

Malware Analysis Report For MachO-iOS-arm1176JZFS-bash

Binary Type

Mach-O (Mach Object). (Approved)

Analyzing File

- **File Name:** MachO-iOS-arm1176JZFS-bash
- **File Extension:**
- **File Type:** Mach-O (Executable)
- **MD5 Hash:** ca56775e71623c2ea245cca7fabbcd69
- **SHA256 Hash:** de6eb2a09424eba1726c481591857fb6c7d8e640b65f8aa96205ab5f4cbef98e

File Identification

File detected as a valid macOS/iOS executable.

Mach-O File Analysis

Mach-O File Analysis: True

Mach-O File Imports

- libSystem.B.dylib
- libgcc_s.1.dylib
- libhistory.6.0.dylib
- libncurses.5.dylib
- libreadline.6.0.dylib

Mach-O File Exports

- dyld_machheader
- dyldstubbinding_helper
- start

String Analysis

ASCII Strings

- __PAGEZERO
- __TEXT
- __text
- __TEXT
- _symbolstub4
- __TEXT
- __cstring

- __TEXT
- __const
- __TEXT
- __literal4
- __TEXT
- __DATA
- _n/symbol_ptr
- __DATA
- __data
- __DATA
- __dyld
- __DATA
- _/asymbol_ptr
- __DATA
- __const
- __DATA
- __DATA
- __common
- __DATA
- __LINKEDIT
- /usr/lib/dyld
- /usr/lib/libreadline.6.0.dylib
- /usr/lib/libhistory.6.0.dylib
- /usr/lib/libncurses.5.dylib
- /usr/lib/libSystem.B.dylib
- /usr/lib/libgcc_s.1.dylib
- KxDzD{D
- ^FUFDFp
- VHWxD
- PIPMyD
- HLIH;"|DxD
- hTD!iY
- !M!|DyD*h0
- l*hyD0
- !xD**3
- CL|D"h
- eh9Njh2Cj`\$h
- DFeh(hY
- ~D5h(h
- |D&h0`
- `vHxD
- DhnHxD
- !zDPF0
- SHSNxD
- MNNJ}D+h
- !~DzD1`
- ^FUFDFp
- ^FUFDFp
- L|D%`X
- H|DxD""N
- H|D#h~DxD2h
- K}DAB)`
- h}DxD,`

- }J~H~I, ~MzDxDyD
- h{l,`{K|MyD
- uJvHzD
- h,`tttKuMyD{D
- !~D0hX
- ZM[l}DyD,`
- NNOJ~DzD2`
- M~D}D*h0hF
-]N~D5h
- [L|D"h
- WN~D3h
- UL|D"h
- &HAFxD"
- &}D(hX
- M|D}D& .
- L|D&h3h
- N|D!hF
- N}D(h~D
- ||DyD#h
- |N~D2h
- lJlHzD
- 0`WJzD
- RMRL}D|D.h!h2`
- MN~D4h!h
- %~D h5`
- "{DxD~D
- " 2`r
- #|D#`A
- l}DyD(
- !qVt)\
- L|D&h0hM
- l~DyD0
- DN~D2h
- AF-"J@QB
- @F-!A@JB
- !~D5h(h
- vL|D!h
- tHttxDyD
- nL|D h
- lM}D.h0hW
- `M}D.h
- KM{D
- -l-MyD
- H|D"hxD
- kllMyD
- VL|D h
- NM}D*h
- GMHK}D,h{D h
- `:M}D*h
- !|D%hKB+`
- }D)h,
- "H#lxD
- =HxDCh

- 8HxDpG8JzD
- .HxDpG.HxDpG-K{D
- ,J,lzDyD
- %HxDpG
- !HxDpG!HxDpG HxDpG K{D
- %|DzDyD
- KxD{D%`
- !}DzD) !
- %K"h{D
- l}D*`yD#i
- Mb}}D)h
- &J``zD
- xDyD{D
- !M!l}D,h hC
- ^FUFDFp
- "[KDF{D
- "|DPFYFV
- N~D4hDa
- M|DyD h}D
- "}D.hQ
-)J*lzD
- &L|D h
- K l{D N
- "|D hQ
- ^FUFDFp
- mD0 *`;
- KmDkD*h
- M}D,h h
- lBFyDp
- vM01mD
- \$4W!,%
- QFjDkD@F
- #kp1x09
- %"X!"pap
- nJoKzD{D
- hyD"h@FV
- %ZF%TW*
- VL|D h
- #5LEF|D h+p
- #@FCpu
- !DFBF!p
- lM}D,hu
- 4L4JIDzD
- /L0JIDzD
- *L,JIDzD
- %L(JIDzD
- DF,T/
- JIDzD
- h`\$HxD
- h"K(' {D
- ^FUFDFp
- _L|D"h
- \N~D2h

- RL|D"h
- PM}D*h
- MNML~D0h|D
- hL|"'EiyD
- i~D3`IL
- i|D"'Eh
- >J>KzD{D
- 7M8K}D{D*h
- 4N~D4h
- 0M}D+h
- .L|D!h
- +N~D0h
- h}DzD|DyD
- M}D,h!h
- J|DzD h
- h&`xL|D h
- rN~D0`
- ;+ nL | D
- kNkHIJ~D1h
- \$xDjMzD
- fM}D.h1h
- IL|D!h
- @M}D,h hU
-
- %EW;-j
- 1L|D#h
- ~D5`R
-)H)xD
- %M%J}DzD(h
- "ID%h*T)
- ^FUFDFp
- @6@6@6@6@6@6@6@6
- @6@6@6@6@6@6@6@6
- XL|D"h
- @6@6@6@6@6@6@6@6
- @6@6@6@6@6@6@6@6
- {K}KyDJh
- @6@6@6@6@6@6@6@6
- TM}D*h
- :M}D*h
- @6@6@6@6@6@6@6@6
- @6@6@6@6@6@6@6@6
- ~L|D h
- @6@6@6@6@6@6@6@6
- GL|D"h
- EL|D!hP
- '!'"
- ^FUFDFp
- ^FUFDFp
- @5@5@5@5@5@5@5@5
- @5@5@5@5@5@5@5@5
- @5@5@5@5@5@5@5@5
- @5@5@5@5@5@5@5@5

- kHkKxDBh
- @5@5@5@5@5@5@5
- @5@5@5@5@5@5@5
- @5@5@5@5@5@5@5
- @5@5@5@5@5@5@5
- BL|D"h
- @5@5@5@5@5@5@5
- F@FPD<&
- @5@5@5@5@5@5@5
- }N~D2h
- ' '!"
- @5@5@5@5@5@5@5
- @5@5@5@5@5@5@5
- @5@5@5@5@5@5@5
- ^FUFDFp
- hzJ}D,h
- tL|D"h
- pLpJ|D#h
- SLSJ|DzD h
- 4L|D"h
- /M}D+h
- 'M}D(h
- ^FUFDFp
- qHqKxD
- hqL{D"C
- h)!!`oI
- ^FUFDFp
- XMYL}D)`7
- UK{DZh
- >M}D.h
- %L|D%h
- "(j ~D1hS
- #|D hiL
- F|D"hQ
- _L|D#h
- JNZK~D0h
- WN~D3h
- RKRM{D
- \JJJJJJ
- IM}D(h
- FL|D!h
- /M0J}D+h/NzD
- C~D+ 0
- `)MN}Dh~D
- !1Ci`c
- %hCF+T`h
- K|Dah{D
- vLwJ|DzD h
- `M}D(h
- \L|D!h
- GMZF}D,h
- BM}D,h
- `LaJ|DzD h

- PM}D*h
- OM}D,h
- L J|DzD h
- wLxJ|DzD h
- %h hCF+T'h
- WMXK}D(h
- JM}D*h
- IL|D h
- #N#J~DzD0h
- "x=#+p
- "Q\CF)p#p
- NTF~D4`
- kHIMxD}D
- 0H1LxD|D
- !(i ~D1hR
- l|DyDbh
- K|Dah{D
- cHdNxD~D
- AHAMxD
- &N!K~D0h
- l@FyDQ
- DF!zXF
- \$}D*hc
- lIJKyD
- %N~D4h
- C~D3
- K(i {D
- NxD~D3h
- N~D1hS
- nM}D*h
- lM}D+h
- lM}D,h
- FI0hyD
- =M}D*h
- ;L|D&h
- 1J1KzD
- bI0hyD
- HM}D+h
- "}D+hBH
- 4K5M{D
- h}D4L)h
- 0L|D#h
- N~D5h)h
- |D h)(7
- kl(hyD2
- |D!hB
- RLKM|D%`
- MJMlzD
- HH=MxD
- BJBlzD
- ;N-M~D5`
- 9!*JyD
- 7l(hyD"

- 5L5l|D hyD
- /M/l}D(hyD"
-)L*|D hyD
- 'N(l~D0hyD
- h(iijjh
- J#hzD+ %
- ^FUFDFp
- mNmK~D{D
- fKgJ{D
- h|D&h,hdH
- 0 (YFPF
- FH|D#hxD
- CK)`zD
- {DAL)
-
- @%`;K{D
- 2M}D,h
- /J/lzD
- &J&lzD
- @MAJ}DzD(h
- %3J4lzD
- }D)h%
- ^FUFDFp
- rNYF~DJ
- oM}D+h
- mN~D1h
- bJYFzDS\
- _KZF{D
- l,:yDR
- H}D+hxD
- `}H~JxD
- yK(`{D
- uKv|MMwJ{D
- h5@yDzD
- rlsHyD
- cN~D1h
- h}DCF*`
- 4KDF"h{D
- MDF"h}D
- h}DCF*`
- DF!h&"
- LBF|D h
- h}DCF|D
- LCF ;BF}D|D
- J|D!hCF ;
- K}D.h{D
- M|D}D&h+h
- h}DCF*`
- h}DCF*`
- rMDF"h}DCF*`
- gNg|~D2h
- `lCFyD
- ZMDF"h}DCF*`

- h}DCF**
- JIKKyD
- DFEH"hxD
- BICKyD
- h}DCF**
- HDF"hxD
- h}DCF**
- MDF"h}DCF**
- h|DCF""
- hAhCF!CA`
- C,CL`AF
- CM`DF#h
- ^HDF"hxD
- 9JDFzD
- 2l2KyD{D
- .J hzD-L
- h"CJ`AF
- CM`DF#h
- HCF ;xD
- HCF(;xD
- HCF(;xD
- {HCF ;xD
- kHCF ;xD
- CFIM(;
- h}D 3*h
- CF@L(;
- CF7L8;
- h5##hyD
- CF,L8;
- h*##hyD
- h|K|K|D
- rHCF(;xD
- bHCF(;xD
- RHCF ;xD
- DF!h&"
- pGCxZ
- L)h|D"h
- 3 ~M}D+h
- HHRFxD
- AH-hxD
-)h <1
- AN~D0h
- 6CQfE#
- 6JQ 4fE
- 6L|D&h
- %J%LzD
- h|D\$I hyD
- #}D~D|D(`
- hCF}D|D`
- NCF~D0`
- ^FUFDFp
- \$N~D0h
- DD `ZF

- -N-M~D}D*h
- &J&KzD{D
- V~(!
- N~D4h%`
- ^FUFDFp
- !jF5@M
- ! @" h
- \$3 t L
- . paF
- >000p)
- CJJQ&&&&&C_C++&&&QXCF
- ^FUFDFp
- KNLL~D0h|D"h
- ^FUFDFp
- ^FUFDFp
- KyDxD{D
- ^FUFDFp
- :J:HzD
- 0h@D0`
- 'K(kDyD
- 'L(i|D
- ,H-LxD|D
- 0V;(<
- !L|D"h
- agIOU[
- WH)hxD
- UH)hxD
- QH)hxD
- NH)hxD
- HH)hxD
- @H*hxD
- >H*hxD
-
- :H*hxD
- 'H)hxD
- "H)hxD
- ^FUFDFp
- H|DxD}D
- K}D{D*h
- LCF|DxD
- M|DxD}D
- iHiMxD
- hH|D}DxD
- H& xD
- ^L_||DyD
- !}DxD
- `@N*h~D0h
- RF)h3h
- H}DxD)h
- H|D}DxD
- i~Hi hxD
- |HBFxD
- uLvK|D{D&h

- %`sHxD
- pHqMxD
- pK}D{D.h
- hNiH~DxD1h
- gI2`yD
- EL|D"h
- ^FUFDFp
- FPIQHQQK
- "yDxD{D
- GIGHyDxD
- `EJFHxD
- |D>H!h>KRFxD
- ! :HxD
- 9HCFxD
- ,H-KxD{D
- `|D#h*H
- %H%K&IRFxDyD
- H|D}DxD
- N~D4h!h@
- BF)pAF
- ch!h0h
- 5H+hxD
- .M/H}D+h
- h(hyDJ
- ISF(hyD
- |D%h)hJ
- ?!,hyD
-
- 1H*hxD
- /K{D/"
- |D%h)hJ
- \$H)hxD
- "K{D"!"
- h hyDJ
- h hyDJ
- (L(|D"hyD
- %N~D5h(hJ
- !H"lxD
- #pcpSpJ
- #pcpSpJ
- #pcpSpJ
- ^FUFDFp
- PF.#CU
- BF00Pp1
- ZF00Pp)
- AF00Hp!
- AF00pT
- CBca#a
- ^FUFDFp
- #HQFxD
- lJQFzD
- >M}D,h&h
- 4N4M~D0h

- "2`2N}D,h
- ~D0J3h`YFzD/L
- HQFxD"
- JxDzDQF
- l2hyD@FI
- ^FUFDFp
- ZL|D#h
- SLYF|D#h
- lH5`xD
- @N~D3h
- :L|D#h
- 5L|D#h
- -L|D h
- 'lyD'K{D
- -J-KzD-I
- &L|D#h
- ^FUFDFp
- h2hQxH
- F hQF2
- ^FUFDFp
- &M}D*h
- KXF{D
- ^FUFDFp
- yLzN|D h
- nN~D5h*h
- CS`UIVHyDVN
- SKTJTlULUHVN{DzDyD|DxD~D
- h{D~DRF
- =J zD
- ~D4h!hH
- rLBi"B
- iN~D2h
- \$-tKyD
- \$N~D1h
- ;# 2 m
- ^FUFDFp
- M}D,h"h
- yDxD|DzD
- tL|D"h
- \$?H@JxD
- .L|D&h5h
- (H(NxD
- ^FUFDFp
- N~D4h h
- hXhah(
- WHYFxD
- \$#Ck`SF
- =N>K~D{D=J5h
- hzD4h(`
- /N~D5h(`
- ^FUFDFp
- M}D.h5h(
- &&CPFF`

