TOD clock completed (next MP number from Lisp)

0505-0599 Domino error codes

0505	CSParity	CS parity error detected
0506	BurdockCPDisabled	Burdock attempted to use EtherKludge
0507	CPBurdockDisabled	CP attempted to use EtherKludge
0508	IOPBreak	An IOP break with no IOP kernel
0509	IllegalIOPIntr	Illegal IOP interrupt
0510	BadMapEntry	Incorrect vm Map entry in IOP access.
0511	NoCPDmaComplete	CP Dma operation failed to complete
0512	NoCPDmaChannel	CP Dma channel not specified
0513	ReadCPPortDead	CP not responding to Read CPPort
0514	WriteCPPortDead	CP not responding to Write CPPort
0520	StackOverflow	A task's stack has overflowed
0565	InvToneCmd	Invalid keyboard tone generator comnd
0570	InvProcCmd	Invalid cmd value in Processor CSB
0571	UnImplCmd	Unimplemented cmd in Processor CSB
0572	SetTODError	The Time-Of-Day could not be set
0576	LSEPCtlOVR	LSEP Control CSB overrun
0580	NoValidCommand	Invalid floppy IOCB command
0581	UnImplFloppyCmd	Unimplemented floppy IOCB cmd
0582	InvalidEscapeCmd	Invalid Escape floppy cmd
0583	CommandTrack	Floppy track register is not correct

0584	TrackToBig	Floppy track number is too large
0585	BadDmaChannel	Couldn't program Floppy Dma
0586	NoDmaEndCount1	External Dma End Count not set
0587	NoDmaEndCount2	Internal Dma End Count not set

0900-0999 Pilot codes

0915 Pilot breakpoint

0937 Trying to find out the time and date. Will hang in this state if no time server is responding, and the time has not been set on the machine since power-up.

0981 Trying to discover Ethernet pup host number. Will hang in this state if non-Lisp code tries to perform Pup operations and no Pup ID Server responds.

9000-9299 DLion Interlisp-D microcode error detected

Most of these errors are indicative of some serious problem, probably hardware, and usually fatal (but try ↑D if you can't TeleRaid). The main exception is 9004—see description of code 9304.

9001	CSParErr	Control store parity error
9002	StackErr	hardware stack overflow
9003	IBEmptyErr	instruction fetch unit empty error
9004	VirtAddrErr	Attempt to reference virtual address >22 bits
9005	EmuMemErr	double bit memory error or non-existent memory
9009	CAR/CDR	bad pointer
9013	NegPcError	inconsistent PC at FnCall
9014	applyUfn	arg to apply not integer
9016	notFreeTrap	stack allocation error
9024	Page fault in the page fault handler.	
9051	BadUfnTable	
9120	MiscErr Output	opcode no such register
9121	MiscErr	opcode bad 2nd byte
9122	MiscErr Input	opcode no such register
9126	PcNegError	inconsistent PC at Punt

9300-9399 Lisp system code error (call to \MP.ERROR)

These codes generally indicate an error state in Lisp system code that cannot be handled in the break package. Most are "should never happen" cases that indicate a serious error; but some (in particular, 9305 and 9318) may be much less serious. If possible, use TeleRaid to find out more information (press the Undo key to enter the TeleRaid server (cursor changes into "TeleRaid"), and run the TeleRaid user from another machine). Even if you can't TeleRaid from another machine, several of these codes you can convert into a Lisp break if the world is still mostly consistent and the error occurred under user code (rather than, say, the garbage collector): type ↑B to the TeleRaid server. Summary of TeleRaid server commands:

- ↑B attempt to enter Break. If error is in a special system context, will change cursor to "CANT", indicating refusal to enter break. Warning: even if the system is willing to try to enter a break, it may fail, leaving your system unrestartable. When in doubt, use ↑D.
- ↑D perform Hard Reset—clear stack, flush all non-restartable processes.
- ↑N continue from error. Warning: You should not use this command except for the following errors: 9318 (when you believe it be be continuable, see below); 9915 error when caused by typing the Raid interrupt; 9325; 9326; 9329.
- ↑P display Pup host number (in decimal) in maintenance panel.

9302 Invalid Vmem: attempt to boot an image that is not a valid Lisp sysout, or which is inconsistent from having some, but not all, of its dirty pages written. Can happen if you boot instead of calling LOGOUT. Usually caught sooner as code 217.

9303 "No place for IOCB page at startup"—this usually only happens if your machine has insufficient memory.

9304 Obsolete [Map out of bounds].

9305 Invalid address: attempt to use a pointer that does not refer to an existing (allocated) part of virtual memory. Usually means garbage was fetched from somewhere that should have contained a pointer; a

common source is code with type checking turned off attempting to fetch a datatype field from an object that is not a datatype, such as NIL or a small integer. This error can often be converted to a break with the ↑B TeleRaid command if the Lisp image is otherwise in a good state.

