KernelShark 1.0

What's new, and what's coming?

Steven Rostedt 9/26/2018



© 2016 VMware Inc. All rights reserved.

Correction:

- KernelShark 1.0 was suppose to be released in August
- Still not out yet
- Why?
 - Prototype was written first to get a good idea about the new design
 - The patches were broken up and reviewed in sets
 - Lots of updates were done (we want to get it right!)
 - Rewrite of designs
 - Breaking it up showed better ways to get things done
 - Went on tangents
 - Oh, we could do this too...
 - We are now at: "Just add a TODO comment, and we'll comeback later"



vmware





• It is a graphical interface to trace-cmd





- It is a graphical interface to trace-cmd
- What is trace-cmd?





- It is a graphical interface to trace-cmd
- What is trace-cmd?
 - A command line interface to ftrace





- It is a graphical interface to trace-cmd
- What is trace-cmd?
 - A command line interface to ftrace
- What is ftrace?





- It is a graphical interface to trace-cmd
- What is trace-cmd?
 - A command line interface to ftrace
- What is ftrace?
 - The official tracing infrastructure of the Linux kernel
 - See any of my other tracing talks





Why update KernelShark?

- Current Version 0.2
 - Written in GTK+ 2.0
 - Needs an update to GTK+ 3.0



- New version written in Qt (Pronounced "cute", I am told)
- Was written as an "idle task"
 - Worked on it between projects
 - A couple of days at a time (may be months between)
- Now have a full time employee (thanks to VMware)
- Can make it much more flexible



Why update KernelShark?

- Current Version 0.2
 - Written in GTK+ 2.0
 - Needs an update to GTK+ 3.0



- Did not want to rewrite again when GTK+ 4.0 comes out
- New version written in Qt (Pronounced "cute", I am told)
- Was written as an "idle task"
 - Worked on it between projects
 - A couple of days at a time (may be months between)
- Now have a full time employee (thanks to VMware)
- Can make it much more flexible



Why was KernelShark created?

- trace-cmd can collect a large amount of data
- Hard to visualize from looking at text
- Real example:



- cyclictest (jitter detecting program) had 250us latency on RT kernel
 - On a totally idle machine (only running cyclictest!)
- hwlat reported the latency
 - But the HW vendor did not believe it
- Used trace-cmd to find demonstrate the issue
- Showed the HW latency with trace-cmd



vmware



(Recap for those not at Embedded Recipes)

- A tool to measure latency
- Runs a simple loop (in a high priority task)
 - Sleep for a specified time
 - Get timestamp when wakes up
 - Compare the difference
- Favorite application of the Linux RT folks













See the hardware latency?

ksoftirqd/33-216	[033]	55597.719935:	timer_cancel:	timer=0xffff88	8403f0ce520
ksoftirqd/33-216	[033]	55597.719935:	<pre>timer_expire_entry:</pre>	timer=0xffff88	8403f0ce520 function=delayed_work
ksoftirqd/33-216	[033]	55597.719935:	funcgraph_entry:	0.069 us	<pre>raw_spin_lock_irqsave();</pre>
ksoftirqd/33-216	[033]	55597.719936:	funcgraph_entry:	0.047 us	<pre>raw_spin_lock();</pre>
ksoftirqd/33-216	[033]	55597.719936:	<pre>sched_stat_sleep:</pre>	comm=kworker/3	33:1 pid=1222 delay=132870067
ksoftirqd/33-216	[033]	55597.719937:	sched_wakeup:	kworker/33:1:	1222 [120] success=1 CPU:033
ksoftirqd/33-216	[033]	55597.719937:	timer_expire_exit:	timer=0xffff88	8403f0ce520
ksoftirqd/33-216	[033]	55597.719942:	timer_cancel:	timer=0xffff88	8403f0ce620
ksoftirqd/33-216	[033]	55597.719942:	<pre>timer_expire_entry:</pre>	timer=0xffff88	8403f0ce620 function=delayed_work
ksoftirqd/33-216	[033]	55597.719943:	funcgraph_entry:	0.045 us	<pre> _raw_spin_lock_irqsave();</pre>
ksoftirqd/33-216	[033]	55597.719943:	<pre>timer_expire_exit:</pre>	timer=0xffff88	8403f0ce620
cyclictest-6110	[007]	55597.719955:	funcgraph_entry:	0.194 us	<pre> _raw_spin_lock();</pre>
cyclictest-6110	[007]	55597.719956:	funcgraph_entry:	0.175 us	<pre> _raw_spin_lock_irqsave();</pre>
cyclictest-6110	[007]	55597.719957:	funcgraph_entry:	0.175 us	<pre> _raw_spin_lock_irqsave();</pre>
cyclictest-6113	[010]	55597.719957:	funcgraph_entry:	2.436 us	<pre> _raw_spin_lock();</pre>
cyclictest-6110	[007]	55597.719957:	funcgraph_entry:	0.203 us	<pre> _raw_spin_lock();</pre>
cyclictest-6110	[007]	55597.719958:	sched_wakeup:	cyclictest:61	13 [4] success=1 CPU:010
cyclictest-6110	[007]	55597.719959:	funcgraph_entry:	0.048 us	<pre> _raw_spin_lock_irqsave();</pre>
cyclictest-6113	[010]	55597.719960:	funcgraph_entry:	0.170 us	<pre> _raw_spin_lock_irq();</pre>
cyclictest-6113	[010]	55597.719961:	funcgraph_entry:	0.045 us	_raw_spin_lock_irqsave();
cyclictest-6113	[010]	55597.719962:	funcgraph_entry:	0.043 us	_raw_spin_lock_irq();
cyclictest-6110	[007]	55597.719963:	print:	ffffffff810e5	776 hit latency threshold (247 > 200)



How about now?

📄 kernel	shark(trace-no-load.dat)
File Filt	er Plots Capture Help 55597 709093 Ourson: 0.0 Markerte 55597 719523 Markerte 55597 719773 & B.Delta: 0.000249
CPU 2	
CPU 3	
CPU 4	
CPU 5	
CPU 6	
CPU 7	
CPU 8	
CPU 9	
CPU 10	
CPU 11	
CPU 12	
CPU 13	
CPU 14	
CPU 15	
CPU 16	
CPU 17	
CPU 18	
CPU 19	
Page 1	Search: Column: # 0 contains 0 graph follows

Better?



I do, here



File Filter Plots Capture Help

Pointer: 55597.717310 Cursor: 0.0 Marker 4 55597.719523 Marker 55597.719773 A,B Delta: 0.000249



--0×



File Filter Plots Capture Help

Pointer: 55597.717310 Cursor: 0.0 MarkerA 55597.719523 MarkerB 55597.719773 A,B Delta: 0.000249



--0×

vmware[®]



0-

Page 1 🗘 Search: Column: |# 🗘 contains 🗘

ns 🗘 🗌 graph follows



File Filter Plots Capture Help

Pointer: 55597.717310 Cursor: 0.0 Marker 55597.719523 Marker 55597.719773 A,B Delta: 0.000249



--0×





SCHED_DEADLINE

File Filter Plots Capture Help									
Pointer: 304	1.318311	Cursor: 0.0 Marke	r <mark>A:</mark> 0.0 Marker <mark>B:</mark>	0.0 A,B Delta: 0.0					
CPU 2									
CPU 3									
deadline_te	st-11896								
deadline_te	st-11897								
deadline_te	st-11898								
deadline_te	st-11899								
deadline_te	st-11900								
deadline_te	st-11901								
		_							
Da no 1 *	Cearch	Column #							
# CPI	J Time Sta	Column: #	Contains	Event					
# CFU	5057.92		St 11030	princ	Inno				
42 3	3037.92	2730 deadline_te	st 11896	print	tracing_mark_write: end at 3037933490 diff: 152 run loops: 146 us				
43 3	3037.92	2737 deadline_te	st 11896 d	sched_waking	comm=kworker/u8:12 pid=11439 prio=120 target_cpu=000				
44 3	3037.92	2739 deadline_te	st 11896 d	sched_wake_idle_without_ip	pi cpu=0				
45 3	3037.92	2740 deadline_te	st 11896 d	sched_wakeup	comm=kworker/u8:12 pid=11439 prio=120 target_cpu=000				
46 3	3037.92	2748 deadline_te	st 11896	print	tracing_mark_write: start at 3037933507 off=2 (period=3037933505 next=3037935005)				
47 3	3037.92	2978 deadline_te	st 11896	print	tracing_mark_write: end at 3037933738 diff: 231 run loops: 226 us				
48 3	3037.92	2984 deadline_te	st 11896 d	sched_waking	comm=kworker/u8:12 pid=11439 prio=120 target_cpu=000				
49 3	3037.92	2985 deadline_te	st 11896 d	sched_wake_idle_without_ip	pi cpu=0				
50 3	3037.92	2985 deadline_te	st 11896 d	sched_wakeup	comm=kworker/u8:12 pid=11439 prio=120 target_cpu=000				
51 3	3037.92	2992 deadline_te	st 11896	print	tracing_mark_write: start at 3037933752 off=2 (period=3037933750 next=3037935750)				
					tracing mark visita, and at 202702/062 diff; 311 cun loope, 206 up				

KernelShark 0.2 (GTK version) vs 1.0 (Qt version)

- 1.0 is MUCH faster!
 - New algorithm to fill in pixels
 - With 1,000,000,000(n) events in 1000(m) pixels width window
 - 0.2 Would do linear search to find next event to draw the next line
 - 1,000,000 queries per vertical line drawn O((n/m))
 - 1.0 does a binary search for the event in the next pixel
 - 30 queries per vertical line draw O(log₂n)
 - Switches to linear search when $log_2n \ge n/m$
 - ~10,000 events per 1000 pixels



vmware

KernelShark 1.0 (Qt version)

- Written by Yordan Karadzhov
 - Although I'm still the maintainer (reviewer of the code)
- Rewritten from scratch
 - I let him play
 - The requirement was to have all features of KernelShark 0.2
 - Then I revisited to help him
 - Break it up into a patch series
 - Why it's late :-p
 - New Look!
 - New design!
 - Becoming a library (more on that later)
- Much faster than KernelShark 0.2 (must keep stressing this!)



