	Appendix: List o	of events which Linux Kernel State	e Tracer records						Copyright	C) Hitachi, Ltd., 2002. All rights	reserved.
Event type [hex]	Categoly	Mnemonic	Descripti	on of events	where to hook	filename	data recorded as "log_arg1"	data recorded as "log_arg2"	data recorded as "log_arg3"	data recorded as "log_arg4"	remarks
01		PROCESS_CONTEXTSWITCH				./kernel/sched.c	address of the task struct	address of the task struct	prev. process state(value after	prev. process count(value before	from log arg3, log arg4, can determain
	Process				schedule()	./ Kernel/Scheu.c	of "prev"	of "next"	switch)	switch)	why processes were switched
02	management	PROCESS_WAKEUP	WAKEUP		try_to_wake_up()		value of "p" in the function	synchronous			
03	inclinagonioni	PROCESS_SIGSEND	sending signal		send_sig_info()	./kernel/signal.c	value of "sig" in the function	value of "t" in the function	pointer to info (info)		
04		PROCESS_LTHREADGEN INT HARDWARE ENTRY	creating a kernel thread		kernel_thread() do_IRQ()	./arch/i386/kernel/process.c	value of "fn" in the function value of "iro" in the function	pointer to argument of kernel thread	flag		
10		INT TASKLETHI ENTRY	hardware	entrance	tasklet_hi_action()	./arch/i386/kernel/irq.c ./kernel/softirq.c	value of "t->func" in the function	interrupt status (status)			
14	Interrupts	INT TASKLET ENTRY	software	entrance	tasklet_action()	./kernel/solurq.c	value of "t->func" in the function				
16		INT BH ENTRY	Solumere	entrance	bh action()		value of "nr" in the function	address of action (bh base)			
10			de	charallee	bil_dotoil()			delices of delicit (bit_base)			
20	Exceptions	EXCEPTION_ENTRY	initia overflow bounds invalid op double fault coprocessor segment overrun invalid op double fault coprocessor segment on op segment on op resent sign of the opposite oppooessor_error debug general protection page fault machine check genos interrupt bog	entrance	error_code device not available	./arch/i386/kernel/entry.S	handler address (edi)	error code (es)	exception occurred address (eip)		
	_		device_not_available	device_not_available	_	the number of this exception			_		
			device not available	1	device not available		handler address	1	-	-	1
21			nmi	exit	nmi		the number of this exception				
			exceptions other than above two	1	error_code	1	handler address (edi)			1	1
30		SYSCALL ENTRY		*	-						recording arguments of system calls is
	System calls	-	entrance		beginning of system_call()	./arch/i386/kernel/entry.S	the number of this system call				optional feature
31		SYSCALL EXIT	exit		ending of system_call()	./arch/i386/kernel/entry.S	the number of this system call	ermo			
40		FS_DEVRW	device IO	creation of request for device	II_rw_block()	./drivers/block/ll_rw_blk.c	buffer (bh)	READ/WRITE (rw)	num of blocks to transfer (nr)		
41 42	Filesystems	FS_DEVEND FS_BUFBUSY	-	completion of request for device buffer busy wait	end_buffer_io_sync()	./fs/buffer.c	buffer (bh) buffer (bh)	uptodate			
42 50		MEM SWAPOUT	swap out		wait_on_buffer()	./fs/buffer.c ./mm/vmscan.c	pointer to page swapped out (page)				
51		MEM SWAPOOT	swap out	exit exit	try_to_swap_out() do_swap_page()	./mm/memory.c	pointer to page swapped out (page) pointer to page swapped in (page)				
52		MEM DO NOPAGE	mem_do_nopage	exit	do no page()	./mm/memory.c	pointer to page allocated (new_page)				
53		MEM DO WPPAGE	mem do wppage		do_wp_page()	./mm/memory.c	pointer to page (new page)				
54		MEM WAIT PAGE	mem wait page	entrance	wait on page()	./mm/filemap.c	pointer to page (page)				
55		MEM_GET_FREEPAGE	mem_get_freepage	exit	get_free_page()	./mm/page_alloc.c	pointer to page (paddr)	type of page (gfp_mask)	the number of page (order)	call address	
56	Memory	MEM_GET_ZEROPAGE	mem_get_zeropage	exit	get_zeroed_page()	./mm/page_alloc.c	pointer to page (address)	type of page (gfp_mask)	call address		
57	Management	MEM_FREEPAGE	mem_freepage	entrance	free_pages()	./mm/page_alloc.c	pointer to (addr)	the number of page (order)	call address		
58 59		MEM VMALLOC MEM VFREE	mem_vmalloc mem_vfree	exit entrance	vmalloc() vfree()	./mm/vmalloc.h ./mm/vmalloc.c	address (addr) address (addr)	size	call address		
59 5a		MEM_CACHE_CREATE	mem_cache_create	exit	kmem_cache_create()	./mm/slab.c	name	size	cachep		
5b		MEM CACHE ALLOC	mem cache alloc	exit	kmem cache alloc()	./mm/slab.c	cachep	flags	obip	call address	
5c		MEM MALLOC	mem malloc	exit	kmalloc()	./mm/slab.c	cachep	flags		call address	
5d	1	MEM CACHE FREE	mem_cache_free	entrance	kmem_cache_free()	./mm/slab.c	cachep	objp	objp call address		
5e		MEM FREE	mem_free	entrance	kfree()	./mm/slab.c	objp	call address			
60		NET_PKTSEND	sending packets	entrance	dev_queue_xmit()	./net/core/dev.c	skb				
61		NET_PKTSENDI	interrupt on sending packets	entrance	net_tx_action()	./net/core/dev.c	n				
62	Networking	NET_PKTRECV NET_PKTRECVI	receiving packets interrupt on receiving packets	entrance	netif_rx() net rx action()	./net/core/dev.c	skb				