- _JQFzD
- YL|D h
- XF `SL|D h
- QFJhCL
- NZF~D4h
- h|D hQF
- izD3h""jh
- xL@F|D%h
- \$0h C0`RF
- `gNhH~D1hgN
- hRFxDfL
- XL|D&h0h
- %N~D4h%h
- LZF|D%h**
- Mqh}DJh,h
- C%hJ`ph
- EIEHyD
- hxDDL5`
- h|D3h"h
- 1`?K{D
- /L0N|D h
- hHBFxD
- XMYK}D{D)h
- LL|D%h(h
- QM}D*h
- CF#`0i
- FCLDJ|D hzD
- J~D3hzD
- ^FUFDFp
- L}D(h|D&hAF
- }D(0
- oHoJxD
- jJjLzD
- %`fL|D h
- SM}D,h h
- &|D&`FN~D2h
- 6LCF|D
- &}D*h"
- \$TKU{D
- !}D(hF
-)L|D"h
- ^FUFDFp
- H4hxD@#
- pL|D"h
- nJolzD
- dL|D#h
- [L|D!h
- GL|D!h
- \$L|D!h
- H|D#hxD
- K|D h{D
- #|D!hXB
- 1!`SF2h

- H|DxD!h
- hCF"h#`
- 4h@##@
- 9ISFyD
- h~D2h#h
- |DCF`
- |lD%hxD
- tNuL~D0h
- ~D0`kK{D
-
- 6N7H~D1hxD
- 4hAF!@
- ~D5hXF*h
- ^FUFDFp
- !}D(hE
- eL|D h
- Ol@"yD
- ^FUFDFp
- ^FUFDFp
- @5@5@5@5@5@5@5
- FYF2xQD
- FCFvFF
- @5@5@5@5@5@5@5
- FPFxD1
- @5@5@5@5@5@5@5
- @5@5@5@5@5@5@5
- pGpGpG
- KxD{D !
- ^FUFDFp
- ci@"`
- ^FUFDFp
- M|D!h}D
- GLQF|D%hhXC
- 0N(`~D2h
- ^FUFDFp
- *J+MzD
- h}D,hH
- \$K%LHQ{D|D
- L|D"h,h
- ^FUFDFp
- CF@F]`
- CF@F]`
- ;K@F{D
- @F!JEi
- F`L|D!h
- SFhiVJk`VK
- \$4Wl,;
- !AV+)@
- @i.M(B,
- C4hja!h
- ^FUFDFp
- ^FUFDFp
- %(@BFPa

- `AFKi}D(h "
- ci@%+B
- `` i (C a
- hi!`0Cha(
- pCFXiD
- ^FUFDFp
- jih`1K{D
- @ha|D#hihZi(h
- L(h|D#hihZi
- %Nih(h
- Cja~D1hKi
- L"@jaFi
- MACBFd
- H!hxDA
- H!hxDA
- Eh3HxD
- %'K)CAa{D
- C}DBa)`
- 8M}D,`
- %3pup0H1
- 6000pd!
- ^FUFDFp
- lxDyD}D
- !}D!`,h h
- L|D%h(h
- |D%h(h
- dNhh~D1
- !0 q ih_H
-]L^K|D{D
- WWJyDzD
- TLCi|DSM
- \$#C}DCa
- OIEiOJ%CyDzD
- JKEiJl
- KAi{D!C
- #xDyDzD
- (V)(<
- uNuH~D2hxD
- slsHyD
- lN~D3h
- iL|D%h(h
- _M}D+h
- NM}D.h0h"
- GN~D4hai
- \$!CAaF
- .H4hxD
- h{D!h\h
- &BF3C@FU`Sa
- ^FUFDFp
- [F(`[h
- ^FUFDFp
- BL|D#h
- h@M}D+h

- !JBxD{D
- L}D)h|D
- #}D,hr
- ^FUFDFp
- hyD(h#
- ^FUFDFp
- lyD@F=
- l|hyD@F=
- lxDyD=
- KyD{D@F=
- X5i%C5a
- \\\lzDyD
- LHLKxD{D
- "CFxD=
- "CFxD=
- 9H9lxDyD=
- 6J6KzD{D
- "CFxD=
- XyDCh@FZh=
- ^FUFDFp
- L|D"hQY
- vL|D#h
- 2L|D h
- JCFzD
- & &`
- ^FUFDFp
- SH~DxD
- PIPLyD
- ^FUFDFp
- |DzD{D
- N~D5h,h
- ,L|D h
- *N~D2h
- eM}D(h
- KN~D3h
- FL|D#h
- 0K1L{D
- #|D h*M
-)|}DyD
- M}D,h`
- 5MTh}D
- \$0i C0a
- !J"KzD
- *h|DCB#`
- h|D0h;
- L(`|D h
- F}M}L}D.h|D&`;
- uN(h#h~D
- lN~D0h<
- `cHdMxD!
- ""*aHxD
- K N{D
- -!VNm ~D

- SL|D!h
- QL|D h
- "h*`@M
- ;M;|}D,h;N
- CByD~D h
- /L|D h
- ^FUFDFp
- NBF~D3h
- MBF}D(h
- sJQFzD
- oHQFxD
- bLcM|D}D
- NJ[FD`
- P IMIH}D
- ELFM|D}D h
- 3L4M|D}D
-)M*K}D
- L~D|D0h;
- eN~D5`eJzD
- \$T`WHXLxD|D
- bhT#iyD
- 8N h~D3h
- -N~D3h
- H"hxD1
- L!N|D%h~D3h
- ^FUFDFp
- LBF|D h
- {N@F~D1h
- qM}D)h
- #~D3`PF
- OL@F|D&h
- AKBN{D
- =L|D h
- ;M}D*h
- 2HQFxD
- ^FUFDFp
- a!hrXTmKnMnH
- h"hpYCh
- hJzD@F]F:
- h`lpY"hChyD
- FKFJ{DzD
- 0K1J{DzD
- ^FUFDFp
- 5hZFQY
- ^FUFDFp
- SFYFjF
- ^FUFDFp
- !|DxD"h
- ^FUFDFp
- cL|D#h
- |D h}DNJ) UF
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- #3HQFxD
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- hDF, + L@FYF|D @FYF+" ^FUFDFp /M}D,h (L|D#h K~D{D2h H\$&hDDp QM}D(h FH\$!hD*" HKHM{D 5H\$#hD@" :K;I{D "H\$!hD *I+NyD &N~D2h !K"J{D M}D,h&h ^FUFDFp nDlDmD3<code>#</code>+
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- hwJYjiD
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- h(bh !h) ``h = '%%%%%%%%%'
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- F3h|DRF
- 1M}DhQF
- F}Dh)
- INIM~D3h}DkL
- F+h|DQF
- hM}DhQF
- SKTH{DxD
- PNQIQJyD~D
- }D) Dh @NAL~D5h|D ;L<N|D
- ~D0 /! 1L1J|DzD +L,J|DzD !~D1``I(HIHHyDxD 3H3KxD h{D# |
- &L'N|D"h~D
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- ^FUFDFp
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- K* "h{D ISF3<code>yDCF+</code>!
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- WNXH~D3hxD
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- "QB{DxD! J|DzD%h ~D5h)h ^FUFDFp jL|D h eL|D h bN~D1h HL|D&h0h |D&h5
- ^FUFDFp
- hNiM~D4h}D*h#h
- aHblxD
- FKFJ{DzD
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- ~D4hd
- 8L9l|D"hyD
- M}D,h"h
- ^FUFDFp
- ^FUFDFp
- AFCpTpsp
- CFipTpAp
- CFipTpAp
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- !n#Sp
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- "}D\$N,h
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- &P*L+ %5P|D h %LPF|D (<code>%hn</code>!H l JyD
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- &i "qh
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- ^FUFDFp
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- UFcF+ +hehcD +hUhcD ```+h0" ^FUFDFp =NjF~D4h 5KjF{D ^FUFDFp ^FUFDFp wHQFxD pHQFxD hHQFxD aHQFxD YHQFxD RHQFxD JHQFxD CHQFxD ;HQFxD 4HQFxD ,HQFxD %HQFxD ^FUFDFp @4@4@4@4@4@4 #PF+T nh@F4h ^FUFDFp F&H;DxD.h SF@F2<code>+</code> 0(!h0
- EMEI}DyD
- DLEMA EJEKFI{D}DzD{DyD
- EaCLCM aBJCKCI{D}DzD{DyD b@J@KAI{D}DzD{DyD c>L>MBc d=J>K>I{D}DzD{DyDDd dAe;J;K>I{D}DzD{DyD eEf9L9M f8J9K9I{D}D K*J{D h)M*KzD 6N~D5h.h Fth%h+x ^FUFDFp M}D,h"h UHYFxD OJzDOHxD JJzDJHxD EJzDEHxD @JzD@HxD ;JzD;HxD .J@#zD 'I "yD /L{D%h,h !I"HyD N~D5h+h ^FUFDFp |L|H|D|JxD%h RHAFxD OHAfxD C%i``.K.h{D %BFTTh ^FUFDFp |AV|D h #L{D h -hCF4
- -hCF ^FUFDFp &YFSF1@Jh -hQFNh eJeHzDxD SJSHzDxD ;JzD;H) ^FUFDFp QFIiWK RFSi"JAI ^FUFDFp gHhMxD hRF#h RFUh,h RFTh%h ^FUFDFp N@i~D4h#h 7H7NxD DFeh.h0 <,,<code>2</code>DF\$h }D,h&h;h VF2hYF "xDRI" <code>b</code> MI%yD
- FHN~D0h
- =M}D(h 2N~D1h ^FUFDFp JH^MxD}D ZKt!{D SMSh}D)hx h+ 2K3N{D
- >It"yD
- 7M}D+h
- }D,h =Jt!zD ;I;NyD \$<code>@0</code>k GJHMzD 'J% zD
- \$L|D|h
- vHvKxD
- mHmMxD}D
- BMCK}D*h{D
- =L|D#h
- ^FUFDFp
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- %=N~D0h
- N|D%h~D,h3hbF!h
- nM}D,h h
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- ^FUFDFp
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- K|D h{D
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- BFTTh!h
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- TF h%h ^hQF0h M}D,h&h;h TF h%h
- >N>I~D4hyD hBF
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- aHQFxD
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- J}D.hzD
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- iHYFxDZF[F
- WHWJxDzD
- GHGJxD
- hGH#hzDCD
- >M?N}D~D0
- 9H9MxD
- 6L6H|DxD
- ~L~H|DxD
- HaJxDzD ~D4h h@D !aV/)u @H@Nx =M=H}DxD h}D|D~D{DzD
C|D&hBD #.MPF}D.h p3hDF[D ^FUFDFp #}D.h#05h
N~D4h#h N~D4h#h UN~D5h(h RN~D3h FL|D&h5hS
0N0H~DxD4h &K{D
- !J3hzD
- QJQHRl
- hzDxDyD
- L|DyD
- ^FUFDFp
- 7M}D)h
- RFTTh h
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- fLCF|D!h
- [L|D!h
- C%ib (h;N ^FUFDFp ^FUFDFp pNqH~D5hxD)h RKSH{D OL|D!h
EMFH}D+hx 8I9HyD 5L|D!h +K,H{D L|D%h+ \$~D}D2h
VL|D&h QMcF}D.h hBXMhL BN~DCF h*X?H1 h)Y,HxD
I}D(hyD ^FUFDFp BFTh h &\F4@, J}DzD)h L@F|D"h
AFLh h BFUh)h {L|D%h jI%hyD bLcH|D#hx BFUh(h
L|D|D"h ^FUFDFp !|D BHxD
- 3JzD 1L|D&h1h V|D" +J+NKhxD
- V|D" %L&JKhxD|D%H#
- pN~D3h
- iliJyD
- fL|D"h
- VHWJxDzD
- D)xXFIDBF
- xmDYFHU
- .J.NzD
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- bL|D hF
- NLii!@ja
- ^FUFDFp
- DJzDDH!
- ^FUFDFp
- :&@DRF
- #HCFxD

- ^FUFDFp
- DFTD h ^FUFDFp ~D5h,h?, thiF"h +!x 6h C ariCF
- YJYHzD
- hxD!hjF
- @lyD@HxD
- L|D h
- ^FUFDFp
- }M}D*h
- RH,hxD
- ixDcie fa%j abj5h#a M}D,h"h cN~D2h lhaIyD UHULxD|D :L|D h lh/!&h0 !|D hDX ^FUFDFp t#+p h
- &|D@F!
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- hyDPF"
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- gL!%|D!h
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- KH[FCD
- >M}D)h
- %JCDzD
- .@SF-+)
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- QLQK|D{D"h
- JKJL{D
- ^FUFDFp
- LBF|D%h* }D+hiF M}D.hlh OIPHyD ;MiF}D+h *J+HzD ^FUFDFp -!IHchxD =JzD=HxD /K(x{D F\$Khx{D ^FUFDFp LAF|Dj L?#|D?1 L@F|D2h ^FUFDFp <code>T</code>YFj\ <code>T</code>YFk\ <code>T</code>YFk\ TABFYF TABFYF TAAFZF TABFYF AN~D5h(h <code>T</code>YFk\ TAAFZF TAYFBF TAZFAF TAZFAF TANFBF"6 \$4ppp " #3prp " #3prp #3prp \$4WUFx \$4WUBh .hth"hT %~D4hbh "lhiF h 0hFh0h D|DBF}D#h CF? ?1 #h)hBF ^FUFDFp yDxD{D !~D0<code>q</code> QN@F~D L)x|D"h }D)hF +hlh~D LA+<code>l</code>4h h N|D~D h1h !)<code>l</code>| M~D}D0h)h }D+hF 3hthzD LA3<code>t</code> }D)hjh LA3<code>t</code>3K{D 3hth}D LA3<code>t</code>,h h +hlh~D LA+<code>l</code>4h h N~D4h h }D)hF pzN{H~D4hxD"h M}D.h
- SN~D0h
- #+ 3 F
- #hFLZh
- % CMDNDK{D K|D{D h }D)hF J~D4hzD#h <code>T</code>4h h SM}D*h OM}D*h hDh h 8M}D(h <code>T</code>4h h AF)<code>l</code> @F(<code></code> L}D|D(h!h K~D{D0h }D)hF 0hFh0h vN~D0h ZM{J}DzD }D)hF TL|D h #+<code>#</code><code>QM}D*h OM}D*h ;# KK{D
- JN~D0h
- CLDK|D{D h