vmware

KernelShark 0.2

Fi	File Filter Plots Capture Help									
Po	inter:	320.0	13359 Cursor:	0.0 Marke	er <mark>A:</mark> 0.0	Marker <mark>B:</mark>	0.0 A,B Delta: 0.0			
								Time Line		
	ŗ	312 5	78996					321 588270 330 607327		
		512.5	,0550					55000.57		
C	PU 0	- "								
								write_msr		
C	PU 1									
								320.012687 cyclictest-2246		
C	PU 2									
C	PU 3									
Pa	ie 1		Search: Colum	nn: #	-	contains	-	arabh follows		
#		CPU	Time Stamp	Task	PID	Latency	Event	Info		
0		1	312.578996	cyclictest	2243		function	mutex unlock < rb simple write		
1		2	312.578996	emacs	2000	d3	function	srcu read lock < trace hardiras off		
2		3	312.578996	<idle></idle>	0	d1	function	raw spin lock < get next timer interrupt		
3		2	312.578997	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F		
4		3	312.578997	<idle></idle>	0	d2	function	_raw_spin_unlock < get_next_timer_interrupt		
5		2	312.578997	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_off		
6		3	312.578997	<idle></idle>	0	d1	function	_raw_spin_lock_irqsave < hrtimer_get_next_event		
7		2	312.578997	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_on		
8		3	312.578998	<idle></idle>	0	d2	function	_raw_spin_unlock_irqrestore < hrtimer_get_next_event		
9		2	312.578998	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F		
10		2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_on		
11		2	312.578998	emacs	2000	d3	function	srcu_read_lock < trace_hardirgs_off_caller		
12		1	312.578998	cyclictest	2243	d.h3	irq_work_entry	vector=246		
13		2	312.578998	emacs	2000	d2	irq_disable	caller=0x35ccF parent=0x800964F		
14		3	312.578998	<idle></idle>	0	d2	function	srcu_read_lock < cpuidle_enter_state		
15		2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_off_caller		
16		1	312.578999	cyclictest	2243	d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>		
1/		3	312.578999	<idle></idle>	0	d1	cpu_idle	state=b cpu_ld=3		
10		1	312.578999	cyclictest	2243	d.n4	runction	_raw_ppin_untock_irgrestore <wake_up_common_tock< td=""></wake_up_common_tock<>		
15		2	312.578999	cidlos	2000	d 2	function	Vet.uli=z40		
21		2	312.578999	emacs	2000	d h2	function	stc_ired_intoxt < chulte_inter_state		
23		1	312.578999	cyclictest	2243	d.h3	function			
23		2	312,578999	emacs	2000	d.h3	function	Taw spin unlock interestore < wake up common lock		
24		2	312.578999	emacs	2000	d.h2	function	raw spin lock irgsave < wake up common lock		
		_								

KernelShark 1.0



Search:	Column	#	▼ contair	ıs	•	Next	Prev Graph follows
#	CPU	Time Stamp	Task	PID	Latency	Event	Info
0	1	312.578996	cyclictest	2243		function	mutex_unlock < rb_simple_write
1	2	312.578996	emacs	2000	d3	function	_srcu_read_lock < trace_hardirqs_off
2	3	312.578996	<idle></idle>	0	d1	function	_raw_spin_lock <- get_next_timer_interrupt
3	2	312.578997	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F
4	3	312.578998	<idle></idle>	0	d2	function	_raw_spin_unlock < get_next_timer_interrupt
5	2	312.578998	emacs	2000	d3	function	_srcu_read_unlock < trace_hardirqs_off
6	3	312.578998	<idle></idle>	0	d1	function	_raw_spin_lock_irqsave < hrtimer_get_next_event
7	2	312.578998	emacs	2000	d3	function	_srcu_read_lock < trace_hardirqs_on
8	3	312.578998	<idle></idle>	0	d2	function	_raw_spin_unlock_irqrestore < hrtimer_get_next_event
9	2	312.578998	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F
10	2	312.578998	emacs	2000	d3	function	_srcu_read_unlock < trace_hardirqs_on
11	2	312.578999	emacs	2000	d3	function	_srcu_read_lock < trace_hardirqs_off_caller
12	1	312.578999	cyclictest	2243	d.h3	irq_work_entry	vector=246
13	2	312.578999	emacs	2000	d2	irq_disable	caller=0x35ccF parent=0x800964F
14	3	312.578999	<idle></idle>	0	d2	function	_srcu_read_lock <- cpuidle_enter_state
15	2	312.578999	emacs	2000	d3	function	_srcu_read_unlock < trace_hardirqs_off_caller
16	1	312.578999	cyclictest	2243	d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>
17	3	312.578999	<idle></idle>	0	d1	cpu_idle	state=6 cpu_id=3
18	1	312.578999	cyclictest	2243	d.h4	function	_raw_spin_unlock_irqrestore <wake_up_common_lock< td=""></wake_up_common_lock<>
19	2	312.578999	emacs	2000	d.h2	irq_work_entry	vector=246
20	3	312.579000	<idle></idle>	0	d2	function	_srcu_read_unlock < cpuidle_enter_state
21	2	312.579000	emacs	2000	d.h2	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>
4							• • • • • • • • • • • • • • • • • • •

Headers

KernelShark 0.2



KernelShark 1.0





KernelShark 0.2 Markers ("Marker A")

File	File Filter Plots Capture Help								
Poi	nter:	316.8	92883 Cursor:	0.0 Marke	r <mark>A:</mark> 318	.673217 N	Marker <mark>B:</mark> 0.0 A,	A,B Delta: 0.0	
								Time Line	-
	ľ	312.5	78996					321,588270	330.607327
				irg enable	9				
CF	00			dN.1	-		l l		
				caller=0x	115909	F parent=	0x67400000F	F	
CF	U 1			510.8920	942 <101	e-			
							,	N	
CF	U 2								
CF	U 3								
Pag	1	÷	Search: Colum	nn: #	-	contains	-	graph follows	
#		CPU	Time Stamp	Task	PID	Latency	Event	Info	A
0		1	312.578996	cyclictest	2243		function	mutex_unlock < rb_simple_write	
1		2	312.578996	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_off	
2		3	312.578996	<idle></idle>	0	d1	function	_raw_spin_lock < get_next_timer_interrupt	
3		2	312.578997	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F	
4		3	312.578997	<idle></idle>	0	d2	function	_raw_spin_unlock < get_next_timer_interrupt	
5		2	312.578997	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_off	
6		3	312.578997	<idle></idle>	0	d1	function	_raw_spin_lock_irqsave < hrtimer_get_next_event	
7		2	312.578997	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_on	
8		3	312.578998	<idle></idle>	0	d2	function	_raw_spin_unlock_irgrestore < hrtimer_get_next_event	
9		2	312.578998	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F	
10		2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_on	
11		2	312.578998	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_off_caller	
12		1	312.578998	cyclictest	2243	d.h3	irq_work_entr	ntry vector=246	
13		2	312.578998	emacs	2000	d2	irq_disable	caller=0x35ccF parent=0x800964F	
14		3	312.578998	<idle></idle>	0	d2	function	srcu_read_lock < cpuidle_enter_state	
15		2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_nardirgs_off_caller	_
16		1	312.578999	cyclictest	2243	d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
1/		3	312.578999	<idle></idle>	0	d1	cpu_lale	state=> cpu_la=s	_
18		1	312.578999	cyclictest	2243	d.n4	function	raw_spin_untock_irgrestore <wake_up_common_tock< td=""><td></td></wake_up_common_tock<>	
19		2	312.578999	cidlos	2000	d 2	function	nuy vector=z40	
20		2	312 578999	emacs	2000	d h2	function		
22		1	312.578999	cyclictest	22000	d.h3	function	idpar_cost_iquet =dot_p_common_cost	
23		2	312.578999	emacs	2000	d.h3	function	raw soin unlock ingrestore < wake up common lock	
24		2	312.578999	emacs	2000	d.h2	function	raw spin lock i rosave wake up common lock	-

KernelShark 0.2 Markers ("Cursor")

