

# ! " # " \$%#& BSD

! " # \$%#& ' (

) \* ' +, - +#. +%\* \* / #S0+1\$1\* ' ' /2#3" ' 0%\* ' , /4#5# "Linux" - +%0\$' 6, /0' /\$%4# /' " # " ' \* #\* /4#5% "7- , +%&' # " "%( 8' /\$, \*%", 2#\$( 9\$# 3%4, 0# " , , 3' "/\$5, " "%( #- , +%&' # " "%( /' /\$, \*% UNIX" , ' /2#3" 1, 0#31 0#\$#+#: 3#/\$; - " 1 < ' +#0#: - ; =4' 0, .

>%0 5 6?\* @, /, 0+, \$? A#6, \*; ' B5, /\$" #/\$C BSD #/\$%54(, \$ @, 4%\$C 4; 6< , . #? D\$% - ; =4' 0%&' ( /\$%5' \$C &, 4CE #5\$, \$' \$C "% 9\$' ' 3+; . ' , 5#- +#/1.

F% - +#\$(@, " ' ' 5/, . # \$, 0/\$% #+=%G%: \$, 5" ' \*% " ' , "% ! " #\$\$\$&&" \$#\$4' 6' ( BSD # \$ Linux.

## 4#1&59\$' +&

1. V\$# \$%0#, BSD? ..... 1
2. V\$#, "%/\$#(G' : UNIX" ? ..... 2
3. A#6, \*; BSD " , 3#/\$%\$#6" # ' B5, /\$" %? ..... 3
4. 8+%5" , " ' , BSD ' Linux ..... 3

## 1. ! " # " \$%#& BSD?

BSD #B" %6%, \$ "Berkeley Software Distribution". >%0 " %B15%4#/C - +#. +%\* \* " #, # =, /- , 6, " ' , , +%/ - +#/\$+% " (5< , , / ( 5' /2#3" 12 0#3%2 H%4' I #+ " ' : /0' \* J" ' 5, +/' \$, \$#\* 5 K, +04' , 0#\$#+#, /" %6%4% - +, 3/\$%54(4# ' B /, =( 3#- #4" , " ' ( 0 #- , +%&' # " "#: /' /\$, \* , UNIX" 0#\* - % " ' ' AT&T. F% #/" #5, 5, +/' ' 4.4BSD-Lite =14' /#B3% " 1 " , /0#4C0# #- , +%&' # " " 12 /' /\$, \* / #S0+1\$1\* ' /2#3" 1\* ' 0#3%\* ' . ) ' 2 /#/\$%5 504E6, " 1 +%B+%=#S0' 3+; . ' 2 - +#, 0\$5, /+, 3' 0#\$#+12 #/#=# /4, 3; , \$ 513, 4' \$C A+#, 0\$ GNU. ) # \$ 6\$# \$%0#, /#=#/\$5, " " # #- , +%&' # " "%( /' /\$, \* % BSD:

¥ L3+# BSD, #5\$, 6%EG, , B% - 4%" ' +#50; - +#&, // #5, ; - +%54, " ' , - %\* (SCE, - #33, +@0; \* " #. #- +#&, // #+ " 12 /' /\$, \* (SMP), +%=#\$; /; /\$+#: /\$5%\* ' ' \$%0 3%4, . .

¥ K' =4' #\$, 0% C, #/" #5" #: /' /\$, \* " 1: ' " \$, +I, : / - +#. +%\* \* ' +5%" ' (.

' ( ) % ( \* + \$, - C ! BSD \* . & \* ! " ! - \$ + . / & - , \* # \$ ( 0 ' \$ 1, % ( , - & \$ ( 0 2 1 \* \$, + - GNU.

¥ 7=#4#60' , I %: 4#51, ; \$' 4' \$1, 0#\* - ' 4(\$#+1, +, 3%0\$#+1 /5(B, : ' 3+; . ' , ; \$' 4' \$1 - #4CB#5%\$, 4(.

3\$, \*+ \*1" \$ (0 &(4) - 0(15G+ . / &- , \*#\$ GNU, - &\$, \*+ \*1" \$Ñ&\$+.

¥ 8' /\$, \* % X Window, #5\$, 6%EG%( B% . +%I ' 6, /0' : ' " \$, +I, : /.

8' /\$, \* % X Window, 0#\$#+%( ' /- #4CB; , \$/( 5 =#4C< " /\$5, 5, +/' : BSD, - #33, +@' 5%, \$/( - +#, 0\$#\* X.Org. FreeBSD 3%?\$ - #4CB#5%\$, 4E 5#B\* #@" #/\$C 51=' +%\$C ' B \* " #@, /\$5%

.+%I ' 6, /O' 2 #=#4#6, 0, \$%O' 2 0%O GNOME, KDE ' 4' Xfce; % \$%O@, ' B \* " #@, /\$5% 4, .O' 2 #0#" " 12 \* , " , 3@, +#5 "%- #3#=' , Openbox, Fluxbox ' 4' Awesome.

¥ M" #@, /\$5# +%B" 12 3+; . ' 2 - +' 04%3" 12 ' /' /\$, \* " 12 - +#. +%\* \* .

## 2. ! " #, ' \$( " #) \* +, UNIX .. ?

7- , +%&' # " " 1, /' /\$, \* 1 BSD " , (54(E\$/ ( 04#" %\* ' 3+; . 3+; .%. 7" ' ' 4' < C - #\$\$\$ 0' #=#G, .# - +, 30%, 78 UNIX .. # \$ AT&T Research, 0#\$#+( \$%O@, 3%4% "%6%4# /#5+, \* , " " #: 78 UNIX .. System V. D\$# I%O\$ \* #@, \$ ; 3' 5' \$C, , /4' 5/- #\* " ' \$C, 6\$# AT&T " ' O#.3% " , #S0+15%4% ' /2#3" 1, 0#31 /5# ' 2 +%B+%=#\$0.

