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¥ Andrey A. Chernov ache@freebsd.org

¥ Bruce A. Mah bmah@freebsd.org

¥ Dag-Erling Smørgrav des@freebsd.org

¥ Giorgos Keramidas keramida@freebsd.org

¥ Ingvil Hovig ingvil.hovig@skatteetaten.no

¥ Jesper Holck jeh.inf@cbs.dk

¥ John Baldwin jhb@freebsd.org

¥ John Polstra jdp@freebsd.org

¥ Kirk McKusick mckusick@freebsd.org

¥ Mark Linimon linimon@freebsd.org

¥ Marleen Devos

¥ Niels Jørgensen nielsj@ruc.dk

¥ Nik Clayton nik@freebsd.org

¥ Poul-Henning Kamp phk@freebsd.org

¥ Simon L. Nielsen simon@freebsd.org

Chapter 1. ! " # \$ %

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60. \$B' #, " (8" (; #&9/% 6 ' \$#; 7#+/* # 1\$"' 6&-0), 1' \$0&/ /8* \$' \$' /) 1 %#+ / . "\$' \$8(. 60&/&-
. "#? \$00. V' &\$4" (? /) /8* \$' \$' /) 1 -CURRENT /, / -STABLE ' (851(\$&0) 15. #, ' \$' /\$*
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K#"4\$' 0\$' #; ' ("6@/, , 9&# ; #, -B /' 0&1# " (8" (; #&9/% #1 FreeBSD " (; #&(= & /' +/1/+6(, -' #,
&# \$0&- E&(*#+\$, - /0. #, -86\$&0) . (" (, , \$, - ' # *' #4/* / " (8" (; #&9/% (* / 1 " (8, /9' 57
&\$%63/7 . "#? \$00(7 " (8" (; #&%/. M(8" (; #&9/% &(%@\$ *#@&\$ " (; #&(&- ' (+ ' \$0%#, -%/* /
/8* \$' \$' /) * / #+' #1"\$* \$' ' #, . #E&#* 6, #@/+) "\$?\$' 8/" #1(' /) /, / &\$0&/" #1(' /) #+' #4#
/, /' \$0%#, -%/7 01# /7 /8* \$' \$' /: , #' *#@&\$. /0(&- +"64#\$ /8* \$' \$' /\$.

! #0%#, -% %(@+5: %#* * /& . "\$+0&(1,) \$& 0#; #: /' %"\$* \$' &(, -' # \$ /8* \$' \$' /\$, E&# *#+\$, - 0
#9\$' - 150%# #: 0&\$. \$' - = /' %"\$* \$' &(, -' #0&/ . F#* * /&5 . "#/07##) &' (0&#, -%# 9(0&#, 9&# 8(
#+ /' 4##^[1] ; 5, # 0+\$, (' # 85427 %#* * /, 9&# 0#0&(1,) \$& 1 0"\$+ \$* 233 %#* * /&(1+\$' -.

H " (* % (7 ". "#4" (* * /" #1(' /) " 1 *#+\$, / K#"4\$' 0\$' (, %(@+5: . "#4" (* * /0& /* \$\$& 01#:
0#; 0&1\$' ' 5: 0&/, - " (; #&5 / 0, \$+6\$& 01#/* 0#; 0&1\$' ' 5* *#+\$,) * " (8" (; #&%/. I&## E&(.
1. #, ' \$ * #4 ; 5 ' (851(&-0) "" (8" (; #&#%#: ", &(% %(% #' 1%, = 9(\$& 0; # " / (' (, /8 &" \$; #1(' /: ,

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"\$S86, -&(&#* E&/7 . #+E&(. #1) 1,)= &0) /07#+ ' 5: %#+ / , / +#%6* \$' &(?) 0/0&\$* 5.

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"(00* (&"/1(&- %(% +(, -' \$: B6= . "#1\$" %6 / /' &\$4" (?/= 0/0&\$* 5. I&(/' &\$4" (?) 0/0&\$* 5
&(%@\$ 1(@' (+,) #. "\$+\$, \$' /) #, ; 6+\$& , / /8* \$' \$' /S. "/') &# 0##; 3\$0&1#*. 2# * #* \$' &(L/
L/%0(?// %#+(" (8" (; #&9/% 1#, \$' 15; /" (&- , ' (0%#, -%# (%&/1' # #' ; 6+\$& #; 06@+(&- \$4 0
#0&(- ' 5* / 69(0&' /%(* / . "#S%&(. S&#; 5 -CURRENT * #4 15. #, ') &- "#, - ; 6L\$(((#81#,))
#&%(&51(&- /+\$ /, %#&#" 5\$ #%(8(, /0- 0' \$15) 1, \$' ' 5* /' \$+#0&(&%(* /), * /' / * (, -' 5: 0" #%,
1 &\$9\$' /\$ %#&#" #4# /8* \$' \$' /) +#, @' 5 #0&(1(&-0) 1 -CURRENT . "\$\$+ 0, /)' /\$* 1 -STABLE,
0#0&(1,) \$& 3 +'). R(%# \$ 0, /)' /\$' (851(\$&0) MFC (Merge From Current).

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" (+/%(, -' # ' #157 L6' %?/ : , (. "\$+0&(1,)= &0#; #: #; ' #1, \$' /) +,) . #++\$ "@%/.

W+/' 0&1\$' ' 5* / /0%, =9\$' /) * / /8 E&#: * #+\$, /) 1,)= &0) /0. "(1, \$' /) ; \$8#. (0' #0&/ /
/8* \$' \$' /) 1 L6' %?/) 7, #; C) 1, \$' ' 57 60&("\$1B/* / 1 1\$&%\$ -CURRENT. H E&/7 0, 69() 7
/8* \$' \$' /) * #46& ; 5&- 1' \$0\$' 5' (. ") * 6= 1 1\$&%6 -STABLE.

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0#1\$" B\$' ' # ' #15\$ L6' %?//, . #+. "#S%&5 / , / . "#S%&5, "\$86, -&(&5 %#&#" 57 /' &\$4" /" 6= &0)
1 FreeBSD ^[2]. I&/ . "#S%&5 1. /051(= &0) 1 FreeBSD &(% @\$, %(% / #; 59' 5\$ " (8" (; #&%/: #' /
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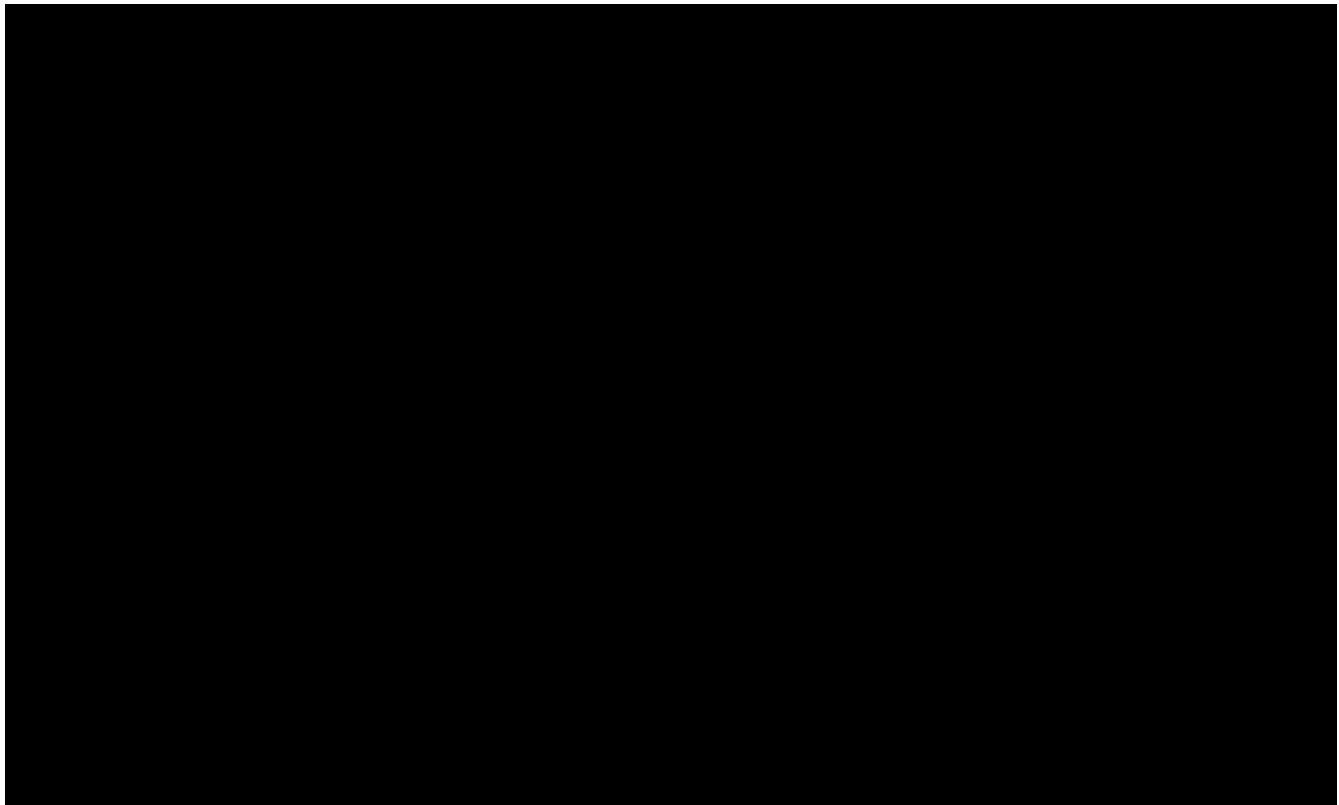
J\$ 063\$0&16\$& 0&(' +("\$. # 15. #, ' \$' / = . "#S%&/"#1(' /), &(%@\$ %(% /
?' \$' &(" /8#1(' ' #4# "\$. #8/&#" /) +,) 7" (' \$' /) . "#S%. <0' #1' #: +/8(: ' 18)& /8 4.4BSD.
^[3] ! #0%#, -%6 . "#S%&/"#1(' /\$) 1,) \$&0) 9(0&=- E&(. ("! "#4" (* * /" #1(' /\$" 1 * #+\$, /
K# " 4\$' 0\$' (, %(@+5: " (8" (; #&9/% / , / . #+. "#S%&0 (* " \$B(\$&, %(% E&# +#, @' # 15. #, ') &-0).
2(@\$ \$0, / . "#S%&/"#1(' /\$ +#, @' # 7" (' /&-0) 1 ?\$' &(" /8#1(' ' #* "\$. #8/&#" //,
"\$86, -&(&5 E&(. #1 . "#S%&/"#1(' /) ; 6+6& / * \$&- #4" (' /9\$' ' 6= . #, \$8' #0&- , &(% %(%
" (8, /9/) 1 * \$&#++ , #4/) 7 0+\$, (= & / 7 . , #7# 0#1* \$0&/ * 5* /, \$0, / 1##; 3\$ 0#1* \$0&/ * 5* /.
2,) #; 3\$4# . "#S%&/"#1(' /) . "#S%&(. . "#S%& . #, (4(\$&0) ' (. #+. "#S%&5, %#&#" 5\$
+#4#1(" /1(= &0) # 0#1* \$0&/ * 57 /' &\$" LS: 0(7 * \$@+6 0#; #: , (' \$' (+/%&(& /' &\$" LS: 0#1.

4.2. D' /0+ %') +#\$0

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#0' #1' 57 1\$&1\$: .

H 0, \$+6= 3\$* +\$" \$1\$ "\$, /8#1 0&" \$, %/, 0, \$+6= 3/\$ + " 64 8(+ " 64#* 1 #. "\$+\$, >' ' #*
' (. "(1, \$' //, . "\$+0&(1,)= & 1\$&%6. !") * #64#, -' %/ / 0# 0. , #B' 5* / , /' /) * / / "#* ; 5
#; #8' (9(= & #L/?/ (, -' 5\$ "\$, /85. !") * #64#, -' %/ / 0 . 6' %&/"' 5* / , /' /) * /
. "\$+0&(1,)= & 1\$&%6 " (8" (; #&%/ ' (&#& * #* \$' & HS&%/ ; \$8#. (0' #0&/ #; #8' (9\$' 5 #1(, (* /
M#* ; 5 #&, /9(= &0) #& . ") * #64#, -' %/ #1 &\$* , 9&# #' / . "\$+0&(1,)= & " (81/, %6, &# \$0&- * \$0&#,
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4.0-RELEASE 1\$&% (4.0-CURRENT " (8+\$, /, (0- ' (4-STABLE / 5.0-CURRENT. J (4.5-RELEASE 1\$&% (" (81\$&1/, (0- ' (1\$&%6 ; \$8#. (0' #0&/ . #+ ' (81(' /\$* RELENG_4_5.



! "#\$%&' 1. ()*)+&*), "-&+ FreeBSD

! 1*\$0*E' 0E&61. +	F\$%. 1(') 7* +#	A) ' (6< B+' ? +*\$%*E' 0E&61. +
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3.0 Current (1\$&% (" (8" (; #&%/)		H\$&%/ Releng 3: 15. 60%/ 0 3.0 Release . # 3.5 Release, 1\$+63/\$ % 15. 60%6 3.5.1 Release / . #0, \$+6= 3\$: 1\$&%\$ 3 Stable
4.0 Current (1\$&% (" (8" (; #&%/)	MS, /8 3.1	H\$&1/ Releng 4: "\$, /85 0 4.1 . # 4.6 (/ "\$, /8 4.6.2), 8(&\$* "\$, /85 0 4.7 . # 4.11 (10\$, ' (9/' () 0 "\$, /8(4.3, &(%@\$ 1\$+63/\$ % 1\$&1/ Releng_4_n), / . #0, \$+6= 3() 1\$&1- "\$, /8(4
5.0 Current (1\$&% (" (8" (; #&%/)	MS, /8 4.0	H\$&1/ Releng 5: M\$, /85 0 5.0 +# 5.4 (8(/0%, = 9\$' /\$* 5.0 / 5.3, %###" 5\$ &(%@\$ 1\$+6& % 1\$&%\$ Releng_5_n), / . #0, \$+6= 3() 1\$&% ("\$, /8(5
6.0 Current (1\$&% (" (8" (; #&%/)	MS, /8 5.3	

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! #0, \$+ ')) 1\$"0/) -CURRENT 10\$4+(#; #8' (9(\$&0) %(% -CURRENT, (. #0, \$+ ' /: "\$, /8 -STABLE 10\$4+(#; #8' (9(\$&0) %(% -STABLE. J (E&#* " /06' %\$ -STABLE #&' #0/&0) % 4-STABLE, (-CURRENT #&' #0/&0) % 5.0-CURRENT . #0, \$ 5.0-RELEASE. [FreeBSD]

Ç<0' #1' #: 15. 60%È 10\$4+(0#8+(>&0) /8 1\$&%/ -CURRENT. <+ ' (%# 1\$&%(-CURRENT ' \$ #;)8(&\$, - ' # + #, @' (" (81\$&1,)&- 0) 1 E&#& * #* \$' &, (* #@\$& 0#0" \$+ #	/&- 0) ' (0&(; /, /8(?//. ! " / * \$" #* E#) 1,) \$&0) &#, 9&# . #0, \$ 3.0-RELEASE, 3.1-RELEASE &(%@\$; 5, . "#+ #, @\$' /\$* 1\$&%/ -CURRENT, / -CURRENT ' \$ 0&(, ' (0&#) 3\$: 1\$&%#: " (8" (; #&%/ + # &\$7 . #", . #%(' \$; 5, 15. 63\$' E&#& "\$, /8 / ' \$; 5, (0#8+(' (1\$&%(3-STABLE. F#4+(-CURRENT 0' #1(0&(' #1/&0) 1\$&%#: " (8" (; #&%/, 8(' / * * #@\$& 0, \$+ #1(&- &#, - % # #0' #1' #: 15. 60%. <@/+(\$&0), 9&# 1\$&%(5-STABLE ; 6+\$& #&+\$, \$' (#& 5.0-CURRENT . " / * \$" ' # ' (* #* \$' & 15. 60%(5.3-RELEASE. R#, - % # . #0, \$ #&+\$, \$' /) 5-STABLE 1\$&%(" (8" (; #&%/ . #, 69/& ' (81(' /\$ 6.0-CURRENT.