Pointer: 119.944485 Curger: 119.944485 Curger:<	File Filter Plots Capture Help									
Image Time 000 12.5797-0 330.607371 011 12.5797-0 330.607371 012 12.54870 331.54870 013 12.54870 331.54870 014 14.444444444 14.4444444444 014 14.444444444 14.4444444444 014 14.444444444 14.444444444 014 14.444444444 14.444444444 014 14.444444444 14.444444444 014 14.444444444 14.444444444 014 14.444444444 14.444444444 114 14.444444444 14.444444444 114 14.4444444444 14.44444444444 114 14.44444444444 14.44444444444444444444444444444444444	Pointer: 319.944885 Cursor: 319.944885 Marker A: 319.944885 Marker B: 0.0 A,B Delt	n: 0.0								
112.70996 321.502.70 321.502.70 33.6072.72 010 112.70996 112.70996 112.70996 33.6072.72 010 112.70996		Time Line	-							
Grup Image: Search: Column: I	312.578996	321.588270	330.607327							
Cruit										
GV1 GV1 GV2 GV1 GV2 GV1 GV3 GV2 GV2 GV2 GV3 GV2 GV3 GV2 GV3 GV2 GV3 GV2 GV2 GV2 GV3 GV2 GV3 GV2 GV2 Ingdate GV2 <t< td=""><td></td><td></td><td></td></t<>										
CPU 1 CPU 2 CPU 1 CPU 1 <t< td=""><td></td><td></td><td></td></t<>										
CPU 2 CPU 3 Search: Column: # Contains C										
CPU 3 CPU 3 CPU 1 CPU 3 CPU 1 CPU 3 CPU 3 <td< td=""><td></td><td></td><td></td></td<>										
Cru a Sauch Column Contains Contain										
Prog 26 Search: Culture # C graph follows # CPU Time Stamp Task C graph follows # CPU Time Stamp Task Prog 12 Time Stamp Ti										
Party 2 D Search: Column # Contains Important Contains Important Imp										
Page 26 Sarch: Comme # Contants										
p CPU Time Same Took Latency Event Info 25539850 1 319.944885 deus-deum 153 d. 2 irq_disable caller=0x1678cf parent=0x32b34F 25539521 319.944885 deus-deum 153 d. 2 irq_disable caller=0x1678cf parent=0x32b34F 25539523 13 319.944885 deus-deum 153 d. 2 irq_disable caller=0x1678cf parent=0x32b34F 2553953 13 319.944885 deus-deum 153 d. 2 irq_disable caller=0x1678b7 parent=0x7400000F 2553953 1 319.944886 deus-deum 153 d. 2 irq_disable caller=0x16636P parent=0x6740000F 2553953 1 319.944886 dbuc-deum 153 d. 2 irq_disable caller=0x1678cF parent=0x6740000F 2553953 1 319.944886 dbuc-deum 153 d. 2 irq_disable caller=0x1678cF parent=0x740000F 25539540 1 319.944886 dbuc-deum 153 d. 2 irq_disable caller=	Page 26 🗘 Search: Column: # 🔻 🕶 contains 💌	graph follows								
2553933 1 319.94485 emacs 200 1 preempt diable caller=0x20347 2553953 0 319.94485 duc-demon 183 d.2 in	# CPU Time Stamp Task PID Latency Event	Info								
2553932 10 319.94488 dbus-deem 12.2 in	25539530 1 319.944885 emacs 20001 preempt_disable	caller=0x32b34F parent=0x32b34F								
2553953 1 319.94485 emas 200 2 ing.enable caller=0xf650cp parent=0x67400000F 2553953 1 319.94485 bus-daemo 183 2 ing.enable caller=0xf650cp parent=0x67400000F 2553953 0 319.94486 bus-daemo 183 1 preemt,diable caller=0xf650cp parent=0x67400000F 2553953 0 319.94486 bus-daemo 183 1 preemt,diable caller=0xf1650cp parent=0x67400000F 2553953 1 319.94486 bus-daemo 183 1 reg.enable caller=0xf650cp parent=0x67400000F 2553953 1 319.94486 bus-daemo 183 1 Ref.pu_init_state x86.fpu_init_state x86.fpu_init_stat	25539531 0 319.944885 dbus-daemon 1853 d2 irq_disable	caller=0xf678cF parent=0x67400000F								
2553953 0 319.944885 duc-demon 1853 irq_enable caller=0xf06000F 2553953 0 319.944885 duc-demon 1853 preemp_disable caller=0xf06000F 2553953 0 319.944885 duc-demon 1853 preemp_disable caller=0xf06000F 2553953 0 319.944886 duc-demon 1853 irq_disable caller=0xf06000F 2553953 1 319.944886 duc-demon 1853 irq_disable caller=0xf0650F parent=0x67400000F 2553953 1 319.944886 duc-demon 1853 irq_disable caller=0xf07672 parent=0x6740000F 25539547 1 319.944887 duc-demon 1853 irq_disable caller=0xf07676 parent=0x6740000F 25539541 1 319.944887 duc-demon 1853 irq_disable caller=0xf07662F parent=0x6740000F 25539547 1 319.944887 duc-demon 1853 irq_disable caller=0xf076000F 25539547 1 319.944887 <	25539532 1 319.944885 emacs 2000 d2 irq_disable	caller=0xf662cF parent=0x67400000F								
2553953 1 319.94485 emac 200 4.2 inc_emable calle=%7f409009F 2553955 0 319.94486 dus-daemo 1853 d.1 preemt_dif650F parent=%67400009F 2553953 1 319.94486 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%67400009F 2553953 1 319.94486 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%6740000F 2553953 0 319.94486 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%6740000F 2553954 1 319.94486 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%6740000F 2553954 1 319.94486 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%6740000F 2553954 1 319.94487 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%6740000F 2553954 1 319.94487 dus-daemo 1853 d.2 inc_disble calle=%7f650F parent=%6740000F 2553954 1 319.94488 dus-daemo <td>25539533 0 319.944885 dbus-daemon 1853 d2 irq_enable</td> <td>caller=0xf67b0F parent=0x67400000F</td> <td></td>	25539533 0 319.944885 dbus-daemon 1853 d2 irq_enable	caller=0xf67b0F parent=0x67400000F								
25539550319.944886dus.deemon18531preempt_disablecaller=0xf632eF parent=0x67400000F25539571319.944886dus.deemon185342irq_disablecaller=0xf652eF parent=0x67400000F255395871319.944886dus.deemon185342irq_enablecaller=0xf652eF parent=0x67400000F25539571319.944886dus.deemon185342irq_enablecaller=0xf652eF parent=0x67400000F255395611319.944886dus.deemon185342irq_enablecaller=0xf652eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.944887dus.deemon185342irq_enablecaller=0xf673eF parent=0x67400000F255395611319.94488dus.deemon185342 </td <td>25539534 1 319.944885 emacs 2000 d2 irq_enable</td> <td>caller=0xf6650F parent=0x67400000F</td> <td></td>	25539534 1 319.944885 emacs 2000 d2 irq_enable	caller=0xf6650F parent=0x67400000F								
25339530319.94486dbus-deemo183d.2ind_isabecaller=0xf652cF parent=0x67400000F25339531319.94486dbus-deemo183d.2ind_emblecaller=0xf6526F parent=0x67400000F25339531319.94486dbus-deemo183d.2ind_emblecaller=0xf6526F parent=0x67400000F25339531319.94486dbus-deemo183d.2ind_emblecaller=0xf6526F parent=0x67400000F25339540319.94487dbus-deemo183d.2ind_emblecaller=0xf650F parent=0x67400000F25339541319.94487dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339540319.94487dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339541319.94487dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339541319.94487dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339541319.94488dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339541319.94488dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339541319.94488dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F25339541319.94488dbus-deemo183d.2ind_emblecaller=0xf670F parent=0x67400000F <t< td=""><td>25539535 0 319.944885 dbus-daemon 18531 preempt_disable</td><td>caller=0x71f143F parent=0x67400000F</td><td></td></t<>	25539535 0 319.944885 dbus-daemon 18531 preempt_disable	caller=0x71f143F parent=0x67400000F								
2533953119.94486emacs2001X86/puint_statex86/fpuint_statex86/puint_statex86	25539536 0 319.944886 dbus-daemon 1853 d2 irq_disable	caller=0xf662cF parent=0x67400000F								
25339530319.94486dus.daem183d2irq_enablecaller=0xf6506 parent=0x67400000F25539541319.944886dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94487macs2002x86_fpu_eqsitedx86/fpu: 0xffff9e5cefc34ac0 initialized: 1 xfeatures: 0 xcomp_bv: 800000000000001f25539541319.94487dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94487dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94487dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94487dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94487dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94488dus.daem183d2irq_enablecaller=0xf670c parent=0x67400000F25539541319.94488dus.daem183d2irq_enablecaller=0xf650p parent=0x67400000F25539541319.94488dus.daem183d2irq_enablecaller=0xf650p parent=0x67400000F25539541319.94488dus.daem183d2irq_enablecaller=0xf650p parent=0x67400000F25539551319.94488dus.daem183dus.daem183dus.d	25539537 1 319.944886 emacs 20001 x86_fpu_init_state	x86/fpu: 0xffff9e5cefc34ac0 initialized: 0 xfeatures: 0 xcomp_bv: 800000000000001f								
2539591319.94488emacs2001x86/pu_activate_statex86/pu_activate_statex86/pu_activate_stateinitialized: 0 xcemp_bv: 8000000000000000000000000000000000000	25539538 0 319.944886 dbus-daemon 1853 d2 irq_enable	caller=0xf6650F parent=0x67400000F								
25339500319.94488dus-daemo1853d2ing_disablecaller=0xf678cF parent=0x6740000F25339541319.94487emacs2002X86/pu:regs_activatedx86/pu:regs_activat	25539539 1 319.944886 emacs 20001 x86_fpu_activate_state	x86/fpu: 0xffff9e5cefc34ac0 initialized: 0 xfeatures: 0 xcomp_bv: 80000000000001f								
25339511319.944887emacs2002x86.fpu.regs_activatedx86/fpu: 0xffff9eScefc34ac0 initialized: 1 xfeatures: 0 xcomp_bv: 80000000000000125339540319.944887dbus-daemo185d2irq_enablecaller=0xf67b0F parent=0x67400000F25339541319.944887dbus-daemo185d2irq_disablecaller=0xff65CF parent=0x6740000F25339541319.944887dbus-daemo185d2irq_disablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo185d2irq_enablecaller=0xff62CF parent=0x6740000F25339541319.94488dbus-daemo <t< td=""><td>25539540 0 319.944886 dbus-daemon 1853 d2 irq_disable</td><td>caller=0xf678cF parent=0x67400000F</td><td></td></t<>	25539540 0 319.944886 dbus-daemon 1853 d2 irq_disable	caller=0xf678cF parent=0x67400000F								