N, : /\$5' \$, 4C" #, UNIX .. " ' 0#.3% " , =14 - +#. +%\* \* " 1\* #=#, /- , 6, " ' , \* / #S0+1\$1\* ' /2#3" 1\* 0#3#\* , ' 5 B%0#" " #\* /\* 1/4, BSD # - +, 3, 4?" " # 38 UNIX .. F# / 3+; . #: /\$#+" 1, 5 AT&T %O\$ ' 5" # ' /- #4CB#5%4' 6; @' , +%B+%=#\$0' , "%- +' \* , + - +#. +%\* \* " #, #=#, /- , 6, " ' , , +%B+%=#\$15%, \* #, 0+; - - #: - # P//4, 3#5%" ' (\* 5 #=#4%/\$' P" I #+\* %\$ ' O' (CSRG) H%4' I #+ " ' : /O#. # J" ' 5, +/ ' \$, \$% 5 K, +04' . 8 1976 CSRG 5 1- ; /O%4% /5#: 0#3 "% \* % . " ' \$" 12 4, " \$%2 - #3 "%B5%" ' , \* *Berkely Software Distribution*, /#0+#G?" " # BSD.

PB" %6%4C" # 3' /\$+' =; \$' 5 1 BSD - +, 3/\$%54(4' /#=#: "%=#+1 - #4CB#5%\$, 4C/O' 2 - +#. +%\* \* , ' \$%O =14# 3# \$, 2 - #+, - #0% CSRG " , B%04E6' 4% 0#" \$+%OS / !. , "\$/\$5#\* - # A, +/- , OS' 5" 1\* A+#, OS%\* - +' M" " ' /\$, +/\$5, 7=#+#" 1 8Q! (DARPA). R, 4CE 0#" \$+%OS% =14# #=" #54, " ' , 0#\* \* ; " ' 0%&' # " " 12 - +#\$#0#4#5, " % 0#\$#+12 3, +@%4%/C 0#\* - CES, +"%( /, \$C %, " \$/\$5%\$NARPANET. F#5#, /, \* , : /\$5# - +#\$#0#4#5 - #4; 6' 4# ' \* ( *Internet Protocols* ' 4' TCP/IP, - # "%B5%" ' (\* 35; 2 #/" #5" 12 - +#\$#0#4#5. P2 - , +5%( < ' +#0# ' B5, /\$%"( +, %4' B%&' ( =14% 5 1- ; G, " % 5 /#/\$5, 4.2BSD 5 1982 . #3; .

) \$, 6, " ' , 5#/C\* ' 3, /(\$12 .#3#5 #=#+B#5%4#/C " , /O#4CO# 0#\* - %" ' : - # - +# ' B5#3/\$5; +%=#6' 2 /\$%" &' : . M" #. ' , ' B " ' 2 - +, 3- #64' 0; - ' \$C 4' &, " B' E " % UNIX .. , " , @, 4' +%B+%=#\$15%\$C /5#? A7 / " ; 4( . 84, 3; , \$ # \$\* , \$' \$C 0#\* - %" ' E Sun, 0#\$#+( - #/\$; - ' 4% ' \* , " " # \$%O' \* #=#+B#\* ' " % #/" #5, 4.2BSD 5 1- ; /\$' 4% /5#E #- , +%&' # " " ; E /' /\$, \* ; SunOS<sup>a</sup>. H#.3% AT&T \$#@, +, < ' 4% B%" (\$C/( 0#\* \* , +6, /O#: - +#3%@, : /5#, : 78 UNIX .. , - #(5' 4%/C "% /5, \$ " , /O#4CO# %/O, \$' 6%"( +, %4' B%&' ( - #3 "%B5%" ' , \* System III, B% 0#\$#++: 5 /O#++\* 5+, \* , " ' - #/4, 3#5%4% System V. P" \$, +, /" #, 6\$# 9\$' 5, +/ ' ' " , /#3, +@%4' 5 /, =, /#=#/\$5, " " #: - #33, +@0' +=#\$1 5 /, \$' ' ' /- #4CB#5%4' 0#3 BSD, 5 \$#\* 6' /4, +, %4' B%&' E TCP/IP ' " #=#+ ; \$' 4' \$, /+, 3' 0#\$#+12 /4, 3; , \$ 5 13, 4' \$C #=#4#60; *csch* ' \$, O/\$#5 1: +, 3%0\$#+ *vi* .) /, 9\$' "3#=#50" /#5\* , /\$" # - #4; 6' 4' "%B5%" ' , *Berkely Extensions*.

