

# Comprehensive Look @ bsdconfig

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# Special Thanks

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- ▶ You (for being here)



# Designed With You In-Mind

Road Map:

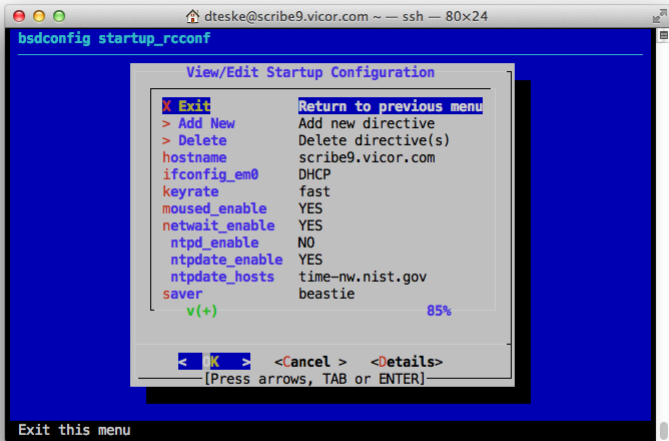
End-Users	Developers	3rd-Party
i18n	debugging	ports
shortcuts	modules	X11
packages	scripting	sudo
network	includes	compat
startup	graphs	

# Road Map

End Users: i18n

# End Users: i18n

Standard Interface (without i18n):



The screenshot shows a terminal window with a blue background. At the top, the window title is "dteske@scribe9.vicor.com ~ — ssh — 80x24". Below the title, the text "bsdconfig startup\_rcconf" is displayed. The main content is a "View/Edit Startup Configuration" menu. The menu items are listed in two columns. The first column contains: "X Exit", "> Add New", "> Delete", "hostname", "ifconfig\_em0", "keyrate", "moused\_enable", "netwait\_enable", "ntpd\_enable", "ntpddate\_enable", "ntpddate\_hosts", and "saver". The second column contains: "Return to previous menu", "Add new directive", "Delete directive(s)", "scribe9.vicor.com", "DHCP", "fast", "YES", "YES", "NO", "YES", "time-nw.nist.gov", and "beastie". At the bottom of the menu, there is a prompt "v(+)" followed by "85%". Below the menu, there are navigation instructions: "< [K] >" and "<Cancel > <Details>", with a note "[Press arrows, TAB or ENTER]". At the bottom left of the terminal, the text "Exit this menu" is visible.

```
bsdconfig startup_rcconf

View/Edit Startup Configuration

X Exit          Return to previous menu
> Add New      Add new directive
> Delete       Delete directive(s)
hostname       scribe9.vicor.com
ifconfig_em0   DHCP
keyrate        fast
moused_enable  YES
netwait_enable YES
ntpd_enable    NO
ntpddate_enable YES
ntpddate_hosts time-nw.nist.gov
saver          beastie

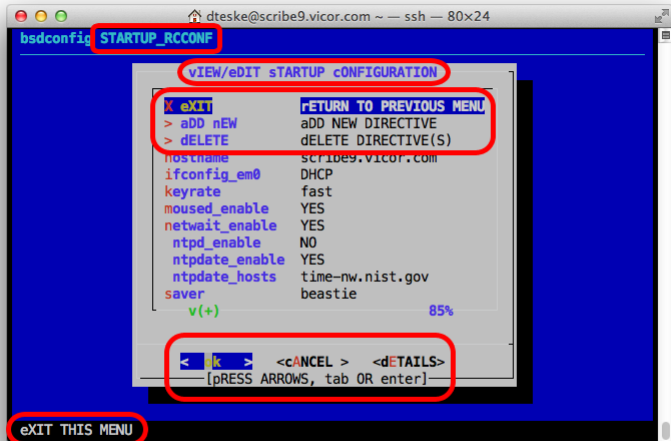
v(+)          85%

< [K] >      <Cancel >  <Details>
[Press arrows, TAB or ENTER]
```

Exit this menu

# End Users: i18n

## Internationalization At Work (Menu):



```
bsdconfig STARTUP_RCCONF
VIEW/EDIT sTARTUP cONFIGURATION
X eXIT          RETURN TO PREVIOUS MENU
> aDD nEW      aDD NEW DIRECTIVE
> dELETE       dELETE DIRECTIVE(S)
hostname       scribe9.vicor.com
ifconfig_em0   DHCP
keyrate        fast
moused_enable  YES
netwait_enable YES
ntpd_enable    NO
ntpddate_enable YES
ntpddate_hosts time-nw.nist.gov
saver          beastie
v(+)          85%
< pk >       <cANCEL > <dETAILS>
[PRESS ARROWS, tab OR enter]
```

eXIT THIS MENU

# End Users: i18n

## Standard Usage (without i18n):

```
dteske@scribe9.vicor.com -- ssh -- 80x33
Usage:
bsdconfig [-h]
bsdconfig command [-h]
bsdconfig [OPTIONS] [command [OPTIONS]]

OPTIONS:
-d          Provide lots of debugging info on standard-out when running.
-D file    Send debugging info to file. If file begins with a plus-sign
          debug info is sent to both standard-out and file (minus the
          leading plus).
-f file    Load file as script and then exit. If multiple occurrences,
          program will only exit after last occurrence. If file is a
          single dash ('-'), bsdconfig reads from standard input.
-h         Print this usage statement and exit.
-S         Secure X11 mode (implies '-X'). As root, always prompt-for
          and validate sudo(8) username/password before starting.
-X         Use Xdialog(1) in place of dialog(1).

COMMANDS:
console      defaultrouter      diskmgmt
docsinstall  dot                      groupadd
groupdel     groupedit                groupmgmt
hostname     kern_securelevel        mouse
mouse_disable mouse_enable             mouse_flags
mouse_port   mouse_type              nameservers
netdev       networking              packages
password     security                startup
startup_misc startup_rcadd            startup_rcconf
startup_rcdelete startup_rcvar           syscons_font
syscons_keymap syscons_repeat         syscons_saver
syscons_screenmap syscons_ttys          timezone
tty          useradd                 userdel
useredit     usermgmt
```