- !}D(hN
- =L|D h
- QF) ! :M}D*h
- 8M}D+h
- ,# 4K{D 3N~D0h RF*<code>2</code> ^FUFDFp sM}D+h cLcNdK|D" ~D{D
- UHULxD
- RJ[FzD
- :N;K~D5h{D
- \F*Y{DF
- +L,I,J|DyDzD
- #H#IxD
- h\F(hyD"h3
- ^FUFDFp
- HBFxDBp
- h+ ?\$ zJzKzD QFKhnI " }D* S
- jI^NyD~D
- QHRJxD
- ~D0hRF
- AHCFxDCp
- ?H?IxD
- 9HAFxDAp
- 7K8N{D
- %2 % ?\$5
- h'M3 QF h}D(k
- RHSIxDyD
- PHQIxDyD
- NHOIxDyD
- LHMlxDyD
- JHKIxDyD
- HHIIxDyD
- ?H@IxDyD
-
- :H;IxDyD
- 8H9IxDyD
- 6H7IxDyD
- 4H5IxDyD
- 2H3IxDyD
- /H0IxDyD
- -H-IxDyD
- +H+IxDyD
-)H)IxDyD
- 'H'IxDyD
- OL|D"h
- Qh+h@F
- >N~D0h
- lh\$H!hxD
- "L|D"h
- M}D+h
- ^FUFDFp
- UIVMyD
- SJSIzD
- PHQJxD
- NLNH|D#hxD

- *KNLL~D5h|D*h"* * IKIN{D BICMyD =MBF}D, FhRF2C ,HAFxD*
"|DyD"
- *I{D|DyD~D}D*
- *FtN~D5h*
- *L0a|D h*
- *YLpa|D h*
- *GL0b|D h*
- *M@F}D)h*
- *^FUFDFp*
- *7HyDxD"*
- *1HyDxD2*
- *+HyDxD"*
- *%HyDxD2*
- *HyDxD"*
- *HyDxD2*
- *}H}xDyD*
- *zH{xDyD*
- *wHxDyD*
- *tHuxDyD*
- *rHrxDyD*
- *oHoxDyD*
- *lHmxDyD*
- *jHjxDyD*
- *gHhxDyD*
- *eHexDyD*
- *bHcxDyD*
- *H xDyD*
- *]H^xDyD*
- *[H[xDyD*
- *XHYxDyD*
- *VHVxDyD*
- *SHTxDyD*
- *QHQxDyD*
- *NHOxDyD*
- *LHLxDyD*
- *lHJxDyD*
- *GHGxDyD*
- *DHExDyD*
- *BHBxDyD*
- *?H@xDyD*
- *=H=xDyD*
- *"|DyD" I{D}DyD~D|D L0a|D h*
- *ZLpa|D h*
- *HL0b|D h*
- *%4@,CDa*
- *N~D5h(h*
- *@## h L}D|D*h#h L}D|D*h#h L}D|D*h#h LhF|D" LhF|D"*
LhF|D" LhF|D" LhF|D" ^FUFDFp ^FUFDFp ^FUFDFp
*^FUFDFp /&#x \$,W/,U (V/(D !iV/)? \$,W/,0 *
*(V/(+ \$,W/, " #.xPF+p ",.xPF*p ^FUFDFp KxCpVxfp LAFld*
* NxFpSxcp \$L|D%h #L|D"hS ^FUFDFp „"@6K4@*
*5M5L6I6H }D|DyDxD 0I@FRF ^FUFDFp „*L+I+H,K,J5@*
^FUFDFp ^FUFDFp ^FUFDFp 0Q)hDF ^FUFDFp ^FUFDFp

```

<li>^FUFDFp</li> <li>^FUFDFp</li> <li>^FUFDFp</li> <li>yHzIhD</li> <li>4(x&amp;x&B</li>
<li>vOOEEEEEEEEEEEEEEEEEOOOMEOOOOOEEEEEEEEEEEEEOEOEEEEEEEEEEEEEEEEEOOOEOEEEEEEEEEEEE</li>
<li>uMMAAAAAAAAAAAAAAAAAAMMM<MAMMMMMAMAAAAAAAAAAAAAAAAAMMAMAAAAAAAAAAAAAAAAAMMMMAAAAAAAAA</li>
<li>"$Pp F
• ""Hp(
• ^FUFDFp
• Vdfb ^z,,,,,,,,,X,,,,,,,,,S,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,S,</li>
<li>&amp;SF!pb</li> <li>\ 02 pbpa</li> <li>0403KpTp</li> <li>^FUFDFp</li> <li>\ (px$</li> <li>^FUFDFp</li>
<li>" paFh</li> <li>05UKxu</li> <li>^FUFDFp</li> <li>5KAF{D</li> <li>^FUFDFp</li> <li>1D!huH</li>
<li>wThDyD</li> <li>1D 7M
• hD+ 1
• l@FyDl"
• HHHHHTH
• !!@01d
• 00CF0p
• ~D @3\ $
• gggggCg
• 00(p@F
• ^FUFDFp
• ^FUFDFp
• bFbC </li> <li>aFaC)
• aFaC) </li> <li>aFaC)
• ^FUFDFp
• M}D(h</li> <li>pON~D5h)h</li> <li>^FUFDFp</li> <li>| %dLiB</li> <li>x!oHLB</li> <li>SJFTWH</li>
<li>EJEHAL</li> <li>=-$$$$$$+-$$$$$$$$$$$$$$$$$+-$$$$$$$$$$$$$$$$$$$$$$2 )$</li>
<li>=/$$$$$$$(/$$$$$$$$$$$$$$$$$(/$$$$$$$$$$$$$$$$$$$$$$$3 &amp;$</li> <li>^FUFDFp</li>
<li>^FUFDFp</li> <li>CTVp
• h#AF
• ^FUFDFp
• N~D4h"h
• BF" QF</li> <li>#& ZB` </li> <li> & CFZ
• #e & ZB
• .LjD#h
• ^FUFDFp
• F( /! </li> <li>MN~D0h</li> <li>KM}D)h</li> <li>^FUFDFp</li> <li>^FUFDFp</li> <li>^FUFDFp</li>
<li>!hRFPX</li> <li>^FUFDFp</li> <li>^FUFDFp</li> <li>AFLh],</li> <li>^FUFDFp</li> <li>^FUFDFp</li>
<li>#AFRFSdp</li> <li>p|IBFyD</li> <li>^FUFDFp</li> <li>^FUFDFp</li> <li>$SF<code>B+</code>\</li>
<li>^FUFDFp</li> <li>#N~D3h</li> <li>/bin/sh</li> <li>I have no name!</li> <li>BASH_ENV</li> <li>GNU bash,
version %s-(%s)</li> <li>arm-apple-darwin9</li> <li>Usage:</li> <li>%s [GNU long option] [option] ...</li>
<li>%s [GNU long option] [option] script-file ...</li> <li>GNU long options:</li> <li>Shell options:</li>
<li>-irsD or -c command or -O shopt_option</li> <li>(invocation only)</li> <li>-%s or -o option</li>
<li>Type %s -c "help set" for more information about shell options.
• Type %s -c help' for more information about shell builtin commands.</li> <li>Use the bashbug' command to
report bugs.
• /usr/share/bashdb/bashdb-main.inc
• runwordexp
• --wordexp
• runonecommand
• FUNCNAME
• BASHSOURCE
• BASHLINENO
• %s: is a directory
• %s: cannot execute binary file

```

- POSIXLYCORRECT
- POSIXPEDANTIC
- `ls-lvls`
- `~/.bashrc`
- `%s`: option requires an argument
- `%s`: invalid option
- `%c%c`: invalid option
- `??host??`
- `/etc/profile`
- `~/.profile`
- `~/.bashprofile`
- `~/.bashlogin`
- `debugger`
- `dump-po-strings`
- `dump-strings`
- `init-file`
- `noediting`
- `noprofile`
- `protected`
- `rcfile`
- `restricted`
- `verbose`
- `version`
- `wordexp`
- `timed out waiting for input: auto-logout`
- PROMPTCOMMAND
- readerloop
- PIPESTATUS
- `readline stdin`
- `syntax error near unexpected token %s'`
- `syntax error: unexpected end of file`
- `syntax error`
- `%a %b %d`
- `%H:%M:%S`
- `%l:%M:%S`
- `%l:%M %p`
- `unexpected EOF while looking for matching %c'`
- `syntax error in conditional expression: unexpected token %s'`
- `unexpected token %s', expected )'`
- `expected )'`
- `unexpected argument %s' to conditional unary operator`
- `unexpected argument to conditional unary operator`
- `unexpected token %s', conditional binary operator expected`
- `unexpected argument %s' to conditional binary operator`
- `unexpected argument to conditional binary operator`
- `unexpected token %c' in conditional command`
- `unexpected token %d in conditional command`
- `logout`
- `Use "%s" to leave the shell.`
- CPROC
- `memory exhausted`
- `select`

- *function*
- *coproc*
- *newLine*
- *OLDPWD*
- */dev/tty*
- *PROMPTDIRTRIM*
- `%s': not a valid identifier`
- `<li>getcwd: cannot access parent directories`
- `<li>clean<em>simple</em>command`
- `<li>make_redirection: redirection instruction %d' out of range`
- `makeheredocument: bad instruction type %d`
- `here-document at line %d delimited by end-of-file (wanted %s')`
- `<li>syntax error: arithmetic expression required`
- `<li>syntax error: ';' unexpected`
- `syntax error: ((%s)) '`
- `<li>cprintf: %c': invalid format character`
- `case %s in`
- `select %s in`
- `for %s in`
- `<<%s%s`
- `<<< %s`
- `%d<&%d`
- `%d>&%d`
- `%d<&%s`
- `%d>&%s`
- `%d<&%d-`
- `%d>&%d-`
- `%d<&%s-`
- `%d>&%s-`
- `for ((`
- `printcommand: bad connector %d'`
- `<li>function %s ()`
- `<li>coproc %s`
- `<li>print_command`
- `<li>case %s in`
- `<li>%s=(%s)`
- `<li>dispose_command`
- `<li>cannot duplicate fd %d to fd %d`
- `<li>%s: %s: bad interpreter`
- `<li>%s_PID`
- `<li>/dev/null`
- `<li>cannot redirect standard input from /dev/null: %s`
- `<li>eval_builtin`
- `<li>builtin_env`
- `<li>return<em>temp</em>env`
- `<li>execute<em>cond</em>node`
- `<li>execute-command`
- `<li>COLUMNS`
- `<li>%*d%s%s`
- `<li>pipe error`
- `<li>pipe-file-descriptors`
- `<li>execute_connection`
- `<li>loop_redirections`
- `<li>%s: readonly function`
- `<li>execute_command`
- `<li>function_calling`
- `<li>execute-shell-function`
- `<li>simple-command`
- `<li>auto_resume`
- `<li>substring`
- `<li>saved redirects`
- `<li>saved_redirects`
- `<li>%s: restricted: cannot specify / in command names`
- `commandnotfoundhandle`
- `%s: command not found`
- `executecoproc: coproc [%d:%s] still exists`
- `real %2R`
- `user %2U`
- `sys %2S`
- *TIMEFORMAT*
- *TIMEFORMAT: %c': invalid format character*
- `<li>pop<em>var</em>context: head of shell_variables not a function context`
- `<li>pop<em>var</em>context: no global_variables context`
- `<li>pop<em>scope: head of shell</em>variables not a temporary environment scope`
- `<li>BASH_ARGV`
- `<li>BASH_ARGC`
- `<li>all<em>local</em>variables: no function context at current scope`
- `<li>make<em>local</em>variable: no function context at current scope`
- `<li>OPTERR`
- `<li>COMP_WORDBREAKS`
- `<li>GLOBIGNORE`
- `<li>OPTIND`
- `<li>ignorespace`
- `<li>ignoredups`
- `<li>ignoreboth`
- `<li>erasedups`
- `<li>HISTFILE`
- `<li>shell-init`
- `<li>shell level (%d) too high, resetting to 1`
- `<li>error importing function definition for %s'`
- `/usr/gnu/bin:/usr/local/bin:/bin:/usr/bin:.`
- *HOSTTYPE*
- *OSTYPE*

- *darwin9*
- *MACHTYPE*
- *HOSTNAME*
- *MAILCHECK*
- *BASHVERSION*
- *BASHVERSINFO*
- *BASHEXECUTIONSTRING*
- *~/.shhistory*
- *~/.bashhistory*
- *IGNOREEOF*
- *ignoreeof*
- *HISTCONTROL*
- *HISTIGNORE*
- *HISTTIMEFORMAT*
- *SECONDS*
- *BASHCOMMAND*
- *BASHSUBSHELL*
- *RANDOM*
- *LINENO*
- *BASHPID*
- *HISTCMD*
- *DIRSTACK*
- *GROUPS*
- *BASHCMDS*
- *BASHALIASES*
- *HISTFILESIZE*
- *HISTSIZE*
- *HOSTFILE*
- *LCALL*
- *LCCOLLATE*
- *LCCTYPE*
- *LCMESSAGES*
- *LCNUMERIC*
- *LCTIME*
- *MAILPATH*
- *TERMCAP*
- *TERMINFO*
- *TEXTDOMAIN*
- *TEXTDOMAINDIR*
- *histchars*
- *(null)*
- *last command: %s*
- *Aborting...*
- *%s: %s: %d*
- *line*
- *%s: %s:%s%d:*
- *%s:%s%d:*
- *warning:*
- *%s: readonly variable*
- *%s: unbound variable*
- *%s: %s*
- *bash-maintainers@gnu.org*
- *unknown command error*

- *bad command type*
- *bad connector*
- *bad jump*
- *%s%s%s: %s (error token is "%s")*
- *invalid number*
- *invalid arithmetic base*
- *value too great for base*
- **%+-%^|*
- *syntax error: operand expected*
- *syntax error: invalid arithmetic operator*
- *identifier expected after pre-increment or pre-decrement*
- *missing)' exponent less than 0 division by 0 expression expected :'
expected for conditional expression*
- *attempted assignment to non-variable*
- *bug: bad expassign token*
- *expression recursion level exceeded*
- *syntax error in expression*
- *recursion stack underflow*
- *[%d] %ld*
- *describepid: %ld: no such pid*
- *Signal %d*
-
- *[%d]%c*
- *Stopped(%s)*
- *Stopped*
- *Running*
- *Done(%d)*
- *Exit %d*
- *Unknown status*
- *(core dumped)*
- *(wd: %s)*
- *%s: line %d:*
- *(core dumped)*
- *(wd now: %s)*
- *notifyofjobstatus*
- *SIGCHLD trap*
- *[%ld: %d (%d)] tcsetattr*
- *initializejobcontrol: getpgrp failed*
- *initializejobcontrol: setpgid*
- *cannot set terminal process group (%d)*
- *no job control in this shell*
- *deleting stopped job %d with process group %ld*
- *fork: retry*
- *child setpgid (%ld to %ld)*
- *forked pid %d appears in running job %d*
- *waitfor: No record of process %ld*
- *%s: job has terminated*
- *%s: job %d already in background*
- *[%d]%s*
- *(wd: %s)*
- *waitforjob: job %d is stopped*
- *wait: pid %ld is not a child of this shell*
- *job-working-directory*