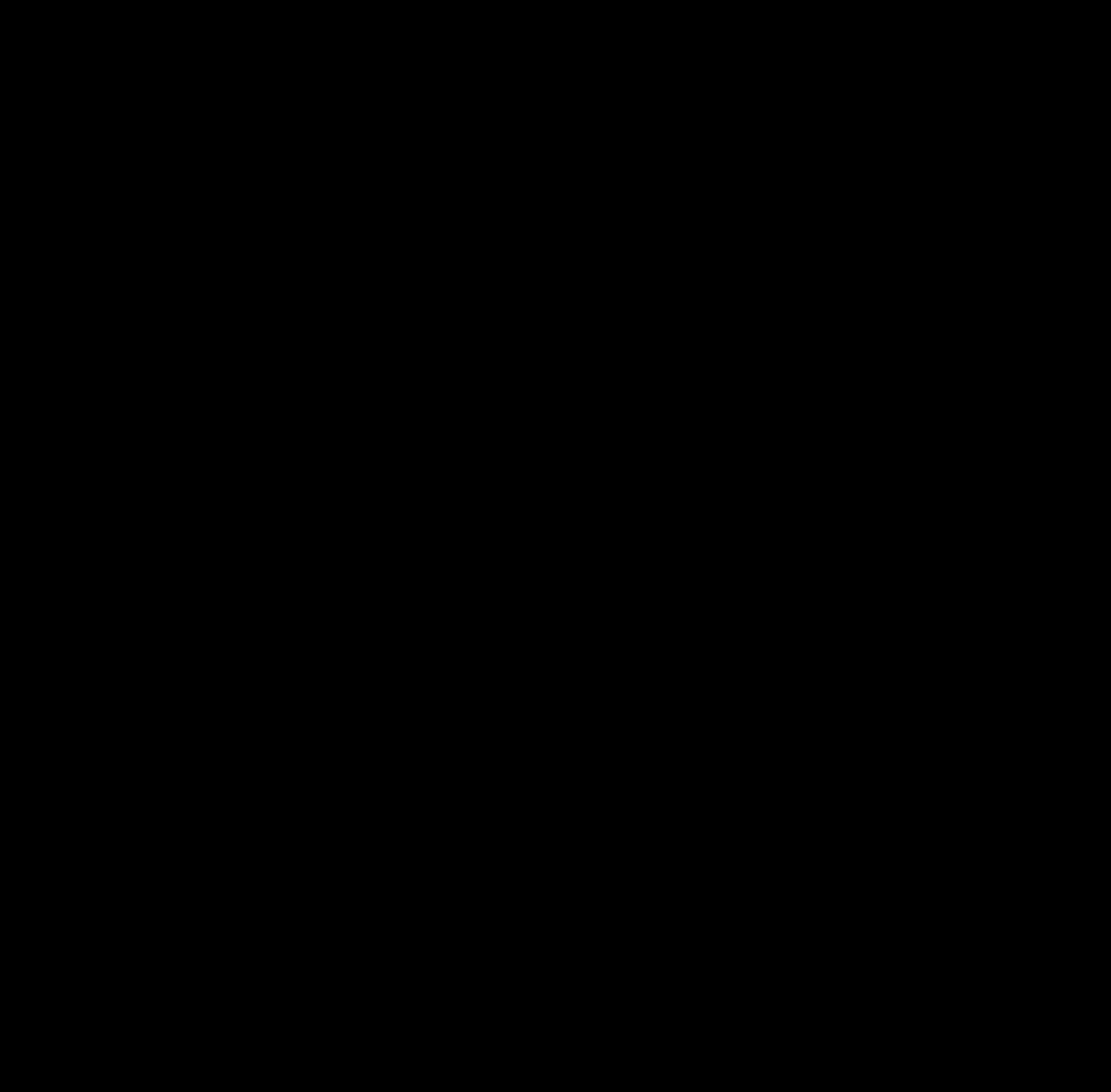
"D/' #"' 5: "\$, /8" 0#8+(\$&0) /8 1\$&%/ -CURRENT . #0, \$ #0' #1' #4# "\$, /8(/, / /8 1\$&%/ -STABLE.

J(9/' () 0 1\$"0// 4.3-RELEASE^[4], % #4+(15. 60%(\$&0) * /' #"' 5: "\$, /8, #' 0&(' #1/&0) Ç1\$&%#: ; \$8#. (0' #0&/È. I&# . "\$+ ' (8' (9\$' # +,) # "4(' /8(?/: , % #&#" 5\$ ' \$ 7#&)& 0, \$+ #1(&- 1\$&%\$ -STABLE / . #&\$' ?/(, - ' 5* ' #15* //8* \$' >' ' 5* L6' %?/) *, % #&#" 5\$ #' (. "\$+, (4(\$& ' # 1* S0&# E# &" \$; 6= & (; 0#, = &' # 0&(; /, - ' #: 0" \$+5, #; ' #1,) \$* #: &#, - % # +,) 1' \$+ " \$' /) /0. " (1, \$' /: ; \$8#. (0' #0&/.^[5]

F(@+ # \$ #; ' #1, \$' /\$ 1 1\$&%\$; \$8#. (0' #0&/ ' (851(\$&0) "6" #1' \$* /0. " (1, \$' /)" (patchlevel). 2,) %(@+ #4# 15. #, ' \$' ' #4# 6, 69B\$' /) ; \$8#. (0' #0&/ ' #* \$" 6" #1') /0. " (1, \$' /) 61\$, /9/1(\$&0), 9&# . #81#,) \$& , \$4%# #&0, \$@/1(&- , %(%/\$ 6, 69B\$' /) ; \$8#. (0' #0&/ ; 5, / "\$, /8#1(' 5. H 0, 69() 7 #0#; \$' ' # 0\$" - \$8' 57 6) 81/* #0&\$: ; \$8#. (0' #0&/ * #@\$& ; 5&- 15. 63\$' . #, ' #0&- = ' #15: "\$, /8 /8 1\$&%/ ; \$8#. (0' #0&/. ! " / * \$" #* E#) 1,) \$&0) 4.6.2-RELEASE.

4.3. AOS(. 7 ? \$(') +

2,) . #+1\$+\$' /) /#1, * #+\$, - " (8" (; #&%/ FreeBSD * #@' # . "\$+0&(1/&- 1 1/+ \$ 0, \$+6= 3\$4# +\$" \$1(:



!"#\$%&' 2. /O12 3&4), 5 *1-*1/&6' "

2\$"\$1# "(8" (;#&%/ FreeBSD 0 &\$%63/* / 60/, /)* / .# "(8" (;#&\$/ ' \$. "\$"51' #: /' &\$4" (?/\$: .

2\$"\$1# 0/* 1#, /8/"6\$& 1\$"0// 15. 60%#1, 4+\$ #0' #1' 5\$ 1\$"0// . #"#@+(=& ' #15\$ 4, (1' 5\$ 1\$&1/, (1&#"#0&\$\$. \$' ' 5\$ 1\$"0//)1,)=&0) 1\$"0//)* / 4, (1' #: 1\$&1/. HS"7')) 1\$&1- Ñ E&# 1\$&1- -CURRENT, 1 %###"6= /' &\$4"/"6\$&0) 10) ' #1() "(8" (;#&%(, (1\$&1- -STABLE ' (7#+/&0) ' \$. #0"\$+0&1\$" ' # . #+ ' \$: . !#+ 1\$&1-= -STABLE ' (7#+)&0) 0&("5\$, ' \$. #++\$"@/1(\$* 5\$ 1\$"0//.

!"#\$%&' (7#+/&0) 1 &6* (' \$. #0&#)' ' #: "(8" (;#&%/ , / "(8" (;#&9%/ / 15; /" (= & * #+\$, / "(8" (;#&%/ , %&#" 5\$ 09/&(=& . #+7#+) 3/* /. M\$86, -&(&5 /7 " (;#&5 8(&\$* /' &\$4"/"6=&0) 1 -CURRENT, 4+\$. "#7#+)& . (" (, , \$, -' 6= #&, (+%6, /' (%#' \$? #; CS+/')=&0) /8 -CURRENT 1 -STABLE. V0. "(1, \$' /) ; \$8#. (0' #0&/ #; CS+/')=&0) /8 -STABLE 1 1\$&%/ ; \$8#. (0' #0&/.

D' #4/\$ %##* * /&&\$" 5 /* \$=& 0. \$?/(, -' 6= #; , (0&- #&1\$&0&1\$" ' #0&/ . I&/ "#, /' (851(=&0) "hats" (B,). (* /). I&/ "#, / * #46& ; 5&- , /; # . "#\$%&' 5* / "#,) * /, ' (. "/* \$" , #L/?\$" . # 01)8)* 0 #; 3 \$0&1\$" ' #0&- =, , /; # 0#. "#1#@+(= 3/* #. "\$+\$, >' ' #: 9(0&/ %#+(. ! #0%#, -%6 E&# . "#\$%&, 4+\$, =+ / +#; "#1#, -' # 6+\$,)=& 01#> 01#; #+ '\$ 1"\$*), , =+ / 0' (8' (9\$" ' 5* / "#,) * / '\$ 10\$4+(+#0&6. ' 5. ! #E&#* 6 #' / +#, @' 5 ' (8' (9/&- 8(* \$0&/&\$,), %&#" 5: * #@\$&

15. #, ')&- E&6 "#, - 1 /7 #&06&0&1/\$. 2"64#: 1("/(' &Ñ. \$"\$+(&- "#, - 4"6. . \$.

D' #4/\$ /8 E&/7 "#, \$: ' \$ L#"* (, /8#1(' 5. X#"* (, /8#1(' ' 5\$ "#, / /* \$=& 60&(1, 1 %&#" #* 6%(8(' 5 	' 5\$?\$, /, . "/1/, \$4// / #;) 8(' ' #0&/. J(. /0(' /\$ &(%/7 60&(1#1 Ñ ' #1()) 9(0&- . "#\$%&(, . #E&#* 6 #' # \$3> ' \$ 8(1\$"B\$" # +,) 10\$7 "#, \$: . I&/ #. /0(' /) "#, \$: ' \$) 1,)=&0) L#"* (, /8(?/\$: , (0%#" \$\$. "\$+0&(1,)=& 0#; #: %" (&#"\$ #. /0(' /\$ "#, / 0# 005, %(* / ' (60&(1, 4+\$ #' +#0&6. \$' , /%#' &(%&' 5* / (+"\$0(* /.

[1] 2,) . #, 69\$' /) E# 9/0, (; 5, /00, \$+#1(' . \$" /#+ 0 1)' 1(") 2004 4#+(. # 31 +\$%(:") 2004 4#+(.

[2] J(. "/* \$", "(8" (; #&% (0&\$% (Bluetooth ' (9/' (, (0- %(% . #+. "#\$%&. #%(' \$; 5, (. "/8' (' (+#0&(' # 0&(; /, -' #: +,) 1%, = 9\$' /) 1 1\$&%6 -CURRENT. RS. \$" - E&# 9(0&- #0' #1' #: 0/0&\$* 5 FreeBSD.

[3] ! # 0, #1(* F/"%(D(%F68/%(, . #0, \$ 20 , S& "(8" (; #&%/ #. \$" (?/' # ' 57 0/0&\$* UNIX, /' &\$"L\$: 05 1 #0' #1' #* 6@\$ #. "\$+\$, \$' 5. ! #E&#* 6 ' S& ' \$#; 7#+/* #0&/ 1 ; #, -B#* %#, /9\$0&1\$. "#\$%&/"#1(' /). <+ ' (%# ' #15\$. "/* \$' \$' /) 0/0&\$* 5 / ' #1#\$ #; #"+#1(' /\$. "/1#+) & % &#* 6, 9&# ' \$%#&#" 5\$ "\$, /8(?// 0&(' #1) &0) ; #, \$\$ 154#+ ' 5* / . # 0'(1' \$' / = 0 "(' \$\$. "\$+ . #9/&(\$* 5* / . <+ ' /* /8 . "/* \$" #1) 1,) S&0) . #) 1, \$' /\$ 1\$; -; "(68/' 4(, %&#&" 5: . "\$1" (&/, #; 59' # \$ TCP/IP- 0#\$+/' \$' /\$ 1 %"#&%/\$ 10. , \$0%/ +(' ' 57, (' \$ 1 60&#: 9/15: . #&#% 8(; #, \$\$ +, /&\$, -' 5: . \$" /#+ 1"\$* \$' /.

[4] ! \$" 15* "\$, /8#*, +,) %&#&" #4# E&# +\$: 0&1/&\$, -' # . "#/8#B, #, ; 5, 4.5-RELEASE, ' # 1\$&%/ ; \$8#. (0' #0&/ ; 5, / 0#8+(' 5 #+' #1"\$* \$' ' # +,) 4.3-RELEASE / 4.4-RELEASE.

[5] G+\$0- 15 1/+/&\$ &\$"* /' #, #4/9\$0%#\$ \$." \$0\$9\$' /\$ 0# 0, #1#* Ç0&(; /, -' 5: È, 9&# . "/1#+/& % ' \$%#&#" #: . 6&(' /?\$. HS&% (-STABLE . #. "\$@' \$* 6) 1,) S&0) 1\$&%#: "(8" (; #&%/ , ?\$, - %&#&" #: Ñ ; 5&- . #, \$8' #: +,) #, -B /' 0&1(. #, -8#1(&\$, \$: . W0, / +,) 0/0&\$* 5 ' \$. "/\$*, \$* # . #, 69(&- /8*\$ \$' \$' /), %&#&" 5\$ ' \$; 5, / #; C) 1, \$' 5 ' (* #* \$' & \$> "(81>" &51(' /), &%(0) 0/0&\$* (+#, @' (" (; #&(&- ' (1\$&%\$; \$8#. (0' #0&/.

Chapter 5. ! /0' /1/0' * * E'

5.1. A/7* (7%/ * E' %\$) +

5.1.1. G; 71/* +. (. \$* /%+ " 2< /\$%)

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#&9>&5 # . "#;, \$* (7 /, / + "64/* / 0. #0#; (* / 0. #0#; 0&16) . "#4" \$006 . "#\$%&(. Q9(0&' /% ' \$
/* \$\$& #0#; 57 . "/1/, \$4/: 1 . "#\$%&\$ FreeBSD. [FreeBSD]

5.1.2. : \$?? +// ' %

\$\$, #1\$, #;, (+ (= 3/: ' \$#; 7#+/* 5* / . "/1/, \$4/) * / +,) +#; (1, \$' /) 01#\$4# %#+(/, /
+ #%6* \$' &(?// 1 "\$. #8/&#" /: . F#* * /&&\$" 0#1\$" B/, %##* * /& 1 &\$9\$' /\$. #0, \$+' /7 12
* \$0)? \$1. [FreeBSD] 0%&/1' 5: %##* * /&&\$" Ñ E&# %##* * /&&\$", %&#" 5: 1 0" \$+' \$* 0#1\$" B (,
#+/ ' %##* * /& 1 * \$0)? 1 &\$9\$' /\$ E# 1" \$* \$' /.