25539540319.94487dus-daemon163d2irq_enablecaller=0xf67b0F parent=0x6740000F25539541319.94487dus-daemon1631prempt_enablecaller=0xf67b6F parent=0x6740000F25539541319.94487dus-daemon163d2irq_disablecaller=0xf67b6F parent=0x6740000F25539541319.94488dus-daemon183d2irq_disablecaller=0xf67b6F parent=0x6740000F25539541319.94488dus-daemon183d2irq_enablecaller=0xf67b6F parent=0x6740000F25539541319.94488dus-daemon183d2irq_enablecaller=0xf650F parent=0x6740000F25539541319.94488dus-daemon183d2irq_enablecaller=0xf650F parent=0x6740000F25539541319.94488dus-daemon183d2irq_enablecaller=0xf650F parent=0x5740000F25539541319.94488dus-daemon183Kfreecaller=0xf650F parent=0x5740000F25539541319.94488dus-daemon183Kfreecaller=0xf650F parent=0x5740000F25539551319.94488dus-daemon183sys_exitNR47 = 1125539551319.94488dus-daemon183sys_exitRA7 = 1125539551319.94488dus-daemon183sys_exitcaller=0xf650F parent=0x5740000F25539551319.	25539541 1 319.944887 emacs 2000 2 x86_fpu_regs_activated	x86/fpu: 0xffff9e5cefc34ac0 initialized: 1 xfeatures: 0 xcomp_bv: 800000000000001f								
255395430319.944887duus-daemon18531preempt_enablecaller=0x7leb56F parent=0x67400000F255395451319.944887emacs2000d2irq_disablecaller=0xf672cF parent=0x67400000F255395450319.944887duus-daemo1853d2irq_disablecaller=0xf672cF parent=0x67400000F255395471319.944887emacs2000d2irq_enablecaller=0xf672bF parent=0x67400000F255395470319.944888emacs2000d2irq_enablecaller=0xf67b0F parent=0x67400000F255395471319.944888emacs2000d2irq_enablecaller=0xf62cF parent=0x67400000F255395470319.94488emacs2000d2irq_enablecaller=0xf62cF parent=0x67400000F255395471319.94488emacs2000d2irq_enablecaller=0xf62cF parent=0x6740000F255395471319.94488emacs2000d2irq_enablecaller=0xf62cF parent=0x740000F255395471319.94488emacs2000d2irq_enablecaller=0xf62cF parent=0x740000F255395471319.94488duus-daemon1853Kreecaller=0xf62cF parent=0x740000F255395471319.94488duus-daemon1853Kreecaller=0xf662cF parent=0x6740000F255395571319.94488duus-daemon1853Sy_exitcaller=0xf6650F parent=0x6740000F<	25539542 0 319.944887 dbus-daemon 1853 d2 irq_enable	caller=0xf67b0F parent=0x67400000F	100							
25539541319.94487emacs200d2irq_disablecaller=0xf678cF parent=0x6740000F25539541319.94488dbus-daemo1853d2irq_disablecaller=0xf67bcF parent=0x6740000F25539541319.94488emacs200d2irq_enablecaller=0xf67bcF parent=0x6740000F25539541319.94488dbus-daemo1853d2irq_enablecaller=0xf650F parent=0x6740000F25539541319.94488dbus-daemo1853d2irq_enablecaller=0xf650F parent=0x6740000F25539541319.94488dbus-daemo1853d2irq_enablecaller=0xf650F parent=0x6740000F25539541319.94488dbus-daemo1853d2irq_enablecaller=0xf620F parent=0x6740000F25539541319.94488dbus-daemo1853d2irq_enablecaller=0xf620F parent=0x6740000F25539551319.94488dbus-daemo1853d2irq_enablecaller=0xf620F parent=0x6740000F25539551319.94488dbus-daemo1853dsy_sexitcaller=0xf650F parent=0x6740000F25539551319.94488dbus-daemo1853dsy_sexitcaller=0xf650F parent=0x6740000F25539551319.94488dbus-daemo1853dsy_sexitcaller=0xf650F parent=0x6740000F25539551319.94488dbus-daemo1853dsy_sexitcaller=0xf1605F parent=0x6740000F <td>25539543 0 319.944887 dbus-daemon 18531 preempt_enable</td> <td>caller=0x71eb56F parent=0x67400000F</td> <td></td>	25539543 0 319.944887 dbus-daemon 18531 preempt_enable	caller=0x71eb56F parent=0x67400000F								
255395450319.944887dus-daemo1853d2irq_disablecaller=0xf62cF parent=0x6740000F255395470319.94488dus-daemo1853d2irq_enablecaller=0xf67b0F parent=0x6740000F255395470319.94488dus-daemo1853d2irq_enablecaller=0xf6650F parent=0x6740000F255395481319.94488emacs20001preemp_enablecaller=0x32bacF255395490319.94488dus-daemo1853Kfreecaller=0x32bacF255395490319.94488emacs2000d2irq_disablecaller=0x32bacF255395490319.94488dus-daemo1853Kfreecaller=0x562cF parent=0x6740000F255395490319.94488dus-daemo1853Kfreecaller=0x562cF parent=0x6740000F255395490319.94488dus-daemo1853Kfreecaller=0x562cF parent=0x6740000F255395490319.94488dus-daemo1853ky_exitcaller=0x562cF parent=0x6740000F255395490319.94488dus-daemo1853ky_exitcaller=0x5660F parent=0x6740000F255395491319.94488dus-daemo1853ky_exitcaller=0x5660F parent=0x6740000F255395491319.94488dus-daemo1853ky_exitcaller=0x16650F parent=0x6740000F255395491319.94488dus-daemo1853	25539544 1 319.944887 emacs 2000 d2 irq_disable	caller=0xf678cF parent=0x67400000F								
255395461319.944887emacs200d2irq_enablecaller=0xf67b0F parent=0x6740000F255395470319.944888dbus-daemo1853d2irq_enablecaller=0xf6650F parent=0x6740000F255395481319.944888emacs20001preemt_enablecaller=0x32bacF255395571319.944888dbus-daemo1853Kfreecaller=0x1662cF parent=0x32bacF255395571319.94488dbus-daemo1853kfreecaller=0x1662cF parent=0x6740000F255395571319.94488dbus-daemo1853sy_sexitcaller=0x1662cF parent=0x6740000F255395571319.94488dbus-daemo1853sy_sexitcaller=0x1662cF parent=0x6740000F255395581319.94488dbus-daemo1853sy_sexitcaller=0x16630F parent=0x6740000F255395581319.94488dbus-daemo1853sy_sexitcaller=0x16630F parent=0x6740000F255395581319.94488dbus-daemo1853sy_sexit_recvmsgQifffffffffffff5255395581319.94488dbus-daemo1853sy_sexit_recvmsgQifffffffffff5255395581319.94488dbus-daemo1853sy_sexit_recvmsgQifffffffffff5255395581319.94488dbus-daemo1853sy_sexit_recvmsgQifffffffffff5255395591319.94488dbus-dae	25539545 0 319.944887 dbus-daemon 1853 d2 irq_disable	caller=0xf662cF parent=0x67400000F								
255395470319.944888dbus-daemon1853d2irq_enablecaller=0xf6650F parent=0x67400000F255395481319.944888emacs20001prempt_enablecaller=0x32bacF255395490319.944888dbus-daemon1853kfreecall_site=fffffff991bb14e ptr=(nil)255395571319.944888emacs2000d2irq_disablecaller=0xf6620F parent=0x67400000F255395571319.944888emacs2000d2irq_enablecaller=0xf6620F parent=0x67400000F255395581319.944888emacs2000d2irq_enablecaller=0xf6650F parent=0x67400000F255395581319.944888bus-daemo1853sy_exitNR 47 = -11255395581319.944888bus-daemo1853sy_exit, recvmsg0xfffffffffffff255395581319.944888bus-daemo1853sy_exit, recvmsg0xfffffffffffff255395581319.944888bus-daemo1853sy_exit, recvmsg0xfffffffffffff255395581319.944888bus-daemo1853sy_exit, recvmsg0xffffffffffff255395541319.944888bus-daemo1853sy_exit, recvmsg0xffffffffffff255395541319.944888bus-daemo1853sy_exit, recvmsg0xffffffffffff255395541319.944888bus-daemo1853 <td>25539546 1 319.944887 emacs 2000 d2 irg_enable</td> <td>caller=0xf67b0F parent=0x67400000F</td> <td></td>	25539546 1 319.944887 emacs 2000 d2 irg_enable	caller=0xf67b0F parent=0x67400000F								
255395481319.944888emacs2001preempt_enablecaller=0x32bacF255395490319.944888dbus-daemon1853kfreecall_site=fffffff991bb14e ptr=(nil)255395571319.944888emacs2000d2irq_disablecaller=0xf662cF parent=0x67400000F255395571319.944888emacs2000d2irq_enablecaller=0xf6650F parent=0x67400000F255395571319.944888emacs2000d2irq_enablecaller=0xf6650F parent=0x67400000F255395581319.944888emacs2000d2irq_enablecaller=0xf16650F parent=0x67400000F255395581319.944888emacs2000dirg_enablecaller=0xf16650F parent=0x67400000F255395581319.944888emacs2000dirg_enablecaller=0xf16050F parent=0x67400000F255395581319.944888emacs2000dirg_enablecaller=0xf16050F parent=0x67400000F	25539547 0 319.944888 dbus-daemon 1853 d2 irg_enable	caller=0xf6650F parent=0x67400000F								
25539549 0 319.944888 dbus-daemon 1853 kfree call_site=fffffff991bb14e ptr=(nil) 25539550 1 319.944888 emacs 2000 d2 irq_disable call_er0xf662cF parent=0x67400000F 25539551 0 319.944888 dbus-daemon 1853 sys_exit NR 47 = -11 25539552 1 319.944888 dbus-daemon 1853 sys_exit NR 47 = -11 25539553 0 319.944888 dbus-daemon 1853 sys_exit caller=0xf6650F parent=0x67400000F 25539553 1 319.944888 dbus-daemon 1853 sys_exit_recvmsg 0xffffffffffffffffffffffffffffffffffff	25539548 1 319.944888 emacs 20001 preempt_enable	caller=0x32bacF parent=0x32bacF								
25539550 1 319.944888 emacs 200 d.2 irq_disable caller=0xf662cF parent=0x67400000F 25539551 0 319.944888 dbus-daemon 183 sys_exit NR 47 = -11 25539552 1 319.944888 emacs 200 d.2 irq_enable caller=0xf6650F parent=0x67400000F 25539553 0 319.944888 dbus-daemon 183 1 sys_exit_recvmsg 0xfffffffffffff 25539554 1 319.944889 emacs 200 d irq_disable caller=0x71f085F parent=0x67400000F	25539549 0 319.944888 dbus-daemon 1853 kfree	call_site=fffffff991bb14e_ptr=(nil)								
25539551 0 319.944888 dbus-daemon 1853 sys_exit NR 47 = -11 25539552 1 319.944888 emacs 200 d2 irq_enable caller=0xf6650F parent=0x67400000F 25539553 0 319.944888 dbus-daemon 1853 1 sys_exit_recvmsg 0xffffffffffff 25539554 1 319.944889 emacs 200 d irg_disable caller=0x71f085F parent=0x67400000F	25539550 1 319.944888 emacs 2000 d2 irg_disable	caller=0xf662cF parent=0x67400000F								
25539552 1 319.944888 emacs 2000 d2 irq_enable caller=0xf6650F parent=0x67400000F 25539553 0 319.944888 dbus-daemon 1853 1 sys_exit_recvmsg 0xffffffffffffffffff 25539554 1 319.944889 emacs 2000 d irq_disable caller=0x71f085F parent=0x67400000F	25539551 0 319.944888 dbus-daemon 1853 sys_exit	NR 47 = -11								
25539553 0 319.944888 dbus-daemon 18531 sys_exit_recvmsg 0xfffffffffffff 25539554 1 319.944889 emacs 2000 d irg_disable caller=0x71f085F parent=0x67400000F	25539552 1 319.944888 emacs 2000 d2 irg_enable	caller=0xf6650F parent=0x67400000F								
25539554 1 319.944889 emacs 2000 d irg disable caller=0x71f085F parent=0x67400000F	25539553 0 319.944888 dbus-daemon 18531 sys_exit_recvmsg	0xffffffffffffff								
	25539554 1 319.944889 emacs 2000 d irg disable	caller=0x71f085F parent=0x67400000F								