9306 Obsolete [Invalid virtual page].

9307 "Unavailable page on real page chain"—inconsistent state in page fault handler.

9308 "Loop in \SELECTREALPAGE"—inconsistent state in page fault handler.

9309 Attempt to allocate already existing page (from call to \NEWPAGE).

9310 A 9309 error recursively inside the new page allocator.

9311 "Locked page occupies a file page needed to lock another"—bad state in virtual memory system.

9312 Arg to CLOCK0 not an integer box.

9313 Fault on resident page: processor took a page fault for a page that appears to be resident.

9314 PageFault on stack: shouldn't happen, as stack is resident.

9316 Obsolete [Attempt to extend vmem beyond 8MB].

9317 "Attempt to write a locked page when not under \FLUSHVM"—bad state in virtual memory system.

9318 Error in uninterruptable system code: an error that ordinarily would enter a break (e.g., a type test failure), but in a piece of code that should not be user-interruptable. This is generally a sign that some datum used by system code has been smashed, but this is not always fatal. Should you not be in a position to diagnose the error with TeleRaid, you can type ↑N after entering the TeleRaid server; Lisp will proceed from the MP halt and attempt to enter a break anyway, from which (if it succeeds) you might be able to glean more information about the problem. Warning: continuing with ↑N can be fatal if the error really was in a place where a break would not succeed.

9319 Stack full: hard stack overflow. A soft stack overflow (Lisp break "STACK FULL") occurs when the stack is mostly used up; if you proceed beyond that point without resetting you can completely fill the stack and get this MP code. Press STOP to perform a HARDRESET to clear the stack, or run TeleRaid to find out who was guilty of overflowing the stack.

9320 Storage is completely full. A continuable Lisp break "STORAGE FULL" occurs when the allocation space is nearly full.

9321 Unknown UFN: attempt to execute an unimplemented opcode. This usually means that the processor is trying to execute random memory, or took a wild jump somewhere. Often a microcode bug.

9322 Atoms full: the limit on number of litatoms (2↑16) has been reached.

9323 Obsolete [Pnames full].

9324 Stack frame use count overflow: the program has attempted to create more than 200 references to the same stack frame.

9325 Storage nearly full: this is a warning that comes later than the "STORAGE FULL" break but before you completely run out (and get a 9320). You can continue from this error with ↑N from TeleRaid.

9326 Bad MDS free list: the free list of recycled MDS pages got trashed. You can continue from this error with ↑N from TeleRaid.

9327 Bad array block. The array allocator found a bad array block in its free list. Generally means some unsafe code trashed one or more locations in array space.

9328 A variation on 9327.

9329 The garbage collector attempted to reclaim an array block, but the block's header was trashed. You can continue from this error with ↑N from TeleRaid, but it is symptomatic of array trashing, and you should save your state as soon as possible and restart in a good sysout.

9330 Reference counting problem: an object marked as having a overflowed reference count (greater than 62) is not found in the overflow table.

9331 Reference counting problem: an object whose reference count just now overflowed was already in the overflow table.

9332 Reference counting problem: an attempt was made to decrement the reference count of an object whose reference count was already zero.

9333 One of a number of consistency checks in the process manager failed.

9334 The process manager needed to build a function frame for some operation, but failed. This normally should never happen, but could conceivably if you are about to completely fill up the stack (and thus would otherwise get a 9319 error).

9335 Occurs at boot time when the sysout you are trying to run uses the full 32MB virtual address space, but you are trying to run it on a machine that can only address 8MB. The function `32MBADDRESSABLE` reports whether a machine has the hardware required to address 32MB.

9336 Somehow control was transferred to the T frame at the top of the world (effectively a `(RETTO T)`, except that `RETTO` turns that case into a `RESET`), thereby evading the process world. This leaves the stack in an unresumable state.

9337 The process that is being scheduled to run next has had its stack released—inconsistent state in the process scheduler.

9393 (Koto Only) See 9341

—Post-Koto Error Codes—

9338-40 Error in locked page logic—not currently used.

9341 Hard disk error in the swapper—the swapper has tried several times to access a page of the virtual memory backing file and failed; page fault cannot proceed.

9342 Disk run table for the virtual memory backing file is malformed.

9400-9899 unassigned

9900-9924 Attempt to call Raid or 1132 Subr.

The only code normally seen in this range is 9915:

9915 Call to `RAID`. Note that if you have the Raid interrupt enabled (typically on ↑C), you will get a 9915 error by typing that interrupt character, which you can continue by typing ↑N from TeleRaid. Any other occurrence of 9915 generally signifies an error in system code that has not been explicitly assigned a code in the 9300 range.