- cannot make pipe for command substitution
- cannot make child for command substitution
- *commandsubstitute: cannot duplicate pipe as fd 1*
- *%s: cannot assign list to array member*
- *bad substitution: no closing ' in %s*
#^,~:==?+/ #%:==?+/ %s: substring
expression < 0 %s: bad substitution %s: cannot assign in this way cannot make
pipe for process substitution cannot make child for process substitution cannot open named
pipe %s for reading cannot open named pipe %s for writing cannot reset nodelay mode for fd
%d cannot duplicate named pipe %s as fd %d process substitution bad substitution:
no closing " " in %s
- *no match: %s*
- *%s: parameter null or not set*
- *You have mail in \$*
- *You have new mail in \$*
- *The mail in %s has been read*
- */var/mail*
- *invalid signal number*
- *interrupt trap*
- *return trap*
- *error trap*
- *debug trap*
- *exit trap*
- *runpendingtraps: bad value in traplist[%d]: %p*
- *runpendingtraps: signal handler is SIGDFL, resending %d (%s) to myself*
- *trap handler: bad signal %d*
- cannot allocate new file descriptor for bash input from fd %d
- *savebashinput: buffer already exists for new fd %d*
- *%s: integer expression expected*
- *argument expected*
- *%s: unary operator expected*
- *%s: binary operator expected*
- *) ' expected)' expected, found %s*
- *missing]' too many arguments %s.%d(%d)-%s release GNU bash, version %s*
(%s) Copyright (C) 2009 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3
or later http://gnu.org/licenses/gpl.html This is
free software; you are free to change and redistribute it. There is NO WARRANTY, to the extent
permitted by law. @(#)Bash version 4.0.17(1) release GNU %s[%s: %s bad array
subscript [%s]: %s %s: invalid associative array key %s: cannot assign to non-
numeric index %s: %s: must use subscript when assigning associative array array
assign %s: cannot convert indexed to associative array %s%s%s %s: cannot create:
%s ;& ;()|<> %s: first non-whitespace character is not ""
- *no closing %c' in %s %s: missing colon separator bashexecuteunix_command: cannot*
find keymap for command READLINE_LINE READLINE_POINT
bashexecuteunix_command completion-ignore-case ;|& ;{ (
- *\$include*
- *hostnamecompletionfile*
- */etc/hosts*
- *symlink-hook*
- *()<>;&|*
- *EmptycmD*
- *shell-expand-line*
- *history-expand-line*
- *magic-space*

- shell-forward-word
- shell-backward-word
- shell-kill-word
- shell-backward-kill-word
- alias-expand-line
- history-and-alias-expand-line
- insert-last-argument
- operate-and-get-next
- display-shell-version
- edit-and-execute-command
- complete-into-braces
- complete-filename
- possible-filename-completions
- complete-username
- possible-username-completions
- complete-hostname
- possible-hostname-completions
- complete-variable
- possible-variable-completions
- complete-command
- possible-command-completions
- glob-complete-word
- glob-expand-word
- glob-list-expansions
- dynamic-complete-history
- dabbrev-expand
- `\"@<>=,|&()#$?*[!:{~ input-meta C-xC-e fc -e "${VISUAL:-${EDITOR:-emacs}}"
fc -e vi fc -e "${VISUAL:-${EDITOR:-vi}}" comment-begin FIGIGNORE
"'><=&|&("'><=&|&(#: %s:%d msgid %s%s msgstr
"" setlocale: LC_ALL: cannot change locale (%s) setlocale: LC_ALL: cannot change locale
(%s): %s setlocale: %s: cannot change locale (%s) setlocale: %s: cannot change locale
(%s): %s redirection error: cannot duplicate fd sh-thd file descriptor out of
range %s: ambiguous redirect %s: cannot overwrite existing file %s: restricted:
cannot redirect output cannot create temp file for here-document: %s /dev/fd/[0-9]*
/dev/tcp/ /dev/udp/ COMP_LINE COMP_POINT
COMP_TYPE COMP_KEY COMP_WORDS COMP_CWORD completion: function %s' not
found`
- gen-shell-function-matches
- COMPREPLY
- `progcompinsert: %s: NULL COMPSPEC`
- `xrealloc: cannot reallocate %lu bytes (%lu bytes allocated)`
- `xmalloc: cannot allocate %lu bytes (%lu bytes allocated)`
- `SIGHUP`
- `SIGINT`
- `SIGQUIT`
- `SIGILL`
- `SIGTRAP`
- `SIGABRT`
- `SIGEMT`
- `SIGFPE`
- `SIGKILL`
- `SIGBUS`
- `SIGSEGV`

- SIGSYS
- SIGPIPE
- SIGALRM
- SIGTERM
- SIGURG
- SIGSTOP
- SIGTSTP
- SIGCONT
- SIGCHLD
- SIGTTIN
- SIGTTOU
- SIGXCPU
- SIGXFSZ
- SIGVTALRM
- SIGPROF
- SIGWINCH
- SIGINFO
- SIGUSR1
- SIGUSR2
- SIGJUNK(%d)
- RETURN
- alias [-p] [name[=value] ...]
- unalias
- unalias [-a] name [name ...]
- bind [-lpvsPVS] [-m keymap] [-f filename] [-q name] [-u name] [-r keyseq] [-x keyseq:shell-command]
- break [n]
- continue
- continue [n]
- builtin
- builtin [shell-builtin [arg ...]]
- caller
- caller [expr]
- cd [-L|-P] [dir]
- pwd [-LP]
- command
- command [-pVv] command [arg ...]
- declare
- declare [-aAfFIlrtux] [-p] [name[=value] ...]
- typeset
- typeset [-aAfFIlrtux] [-p] name[=value] ...
- local [option] name[=value] ...
- echo [-neE] [arg ...]
- enable
- enable [-a] [-dnps] [-f filename] [name ...]
- eval [arg ...]
- getopts
- getopts optstring name [arg]
- exec [-cl] [-a name] [command [arguments ...]] [redirection ...]
- exit [n]
- logout [n]
- fc [-e ename] [-lnr] [first] [last] or fc -s [pat=rep] [command]
- fg [jobspec]
- bg [jobspec ...]

- *hash [-lr] [-p pathname] [-dt] [name ...]*
- *help [-ds] [pattern ...]*
- *history [-c] [-d offset] [n] or history -anrw[filename] or history -ps arg [arg...]*
- *jobs [-lnprs] [jobspec ...] or jobs -x command [args]*
- *disown*
- *disown [-h] [-ar] [jobspec ...]*
- *kill [-s sigspec | -n signum | -sigspec] pid | jobspec ... or kill -l [sigspec]*
- *let arg [arg ...]*
- *read [-ers] [-a array] [-d delim] [-i text] [-n nchars] [-p prompt] [-t timeout] [-u fd] [name ...]*
- *return*
- *return [n]*
- *set [--abefhkmnptuvxBCHP] [-o option-name] [arg ...]*
- *unset [-f] [-v] [name ...]*
- *export*
- *export [-fn] [name=value] ... or export -p*
- *readonly*
- *readonly [-af] [name=value] ... or readonly -p*
- *shift [n]*
- *source filename [arguments]*
- *. filename [arguments]*
- *suspend*
- *suspend [-f]*
- *test [expr]*
- *[arg...]*
- *trap [-lp] [[arg] signalspec ...]*
- *type [-afptP] name [name ...]*
- *ulimit*
- *ulimit [-SHacdefilmnpqrstuvx] [limit]*
- *umask [-p] [-S] [mode]*
- *wait [id]*
- *for NAME [in WORDS ...] ; do COMMANDS; done*
- *for ((exp1; exp2; exp3)); do COMMANDS; done*
- *select NAME [in WORDS ... ;] do COMMANDS; done*
- *time [-p] pipeline*
- *case WORD in [PATTERN [PATTERN]...) COMMANDS ;;]... esac*
- *if COMMANDS; then COMMANDS; [elif COMMANDS; then COMMANDS;]... [else COMMANDS;] fi*
- *while COMMANDS; do COMMANDS; done*
- *until COMMANDS; do COMMANDS; done*
- *coproc [NAME] command [redirections]*
- *function name { COMMANDS ; } or name () { COMMANDS ; }*
- *{ ... }*
- *{ COMMANDS ; }*
- *jobspec [&]*
- *((...))*
- *((expression))*
- *[[...]]*
- *[[expression]]*
- *variables*
- *variables - Names and meanings of some shell variables*
- *pushd [-n] [+N | -N | dir]*
- *popd [-n] [+N | -N]*
- *dirs [-clpv] [+N] [-N]*
- *shopt [-pqsu] [-o] [optname ...]*

- `printf`
- `printf [-v var] format [arguments]`
- `complete`
- `complete [-abcdefgksuv] [-pr] [-o option] [-A action] [-G globpat] [-W wordlist] [-F function] [-C`
- `compgen`
- `compgen [-abcdefgksuv] [-o option] [-A action] [-G globpat] [-W wordlist] [-F function] [-C comma`
- `compopt`
- `compopt [-o|+o option] [name ...]`
- `mapfile`
- `mapfile [-n count] [-O origin] [-s count] [-t] [-u fd] [-C callback] [-c quantum] [array]`
- `readarray`
- `readarray [-n count] [-O origin] [-s count] [-t] [-u fd] [-C callback] [-c quantum] [array]`
- Define or display aliases.
- Without arguments, `alias` prints the list of aliases in the reusable format `alias NAME=VALUE` on standard output.
- Otherwise, an alias is defined for each NAME whose VALUE is given.
- A trailing space in VALUE causes the next word to be checked for
- alias substitution when the alias is expanded.
- Options:
- `-p`
- Print all defined aliases in a reusable format
- Exit Status:
- `alias` returns true unless a NAME is supplied for which no alias has been
- defined.
- Remove each NAME from the list of defined aliases.
- Options:
- `-a`
- remove all alias definitions.
- Return success unless a NAME is not an existing alias.
- Set Readline key bindings and variables.
- Bind a key sequence to a Readline function or a macro, or set a
- Readline variable. The non-option argument syntax is equivalent to
- that found in `~/inputrc`, but must be passed as a single argument:
- e.g., bind `"\C-x\C-r": re-read-init-file`.
- Options:
- `-m keymap` Use KEYMAP as the keymap for the duration of this
- command. Acceptable keymap names are `emacs`,
- `emacs-standard`, `emacs-meta`, `emacs-ctlx`, `vi`, `vi-move`,
- `vi-command`, and `vi-insert`.
- `-l` List names of functions.
- `-P` List function names and bindings.
- `-p` List functions and bindings in a form that can be
- reused as input.
- `-S` List key sequences that invoke macros and their values
- `-s` List key sequences that invoke macros and their values
- in a form that can be reused as input.
- `-V` List variable names and values
- `-v` List variable names and values in a form that can
- be reused as input.
- `-q function-name` Query about which keys invoke the named function.
- `-u function-name` Unbind all keys which are bound to the named function.
- `-r keyseq` Remove the binding for KEYSEQ.
- `-f filename` Read key bindings from FILENAME.

- `-x` keyseq:shell-command
- Cause SHELL-COMMAND to be executed when
- KEYSEQ is entered.
- Exit Status:
- `bind` returns 0 unless an unrecognized option is given or an error occurs.
- Exit for, while, or until loops.
- Exit a FOR, WHILE or UNTIL loop. If N is specified, break N enclosing
- loops.
- Exit Status:
- The exit status is 0 unless N is not greater than or equal to 1.
- Resume for, while, or until loops.
- Resumes the next iteration of the enclosing FOR, WHILE or UNTIL loop.
- If N is specified, resumes the Nth enclosing loop.
- Exit Status:
- The exit status is 0 unless N is not greater than or equal to 1.
- Execute shell builtins.
- Execute SHELL-BUILTIN with arguments ARGs without performing command
- lookup. This is useful when you wish to reimplement a shell builtin
- as a shell function, but need to execute the builtin within the function.
- Exit Status:
- Returns the exit status of SHELL-BUILTIN, or false if SHELL-BUILTIN is
- not a shell builtin..
- Return the context of the current subroutine call.
- Without EXPR, returns "\$line \$filename". With EXPR, returns
- "\$line \$subroutine \$filename"; this extra information can be used to
- provide a stack trace.
- The value of EXPR indicates howmany call frames to go back before the
- current one; the top frame is frame 0.
- Exit Status:
- Returns 0 unless the shell is not executing a shell function or EXPR
- is invalid.
- Change the shell working directory.
- Change the current directory to DIR. The default DIR is the value of the
- HOME shell variable.
- The variable CDPATH defines the search path for the directory containing
- DIR. Alternative directory names in CDPATH are separated by a colon (:).
- A null directory name is the same as the current directory. If DIR begins
- with a slash (/), then CDPATH is not used.
- If the directory is not found, and the shell option `cdable_vars` is set, the word is assumed to be a
- variable name. If that variable has a value, its value is used for DIR. Options:
- `-I` force symbolic links to be followed
- `-P` use the physical directory
- structure without following symbolic links
- The default is to follow symbolic links, as if `-L` were
- specified.
- Exit Status:
- Returns 0 if the directory is changed; non-zero otherwise.
- Print the name of the current working directory.
- Options:
- `-L`
- print the value of \$PWD if it names the current working
- directory
- `-P`
- print the physical directory, without any symbolic links
- By default, `pwd` behaves as if `-L` were specified.