KernelShark 0.2 Markers ("Marker B")

File Filter Plots Capture Help	
Pointer: 320.747013 Cursor: 319.944885 Marker A: 320.668757 Marker 320.747013 A,B D	elta: 0.078256
	Time Line
312,578996	321588270 330.607327
CPU 1	
CPU 2	
CPU 3	
Page 26 * Search: Column: # contains v	nh follows
# CPIL Time Stamp Tack PID Latency Event	info
25539530 1 319.944885 emars 2000 1 preempt disable	and caller=0y32h3dF narent=0y32h3dF
25539531 0 319 944885 dhus-daemon 1853 d. 2 irg disable	
25539532 1 319.944885 emacs 2000 d2 irg disable	caller=0xf662CF parent=0x67400000F
25539533 0 319.944885 dbus-daemon 1853 d2 irg enable	caller=0xf67b0F parent=0x67400000F
25539534 1 319.944885 emacs 2000 d2 irg enable	caller=0xf6650F parent=0x67400000F
25539535 0 319.944885 dbus-daemon 18531 preempt disable	caller=0x71f143F parent=0x67400000F
25539536 0 319.944886 dbus-daemon 1853 d2 irg disable	caller=0xf662cF parent=0x67400000F
25539537 1 319.944886 emacs 20001 x86 fpu init state	x86/fpu: 0xffff95/cefc34ac0 initialized: 0 xfeatures: 0 xcomp bv: 80000000000001f
25539538 0 319.944886 dbus-daemon 1853 d2 irq_enable	caller=0xf6650F parent=0x67400000F
25539539 1 319.944886 emacs 2000 1 x86_fpu_activate_state	x86/fpu: 0xffff9e5cefc34ac0 initialized: 0 xfeatures: 0 xcomp_bv: 800000000000001f
25539540 0 319.944886 dbus-daemon 1853 d2 irq_disable	caller=0xf678cF parent=0x67400000F
25539541 1 319.944887 emacs 2000 2 x86_fpu_regs_activated	x86/fpu: 0xffff9e5cefc34ac0 initialized: 1 xfeatures: 0 xcomp_bv: 80000000000001f
25539542 0 319.944887 dbus-daemon 1853 d2 irq_enable	caller=0xf67b0F parent=0x67400000F
25539543 0 319.944887 dbus-daemon 18531 preempt_enable	caller=0x71eb56F parent=0x67400000F
25539544 1 319.944887 emacs 2000 d2 irq_disable	caller=0xf678cF parent=0x67400000F
25539545 0 319.944887 dbus-daemon 1853 d2 irq_disable	caller=0xf662cF parent=0x67400000F
25539546 1 319.944887 emacs 2000 d2 irq_enable	caller=0xf67b0F parent=0x67400000F
25539547 0 319.944888 dbus-daemon 1853 d2 irq_enable	caller=0xf6650F parent=0x67400000F
25539548 1 319.944888 emacs 20001 preempt_enable	caller=0x32bacF parent=0x32bacF
25539549 0 319.944888 dbus-daemon 1853 kfree	call_site=fffffff991bb14e ptr=(nil)
25539550 1 319.944888 emacs 2000 d2 irq_disable	caller=0xf662cF parent=0x67400000F
25539551 0 319.944888 dbus-daemon 1853 sys_exit	NR 47 = -11
25539552 1 319.944888 emacs 2000 d2 irq_enable	caller=0xf6650F parent=0x67400000F
25539553 0 319.944888 dbus-daemon 18531 sys_exit_recvmsg	0xffffffffffffff
25539554 1 319.944889 emacs 2000 d irg disable	caller=0x71f085F parent=0x67400000F

KernelShark 1.0 Markers ("Marker A")

File Filter Plots Tools Help		
Pointer: 320.674448 <idle>-0 Cpu 0 d1 irq_disable caller=0x35ccF parent=0x80</idle>	0964F	
< + - > Marker A 320.6744485 Marker B	A,B Delta:	
312.578996	321.593161	330.60732
CPU 0		
	a de la calegra de la caleg	
CPU 2	a na ang ang ang ang ang ang ang ang ang	a a canada 📷
СРИ 3		
	1	

Search: Column #

contains

-

Next Prev V Graph follows

# CP	U Time Stamp	Task	PID	Latency	v Event	Info	
28095211 2	320.674445	cyclictest	2246	i d2	sched_switch	cyclictest:2246 [19] D ==> emacs:2000 [120]	
28095212 2	320.674446	cyclictest	2246	i d2	tlb_flush	pages=0 reason=flush on task switch (0)	
28095213 2	320.674446	cyclictest	2246	d2	x86_fpu_regs_deactivated	x86/fpu: 0xffff9e5ce9872b40 initialized: 1 xfeatures: 2 xcomp_bv: 8000000000001f	
28095214 2	320.674446	cyclictest	2246	d2	write_msr	c0000100, value 7fb16f1b0d00	
28095215 2	320.674447	cyclictest	2246	d2	x86_fpu_regs_activated	x86/fpu: 0xffff9e5cefc34ac0 initialized: 1 xfeatures: 3 xcomp_bv: 80000000000001f	
28095216 2	320.674447	emacs	2000	d2	irq_enable	caller=0x71ecf1F parent=0x67400000F	
28095217 2	320.674447	emacs	2000	d2	irq_disable	caller=0xf678cF parent=0x67400000F	
28095218 2	320.674448	emacs	2000	d2	irq_enable	caller=0xf67b0F parent=0x67400000F	
28095219 2	320.674448	emacs	2000	1	preempt_enable	caller=0x71955cF parent=0x71955cF	
28095220 2	320.674448	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F	
28095221 0	320.674449	<idle></idle>	0	d1	irq_disable	caller=0x35ccF parent=0x800964F	
28095222 2	320.674449	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F	
28095223 2	320.674449	emacs	2000) d	irq_disable	caller=0x3ec7F parent=0x67400000F	
28095224 0	320.674449	<idle></idle>	0	d.h1	local_timer_entry	vector=236	
28095225 2	320.674450	emacs	2000) d	irq_enable	caller=0x35b0F parent=0x8009c9F	
28095226 0	320.674450	<idle></idle>	0	d.h2	hrtimer_cancel	hrtimer=0xfffb58cc47d7e70	
28095227 0	320.674450	<idle></idle>	0	d.h1	hrtimer_expire_entry	hrtimer=0xffffb58cc47d7e70 now=320671382513 function=hrtimer_wakeup/0x0	
28095228 0	320.674451	<idle></idle>	0	d.h2	sched_waking	comm=cyclictest pid=2244 prio=19 target_cpu=000	
28095229 2	320.674451	emacs	2000) d	irq_disable	caller=0x35ccF parent=0x800082F	
28095230 2	320.674451	emacs	2000) d	irq_enable	caller=0x4192F parent=0x67400000F	
28095231 0	320.674451	<idle></idle>	0	dNh3	sched_wakeup	cyclictest:2244 [19] success=1 CPU:000	
28095232 2	320.674451	emacs	2000		sys_enter	NR 7 (7ffe4450a7f8, 1, ffffffff, d00160, 0, 0)	_
4							Þ

KernelShark 1.0 Markers ("Marker B")

File Filter Plots Tools Help

vmvvare^{*}

Pointer: 320.757043 <idle>-0 Cpu 0 dN.2 irq_enable caller=0xf67b0F parent=0x67400000F</idle>	
+ > Marker A 320.7570437 A,B Delta: 0.0825951	
312.578996 321.593161	330.60732

Search: Co	lumn #	▼ contair	ns	•	Next	Prev Graph follows
#	CPU Time Stan	p Task	PID	Latency	/ Event	Info
28260589	1 320.75703	emacs	2000	d	irq_disable	caller=0x420dF parent=0x67400000F
28260590	1 320.75703	emacs	2000	d	irq_enable	caller=0x3ee5F parent=0x67400000F
28260591	1 320.75703	emacs	2000	d	irq_disable	caller=0x3ec7F parent=0x67400000F
28260592	1 320.75704) emacs	2000	d	irq_enable	caller=0x35b0F parent=0x80009dF
28260593	1 320.75704	L emacs	2000	d	irq_disable	caller=0x35ccF parent=0x80093aF
28260594	1 320.75704	L emacs	2000	d.h.	preempt_disable	caller=0x84b21F parent=0x84b21F
28260595	1 320.75704	L emacs	2000	d.h.	irq_work_entry	vector=246
28260596	1 320.75704	2 emacs	2000	d.h2	sched_waking	comm=trace-cmd pid=2240 prio=120 target_cpu=000
28260597	1 320.75704	8 emacs	2000	d.h3	sched_wake_idle_without_	ipi cpu=0
28260598	1 320.75704	8 emacs	2000	d.h3	sched_wakeup	trace-cmd:2240 [120] success=1 CPU:000
28260599	0 320.75704	\$ <idle></idle>	0	dN.2	irq_enable	caller=0xf67b0F parent=0x67400000F
28260600	1 320.75704	1 emacs	2000	d.h.	irq_work_exit	vector=246
28260601	0 320.75704	1 <idle></idle>	0	.N.1	cpu_idle	state=4294967295 cpu_id=0
28260602	1 320.75704	1 emacs	2000	d.h.	preempt_enable	caller=0x84b6bF parent=0x84b6bF
28260603	0 320.75704	4 <idle></idle>	0	dN.2	irq_disable	caller=0xf662cF parent=0x67400000F
28260604	0 320.75704	4 <idle></idle>	0	dN.2	irq_enable	caller=0xf6650F parent=0x67400000F
28260605	1 320.75704	5 emacs	2000	d	irq_enable	caller=0x35b0F parent=0x8009c9F
28260606	0 320.75704	5 <idle></idle>	0	dN.1	irq_disable	caller=0xf667dF parent=0x67400000F
28260607	0 320.75704	5 <idle></idle>	0	dN.1	irq_enable	caller=0xf66c0F parent=0x67400000F
28260608	1 320.75704	5 emacs	2000	d	irq_disable	caller=0x35ccF parent=0x800082F
28260609	0 320.75704	5 <idle></idle>	0	dN.1	irq_disable	caller=0x1158cdF parent=0x67400000F
28260610	1 320.75704	5 emacs	2000	d	irq_enable	caller=0x4192F parent=0x67400000F
4					la	

KernelShark 0.2 Zooming

File	ilter Pl	ots Capture H	elp				
Pointe	r: 321.1	67642 Cursor:	0.0 Marke	r <mark>A:</mark> 0.0	Marker <mark>B:</mark> (0.0 A,B Delta: 0.0	
							Time Line
	312.5	78996					321,588270 330,607327
CPU (
CPU 1							
CPU 2							
CPU 3							
Page 1		Search: Colum	n: #	-	contains	•	
#	CPU	Time Stamp	Task	PID	Latency	Event	
0	1	312.578996	cvclictest	2243	Lucency	function	mutex unlock < rb simple write
1	2	312.578996	emacs	2000	d3	function	srcu read lock < trace hardirgs off
2	3	312.578996	<idle></idle>	0	d1	function	raw spin lock < get next timer interrupt
3	2	312.578997	emacs	2000	d2	irg disable	caller=0xf662cF parent=0x67400000F
4	3	312.578997	<idle></idle>	0	d2	function	_raw_spin_unlock < get_next_timer_interrupt
5	2	312.578997	emacs	2000	d3	function	_srcu_read_unlock < trace_hardirgs_off
6	3	312.578997	<idle></idle>	0	d1	function	_raw_spin_lock_irqsave < hrtimer_get_next_event
7	2	312.578997	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_on
8	3	312.578998	<idle></idle>	0	d2	function	_raw_spin_unlock_irgrestore < hrtimer_get_next_event
9	2	312.578998	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F
10	2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_on
11	2	312.578998	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_off_caller
12	1	312.578998	cyclictest	2243	d.h3	irq_work_entry	vector=246
13	2	312.578998	emacs	2000	d2	irq_disable	caller=0x35ccF parent=0x800964F
14	3	312.578998	<idle></idle>	0	d2	function	srcu_read_lock < cpuidle_enter_state
15	2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_off_caller
16	1	312.578999	cyclictest	2243	d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>
17	3	312.578999	<idle></idle>	0	d1	cpu_idle	state=6 cpu_id=3
18	1	312.578999	cyclictest	2243	d.h4	function	_raw_spin_unlock_irqrestore <wake_up_common_lock< td=""></wake_up_common_lock<>
19	2	312.578999	emacs	2000	d.h2	irq_work_entry	vector=246
20	3	312.578999	<idle></idle>	0	d2	function	_srcu_read_unlock < cpuidle_enter_state
21	2	312.578999	emacs	2000	d.h2	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>
22	1	312.5/8999	cyclictest	2243	u.n3 d b2	function	raw_spin_uote_indexee <wake_up_common_lock< td=""></wake_up_common_lock<>
23	2	212 578000	ernacs	2000	d h2	function	Taw spin under index index and the mean lack
24	2	312.3/0999	ernacs	2000	u.112	runction	Taw Spiri took irusave wake up common took