64		NET SOCKETIF	socket()	entrance	sys_socketcall	/net/socket.c	call	args			exit is recorded as exit of system call.
70	SysV IPC	SYSV IPC	IPC functions	entrance	sys_ipc()	./arch/i386/kernel/sys_i386.c	call/first	second/third	*ptr		
80		SYSV_IPC LK_SPINLOCK		lock	spin_lock()		address where it was called	lock			inline
81	1	LK_SPINTRYLOCK	spin lock	try lock (exit)	spin_trylock()		address where it was called	lock	return value		inline
82 83	4	LK_SPINUNLOCK		unlock	spin_unlock()		address where it was called	lock			inline
83	Locks	LK_WRLOCK	4	write lock write try lock (exit)	write_lock() write trylock()	./include/asm-i386/spinlock.h	address where it was called address where it was called	rwlock	return value		inline
84 85	4	LK WRIHYLOCK	read/write lock	write try lock (exit) write unlock	write_trylock() write_unlock()		address where it was called address where it was called	rwlock	return value		define
86	1	LK RDLOCK		read lock	read lock()	1	address where it was called	rwlock		1	inline
87	1	LK RDUNLOCK	1	read unlock	read_unlock()	1	address where it was called	rwlock			define
		TIMER RUN	run timer list		run_timer_list()		function address(fn)	argument for the function(data)			
a0					add timer()	a 100	pointer to timer list (timer)	unexpired term (timer->expires)	function address (timer->function)	argument for the function (timer-	
a0 a1	-	TIMER_ADD	add to timer list				pointer to timer list (timer)		Itunction address (timer->function)	argument for the function (timer-	1
a0 a1 a2	Timer	TIMER ADD TIMER MOD	modify timer list		mod_timer()	./kernel/timer.c		unexpired term (timer->expires)	function address (timer - f +)	argument for the function /*	
a0 a1 a2 a3	Timer	TIMER ADD TIMER MOD TIMER DEL	modify timer list delete from timer list	2000/16	del_timer()	./kernel/timer.c	pointer to timer list (timer)	unexpired term (timer->expires)	function address (timer->function)	argument for the function (timer-	
a0 a1 a2 a3 a4	Timer	TIMER_ADD TIMER MOD TIMER DEL TIMER_DEL_SYNC	modify timer list	ronous	del_timer() del timer sync()	./kernel/timer.c			function address (timer->function) function address (timer->function)	argument for the function (timer- argument for the function (timer-	
a0 a1 a2 a3 a4 90		TIMER_ADD TIMER_MOD TIMER_DEL TIMER_DEL_SYNC O_PORTIN	modify timer list delete from timer list	port output	del_timer() del_timer_sync() OUT() or betweenOUT1() and OUT2()	./kernel/timer.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width	unexpired term (timer->expires) unexpired term (timer->expires) value to output	function address (timer->function) function address (timer->function) address where it was called	argument for the function (timer-	inline
a0 a1 a2 a3 a4 90 91	Timer	TIMER_ADD TIMER_MOD TIMER_DEL TIMER_DEL_SYNC O_PORTIN O_PORTOUT	modify timer list delete from timer list delete from timer list with synchr io commands		del_timer() del_timer_sync() OUT() or betweenOUT1() and	./include/asm-i386/io.h	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width	unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input	function address (timer->function) function address (timer->function)	argument for the function (timer-	inline Inline
a0 a1 a2 a3 a4 90 91 92		TIMER ADD TIMER MOD TIMER DEL TIMER DEL SYNC O_PORTIN O_PORTOUT O_PANIC	modify timer list delete from timer list delete from timer list with synchu io commands panic	port output	del_timer() del_timer_sync() OUT() or betweenOUT1() and OUT2()	./include/asm·i386/io.h ./kernel/panic.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width address of argument	unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input address where it was called	function address (timer->function) function address (timer->function) address where it was called	argument for the function (timer-	
a0 a1 a2 a3 a4 90 91 92 93		TIMER_ADD TIMER_MOD TIMER_DEL TIMER_DEL_SYNC O_PORTIN O_PORTOUT O_PANIC O_PRINTK	modify timer list delete from timer list d delete from timer list with synchu io commands panic printk	port output port input	del_timer() del_timer_sync() OUT() or betweenOUT1() and OUT2() tail ofIN()	./include/asm-i386/io.h ./kernel/panic.c ./kernel/pinitk.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width address of argument address of argument	unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input	function address (timer->function) function address (timer->function) address where it was called	argument for the function (timer-	