N&# /& #&* \$&/&- , 9&# ' \$& &\$7' /9\$0%/7 . "\$.)&0&1/: , %&#" 5\$ * #4, /; 5 . #* \$B (&- %##* * 6-, /; #,
. #, 69/1B\$* 6 . " (1(' (%##* * /&5 1 #0' #1' #* /, / . #+. "#\$%&\$, +\$, (&- %##* * /&5 1 9(0&) 7
/07#+ ' #4# %#+(. "#\$%&(, +,) %&#" 57 6 %##* * /&&\$" (' \$&) 1' #4# " (8" \$B\$' /) ' (/8* \$' \$' /\$.
<+ ' (%#, . "/ @\$, (' // 1' \$0&/ /8* \$' \$' /) 1 9(0&/, 0 %&#" 5* / %##* * /&&\$" " (' \$\$ ' \$ " (; #&(, ,
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. "#9/&(&- L(: , MAINTAINERS, 9&#; 5 68' (&- , \$0&- , / 6 0#. "#1#@+(= 3\$4# E&#: 9(0&/ %(/%/\$-
, /; # #0#; 5\$ &" \$; #1(' /) % 1' \$0\$' /= /8* \$' \$' /: 1 %#+.

5.1.3. ! 1* \$0* 7, . \$? 7* (7 (Core Team)

<0' #1' () %##* (' +(/8; /" (\$&0) %##* * /&&\$" (* / /8 9/0, (%##* * /&&\$" #1 / 15. #, ') \$& L6' %?//
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' (8' (9(\$& , =+\$: ' (9\$&%# #. "\$+\$, >' ' 5\$ "#, / (hats) /) 1,) \$&0) %##* * 9(\$&, - ' 5* (" ; /&" #*
. "/ . "/')& // "\$B\$' /: # ' (. " (1, \$' // " (81/&/) . "#\$%&(J(1 / =,) 2004 4#+(1 0#0&(1
#0' #1' #: %##* (' +5 17#+/, # 9 9, \$' #1. H5; # " 5 . "#1#+) &0) %(@+5\$+1(4#+(.

5.1.4. A\$&%\$0\$H(' * +'

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9(0&- %#+(, / /* \$\$& "\$B (= 3\$\$ 0, #1# 1 0, 69(\$ " (8' #4, (0/: . # . #1#+6 %#+(. I&# 1%, = 9(\$& 1
0\$;) %(% (%&/1' 6= " (; #&6, ' (. " (1, \$' ' 6= ' (0&/ * 6, /" #1(' /\$ 69(0&' /%#1
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H /07#+ ' #* %#+\$ FreeBSD \$0&- L(: , MAINTAINERS, 0#+\$ "@(3/: %" (&#\$ #. /0(' /\$ #, %(%
%(@+5: 0#. "#1#@+(= 3/: . "\$+. #9/&(\$& . #, 69(&- 1%, (+5. J(, /9/\$ E# 61\$+##, \$' /) /
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8(0&" \$1(&- 1 * \$+, \$' ' #: . "\$\$. /0%\$, \$0, / 0#. "#1#@+(= 3/: ; 6+\$& ' \$+0&6. \$' 1 &\$9\$' /\$
' \$%&#" #4# 1" \$* \$' /.

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, = + / 15. #, ') = & 8' (9 / & \$, - ' 5: #; C > * " (; # & 5, 0#. "#1#@+' / \$ * # @ \$ & ; 5 & - . \$ " \$ + (' # ; \$ 8 0#4, (0 /) 0#. "#1#@+(= 3 \$ 4#. I & # # 0' # 1 (' # ' (. # 8 / ? / / , 9 & # 0#. "#1#@+' / \$ + #, @ ' # ; 5 & - . "# + \$ * # ' 0 & " / " # 1 (' #, (' \$ 8 () 1, \$ ' #.

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5.2. ! I + 4 + 7) 2 * E ' % \$) +

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5.2.1. > ' * ' (H ' % & % \$ ' . / 7 (\$. 6 ? ' * / 7 4 + +

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M #, - . # + + \$ " @ / 1 (\$ & 0): F # * (' + #: DocEng doceng@FreeBSD.org. Q 0 & (1 DocEng.

5.2.2. Postmaster

Postmaster # & 1 \$ 9 (\$ & 8 (% # " " \$ % & ' 6 = + # 0 & (1 % 6 . # 9 & 5 ' ((+ " \$ 0 (E, \$ % & " # ' ' #: . # 9 & 5 % # * * / & & \$ " # 1. R (% @ \$ # ' # & 1 \$ 9 (\$ & 8 (" (; # & # 0. # 0 # ; ' # 0 & - . # 9 & # 1 5 7 " (0 0 5, # % / + #, @ \$ ' . "/ ' / * (& - * \$ ' 5 . "# & / 1 1 # 8 * # @ ' 5 7 0; # \$ 1 1 " (; # & \$. # 9 & 5, & (% / 7 % (% & " #, , / ' 4-, 0. (* - / 1 / " 6 0-L / , - & " 5.

R \$ % 6 3 / : " 6 % # 1 # + / & \$, - : F # * (' + (. # 9 & # 1 5 7 0 \$ " 1 \$ " # 1 postmaster@FreeBSD.org.

5.2.3. : \$ \$ % (+ * 7 4 + , 0 E & 6 1. \$ 0

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¥ Q 0 & (' # 1 % (, . 6 ; , / % (? /) / 0 # ; , = + \$ ' / \$ 4 " (L / % (1 5. 6 0 % (# L / ? / (, - ' 5 7 " \$, / 8 # 1

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¥ F # # " + / ' (? /) 0 % # * (' + #: ; \$ 8#. (0' # 0 & / +,) & # 4#, 9 & # ; 5 4 # & # 1) 3 / \$ 0) 1 5. 6 0 % / ' \$; 5, / 8 (& " # ' 6 & 5 ' \$ + (1' # # ; ' (" 6 @ \$ ' ' 5 * / 6) 8 1 / * # 0 &) * /.

2 #. #, ' / & \$, - ' () / ' L # " * (? /) #. "# ? \$ 0 0 \$ " (8 " (; # & % / + # 0 & 6. ' (1 " (8 + \$, \$ H 5. 6 0 % " \$, / 8 # 1.

M #, - . # + + \$ " @ / 1 (\$ & 0): % # * (' + #: 1 5. 6 0 % " \$, / 8 # 1 (Release Engineering) re@FreeBSD.org. Q 0 & (1 Release Engineering.

5.2.4. ! /* \$C ' * +, 1 \$ " B ' 1/0' * * \$1/2 < + . \$ % & \$ % 7 / + 0 * E ' 10, # +

<;) 8(' ' #0&/ #&+\$, (. # 01) 8) * 0 #; 3 \$ 0 & 1 \$ ' ' #0&- = / % # " . # " (&/1' 5 * # & ' # B \$ ' /) * 1%, = 9 (= &:

¥ ! 6; , /% # 1 (&- . " \$ 0 0 - " \$, / 8 5 . " / 1 # 8' / % ' # 1 \$ ' // 0 #; 5 & / : , 1 (@ ' 5 7 + ,) . " # \$ % & (FreeBSD.

¥ P 5 &- # L / ? / (, - ' 5 * % # ' & (% & ' 5 * , / ? * + ,) % # " . # " (? / : , & \$ 0 ' # 0 # & " 6 + ' / 9 (= 3 / 7 0 . " # \$ % & # * FreeBSD.

¥ ! " / ' /* (&- * \$ " 5 + ,) . " # + 1 / @ \$ ' /) FreeBSD (% 1 0 # #; 3 \$ 0 & 1 \$ Open Source, & (% / 1 % # " . # " (&/1' # * * / " \$.

¥ <; " (; (& 5 1 (&- 0 . / 0 # % " (0 0 5 , % / " freebsd-advocacy".

I & (" # , - 1 ' (0 & #) 3 \$ \$ 1 " \$ *) ' \$ 8 (') & (.

5.2.5. ! / 0' / 1/0' * * E = # 7 " ' # \$ & 7 1 * \$ 1/2 (Security Officer)

< 0' # 1' () # ;) 8 (' ' # 0 &- < & 1 \$ & 0 & 1 \$ ' ' # 4 # 8 (; \$ 8 # . (0' # 0 &- Ñ % # # " + / ' / " # 1 (&- # ; * \$ ' / ' L # " * (? / \$: 0 0 # #; 3 \$ 0 & 1 # * ; \$ 8 # . (0' # 0 &/ / / . " # \$ % & # * FreeBSD. < & 1 \$ & 0 & 1 \$ ' ' 5 : 8 (; \$ 8 # . (0' # 0 &- & (% @ \$. " / ' /* (\$ & * \$ " 5 . " / . # 0 & 6 . , \$ ' // 0 # #; 3 \$ ' / : # . " # ; , \$ * (7 ; \$ 8 # . (0' # 0 &/ / 0 . # 0 #; 0 & 1 6 \$ & (% & / 1' # * 6 " (8 1 / & / = 1 # ; , (0 &/ ; \$ 8 # . (0' # 0 &/ .

V 8 - 8 (# . (0 \$ ' / : , 9 & # / ' L # " * (? /) # ; 6) 8 1 / * # 0 &) 7 * # @ \$ & . # . (0 &- % 8 , # 6 * 5 B , \$ ' ' / % (* + # 1 5 . 6 0 % (/ 0 . " (1 , \$ ' /) , & # , - % # < & 1 \$ & 0 & 1 \$ ' ' 5 : 8 (; \$ 8 # . (0' # 0 &- , 1 % , = 9 (= 3 / : " 6 % # 1 # + / & \$,) , 8 (* \$ 0 & / & \$,) / + 1 6 7 9 , \$ ' # 1 < 0' # 1' # : % # * (' + 5 (Core Team) , . # , 6 9 (\$ & % # ' L / + \$ ' ? / (, - ' 6 = / ' L # " * (? / = # . " # ; , \$ * (7 ; \$ 8 # . (0' # 0 &/ . < + ' (% # + ,) 0 # 8 + (' /) / , / 1' \$ + " \$ ' /) / 0 . " (1 , \$ ' /) < & 1 \$ & 0 & 1 \$ ' ' 5 : 8 (; \$ 8 # . (0' # 0 &- * # @ \$ & # ; " (&/&- 0) % % # * (' + \$ security-team@FreeBSD.org + ,) . # * # 3 / 1 1 5 . # , ' \$ ' // " (; # & 5 .

5.2.6. > ' * ' (H' % %' & \$ # + / \$ % + , + 1 J \$ (* \$ 8 \$. \$ (7

D \$ ' \$ + @ \$ " " \$. # 8 / & # " /) / 0 7 # + ' # 4 # % # + (Ñ \$ + / ' 0 & 1 \$ ' ' 5 : , % # * 6 " (8 " \$ B \$ ' # ' (. ") * 6 = / 8 * \$ ') &- " \$. # 8 / & # " / : ; \$ 8 / 0 . # , - 8 # 1 (' /) / ' 0 & " 6 * \$ ' & (Git. H \$ 4 # # ;) 8 (' ' # 0 &/ 1 7 # + / & # . \$ " (&/1' # \$ " \$ B \$ ' / \$ & \$ 7' / 9 \$ 0 % / 7 . " # ; , \$ * , 1 # 8' / % (= 3 / 7 1 " \$. # 8 / & # " / / . D \$ ' \$ + @ \$ " " \$. # 8 / & # " /) / 0 7 # + ' # 4 # % # + (/ * \$ \$ & . " (1 # # & * \$ ') &- % # * * / & 5 , \$ 0 , / E & # ' \$ # ; 7 # + / * # + ,) 6 0 & " (' \$ ' /) & \$ 7' / 9 \$ 0 % / 7 . " # ; , \$ * 0 Git.

M # , - . " / ' (+ , \$ @ / & : D \$ ' \$ + @ \$ " 6 " \$. # 8 / & # " /) / 0 7 # + ' # 4 # % # + (clusteradm@FreeBSD.org.

5.2.7. > ' * ' (H' % 0 E " \$ % \$ 0

D \$ ' \$ + @ \$ " 1 5 ; # " # 1 # & 1 \$ 9 (\$ & 8 (. " # ? \$ 0 0 1 5 ; # " # 1 < 0' # 1' # : % # * (' + 5 (Core Team) . < ' # & 1 \$ 9 (\$ & 8 (. " # 1 \$ + \$ ' / \$ / . # + + \$ " @ (' / \$ 0 / 0 & \$ * 5 1 5 ; # " # 1 , (& (% @ \$) 1 ,) \$ & 0) # # # ' 9 (& \$, - ' # : / ' 0 & (' ? / \$: 1 0 , 6 9 (\$ ' \$ 8' (9 / & \$, - ' 5 7 ' \$. " \$ + 1 / + \$ ' ' 5 7 0 # ; 5 & / : 1 . " # ? \$ 0 0 \$ 1 5 ; # " # 1 . F " 6 . ' 5 \$ ' \$. " \$ + 1 / + \$ ' ' 5 \$ 0 # ; 5 & /) + # , @ ' 5 # ; 0 6 @ + (&- 0) 0 < 0' # 1' # : % # * (' + # :

M # , - 1 5 . # , ') \$ & 0) & # , - % # 1 # 1 " \$ *) 1 5 ; # " # 1 .

5.2.8. G&%70) ' * + ' 0' "-17=/S?

M#, - 6. "(1, S' /) 1\$; -0(: &#* #&1\$9(\$& 8(%##"+/' (?/= "(81\$"&51(' /) #; ' #1, S' ' 57 1\$; -0&" (' /? ' (8\$"% (, (7 . # 10\$* 6 * /"6, 8(#; 36= 0&"6%&6"6 #0' #1' #4# 1\$; -0(: &(/ 0/0&\$* 6, ' (%&##"#: #' " (;#&(\$& Q. "(1, S' /\$ +#, @' # 0#4, (0#151(&- 0#+\$"@/* #S 0 ! "#\$%&#* +#%6* S' &(??// FreeBSD / 150&6. (\$& 1 "#, / 0#. "#1#@+(= 3\$4# +,) +\$" \$1("www".

M#, - . #++\$"@/1(\$&0): 1\$; -* (0&\$" 5 FreeBSD www@FreeBSD.org.

5.2.9. > ' * ' (H' % &\$%/S0

DS' \$+@\$" . #" 150&6. (\$& 1 "#, / 01)86= 3\$4# 81\$' (* \$@+6 ! #+. "#\$%&#* . #" / #0' #1' 5* . "#\$%&#*, / 10\$ 8(. "#05 #& . "#\$%&(+#, @' 5 ' (. "(1,)&-0) * S' \$+@\$"6 . #".

M#, - . "/' (+, \$@/&: F#* (' +\$ 6. "(1, S' /) . #"&(* / portmgr@FreeBSD.org. Q0&(1 Portmgr.

5.2.10. A/7* (7%/E

M#, - 0&(' +(" #&1\$9(\$& 8(#; \$0. \$9\$' /\$ 0##&1\$&0&1/) FreeBSD 0&(' +("&(*, %&##" 5* 0/0&\$* (0, \$+6\$&, #&0, \$@/1(\$& "(81/&/ \$ E&/7 0&(' +(" / 61\$+##,) \$& "(8" (; #&9/%#1 FreeBSD # 1(@' 57 /8* S' S' /)7. I&# . #81#,) \$& "(8" (; #&9/(* +\$: 0&1#1(&- . "#(%&/1' # / 0#%" (3 (&- 1" \$*) * \$@+6 #; ' #1, S' /\$* 0&(' +(" / +#0&/@\$' /\$* 0##&1\$&0&1/) 1 FreeBSD.

RS%63/: #&1\$&0&1\$' ' 5: : Garrett Wollman wollman@FreeBSD.org.

5.2.11. A' . %' /7%2 ! 1*\$0*\$ = . \$? 7* (E (Core Team)

<0' #1' () #;)8(' ' #0&- NS%"\$&(") <0' #1' #: %#* (' +5 Ñ 0#0&(1, S' /\$ 9\$"' #1/%#1 / . 6; , /(%(?/) %##' 9(\$&, -' 57 #&9>#1 <0' #1' #: %#* (' +5. NS%"\$&("- &(%@\$ 1\$+>& . #1\$0&%6 <0' #1' #: %#* (' +5, 4(" (' &/"6), 9&# ' / #+/' 1#. "#0' \$ #0&(' \$&0) ; \$8 "SB\$' /).

<&1\$&0&1\$' ' 5: 1' (0&#) 3\$\$ 1"\$ \$*): RenŽ Ladan <rene@FreeBSD.org>.

