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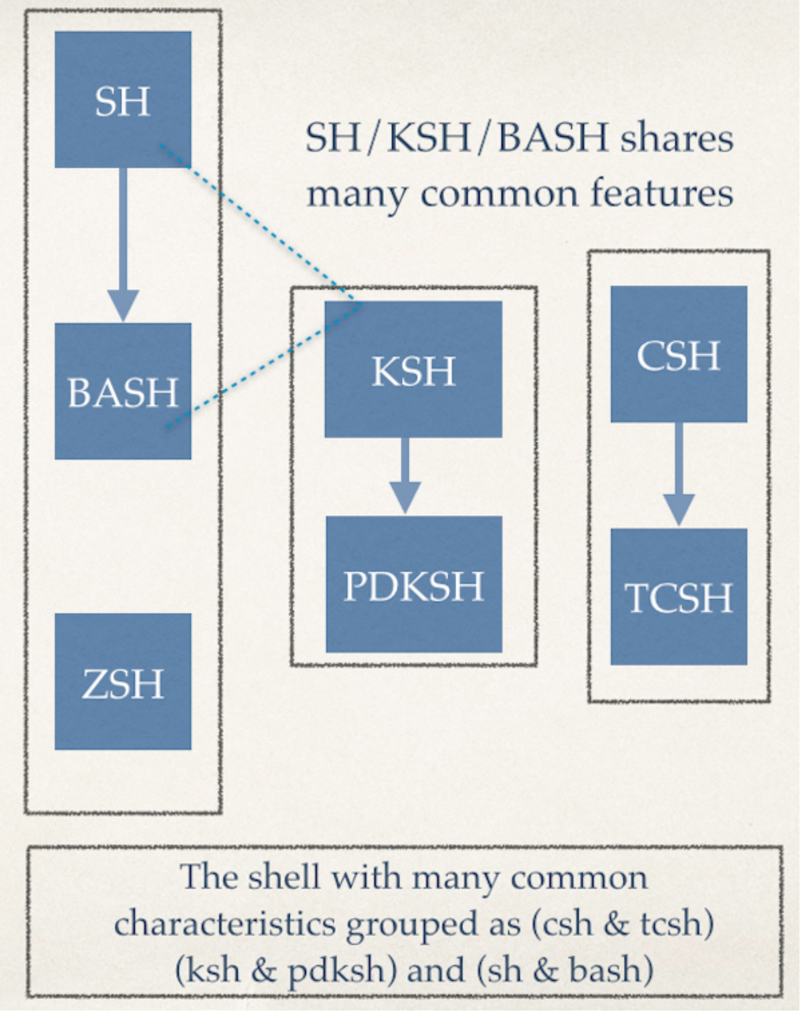
A Shell Primer: Master Your Linux, OS X, Unix Shell Environment

by nixCraft on January 23, 2015 · 2 Comments· LAST UPDATED January 25, 2015

in Command Line Hacks, Howto

On a Linux or Unix-like systems each user and process runs in a specific environment. An environment includes variables, settings, aliases, functions and more. Following is a very brief introduction to some useful shell environment commands, including examples of how to use each command and setup your own environment to increase productivity in the command prompt.


SH
BASH
ZSH
SH/KSH/BASH shares many common features
KSH
PDKSH
CSH
TCSH
The shell with many common characteristics grouped as (csh & tcsh) (ksh & pdksh) and (sh & bash)

Finding out your current shell

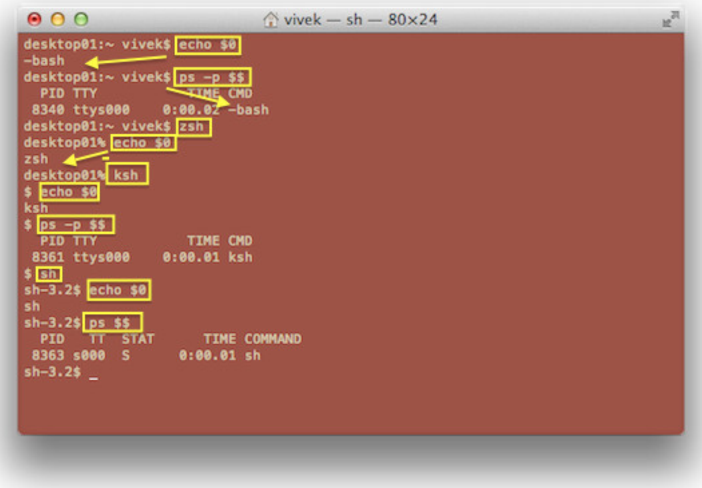
Type any one of the following command at the Terminal app:

```
ps $$
ps -p $$
```

OR

```
echo "$0"
```

Sample outputs:



```
desktop01:~ vivek$ echo $0
-bash
desktop01:~ vivek$ ps -p $$
  PID TTY           TIME CMD
 8340 ttys000    0:00.02 -bash
desktop01:~ vivek$ zsh
desktop01% echo $0
zsh
desktop01% ksh
$ echo $0
ksh
$ ps -p $$
  PID TTY           TIME CMD
 8361 ttys000    0:00.01 ksh
$ sh
sh-3.2$ echo $0
sh
sh-3.2$ ps $$
  PID   TT  STAT      TIME COMMAND
 8363 s000  S      0:00.01 sh
sh-3.2$ _
```