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# End Users: i18n

## Internationalization At Work (Usage):

```
dteske@scribe9.vicor.com -- ssh -- 80x33
uSAGE:
bsdconfig [-h]
bsdconfig COMMAND [-h]
bsdconfig [options] [COMMAND [options]]

options:
-d          pROVIDE LOTS OF DEBUGGING INFO ON STANDARD-OUT WHEN RUNNING.
-D FILE    sEND DEBUGGING INFO TO FILE. IF FILE BEGINS WITH A PLUS-SIGN
          DEBUG INFO IS SENT TO BOTH STANDARD-OUT AND FILE (MINUS THE
          LEADING PLUS).
-f FILE    lOAD FILE AS SCRIPT AND THEN EXIT. IF MULTIPLE OCCURRENCES,
          PROGRAM WILL ONLY EXIT AFTER LAST OCCURRENCE. IF FILE IS A
          SINGLE DASH ('-'), bsdconfig READS FROM STANDARD INPUT.
-h         pRINT THIS USAGE STATEMENT AND EXIT.
-S        sECURE x11 MODE (IMPLIES '-X'). aS ROOT, ALWAYS PROMPT-FOR
          AND VALIDATE sudo(8) USERNAME/PASSWORD BEFORE STARTING.
-X        uSE Xdialog(1) IN PLACE OF dialog(1).

commands:
CONSOLE          DEFAULTROUTER      DISKMGMT
DOCSINSTALL      DOT                GROUPADD
GROUPDEL         GROUPEDIT          GROUPMGMT
HOSTNAME        KERN_SECURELEVEL  MOUSE
MOUSE_DISABLE   MOUSE_ENABLE      MOUSE_FLAGS
MOUSE_PORT      MOUSE_TYPE        NAMESERVERS
NETDEV          NETWORKING        PACKAGES
PASSWORD        SECURITY           STARTUP
STARTUP_MISC    STARTUP_RCADD     STARTUP_RCCONF
STARTUP_RCDELETE STARTUP_RCVAR     SYSCONS_FONT
SYSCONS_KEYMAP  SYSCONS_REPEAT   SYSCONS_SAVER
SYSCONS_SCREENMAP SYSCONS_TTYS     TIMEZONE
TTY            USERADD          USERDEL
USEREDIT       USERMGMT
```



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# End Users: i18n

Language Files (e.g., LANG="de\_DE.ISO8859-1" for German):

1 INDEX.\$LANG

- Menuitem text/help and shortcut keywords

2 USAGE.\$LANG

- Command-line usage statement

3 messages.subr.\$LANG

- Application messages

4 helpfile.hlp.\$LANG

- Various in-application help screens



# End Users: i18n

## 1. INDEX.\$LANG (conf-like text file)

Example(s):

```
/usr/libexec/bsdconfig/080.console/INDEX
```

```
/usr/libexec/bsdconfig/080.console/INDEX.de_DE.ISO8859-1
```

API Functions (common.subr)

```
# f_index_file $keyword
```

```
- Take $keyword and return $indexfile to be used below
```

```
# f_index_menusel_keyword $indexfile $program
```

```
- Take $indexfile, return i18n menu text assoc. with $program
```

```
# f_index_menusel_command $indexfile $keyword
```

```
- Take $indexfile, return $program assoc. with $keyword
```



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# End Users: i18n

## 2. USAGE.\$LANG (free-form text file w/ optional macros)

Example(s):

```
/usr/libexec/bsdconfig/USAGE  
/usr/libexec/bsdconfig/USAGE.de_DE.ISO8859-1
```

API Functions (common.subr)

```
# f_usage $file [$key1 $value1 ...]  
- Display $file.$LANG (else $file) in textbox  
- Globally replaces '@$key1@' with '$value1' before display
```

# End Users: i18n

## 3. messages.subr.\$LANG (sh source file)

Example(s):

```
/usr/libexec/bsdconfig/include/messages.subr  
/usr/libexec/bsdconfig/include/messages.subr.de_DE.ISO8859-1
```

API Functions (common.subr)

```
# f_include_lang $file  
- Source $file.$LANG (else $file)
```



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# End Users: i18n

## 4. helpfile.hlp.\$LANG (free-form text file)

Example(s):

```
/usr/libexec/bsdconfig/include/media.hlp
```

```
/usr/libexec/bsdconfig/include/media.hlp.de_DE.ISO8859-1
```

API Functions (common.subr)

```
# f_show_help $file
```

```
- Display $file.$LANG (else $file) in textbox
```



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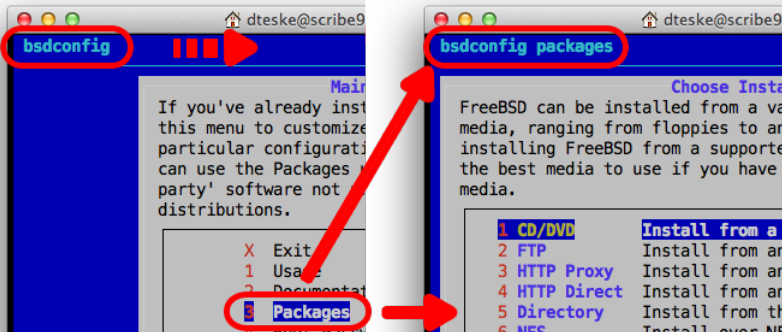
# Road Map