a0 a1 a2 a3 a4 90 91 92 93 f00		TIMER ADD TIMER MOD TIMER DEL TIMER DEL_SYNC O_PORTIN O_PORTOUT O_PANIC O_PRINTK LKST INIT	modify timer list delete from timer list with synch io commands panic printk Progress of LKST initialization p	port output port input	del_timer() del_timer_sync() _OUT() or betweenOUT1() and _OUT2() tail of TJN()	./include/asm-i386/io.h /kernel/panic.c /kernel/printk.c //driver/ikst.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width address of argument address of argument Initialization status	unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input address where it was called address where it was called	function address (timer->function) function address (timer->function) address where it was called address where it was called	argument for the function (timer- argument for the function (timer-	inline
a0 a1 a2 a3 a4 90 91 92 93 600 f08		TIMER ADD TIMER MOO TIMER DEL TIMER DEL SYNC O_PORTOUT O_PORTOUT O_PORTOUT O_PRINIC O_PRINIC UKST INIT LKST INSEL XCHG	modify timer list delete from timer list with synchr io commands panic printk Progress of LKST initialization p LKST switches the masksets	port output port input	del imer() (del imers sync() OUT() or betweenOUT1() andOUT2() (del imers sync) Out2() (del imers sync) (ail ofIN() (del imers sync) (kst_init_stage[0-1]() (kst_evhandlerprim_maskset_xchg_inlin)	./include/asm-i386/io.h ./kernel/panic.c ./kernel/printk.c ./driver/ikst/kst.c ./driver/ikst/kst.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width address of argument address of argument initialization status old maskeet ID	Unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input value to input address where it was called address where it was new maskset ID	function address (imer-stunction) function address (imer-stunction) address where it was called address where it was called pointer to old maskset	argument for the function (timer- argument for the function (timer- limer- poniter to new maskset	Inline Recorded 2 times; before/after
a0 a1 a2 a3 a4 90 91 92 93 f00 f08 f10	Others	TIMER ADD TIMER MOD TIMER DEL TIMER DEL_SYNC O_PORTIN O_PORTOUT O_PANIC O_PRINTK LKST INIT	modify timer list delete from timer list with synch io commands panic printk Progress of LKST initialization p	port output port input	del_timer() del_timer_sync() _OUT() or betweenOUT1() and _OUT2() tail of TJN()	./include/asm-i386/io.h ./kernel/panic.c ./kernel/printk.c ./driver/ikst/kst.c ./driver/ikst/kst.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width address of argument address of argument Initialization status	unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input address where it was called address where it was called	function address (timer->function) function address (timer->function) address where it was called address where it was called	argument for the function (timer- argument for the function (timer-	inline Recorded 2 times; before/after Recorded 2 times; before/after
a0 a1 a2 a3 a4 90 91 92 93 f00 f08	Others	TIMER ADD TIMER ADD TIMER DEL TIMER DEL SYNC O PORTOUT O PORTOUT O PRINK LKST MSET XCHG LKST MSET XCHG LKST MSET XCHG	modify timer list delete from timer list with synche to commands panic printk Progress of LKST initialization p LKST switches the maskeets LKST shifts the buffers	port output port input rocess	del imer() del imer() OUT() or between _OUT1() and OUT2() tail of _IN() kst init stage[0-1]() (kst evhandlerprim maskset xchg inlin [kst evhandlerprim buffer_shift inline()	/include/asm-i386/io.h /kernel/panic.c /kernel/printk.c /driver/listRist.c /driver/listRist.c /driver/listRist.c	pointer to timer ist (timer) pointer to timer ist (timer) port address/byte width address/byte width address/byte width address/byte width address/byte width address/byte width address/byte address/by	Unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input value to input address where it was called address where it was new maskset ID	function address (imer-stunction) function address (imer-stunction) address where it was called address where it was called pointer to old maskset	argument for the function (timer- argument for the function (timer- limer- poniter to new maskset	inline Recorded 2 times; before/after Recorded 2 times; before/after Used for automatically shifting buffer.