- **Exit Status:**
- Returns 0 unless an invalid option is given or the current directory cannot be read.
- Null command.
- No effect; the command does nothing.
- **Exit Status:**
- Always succeeds.
- Return a successful result.
- **Exit Status:**
- Always succeeds.
- Return an unsuccessful result.
- **Exit Status:**
- Always fails.
- Execute a simple command or display information about commands.
- Runs COMMAND with ARGS suppressing shell function lookup, or display information about the specified COMMANDs. Can be used to invoke commands on disk when a function with the same name exists.
- **Options:**
- -p
- use a default value for PATH that is guaranteed to find all of the standard utilities
- -v
- print a description of COMMAND similar to the `type builtin`
- -V
- print a more verbose description of each COMMAND
- Exit Status:
- Returns exit status of COMMAND, or failure if COMMAND is not found.
- Set variable values and attributes.
- Declare variables and give them attributes. If no NAMES are given,
- display the attributes and values of all variables.
- Options:
- -f
- restrict action or display to function names and definitions
- -F
- restrict display to function names only (plus line number and
- source file when debugging)
- -p
- display the attributes and value of each NAME
- Options which set attributes:
- -a
- to make NAMES indexed arrays (if supported)
- -A
- to make NAMES associative arrays (if supported)
- -i
- to make NAMES have the *integer* attribute
- -l
- to convert NAMES to lower case on assignment
- -r
- to make NAMES readonly
- -t
- to make NAMES have the *trace* attribute
- -u
- to convert NAMES to upper case on assignment
- -x
- to make NAMES export
- Using `+` instead of `-` turns off the given attribute.
- Variables with the integer attribute have arithmetic evaluation (see
- the *let* command) performed when the variable is assigned a value.
- When used in a function, *declare* makes NAMES local, as with the *local* command.
- **Exit Status:**
- Returns success unless an invalid option is supplied or an error occurs.
- Set variable values and attributes.
- **Obsolete.** See `help declare`
- Define local variables.
- Create a local variable called NAME, and give it VALUE. OPTION can
- be any option accepted by *declare*.
- Local variables can only be used within a function; they are visible only to the function where they are defined and its children.
- **Exit Status:**
- Returns success unless an invalid option is supplied, an error occurs, or the shell is not executing a function.
- Write arguments to the standard output.

- Display the ARGs on the standard output followed by a newline.
- Options:
 - -n
 - do not append a newline
 - -e
 - enable interpretation of the following backslash escapes
 - -E
 - explicitly suppress interpretation of backslash escapes
- `echo` interprets the following backslash-escaped characters:
 - \a alert (bell)
 - \b backspace
 - \c suppress further output
 - \e escape character
 - \f form feed
 - \n new line
 - \r carriage return
 - \t horizontal tab
 - \v vertical tab
 - \ backslash
 - \0nnn the character whose ASCII code is NNN (octal). NNN can be 0 to 3 octal digits
 - \xHH the eight-bit character whose value is HH (hexadecimal). HH can be one or two hex digits
- Exit Status:
 - Returns success unless a write error occurs.
 - Enable and disable shell builtins.
 - Enables and disables builtin shell commands. Disabling allows you to execute a disk command which has the same name as a shell builtin without using a full pathname.
 - Options:
 - -a print a list of builtins showing whether or not each is enabled
 - -n disable each NAME or display a list of disabled builtins
 - -p print the list of builtins in a reusable format
 - -s print only the names of Posix special builtins
- Options controlling dynamic loading:
 - -f
 - Load builtin NAME from shared object FILENAME
 - -d
 - Remove a builtin loaded with -f
 - Without options, each NAME is enabled.
 - To use the `test` found in \$PATH instead of the shell builtin version, type `enable -n test`.
- Exit Status:
 - Returns success unless NAME is not a shell builtin or an error occurs.
 - Execute arguments as a shell command.
 - Combine ARGs into a single string, use the result as input to the shell, and execute the resulting commands.
- Exit Status:
 - Returns exit status of command or success if command is null.
 - Parse option arguments.
 - getopt is used by shell procedures to parse positional parameters as options.
 - OPTSTRING contains the option letters to be recognized; if a letter is followed by a colon, the option is expected to have an argument, which should be separated from it by white space.
 - Each time it is invoked, getopt will place the next option in the shell variable \$name, initializing name if it does not exist, and the index of the next argument to be processed into the shell variable OPTIND. OPTIND is initialized to 1 each time the shell or a shell script is invoked. When an option requires an argument, getopt places that argument into the shell variable OPTARG.
 - getopt reports errors in one of two ways. If the first character of OPTSTRING is a colon, getopt uses silent error reporting. In this mode, no error messages are printed. If an invalid option is seen, getopt places the option character found into OPTARG. If a required argument is not found, getopt places a ':' into NAME and sets OPTARG to the option character found. If getopt is not in

- silent mode, and an invalid option is seen, getopt places '?' into
- NAME and unsets OPTARG. If a required argument is not found, a '?'
- is placed in NAME, OPTARG is unset, and a diagnostic message is
- printed.
- If the shell variable OPTERR has the value 0, getopt disables the
- printing of error messages, even if the first character of
- OPTSTRING is not a colon. OPTERR has the value 1 by default.
- Getopts normally parses the positional parameters (\$0 - \$9), but if
- more arguments are given, they are parsed instead.
- Exit Status:
- Returns success if an option is found; fails if the end of options is
- encountered or an error occurs.
- Replace the shell with the given command.
- Execute COMMAND, replacing this shell with the specified program.
- ARGUMENTS become the arguments to COMMAND. If COMMAND is not specified,
- any redirections take effect in the current shell.
- Options:
- -a name
- pass NAME as the zeroth argument to COMMAND
- -c
- execute COMMAND with an empty environment
- -l
- place a dash in the zeroth argument to COMMAND
- If the command cannot be executed, a non-interactive shell exits, unless
- the shell option `execfail` is set.
- Exit Status:
- Returns success unless COMMAND is not found or a redirection error occurs.
- Exit the shell.
- Exits the shell with a status of N. If N is omitted, the exit status
- is that of the last command executed.
- Exit a login shell.
- Exits a login shell with exit status N. Returns an error if not executed
- in a login shell.
- Display or execute commands from the history list.
- fc is used to list or edit and re-execute commands from the history list.
- FIRST and LAST can be numbers specifying the range, or FIRST can be a
- string, which means the most recent command beginning with that
- string.
- Options:
- e ENAME
- select which editor to use. Default is FCEDIT, then EDITOR,
- then vi
- l
- list lines instead of editing
- n
- omit line numbers when listing
- r
- reverse the order of the lines (newest listed first)
- With the `fc -s` [pat=rep ...] [command] format, COMMAND is
- re-executed after the substitution OLD=NEW is performed.
- A useful alias to use with this is `r='fc -s'`, so that typing `r cc'`
- runs the last command beginning with `cc'` and typing `r'` re-executes
- the last command.
- Exit Status:
- Returns success or status of executed command; non-zero if an error occurs.
- Move job to the foreground.
- Place the job identified by JOB_SPEC in the foreground, making it the
- current job. If JOB_SPEC is not present, the shell's notion of the
- current job is used.
- Exit Status:
- Status of command placed in foreground, or failure if an error occurs.
- Move jobs to the background.
- Place the jobs identified by each JOB_SPEC in the background, as if they
- had been started with `&'`. If JOBSPEC is not present, the shell's notion
- of the current job is used.
- Exit Status:
- Returns success unless job control is not enabled or an error occurs.
- Remember or display program locations.
- Determine and remember the full pathname of each command NAME. If
- no arguments are given, information about remembered commands is displayed.
- Options:
- d
- forget the remembered location of each NAME

- -l
 - display in a format that may be reused as input
 - -p pathname
 - use PATHNAME is the full pathname of NAME
 - -r
 - forget all remembered locations
 - -t
 - print the remembered location of each NAME, preceding
 - each location with the corresponding NAME if multiple
 - NAMES are given
 - Arguments:
 - NAME
 - Each NAME is searched for in \$PATH and added to the list
 - of remembered commands.
 - Exit Status:
 - Returns success unless NAME is not found or an invalid option is given.
 - Display information about builtin commands.
 - Displays brief summaries of builtin commands. If PATTERN is
 - specified, gives detailed help on all commands matching PATTERN,
 - otherwise the list of help topics is printed.
 - Options:
 - -d
 - output short description for each topic
 - -m
 - display usage in pseudo-manpage format
 - -s
 - output only a short usage synopsis for each topic matching
 - PATTERN
 - Arguments:
 - PATTERN
 - Pattern specifying a help topic
 - Exit Status:
 - Returns success unless PATTERN is not found or an invalid option is given.
 - Display or manipulate the history list.
 - Display the history list with line numbers, prefixing each modified
 - entry with a `*`. An argument of N lists only the last N entries.
- Options:
- c clear the history list by deleting all of the entries
 - d offset delete the history entry at offset OFFSET.
 - a append history lines from this session to the history file
 - n read all history lines not already read from the history file
 - r read the history file and append the contents to the history
 - w write the current history to the history file
 - and append them to the history list
 - p perform history expansion on each ARG and display the result
 - without storing it in the history list
 - s append the ARGs to the history list as a single entry
 - If FILENAME is given, it is used as the history file. Otherwise,
 - if \$HISTFILE has a value, that is used, else ~/.bash_history.
 - If the \$HISTTIMEFORMAT variable is set and not null, its value is used
 - as a format string for strftime(3) to print the time stamp associated
 - with each displayed history entry. No time stamps are printed otherwise.
- Exit Status:
- Returns success unless an invalid option is given or an error occurs.
 - Display status of jobs.
 - Lists the active jobs. JOBSPEC restricts output to that job.
 - Without options, the status of all active jobs is displayed.
- Options:
- l lists process IDs in addition to the normal information
 - n list only processes that have changed status since the last
 - notification
 - p lists process IDs only
 - r restrict output to running jobs
 - s restrict output to stopped jobs
 - If -x is supplied, COMMAND is run after all job specifications that
 - appear in ARGS

have been replaced with the process ID of that job's process group leader.

Exit Status:

Returns success unless an invalid option is given or an error occurs.

If -x is used, returns the exit status of COMMAND.

Remove jobs from current shell.

Removes each JOBSPEC argument from the table of active jobs. Without any JOBSPECs, the shell uses its notion of the current job.

Options:

- a remove all jobs if JOBSPEC is not supplied
- h mark each JOBSPEC so that SIGHUP is not sent to the job if the shell receives a SIGHUP
- r remove only running jobs

Exit Status:

Returns success unless an invalid option or JOBSPEC is given.

Send a signal to a job.

Send the processes identified by PID or JOBSPEC the signal named by SIGSPEC or SIGNUM. If neither SIGSPEC nor SIGNUM is present, then SIGTERM is assumed.

Options:

- s sig SIG is a signal name
- n sig SIG is a signal number
- l list the signal names; if arguments follow -l they are

- assumed to be signal numbers for which names should be listed
- Kill is a shell builtin for two reasons: it allows job IDs to be used instead of process IDs, and allows processes to be killed if the limit on processes that you can create is reached.
- Exit Status:
 - Returns success unless an invalid option is given or an error occurs.
- Evaluate arithmetic expressions.
 - Evaluate each ARG as an arithmetic expression. Evaluation is done in fixed-width integers with no check for overflow, though division by 0 is trapped and flagged as an error. The following list of operators is grouped into levels of equal-precedence operators. The levels are listed in order of decreasing precedence.
- id++, id--
- variable post-increment, post-decrement
- ++id, --id
- variable pre-increment, pre-decrement
- unary minus, plus
- logical and bitwise negation
- exponentiation
- , /, %
- multiplication, division, remainder
- addition, subtraction
- <, >
- left and right bitwise shifts
- <=, >=, <, >
- comparison
- ==, !=
- equality, inequality
- bitwise AND
- bitwise XOR
- bitwise OR
- logical AND
- logical OR
- expr ? expr : expr
- conditional operator
- =, *=, /=, %=
- +=, -=, <<=, >>=
- &=, ^=, |=
- assignment
- Shell variables are allowed as operands. The name of the variable is replaced by its value (coerced to a fixed-width integer) within

- an expression. The variable need not have its integer attribute
- turned on to be used in an expression.
- Operators are evaluated in order of precedence. Sub-expressions in
- parentheses are evaluated first and may override the precedence
- rules above.
- Exit Status:
- If the last ARG evaluates to 0, let returns 1; let returns 0 otherwise..
- Read a line from the standard input and split it into fields.
- Reads a single line from the standard input, or from file descriptor FD
- if the -u option is supplied. The line is split into fields as with word
- splitting, and the first word is assigned to the first NAME, the second
- word to the second NAME, and so on, with any leftover words assigned to
- the last NAME. Only the characters found in \$IFS are recognized as word
- delimiters.
- If no NAMEs are supplied, the line read is stored in the REPLY variable.
- Options:
- -a array
- assign the words read to sequential indices of the array
- variable ARRAY, starting at zero
- -d delim
- continue until the first character of DELIM is read, rather
- than newline
- -e
- use Readline to obtain the line in an interactive shell
- -i text
- Use TEXT as the initial text for Readline
- -n nchars
- return after reading NCHARS characters rather than waiting
- for a newline
- -p prompt
- output the string PROMPT without a trailing newline before
- attempting to read
- -r
- do not allow backslashes to escape any characters
- -s
- do not echo input coming from a terminal
- -t timeout
- time out and return failure if a complete line of input is
- not read within TIMEOUT seconds. The value of the TMOUT
- variable is the default timeout. TIMEOUT may be a
- fractional number. If TIMEOUT is 0, read returns success only
- if input is available on the specified file descriptor. The
- exit status is greater than 128 if the timeout is exceeded
- -u fd
- read from file descriptor FD instead of the standard input
- Exit Status:
- The return code is zero, unless end-of-file is encountered, read times out,
- or an invalid file descriptor is supplied as the argument to -u.
- Return from a shell function.
- Causes a function or sourced script to exit with the return value
- specified by N. If N is omitted, the return status is that of the
- last command executed within the function or script.
- Exit Status:

- Returns N, or failure if the shell is not executing a function or script.
- Set or unset values of shell options and positional parameters.
- Change the value of shell attributes and positional parameters, or
- display the names and values of shell variables.
- Options:
- -a Mark variables which are modified or created for export.
- -b Notify of job termination immediately.
- -e Exit immediately if a command exits with a non-zero status.
- -f Disable file name generation (globbing).
- -h Remember the location of commands as they are looked up.
- -k All assignment arguments are placed in the environment for a command, not just those that precede the command name.
- -m Job control is enabled.
- -n Read commands but do not execute them.
- -o option-name
- Set the variable corresponding to option-name:
- allexport same as -a
- braceexpand same as -B
- emacs use an emacs-style line editing interface
- errexit same as -e
- erretrace same as -E
- functrace same as -T
- hashall same as -h
- histexpand same as -H
- history enable command history
- ignoreeof the shell will not exit upon reading EOF
- interactive-comments
- allowcomments to appear in interactive commands
- keyword same as -k
- monitor same as -m
- noclobber same as -C
- noexec same as -n
- noglob same as -f
- nolog currently accepted but ignored
- notify same as -b
- nounset same as -u
- onecmd same as -t
- physical same as -P
- pipefail the return value of a pipeline is the status of
- the last command to exit with a non-zero status,
- or zero if no command exited with a non-zero status
- posix change the behavior of bash where the default
- operation differs from the Posix standard to
- match the standard
- privileged same as -p
- verbose same as -v
- vi use a vi-style line editing interface
- xtrace same as -x
- -p Turned on whenever the real and effective user ids do not match.
- Disables processing of the \$ENV file and importing of shell
- functions. Turning this option off causes the effective uid and
- gid to be set to the real uid and gid.
- -t Exit after reading and executing one command.