N' /\$+' =; \$' 5 BSD /#3, +@%4 0#3, - +' "%34, @%5<' : AT&T, ' , /4, 3#5%\$, 4C" #, \$+, =#5%4 4' &, " B' ' . H 1990 . #3; I ' " % /' +#5%" ' , CSRG - +, 0+%\$' 4#/C, ' .+; - - % =14% +%/ - ; G, " % . H#, - OS# ' B =15<' 2 64, " #5 .+; - - 1 +, < ' 4 #- ; =4' 0#5%\$C 0#3 BSD #3, 4C" # # \$ B%O+1\$#. # 0#3% AT&T. ) 0#" &e 0#" #5 9\$# ; 3%4#/C, ' \$%O - #(5' 4%/C "% /5, \$ 5, +/ ' ( *Networking Tape 2* ' 4' Net/2. Net/2 " , =14% B%0#" 6, " " #: , &, 4C" #: #- , +%&' # " " #: /' /\$, \* #: : #0#4# 20% 0#3% (3+% #\$/; \$/\$5#5%4#. 73" " ' B 64, " #5 CSRG, William F. Jolitz, 3#- ' /%4 " , 3#/\$%EG' : 0#3 ' #- ; =4' 0#5%4 +, B; 4C\$%\$ 5 "%6%4, 1992 . #3% - #3 ' \* , " , \* 386BSD. ) \$# @, /%\* #, 5+, \* ( 3+; .%( .+; - - % =15<' 2 64, " #5 CSRG #+." ' B#5%4% 0#\* \* , +6, /O; E 0#\* - %" ' E [Berkeley Software Design Inc.](#) ' 5 1- ; /\$' 4% =, \$%-5, +/ ' E #- , +%&' # " " #: /' /\$, \* 1 BSD/386, 0#\$#+( =%B' +#5%4%/C "% \$#\* @, /%\* #\* 0#3, . A#B@, 9\$# "%B5%" ' , =14# ' B\* , " , " # "% BSD/OS.



- +#, 0\$1 / #S0+1\$1 \* 0#3#\* /# /5# ' \* ' B%0#"%' ' ' 0#44, 0\$' 5%\* ' +%B+%=#\$6' 0#5.

## 4.2. 6\$% 3: ;8) 1+" 75#<&(( 5\$25\$=#"%+ + #=' #38&' +) BSD?

L3+% BSD ' /- #4CB; E\$ Open Source \* #3, 4C +%B+%=#S0' . H%@31: - +#, 0\$ - #33, +@' 5%, \$  
- ;=4' 6" # 3#/\$; - "#, #S1\$!\* (. 4\*#&(&, \*! / - #\* #GCE Concurrent Versions System (CVS). DS#  
3, +, 5# /#3, +@' \$ %=#4E\$"# 5, /C ' /2#3" 1: 0#3 - +#, 0\$%, % \$%0@, 3#0; \*, " \$%&' E ' 5/  
5/- #\* #.\$, 4C" 1, I%: 41. CVS - #B5#4(, \$ - #4CB#5\$, 4(\* - #4; 6' \$C 0#- ' E 3, +, 5% 4E=#:  
5, +/' ' /' /\$, \* 1.

7.+#\* "#, 6' /4# 4E3, : /# 5/, .# \*' +% ;6%/\$5; E\$ 5 /#5, +<, "/\$5#5%" ' ' BSD. )/, #' '  
+%B3, 4, " 1 "% \$+' .+; - - 1:

¥ 9\*#&+ 1(): 6+ \*1" - ' <; \$ 0#3 ' 4' 3#0; \*, " \$%&' E. 7" ' " , \* #. ; \$ 3#=#54(\$C ' 4' ' B\* , " (\$C  
0#3 " , - #/+ , 3/\$5, " " # 5 3, +, 5, ' /2#3" ' 0#5 - +#, 0\$%. DS# - + ' 5' 4, . ' ( #/#=1 \* #=#+B#\*  
B%+, . ' /\$+' +#5%" " 12 +%B+%=#S6' 0#5, ' 4' , \*; ; ( + + \$1\*! (committers), 0#\$#+1,  
- +#/\* %\$+' 5%E\$ ' \$, /\$' +; E\$ - + ' /14%, \* 1: ' \* 0#3 ' 504E6%E\$ , . # 5 3, +, 5#.

¥ 9\*; ; ( + + \$1" (54(E\$/ ( +%B+%=#S6' 0#\* ' , 0#\$#+1, ' \* , E\$ 3#/\$; - "% B%- ' /C 5 3, +, 5#  
' /2#3" 12 0#3#5 - +#, 0\$%. VS#=#1 /\$%\$C 0#\* \* ' \$\$, +#\* , 6, 4#5, 0 3#4@, " - +#(5' \$C /, =( 5  
\$#: #=#4%/\$' , 5 0#\$#+#: # " 2#6, \$ +%=#\$%\$C.

H%@31: 0#\* \* ' \$\$, + - # /5#, \*; /#=#/5, " " #\* ; ; / \* # \$+, " ' E +, < %, \$, " ; @ " # 4' , \* ;  
- #3\$5, +@3, " ' , - +%5' 4C" #/\$' - 4%" ' +; , \* 12 ' B\* , " , " ' : # \$ 3+; . ' 2 +%B+%=#S6' 0#5 ' 4'  
" , \$.) #=#G, \* /4; 6%, #- 1\$" 1: 0#\* \* ' \$\$, + \* #@, \$ 5" #/' \$C #6, 5' 3" # 51. #3" 1, ' B\* , " , " ' ( " ' / 0, \* " , /#5, \$; (/C. H - + ' \* , +; , 0#\* \* ' \$\$, + - +#, 0\$% 3#0; \* , " \$%&' ' \* #@, \$ ' /- +%54(\$C  
#- , 6%\$0' ' 4' . +%\* \* %\$' 6, /0' , # < ' =0' 5 3#0; \* , " \$%2 =, B - +, 35%+' \$, 4C" #. #  
/#. 4%/#5%" ' ( . F%- +#\$' 5, 3%4, 0# ' 3; G' , ' 4' - +#/\$# /4#@" 1, ' B\* , " , " ' ( "%/\$#(\$, 4C" #  
+, 0#\* , " 3; , \$/( - +, 3/\$%54(\$C 0 #=#; @3, " ' E - , +, 3 #0#" 6%\$, 4C" 1\* 5" , /, " ' , \* 5 3, +, 5#.  
K15%E\$ 0+%; " ' , /4; 6%' , 0#. 3% 64, " 7/" #5" #: 0#\* %" 31 (Core Team), 51- #4" (EG' :  
I; " 0&' E % +2' \$, 0#\$#+% - +#, 0\$%, \* #@, \$ /%" 0&' # " ' + #5%\$C " , \* , 34, " " ; E # \$\* , " ; ' 4'  
\* +, - + 0%0' 2-\$# ' B\* , " , " ' : 5 3, +, 5, . ) /, 0#\* \* ' \$\$, +1 #=(B%\$, 4C" # - #4; 6%E\$  
; 5, 3#\* 4, " ' , # 0#@3#\* ' B\* , " , " ' ' 5 3, +, 5, - # 94, 0\$+#" #: - #6\$, , \$%0 6\$# ' 2  
" , 5#B\* #@" # /#2+% " ' \$C 5 \$%: " , .