KernelShark 0.2 Zooming

File	Filter Pl	ots Capture Help					
Pointe	r: 320.7	71923 Cursor: 0.0 Mark	er <mark>A:</mark> 0.0	Marker <mark>B:</mark>	0.0 A,B Delta: 0.0	.0	
						Time Line	-
						320 510484 320 669998	
CPU (
CPU 1							
CPU 2	2						
CPU 3	3						
	4						•
Page 1	•	Search: Column: #	-	contains	.	graph follows	
#	CPU	Time Stamp Task	PID	Latency	Event	Info	
0	1	312.578996 cyclictes	t 2243	3	function	mutex unlock < rb simple write	[
1	2	312.578996 emacs	2000) d3	function	srcu read lock < trace hardings off	
2	3	312.578996 <idle></idle>	0	d1	function	raw spin lock < get next timer interrupt	
3	2	312.578997 emacs	2000) d2	irg disable	caller=0xf662cF parent=0x67400000F	
4	3	312.578997 <idle></idle>	0	d2	function	raw spin unlock < qet next timer interrupt	
5	2	312.578997 emacs	2000) d3	function	srcu read unlock < trace hardings off	
6	3	312.578997 <idle></idle>	0	d1	function	raw spin lock irgsave < hrtimer get next event	
7	2	312.578997 emacs	2000) d3	function	srcu_read_lock < trace_hardirgs_on	
8	3	312.578998 <idle></idle>	0	d2	function	_raw_spin_unlock_irgrestore < hrtimer_get_next_event	
9	2	312.578998 emacs	2000) d2	irq_enable	caller=0xf6650F parent=0x67400000F	
10	2	312.578998 emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_on	
11	2	312.578998 emacs	2000) d3	function	srcu_read_lock < trace_hardirqs_off_caller	
12	1	312.578998 cyclictes	t 2243	8 d.h3	irq_work_entry	v vector=246	
13	2	312.578998 emacs	2000) d2	irq_disable	caller=0x35ccF parent=0x800964F	
14	3	312.578998 <idle></idle>	0	d2	function	srcu_read_lock < cpuidle_enter_state	
15	2	312.578998 emacs	2000) d3	function	srcu_read_unlock < trace_hardirqs_off_caller	
16	1	312.578999 cyclictes	t 2243	3 d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
17	3	312.578999 <idle></idle>	0	d1	cpu_idle	state=6 cpu_id=3	
18	1	312.578999 cyclictes	t 2243	3 d.h4	function	_raw_spin_unlock_irqrestore <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
19	2	312.578999 emacs	2000) d.h2	irq_work_entry	v vector=246	
20	3	312.578999 <idle></idle>	0	d2	function	srcu_read_unlock < cpuidle_enter_state	
21	2	312.578999 emacs	2000) d.h2	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
22	1	312.578999 cyclictes	t 2243	3 d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
23	2	312.578999 emacs	2000) d.h3	function	_raw_spin_unlock_irqrestore <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
24	2	312.578999 emacs	2000) d.h2	function	raw spin lock irqsave < wake up common lock	

KernelShark 1.0 Zooming

Flie Fliter Plots Tools Help	File	Filter	Plots	Tools	Help
------------------------------	------	--------	-------	-------	------

Pointer: 32	1.220675 emacs-2000 Cpu 2 dNh. hrtimer_expire_exit hrtimer=0xfff	b58cc223fe70		
< +	- > Marker A Marker B	A,B Delta:		
312.5	578996		321.593161	330.60732
СРИ 0				
CPU 1				
CPUI				
CPU 2				
L .				
CPU 3				
				•

Search: Colu	mn #	▼ conta	ins	•		Next Prev Graph follows
#	PU Time Stam	Task	PID	Latency	Event	Info
27581632 1	320.53030	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F
27581633 3	320.53030	Xorg	805	d	irq_disable	caller=0x35ccF parent=0x800082F
27581634 3	320.53030	Xorg	805	d	irq_enable	caller=0x4192F parent=0x67400000F
27581635 1	320.53030	emacs	2000	d	irq_disable	caller=0x71ee50F parent=0x67400000F
27581636 3	320.53030	Xorg	805		sys_enter	NR 47 (3a, 7fffa024dbb0, 0, a, 0, 55ac8fe9fdf0)
27581637 3	320.53030	i Xorg	805	1	sys_enter_recvmsg	fd: 0x000003a, msg: 0x7fffa024dbb0, flags: 0x0000000
27581638 1	320.53030	emacs	2000	d1	preempt_disable	caller=0x71ee5aF parent=0x67400000F
27581639 1	320.53030	emacs	2000	d1	irq_enable	caller=0x71ed60F parent=0x67400000F
27581640 3	320.53030	5 Xorg	805	d2	irq_disable	caller=0xf678cF parent=0x67400000F
27581641 1	320.53030	emacs	2000	d2	irq_disable	caller=0xf678cF parent=0x67400000F
27581642 3	320.53030	Xorg	805	d2	irq_enable	caller=0xf67b0F parent=0x67400000F
27581643 1	320.53030	emacs	2000	d2	irq_enable	caller=0xf67b0F parent=0x67400000F
27581644 3	320.53030	Xorg	805	1	preempt_disable	caller=0x71f143F parent=0x67400000F
27581645 1	320.53030	emacs	2000	1	preempt_enable	caller=0x71ed4eF parent=0x67400000F
27581646 3	320.53030	Xorg	805	d2	irq_disable	caller=0xf662cF parent=0x67400000F
27581647 1	320.53030	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F
27581648 3	320.53030	Xorg	805	d2	irq_enable	caller=0xf6650F parent=0x67400000F
27581649 1	320.53030	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F
27581650 3	320.53030	Xorg	805	d2	irq_disable	caller=0xf678cF parent=0x67400000F
27581651 1	320.53030	emacs	2000		sys_exit	NR 7 = 1
27581652 1	320.53030	emacs	2000	1	sys_exit_poll	0x1
27581653 3	320.53030	Xorg	805	d2	irq_enable	caller=0xf67b0F parent=0x67400000F
4					-l	
	Nare	-				

KernelShark 1.0 Zooming

File Filter Plots Tools Help		
Pointer: 320.785737		
< + - > Marker A Marker B	A,B Delta:	
320.286975	320.728993	321.171011
Г	1	
CPU 1		
CPU 2		

Search: Colum	n #	* contair	ns	•	Next	Prev Graph follows
# CPU	Time Stamp	Task	PID	Latency	Event	Info
26739090 3	320.286977	emacs	2000	d4	sched_wake_idle_without_ip	cpu=2
26739091 2	320.286978	<idle></idle>	0	dN.2	irq_disable	caller=0xf678cF parent=0x67400000F
26739092 3	320.286978	emacs	2000	d4	sched_wakeup	Xorg:805 [120] success=1 CPU:002
26739093 2	320.286978	<idle></idle>	0	dN.2	irq_enable	caller=0xf67b0F parent=0x67400000F
26739094 3	320.286978	emacs	2000	d1	irq_enable	caller=0x71ed60F parent=0x67400000F
26739095 2	320.286978	<idle></idle>	0	.N.1	cpu_idle	state=4294967295 cpu_id=2
26739096 3	320.286979	emacs	2000	d2	irq_disable	caller=0xf678cF parent=0x67400000F
26739097 2	320.286979	<idle></idle>	0	dN.2	irq_disable	caller=0xf662cF parent=0x67400000F
26739098 3	320.286979	emacs	2000	d2	irq_enable	caller=0xf67b0F parent=0x67400000F
26739099 2	320.286979	<idle></idle>	0	dN.2	irq_enable	caller=0xf6650F parent=0x67400000F
26739100 3	320.286979	emacs	2000	1	preempt_enable	caller=0x71ed4eF parent=0x67400000F
26739101 3	320.286980	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F
26739102 2	320.286980	<idle></idle>	0	dN.1	irq_disable	caller=0xf667dF parent=0x67400000F
26739103 2	320.286980	<idle></idle>	0	dN.1	irq_enable	caller=0xf66c0F parent=0x67400000F
26739104 3	320.286980	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F
26739105 2	320.286981	<idle></idle>	0	dN.1	irq_disable	caller=0x1158cdF parent=0x67400000F
26739106 3	320.286981	emacs	2000		kfree	(vfs_writev+0xc5) call_site=fffffff98e6eb15 ptr=(nil)
26739107 2	320.286981	<idle></idle>	0	dN.1	irq_enable	caller=0x115909F parent=0x67400000F
26739108 3	320.286981	emacs	2000		sys_exit	NR 20 = 4
26739109 3	320.286981	emacs	2000	1	sys_exit_writev	0x4
26739110 2	320.286981	<idle></idle>	0	dN.1	irq_disable	caller=0x718cf1F parent=0x67400000F
26739111 2	320.286982	<idle></idle>	0	dN.1	rcu_utilization	Start context switch
4						5

