

2008.7.5

JNUG 2008 BOF

NetBSD 5.0

(and the future)

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Topics

- ♪ Kernel
 - ♪ MP
 - ♪ Threading model (wrstuden-revivesa)
 - ♪ Scheduler
 - ♪ Modules
- ♪ Filesystem
 - ♪ WAPBL
 - ♪ PUFFS, rumps
 - ♪ Snapshot (fss(4))
 - ♪ Softupdate
- ♪ Releases
- ♪ GSoC 2007 / 2008

MP (1)

- ♪ Lock & synchronization primitives
 - ♪ mutex(9)
 - ♪ condvar(9)
 - ♪ rwlock(9)
 - ♪ atomic(9)
 - ♪ mb(9)
 - ♪ softint(9)
- ♪ Subsystems
 - ♪ NFS (yamt-nfs-mp)
 - ♪ audio (ad-audiomp)
 - ♪ scsipi(4), ata(4), raidframe(4), ...

MP (2)

- ♪ Replace uses of simple locks and lockmgr() locks throughout the kernel
- ♪ Implement a patent free alternative to RCU (read, copy, update)
- ♪ Allow interrupt handlers to be individually marked as MT safe / unsafe
- ♪ Make lockstat use timecounters for reporting, so that results are accurate for sleep locks
- ♪ Make event counters lockless
- ♪ Convert remaining global counters into event counters

Threading model (wrstudent-revivesa)

- ♪ 1:1
- ♪ Revive SA (Scheduler Activation, M:N)
- ♪ Re-add syscall compatibility of SA-based libpthread programs
- ♪ Re-add necessary upcall support
- ♪ Clean up
- ♪ wrstudent-fixsa? (netbsd-4)

Scheduler changes

- ♪ Scheduler implementation configuration
 - ♪ bsd4
 - ♪ M2
- ♪ schedctl(8)
 - ♪ nice(1) replacement
 - ♪ Affinity
 - ♪ Policy
 - ♪ Time-sharing
 - ♪ FIFO
 - ♪ Round-robin
- ♪ cpuctl(8)
- ♪ POSIX Real-Time Extensions

WAPBL (1)

- ♪ Write-Ahead Physical Block Logging
 - ♪ Database
- ♪ Wasabi JFS
 - ♪ Contributed by Wasabi Systems, Inc.
 - ♪ <http://www.wasabisystems.com/technology/wjfs>
 - ♪ NetBSD 4.0 base
 - ♪ Darrin B. Jewell <dbj@NetBSD.org>
- ♪ Ported to NetBSD HEAD around 2008/04
 - ♪ pooka@ & simonb@ & go@
 - ♪ simonb-wapbl
 - ♪ Running on ftp.n.o, but... (20080705)

WAPBL (2)

- ♪ For FFSv1 and FFSv2
- ♪ Log only metadata
- ♪ Extra area for logs
 - ♪ will be included within filesystem
- ♪ Mount
 - ♪ Option (-o log)
- ♪ Compatibility?

Filesystem

- ♪ PUFFS
- ♪ rumps
- ♪ fss(4)
- ♪ Softupdate

Modules

- ♪ Kernel module
- ♪ Replace LKM
- ♪ From FreeBSD
- ♪ Path?
- ♪ Versioning?
- ♪ ABI?
- ♪ Application
 - ♪ md_root
 - ♪ audio
 - ♪ VFS
 - ♪ network protocols?

GSoC 2007

- ♪ atf: Automated Testing Framework
- ♪ hal: Hardware monitoring and HAL port
- ♪ qos: A Framework For Enforcing QoS Inside the NetBSD UVM
- ♪ ukfs: Running Kernel File Systems in Userspace
- ♪ xpkgsrc: Improving the pkgsrc build system
- ♪ zfs: Porting ZFS

GSoC 2008 (1)

- ♪ uvc: Add support for UVC devices (USB web-cams)
- ♪ dvb: DVB drivers and kernel framework
- ♪ cwrapper: rewrite pkgsrc wrapper framework in C
- ♪ syslogd: Improve syslogd
- ♪ atfify: Converting remaining regression tests to the Automatic Testing Framework

GSoC 2008 (2)

- ♪ ext3: Implement Ext3 file system support
- ♪ packet-classes: Create an in-kernel API for "packet classes"
- ♪ fs-utils: File system access utilities
- ♪ wscons: Expansion for wstablet in NetBSD
- ♪ subfiles: Subfile Support for NetBSD
- ♪ hurdt: Hurd translators
- ♪ lvm: Write and improve NetBSD LVM driver
- ♪ teredo: Implementation of RFC4380 (Teredo) in NetBSD

I18N

♪ `wcurses`

♪ `nvi`

♪ `Citrus?` `LC_COLLATE`, `localedef`, `regex...`

♪ `uwscons???`

Commit Stats src/ 200707-200806 (1)

1	2123	ad	21	177	dholland
2	947	xtraeme	22	175	jdc
3	731	yamt	23	155	uwe
4	709	pooka	24	153	liamjfoy
5	678	dyoung	25	151	rmind
6	650	christos	26	148	garbled
7	573	bouyer	27	137	pavel
8	529	joerg	28	129	drochner
9	490	tsutsui	29	129	kiyohara
10	444	jmcneill	30	125	riz
11	427	matt	31	117	jnemeth
12	279	martin	32	116	dogcow
13	276	lukem	33	115	njoly
14	257	macallan	34	103	wrstuden
15	242	skrll	35	100	cube
16	234	dsl	36	99	simonb
17	228	cegger	37	96	plunky
18	213	wiz	38	95	elad
19	192	he	39	89	chris
20	185	jmmv	40	89	agc