5.2.12. ! /0' /1/0' **E = #7 \$C +". + (Bugmeister)

<&1\$&0&1\$' ' 5: 8(#B /; %/ (Bugmeister) #&1\$9(\$& 8(. #++\$"@(' /\$; (85 +(' ' 57 . # #; 0, 6@/1(' /= 1 " (; #9\$* 0#0&#)' //, 8(%##" "\$%&' 6= %(&\$4#"/8(?/= 8(. /0\$: / #&06&0&1/\$ ' \$+\$: 0&1/&\$, -' 57 8(. /0\$: . <' /%6"/"6=&/0. "(1/&\$, \$: #B /; % (bugbusters).

RS%63/: #&1\$&0&1\$' ' 5: : %#* (' + (Bugmeister Team bugmeister@FreeBSD.org).

5.2.13. 3%' (1/70+/') 2 &\$ &%+0) ' ; ' * +< &\$H' %/0\$07* +=

G(+ (9(. "\$+0&(1/&\$,) . # . "/1, \$9\$' /= . #@\$"&1#1(' /: Ñ 01)851(&- "(8" (; #&9/%#1, %&##" 5* 9&#-&# ' 6@' #, 0, =+- * / /, / # "4(' /8(?/)* /, 4#* / 0+\$, (&- . #@\$"&1#1(' /\$.

M#, - . #++\$"@/1(\$&0): <&+\$, #* . # . "/1, \$9\$' /= . #@\$"&1#1(' /: donations@FreeBSD.org. Q0&(1 <&+\$, (. # . "/1, \$9\$' /= . #@\$"&1#1(' /: .

5.2.14. - (? +* +1/%7/\$% (Admin)

(R(%@\$ ' (851(\$&0) "O+* /' /0&" (&#" %, (0&\$" (FreeBSD")

F#* (' +((+* /' /0&" (&#" #1 0#0&#/& /8 , =+\$: , #&1\$&0&1\$' ' 57 8((+* /' /0&" /" #1(' /\$ %*#* . - =&\$" #1, %&#&#" 5\$. "#\$%& /0. #, - 86\$& +,) "(0. "\$+\$, >' ' #: "(; #&5 / 0/' 7"#' /8(?// %*#* * 6' /%(?//. H #0' #1' #* 1' \$> 17#+) & &\$, %&# / * \$\$& L/8/9\$0%/: + #0&6. % 0\$" 1\$" (*.

M#, - . #++\$" @/1(\$&0):%*#* (' +#: (+* /' /0&" (&#" #1 admin@FreeBSD.org.

5.3. 3%\$4' 11\$#70+1+? E' %\$) +

5.3.1. K* +4+7/\$% \$/; L/7

Y/?#, /8' (9(, - ' # #&1\$&0&1\$' ' # \$ 8(. #+(96 #&9>&(# . "#; , \$* \$.

5.3.2. K1&%70+/') 2 \$C + " \$. (Bugbuster)

\$\$, #1\$, %&#&#" 5: , /; # ' (: +\$& . #+7#+) 3\$4# 0. \$?/(, /0&(+,) "\$B\$' /) . "#; , \$* 5, , /; # 8(%"#S& PR, \$0, / #') 1,) \$&0) +6; , /%(&#* /, / . # + " 64/* . "/9/' (* ' \$. "\$+0&(1,) \$& /' &\$" \$0(.

5.3.3. M71/70* +. (Mentor)

J(0&(1' /% Ñ E&# %*#* * /&&\$", %&#&#" 5: ; \$" \$&' (0\$;) 8(+ (96 #8' (%*#* /&- ' #1#4# %*#* * /&&\$" (0 . "#\$%&#* . I&# 1%, = 9(\$& 1 0\$;) . "#1\$" %6 %#" "\$%&' #0&/ ' (0&" #: %/ #%" 6@\$' /) ' #1#4# %*#* * /&&\$" (, #; 69\$' /\$ + #0&6. ' 5* /' 0&" 6* \$' &(*, ' \$#; 7#+/* 5* +,) "(; #&5, (&(%@\$ " (8C) 0' \$' /\$ # @ / + (\$* #4# . #1\$+\$' /).

5.3.4. 3\$1/70B +.

Y/?# (, /?() /, / # " 4(' /8(?/), #& %&#&#" 57 . #0&6. (\$& 1' \$B' /: %#+ / %&#&#" 5* #&. "(1,) = &0) /0. "(1, \$' /).

5.3.5. 5' 4' *# ' * /E

Y= + / / 80. /0%(" (005, %/, %6+(#&. "(1, \$' 8(. "#0' ("\$?S' 8/" #1(' /\$.

N, \$+6= 3/: "(8+\$, #. /051(\$& 60&(' #1, \$' ' 5\$. "#?S005 . "#\$%&(. H#. "#05, ' \$ #71(9\$' ' 5\$ E& /* / . "#?S00(* /, "\$B(= &0) . # * \$" \$ 1#8' /%' #1\$' /), /07#+) /8 0, # @ / 1B\$: 0) . "(%&/%/ / 1 (' (, #4/9' 570, 69) 7.

Chapter 6. 3%\$4' 11E

6.1. N\$" 70) ' * +' * \$0E J + 6(7) ' * +' 1/7%E J . \$?? +// ' %\$0

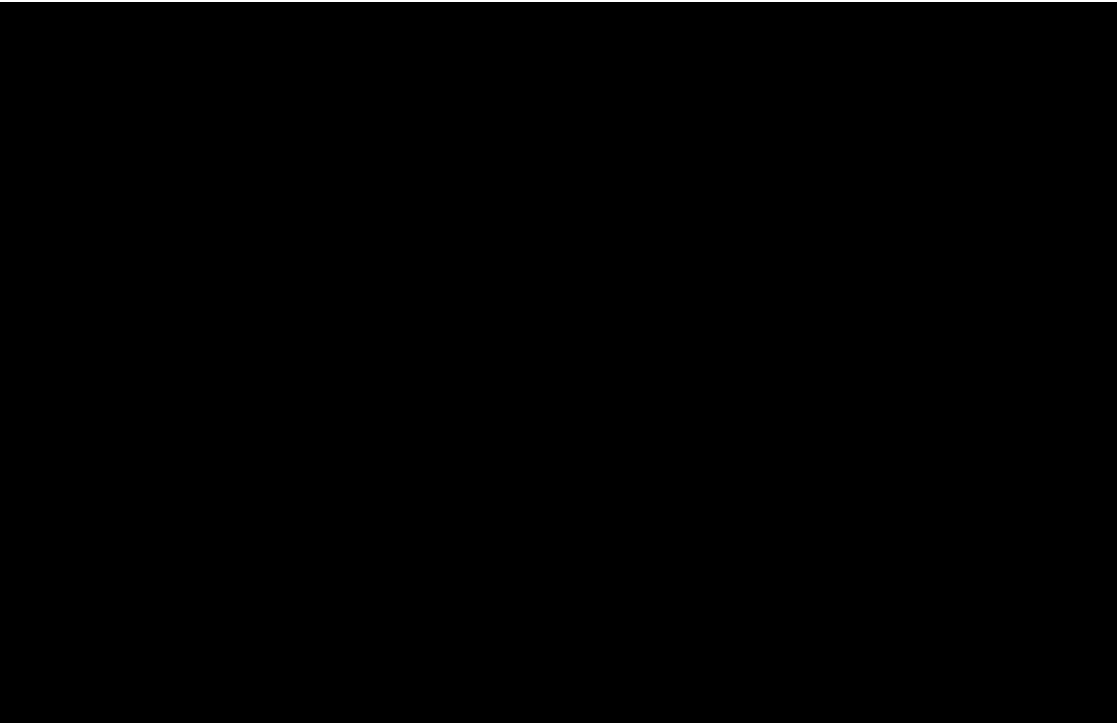
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69(0&' /%#1. I&# * #@\$&; 5&- 0+\$, (' # &#, -%# 9\$" \$8 4#, #0#1(' /\$ 1 0. /0%\$ "(005, %/ <0' #1' #:
%* (' +5. ! #+. "#\$%&5 ports / documentation * #46& . "\$+#0&(1,)&- . "(1(' (%* * /& , =+)*,
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<; 59' # %(' +/+(&(1 %* * /&&\$" 5 #0' #1' #: %* (' +\$ (Core Team) "\$%#* \$' +6= &%* * /&&\$" 5.
2,) 69(0&' /%#1 /, / . #0&#" #' ' /7 #; "(3 (&-0) 1 <0' #1' 6= %* (' +6 0 . "#0-; #: 0&(&-
%* * /&&\$" * 09/ &(\$&0) ' \$; , (4#" (86* ' 5* / &(%). "#0-; (, %(%). "(1/, #, #&%, #') \$&0).

W0, / #; , (0&- , . "\$+0&(1,)= 3() #0#; 5: /' &\$" \$0 +,) "(8" (; #&9/%(, . #&\$' ?/(, -' #
. "\$ \$0\$%(\$&0) 0 8# ' #: #&1\$&0&1\$' ' #0&/ +" 64/7 0#. "#1#@+(= 3/7, 8(. "(B/1(\$&0) * ' \$' /\$
E&/7 0#. "#1#@+(= 3/7. <+' (%# 9(0&# /* \$' ' # E&#& 0#. "#1#@+(= 3/: "\$%#* \$' +6\$&
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F#4+(69(0&' /%6 . "\$+#0&(1,)\$&0) 0&(&60 %* * /&&\$" (, \$* 6' (8' (9(\$&0) ' (0&(1' /%. H #; 3\$*
0, 69(\$ %* * /&&\$", %&#&" 5: "\$%#* \$' +#1(, ' #1#4# %* * /&&\$" (, ; \$" \$&' (0\$;) #;) 8(' ' #0&/
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. #* #3- = [Pretty Good Privacy](#) . /0- * # #& N\$" \$&(") <0' #1' #: %* (' +5, D\$' \$+@\$" (. #"
/, / nik@freebsd.org ' ((" \$0(admins@freebsd.org, ' (8' (9\$' ' #4# ' (0&(1' /%(, ' #1#4#
%* * /&&\$" (/ <0' #1' #: %* (' +5, . #+&1\$" @+() #+; ; "\$' /\$ ' #1#: 69>&' #: 8(. /0/. G(&\$*
' (0&(1' /% 0#; /" (\$& 0&" #6 . ("#,), [Secure Shell](#) #&%" 5&5: %, =9 / PGP-%, =9 #&' #1#4#
%* * /&&\$" (/ #&. "(1,)\$& /7 O+* /' /0& (&#" 6. F#4+(' #1() 69>&' () 8(. /0- 0#8+((,
' (0&(1' /% (%&/1/" 6\$& . "(1# %* * /&(/ . "#1#+/&' #1#4# %* * /&&\$" (9\$" \$8 #0&(, -' 5\$
E&(. 5' (9(, -' #4# . "#?\$00(.

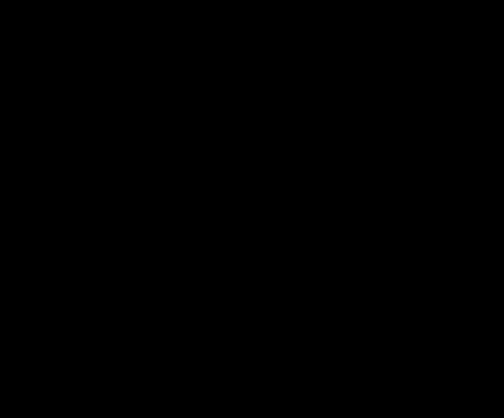


!"#\$%&' 3. 7*&8)## +' *168): 4&/1+,)%") %&+&9& ' &33 "66)*1

F#4+(69(0&' /% #&. "(1,)\$& L"(4* \$' & %#+(, . "/' /* (= 3/: %##* * /&&\$" * #@\$& . "\$+, #@/&-
. "\$+#0&(1/&- E&#* 6 69(0&' /%6 . "(1(' (%##* * /&. W0, / #' "\$%##* \$' +6\$& E&# #0' #1' #:
%##* (' +\$ (Core Team), %##* (' +(. "#1#+/& 4#, #0#1(' /\$. # E&#: "\$%##* \$' +(?//. W0, /
4#, #0#1(' /\$ 8(1\$"B(\$&0) 1 . #, -86 . "\$+, #@\$' /), ' #1#*6 %##* * /&&\$"6 ' (8' (9(\$&0)
' (0&(1' /%, / ' #15: %##* * /&&\$" +#, @\$' #&. "(1/&- 01#/ +(' ' 5\$ (+* '/' /0&"(&#"(* +,)
0#8+(' /) 69>&' #: 8(. /0/. ! #0, \$ E# ' #15: %##* * /&&\$" 4# 0+\$, (&- 01#: . \$" 15: %##* * /&
! # &" (+/?//, E&# +\$, (\$&0) . 6&>* +#; (1, \$' /) 01#\$4# /* \$' / 1 0. /0#% %##* * /&&\$" #1.

J(. #*' /*, 9&# %##* * /&&\$" #* 09/&(\$&0) &#&, %&# 8(. #0, \$+' /\$ 12 * \$0)?\$1 1' >0 /8* \$' \$' /) 1
%#+. <+' (%# . "(1# ' (%##* * /&5 * #@\$& ;5&- #Q(' # &#, -%# . #0, \$ 18 * \$0)?\$1
' \$(%&/1' #0&/.

<+' (%# ' \$ 063\$0&16\$& (1&#* (&/9\$0%/7 . "#?S+6" +,) E#. 2,) +\$: 0&1/: , 01)8(' ' 57 0
. "/1/, \$4/)* / %##* * /, ' \$ 1581(' ' 57 1"\$* \$' \$*, 0*. "(8+\$, 1.5.8.



!"#\$%&' 4. 7*&8)##: \$41,)%") ' &33 "66)*1

F#4+(<0' #1' () %##* (' +((Core Team) . "/' /* (\$& "\$B\$' /\$ #9/0&/&- 0. /0#% %##* * /&&\$" #1,
/ . "#1\$") = &, %&# ' \$ +\$, (, %##* * / 8(. #0, \$+' /\$ 18 * \$0)?\$1. F#* * /&&\$" 5, %&#&" 5\$

E# ' \$ 0+\$, (, /, , /B(=&0) . "(1 ' (%##* * /&, / /7 69>&' 5\$ 8(. /0/ 6+(,) =&0)
(+* /' /0&" (&#" (* /.

R(%@\$ 1#8* #@' # +,) %##* * /&&\$" #1 8(. "#0/&- #&851 /7 . "(1(' (%##* * /&, \$0, / . # %(%#: -&#
. "/9/' \$ #' / ;#, -B\$ ' \$; 6+6& (%&/1' # 69(0&1#1(&- 1 . "#\$%&\$. H E&#* 0, 69(\$, . "(1# * #@&\$
; 5&- 1#00&(' #1, \$' # . #8@\$. # 8(. "#06 %##* * /&&\$" (.