End Users: shortcuts



# End Users: shortcuts

Self-Updating i18n Navigational Hints (cmdline shortcuts):



# Road Map

End Users: packages





# End Users: packages

## Package Categories (improved)

```
bsdconfig packages

Package Selection
Please select a category to display.

> Review          Review/perform pending actions
All*             22631 packages; 218 installed; 3 selected
accessibility    55 packages; 1 installed
afterstep        31 packages
arabic           10 packages
archivers        213 packages
astro            131 packages
audio            821 packages
benchmarks*     78 packages; 1 installed; 1 selected
biology          90 packages
cad              90 packages
chinese          137 packages
v(+)

12%

<select>      <Cancel>
```

Utilities for measuring system performance.

# End Users: packages

## Package Selection (improved)

```
bsdconfig packages
Package Selection
All available packages in all categories. (Page 11 of 12)
> Previous page*
> Next page*
szip-1.12b_2          [ ] /usr/ports/archivers/szip
t-prot-2.101         [ ] /usr/ports/mail/t-prot
tllib-5.1.2_1,1     [X] /usr/ports/devel/tllib
tlutils-1.32        [I] /usr/ports/print/tlutils
t3d-1.1_2           [ ] /usr/ports/x11-clocks/t3d
t3x-8.1.5_1         [ ] /usr/ports/lang/t3x
tdom-0.8.3          [ ] /usr/ports/www/tdom
tRNAscan-SE-1.23_1 [ ] /usr/ports/biology/tRNAscan-SE
t_coffee-5.68       [ ] /usr/ports/biology/t_coffee
ta-aspell-20040424.1_1 [ ] /usr/ports/textproc/ta-aspell
v(+)                                                         0%
```

<elect> < Back >  
[Use arrows, TAB, punctuation, ENTER]

Six utilities for manipulating t1 fonts

# End Users: packages

## Scripting (script.subr)

### configPackages

- Initializes media type (if not yet initialized)
- Displays the package management screen
- User adds, removes, or reinstalls packages
- Backward compatible with sysinstall scripts



## End Users: packages

### Scripting (script.subr) cont.: Pre-initializing media

<code>mediaGetType</code>	- Let the user choose
<code>mediaSetCDROM</code>	- CD/DVD
<code>mediaSetDOS</code>	- DOS Partition
<code>mediaSetDirectory</code>	- UNIX Directory
<code>mediaSetFTP</code>	- Active/Passive FTP
<code>mediaSetFTPActive</code>	- Active FTP
<code>mediaSetFTPPassive</code>	- Passive FTP
<code>mediaSetFTPUserPass</code>	- Initialize FTP credentials
<code>mediaSetFloppy</code>	- Floppy Diskette
<code>mediaSetHTTP</code>	- HTTP Direct
<code>mediaSetHTTPProxy</code>	- FTP via HTTP Proxy
<code>mediaSetNFS</code>	- Network File Share
<code>mediaSetUFS</code>	- UFS Partition
<code>mediaSetUSB</code>	- USB disk device



# End Users: packages

## Scripting (script.subr) cont.: Pre-initializing media (cont.)

### optionsEditor

- Displays media options
- Normally accessible via mediaGetType menu

### tcpMenuSelect

- Configures non-persistent networking
- Normally invoked when choosing network-based media
- Has option to declare network already active



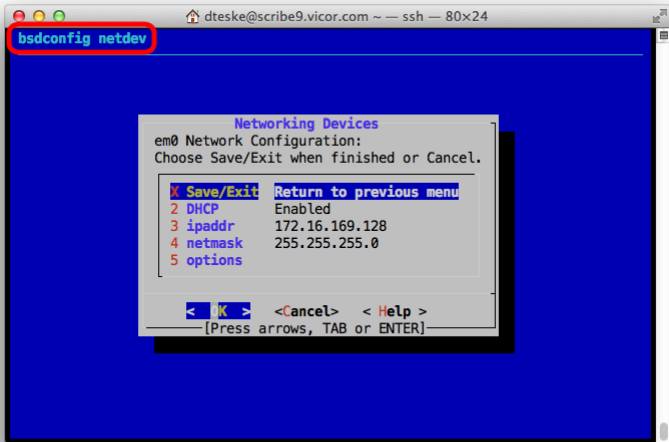
# Road Map

End Users: network



# End Users: network

## Configure Persistent Networking



The screenshot shows a terminal window with a blue background. The title bar indicates the user is logged in as 'dteske' on 'scribe9.vicor.com' via 'ssh' in an 80x24 terminal. The prompt is 'bsdconfig netdev', which is highlighted with a red box. A white dialog box titled 'Networking Devices' is centered on the screen. It contains the following text:

```
Networking Devices
em0 Network Configuration:
Choose Save/Exit when finished or Cancel.

X Save/Exit Return to previous menu
2 DHCP      Enabled
3 ipaddr    172.16.169.128
4 netmask   255.255.255.0
5 options

< K > <Cancel> < Help >
[Press arrows, TAB or ENTER]
```