Selecting Tasks





KernelShark 0.2 Wake-up Latency

File Filter Plots	Capture Help						
Pointer: 320.776	702 Cursor: 320	0.776701	Marker <mark>A:</mark> 3	320.77670	1 Marker <mark>B:</mark> 320.776706	A,B Delta: 0.000005	
CPU 0							4
CPU 1							
							-
CPU 2							
CPU 3							
cyclictest-2243							
							_
cvclictest-2244							
							_
cvclictest-2245							
			L	•			•
Page 29 , S	earch: Column:	#	▼ conta	ins 🖣			
# CPU	Time Stamp 320,776700	Task <idle></idle>	PID	Latency	Event sched waking	Into commercyclictest_pid=2244_prio=19_farget_cpu=800	
28310738 2	320.776700	<idle></idle>	0	d1	cpu idle	state=0 cpu id=2	
28310739 0	320.776701	<idle></idle>	0	dNh3	sched_wakeup	comm=cyclictest pid=2244 prio=19 target_cpu=000	
28310740 2	320.776701	<idle></idle>	0	d1	irq_enable	caller=0x71eabdF parent=0x67400000F	
28310741 0	320.776701	<idle></idle>	0	dNh1	hrtimer_expire_exit	hrtimer=0xfffb58cc47d7e70	
28310742 0	320.776702	<idle></idle>	0	dNh1	write_msr	6e0, value cdeb39f392	
28310743 0	320.776702	<idle></idle>	0	dNh1	local_timer_exit	vector=236	
28310744 0	320.776702	<idle></idle>	0	dN.1	irq_enable	caller=0x35b0F parent=0x800a7dF	
28310745 0	320.776703	<idle></idle>	0	dN.2	irq_disable	caller=0xf678cF parent=0x67400000F	
28310746 0	320.776703	<idle></idle>	0	dN.2	irq_enable	caller=0xf67b0F parent=0x67400000F	
28310747 0	320.776703	<idle></idle>	0	.N.1	cpu_idle	state=4294967295 cpu_id=0	
28310748 0	320.776703	<idle></idle>	0	dN.2	irq_disable	caller=0xf662cF parent=0x67400000F	- 1
28310749 0	320.776704	<idle></idle>	0	dN.2	irq_enable	caller=0xf6650F parent=0x67400000F	- 1
28310750 0	320.776704	<idle></idle>	0	dN.1	irq_disable	caller=0xf667dF parent=0x67400000F	- 1
28310751 0	320.776704	<idle></idle>	0	dN.1	irq_enable	caller=0xf66c0F parent=0x67400000F	- 1
28310752 0	320.776705	<idle></idle>	0	dN.1	irq_disable	caller=0x1158cdF parent=0x67400000F	- 1
28310753 0	320.776705	<idle></idle>	0	dN.1	irq_enable	caller=0x115909F parent=0x67400000F	
28310754 0	320.776705	<idle></idle>	0	dN.1	irq_disable	caller=0x718cf1F parent=0x67400000F	- 1
28310755 0	320.776706	<idle></idle>	0	dN.1	rcu_utilization	Start context switch	
28310756 0	320.776706	<idle></idle>	U	dN.I	rcu_utilization	ena context switch	
20310/5/ 0	320.776705	<idlo></idlo>	0	d2	sched_SWITCh	prev_comm=swapper/o prev_prev_prev_prev_prev_prev_state=5 ==> next_comm=cyclictest next_pre=2244 next_prev=24	
4	320.770707		U	u2		pages.v reason.rtush on task switch (0)	
							8 //
VIIIVV	alt						

KernelShark 1.0 Wake-up Latency

File Filter Plots Tools Help

Pointer: 320.77	5706 cyclictest-2245			
< + -	> Marker A 320.7767011 Marker B 320.7767069	A,B Delta: 0.0000058		
CPU 0				
CPU 1				
CPU 2				
CPU 3				
cyclictest-2243				
evelictest 2245				
cyclictest-2244				-

Search: Column # v contains v

Next Prev ✔ Graph follows

# 0	PU Time Stam	p Task	PID	Latency	/ Event	Info	1
28310739	320.776701	<idle></idle>	0	dNh3	sched_wakeup	cyclictest:2244 [19] success=1 CPU:000	1
28310740 2	320.776701	<idle></idle>	0	d1	irq_enable	caller=0x71eabdF parent=0x67400000F	
28310741 0	320.776702	<idle></idle>	0	dNh1	hrtimer_expire_exit	hrtimer=0xfffb58cc47d7e70	
28310742 0	320.776702	<idle></idle>	0	dNh1	write_msr	6e0, value cdeb39f392	
28310743 0	320.776702	<idle></idle>	0	dNh1	local_timer_exit	vector=236	
28310744 0	320.776703	<idle></idle>	0	dN.1	irq_enable	caller=0x35b0F parent=0x800a7dF	
28310745 0	320.776703	<idle></idle>	0	dN.2	irq_disable	caller=0xf678cF parent=0x67400000F	
28310746 0	320.776703	<idle></idle>	0	dN.2	irq_enable	caller=0xf67b0F parent=0x67400000F	
28310747 0	320.776704	<idle></idle>	0	.N.1	cpu_idle	state=4294967295 cpu_id=0	
28310748 0	320.776704	<idle></idle>	0	dN.2	irq_disable	caller=0xf662cF parent=0x67400000F	T
28310749 0	320.776704	<idle></idle>	0	dN.2	irq_enable	caller=0xf6650F parent=0x67400000F	
28310750 0	320.776705	<idle></idle>	0	dN.1	irq_disable	caller=0xf667dF parent=0x67400000F	
28310751 0	320.776705	<idle></idle>	0	dN.1	irq_enable	caller=0xf66c0F parent=0x67400000F	
28310752 0	320.776705	<idle></idle>	0	dN.1	irq_disable	caller=0x1158cdF parent=0x67400000F	
28310753 0	320.776706	<idle></idle>	0	dN.1	irq_enable	caller=0x115909F parent=0x67400000F	
28310754 0	320.776706	<idle></idle>	0	dN.1	irq_disable	caller=0x718cf1F parent=0x67400000F	
28310755 0	320.776706	<idle></idle>	0	dN.1	rcu_utilization	Start context switch	
28310756 0	320.776706	<idle></idle>	0	dN.1	rcu_utilization	End context switch	
28310757 0	320.776707	<idle></idle>	0	d2	sched_switch	swapper/0:0 [120] S ==> cyclictest:2244 [19]	
28310758 0	320.776707	<idle></idle>	0	d2	tlb_flush	pages=0 reason=flush on task switch (0)	

KernelShark 1.0 Sessions

File Filter Plots	Tools Help				
🖺 Open	Ctrl+O	_			
🛎 Sessions	🕨 🗎 Restor Last Session 💦		_		
🗶 Quit	Ctrl+Q Import Session	rker B 320.7767069 A,B Delta: 0.0000058			
	Export Sassion			1	-
CPU 0					
CPU 1					
CPU 2					
CPU 3					
cyclictest-2243					
cyclictest-2244					-

vmware^{*}

Next Prev ✔Graph follows

#	CPU Time Sta	1p Task	PID	Latency	/ Event	Info
28310739	0 320.77670	1 <idle></idle>	0	dNh3	sched_wakeup	cyclictest:2244 [19] success=1 CPU:000
28310740	2 320.77670	1 <idle></idle>	0	d1	irq_enable	caller=0x71eabdF parent=0x67400000F
28310741	0 320.77670	2 <idle></idle>	0	dNh1	hrtimer_expire_exit	hrtimer=0xfffb58cc47d7e70
28310742	0 320.77670	2 <idle></idle>	0	dNh1	write_msr	6e0, value cdeb39f392
28310743	0 320.77670	2 <idle></idle>	0	dNh1	local_timer_exit	vector=236
28310744	0 320.77670	3 <idle></idle>	0	dN.1	irq_enable	caller=0x35b0F parent=0x800a7dF
28310745	0 320.77670	3 <idle></idle>	0	dN.2	irq_disable	caller=0xf678cF parent=0x67400000F
28310746	0 320.77670	3 <idle></idle>	0	dN.2	irq_enable	caller=0xf67b0F parent=0x67400000F
28310747	0 320.77670	4 <idle></idle>	0	.N.1	cpu_idle	state=4294967295 cpu_id=0
28310748	0 320.77670	4 <idle></idle>	0	dN.2	irq_disable	caller=0xf662cF parent=0x67400000F
28310749	0 320.77670	4 <idle></idle>	0	dN.2	irq_enable	caller=0xf6650F parent=0x67400000F
28310750	0 320.77670	5 <idle></idle>	0	dN.1	irq_disable	caller=0xf667dF parent=0x67400000F
28310751	0 320.77670	5 <idle></idle>	0	dN.1	irq_enable	caller=0xf66c0F parent=0x67400000F
28310752	0 320.77670	5 <idle></idle>	0	dN.1	irq_disable	caller=0x1158cdF parent=0x67400000F
28310753	0 320.77670	6 <idle></idle>	0	dN.1	irq_enable	caller=0x115909F parent=0x67400000F
28310754	0 320.77670	6 <idle></idle>	0	dN.1	irq_disable	caller=0x718cf1F parent=0x67400000F
28310755	0 320.77670	6 <idle></idle>	0	dN.1	rcu_utilization	Start context switch
28310756	0 320.77670	6 <idle></idle>	0	dN.1	rcu_utilization	End context switch
28310757	0 320.77670	7 <idle></idle>	0	d2	sched_switch	swapper/0:0 [120] S ==> cyclictest:2244 [19]
28310758	0 320.77670	7 <idle></idle>	0	d2	tlb_flush	pages=0 reason=flush on task switch (0)

KernelShark 0.2 Zooming

File	ilter Pl	ots Capture H	elp				
Pointe	: 321.1	67642 Cursor:	0.0 Marke	r <mark>A:</mark> 0.0	Marker <mark>B:</mark> (0.0 A,B Delta: 0.0	
							Time Line
	312.5	78996					321,58270 330,607327
CPU (
CPU 1							
CPU 2							
CPU 3							
Page 1	<u>.</u>	Search: Colum	n: #	•	contains	-	graph follows
#	CPU	Time Stamp	Task	PID	Latency	Event	Info
0	1	312,578996	cvclictest	2243		function	mutex unlock < rb simple write
1	2	312.578996	emacs	2000	d3	function	srcu read lock < trace hardings off
2	3	312.578996	<idle></idle>	0	d1	function	raw spin lock < get next timer interrupt
3	2	312.578997	emacs	2000	d2	irg disable	caller=0xf662cF parent=0x67400000F
4	3	312.578997	<idle></idle>	0	d2	function	_raw_spin_unlock < get_next_timer_interrupt
5	2	312.578997	emacs	2000	d3	function	_srcu_read_unlock < trace_hardirgs_off
6	3	312.578997	<idle></idle>	0	d1	function	_raw_spin_lock_irqsave < hrtimer_get_next_event
7	2	312.578997	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_on
8	3	312.578998	<idle></idle>	0	d2	function	_raw_spin_unlock_irgrestore < hrtimer_get_next_event
9	2	312.578998	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F
10	2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_on
11	2	312.578998	emacs	2000	d3	function	srcu_read_lock < trace_hardirqs_off_caller
12	1	312.578998	cyclictest	2243	d.h3	irq_work_entry	vector=246
13	2	312.578998	emacs	2000	d2	irq_disable	caller=0x35ccF parent=0x800964F
14	3	312.578998	<idle></idle>	0	d2	function	srcu_read_lock < cpuidle_enter_state
15	2	312.578998	emacs	2000	d3	function	srcu_read_unlock < trace_hardirqs_off_caller
16	1	312.578999	cyclictest	2243	d.h3	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>
17	3	312.578999	<idle></idle>	0	d1	cpu_idle	state=6 cpu_id=3
18	1	312.578999	cyclictest	2243	d.h4	function	_raw_spin_unlock_irqrestore <wake_up_common_lock< td=""></wake_up_common_lock<>
19	2	312.578999	emacs	2000	d.h2	irq_work_entry	vector=246
20	3	312.578999	<idle></idle>	0	d2	function	_srcu_read_unlock < cpuidle_enter_state
21	2	312.578999	emacs	2000	d.h2	function	_raw_spin_lock_irqsave <wake_up_common_lock< td=""></wake_up_common_lock<>
22	1	312.5/8999	cyclictest	2243	u.n3 d b2	function	raw_spin_uote_indexee <wake_up_common_lock< td=""></wake_up_common_lock<>
23	2	312.370999	ernacs	2000	d h2	function	Taw spin under index index and the mean lack
24	2	312.3/0999	ernacs	2000	u.112	runction	Taw Spiri Lock Trisave S Wake up Common Lock