M#, / 1 E&#* . "#?S00\$:

1. <0' #1' () %##* (' +((Core Team)
2. Q9(0&' /% (%#' &" /; - = &#")
3. F#* * /&&\$"
4. N#. "#1#@+\$' /\$
5. J (0&(1' /% (Mentor)

: \$?? +/ . \$(7

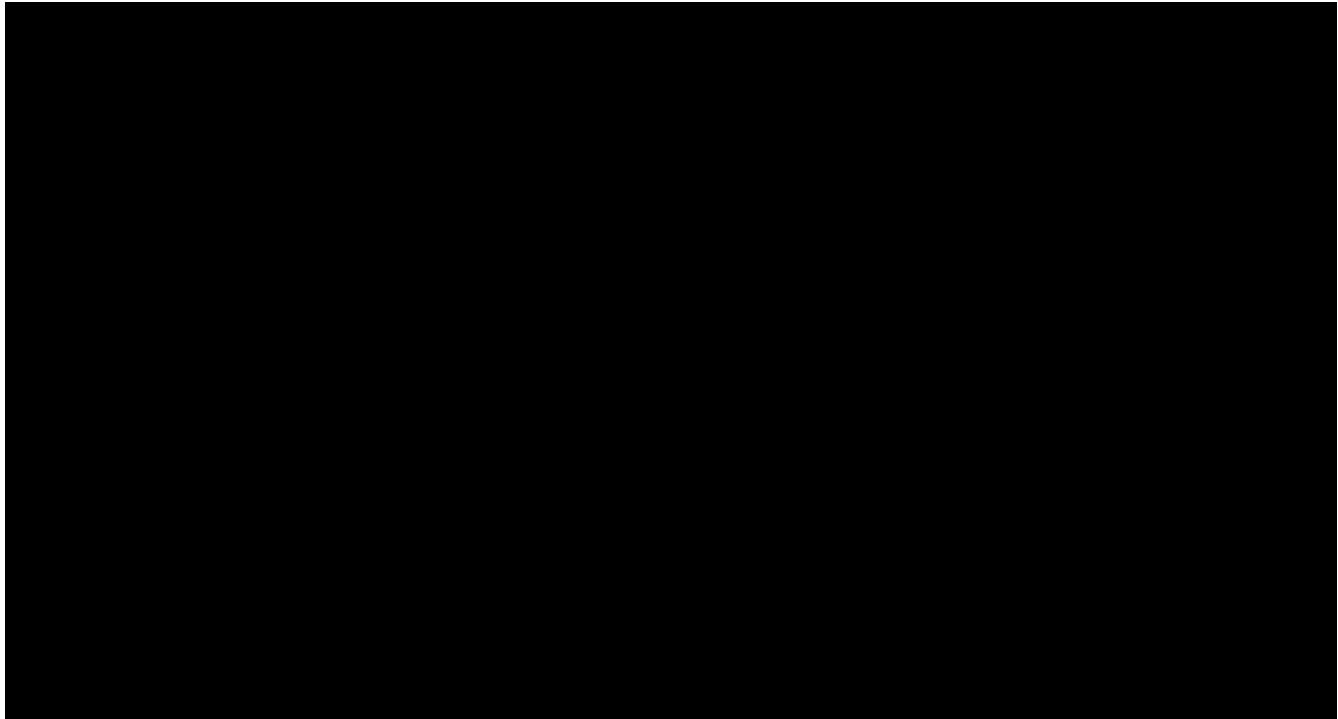
2#; (1, \$' /\$ ' #1#4# /, / /8* \$' >' ' #4# %##+(Ñ #+/' /8' (/; #, \$\$ 9(0&57 . "#?S00#1 1 . "#\$%&\$
FreeBSD / #; 59' # . "#/07##+/&' \$0%#, -%# " (8 1+\$' -. X/%0(?/) %##+(* #@&\$; 5&- 15. #, ' \$' (
&#, -%# "%##* * /&&\$" #* ". F#* * /&&\$" 5 L/%0/" 6=& , /; # %##+, ' (. /0(' ' 5: /* / 0(* /* / , , /; #
%##+, . "\$ \$+(' ' 5: /* , , /; # %##+, #&. "(1, \$' ' 5: 9\$"\$ 8 #&9>& # . "#; , \$* \$.

F#4+("(8" (; #&9/% . /B\$&' \$&"/1/(, -' 5: %##+, #' +#, @\$' 8(. "#0/&- "\$?S' 8/" #1(' /\$ %##+(6
0##; 3 \$0&1(. I&# +\$, (\$&0) . 6&>* #&. "(1%/ . /0- * (1 0##&1\$&0&16= 3/: 0. /0#% "(005, %/ 0
. "#0-; #: # "\$?S' 8/" #1(' // . !\$" \$+ #&. "(1%#: %##+(' (. "#1\$"%6 "(8" (; #&9/% +#, @\$'
6; \$+/&-0), 9&# #' %#" "\$%&' # %##* . /, /" 6\$&0) 0# 10\$* +\$"\$1#* /07##+ #4# %##+(/ 9&# 10\$
0##&1\$&0&16= 3/\$ &\$0&5 15. #, ') =&0). I&# ' (851(\$&0) ". "\$+1("/&\$, -' #: . "#1\$"%#: . "\$ \$+
%##* * /&##* ". F#4+(. #, 69\$' 1%, (+ 1 1/\$ %##+(, %##* * /&&\$" +#, @\$' . "#0* #&"\$&- \$4# /
. "#&\$0&/" #1(&- &(%/* @\$ #; "(8#* .

F#4+(/8* \$' \$' /\$ L/%0/" 6\$&0) 1 9(0&/ /07##+ #4# %##+(, %#&#" () ; 5, (. #, 69\$' (#& 1' \$B' \$4#
. #0&(13/%(, 0#. "#1#@+(= 3/: +#, @\$' 6; \$+/&-0), 9&# . (&9 . "\$ \$+(' #; "(&' # . #0&(13/%6.
I&# 0##&1\$&0&16\$& L/, #0#L// #&%" 5# /07##+ #4# %##+(/ 6. "#3(\$& 0/' 7" #' /8(?/= 0
1' \$B' /* / . "#\$%&(* /, &(% %(% . (&9/ ' \$. "/+>&0) . "/* \$') &- 8(' #1# . "/ %(@+##* ' #1#*
15. 60%\$.

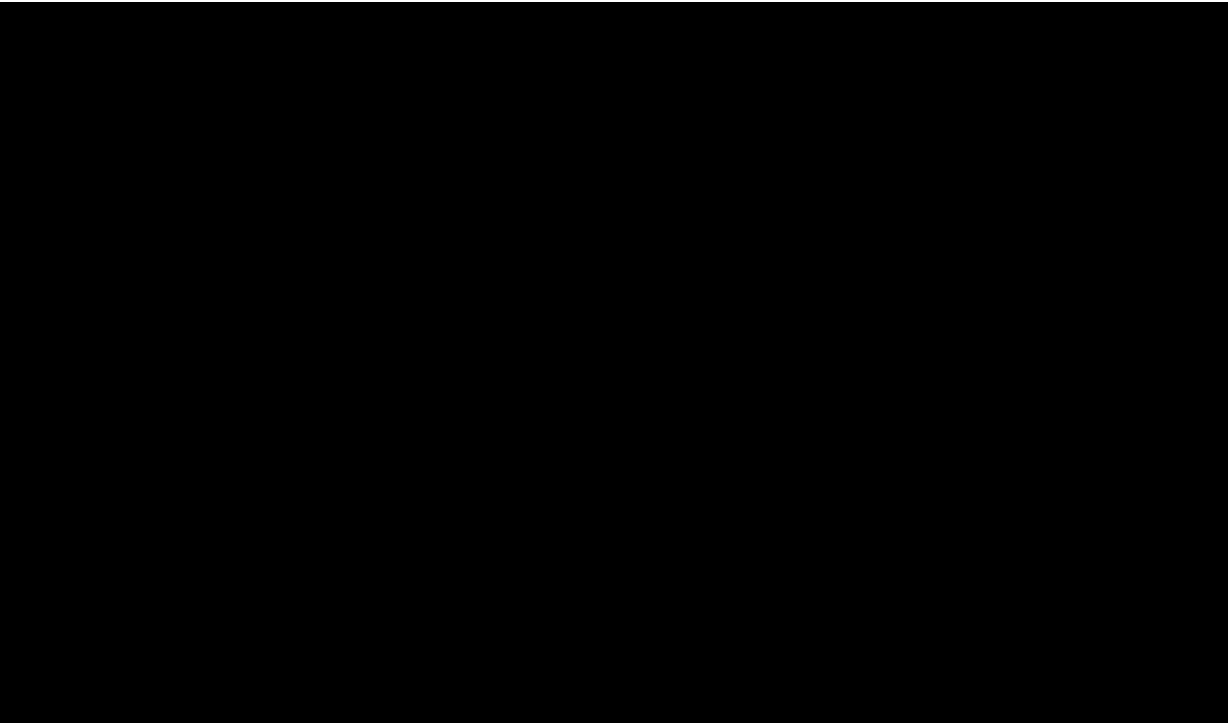
! #0, \$ # %(% %##+ ; 5, +#0&6. \$' +,) "\$?S' 8/" #1(' /) / +(-' \$: B/\$ /8* \$' \$' /) ' \$
&" \$; 6= &0), %##+ 1' #0/&0) 1 1\$&%6 "(8" (; #&%/ -CURRENT. W0, / /8* \$' \$' /\$. "/* \$' /* # / +,)
1\$&%/ -STABLE, /, / +" 64/7 1\$&#%, %##* * /&&\$" 60&(' (1, /1(\$& #&09>& 1"\$ \$* \$' / +,) "0, /)' /) /8
&\$%63\$: "(MFC)". ! #0, \$ # %(% . "#: +>& #%, /9\$0&1# +' \$: , 15; "(' ' # \$ %##* * /&&\$" #* . "/
60&(' #1\$ MFC, (1&#* (&/9\$0%/ ; 6+\$& #&. "(1, \$' # . /0- * # %##* * /&&\$" 6 0 ' (. #* /' (' /\$*
1' \$0&/ /8* \$' \$' /) 1 1\$&%6 -STABLE ((&(%@\$, 1#8* #@' #, 1 1\$&%/ ; 8#. (0' #0&/). H 1\$&%/
; 8#. (0' #0&/ 0, \$+6\$& 0, /1(&- &#, -%# %"/&/9\$0%/ \$ /8* \$' \$' /), 01) 8(' ' 5\$ 0 ; 8#. (0' #0&- =.

<&%, (+51(' /\$ %##* * /&(1 -STABLE / +" 64/\$ 1\$&%/ . #81#,)\$& . "#1##+/&- ". (" (, , \$, -' 6=
#&, (+%6", %#4+(8(%##* * /9\$' ' 5: %##+ &\$0&/" 6\$&0) ' (B/" #%%#* 0. \$%&" \$ %#' L/46" (?/: . I&#
. "/1##+/% & #&#* 6, 9&# /8* \$' \$' /) 1 -STABLE 0##+\$"@(& * \$' -B\$ #B /; #%, 9&# / +(>& 1\$&%\$ \$>



!"#\$%&' 5. 7*&8)##+' *168):' &33"66)* 4), 1)6' &33"6' &41

F#4+(%##* * /&&\$" ' (. /0(, 9(0&- %#+(/ 7#9\$& \$4# 8(%##* * /&/&- , #' 0' (9(, (+#, @\$' #. "\$+\$, /&- , +#0&(' # , / #' &"/1/(, \$' , 9&#; 5 .#. (0&- 1 "\$. #8/&#" /: ;\$8 . "\$+1("/&\$, -' #: "\$?\$' 8//, /, / \$* 6 0' (9(, (0, \$+6\$& 0+\$, (&- "\$?\$' 8/= 1 0##; 3\$0&1\$ "(8" (; #&9/%#1. W0, / %#+ &"/1/(, \$' /, / ;5, #&"\$?\$' 8/"#1(' , / %##* * /&&\$" ' \$)1,) \$&0) 0#. "#1#@+(=3/*, #' +#, @\$' . "#%#' 06, - &/"#1(&- 0) 0 0#. "#1#@+(=3/* . "\$+\$ &\$*, %(% . "#+##, @/&- . W0, / %#+ . "\$+#0&(1, \$' 1' \$B' /* . #0&(13/%##, 0#. "#1#@+(=3/: +#, @\$' 0#8+(&- . (&9, %##&#" 5: #&. "(1,) \$&0) #; " (&' # . #0&(13/%6. G(&\$* %#+ %##* * /&/&0) / "(81\$"&51(\$&0) . #, -8#1(&\$,) * /. W0, / #' / #; ' ("6@(& . "#; , \$* 5 0 %#+##, E&# ; 6+\$& 0##; 3\$' #, / %##* * /&&\$" * #@\$& 1\$"' 6&- 0) %' (. /0(' /= . (&9(. W0, / 8(&"#' 6& . #0&(13/%, #' * #@\$& 15; " (&- "\$ (, /8(?/= /, / /4' #"/"#1(' /\$. (&9(.



!"#\$%&' 6. 7*&8)##+'*168):.;1#6%"' 4), 1)6' &33"6' &41

M(8' /?(, %#4+(69(0&' /% 1' #0/& %#+, 8(% , =9(\$&0) 1 &#*, 9&# #' #&. "(1,) \$& %#+ 9\$" \$8 /' &\$" L\$: 0 Bugzilla. I&## #&9>& 8(; /" (\$& 0#. "#1#@+(= 3 /: , %#&#" 5: . "#0* (& /1(\$& %#+ / +\$, (\$& \$* 6 %#* * /&.

M#, /, 8(+\$: 0&1#1(' ' 5\$ 1 E&#* . "#?\$00\$:

1. F#* * /&&\$"
2. Q9(0&' /% (%#' &' /; - = &#")
3. ! #0&(13 /%
4. MS?\$' 8\$' &5

DE " \$%E \$1* \$0* \$= . \$? 7* (E (Core Team)

H5; #" 5 <0' #1' #: %#* (' +5 . "#1#+)&0) ' \$ "\$@\$ 9\$* "(8 1 +1(4#+(. ^[1] V8; /" (= &0) +\$1) &- 69(0&' /%#1 <0' #1' #: %#* (' +5. J#15\$ 15; #" 5 . "#1#+)&0), \$0, / %#, /9\$0&1# 69(0&' /%#1 <0' #1' #: %#* (' +5 0&(' #1/&0) * \$' -B\$ 0\$* /. J#15\$ 15; #" 5 &(%@\$ * #46& ; 5&- . "#1\$+\$' 5, \$0, / E# . #&" \$; 6= & %(% * /' /* 6* 1/3 (%&/1' 57 %#* * /&&\$" #1.

F#4+(+#, @' 5 0#0&#) &-0) 15; #" 5, <0' #1' () %#* (' +(#; C) 1,) \$& #; E&#* %(% * /' /* 6* 8(6 '\$+\$, - /' (8' (9(\$& * \$' \$+@\$" (15; #" #1 +,) /7. "#1\$+\$' /).

R#, -%# %#* * /&&\$" 5 * #46& ; 5&- /8; (' 5 1 0#0&(1 #0' #1' #: %#* (' +5 (Core Team). F(' +/+(&5 +#, @' 5 . #+(&- 01#/ 8) 1% / %(% * /' /* 6* 8(#+ ' 6' \$+\$, = +#' (9(, (15; #" #1, ' # * #46& 6	') &- 01#/ 8) 1, \$' /) +# ' (9(, (4#, #0#1(' /). <' / . "\$+0&(1, \$' 5 1 0. /0%\$ %(' +/+(. ! " / 0#0&(1, \$' // 01#/ 7. "\$+15; #" ' 57 8) 1, \$' /: %(' +/+(&5 +#, @' 5 #&1\$&/&- ' (' \$0%#, -%# 0&(' +(" &' 57 1#. "#0#1, . "\$+0&(1, \$' ' 57 #" 4(' /8(&#" #* 15; #" #1.

H# 1"\$ *) 15; #" #1 0&" #4# 0#; , = +(\$&0) . "(1 /, #, 9&# %#* * /&&\$" +#, @\$' ; 5, 0+\$, (&- %#* * /&

1 &\$9\$' /\$. #0, \$+' /7 12 * \$0)?\$1. R#, -%# E&/ %#* * /&&\$" 5 / * \$=& . "(1# 4#, #0#1(&-.

! "/ 4#, #0#1(' // %#* * /&&\$" * #@\$& . "#4#, #0#1(&- #+' ' "(8 1 . #++\$ "@%6 +# +\$1)&/ ' #* /' (' . T#, #0#1(' /\$. "#1#+/&0) 1 &\$9\$' /\$ 9&\$5">7 ' \$+\$, -, 0 ' (. #* /' (' /)* /, . 6;, /%6\$* 5* / 1 "(005, %\$ "developers", +#0&6. ' #: 10\$* %#* * /&&\$" (*.