# Road Map

End Users: startup





# End Users: startup

## Configuring Startup Services

```
bsdconfig startup_rcvar Toggle Startup Services
^(-)
sendmail_submit_enable [X] /etc/rc.d/sendmail; Default: YES
sshd_enable             [X] /etc/rc.d/sshd; Default: NO
svnservce_enable        [ ] /usr/local/etc/rc.d/svnservce; Default: NO
syslogd_enable          [X] /etc/rc.d/syslogd; Default: YES
timed_enable            [ ] /etc/rc.d/timed; Default: NO
ubthidhci_enable        [ ] /etc/rc.d/ubthidhci; Default: NO
ugidfw_enable           [ ] /etc/rc.d/ugidfw; Default: NO
update_motd             [X] /etc/rc.d/motd; Default: YES
vimage_enable           [ ] /etc/rc.d/vimage; Default: NO
wirecover_enable        [X] /etc/rc.d/wirecover; Default: YES
watchdogd_enable        [ ] /etc/rc.d/watchdogd; Default: NO
zfs_enable               [X] /etc/rc.d/zfs; Default: NO
v(+)                                                             99%
```

< K > <Cancel>  
[Press arrows, TAB or ENTER]

Set to YES to automatically mount ZFS file systems

# End Users: startup

## Configuring rc.conf(5) parameters

```
bsdconfig startup_rcconf
```

```
View/Edit Startup Configuration
```

X Exit	Return to previous menu
> Add New	Add new directive
> Delete	Delete directive(s)
hostname	scribe9.vicor.com
ifconfig_em0	DHCP
keyrate	fast
moused_enable	YES
netwait_enable	YES
ntpd_enable	NO
ntpddate_enable	YES
ntpddate_hosts	time-nw.nist.gov
saver	beastie

v(+) 85%

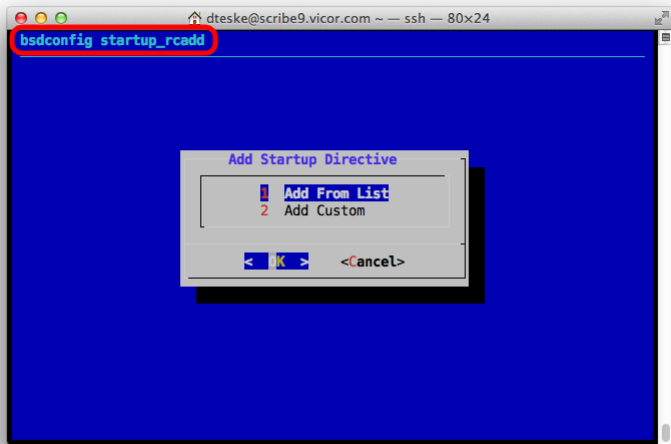
< [K] > <Cancel > <Details>

[Press arrows, TAB or ENTER]

```
keyboard rate to: slow, normal, fast (or NO).
```

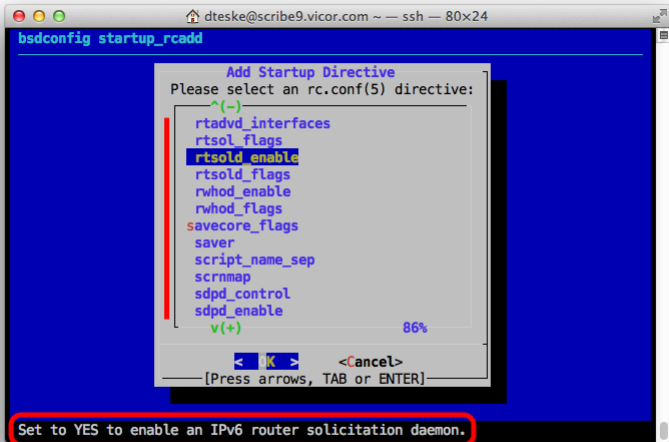
# End Users: startup

Adding a new parameter to rc.conf(5)