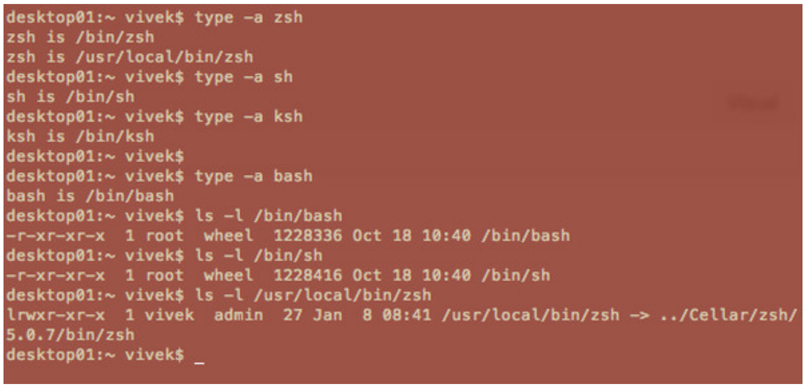
Fig.01: Finding out your shell name

Finding out installed shells

To find out the full path for installed shell type:

```
type -a zsh
type -a ksh
type -a sh
type -a bash
```

Sample outputs:



```
desktop01:~ vivek$ type -a zsh
zsh is /bin/zsh
zsh is /usr/local/bin/zsh
desktop01:~ vivek$ type -a sh
sh is /bin/sh
desktop01:~ vivek$ type -a ksh
ksh is /bin/ksh
desktop01:~ vivek$
desktop01:~ vivek$ type -a bash
bash is /bin/bash
desktop01:~ vivek$ ls -l /bin/bash
-r-xr-xr-x  1 root  wheel  1228336 Oct 18 10:40 /bin/bash
desktop01:~ vivek$ ls -l /bin/sh
-r-xr-xr-x  1 root  wheel  1228416 Oct 18 10:40 /bin/sh
desktop01:~ vivek$ ls -l /usr/local/bin/zsh
lrwxr-xr-x  1 vivek  admin  27 Jan  8 08:41 /usr/local/bin/zsh -> ../Cellar/zsh/
5.0.7/bin/zsh
desktop01:~ vivek$ _
```

Fig.02: Finding out your shell path

The `/etc/shells` file contains a list of the shells on the system. For each shell a single line should be present, consisting of the shell's path, relative to root. Type the following cat command to see shell database:

```
cat /etc/shells
```

Sample outputs:

```
# List of acceptable shells for chpass(1).
# Ftpd will not allow users to connect who are not using
# one of these shells.

/bin/bash
/bin/csh
/bin/ksh
/bin/sh
/bin/tcsh
/bin/zsh
/usr/local/bin/fish
```

Changing your current shell temporarily

Just type the shell name. In this example, I'm changing from bash to zsh:

```
zsh
```

You just changed your shell temporarily to zsh. Also known as subshell. To exit from subshell/temporary shell, type the following command or hit `CTRL-d`:

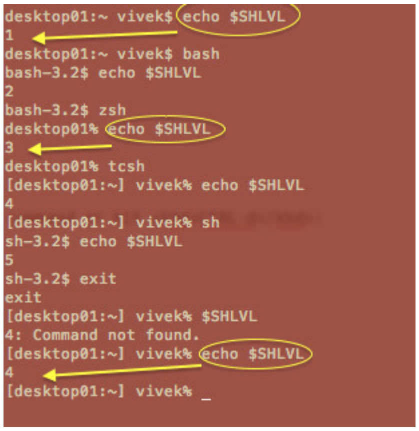
```
exit
```

Finding out subshell level/temporary shell nesting level

The `$SHLVL` incremented by one each time an instance of bash is started. Type the following command:

```
echo "$SHLVL"
```

Sample outputs:



```
desktop01:~ vivek$ echo $SHLVL
1
desktop01:~ vivek$ bash
bash-3.2$ echo $SHLVL
2
bash-3.2$ zsh
desktop01% echo $SHLVL
3
desktop01% tcsh
[desktop01:~] vivek% echo $SHLVL
4
[desktop01:~] vivek% sh
sh-3.2$ echo $SHLVL
5
sh-3.2$ exit
exit
[desktop01:~] vivek% $SHLVL
4: Command not found.
[desktop01:~] vivek% echo $SHLVL
4
[desktop01:~] vivek% _
```

Fig. 03: Bash shell nesting level (subshell numbers)

Changing your current shell permanently with `chsh` command

Want to change **your own shell** from bash to zsh permanently? Try:

```
chsh -s /bin/zsh
```

Want to **change the other user's shell** from bash to ksh permanently? Try:

```
sudo chsh -s /bin/ksh userNameHere
```