MS86, -&(&5 15; #"#1 . 6;, /%6=&0) 9\$"\$8 ' \$+\$, = . #0, \$ /7 #%# ' 9(' /), (' #1() #0' #1' () %#* (' +(10&6. (\$& 1 +#, @' #0&- 9\$"\$8 ' \$+\$, = . #0, \$. 6;, /%(?// "\$86, -&(.

H 0, 69(\$ ' /9-\$: . "/ 4#, #0#1(' //, E&# ; 6+\$& "(8"\$B\$' # ' #15* /, #+' #8' (9' # /8; "(' ' 5* / 9, \$' (* /)+".

T#, #0(/ 8() 1, \$' /) %(' +/+(("7/1/"6=&0), ' # ("7/15 ' \$) 1,)=&0) #; 3\$+#0&6. ' 5* /.



!"#\$%&' 7. 7*&8)## +' *168): <=/&* = &#%&+%&> ' &31%4= (Core Team)

<0' #1' () %#* (' +(#; C) 1,)\$& 15; # "5 / ' (8' (9(\$& "6%#1#+/&\$,) 15; #"#1, %#&#" 5: . #+4#&(1, /1(\$& . "#?\$00. F#4+(10> 4##, %(' +/+(&5 * #46& #; C) 1/&- # 01#\$: %(' +/+(&6"\$, . "\$+0&(1/1 8() 1, \$' /). G(&\$* %#* * /&&\$" 5 4#, #06=& ! #0, \$ 8(1\$"B\$' /) 4#, #0#1(' /) "\$86, -&(&5 15; #"#1 #; C) 1,)=&0), /' #1() #0' #1' () %#* (' +(10&6. (\$& 1 +#, @' #0&-.

<&1\$&0&1\$' ' 5: 8(15; # "5 <0' #1' #: %#* (' +5:

¥ <0' #1' () %#* (' +((Core Team)

¥ F#* * /&&\$"

¥ D\$' \$+@\$" 15; #"#1

57#%7" \$/. 7 * \$OE J I 6*. 4+=

H "(*%(7 . "#\$%&(063\$0&16=& . #+. "#\$%&5, "(; #&(= 3/\$ ' (+ ' #15* / L6' %?/) * /. I&/ . "#\$%&5 #; 59' # 15. #, ')=&0) #+' /* 9\$, #1\$%#* [K#"4\$' 0\$']. F(@+5: . "#\$%& 1#, \$'

#"4(' /8#151(&- " (8" (; #&%6 &(% , (% 09/&(\$& ' 6@' 5* . <+' (%# , %4+(. "#\$%& #; CS+/') S&0) 0 1S&1- = -CURRENT, #' +#, @S' 0, \$+#1(&- "6%#1#+0&1(* . "#\$%&(. F#4+(%#+ 7#"#B# . "#&\$0&/"#1(' 1 1S&1/ -CURRENT / . "/8' (' +#0&(' # 0&(/, -' 5* / (%&6(, -' 5* +,) 1S&1/ -STABLE, #' #; CS+/') S&0) 0 1S&1- = -STABLE.

R"\$; #1(' /) . "#\$%&(#. "\$+\$,) = &0) . #@\$, (' /) * / " (8" (; #&9/%#1, 8(. "#0(* / 0##; 3 \$0&1(1 1/+ \$. ") * 57 #; "(3\$' /: . # . #9&\$, #&9> # . "#; , \$* (7 (Problem Reports), %##* \$ "9\$0%/ * L/' (' 0/"#1(' /\$* " (8" (; #&%/ L6' %?/#' (, -' #0&/ /, / 1%, (+(* / ' (69' #4# 0##; 3 \$0&1(. ! #@\$, (' /), %##&" 5\$ 17#+) & 1 8# ' 6 #&1\$&0&1\$' ' #0&/ " (8" (; #&9/%, . "\$ \$+ (= &0) E&#* 6 " (8" (; #&9/%6, %##&" 5: " (00&(1,) S& . "/#"/&\$&5 * \$@+6 8(. "#0## / 01#/* / 0#; 0&1\$' ' 5* / . #@\$, (' /) * / . M(0. "#0&" (' \$' ' 5: 0. #0#; #"4(' /8(?// E# . "#?S00(Ñ 1\$+' /\$ 0. /0%(8(+ (9 (TODO-list), . #++\$ "@/1(\$* #4# . "#\$%&#* . G(+ (9/, ' \$ 17#+) 3/\$ 1 9- = -, /; # 8# ' 6 #&1\$&0&1\$' ' #0&/, 0#; /" (= &0) 1 0. /0%(7 TODO, . %%(%&#- /; 6+- ' \$ 1#8- * S& ' (0\$;) #&1\$&0&1\$' ' #0&- 8(/7 15. #, ' \$' /\$. H0\$ 8(. "#05, /7 " (0. "\$+\$, \$' /\$ / #&0, \$@/1(' /\$ #; " (; (&51 (= &0) 0. ##3- = /' 0&" 6* \$' & (Bugzilla.

O' (, /8 &" \$; #1(' /: . "#/07##/& +16*) 0. #0#; (* / . ! #0&6. /1B/\$ 8(. "#05 #; 06@+ (= &0) 1 . #9 " (005, %(7, %(% 1 #0' #1' #* . "#\$%&\$, &(% / 1 . #+. "#\$%&\$, % %##&" #* 6 #&' #0/&0) 8(. "#0 /, / %##&" 5: 0#8+(\$&0) E&/* 8(. "#0##. F"## \$ #, #&+\$, -' 5\$ " (8" (; #&9/%/ . #+. "#\$%&(#?S' /1(= & #063 \$0&1/* #0&- 8(. "#0#1 / #. "\$+\$,) = & . "/#"/&\$&5 * \$@+6 ' /* / . ! #* /* # ("7/1#1 #; 06@+\$' /: , ' (E&#* E&(. \$ ' \$ 0#8+(\$&0) ' /(%/7 "\$86, -&(, %##&" 5\$ 1%, = 9(= &0) 1 #0' #1' #: . "#\$%&.

! #0%#, -%6 8(. "#05 . "/#"/&8/"6= &0) #&+\$, -' 5* / " (8" (; #&9/>(* / ' (#0' #1\$ #, 9&# #' / 09/&(= & /' &\$" \$0' 5*, ' \$#; 7#+/* 5* /, / 8(9&# /* . , (&) & #&06&0&16\$& #; 3 () 0&" (&\$4/) /, / . "/#"/&\$8(?/) #, %(%/ \$ 8(. "#05 09/&(&- &" \$; #1(' /) * /, / %(% #&' &" #, /" #1(&- /7 %##" "\$%&' 6= "\$ (, /8(?/= . <+' (%# ; #, -B/' 0&1# " (8" (; #&9/%#1 " (8+\$,) = & #; 3 \$\$ 1/+ \$' /\$ #, %(%/ \$ 1# . "#05) 1,) = &0) ; #, \$\$ 1(@' 5* /, / #' / * #46& 8(. "#0/&- "\$%## \$' +(?// 6 %##* (' +5 /' @S' \$" #1. # 15. 60%6 "\$, /8#1.

X(8(. "#1\$"/ . "#\$%&(0#0&#/& /8 +167 E&(. #1. ! \$" \$+ 1' \$0\$' /\$* %##+(1 &\$%636= 1\$&%6 " (8" (; #&9/%/ 8(. "(B/1(= & "\$?S' 8/"#1(' /\$ 01#\$4# %##+(%#, , \$4(* / . I&# "\$?S' 8/"#1(' /\$ 1 #0' #1' #* . "#1#+/&0) 0 . ##3- = L6' %?/#' (, -' #4# &\$0&/"#1(' /), ' # &(%@\$ 1(@' (. "#1\$"/ (%##+(. F#4+(%#+ 1' \$0>' 1 1\$&%6, . "#1#+/&0) ; #, \$\$ B/"#%#\$ L6' %?/#' (, -' # \$&\$0&/"#1(' /\$, %##&" # \$ * #@\$& . "/1\$0&/ % +#. #, ' /&\$, -' #: . "#1\$"/% \$ %##+(/ #&, (+%\$, \$0, / %#+ 1\$+>& 0\$;) ' \$ &(% , (% #@/+ (, #0- . I&(1&# () L#" * (. "#1\$"/ * #@\$& " (00* (& /1(&- 0) %(% 0&" 6%&6" () 1\$"/L/%(?/). U#&) 0(* / . #+. "#\$%&5 * #46& . /0(&- L#" * (, -' 5\$ &\$0&5, &(%/ \$ %(% * #+6, -' 5\$ &\$0&5, #' / #; 59' # ' \$ 0#; /" (= &0) #0' #1' 5* . "#\$%&#* / 9(3\$ 10\$4# 6+(,) = &0) . "\$ \$+ 1' \$0\$' /\$* %##+(1 &\$%636= 1\$&%6.^[2]

6.2. A\$&%\$0\$H(' * +'

2,) . "#\$%&(. #, \$8' #, 9&#; 5 8(%(@+6= #; , (0&- /07##+ ' #4# %##+(#&1\$9(, 7#&) ; 5 #+/' 9\$, #1\$, %##&" 5: 7#"#B# \$> 8' (\$& . J\$%##&" 5\$ 9(0&/ %##+(/* \$ = & ' (8' (9\$' ' 57 0#. "#1#@+(= 3/7. 2"64/\$ /* \$ = & L(%&/9\$0%/7 0#. "#1#@+(= 3/7, (' \$%##&" 5\$ 9(0&/ 0/0&\$* 5 ' \$ /* \$ = & 0#. "#1#@+(= 3/7. N#. "#1#@+(= 3/: #; 59' #) 1,) S&0) 69(0&' /%##* . #+. "#\$%&(, %##&" 5: ' (. /0(, / /' &\$4"/#1(, %##+, /, / &\$*, %&# . #"/#1(, \$4# 0 . , (&L#" * 5, +,) %##&" #: #' ; 5, ' (. /0(' .^[3] G(+ (9(0#. "#1#@+(= 3\$4# Ñ 6; \$+/&- 0), 9&# %##+

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"\$?\$' 8/" #1(' /\$. "\$+1("/&\$, -' () . "#1\$"%(. "\$+ %##* * /&#*	. "#4" (* * /" #1(' /\$
. "\$+1("/&\$, -' () . "#1\$"%(. "\$+ %##* * /&#*	"\$, /8 +,) "(8" (; #&%/	. "#4" (* * /" #1(' /\$
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. (" (, , \$, -' () #&, (+%("\$, /8 +,) . "#/81#+0&1(. "#4" (* * /" #1(' /\$
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G+\$0- ""\$, /8 +,) "(8" (; #&%/ " #&' #0/&0) % 1\$&%\$ -CURRENT, (""\$, /8 +,) . "#/81#+0&1(" Ñ % 1\$&%\$ -STABLE. "! "\$+1("/&\$, -' () . "#1\$"%(. "\$+ %##* * /&#*" Ñ E&# L6' %?/#' (, -' # \$&0&/" #1(' /\$, . "#1#+/* # \$ %#, , \$4(* /- (8" (; #&9/(* / . # 8(. "#06 /, / +,) . "#1\$"/ %#+(0 ?\$, - = #. "\$+\$, \$' /) 0#0&#) ' /) . #+. "#\$%&(. "! (" (, , \$, -' () #&, (+%(" Ñ E&# L6' %?/#' (, -' # \$&0&/" #1(' /\$, %&#&" # \$ * #@\$& 1581(&- +#. #, ' /&\$, -' 5: #; 8#" / #&, (+%6, %4+(%#+ 1%, = 9>' 1 1\$&%6 -CURRENT.

J(* ## \$' &' (. /0(' /) E# +#%6* \$' &(1 . "#\$%&\$; 5, # 269 %##* * /&&\$" #1. F#4+(#' / 1' #0) & /8* \$' \$' /) 1 1\$&%6, E&# 0#8+(\$& ' #15: 15. 60%. <9\$' - 9(0&# . #, -8#1(&\$, / 1 0##; 3\$0&1\$ #&0, \$@/1(= & #. "\$+\$, >' ' 6= 1\$&%6. D4' #1\$' ' # \$. #) 1, \$' /\$ ' #1#4# 15. 60%(+\$, (\$& /8* \$' \$' /) B/" ### +#0&6. ' 5* / 0" (86 @\$ / . #81#,) \$& ; 50&"# . #, 69(&- #&8515 #& 0##; 3\$0&1(. I&# &(%@\$ +(>& 0##; 3\$0&16 #@/+(\$* # \$ 1" \$*) "\$(%?// ' (. "#; , \$* 5, %&#&" 5\$ 1(@' 5 +,) ' /7. I&# +\$, (\$& 0##; 3\$0&1# ; #, \$\$ 1#1, \$9\$' ' 5*, 9&#, 1 01# = #9\$"\$+-. . #81#,) \$& . #, 69(&- ; #, -B\$ / , 69B\$ #&851#1, 9&# 0' #1(0&/ * 6, /" 6\$& ; #, -B\$ 0#. "#1#@+\$' /) / 1 %#' \$9' #* /\$ +#, @' # 0#8+(&- , 69B /: . "#+6%&.

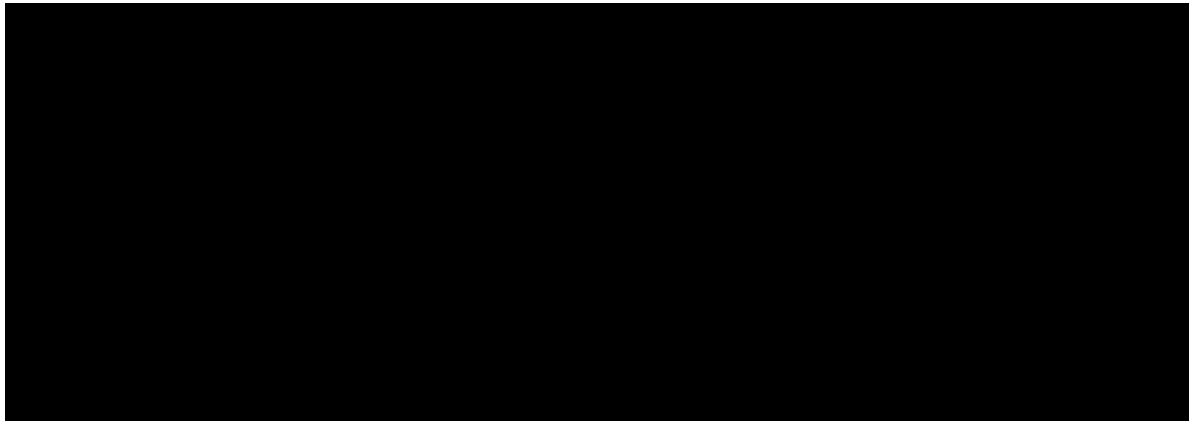
!"\$@+\$ 9\$* 1' #0/&- /8* \$' \$' /) 1 %#+ 1 9(0&)7 +\$" \$1(, /0&#" /) %&#&" 57 ' \$/81\$0&' (%##* * /&&\$" 6, %##* * /&&\$" #;) 8(' . "#9/&(&- @6" ' (, 5 %##* * /, 9&#; 5 . #') &- , . #9\$* 6 #. "\$+\$, >' ' 5\$ L6' %?// "\$ (, /8#1(' 5 / * \$' ' # &(% , / /8; \$@(&- #B /; #%, %&#&" 5\$ 6@\$; 5, / #; +6* (' 5 /, / /0. "(1, \$' 5 "(\$ \$.

6.3. A\$\$" B ' * +' \$ &%\$") ' ?'

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+(' ' 57 0#. "#1#@+\$' /) #&9> # . "#; , \$* (7. V0. "(1/&\$, - #B /; #% (Bugbuster)
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! "#\$%&' 8. ?+&4' 1 @*&8)##1: #&&/O%)") & @* &/,)3)

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' /' L#" * (?// +,) 0#8+(' /) " (; #9\$4# /0. "(1, \$' /). I&# /0. "(1, \$' /\$ 8(&\$* L/%0/"6\$&0), /
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[FreeBSD].