KernelShark 0.2 Zooming

				-		No second destant destant destant	
#12/10						kernelshark(trace.dat)	1 M 5 HW
Hilter	Plots Capture	Help					
er: 320	189436 Cursor	о.о магке	0.0	Marker	0.0 A,B Deita: 0.0	2 Vii	
						Time Line	
312	578996					321.588270	330.60732
× –							
1							
1							
2							
-							
3							
-							
		17.000 - 12	77				
1 :	Search: Colur	nn: #		contains	X 1	graph follows	
CP	U Time Stamp	Task	PID	Latency	Event	info	
1	312.578996	cyclictest	2243		function	<pre>mutex_unlock < rb_simple_write</pre>	
2	312.578996	emacs	2000	d3	function	_srcu_read_lock < trace hardings off	
3	312:578996	<idle></idle>	0	d1	function	raw spin Lock < get next timer interrupt	
2	312.578997	emacs	2000	d2	function	caller=extbc/cr parent=ext/400000F	
2	312 578997	emacs	2000	d2	function	Taw spin_uncock < get_next_cater_interippe	
3	312.578997	<idle></idle>	0	d1	function	raw spin lock i rasaye < hrtimer get next event	
2	312.578997	emacs	2000	d3	function	srcu read lock < trace hardings on	
3	312.578998	<idle></idle>	0	d2	function	raw spin unlock irgrestore < hrtimer get next event	
z	312.578998	emacs	2000	d2	irg_enable	caller=0xf6650F parent=0x67400000F	
2	312.578998	emacs	2000	d3	function	_srcu_read_unlock < trace_hardirgs_on	
2	312.578998	emacs	2000	d3	function	_srcu_read_lock < trace_hardirgs_off_caller	
1	312.578998	cyclictest	2243	d.h3	irq_work_entry	vector=246	
2	312.578998	emacs	2000	d2	irq_disable	caller=0x35ccF parent=0x800964F	
3	312.578998	<idle></idle>	0	d2	function	_srcu read lock < cpuidle enter state	
2	312.578998	emacs	2000	d3	function	_srcu read unlock < trace hardings off caller	
1	312.578999	cyclictest	0	d.13	runction	_raw spin_lock_irqsave <wake common_lock<="" td="" up=""><td></td></wake>	
1	312.578999	cyclictest	2243	d h4	function	state=o cpu_lu=>	
*	312.578999	emacs	2000	d.h2	irg work entry	vector=246	
2	312.578999	<idle></idle>	0	d2	function	srcu read unlock < cpuidle enter state	
2		emace	2000	d.h2	function	raw_spin lock_irqsave <wake_up_common_lock< td=""><td></td></wake_up_common_lock<>	
2 3 2	312.578999	ennoca				raw min lack increase and unknown lack	
2 3 2 1	312.578999 312.578999	cyclictest	2243	d.h3	function	Taw spin cock indsave swake_up_collaton_cock	
2 3 2 1 2	312.578999 312.578999 312.578999	cyclictest emacs	2243 2000	d.h3 d.h3	function function	raw spin tock ingrestore < wake_up_common_lock	



KernelShark 1.0 Zooming

Flie Fliter Plots Tools Help	File	Filter	Plots	Tools	Help
------------------------------	------	--------	-------	-------	------

Pointer: 321		b58cc223fe70		
< +	- > Marker A Marker B	A,B Delta:		
312.5	78996		321.593161	330.60732 *
CPU 0				
CDU 1				
CPUI				
CPU 2				
CPU 3				
				-

Search: Column #		contains				Next Prev Graph follows		
#	PU Time Stamp	Task	PID	Latency	Event	Info		
27581632 1	320.530305	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F		
27581633 3	320.530305	Xorg	805	d	irq_disable	caller=0x35ccF parent=0x800082F		
27581634 3	320.530305	Xorg	805	d	irq_enable	caller=0x4192F parent=0x67400000F		
27581635 1	320.530305	emacs	2000	d	irq_disable	caller=0x71ee50F parent=0x67400000F		
27581636 3	320.530305	Xorg	805		sys_enter	NR 47 (3a, 7fffa024dbb0, 0, a, 0, 55ac8fe9fdf0)		
27581637 3	320.530306	Xorg	805	1	sys_enter_recvmsg	fd: 0x000003a, msg: 0x7fffa024dbb0, flags: 0x0000000		
27581638 1	320.530306	emacs	2000	d1	preempt_disable	caller=0x71ee5aF parent=0x67400000F		
27581639 1	320.530306	emacs	2000	d1	irq_enable	caller=0x71ed60F parent=0x67400000F		
27581640 3	320.530306	Xorg	805	d2	irq_disable	caller=0xf678cF parent=0x67400000F		
27581641 1	320.530306	emacs	2000	d2	irq_disable	caller=0xf678cF parent=0x67400000F		
27581642 3	320.530307	Xorg	805	d2	irq_enable	caller=0xf67b0F parent=0x67400000F		
27581643 1	320.530307	emacs	2000	d2	irq_enable	caller=0xf67b0F parent=0x67400000F		
27581644 3	320.530307	Xorg	805	1	preempt_disable	caller=0x71f143F parent=0x67400000F		
27581645 1	320.530307	emacs	2000	1	preempt_enable	caller=0x71ed4eF parent=0x67400000F		
27581646 3	320.530308	Xorg	805	d2	irq_disable	caller=0xf662cF parent=0x67400000F		
27581647 1	320.530308	emacs	2000	d2	irq_disable	caller=0xf662cF parent=0x67400000F		
27581648 3	320.530308	Xorg	805	d2	irq_enable	caller=0xf6650F parent=0x67400000F		
27581649 1	320.530308	emacs	2000	d2	irq_enable	caller=0xf6650F parent=0x67400000F		
27581650 3	320.530308	Xorg	805	d2	irq_disable	caller=0xf678cF parent=0x67400000F		
27581651 1	320.530308	emacs	2000		sys_exit	NR 7 = 1		
27581652 1	320.530309	emacs	2000	1	sys_exit_poll	0x1		
27581653 3	320.530309	Xorg	805	d2	irq_enable	caller=0xf67b0F parent=0x67400000F		
4					-l			
	Nare							

KernelShark 1.0 Zooming

		200 🔛				Steven Rostedt 74% (4:58, 74%) (05:5
1					Kernel Shark (/rt-tests/trace.dat)	
File Filter P	ots Tools He	alp				
Pointer: 320.	97580	<idle>-0</idle>	Cpu 2 d.2 irg	enable caller=0x71ecf1F pa	rent=0x67400000F	
< +		Marker A		Marker B	A,B.Delta:	
312.57	996				321.593161	330.60732 *
_					1	1
CPU 0						
CPU 1						
CPU 2		A REAL PROPERTY	H BERNALDARY AND AND A		energy sympetic many energy from the many from the many property and the second system of the second system of	
1.000						
CPU 3						a sa ang kana na manda da sa kanan dina mining kanan dina mang kanan sa kanan sa kanan sa kanan sa sa kanan sa
Search: Colum	n'#	→ conta	ins *	Next	Prev Graph follows	
	e metalio del Calor	(#2016)	Bre Exercis			
# CP	220 Zoo262	Task	PID Latency	y Event	INTO	
28146170 1	320.700362	emacs	2000 d.2	irg_disable	caller=0x67b0E parent=0x67400000E	
28146172 1	320,700363	emacs	20001	preempt enable	caller=0x71ed4eF narent=0x67400000F	
28146173 1	320.700363	emacs	2000 d2	irg disable	caller=0x662cF parent=0x67400000F	
28146174 1	320,700363	emacs	2000 d2	irg enable	caller=0xf6650F parent=0x67400000F	
28146175 1	320.700364	emacs	2000 d2	irg disable	caller=0xf678cF parent=0x67400000F	
28146176 1	320.700364	emacs	2000 d2	irg_enable	caller=0xf67b0F parent=0x67400000F	
28146177 1	320.700364	emacs	20001	preempt_disable	caller=0x2619e9F parent=0x2619e9F	
28146178 1	320.700364	emacs	2000 d2	irq_disable	caller=0xf662cF parent=0x67400000F	
28146179 1	320.700365	emacs	2000 d2	irg_enable	caller=0xf6650F parent=0x67400000F	
28146180 1	320.700365	emacs	2000 d2	irq_disable	caller=0xf678cF parent=0x67400000F	
28146181 1	320.700365	emacs	2000 d2	irq_enable	caller=0xf67b0F parent=0x67400000F	
28146182 1	320,700366	emacs	20001	preempt_enable	caller=0x2619ffF parent=0x2619ffF	
28146183 1	320.700366	emacs	2000 d2	irq_disable	caller=0xf662cF parent=0x67400000F	
28146184 1	320.700366	emacs	2000 d2	irq_enable	caller=0xf6650F parent=0x67400000F	
28146185 1	320.700366	emacs	2000	kmem_cache_alloc_node	(_alloc_skb+0x57) call_site=ffffffff991c5527 ptr=0xffff9e5d3a8e8b00 bytes_req=232 bytes_alloc=256 gfp_flags=	GFP_KERNEL_ACCOUNT GFP_RETRY_MAYFAIL node=-1
28146186 1	320.700367	emacs	2000 d2	irq_disable	caller=0xf678cF parent=0x67400000F	
28146187 1	320.700367	emacs	2000 d2	irq_enable	caller=0xf67b0F parent=0x67400000F	
28146188 1	320,700367	emacs	20001	preempt_disable	caller=0x25c06eF parent=0x25c06eF	
28146189 1	320.700368	emacs	2000 d2	irq_disable	caller=0xf662cF parent=0x67400000F	
28146190 1	320,700368	emacs	2000 d2	irg_enable	caller=0xf6650F parent=0x67400000F	
28146191 1	320.700368	emacs	2000 d2	irq_disable	caller=0xt678cF parent=0x67400000F	
						4

- libkshark.so
 - The guts of KernelShark is being "modularized"
 - The KernelShark application is just a "shell"
 - Any tool will be able to use it
 - Also will be used by Python applications (libkshark.py)
- Will read multiple formats
 - Not just trace.dat
 - perf.data
 - Common Trace Format (CTF)
- Plugins
 - C, C++, Python











- More than one view
 - Plot view (what it currently is)
 - Graphs

ware

- Flame graphs (see Brendan Gregg's presentations)
- Will show multiple machines
 - Show interactions between hosts and multiple guests





We have time!

DEMO!