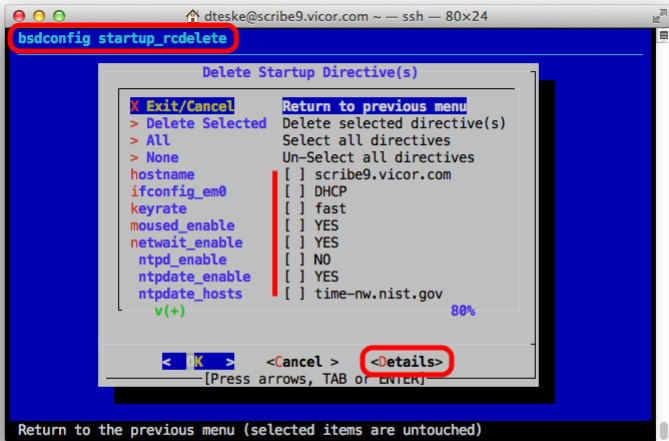
## End Users: startup

Picking an rc.conf(5) parameter from sorted list w/ descriptions



# End Users: startup

Deleting rc.conf(5) parameters:



```
dteske@scribe9.vicor.com ~ — ssh — 80x24
bsdconfig startup_rcdelete

Delete Startup Directive(s)

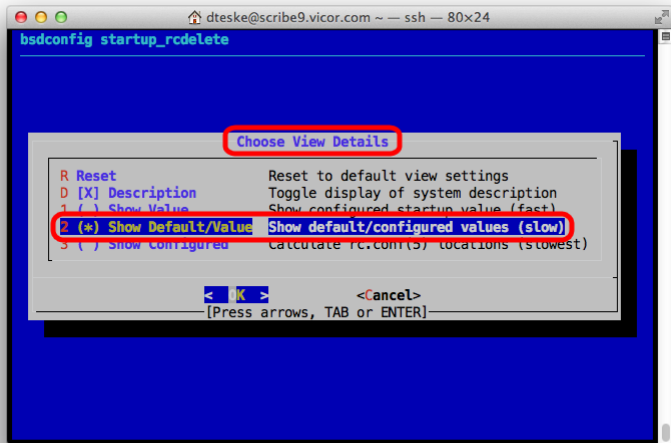
X Exit/Cancel      Return to previous menu
> Delete Selected  Delete selected directive(s)
> All              Select all directives
> None            Un-Select all directives
hostname          [ ] scribe9.vicor.com
ifconfig_em0     [ ] DHCP
keyrate          [ ] fast
moused_enable    [ ] YES
netwait_enable   [ ] YES
ntpd_enable      [ ] NO
ntpdate_enable   [ ] YES
ntpdate_hosts    [ ] time-nw.nist.gov
v(+)                                                     80%

<K> <Cancel> <Details>
[Press arrows, TAB or ENTER]
```

Return to the previous menu (selected items are untouched)

# End Users: startup

Choosing your level of detail:



# End Users: startup

Cleaning up your rc.conf(5):

```
dteske@scribe9.vicor.com ~ — ssh — 80x24
bsdconfig startup_rcdelete

Delete Startup Directive(s)

X Exit/Cancel          Return to previous menu
> Delete Selected     Delete selected directive(s)
> All                 Select all directives
> None                Un-Select all directives
hostname              [ ] Default: ; scribe9.vicor.com
ifconfig_em0         [ ] Default: ; DHCP
keyrate               [ ] Default: NO; fast
moused_enable        [ ] Default: NO; YES
netwait_enable       [ ] Default: NO; YES
ntpdate_enable       [X] Default: NO; NO
ntpdate_enable       [ ] Default: NO; YES
ntpdate_hosts        [ ] Default: ; time-nw.nist.gov
v(+)                  80%

< K >      <Cancel >      <Details>
[Press arrows, TAB or ENTER]
```

Delete each of the selected rc.conf(5) configuration directives

# Road Map

Developers: debugging





# Developers: debugging

3 Flavors:	<code>bsdconfig -d</code>	<code># Log to terminal</code>
	<code>bsdconfig -D file</code>	<code># Log to file</code>
	<code>bsdconfig -D +file</code>	<code># Log to both terminal and file</code>

## Many Ways to Enable

Above syntax switches

---

`$debug` same as `'-d'`

`$debugFile` same as `'-D [+file]'`

---

Can be set in a script (e.g., `bsdconfig -f script`)

---

Can be set/unset as-needed at runtime



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# Developers: debugging

## API Functions (common.subr)

### # f\_debug\_init

- Initializes the debugging system (reads "\$@")
- Called automatically unless DEBUG\_SELF\_INITIALIZE=NO

### # f\_dprintf \$format [\$arguments ...]

- Produces debugging (if enabled) with printf(1) syntax

### # f\_eval\_catch [-d] \$funcname \$utility \$format [\$arguments ...]

- Takes command in printf(1) syntax to evaluate
- Prints copy of command + output to debugging
- On error, displays diaog box with command output
- Takes optional '-d' to skip error dialog
- If \$nonInteractive is set and command fails, calls f\_die()



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# Road Map

Developers: modules



# Developers: modules

Your basic module:

```
mymodule/INDEX  
mymodule/myprogram
```

Optional:

```
mymodule/USAGE  
- API f_usage()  
mymodule/include/messages.subr  
- API f_include() or f_include_lang()  
- Used for i18n string mapping
```

# Developers: modules

Your basic INDEX file:

```
    # MenuItem Text/Help
1   menu_title="Hello, World!"
2   menu_help="A basic module that greets the World."

    # MenuItem program to execute
3   menu_program="hworld"

    # Command-line shortcut mapping (keyword|program)
4   menu_selection="helloworld|hworld"
   menu_selection="hiworld|hworld"
   menu_selection="hi|hworld"
```

## Developers: modules

Your basic program (if you choose shell) [hworld]:

```
1  #!/bin/sh
2  BSDCFG_SHARE="/usr/share/bsdconfig"
3  . $BSDCFG_SHARE/common.subr || exit 1
4  f_include $BSDCFG_SHARE/dialog.subr # Recommended

5  f_show_msg "Hello, World!" # Say it with dialog(1)

6  debug=1
7  f_dprintf "Hello, World!" # Say it again via debug
```



# Developers: modules

Your basic USAGE file (Optional):

```
Usage: bsdconfig @PROGRAM_NAME@
```

Displaying USAGE:

```
f_usage path/to/USAGE PROGRAM_NAME "$0"
```

# Developers: modules

Base Modules in /usr/libexec/bsdconfig:

020.docsinstall/INDEX

030.packages/INDEX

040.password/INDEX

050.diskmgmt/INDEX

070.usermgmt/INDEX

080.console/INDEX

090.timezone/INDEX

110.mouse/INDEX

120.networking/INDEX

130.security/INDEX

140.startup/INDEX

150.ttys/INDEX

dot/INDEX



# Road Map

Developers: scripting



# Developers: scripting

## 3 Flavors:

Stand-Alone	<pre>#!/bin/sh . /usr/share/bsdconfig/script.subr    exit 1 f_dialog_msgbox "Hello, World!"</pre>
Loadable	<pre>FILE: f_dialog_msgbox "Hello, World!" bsdconfig -f FILE</pre>
Pipe/Here	<pre>bsdconfig -f- &lt;&lt; EOF f_dialog_msgbox "Hello, World!" EOF</pre>

# Developers: scripting

Functions that begin with 'f\_'