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¥ <0' #1' () %#* (' +((Core Team)

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F#4+(4#/&0) 15. 60% "\$, /8(, . "#\$%& FreeBSD '\$0%#, -%# * \$')\$& 01# = 0&"6%&6"6. N#0&(1,)\$&0) 4"(L/% 15. 60%(, 1%, =9(= 3 /: 8(*#"#8%6 L6' %?/#' (, -' #0&/ / %#+(, 15. 60% . "#* \$@6	' 57 "\$, /8#1 /L/' (, -' #4# "\$, /8(G(*#"#8%(L6' %?/#' (, -' #0&/ #8' (9(\$&, 9&# ' #15\$ L6' %?// ' \$ * #46& ; 5&- + #; (1, \$' 5 1 1\$&%6 ; \$8) 1' #4# 0#4, (0/) /' @\$' \$"#1 "\$, /8(G(*#"#8%(%#+(#8' (9(\$&, 9&# /8*\$' \$' /) 1 %#+\$ (' (. "/*\$", /0. "(1, \$' /) #B /; #%) '\$ * #46& ; 5&- + #; (1, \$' 5 ; \$8) 1' #4# 0#4, (0/) /' @\$' \$"#1 "\$, /8(I&## . "#?S00 8(*#"#8%/ L6' %?/#' (, -' #0&/ / %#+(/81\$0&\$' %(% 0&(; /, /8(?/). H. "#?S00\$ 15. 60%("\$, /8(/' @\$' \$" "\$, /8(/* \$\$& . #, ' #* #9/) #&%(&51(&- 0) % ; #, \$\$ 0&("5* 1\$"0/) * %#+(/, &(%/* #; "(8#*, "#&* \$')&- /8*\$' \$' /), \$0, / # / 0#9&6&, 9&# E&/ /8*\$' \$' /) ' \$. #+7#+) & +,) 1%, =9\$' /) 1 "\$, /8.

N63\$0&16\$&&"/ "(8, /9' 57 1/+(15. 60%#1:

1. .0 15. 60%/) 1,) = &0) . \$" 15* " \$, /8#* #0' #1' #: 1\$"0//. <' / 1\$&1) &0) #& 1\$&%/ -CURRENT / /* \$=& 8' (9/&\$, -' # ;#, \$\$ +, /&\$, -' 5: ?/%, " (8" (; #&%/ /8-8(' \$0&(; /, -' #4# 7(" (%&\$" (1\$&%/ -CURRENT
2. .X " \$, /85 Ñ E&# " \$, /85 1\$&%/ -STABLE. <' / 8(., (' /" #1(' 5 % 157#+6% (@+5\$ 4 * \$0)?(.
3. .X.Y Ñ E&# 15. 60%/ 0 /0. " (1, \$' /) * / 6) 81/* #0&\$: , 0, \$+6= 3 / \$ 8(1\$&%#: .X. <' / 157#+) & #, -%# #&4+(, %4+(0 * #* \$' & (. #0, \$+ ' \$4# 15. 60%(1 E&#: 1\$&%\$; 5, # #; C\$+/' \$' # + #0&(' # \$ %#, /9\$0&1# /0. " (1, \$' /: 6) 81/* #0&\$: . J #15\$ L6' %?// 1%, = 9(= &0) "\$+%, (%#* (' + (; \$8#. (0' #0&/ 69(0&16\$& 1 E&/ 7 15. 60%(7 4#" (8+# (%&/1' \$\$, 9\$* 1 #; 59' 57.

2,) 15. 60%#1 1\$&%/ -STABLE . "#? \$00 15. 60%(' (9/' (\$&0) 8(45 +' \$: + # . "\$+. #, (4(\$* #: +(&5 " \$, /8(. H &\$9\$' / \$. \$" 1#: L(85, . \$" 157 15 +' \$: , " (8" (; #&9%/ / . \$" \$' #0) & /8* \$' \$' /) /8 -CURRENT, %#&#" 5\$ # / 7#&) & 1%, = 9/&- 1 " \$, /8, 1 1\$&%6 15. 60%(. ! # #%# ' 9(' // E# . \$" /#+(%#+ 17#+/ & 1 15-+' \$1' 5: . \$" /#+ 8(* # " #8%/ , 1 &\$9\$' / \$ %#&#" #4# + #. 60%(= &0) &#, -%# /0. " (1, \$' /) #B /; #%, #; ' #1, \$' /) + #6* \$' & (?//, /0. " (1, \$' /), 01) 8(' ' 5\$ 0 ; \$8#. (0' #0&- =, / ' \$8' (9/&\$, -' 5\$ /8* \$' \$' /) + " (: 1\$" #1 60&" #: 0&1. I&/ /8* \$' \$' /) + #, @' 5 ; 5&- . "\$+1(" /&\$, -' # #+ #; "\$' 5 /' @' \$" #* 15. 60%(. H ' (9(, \$. #0, \$+ ' \$4# 15-+' \$1' #4# . \$" /#+(0#8+(\$&0) %(' + / + (& ' (15. 60% +,) B /" #%#4# &\$0&/ " #1(' /). H E&#& . \$" /#+ 1\$"#) &' #0&- 1' \$0\$' /) /8* \$' \$' /: 0' /@(\$&0), 8(/0%, = 9\$' /\$* 1(@' 57 /0. " (1, \$' /: #B /; #% / #; ' #1, \$' /: ; \$8#. (0' #0&/ . H E&#& 8(% , = 9/&\$, -' 5: . \$" /#+ 10\$ 15. 60%/ 09/&(= &0) %(' + / + (&* / ' (15. 60%. ! # 8(1\$" B\$' // . "#? \$00(15. 60%(0#8+(\$&0) " \$, /8 0 ' #15* ' #* \$" #* 1\$"0//, 1%, = 9) ; /' (" ' 5\$ + /0&" /; 6&/15 ' (1\$; -0(: &(7 / 0#8+(' / \$ #; " (8#1 CD-ROM. <+' (%# " \$, /8 ' \$ 09/&(\$&0) Ç+\$: 0&1/&\$, -' # 15. 63\$' ' 5* È + # &\$7 . #", . #%(' (0. /0#% " (005, %/ freebsd-announce ' \$; 6+\$& #&. " (1, \$' # 0##; 3\$' /\$, . #+. /0(' ' # \$ 0. #* #3- = [Pretty Good Privacy](#), 1 %#&#" #*) 1' # 6%(8(' #, 9&# " \$, /8 0#0&#), 0); 10\$, 9&# #; #8' (9\$' # %(% Ç" \$, /8È + # E# * #* \$' &(, * #@\$& ' (7#+/ &-0) 1 . "#? \$00\$ + # (" ; #&%/ / /8* \$') &-0) + # #&. " (1%/ PGP-. #+. /0(' ' #4# 0##; 3\$' /). ^[4]

HS"0// 1\$&%/ -CURRENT (&# \$0&- 10\$ 1\$"0//, #%(' 9/1(= 3/\$0) ' (".0"), #9\$' - . #7#@/, ' # 0 1+1# \$; #, -B/* 1"\$* \$' ' 5* . "#* \$@6&#%#* . ! "#? \$00 ' (9/' (\$&0) 8(8 ' \$+\$, - + # 15. 60%(0 #; C) 1, \$' /) 4" (L/%(" \$, /8(. \$\$" \$8 +1\$ ' \$+\$, / . #0, \$ ' (9(, (. "#? \$00(15. 60%(11#+/ &0) 8(* # " #8%(L6' %?/#' (, -' #0&/, / #. & /* /8(?/). "#/81#+/ &\$, -' #0&/ + #, @' (; 5&- 01\$+\$' (% * /' /* 6* 6. G(9\$&5" \$' \$+\$, / + # 15. 60%(0&(' #1/ &0) + #0&6. ' (#L/?/ (, -') ; \$&(-1\$"0/). G(+1\$ ' \$+\$, / + # 15. 60%(%#+ #L/?/ (, -' # 1\$&1/ &0) 1 ' #16= 1\$"0/= . I&#: 1\$"0// . "/01(/1(\$&0) 0&(&60 " \$, /8-%(' + / + (&, /, %(% / 1 0, 69(\$ 0 " (8" (; #&%#: -STABLE, 8(* # " #8%(%#+(" \$, /8-%(' + / + (& 6@ \$0	(\$&0). <+' (%# " (8" (; #&%(' (#0' #1' #: 1\$&%\$ " (8" (; #&%/ * #@\$& . "#+ #, @(&-0). G(/0%, = 9\$' /\$* E&/ 7 " (8, /9/: . . "#? \$005 " (8" (; #&%/ " \$, /8#1 07#@/.

.0 15. 60%/ 15+\$,) = &0) 1 #&+\$, -' 6= 1\$&%6 / #"/\$' &/" #1(' 5 1 #0' #1' # ' (" (' ' /7 . #0, \$+ #1(\$&, \$: . G(\$&\$* 1\$&%(. "#7#+/ & . \$" /#+ 0&(; /, /8(?//, / &#, -%# . #0, \$ #, %(% F#* (' + (" (8" (; #&%/ " \$, /8#1 " \$B/ &, 9&# &" \$; #1(' /) % 0&(; /, -' #0&/ 15. #, ' \$' 5, 1\$&%(0&(' #1/ &0) -STABLE, (-CURRENT . \$" \$%, = 9(\$&0) ' (0, \$+6= 36= * (@#" ' 6= 1\$"0/= . U#&) 1 ; #, -B/' 0&1\$ 0, 69(\$1 E&# . "#/07#+/ , # 0 1\$"0/)* / *1, E&# ' \$) 1,) \$&0) #;) 8(\$&, -' 5* &" \$; #1(' /\$* .

P#, -B/' 0&1# 15. 60%#1 . "#/07#+/ & . # + #0&/@\$' // + (&5, %#&#" () 09/&(\$&0) + #0&(' # #&+(, >' #: #& . "\$+5+63\$4# 15. 60%(. Q0&(' #1, \$' (?\$, - 15. 60%(&- #0' #1' 5\$ 1\$"0// %(@+5\$ 18 * \$0)?\$1, (. "#* \$@6	' 5\$ Ñ %(@+5\$ 4 * \$0)?(. N##; 3\$0&1# . #, -8#1(\$&, \$: 9>&%# + (, # . #') &- , 9&# ; \$8#. (0' #0&- / 0&(; /, -' #0&- ' \$* #46& ; 5&- . "/' \$0\$' 5 1 @\$" &16 /8-8(

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+#. #, ' /&\$, - ' () +/0?/. , /' (. " / 1' \$0\$' // /8* \$' \$' /: 1 -STABLE.

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2. G(* # " #8/&- L6' %?/#' (, - ' #0&-
3. G(* # " #8%(%#+(
4. N#8+(&- 1\$&%6
5. F(' +/+(&' (15. 60%
6. N&(; /, /8/" #1(&- 15. 60% (. "/ ' \$#; 7#+/* #0&/ 1\$" ' 6&-0) % . "\$+5+63\$* 6 B (46; %4+(
15. 60% 09/&(\$&0) 0&(; /, - ' 5* , . \$" \$: &/ % 0, \$+6= 3\$* 6 B (46)
7. N#; " (&- . (%\$&5
8. ! "\$+6. "\$+/&- 0(: &5-8\$" % (, (
9. < . 6; , /%#1(&- 15. 60%

[[FreeBSD](#)]

- [1] ! "\$ 15\$ 15; #" 5 <0' #1' #: %#* (' +5 0#0&#), /0- 1 0\$' &); "\$ 2000 4#+(
- [2] <+' (%# 10> ;#, -B\$ &\$0 15. #, ') \$&0) . "/ 0; #"%\$ 0/0&\$* 5 (make world). I&/ &\$0&5)1,)=&0) #9\$' - ' #15*
+#. #, ' \$' /\$*, / 0/0&\$* (&/9\$0%() 0&"6%&6" (+,) ' /7 \$3>' \$ 0#8+(' (
- [3] sendmail / named Ñ . " / * \$ " 5 %##+, %##&" 5: ; 5, #; CS+/' >' 0 +" 64/7 . , (&L#" * .
- [4] D' #4/\$ %## * \$ " 9\$0%/ \$. #0&(13 /% / /0. #, -86=& E&/ #; " (85 +,) 0#8+(' /) CD-ROM, %##&" 5\$. "#+(= &0) 1 "#8' /9' 57
* (4(8/' (7.

Chapter 7. K* 1/%6? ' * /E

<0' #1' 5\$ /' 0&"6* \$' &5 . #++\$ "@%/ . "#?S00(" (8" (; #&%/ Ñ E&# Bugzilla, Mailman / OpenSSH. I&# /' 0&"6* \$' &5, " (8" (; #&(' ' 5\$ 0&#" #' ' /* / "#4(' /8(?/)* /, %&#" 5\$ B/" #%# /0. #, -86=&0) 1 * /"\$ \$&%" 5# /07#+ ' #4# %#+(.

7.1. Git

Git Ñ E&# 0/0&\$* (+,) 6. " (1, \$' /) ' \$0%#, -%/* / 1\$"0/) * / &\$%0 L(: , #1, #&0, \$@/1(' /) 1' \$0>' ' 57 /8* \$' \$' /: , /7 (1&#"#1 / . "/9/' . ! "#\$%& 7" (' /&0) 1 Ç" \$. #8/&#" /Ë, (" (8' 5\$ 1\$"0//09/&(=&0) " (8' 5* / Ç1\$&%(* /Ë.

7.2. Bugzilla

Bugzilla Ñ E&# ; (8(+' ' 57 +,) 0#. "#1#@+\$' /), 0#0&#) 3() /8 ' (; #"(/' 0&"6* \$' +,) #&0, \$@/1(' /) #B /; #% ' (?\$' &" (, -' #* 0(: &\$. <' (. #++\$ "@/1(\$& . "#?S00 #&0, \$@/1(' /) #B /; #%, 1%, =9() #&. " (1%6 / #; " (; #&%6 #B /; #%, (&(%@\$ 8(. "#05 / #; ' #1, \$' /\$; (85 +(' ' 57, (&(%@\$ "\$+(%&/" #1(' /\$ #&9> #; #B /; %(7. ! "#\$%& /0. #, -86\$& 1\$; -/' &\$" L\$: 0 +,) #&. " (1% / "<&9> # . "#; , \$* (7" ' (?\$' &" (, -' 5: 0\$" 1\$" Bugzilla . "#\$%&(. Q %##* * /&&\$" #1 &(%@\$ \$0&- 1\$; - / %##* (' + ' 5\$ %, /\$' &5.

7.3. Mailman

Mailman - E&# . "#4" (* * (, %&#" () (1&#* (&/8/"6\$& 6. " (1, \$' /\$. #9* / " (005, %(* / . ! "#\$%& FreeBSD /0. #, -86\$& \$> +,) 1\$+\$' /) 16 #; 3/7 " (005, #%, 60 &\$7' /9\$0%/7 " (005, #%, 4 #4" (' /9\$' ' 57 " (005, #% / 5 " (005, #% 0 , #4(* / %##* * / Git. <' (&(%@\$ /0. #, -86\$&0) +,) *' #4/7 . #9 " (005, #%, 0#8+(' ' 57 / /0. #, -86\$* 57 +"64/* / , =+- * / / . "#\$%&(* / 1 0##; 3 \$0&1\$ FreeBSD. <; 3/\$ " (005, %/ . "\$+' (8' (9\$' 5 +,) B/" #%#: . 6; , /%/, &\$7' /9\$0%/\$ " (005, %/ 1 #0' #1' #* . "\$+' (8' (9\$' 5 +,) " (8" (; #&%/ #. "\$+\$, >' ' 57 #; , (0&\$: /' &\$" \$0#1, (8(" 5&5\$ " (005, %/ /0. #, -86=&0) +,) 1' 6&" \$' ' \$: %##* * 6' /%(?//, ' \$. "\$+' (8' (9\$' ' #: +,) B/" #%#: . 6; , /%/. P#, -B() 9(0&- 10\$: %##* * 6' /%(?// 1 . "#\$%&\$. "#7#+/& 9\$" \$8 E&/ 85 " (005, #% [FreeBSD, ! " /, #@\$' /\$ C].