- *-u Treat unset variables as an error when substituting.*
- *-v Print shell input lines as they are read.*
- *-x Print commands and their arguments as they are executed.*
- *-B the shell will perform brace expansion*
- *-C If set, disallow existing regular files to be overwritten*
- *by redirection of output.*
- *-E If set, the ERR trap is inherited by shell functions.*
- *-H Enable ! style history substitution. This flag is on*
- *by default when the shell is interactive.*
- *-P If set, do not follow symbolic links when executing commands*
- *such as cd which change the current directory.*
- *-T If set, the DEBUG trap is inherited by shell functions.*
- - *Assign any remaining arguments to the positional parameters.*
- *The -x and -v options are turned off.*
- *Using + rather than - causes these flags to be turned off. The*
- *flags can also be used upon invocation of the shell. The current*
- *set of flags may be found in \$-. The remaining n ARGs are positional*
- *parameters and are assigned, in order, to \$1, \$2, .. \$n. If no*
- *ARGs are given, all shell variables are printed.*
- *Exit Status:*
- *Returns success unless an invalid option is given.*
- *Unset values and attributes of shell variables and functions.*
- *For each NAME, remove the corresponding variable or function.*
- *Options:*
- *-f*
- *treat each NAME as a shell function*
- *-v*
- *treat each NAME as a shell variable*
- *Without options, unset first tries to unset a variable, and if that fails,*
- *tries to unset a function.*
- *Some variables cannot be unset; also see readonly'. Exit Status: Returns success unless an*
- *invalid option is given or a NAME is read-only. Set export attribute for shell variables.*
- *Marks each NAME for automatic export to the environment of subsequently executed commands. If*
- *VALUE is supplied, assign VALUE before exporting. Options: -f refer to shell*
- *functions -n remove the export property from each NAME -p display a list*
- *of all exported variables and functions An argument of --' disables further option processing.*
- *Exit Status:*
- *Returns success unless an invalid option is given or NAME is invalid.*
- *Mark shell variables as unchangeable.*
- *Mark each NAME as read-only; the values of these NAMEs may not be*
- *changed by subsequent assignment. If VALUE is supplied, assign VALUE*
- *before marking as read-only.*
- *Options:*
- *-a*
- *refer to indexed array variables*
- *-A*
- *refer to associative array variables*
- *-f*
- *refer to shell functions*
- *-p*
- *display a list of all readonly variables and functions*
- *An argument of --' disables further option processing. Exit Status: Returns success unless*

an invalid option is given or NAME is invalid.

Shift positional parameters.

Rename the positional parameters \$N+1,\$N+2 ... to \$1,\$2 ... If N is not given, it is assumed to be 1.

Exit Status:

Returns success unless N is negative or greater than \$#.

Execute commands from a file in the current shell.

Read and execute commands from FILENAME in the current shell.

The entries in \$PATH are used to find the directory containing FILENAME.

If any ARGUMENTS are supplied, they become the positional parameters when FILENAME is executed.

Exit Status:

Returns the status of the last command executed in FILENAME; fails if FILENAME cannot be read.

Suspend shell execution.

Suspend the execution of this shell until it receives a SIGCONT signal.

Unless forced, login shells cannot be suspended.

Options:

-f force the suspend, even if the shell is a login shell

Exit Status:

Returns success unless job control is not enabled or an error occurs.

Evaluate conditional expression.

Exits with a status of 0 (true) or 1 (false) depending on the evaluation of EXPR. Expressions may be unary or binary. Unary expressions are often used to examine the status of a file.

There are string operators as well, and numeric comparison operators.

File operators:

-a FILE True if file exists.

-b FILE True if file is block special.

-c FILE True if file is character special.

-d FILE True if file is a directory.

-e FILE True if file exists.

-f FILE True if file exists and is a regular file.

-g FILE True if file is set-group-id.

-h FILE True if file is a symbolic link.

-L FILE True if file is a symbolic link.

-k FILE True if file has its *sticky* bit set.

- -p FILE True if file is a named pipe.
- -r FILE True if file is readable by you.
- -s FILE True if file exists and is not empty.
- -S FILE True if file is a socket.
- -t FD True if FD is opened on a terminal.
- -u FILE True if the file is set-user-id.
- -w FILE True if the file is writable by you.
- -x FILE True if the file is executable by you.
- -O FILE True if the file is effectively owned by you.
- -G FILE True if the file is effectively owned by your group.
- -N FILE True if the file has been modified since it was last read.
- FILE1 -nt FILE2 True if file1 is newer than file2 (according to modification date).
- FILE1 -ot FILE2 True if file1 is older than file2.
- FILE1 -ef FILE2 True if file1 is a hard link to file2.
- String operators:
- -z STRING True if string is empty.
- -n STRING
- STRING True if string is not empty.
- STRING1 = STRING2
- True if the strings are equal.
- STRING1 != STRING2
- True if the strings are not equal.
- STRING1 < STRING2
- True if STRING1 sorts before STRING2 lexicographically.
- STRING1 > STRING2
- True if STRING1 sorts after STRING2 lexicographically.
- Other operators:
- -o OPTION True if the shell option OPTION is enabled.
- ! EXPR True if expr is false.
- EXPR1 -a EXPR2 True if both expr1 AND expr2 are true.
- EXPR1 -o EXPR2 True if either expr1 OR expr2 is true.
- arg1 OP arg2 Arithmetic tests. OP is one of -eq, -ne, -lt, -le, -gt, or -ge.

- Arithmetic binary operators return true if ARG1 is equal, not-equal, less-than, less-than-or-equal, greater-than, or greater-than-or-equal than ARG2.
- Exit Status:
- Returns success if EXPR evaluates to true; fails if EXPR evaluates to false or an invalid argument is given.
- Evaluate conditional expression.
- This is a synonym for the "test" builtin, but the last argument must be a literal `]'`, to match the opening `[`.
- Display process times.
- Prints the accumulated user and system times for the shell and all of its child processes.
- Exit Status:
- Always succeeds.
- Trap signals and other events.
- Defines and activates handlers to be run when the shell receives signals or other conditions.
- ARG is a command to be read and executed when the shell receives the signal(s) SIGNALSPEC. If ARG is absent (and a single SIGNALSPEC is supplied) or `-'`, each specified signal is reset to its original value. If ARG is the null string each SIGNAL_SPEC is ignored by the shell and by the commands it invokes. If a SIGNAL_SPEC is EXIT (0) ARG is executed on exit from the shell. If a SIGNAL_SPEC is DEBUG, ARG is executed before every simple command. If no arguments are supplied, trap prints the list of commands associated with each signal. Options: `-l` print a list of signal names and their corresponding numbers `-p` display the trap commands associated with each SIGNAL_SPEC Each SIGNAL_SPEC is either a signal name in `<signal.h>` or a signal number. Signal names are case insensitive and the SIG prefix is optional. A signal may be sent to the shell with `"kill -signal $$"`. Exit Status: Returns success unless a SIGSPEC is invalid or an invalid option is given. Display information about command type. For each NAME, indicate how it would be interpreted if used as a command name. Options: `-a` display all locations containing an executable named NAME; includes aliases, builtins, and functions, if and only if the `-p` option is not also used
- `-f`
- suppress shell function lookup
- `-P`
- force a PATH search for each NAME, even if it is an alias, builtin, or function, and returns the name of the disk file that would be executed
- `-p`
- returns either the name of the disk file that would be executed, or nothing if `type -t NAME` would not return file'.
- `-t`
- output a single word which is one of `alias'`, `keyword'`, `function'`, `builtin'`, `file'` or `'`, if NAME is an alias, shell reserved word, shell function, shell builtin, disk file, or not found, respectively
- Arguments:
- NAME
- Command name to be interpreted.
- Exit Status:
- Returns success if all of the NAMEs are found; fails if any are not found.
- Modify shell resource limits.
- Provides control over the resources available to the shell and processes

- it creates, on systems that allow such control.
- Options:
- -S
- use the `soft` resource limit `<li>-H</li>` use the `hard` resource limit
- -a
- all current limits are reported
- -b
- the socket buffer size
- -c
- the maximum size of core files created
- -d
- the maximum size of a process's data segment
- -e
- the maximum scheduling priority (`nice`) `<li>-f</li>` the maximum size of files written by the shell and its children `<li>-i</li>` the maximum number of pending signals `<li>-l</li>` the maximum size a process may lock into memory `<li>-m</li>` the maximum resident set size `<li>-n</li>` the maximum number of open file descriptors `<li>-p</li>` the pipe buffer size `<li>-q</li>` the maximum number of bytes in POSIX message queues `<li>-r</li>` the maximum real-time scheduling priority `<li>-s</li>` the maximum stack size `<li>-t</li>` the maximum amount of cpu time in seconds `<li>-u</li>` the maximum number of user processes `<li>-v</li>` the size of virtual memory `<li>-x</li>` the maximum number of file locks `<li>`If `LIMIT` is given, it is the new value of the specified resource; the special `LIMIT` values `soft`, `hard`, and `unlimited` stand for the
- current soft limit, the current hard limit, and no limit, respectively.
- Otherwise, the current value of the specified resource is printed. If
- no option is given, then `-f` is assumed.
- Values are in 1024-byte increments, except for `-t`, which is in seconds,
- `-p`, which is in increments of 512 bytes, and `-u`, which is an unscaled
- number of processes.
- Exit Status:
- Returns success unless an invalid option is supplied or an error occurs.
- Display or set file mode mask.
- Sets the user file-creation mask to `MODE`. If `MODE` is omitted, prints
- the current value of the mask.
- If `MODE` begins with a digit, it is interpreted as an octal number;
- otherwise it is a symbolic mode string like that accepted by `chmod(1)`.
- Options:
- -p
- if `MODE` is omitted, output in a form that may be reused as input
- -S
- makes the output symbolic; otherwise an octal number is output
- Exit Status:
- Returns success unless `MODE` is invalid or an invalid option is given.
- Wait for job completion and return exit status.
- Waits for the process identified by `ID`, which may be a process ID or a
- job specification, and reports its termination status. If `ID` is not
- given, waits for all currently active child processes, and the return
- status is zero. If `ID` is a job specification, waits for all processes
- in the job's pipeline.
- Exit Status:
- Returns the status of `ID`; fails if `ID` is invalid or an invalid option is
- given.
- Execute commands for each member in a list.

- **The for' loop** executes a sequence of commands for each member in a list of items. If `in WORDS ...;` is not present, then `in "$@"` is assumed. For each element in WORDS, NAME is set to that element, and the COMMANDS are executed. Exit Status: Returns the status of the last command executed. Arithmetic for loop. Equivalent to `(( EXP1 ))` while `(( EXP2 ))`; do COMMANDS `(( EXP3 ))` EXP1, EXP2, and EXP3 are arithmetic expressions. If any expression is omitted, it behaves as if it evaluates to 1. Exit Status: Returns the status of the last command executed. Select words from a list and execute commands. The WORDS are expanded, generating a list of words. The set of expanded words is printed on the standard error, each preceded by a number. If `in WORDS'` is not present, `in "$@"` is assumed. The PS3 prompt is then displayed and a line read from the standard input. If the line consists of the number corresponding to one of the displayed words, then NAME is set to that word. If the line is empty, WORDS and the prompt are redisplayed. If EOF is read, the command completes. Any other value read causes NAME to be set to null. The line read is saved in the variable REPLY. COMMANDS are executed after each selection until a break command is executed. Exit Status: Returns the status of the last command executed. Report time consumed by pipeline's execution. Execute PIPELINE and print a summary of the real time, user CPU time, and system CPU time spent executing PIPELINE when it terminates. Options: -p print the timing summary in the portable Posix format The value of the TIMEFORMAT variable is used as the output format. Exit Status: The return status is the return status of PIPELINE. Execute commands based on pattern matching. Selectively execute COMMANDS based upon WORD matching PATTERN. The `|` is used to separate multiple patterns.
- **Exit Status:**
- **Returns the status of the last command executed.**
- **Execute commands based on conditional.**
- **The if COMMANDS' list is executed.** If its exit status is zero, then the `then COMMANDS' list` is executed. Otherwise, each `elif COMMANDS' list` is executed in turn, and if its exit status is zero, the corresponding **then COMMANDS' list is executed and the if command completes. Otherwise,**
- **the else COMMANDS' list is executed, if present.** The exit status of the entire construct is the exit status of the last command executed, or zero if no condition tested true. Exit Status: Returns the status of the last command executed. Execute commands as long as a test succeeds. Expand and execute COMMANDS as long as the final command in the **while' COMMANDS has an exit status of zero.**
- **Exit Status:**
- **Returns the status of the last command executed.**
- **Execute commands as long as a test does not succeed.**
- **Expand and execute COMMANDS as long as the final command in the**
- **until' COMMANDS has an exit status which is not zero.** Exit Status: Returns the status of the last command executed. Create a coprocess named NAME. Execute COMMAND asynchronously, with the standard output and standard input of the command connected via a pipe to file descriptors assigned to indices 0 and 1 of an array variable NAME in the executing shell. The default NAME is "COPROC". Exit Status: Returns the exit status of COMMAND. Define shell function. Create a shell function named NAME. When invoked as a simple command, NAME runs COMMANDS in the calling shell's context. When NAME is invoked, the arguments are passed to the function as \$1...\$n, and the function's name is in \$FUNCNAME. Exit Status: Returns success unless NAME is readonly. Group commands as a unit. Run a set of commands in a group. This is one way to redirect an entire set of commands. Exit Status: Returns the status of the last command executed. Resume job in foreground. Equivalent to the JOB_SPEC argument to the **fg' command. Resume a**
- **stopped or background job. JOB_SPEC can specify either a job name**
- **or a job number. Following JOB_SPEC with a `&` places the job in the background, as if the job specification had been supplied as an argument to **bg'.****
- **Exit Status:**
- **Returns the status of the resumed job.**