- Standard API call
- Used in modules and includes
- Example: `f_package_add (packages.subr)`

2 Different APIs:

Functions that are “camelCase”

- *Only* found in `script.subr`
- *Never* used elsewhere except scripts
- Error or cancel will terminate process
- Backward compatible with `sysinstall`
- Simplified scripting
- Example: `packageAdd`



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# Developers: scripting

## Advanced Tip Making a Hybrid Script

```
#!/bin/sh
[ "$_SCRIPT_SUBR" ] ||
    . /usr/share/bsdconfig/script.subr
# Rest of script
nonInteractive=1
_ftpPath=ftp://ftp.freebsd.org # or ftp-archive.f.o
mediaSetFTP
configPackages
```

**Load** it with 'bsdconfig -f FILE' or

**Pipe** it with 'bsdconfig -f- < FILE' or

**Execute** it as a stand-alone script.



# Developers: scripting

**Advanced Tip** Mixing APIs for added flexibility

```
nonInteractive=1
_ftpPath=ftp://ftp.freebsd.org # or ftp-archive.f.o
mediaSetFTP
mediaOpen
f_device_get media games.txz | md5
f_device_get media packages/INDEX | wc -l
mediaClose
f_debugging && dumpVariables
```

**Great** for deployment scripting



# Road Map

Developers: includes



# Developers: includes

Your *Basic Needs* Include:

```
/usr/libexec/bsdconfig/common.subr
```

Your *Kitchen Sink* Include:

```
/usr/libexec/bsdconfig/script.subr
```



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## Developers: includes

*Other* includes in /usr/share/bsdconfig:

device.subr	- Device discovery/properties
dialog.subr	- dialog(1) API
keymap.subr	- keymap(5) subroutines
media/*.subr	- Media device mgmt (incl. TCP/IP)
mustberoot.subr	- Become root with proper authn/z
networking/*.subr	- Persistent network config
packages/*.subr	- Package management
password/*.subr	- Password management (e.g., root)
startup/*.subr	- Startup configuration
strings.subr	- String manipulation subroutines
struct.subr	- Store information in 'structures'
sysrc.subr	- Manage rc.conf(5)
timezone/*.subr	- ISO3166 and sundry TZ subroutines
usermgmt/*.subr	- Login/Group management
variable.subr	- 'Advertised' variables



## Developers: includes

Listing all includes:

```
find /usr/share/bsdconfig -name "*.subr"
```

Listing functions in one or more include(s):

```
grep "^# f_" FILE.subr
```

*functions beginning with 'f\_dialog-' use dialog(1)*

## Developers: includes

Example listing of functions:

```
$ grep "^# f_" /usr/share/bsdconfig/strings.subr
# f_substr "$string" $start [$length]
# f_snprintf $var_to_set $size $format [$arguments ...]
# f_sprintf $var_to_set $format [$arguments ...]
# f_vsnprintf $var_to_set $size $format $format_args
# f_vsprintf $var_to_set $format $format_args
# f_longest_line_length
# f_number_of_lines
# f_isinteger $arg
# f_uriencode [$text]
# f_uridecode [$text]
# f_replaceall $string $find $replace [$var_to_set]
# f_str2varname $string [$var_to_set]
# f_shell_escape $string [$var_to_set]
# f_shell_unescape $string [$var_to_set]
# f_expand_number $string [$var_to_set]
```



FreeBSD

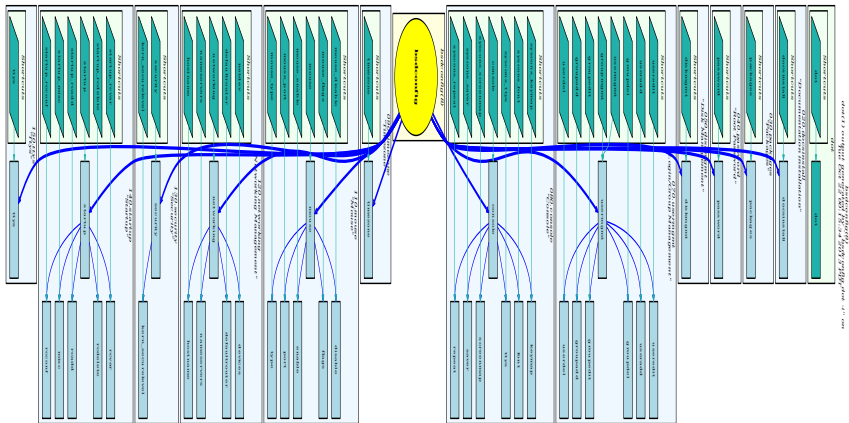
# Road Map

Developers: graphs



# Developers: graphs

Built-in 'dot' module (graphs realtime sprawl)



*'bsdconfig dot -h' for more info*



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## Developers: graphs

Many graphs generated and stored here (SVG):  
<http://druidbsd.sf.net/download/bsdconfig/>

2 important flags

---

'-i' disables includes | '-c' disables cmdline shortcuts

4 possible graphs

bsdconfig dot

bsdconfig dot -i

bsdconfig dot -c

bsdconfig dot -ic



FreeBSD

# Road Map

3rd-Party: ports



FreeBSD

## 3rd-Party: ports

Base modules go here:

```
/usr/libexec/bsdconfig
```

---

Ports modules go here:

```
/usr/local/libexec/bsdconfig
```

## 3rd-Party: ports

### Port Modules:

- ▶ Get installed/maintained from ports tree
- ▶ Get displayed in the bsdconfig main menu
- ▶ Get rendered in graph outputs ('dot' module)
- ▶ Keywords get listed in 'bsdconfig -h' output
- ▶ Can be programmed in any language