Commit Stats src/ 200707-200806 (2)

41	88	mjf	61	36	phx
42	83	nisimura	62	36	vanhu
43	83	ghen	63	35	ginsbach
44	82	apb	64	33	oster
45	71	mlelstv	65	32	reed
46	67	reinoud	66	31	itohy
47	67	nakayama	67	30	sborrill
48	56	mrg	68	30	mgrooms
49	55	tnn	69	28	ober
50	50	hannken	70	27	rjs
51	48	tls	71	27	aymeric
52	47	msaitoh	72	24	manu
53	45	degroote	73	23	nonaka
54	44	rumble	74	22	martti
55	43	gmcgarry	75	21	rafal
56	41	tron	76	20	gdt
57	41	peter	77	20	perry
58	39	bjs	78	18	markd
59	39	isaki	79	17	adrianp
60	37	thorpej	80	17	scw

Commit Stats src/ 200707-200806 (3)

81	16	ragge	101	9	mjacob
82	15	jklos	102	8	rearnsha
83	14	dsieger	103	7	veego
84	14	hubertf	104	7	rtr
85	13	ichiro	105	7	abs
86	13	rillig	106	6	hira
87	13	hauke	107	6	darrenr
88	12	skd	108	6	elric
89	12	is	109	6	junyoung
90	12	chs	110	6	seanb
91	12	sjg	111	5	tshiozak
92	11	snj	112	5	jld
93	11	kent	113	5	sekiya
94	11	taca	114	5	alc
95	10	spz	115	5	kristew
96	10	hamajima	116	5	kleink
97	9	smb	117	5	haad
98	9	freza	118	5	kochi
99	9	mhitch	119	5	hans
100	9	uebayasi	120	5	gson

Commit Stats src/ 200707-200806 (4)

121	5	tonnerre	141	2	daniel
122	4	heas	142	2	atatat
123	4	minskim	143	1	mishka
124	4	blymn	144	1	cherry
125	4	explorer	145	1	jschauma
126	4	kefren	146	1	gavan
127	4	imp	147	1	erh
128	4	ws	148	1	rittera
129	4	cliff	149	1	perseant
130	3	hpeyerl	150	1	dsainty
131	3	keiichi	151	1	mellon
132	3	jkunz	152	1	billc
133	3	chuck	153	1	mkirby
134	2	fvdl	154	1	marty
135	2	enami	155	1	david
136	2	marcus	156	1	dan
137	2	seb	157	1	brook
138	2	bsh	158	1	rhaen
139	2	cyber	159	1	jwise
140	2	sketch	160	1	darcy

Commit Stats src/ 200707-200806 (5)

161	1	weinem
162	1	cjep
163	1	scottr
164	1	toshii
165	1	heinz
166	0	minoura
167	0	soda

Commit Stats

pkgsrc/ 200707-200806 (1)

1	1886	wiz	21	123	agc
2	1428	joerg	22	121	seb
3	1048	obache	23	121	tonnerre
4	919	rillig	24	115	rtr
5	848	drochner	25	102	reed
6	809	tnn	26	102	he
7	693	jlam	27	94	jnemeth
8	522	bjs	28	74	schmonz
9	471	taca	29	67	rhaen
10	447	adrianp	30	67	dsainty
11	414	ghen	31	65	hira
12	391	tron	32	64	smb
13	307	heinz	33	64	dmcmahill
14	293	adam	34	62	shannonjr
15	263	abs	35	61	jmcneill
16	259	xtraeme	36	61	kefren
17	257	gdt	37	60	jmmv
18	167	markd	38	58	tonio
19	166	martti	39	54	uebayasi
20	127	minskim	40	52	sborrill

Commit Stats

pkgsrc/ 200707-200806 (2)

41	48	jdolecek	61	13	grant
42	44	bouyer	62	12	
43	42	wulf	63	12	cube
44	33	spz	64	11	degroote
45	32	dillo	65	11	bad
46	29	mjl	66	11	peter
47	28	is	67	11	lukem
48	27	apb	68	11	simonb
49	26	hiramatsu	69	9	reinoud
50	26	darcy	70	9	kleink
51	23	lkundrak	71	8	yyamano
52	22	veego	72	8	dan
53	20	salo	73	8	jwise
54	20	hauke	74	8	cjep
55	20	sketch	75	7	pooka
56	18	rh	76	7	mishka
57	18	christos	77	7	dbj
58	16	kristerw	78	7	dogcow
59	15	hubertf	79	7	epg
60	14	dholland	80	7	gson

Commit Stats

pkgsrc/ 200707-200806 (3)

81	7	weinem	101	2	phil
82	6	kim	102	2	wennmach
83	5	martin	103	2	recht
84	5	cjs	104	2	ichiro
85	5	kano	105	2	mrg
86	5	snj	106	2	rmind
87	5	jschauma	107	2	itohy
88	5	jklos	108	2	garbled
89	5	rumble	109	2	tsutsui
90	5	tv	110	2	dholland
91	4	mlelstv	111	2	toshii
92	4	gendalia	112	1	minoura
93	4	jonb	113	1	macallan
94	3	plunky	114	1	hannken
95	3	tls	115	1	schwarz
96	3	chris	116	1	manu
97	3	kei	117	1	dsieger
98	3	gavan	118	1	brook
99	3	jdc	119	1	aymeric
100	2	zuntum	120	1	frueauf