- Evaluate arithmetic expression.
- The *EXPRESSION* is evaluated according to the rules for arithmetic evaluation. Equivalent to "let *EXPRESSION*".
- Exit Status:
- Returns 1 if *EXPRESSION* evaluates to 0; returns 0 otherwise.
- Execute conditional command.
- Returns a status of 0 or 1 depending on the evaluation of the conditional expression *EXPRESSION*. Expressions are composed of the same primaries used
- by the `test` builtin, and may be combined using the following operators:
 - `( EXPRESSION )` Returns the value of *EXPRESSION*
 - `! EXPRESSION` True if *EXPRESSION* is false; else false
 - `EXPR1 && EXPR2` True if both *EXPR1* and *EXPR2* are true; else false
 - `EXPR1 || EXPR2` True if either *EXPR1* or *EXPR2* is true; else false
 - When the `==` and `!=` operators are used, the string to the right of the operator is used as a pattern and pattern matching is performed.
 - When the `==` operator is used, the string to the right of the operator is matched as a regular expression.
- The `&&` and `||` operators do not evaluate *EXPR2* if *EXPR1* is sufficient to determine the expression's value.
- Exit Status:
- 0 or 1 depending on value of *EXPRESSION*.
- Common shell variable names and usage.
- *BASH_VERSION*
- Version information for this Bash.
- *CDPATH*
- A colon-separated list of directories to search
- for directories given as arguments to `cd`.
 - GLOBIGNORE* A colon-separated list of patterns describing filenames to be ignored by pathname expansion.
 - HISTFILE* The name of the file where your command history is stored.
 - HISTFILESIZE* The maximum number of lines this file can contain.
 - HISTSIZE* The maximum number of history lines that a running shell can access.
 - HOME* The complete pathname to your login directory.
 - HOSTNAME* The name of the current host.
 - HOSTTYPE* The type of CPU this version of Bash is running under.
 - IGNOREEOF* Controls the action of the shell on receipt of an EOF character as the sole input. If set, then the value of it is the number of EOF characters that can be seen in a row on an empty line before the shell will exit (default 10). When unset, EOF signifies the end of input.
 - MACHTYPE* A string describing the current system Bash is running on.
 - MAILCHECK* How often, in seconds, Bash checks for new mail.
 - MAILPATH* A colon-separated list of filenames which Bash checks for new mail.
 - OSTYPE* The version of Unix this version of Bash is running on.
 - PATH* A colon-separated list of directories to search when looking for commands.
 - PROMPT_COMMAND* A command to be executed before the printing of each primary prompt.
 - PS1* The primary prompt string.
 - PS2* The secondary prompt string.
 - PWD* The full pathname of the current directory.
 - SHELLOPTS* A colon-separated list of enabled shell options.
 - TERM* The name of the current terminal type.
 - TIMEFORMAT* The output format for timing statistics displayed by the `time` reserved word.
- *auto_resume*
- Non-null means a command word appearing on a line by
- itself is first looked for in the list of currently
- stopped jobs. If found there, that job is foregrounded.
- A value of *exact* means that the command word must exactly match a command in the list of stopped jobs. A value of *substring* means that the command word must
- match a substring of the job. Any other value means that
- the command must be a prefix of a stopped job.
- *histchars*
- Characters controlling history expansion and quick

- **substitution. The first character is the history**
- **substitution character, usually '!'. The second is** the `quick substitution` character, usually `^`. The **third is the** `history comment` character, usually `#`.
- **HISTIGNORE** A colon-separated list of patterns used to decide which commands should be saved on the history list.
- **Add directories to stack.** Adds a directory to the top of the directory stack, or rotates the stack, making the new top of the stack the current working directory. With no arguments, exchanges the top two directories.
- **Options:**
 - **-n** Suppresses the normal change of directory when adding directories to the stack, so only the stack is manipulated.
 - **Arguments:**
 - **+N** Rotates the stack so that the Nth directory (counting from the left of the list shown by `dirs`, starting with zero) is at the top.
 - **-N** Rotates the stack so that the Nth directory (counting from the right of the list shown by `dirs`, starting with zero) is at the top.
 - **dir** Adds DIR to the directory stack at the top, making it the new current working directory.
 - **The `dirs` builtin displays the directory stack.**
- **Exit Status:**
 - Returns success unless an invalid argument is supplied or the directory change fails.
 - Remove directories from stack.
 - Removes entries from the directory stack. With no arguments, removes the top directory from the stack, and changes to the newtop directory.
- **Options:**
 - **-n** Suppresses the normal change of directory when removing directories from the stack, so only the stack is manipulated.
- **Arguments:**
 - **+N** Removes the Nth entry counting from the left of the list shown by `dirs`, starting with zero. For example: `popd +0` removes the first directory, `popd +1` the second.
 - **-N** Removes the Nth entry counting from the right of the list shown by `dirs`, starting with zero. For example: `popd -0` removes the last directory, `popd -1` the next to last.
- **The `dirs` builtin displays the directory stack.** Exit Status: Returns success unless an invalid argument is supplied or the directory change fails. Display directory stack. Display the list of currently remembered directories. Directories find their way onto the list with the `pushd` command; you can get back up through the list with the `popd` command.
- **Options:**
 - **-c** clear the directory stack by deleting all of the elements
 - **-l** do not print tilde-prefixed versions of directories relative to your home directory
 - **-p** print the directory stack with one entry per line
 - **-v** print the directory stack with one entry per line prefixed with its position in the stack
 - **Arguments:**
 - **+N** Displays the Nth entry counting from the left of the list shown by `dirs` when invoked without options, starting with zero.
 - **-N** Displays the Nth entry counting from the right of the list shown by `dirs` when invoked without options, starting with zero.
- **Exit Status:** Returns success unless an invalid option is supplied or an error occurs.
- **Set and unset shell options.** Change the setting of each shell option OPTNAME. Without any option arguments, list all shell options with an indication of whether or not each is set.
- **Options:**
 - **-o** restrict OPTNAMEs to those defined for use with `set -o`
 - **-p** print each shell option with an indication of its status
 - **-q** suppress output

- -s
- enable (set) each OPTNAME
- -u
- disable (unset) each OPTNAME
- Exit Status:
- Returns success if OPTNAME is enabled; fails if an invalid option is given or OPTNAME is disabled.
- Formats and prints ARGUMENTS under control of the FORMAT.
- Options:
- -v var
- assign the output to shell variable VAR rather than
- display it on the standard output
- FORMAT is a character string which contains three types of objects: plain
- characters, which are simply copied to standard output; character escape
- sequences, which are converted and copied to the standard output; and
- format specifications, each of which causes printing of the next successive
- argument.
- In addition to the standard format specifications described in printf(1)
- and printf(3), printf interprets:
- %b
- expand backslash escape sequences in the corresponding argument
- %q
- quote the argument in a way that can be reused as shell input
- Exit Status:
- Returns success unless an invalid option is given or a write or assignment
- error occurs.
- Specify how arguments are to be completed by Readline.
- For each NAME, specify how arguments are to be completed. If no options
- are supplied, existing completion specifications are printed in a way that
- allows them to be reused as input.
- Options:
- -p
- print existing completion specifications in a reusable format
- -r
- remove a completion specification for each NAME, or, if no
- NAMES are supplied, all completion specifications
- When completion is attempted, the actions are applied in the order the
- uppercase-letter options are listed above.
- Exit Status:
- Returns success unless an invalid option is supplied or an error occurs.
- Display possible completions depending on the options.
- Intended to be used from within a shell function generating possible
- completions. If the optional WORD argument is supplied, matches against
- WORD are generated.
- Exit Status:
- Returns success unless an invalid option is supplied or an error occurs.
- Modify or display completion options.
- Modify the completion options for each NAME, or, if no NAMES are supplied,
- the completion currently begin executed. If no OPTIONS are given, print
- the completion options for each NAME or the current completion specification.
- Options:
- -o option
- Set completion option OPTION for each NAME

- Using `+o` instead of `-o` turns off the specified option.
- Arguments:
- Each NAME refers to a command for which a completion specification must
- have previously been defined using the `complete` builtin. If no NAMES are supplied, `compgen` must be called by a function currently generating completions, and the options for that currently-executing completion generator are modified. Exit Status: Returns success unless an invalid option is supplied or NAME does not have a completion specification defined. Read lines from the standard input into an array variable. Read lines from the standard input into the array variable ARRAY, or from file descriptor FD if the `-u` option is supplied. The variable MAPFILE is the default ARRAY. Options: `-n count` Copy at most COUNT lines. If COUNT is 0, all lines are copied. `-O origin` Begin assigning to ARRAY at index ORIGIN. The default index is 0. `-s count` Discard the first COUNT lines read. `-t` Remove a trailing newline from each line read. `-u fd` Read lines from file descriptor FD instead of the standard input. `-C callback` Evaluate CALLBACK each time QUANTUM lines are read. `-c quantum` Specify the number of lines read between each call to CALLBACK. Arguments: ARRAY Array variable name to use for file data. If `-C` is supplied without `-c`, the default quantum is 5000. When CALLBACK is evaluated, it is supplied the index of the next array element to be assigned as an additional argument. If not supplied with an explicit origin, `mapfile` will clear ARRAY before assigning to it. Exit Status: Returns success unless an invalid option is given or ARRAY is readonly. Read lines from a file into an array variable. A synonym for `mapfile`.
- alias
- `%s`: invalid alias name line editing not enabled `bind` builtin `lvpsf:q:u:m:r:x` `%s`: invalid keymap name
- `%s`: cannot read: %s
- `%s`: unknown function name `%s` is not bound to any keys. `%s` can be invoked via `"%s"` `%s`: cannot unbind
- only meaningful in a `for`, `while`, or `until` loop loop count `%s %s %s` `OLDPWD` not set `OLDPWD` not set `CDPATH` `command` builtin `/bin:/usr/bin:/sbin:/usr/sbin:/etc:/usr/etc` `%s`: error retrieving current directory: `%s: %s` `%s`: usage: `%d` `%s`: ambiguous job spec error setting terminal attributes: `%s` error getting terminal attributes: `%s` write error: `%s` `%s`: not a shell builtin `%s`: restricted `%s`: no job control `%s`: no job control `%s`: no such job `%s`: argument `%s` out of range `%s` out of range `%s`: not a pid or valid job spec
- `%s`: invalid signal specification
- SIGJUNK
- Unknown
- `%2d` %s
- invalid octal number
- invalid hex number
- `%s`: invalid option name
- `%s`: not found
- `%s`: numeric argument required
- `+acfilprtuxAF`
- cannot use `-f` to make functions `%s %d %s` `%s`: cannot destroy array variables in this way `%s`: cannot convert associative to indexed array can only be used in a function `adnpsf` `enable %s` `enable -n %s` cannot open shared object `%s: %s` `_struct` cannot find `%s` in shared object `%s: %s` `%s`: not dynamically loaded `%s`: cannot delete: `%s` `%s`: not a regular file `%s`: file is too large `_evalfile` `source` `parse_string top` `parse_string` `parse` and execute `top` `pe_dispose` `parse` and execute `%s`: cannot execute: `%s` `~/bash_logout` There are stopped jobs. There are running jobs. not login

shell: use `exit`

- `logout`
- `:.e:lnrs`
- `no command found`
- `history specification`
- `bash-fc`
- `%s: cannot open temp file: %s`
- `${FCEDIT:-${EDITOR:-ed}}`
- `${FCEDIT:-${EDITOR:-vi}}`
- `fc builtin`
- `job %d started without job control`
- `builtin hash -p %s %s`
- `hashing disabled`
- `dlp:rt`
- `command`
- `%s: hash table empty`
- `%s: cannot open: %s`
- *These shell commands are defined internally. Type `help` to see this list.*
- *Type `help name` to find out more about the function `name`.*
- *Use `man -k` or `info` to find out more about commands not in this list.*
- *A star (*) next to a name means that the command is disabled.*
- Shell commands matching keyword `Shell commands matching keywords`
- `%s%s -`
- `SYNOPSIS`
- `DESCRIPTION`
- `SEE ALSO`
- `%sbash(1)`
- `IMPLEMENTATION`
- `%s: %s`
- `no help topics match %s'. Try help help or man -k %s or info %s.`
- `acd:npsrw`
- `cannot use more than one of -anrw`
- `%s: history expansion failed`
- `history position`
- `%5d%c %s%s`
- `current`
- `no other options allowed with -x'`
- `lpnxrs`
- `jobs_builtin`
- `Unknown error`
- `(%ld) - %s`
- `%s: arguments must be process or job IDs`
- `%s: invalid line count`
- `%s: invalid array origin`
- `%s: invalid callback quantum`
- `u:n:O:tC:c:s:`
- `internal error: getting variable name`
- `empty array variable name`
- `MAPFILE`
- `dirstack`
- `directory stack empty`
- `directory stack index`
- `<no current directory>`
- `%2d %s`
- `%2d %s`
- `no other directory`
- `%s: invalid timeout specification`
- `%s: invalid file descriptor specification`
- `%d: invalid file descriptor: %s`
- `ersa:d:i:n:p:t:u:`
- `read_builtin`
- `read error: %d: %s`
- `can only return' from a function or sourced script`
- `editing-mode`
- `cannot simultaneously unset a function and a variable`
- `%s: cannot unset`
- `variable`
- `%s: cannot unset: readonly %s`
- `%s: not an array variable`
- `SHELLOPTS`
- `allexport`
- `braceexpand`

- errexit
- errtrace
- functrace
- hashall
- histexpand
- history
- interactive-comments
- keyword
- monitor
- noclobber
- noexec
- noglob
- notify
- nounset
- onecmd
- physical
- pipefail
- privileged
- xtrace
- declare -%s
- %s -%s
- %s: not a function
- shift count
- filename argument required
- %s: file not found
- cannot suspend
- cannot suspend a login shell
- unknown
- trap -- %s %d
- trap -- %s %s
- %s is aliased to `%s'`
- `<li>alias %s=%s</li> <li>%s is a shell keyword</li> <li>%s is a function</li> <li>%s is a shell builtin</li> <li>%s is %s</li> <li>%s is hashed (%s)</li> <li>(%s, -%c) </li> <li>(-%c) </li> <li>%-20s %16s</li> <li>unlimited</li> <li>%s: cannot get limit: %s</li> <li>%c': bad command`
- %s: cannot modify limit: %s
- core file size
- blocks
- data seg size
- kbytes
- file size
- max locked memory
- max memory size
- open files
- pipe size
- 512 bytes
- stack size
- cpu time
- seconds
- max user processes
- virtual memory
- `%c': invalid symbolic mode operator</li> <li>%c': invalid symbolic mode character`
- u=%s,g=%s,o=%s
- octal number
- umask%s