¥ < . &\*!&- / , \*; - &#- (Core Team). ) - +#, 0\$%2 FreeBSD ' NetBSD ' \* , E\$/( ; - +%54(EG' ,  
/#5, \$1, 0#\$#+1, B%" ' \* %E\$/( 0##+3' "%&' # " #: 3, (\$, 4C" #/\$CE. P2 + #4C, - +%5% ' #=  
#=(B%" " #/\$' " , 5/, . 3% 6?S0# # - +, 3, 4, " 1. F, #=(B%\$, 4C" # (2#\$( 5 - #+(30, 5, G, :) = 1 \$C  
0#\* \* ' \$\$, +#\* 34( \$#. #, 6\$#=#1 52#3' \$C 5 /#/\$%5 7/" #5" #: 0#\* %" 31. A+%5' 4%, 0#\$#+1\*  
/4, 3; , \$ 7/" #5" % ( 0#\* %" 3%, +%B4' 6%E\$/( \* , @3; - +#, 0\$%\* ' , " # 5 #=#G, \* /4; 6%, 64, " 1  
7/" #5" #: 0#\* %" 31 # - +, 3, 4(E\$ #=#G, , "%- +%54, " ' , +%B5' \$' ( /' /\$, \* 1 5 =#4C< , :  
/\$, - , " ' , 6, \* 5/, #/\$%4C" 1, +%B+%=#S6' 0' .

>%0#, - #4#@, " ' , 5, G, : #S4' 6%, \$/( # \$ - + ' (\$#. # 5 Linux:

1. F, /; G, /\$5; , \$ 6, 4#5, 0%, 0#\$#+1: =1 0#" \$+ #4' + #5%4 /#3, +@' \* #, /' /\$, \* 1. F% - +%0\$' 0,  
B%" 6, " ' , 9\$#. # #S4' 6' ( #0%B15%, \$/( - , +, #&, " ? " " 1\* , \$%0 0%0 ) , 3; G' : ! +2' \$, 0#\$+  
\* #@, \$ 5/, . 3% - # \$+, =#5%\$C #S0\$ ' B\* , " , " ' : H# 5/, \*; - + #6, \* ; , 5 - +#, 0\$, Linux "%

/#5+, \*, " " #\* 9\$%- , ' B\* , " , " ' ( 5 0#3 5" #/( \$/( \$#@, " , #3" ' \* , % " , /0#4C0' \* ' 4E3C\* ' .

2. 8 3+; .#: /\$##+ 1, .5=\$. +!5\$+ &," \$+%4C" #, 2+% " ' 4' G, (repository), #S0; 3% \* #@" # - #4; 6' \$C - #4" 1: 0#3 5/, : /' /\$, \* 1, - + ' 6?\* 0%0 /#5+, \*, " " 12, \$%0 ' - +, 313; G' 2 5, +/' : .

3. A+#, OS 1 BSD (54(E\$/( &, 4C" 1\* ' "7- , +%&' # " " 1\* ' 8' /\$, \* %\* ' " , % " , - + #/\$# (3+%\* ' . D\$# +%B4' 6' , \$#@, ' " #.3% - , +, #&, " ' 5%E\$ : " ' BSD, " ' Linux " , - +, 3/\$%54(E\$ &, " " #/\$' =, B - + ' 4#@, " ' : , % # " ' - #+ #: #3 " ' ' \$ , @, 5 # = , ' 2 / + , 3%2.

4. ) +, B; 4C\$%, I #+\* %4' B#5% " " #: - + #&, 3; +1 - #33, +@0' , 3' " #. # 3, +, 5% ' /2#3 " ' 0#5 5 CVS - + #&, // +%B+%=#\$0' BSD (54(, \$/( - #4" #/SCE #S0+1\$1\* , ' \* 1 - #4; 6%, \* 5#B\* #@" #/\$C 3#/\$; - % 0 4E=#: 5, +/' ' /' /\$, \* 1 - # " #\* , +; ' 4' - # 3%\$, . CVS \$%0@, #6, " C 2##+< # - #32#3' \$ 34( - #/4, 3#5%\$, 4C" 12 ' B\* , " , " ' : 5 0#3, : 0 - + ' \* , +; , 2+% " ' 4' G, 0#3% FreeBSD #=" #54(, \$/( #0#4# /\$% +%B B% 3, " C, ' =#4C< " ' /\$5# 9\$' 2 ' B\* , " , " ' : 5, /C\* % \* %41 ' " , B" %6' \$, 4C" 1 5 # \$3, 4C" #/\$' 3+; . # \$ 3+; . %.