## 3rd-Party: ports

Some Ideas:

- ▶ Make a tool for automating \$WORK
- ▶ Make a menu listing your favorite games
- ▶ Package a configurator with your existing port
- ▶ Not limited to only dialog-based functionality
- ▶ Anything you'd like to have quick access to



FreeBSD

# Road Map

3rd-Party: X11

## 3rd-Party: X11

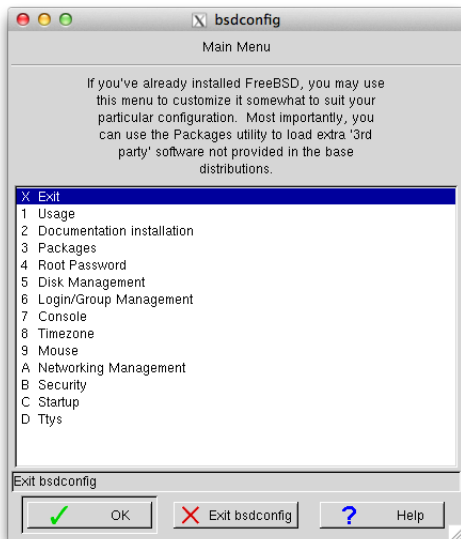
100% X11 compatible

*Requires x11/xdialog and x11/xauth*



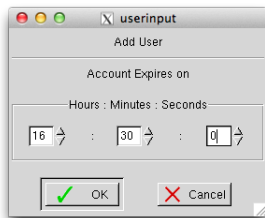
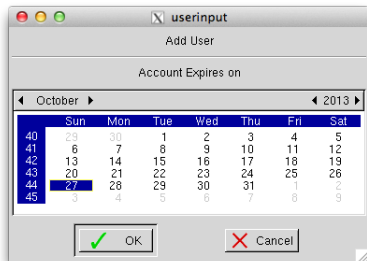
FreeBSD

## 3rd-Party: X11

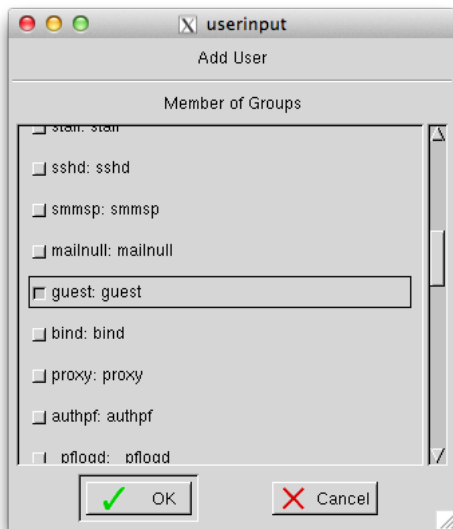


## 3rd-Party: X11

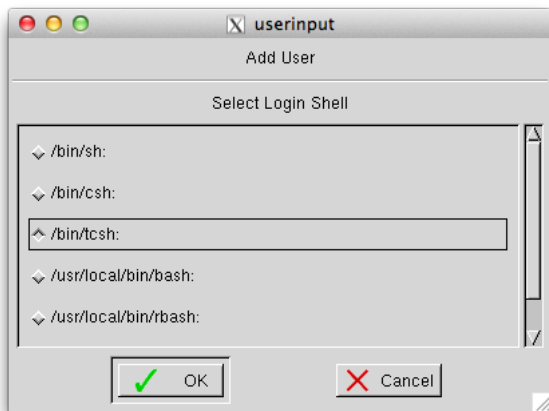
Adding a 'vbsdcon' account (expires Sunday @ 4:30):



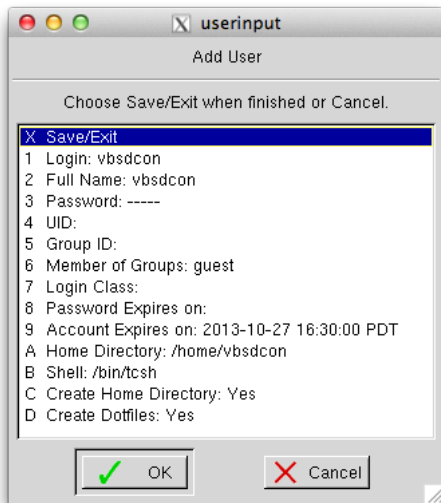
## 3rd-Party: X11



## 3rd-Party: X11



## 3rd-Party: X11





## 3rd-Party: X11

API Functions (dialog.subr)

# f\_dialog\_init

- Initializes the dialog system (reads "\$@")
- Called automatically unless DIALOG\_SELF\_INITIALIZE=NO
- Sets \$USE\_DIALOG versus \$USE\_XDIALOG
- Sets \$DIALOG to appropriate value (dialog or Xdialog)

**f\_dialog\_\*** functions automatically use X11 when enabled

**Enabled** when f\_dialog\_init finds '-X' in "\$@" or  
USE\_XDIALOG=1



# Road Map

3rd-Party: sudo

## 3rd-Party: sudo

**Seamless** transition from non-root → root  
*Requires security/sudo*

## 3rd-Party: sudo

`bsdconfig` runs as non-root

`modules` use the below to escalate *as-needed*

API Functions (mustberoot.subr)

# `f_become_root_via_sudo`

- Prompts for sudo password; cannot proceed unless valid
- If sudo likes you, [seamlessly] transitions to root