a0 a1 a2 a3 a4 90 91 92 93 f00 f08 f10	Others	TIMER ADD TIMER MOO TIMER DEL TIMER DEL SYNC O_PORTOUT O_PORTOUT O_PORTOUT O_PRINIC O_PRINIC UKST INIT LKST INSEL XCHG	modify timer list delete from timer list with synchr io commands panic printk Progress of LKST initialization p LKST switches the masksets	port output port input rocess	del_imer() del_imer() OUT() or between _OUT() and OUT2() tail of _IN() kst_entanderprim_maskset_xchg_inlin kst_entanderprim_buffe_shift_inline() kst_entanderprim_buffe_shift_inline()	Jinclude/asm-i386/io.h Jkernel/panic.c Jkernel/printk.c J/driver/fkst/Rst.c J/driver/fkst/Rst.c J/driver/fkst/Rst.c	pointer to timer list (timer) pointer to timer list (timer) port address/byte width port address/byte width address of argument address of argument initialization status old maskeet ID	Unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input value to input address where it was called address where it was new maskset ID	function address (timer-sfunction) function address (timer-sfunction) address where it was called address where it was called pointer to old maskset pointer to old buffer	argument for the function (timer- argument for the function (timer- limer- poniter to new maskset	inline Recorded 2 times; before/after Recorded 2 times; before/after Used for automatically shifting buffer. If masked, LKST stops it.
a0 a1 a2 a3 a4 90 91 92 93 100 108 110 111 119 11a	Others	TIMER ADD TIMER ADD TIMER DEL SYNC O_PORTIN O_PORTIN O_PANIC O_PANIC O_PANIC O_PANIC C_PANIC C_PANIC LKST MSET XCHG LKST MSET XCHG LKST SWC VID LKST SYNC UID LKST SYNC GID	modify time ist delete from timer ist delete from timer ist delete from timer ist source ist panic prink progress of LKST initialization p UKST switches the maskets LKST switches the maskets LKST switches the buffers general near control in the currer Synchronization with QID Synchronization with QID	port output port input rocess	del imer() del imer() OUT() or between _OUT1() and OUT2() tail of _IN() kst init stage[0-1]() (kst evhandlerprim maskset xchg inlin [kst evhandlerprim buffer_shift inline()	./include/asm-i386/io.h ./kernel/panic.c ./kernel/printk.c ./driver/ikst/kst.c ./driver/ikst/kst.c ./driver/ikst/kst.c ./inLude/iinzv/kst.private.h ./kernel/imer.c, sys.c ./kernel/imer.c, sys.c	pointer to timer ist (timer) pointer to timer ist (timer) port address/byte width address of argument address of argument initialization status old maskset ID old buffer ID opinter to the buffer	unexpired term (timer-sexpires) unexpired term (timer-sexpires) value to output value to input address where it was called address where it was called new maskset ID new buffer ID	function address (imer-stunction) function address (imer-stunction) address where it was called address where it was called pointer to old maskset	argument for the function (timer- argument for the function (timer- limer- poniter to new maskset	Inline Recorded 2 times; before/after Recorded 2 times; before/after Used for automatically shifting buffer. Used for automatically shifting buffer. If masked, LKST stops it. for compensation of dropped log data for compensation of dropped log data
a0 a1 a2 a3 a4 90 91 92 93 100 108 110 111 119	Others	TIMER ADD TIMER ADD TIMER DEL_SYNC 0_PORTIN 0_PORTIN 0_PRIVE VKST MSET XCHG UKST MSET XCHG UKST BUFF_OVFLOW UKST BUFF_OVFLOW UKST SUFF_OVFLOW	modify time ist delete from timer ist delete from timer ist with synch is commands panic prink Progress of LKST initialization p UKST switches the maskets UKST shifts the buffers overrun occurred in the current Synchronization with UID	port output port input rocess	del_timer() del_timer(), or botween_OUT1() and OUT2() tall ofN() ket_init_stage(0:11() ket_entage(0:11() ket_entage(0:11() ket_entage(0:11() ket_entage(0:11()) ke	Jinclude/asm-i386/io.h Jkernel/panic.c Jkernel/printk.c J/driver/fkst/Rst.c J/driver/fkst/Rst.c J/driver/fkst/Rst.c	pointer to timer ist (timer) pointer to timer ist (timer) port address/byte width address of argument address of argument maintazate status old buffer ID pointer to the buffer UID	Unexpired term (timer->expires) unexpired term (timer->expires) value to output value to input value to input address where it was called address where it was new maskset ID	function address (imer-sfunction) function address (imer-sfunction) address where it was called address where it was called pointer to old maskset pointer to old buffer pointer to the process table	argument for the function (timer- argument for the function (timer- limer- poniter to new maskset	inline Recorded 2 times; before/after Recorded 2 times; before/after Used for automically shifting buffer. If masked, LKST stops it. for compensation of dropped log data