### 4.3. >&5(++ BSD

FreeBSD, NetBSD ' OpenBSD - +, 3#/\$%54(, \$ \* ' +; \$+ ' +%B4' 6" 12 5%+ ' % " \$% /' /\$, \* 1. H%0 ' 5 Linux, 5, +/' ( \* - + ' /5% ' 5%E\$/( " #\* , +%, "%- + ' \* , + 1.4.1 ' 4' 3.5. ) 3#=%5#0, " #\* , + 5, +/' ' \* , , \$ /; I I ' 0/Ñ\$#=#B" %6, " ' , 5%+ ' % " \$%, 0#\$##+ , ; 0%B 15%, \$ " % &, 4' \$#: ' 4' ' ' #: 5, +/' ' :

1. ) , +/' ( 34( +%B+%=#\$6' 0#5 " #/' \$ " %B5% " ' , CURRENT. FreeBSD - + ' /5% ' 5%, \$ , : ' " #\* , +, "%- + ' \* , + FreeBSD 5.0-CURRENT. NetBSD ' /- #4CB; , \$ 6; \$C-6; \$C 3+; .; E /2, \* ; "%' \* , " #5% " ' : ' 3#=%54(, \$ 0 " #\* , +; #3" #=: 05, " " 1: /; I I ' 0/, #=#B" %6%EG' : ' B\* , " , " ' ( 5# 5" ; \$+, " " ' 2 ' " \$, +I , : /%2. A+ ' \* , +: NetBSD 1.4.3G. OpenBSD " , " ; \* , +; , \$ +%B+%=%\$ 15%, \* ; E 5, +/' E ("OpenBSD-current"). ) /, " #51, +%B+%=#\$0' - + # ' B5#3(\$/( ' \* , " " # " % 9\$#: "5, \$0, " (branch) /' /\$, \* 1.

2. V, +, B #- +, 3, 4?" " 1, ' " \$, +5%41 # \$ 3 3# 6 \* , /(&, 5 - + #, OS 51- ; /0%, \$ 5, +/' E RELEASE, 0#\$##+( +%/- + #/\$+%" (, \$/( "% CD-ROM ' 3#/\$; - "% 34( /0%6' 5% " ' ( / / , +5, + #5 FTP. A+ ' \* , +%\* ' \$%0' 2 5, +/' : \* #. ; \$ /4; @' \$C OpenBSD 2.6-RELEASE ' NetBSD 1.4-RELEASE. D\$#\$ 5%+ ' % " \$ - +, 3" %B" %6, " 34( 0# " , 6" 12 - #4CB#5%\$, 4, : . NetBSD \$%0@, - +, 3#/\$%54(, \$ \$%0 " %B 15%, \* 1, (. >1- !%\$&&" \$ 1\$(0" (patch releases), #=#B" %6%, \* 1, \$+, \$C, : &' I + #: 5 " #\* , +, , "%- + ' \* , + NetBSD 1.4.2.

3. A# \* , +, #=" %+; @, " ' ( #< ' =#0 5 5, +/' ' RELEASE " , #=#2#3' \* 1, ' /- +%54, " ' ( 5" #/( \$/( 5 3, +, 5# CVS. A#4; 6%EG%/( /' /\$, \* % 5 - + #, OS, FreeBSD " #/' \$ " %B5% " ' , STABLE, % 5 NetBSD ' OpenBSD - + #3#4@%, \$ " %B 15%\$C/( RELEASE. F, 0#\$##+1, \* , 40' , ; 4; 6< , " ' ( \$#@, ' " #.3% 5" #/( \$/( 5 9\$; 5, +/' E - #/4, - + #3#4@' \$, 4C" #. # - , + ' #3% \$, /\$' + #5% " ' ( 5 CURRENT.

Linux, &->1\*+ (!, >##\$1? (!-\$+ #!- 1-0%(@&" 4 #S1\$!- (.4\*#&(, \*!, , \*+ \*1" \$ &-0" !-G+./ .\*\*+!\$+. +!\$&&\* .+-) (%:&\*A !\$1. (\$A ( !\$1. (\$A #%/ 1-01-) \*+@(, \*!. B+-) (%:&" \$ !\$1. (( (; \$G+ @C+ &" A !+ \*1(@&" A &\*; \$1, &->1(; \$1 2.0, 2.2 (%( 2.4. D\$1. (( #%/ 1-01-) \*+@(, \*! (.>\*: 05G+ &\$@C+ &" \$ &\*; \$1-, +-, (\$ , -, 2.1, 2.3 (%( 2.5. D\* \*)\*(4 .%5@-/4, , #!\*A&\*; 5 &\*; \$15 !\$1. (( #\*)-!%/ \$+./ \$=C \*#&\* @(.%\*, 5, -0" !-G=\$ \$ &- , \* &, 1\$+ &" A 1\$(0. B+ \*(+ +- , ? \$ \*+; \$+ (+:, @+ \* , -? # " A >\* . + - ! = ( , >1\$#\* . + - !%/ \$+ . !\*A .\*) . + ! \$&&" A !-1(-&+ >\*: 0\*!-+ \$%:, (4 >1\*E1-; ; (userland), +-, @+ \* ( ; /#(.+1() 5+ (!- + \*? \$ ( ; \$\$+ 0&-@&\$&\$. 8. + \$ . + ! \$&&\* , @+ \* >\* . + - ! = ( , ( &5; \$15G+ . !\*( ( 0#\$( / , -? # " A >\* . !\* \$; 5, ( , +-, ( ; \*) 1-0\* ; ; " >%5@-\$; @+ \* - + \* !1\*# \$ "TurboLinux 6.0. /#1\*; 2.2.14".