# `f_authenticate_some_user`

- [X11 only] Prompts for username/password; must be valid
- Requires already-running as root
- Designed for integration with Display Managers

# `f_mustberoot_init`

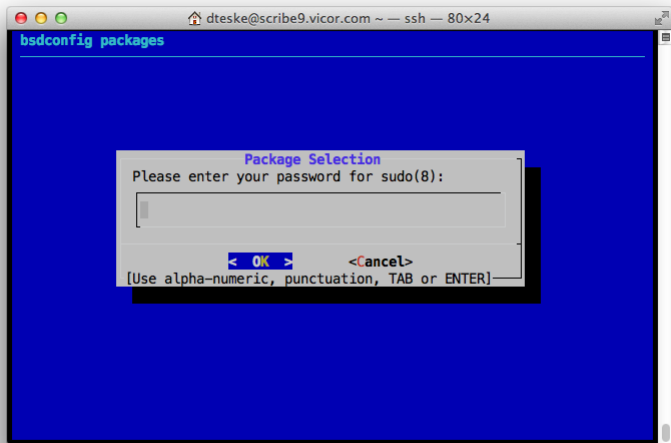
- If you're already root, simply exits (unless '-S')
- Chooses which above function use based on environment



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## 3rd-Party: sudo

*f\_become\_root\_via\_sudo* (mustberoot.subr)



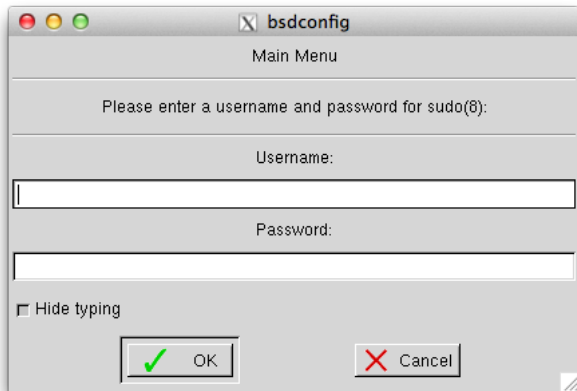
## 3rd-Party: sudo

*f\_become\_root\_via\_sudo* (X11 mode)



## 3rd-Party: sudo

*f\_authenticate\_some\_user* (X11 only)



## 3rd-Party: sudo

**Advanced Tip** Create custom `~/dialogrc` file

```
(as non-root)
```

```
$ dialog --create-rc ~/.dialogrc
```

```
# Edit ~/.dialogrc to set these new values
```

```
use_shadow = OFF
```

```
use_colors = ON
```

```
screen_color = (RED, BLACK, ON)
```

**Now** when becoming root, colors change back to defaults.

**Easily** tell when running as root vs. non-root.

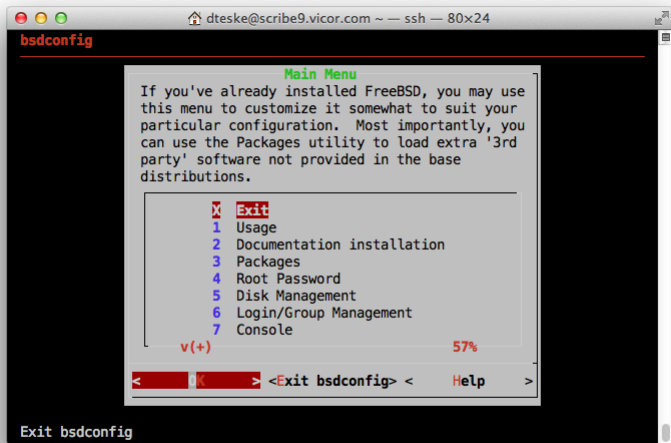


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## 3rd-Party: sudo

Running non-root with my custom ~/.dialogrc



The screenshot shows a terminal window titled "bsdconfig" with a window title bar indicating the user is "dteske@scribe9.vicor.com" in an "ssh" session. The main content is a "Main Menu" with a text introduction and a list of options. The "Exit" option is highlighted with a red box and a red 'X' to its left. At the bottom of the menu, there are navigation arrows and the text "<Exit bsdconfig> < Help >". Below the menu, the text "Exit bsdconfig" is visible in the terminal.

```
bsdconfig
Main Menu
If you've already installed FreeBSD, you may use
this menu to customize it somewhat to suit your
particular configuration. Most importantly, you
can use the Packages utility to load extra '3rd
party' software not provided in the base
distributions.

  X Exit
  1 Usage
  2 Documentation installation
  3 Packages
  4 Root Password
  5 Disk Management
  6 Login/Group Management
  7 Console

v(+) 57%

< [red box] > <Exit bsdconfig> < Help >

Exit bsdconfig
```

# Road Map

3rd-Party: compat



FreeBSD

## 3rd-Party: compat

Backward compatible; can load sysinstall *install.cfg* scripts

A few notes however:

- ▶ Treats sysinstall scripts as shell scripts
- ▶ Change multi-word assignments to be quoted (e.g. `foo=bar baz` → `foo="bar baz"`)
- ▶ sysinstall scripts cannot...
  - ▶ `set debug=1`
  - ▶ `unset nonInteractive` once it has been set
- ▶ ...while `bsdconfig` allows those things.

# Road Map

Availability



# Availability

- ▶ 9.2-RELEASE & 10.0-BETA1 (Everything we discussed)
- ▶ 10.0-BETA2 (Upcoming Enhancements)
- ▶ 10.0-RELEASE (shoud be nice!)

Thank you for your attention!  
*ask questions now*

Contact: [dteske@FreeBSD.org](mailto:dteske@FreeBSD.org)