- OPTARG
- %s: invalid shell option name
- shopt %s %s
- cannot set and unset shell options simultaneously
- set %co %s
- autocd
- cdablevars
- cdspell
- checkhash
- checkjobs
- checkwinsize
- cmdhist
- compat31
- compat32
- dirspeak
- dotglob
- execfail
- expandaliases
- extdebug
- extglob
- extquote
- failglob
- forceignore
- globstar
- gnuerrfmt
- histappend
- histredit
- histverify
- hostcomplete
- huponexit
- interactivecomments
- lithist
- loginshell
- mailwarn
- noemptycmdcompletion
- nocaseglob
- nocasematch
- nullglob
- progcomp
- promptvars
- restrictedshell
- shiftverbose
- sourcepath
- xpgecho
- missing hex digit for \x
- #-+ 0
- warning: %s: %s
- hjlLtz
- %s': missing format character %c': invalid format character
- %s: illegal option -- %c
- %s: option requires an argument -- %c
- compopt
- -o %s

- bashdefault
- +o %s
- default
- dirnames
- filenames
- nospace
- plusdirs
- not currently executing completion function
- %s: no completion specification
- %s: invalid action name
- abcdefgjkoprsvA:G:W:P:S:X:F:C:E
- warning: -F option may not work as you expect
- warning: -C option may not work as you expect
- complete
- -A %s
- arrayvar
- binding
- disabled
- enabled
- helptopic
- hostname
- running
- setopt
- signal
- stopped
- %s %s
- directory
- service
- BASHREMATCH
- /dev/fd/
- /dev/std
- %s: bad network path specification
- socket
- connect
- %ldm%d.%03ds
- shmakepath
- shrealpath
- TMPDIR
- /var/tmp/
- /var/tmp
- /usr/tmp
- %s/%s-%lu
- %s/cur
- %s/tmp
- %s/new
- invalid base
- 0123456789ABCDEF
- 0123456789abcdef
- ../../../../../../../../../../../../../../../../../../
- xdigit
- backspace
- vertical-tab
- form-feed

- carriage-return
- exclamation-mark
- quotation-mark
- number-sign
- dollar-sign
- percent-sign
- ampersand
- apostrophe
- left-parenthesis
- right-parenthesis
- asterisk
- plus-sign
- hyphen
- hyphen-minus
- period
- full-stop
- solidus
- semicolon
- less-than-sign
- equals-sign
- greater-than-sign
- question-mark
- commercial-at
- left-square-bracket
- backslash
- reverse-solidus
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- `terminalpgrp`
- `terminatecurrentpipeline`
- `terminateimmediately`
- `terminatestoppedjobs`
- `terminatingsignal`
- `termsighandler`
- `termsigsighandler`
- `testbinop`
- `testbracketdoc`
- `testbuiltin`
- `testcommand`
- `testdoc`
- `testunop`
- `thecurrentmaintainer`
- `thecurrentworkingdirectory`
- `thepipeline`
- `theprintedcommand`
- `theprintedcommandexcepttrap`
- `theprintedcommandsize`
- `thiscommandname`
- `thisshellbuiltin`
- `thisshellfunction`
- `throwtotoplevel`
- `tildeinitialize`
- `timedoc`
- `timetocheckmail`
- `timesbuiltin`
- `timesdoc`
- `timevaltocpu`
- `timevaltosecs`
- `toplevel`
- `toplevelcleanup`
- `toplevelmask`
- `trapbuiltin`
- `trapdoc`
- `traphandler`
- `traplist`
- `trapsavedexitvalue`
- `traptosighandler`
- `trimpathname`
- `truedoc`

- *ttsetcbreak*
- *ttseteightbit*
- *ttsetnocanon*
- *ttsetnoecho*
- *ttsetonechar*
- *ttattr*
- *ttcbreak*
- *tteightbit*
- *ttfdcbreak*
- *ttfdeightbit*
- *ttfdnocanon*
- *ttfdnoecho*
- *ttfdonechar*
- *ttgetattr*
- *tnocanon*
- *tnoecho*
- *tonechar*
- *ttstore*
- *ttsave*
- *ttsetattr*
- *typebuiltin*
- *typedoc*
- *typesetdoc*
- *uconvert*
- *uinttostr*
- *uitos*
- *ulimitbuiltin*
- *ulimitdoc*
- *umaskbuiltin*
- *umaskdoc*
- *unaliasbuiltin*
- *unaliasdoc*
- *unarytest*
- *unbindargs*
- *unbindarrayelement*
- *unbindfunc*
- *unbindfunctiondef*
- *unbindvariable*
- *unboundvarsiserror*
- *unclosedpair*
- *unfreezejobslist*
- *ungetcwithrestart*
- *unlinkifolist*
- *unquotedglobpattern*
- *unsetbashinput*
- *unsetbuiltin*
- *unsetdoc*
- *unsetsigwinchhandler*
- *unsetenv*
- *untildoc*
- *unwindprotectmem*
- *updateexportenvinplace*

- *usercommandmatches*
- *validarrayreference*
- *varlookup*
- *variablecontext*
- *variablehelpdoc*
- *waitbuiltin*
- *waitdoc*
- *waitfor*
- *waitforbackgroundpids*
- *waitforjob*
- *waitforsinglepid*
- *waitintrbuf*
- *waitsignalreceived*
- *wantpendingcommand*
- *wcsdup*
- *wcsmatch*
- *wdcache*
- *whichsetflags*
- *whiledoc*
- *withininputfrombufferedstream*
- *withininputfromstdin*
- *withininputfromstream*
- *withininputfromstring*
- *withoutjobcontrol*
- *wlcache*
- *wordlistremovequotednulls*
- *wordsplit*
- *wordtokenalist*
- *wordexponly*
- *xbcopy*
- *xdupmbstowcs*
- *xfree*
- *xmalloc*
- *xmbsrtowcs*
- *xparsedolparen*
- *xpgecho*
- *xrealloc*
- *xstrchr*
- *xstrmatch*
- *xtraceprintarithcmd*
- *xtraceprintassignment*
- *xtraceprintcasecommandhead*
- *xtraceprintcondterm*
- *xtraceprintforcommandhead*
- *xtraceprintselectcommandhead*
- *xtraceprintwordlist*
- *yyinputname*
- *yychar*
- *yyerror*
- *yyval*
- *yyerrs*
- *yyparse*

- `zcatfd`
- `zgetline`
- `zmapfd`
- `zread`
- `zreadc`
- `zreadcintr`
- `zreadintr`
- `zreadretry`
- `zreset`
- `zsyncfd`
- `zwrite`
- `__DefaultRuneLocale`
- `divdi3`
- `divsi3`
- `error`
- `floatdidf`
- `maskrune`
- `mbcurmax`
- `moddi3`
- `modsi3`
- `muldi3`
- `stderrp`
- `stdinp`
- `stdoutp`
- `tolower`
- `toupper`
- `udivdi3`
- `udivsi3`
- `umoddi3`
- `umodsi3`
- `abort`
- `access`
- `addhistory`
- `alarm`
- `appendhistory`
- `asprintf`
- `bcopy`
- `chdir`
- `clearhistory`
- `clearerr`
- `close`
- `closedir`
- `confstr`
- `connect`
- `dlclose`
- `dLError`
- `dlopen`
- `dlsym`
- `emacsctixkeymap`
- `emacsmetakeymap`
- `emacsstandardkeymap`
- `endgrent`

- *endpwent*
- *endservent*
- *execve*
- *fclose*
- *fcntl*
- *fdopen*
- *ferror*
- *fflush*
- *fgets*
- *fileno*
- *fopen*
- *fprintf*
- *fpurge*
- *fputc*
- *fputs*
- *freehistoryentry*
- *freeaddrinfo*
- *fstat*
- *fwrite*
- *gaistrerror*
- *getaddrinfo*
- *getdtablesize*
- *getegid*
- *geteuid*
- *getgid*
- *getgrent*
- *getgroups*
- *gethostname*
- *getpeername*
- *getpgrp*
- *getpid*
- *getppid*
- *getpwuid*
- *getrlimit*
- *getrusage*
- *getservent*
- *gettimeofday*
- *getuid*
- *historybase*
- *historycommentchar*
- *historyexpand*
- *historyexpansionchar*
- *historyget*
- *historygettime*
- *historyinhibitexpansionfunction*
- *historyisstifled*
- *historylength*
- *historylist*
- *historymaxentries*
- *historyquotesinhibitexpansion*
- *historysearchdelimiterchars*
- *historysetpos*

- *historysubstchar*
- *historytokenize*
- *historytruncatefile*
- *historywritetimestamps*
- *ioctl*
- *isatty*
- *killpg*
- *localtime*
- *lseek*
- *lstat*
- *malloc*
- *mblen*
- *mbrlen*
- *mbrtowc*
- *mbsinit*
- *mbsrtowcs*
- *mbstowcs*
- *mbtowc*
- *memcpy*
- *memset*
- *mkfifo*
- *opendir*
- *pathconf*
- *previoushistory*
- *printf*
- *putchar*
- *qsort*
- *readhistory*
- *readhistoryrange*
- *readdir*
- *readline*
- *readlink*
- *realloc*
- *regcomp*
- *regexexec*
- *regfree*
- *removehistory*
- *replacehistoryentry*
- *rladddefun*
- *rladdundo*
- *rlattemptedcompletionfunction*
- *rlattemptedcompletionover*
- *rlbasicwordbreakcharacters*
- *rlbindkeyifunboundinmap*
- *rlbindkeyinmap*
- *rlbindkeyseqinmap*
- *rlcharisquotedp*
- *rlcomplete*
- *rlcompleteinternal*
- *rlcompleterquotecharacters*
- *rlcompleterwordbreakcharacters*
- *rlcompletionappendcharacter*

- *rlcompletionentryfunction*
- *rlcompletionfoundquote*
- *rlcompletioninvokingkey*
- *rlcompletionmarksymlinkdirs*
- *rlcompletionmatches*
- *rlcompletionmode*
- *rlcompletionquotecharacter*
- *rlcompletionsuppressappend*
- *rlcompletionsuppressquote*
- *rlcompletiontype*
- *rlcrlf*
- *rldeletetext*
- *rldepreptermfunction*
- *rlding*
- *rldirectorycompletionhook*
- *rldirectoryrewritehook*
- *rldispatching*
- *rldone*
- *rleditingmode*
- *rlend*
- *rlexecutingkeymap*
- *rlexplicitarg*
- *rlfilenamecompletiondesired*
- *rlfilenamecompletionfunction*
- *rlfilenamedequotingfunction*
- *rlfilenamequotecharacters*
- *rlfilenamequotingdesired*
- *rlfilenamequotingfunction*
- *rlforcedupdatedisplay*
- *rlforwardword*
- *rlfunctiondumper*
- *rlfunctionofkeyseq*
- *rlfunmapnames*
- *rlgenericbind*
- *rlgetkeymap*
- *rlgetkeymapbyname*
- *rlgetprevioushistory*
- *rlignoresomecompletionsfunction*
- *rlinitialize*
- *rlinsert*
- *rlinserttext*
- *rlinstream*
- *rlinvokingkeyseqs*
- *rlkilltext*
- *rllastfunc*
- *rllinebuffer*
- *rllistfunmapnames*
- *rlmacrodumper*
- *rlmakebarekeymap*
- *rlmark*
- *rlmenucomplete*
- *rlmenucompletionentryfunction*

- *rlnamedfunction*
- *rlnewline*
- *rlnumcharstoread*
- *rlonnewline*
- *rloutstream*
- *rlparseandbind*
- *rlpoint*
- *rlpretermfunction*
- *rlpushmacroinput*
- *rlreadinitfile*
- *rlreadkey*
- *rlreadlinename*
- *rlreadlinestate*
- *rlredisplay*
- *rlresetterminal*
- *rlsetkey*
- *rlsetkeymap*
- *rlsetscreensize*
- *rlspecialprefixes*
- *rlstartuphook*
- *rltabinsert*
- *rlterminalname*
- *rltildeexpand*
- *rlunbindfunctioninmap*
- *rlunbindkeyinmap*
- *rlusernamecompletionfunction*
- *rlvariablebind*
- *rlvariabledumper*
- *rlvariablevalue*
- *rlvibWord*
- *rlvieditingmode*
- *rlviendword*
- *rlvistartinserting*
- *rlyank/lastarg*
- *select*
- *setgid*
- *setgrent*
- *setitimer*
- *setlocale*
- *setpgid*
- *setregid*
- *setreuid*
- *setrlimit*
- *setservent*
- *setuid*
- *setvbuf*
- *sigaction*
- *sigaddset*
- *sigemptyset*
- *siglongjmp*
- *sigprocmask*
- *sigsetjmp*

- *sleep*
- *snprintf*
- *socket*
- *sprintf*
- *stiflehistory*
- *strcasecmp*
- *strcat*
- *strchr*
- *strcmp*
- *strcpy*
- *strerror*
- *strftime*
- *strlen*
- *strncasecmp*
- *strncmp*
- *strncpy*
- *strpbrk*
- *strrchr*
- *strsignal*
- *strstr*
- *strtod*
- *strtoimax*
- *strtoul*
- *strtoumax*
- *sysconf*
- *tcgetattr*
- *tcgetpgrp*
- *tcsetattr*
- *tcsetpgrp*
- *tildeadditionalprefixes*
- *tildeadditionalsuffixes*
- *tildeexpand*
- *tildeexpansionpreexpansionhook*
- *ttyname*
- *tzset*
- *umask*
- *unlink*
- *unstiflehistory*
- *usinghistory*
- *vfprintf*
- *viinsertionkeymap*
- *vimovementkeymap*
- *vsnprintf*
- *waitpid*
- *wcrtomb*
- *wcschr*
- *wscmp*
- *wscoll*
- *wscpy*
- *wcslen*
- *wcsncmp*
- *wcsrtombs*

- wctob
- wctype
- wherehistory
- write
- writehistory
- @|&]"3(q
- tJRTJ
- L331Q/

UTF-8 Strings

No detected.

UTF-16LE Strings

Extracted URLs

- <http://gnu.org/licenses/gpl.html>

Base64 Strings

No valid Base64-encoded strings found.

File Entropy Analysis

- **Entropy:** 6.81
- **Status:** This file is likely packed or encrypted.

VirusTotal Analysis

Scan Date: 2022-10-28 03:53:20

Scan Results

- Malicious: 0
- Suspicious: 0
- Undetected: 62
- Harmless: 0
- Timeout: 0
- Confirmed-timeout: 0
- Failure: 0
- Type-unsupported: 14

Community Votes

- Harmless: 1
- Malicious: 0

Virus Total Permalink

- No VirusTotal link available.

Detailed Engine Results

Engine Name	Detection Category	Detection
No results	No results	No results