## 4.4. BSD? :

) Linux, 5 \* ' +, /; G, /\$5; , \$ 4' < C 6, \$1+, 0+; - " 12 BSD - +#, 0\$% / #S0+1 \$1 \* ' ' /2#3" 1 \* ' 0#3%\* ' . H%@31: ' B " ' 2 - #33, +@' 5%, \$ /5#? /#=#/\$5, " " #, 3, +, 5# ' /2#3" ' 0#5 ' /5#? /#=#/\$5, " " #, (3+#. F% - +%OS' 0, #3"%0# #0%B15%, \$/(, 6\$# - #4CB#5%\$, 4C/O', 6%/\$' (userland) +%B4' 6" 12 BSD #S4' 6%E\$/(. #+%B3# \*, "C< , , 6, \* ; +%B" 12 3' /\$+' =; \$' 5#5 Linux.

R, 4' 0%#3#. # ' B - +#, 0\$%5 " , - #33%E\$/( 6?S0#: I #+\*; 4' +#50, . U%B4' 6' ( \*, @3; " ' \* ' 5, /C\* % /; =W, OS' 5" 1.) #/" #5" #\* ,

¥ - +#, 0\$ FreeBSD "%&, 4, " "% - #51< , " ' , - +#' B5#3' \$, 4C" #/\$' ' - +#/\$#; 5 ' /- #4CB#5% " ' ' 0# " , 6" 1 \* ' - #4CB#5%\$, 4(\* ' . FreeBSD #6, " C &, " (\$ 5 /+, 3, web-2#/\$, +#5. DS\$ 78 +%=#\$%, \$ " % " , /O#4CO' 2 %- - +%\$ " 12 - 4%SI #+\* %2, 6' /4# - #4CB#5%\$, 4, : FreeBSD B" %6' \$, 4C" # - +, 51< %, \$ 6' /4# - #4CB#5%\$, 4, : 3+; . ' 2 - +#, 0\$#5.

¥ - +#, 0\$ NetBSD /\$%5' \$ &, 4CE \* %O/ \* %4C"; E \* #=' 4C" #/SC ( ' 4' - , +, " #/' \* #/\$C) 0#3%: 3, 5' B "O#" , 6" # NetBSD +%=#\$%, \$ " % 9\$#\* " . NetBSD - #33, +@' 5%, \$ \* %< ' " 1 # \$ 0+< , 6" 12 - %4\* \$#- #5 3# #. +#\* " 12 /, +5, +#5 ' ' /- #4CB#5%4%/C NASA 5 0#/' \* ' 6, /O' 2 \* ' //' (2. DS# 2#++< ' : 51=#+ 34( /\$%+#: " , -Intel" %- - +%\$; +1.

¥ - +#, 0\$ OpenBSD "%&, 4, " "% =, B#- %/" #/\$C ' "6' /\$#; " 0#3%. 8 - #\* #GCE 0#\* = ' " ' +5%" ' ( 0#" &, - &' : #S0+1 \$12 ' /2#3" ' 0#5 ' /O+; - ; 4?B" #. # "%' %4' B% 0#3% - +#, 0\$ 3, \* # " /\$+' +; , \$ 6; 3, /% 0#++ , 0\$ " #/\$' +%=#\$1 /' /\$, \* 1. ) /' 4; " %B5%" " 12 - + ' 6' " /#5, +< , " " # , /\$, /\$5, " " #, 6\$# OpenBSD 51=' +%E\$ #+.%" ' B%&' ' , 34( 0#\$#+12 #6, " C 5%@" "% B%G' \$% ' " I #+\* %&' ' , " %- + ' \* , + = " O' , I # " 3#51, = ' +@' ' ' +%B4' 6" 1, 3, - %+\$%\*, " \$1 - +%5' \$, 4C/\$5% 8Q! . >%0@, 0%0 ' NetBSD, - +#, 0\$ - #33, +@' 5%, \$ &, 41: +(3 %- - +%\$ " 12 - 4%SI #+\* .

¥ R, 4CE DragonFlyBSD (54(, \$/( 3#/\$' @, " ' , 51/#0#: - +#' B5#3' \$, 4C" #/\$' ' \* %/< \$%=' +; , \* #/\$' 5 4E=#: /' \$; %&' ' -0%0 34( #3' " #6" 12 #3# #- +#&, //#+ " 12, \$%O ' 0+; - " 12 04%/\$, + " 12 /' /\$, \* . DragonFlyBSD /\$%5' \$ - , +, 3 /#=#: " , /O#4CO# 3#4. #/+ #6" 12 \$, 2" ' 6, /O' 2 B%3%6, " # #/" #5" #: ; - #+ 3, 4%, \$/( " % /#B3%" ' , ' " I +%/\$+; OS; +1 34( +%=#\$1 /SMP, 0#\$#+( =14% =1 - +#/\$% 34( - # " ' \* % " ' (, - #33, +@O' ' 5, 3, " ' ( 5 " , : +%B+%=#\$#0.