7.4. Pretty Good Privacy

Pretty Good Privacy, ;#, \$\$ /81\$0&' 5: %(% PGP, Ñ E&# %" / . �/0&\$* (, /0. #, -86= 3() ("7/&\$%&6"6 #&%" 5# %, =9(, 9&#; 5 . #81#, /&- . #, -8#1(&\$,) * . #+. /051(&- //, / B/L"#1(&- /' L#" * (?/= ?/L"#1#: . #+. /0- = +,) #; \$0. \$9\$' /) ; \$8#. (0' #: 01)8/ * \$@+6 +16*) 0&#" #' (* / . ! #+. /0- /0. #, -86\$&0) . "/ #&. " (1%\$ /' L#" * (?// *' #@\$0&16 . #, 69(&\$, \$: , . #81#,)) / * 6; \$+ /&- 0), 9&# /' L#" * (?/) ' \$; 5, (/8* \$' \$' (+# #, %(% #' / \$> . #, 69/, /. H . "#\$%&\$ FreeBSD E&# #0' #1' #: 0. #0#; 6; \$+ /&- 0), 9&# /' L#" * (?/) ; 5, (' (. /0(' (&\$* , %&# 6&1\$" @+(\$&, 9&# \$> 0#8+(, , /' \$; 5, (/8* \$' \$' (1 . "#?S00\$. "\$ \$+(9/.

7.5. Secure Shell (SSH)

Secure Shell - E&# 0&(' +("& ; \$8#. (0' #4# 17#+(1 6+(, >' ' 6= 0/0&\$* 6 / 15. #, ' \$' /) %#* (' + ' (' \$: . <' . #81#,) \$& 60&(' (1, /1(&- / 8(3/3 (&- +" 64/\$ 0#\$+/' \$' /), ' (851(\$* 5\$ &6' ' \$,) * /, * \$@+6 +16*) 18(/* #+\$: 0&16= 3/* / 0/0&\$* (* /. I&#& 0&(' +("& 063\$0&16\$& 1 +167 #0' #1' 57 1\$"0/) 7, / &#, -%# 1\$"0/) +1(/0. #, -86\$&0) 1 . "#\$%&&\$ FreeBSD. J(/; #, \$\$ " (0. "#0&" (' >' ' () "\$(/8(?/) 0&(' +("& (- OpenSSH, %&#&#" () 17#+/& 1 #0' #1' 6= +/0&" /; 6?/= . "#\$%&(. ! #0%#, -%6 \$> /07#+ ' 5: %#+ #; ' #1,) \$&0) 9(3\$, 9\$* 15. 60%/ FreeBSD, . #0, \$+')) 1\$"0/ &(%@\$ +#0&6. ' (1 +\$" \$1\$. #" .

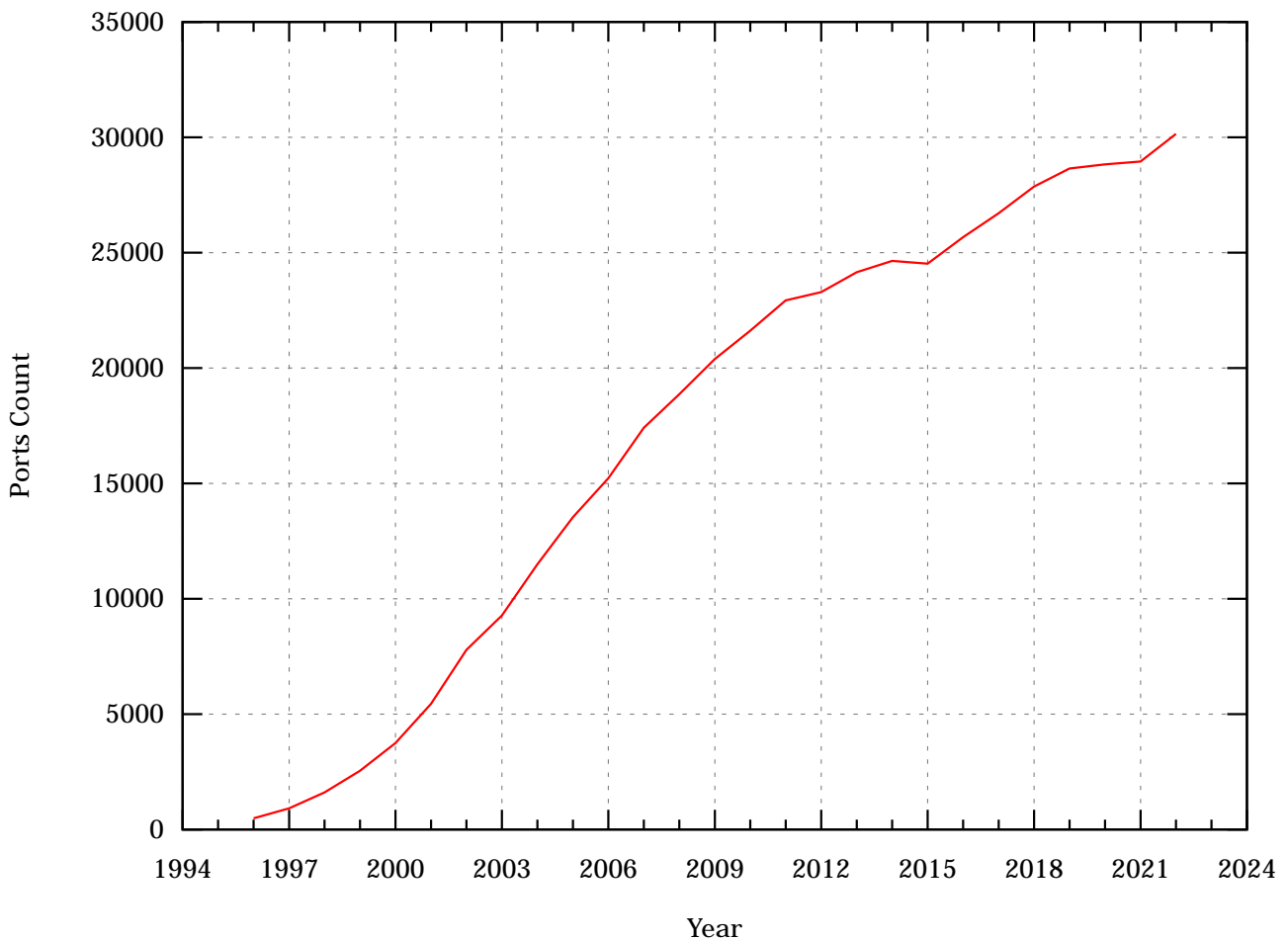
Chapter 8. 3\$(&%\$' . /E

! #+. "#\$%&5 0#8+(=&0) +,) 6*\$' -B\$' /) #;C>* (%##* * 6' /%(?//, ' \$#; 7#+/* #: +,) %##"+/' (?// 4"6. . 5 " (8" (; #&9/%#1. F#4+(. "#; , \$*' () #; , (0&- +#0&(' # /8#, /"#1(' (, ;# , -B () 9(0&- %##* * 6' /%(?// . "#/07#+/& 1' 6&"/ 4"6. . 5, 0#0"\$+##9\$' ' #: ' (. "#; , \$*\$, 9&# &"\$; 6\$& * \$' -B\$ #; 3\$' /) 0 +"64/* / 4"6. . (* / . # 0" (1' \$' /= 0 0/&6(?/\$: , %#4+(4"6. . (' \$ /8#, /"#1(' (.

8.1. 3\$(&%\$' . / Ports

"! #"&" Ñ E&# ' (; # " * \$&+(' ' 57 / . (&9\$: , ' \$#; 7#+/* 57 +,) 8(4"68%/ , %##. /,) ?// / %#" "\$%&' #: 60&(' #1%/ 1' \$B' \$4# . "#4" (* * ' #4# #; \$0. \$9\$' /) 1 0/0&\$* \$ FreeBSD. F#, /9\$0&1# . # " " (0&>& 0 #4" #* ' #: 0%#" #0&- =, %(%. #%(8(' # ' (0, \$+6= 3\$* "/06' %\$.

Number of ports over the year



!"#\$%&' 9. A&, ";)#6+& @&*6&+, 4&/1+,)%%=B 3)C4\$ 1995 " 2022 9&413 "

image::portsstatus.svg . #%(851(\$& %#, /9\$0&1# . # ", +#0&6. ' 57 +,) FreeBSD 1 . \$' /#+ 0 1995 . # 2022 4#+. ! #7#@\$, 9&# %" /1() 0' (9(, (" #0, (E%0. #' \$' ?/(, -' #, (8(&\$* 0 0\$" \$+/' 5 2001 +# 0\$" \$+/' 5 2007 4#+(" #0, (, /' \$: ' # 0# 0%#" #0&- = #%%, # 2000 . # "/4#+, . #0, \$ 9\$4# 0%#" #0&- "#0&(0' /8/, (0-.

! #0%#, -%6 1' \$B' \$\$. "#4" (* * ' # \$ #; \$0. \$9\$' /\$, #. /051(\$* # \$. # "&#*, 9(0&# ' (7#+/&0) 1

0&(+/ / (%&/1' #: "(8" (; #&%/ , #; C>* "(; #&5, ' \$#; 7#+/* #: +,) . #++\$ "@% / . #' , 6@\$ 1\$, /% / . "#+##, @(\$& "(0&/ . I&# . "/1\$, # % &#* 6, 9&# 9(0&- . "#\$%&(FreeBSD, 01)8(' ' () 0 . #"&(* / , . #, 69 / , (; #, \$\$ 0(* #0&#) &\$, - ' 6= 0&"6%&6"6 / 10\$; #, - B \$ 0&(' #1/&0) . #+. "#\$%&#* . "#\$%&(FreeBSD).

! "#&5 /* \$=& 01#= 0#; 0&1\$' ' 6= #0' #1' 6= %*# (' +6 0 DS' \$+@\$" *# ! "# 1# 4, (1\$, / E&(%*# (' +(* #@\$& ' (8' (9(&- %*#* /&&\$" #1 ; \$8 #+##; "\$' /) <0' #1' #: %*# (' +5 FreeBSD (Core Team). H #&, /9/\$ #& . "#\$%&(FreeBSD, 4+\$ (%&/1' # \$ 0#. "#1#@+\$' /\$ 9(0&# 1#8' (4" (@+(\$&0) . "(1#* %*#* /&(, . #+. "#\$%& . #" 1%, =9(\$& *' #@\$0&1# (%&/1' 57 0#. "#1#@+(= 3/7, ' \$)1,) = 3/70) %*#* /&&\$" (* /.

H #&, /9/\$ #& #0' #1' #4# . "#\$%&(, +\$ " \$1# . #" ' \$ "(81\$&1,) \$&0). F(@+5: 15. 60% FreeBSD 0, \$+6\$& &\$%63\$: #%, , \$%?// . #", 9&# #; \$0. \$9/1(\$& +#0&6. % #; ' #1, >' ' #: /' L#" * (?// # &#*, 4+\$ ' (: &/ . "#4" (* * 5 / %(% /7 0#; "(&- . <+ ' (%# E&# #8' (9(\$&, 9&# . #"&, 8(1/0)3/: #& 0/0&\$* 5, * #@\$& &"\$; #1(&- /8* \$' \$' /: 1 8(1/0/* #0&/ #& 1\$"0// FreeBSD, ' (%&# "#: #' 8(. 63\$' .

N ' \$" (81\$&1, >' ' 5* "\$. #8/&#" /\$* . #" ' \$1#8* #@' # 4(" (' &/ "#1(&- , 9&# , =; #: . #"& ; 6+\$& "(; #&(&- ' (9>* -, /; #, %"#* \$ -CURRENT / -STABLE, 1 9(0&' #0&/ ' (0&(" 57, * /' #' ' 57 15. 60%(7. 2,) E# ' \$& ' /' L" (0&"6%&6"5, ' / 1"\$* \$' / 1#, #' &>" #1.

F#* (' +5, 8(1/0)3/\$ #& Ports, &(%/\$ %(% %*# (' +(15. 60%("\$, /8#1, +,) ELLS%&/1' #0&/ %*#* 6' /%(?// /* \$=& 01#/7 0#; 0&1\$' ' 57. "\$+0&(1/&\$, \$: . #. #"&(* .

8.2. 3%\$' . / (\$. 6? ' * /74++ FreeBSD

! "#\$%& +#%6* \$' &(?// FreeBSD ; 5, ' (9(& 1) ' 1("\$ 1995 4#+(. <& . \$" 1# ' (9(, - ' #: 4" 6. . 5, 0#0&#) 1B\$: /8 "6%#1#+/&\$,) . "#\$%&(, 9\$&5">7 "6%#1#+/&\$, \$: %*# (' + / 16 69(0&' /%#1, 0\$: 9(0 #; 3\$\$ 9/0, # %*#* /&&\$" #1 +#0&/4, # 44. N. /0#% " (005, %/ +#%6* \$' &(?// ' (09/&51(\$& 96&- * \$' \$\$ 300 69(0&' /%#1, 9&# 6%(851(\$& ' (+#1#, - ' #; #, - B#\$ 0##; 3\$0&1# 1#" 64 ' \$4#.

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! "#\$%& +#%6* \$' &(?// 1%, =9(\$& 1 0\$;) 11#+ ' # \$ "6%#1#+0&1#. <' # /0. #, - 86\$&0) %(% +,) #8' (%*#, \$' /) ' #157 69(0&' /%#1 . "#\$%&(0# 0&(' + ("&' 5* / /' 0&" 6* \$' &(* / / 0/ ' &(%0/0#*, &(% / 1 % (9\$0&1\$ 0. "(1#9' /%(. "/ " (; #&\$ ' (+ . "#\$%&#* .

A&+1\$.) +/' %7/6%E

[Brooks, 1995] X"\$+\$"/%!. P"6%0. O1&#"0%#\$. "(1# © 1975, 1995 Pearson Education Limited. 0201835959. Addison-Wesley Pub Co. D/L/9\$0%/: 9\$, #1\$%* \$0)? . I00\$ # . "#4" (* * ' #: /' @\$' \$" //, =; /, \$: ' # \$ /8+(' /\$ (2-\$ /8+(' /\$).

[Saers, 2003] J/%, (0 N(\$"0. O1&#"0%#\$. "(1# © 2003. D#+\$, - . "#\$%&(+,) FreeBSD. F(' +/+(&0%() +/00\$" &(?/). <http://niklas.saers.com/thesis>.

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[FreeBSD, 2002B] Copyright © 2002 ! "#\$%& FreeBSD. H5; #" 5 0#0&(1(#0' #1' #: %*# (' +5 (Core Team) 2002. <http://election.uk.freebsd.org/candidates.html>.

[FreeBSD, 2002C] 2(4-I", /' 4 N* >"4"(1 / U/&\$' ! (' +-). Copyright © 2002 The FreeBSD Documentation Project. The FreeBSD Documentation Project. M\$%#* \$' +(?// . # " (; #&\$ 0 0##; 3\$' /) * / # . "#; , \$* (7. M\$%#* \$' +(?// . # " (; #&\$ 0 0##; 3\$' /) * / # . "#; , \$* (7.

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/0&\$9\$' /) 0" #%(+\$: 0&1/) ; / %#* * /. 2002/04/06 15:35:30.
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[Lehey, 2002] T" \$4 Y\$7/. Copyright © 2002 T" \$4 Y\$7/. T" \$4 Y\$7/. Two years in the trenches. The
evolution of a software project (21(4#+(1 #%#. (7. I 1#, =?/) . "#4" (* * ' #4# . "#\$%&()).
<http://www.lemis.com/grog/In-the-trenches.pdf>.