84, 3; , \$ ; - #\* ( " ; \$C , G? 35, #- , +%&' # " " 12 /' /\$, \* 1 BSD UNIX" , 0#\$#+1, " , - +, 3#/\$%54(ES - ; =4' 6" #. # 3#/\$; - % 0 /5# ' \* ' /2#3" 1 \* 0#3%\* . DS# BSD/OS ' Mac OS" X 0#\* - %" ' ' Apple:

¥ BSD/OS (54(4%/C /%\* 1\* /\$%+1\* ' B - #S#\* 0#5 4.4BSD. P/2#3" 1: 0#3 =14 " , 3#/\$; - , " < ' +#0#: - ; =4' 0, , 2#\$( 4' &, " B' ( " % " , . # /\$# ' 4% # \$ " #/' \$, 4C" # " , \* " #. #. BSD/OS 5# \* " #. #\* - #2#@% " % FreeBSD. V, +, B 35% . #3% - #/4, - #. 4#G, " ' ( BSDi 0#\* - %" ' , : Wind River Systems, BSD/OS - , +, /\$%4% /; G, /\$5#5%SC 0%0 #S3, 4C" 1: - +#3; 0\$. A#33, +@0; ' ' /2#3" 1: 0#3 , G? \* #@" # - #4; 6' \$C ; Wind River, " # 5/, " #51, +%B+%=#S0' /#/+ , 3#\$#6, " 1 " % 5/\$+% ' 5%, \* #: #- , +%&' # " " #: /' /\$, \* #: VxWorks.

¥ Mac OS" X - 9\$# /%\*( - #/4, 3" (( 5, +/' ( #-, +%&' # " " #: /' /\$, \* 1 34( 4' " , : 0' 0#\* - CE\$, +5 Apple" Mac" . L3+# 9\$#: #- , +%&' # " " #: /' /\$, \* 1, Darwin, - #/\$+#, " " #, " % 0#3, BSD, 3#/\$; - " # 5 5' 3, - #4" #/\$CE I ; " O&' # "%4C" #: #- , +%&' # " " #: /' /\$, \* 1 / #S0+1 \$1 \* 0#3%\* 34( 0#\* - CE\$, +5 %2' \$, OS; + x86 ' PPC. 73"%0# 0#3 . +I ' 6, /O#: /' /\$, \* 1 Aqua/Quartz ' \* " #. ' 2 3+; . ' 2 - +#- + ' , \$%+" 12 0#\* - # " , " \$%5 Mac OS" X #/\$%?\$/ ( B%0+1 \$1 \* . F, /O#4CO# +%B+%=#S6' 0#5 Darwin (54(ES/( \$%0@, 0#\* \* ' \$\$, +%\* ' FreeBSD ' )

"%#=#+#\$.

## 4.5. > . @/ #"8+. +& / &9 10 8+<&' 2+&, BSD + A=\* &("3&' ' #, B+<&' 2+&, GNU (GPL)?

Linux +%/ - +#/ \$+%" (, \$/( "% ;/4#5' (2 4' &, "B' ' GNU General Public License (GPL). D\$% 4' &, "B' ( ' \* , , \$ &, 4CE ; "' 6\$#@' SC - +#. +%\* \* "#, # =, / - , 6, "' , / B%0+1\$1\* ' /2#3" 1\* 0#3#\* . ) 6%/\$" #/\$' , 4E=#, A7, =%B' +; EG, , / ( "% - +#3; 0\$, , 51- ; G, " " #\* "% ;/4#5' (2 4' &, "B' ' GPL, \$#@, 3#4@" # - #/\$%54(\$C/( / ' /2#3" 1\* ' 0#3#\* ' - # - , +5#\* ; \$+, =#5%" ' E. X' &, "B' ( BSD ", "%04%315%, \$ \$%0' 2 @?/\$0' 2 #. +%" ' 6, "' : : +%B+, < %, \$/( +%/ - +#/ \$+%" , "' , - +#. +%\* \* "#. # # =, / - , 6, "' ( 5 35# ' 6" #\* 5' 3, (binary-only). D\$#\$ I %OS - + ' 54, 0%, \$ +%B+%=#\$6' 0#5 5/\$+#, " " 12 (embedded) - + ' 4#@, "' : .

## 4.6. ! "# &\* @ (8&10&" 2' \$"C?

># #=\$/\$(\$, 4C/\$5#, 6\$# - + ' 4#@, "' : 34( BSD /; G, /\$5; , \$ \* , "C< , , 6, \* 34( Linux, 51" ; 3' 4# +%B+%=#\$6' 0#5 BSD - #B%=#\$' SC/( # /#B3%" ' ' 3#- #4" ' \$, 4C" #: /#5\* , /\$' \* #/\$' / Linux, 0#\$#+( - #B5#4(, \$ B%- ; /0%\$C - +#. +%\* \* 1 34( Linux "% 0#\* - CE\$, +, , +%=#\$%EG, \* - #3 BSD. A+#. +%\* \* " 1: - %O, \$, # =, / - , 6' 5%EG' : /#5\* , /\$' \* #/\$C, 504E6%, \$ 5 /, =( 0%0 (3, +"; E +, %4' B%&' E /' /\$, \* " 12 51B#5#5 Linux, \$%0 ' +%B" ##=+%B" 1, I %: 41, " , #=2#3' \* 1, - +#. +%\* \* %\*, /0#\* - ' 4' +5%" " 1\* 34( Linux, "%- + ' \* , + = ' =4' #\$, 0; C. U%B" ' &% 5 /0##/\$' 51- #4" , "' ( Linux-- + ' 4#@, "' : "% \* %< ' " , / Linux ' "% \$%0#: @, \* %< ' " , / BSD " , B%\* , \$" %.

A+ ' "&' - "5/( /' /\$, \* % # \$ #3" #. # - #/\$%5G' 0%", ' /- #4CB; , \* 1: 5 BSD, - + ' 5#3' \$ 0 ; - + #G, "' E - + #&, 3; + #=" #54, "' ( /' /\$, \* 1 - # /+5%" , "' E / \* "#. ' \* ' 3' /\$+ ' =; \$' 5%\* ' Linux. BSD - +, 3#/\$%54(, \$ /- , &' %4C" 1, \* #3; 4' /#5\* , /\$' \* #/\$' / ; /\$%+, 5< ' \* ' 5, +/' (\* ' /' /\$, \* " 12 = ' =4' #\$, 0, ' \$%0' \* # =+%B#\* 3, 4%, \$ 5#B# #@" 1\* B%- ; /0 #S0#\* - ' 4' +5%" " 12 " , /0#4C0# 4, \$ "%B%3 - +#. +%\* \* "% #=" #54?" "#: /' /\$, \* , .

## 4.7. ! "# 9& 3: =5\$"C, BSD +8+ Linux?

)# 6\$# 514' 5%, \$/( 5/? 51< , /0%B%" "#, "% - +%OS' 0, ? H#\* ; - +, 3"%B"%6, "% BSD, ' 0#\* ; Ñ Linux?

D\$# 3, : /\$5' \$, 4C" # #6, " C /4#@" 1: 5#- +#/ . A+ ' 5, 3?\* " , /0#4C0# /#5, \$%5, 0#\$#+1, - + ' B5%" 1 - #\* #6C) %\* / 51=#+##\* :

¥ "F, \$+#" C, - #0% +%=#\$%, \$": , /4' ) 1 ; @, ; /- , < " # ' /- #4CB; , \$, 0%0; E- "' =; 3C Open Source 78, ' "#" %) %/ ; /\$+% ' 5%, \$, \$# - #@%4; : " , /\$# ' \$ " ' 6, . # \* , " (\$C.

¥ 8' /\$, \* 1 BSD, 5 #/# =, " "#/\$' FreeBSD, \* #. ; \$ 3, \* #"/\$+ ' +5%\$C =#4C< ; E - # /+5%" , "' E / Linux - + # B5#3' \$, 4C" #/\$C. F# 9\$# 5#5/, " , ; "' 5, +/%4C" #, - +5' 4#. ) # \* "#. ' 2 /4; 6%(2 9\$% +%B" ' &% " , B%\* , \$" % , /4' 5##=G, , /\$C. P" #. 3% Linux \* #@, \$ +%=#\$%\$C 4; 6< , , 6, \* FreeBSD.

¥ ) # =G, \* /4; 6%, , ; /' /\$, \* BSD #6, " C 2##+<% ( +, - ; \$%&' ( , 0#. 3% 3, 4# 0%/ , \$/( "%3?@" #/\$' . D\$#, 5 #/" #5" #\* , /5(B%" # / =#4, , "B+, 4#: " =%B#: ' /2#3" 12 0#3#5.

¥ BSD - + #, 0\$1 ' \* , E\$ =#4, , 4; 6< ; E +, - ; \$%&' E B% 0%6, /\$5# ' - #4" # \$; 3#0; \* , "\$%&' ' .

U%B4' 6" 1, -+#, 0\$1 3#0; \*, " \$' +#5%"' ( /\$%5(\$ /5#, : & 4CE -+, 3#/\$%54(\$C %0\$' 5" #  
' B\* , " (EG; E/( 3#0; \*, " \$%&' E, 5 \$#\* 6' /4, ' "% , /0#4C0' 2 (B10%2 ' -#0+15%EG; E  
5/, %/- , 0\$1 /' /\$, \* 1.

¥ X' &, " B' ( BSD ' " #.3% \* #@, \$ =1 \$C =#4, , - + ' 54, 0%\$, 4C" #: , " , @, 4' GPL.

¥ ) BSD \* #@, \$ +%=#\$%\$C =#4C<' " /\$5# ' /- #4"' \* 12 I%: 4#5 Linux, #3"%0# 5 Linux  
51- #4"' \* 1, I%: 41 BSD B%- ; /0%\$C/( " , =; 3; \$. ) # \* "#. ' 2 +, %4' B%&' (2 BSD \* #. ; \$ \$%0@,  
51- #4" (\$C/( 35#' 6" 1, I%: 4 ' 3+; . ' 2 UNIX` -- #3#=" 12 /' /\$, \* . >%0' \* #=%B#\* , BSD  
\* #@, \$ - +, 34#@' \$C =#4, , - + #/\$#: /- #/#= - , +, 2#3% / 3+; . ' 2 /' /\$, \* , 6, \* Linux.

## 4.8. 6" # 75&1# (" \$38) &" "&D' +. &(%0? 7#11&59%0, #=(809+3\$' +& + #=0. &' +& 18) (+ (" &/ BSD?

BSDi / [FreeBSD Mail, Inc.](#) ; @, #0#4# 3, /(\$' 4, \$ - +, 34%. %, \$ 0#" \$+%0\$1 "% - #33, +@0; FreeBSD.

H+##\* , \$#. #, 0%@31: ' B - +#, 0\$#5 - #/\$#(" "# #=" #54(, \$ /- ' /#0 0# /; 4C\$%" \$#5, 0#\$#+1,  
#0%B15%E\$ - #33, +@0; B% #3, 4C" ; E - 4%\$; : [FreeBSD](#), [NetBSD](#) ' [OpenBSD](#).