Finding out your current environment

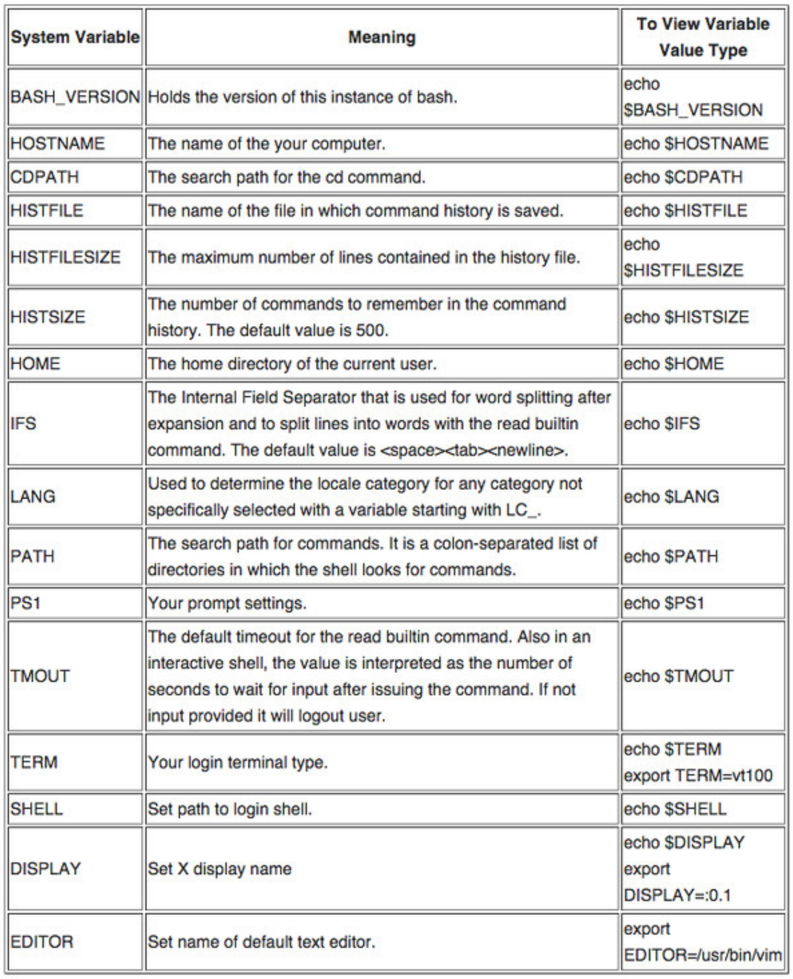
You need to use the

```
env
env | more
env | less
env | grep 'NAME'
```

Sample outputs:

```
TERM_PROGRAM=Apple_Terminal
SHELL=/bin/bash
TERM=xterm-256color
TMPDIR=/var/folders/6x/45252d6j1lqbtyy_xt62h40c0000gn/T/
Apple_PubSub_Socket_Render=/tmp/launch-djaOJg/Render
TERM_PROGRAM_VERSION=326
TERM_SESSION_ID=16F470E3-501C-498E-B315-D70E538DA825
USER=vivek
SSH_AUTH_SOCK=/tmp/launch-uQGJ2h/Listeners
__CF_USER_TEXT_ENCODING=0x1F5:0:0
PATH=/usr/bin:/bin:/usr/sbin:/sbin:/usr/local/bin:/opt/X11/bin:/usr/local/go/bin:/usr/local/sbin/modemZapp:/Users/vivek/google-cloud-sdk/bin
__CHECKFIX1436934=1
PWD=/Users/vivek
SHLVL=2
HOME=/Users/vivek
LOGNAME=vivek
LC_CTYPE=UTF-8
DISPLAY=/tmp/launch-6hNAhh/org.macosforge.xquartz:0
_=/usr/bin/env
OLDPWD=/Users/vivek
```

Here is a table of commonly used bash shell variables:



System Variable	Meaning	To View Variable Value Type
BASH_VERSION	Holds the version of this instance of bash.	echo $BASH_VERSION
HOSTNAME	The name of the your computer.	echo $HOSTNAME
CDPATH	The search path for the cd command.	echo $CDPATH
HISTFILE	The name of the file in which command history is saved.	echo $HISTFILE
HISTFILESIZE	The maximum number of lines contained in the history file.	echo $HISTFILESIZE
HISTSIZE	The number of commands to remember in the command history. The default value is 500.	echo $HISTSIZE
HOME	The home directory of the current user.	echo $HOME
IFS	The Internal Field Separator that is used for word splitting after expansion and to split lines into words with the read builtin command. The default value is <space><tab><newline>.	echo $IFS
LANG	Used to determine the locale category for any category not specifically selected with a variable starting with LC_.	echo $LANG
PATH	The search path for commands. It is a colon-separated list of directories in which the shell looks for commands.	echo $PATH
PS1	Your prompt settings.	echo $PS1
TMOUT	The default timeout for the read builtin command. Also in an interactive shell, the value is interpreted as the number of seconds to wait for input after issuing the command. If not input provided it will logout user.	echo $TMOUT
TERM	Your login terminal type.	echo $TERM export TERM=vt100
SHELL	Set path to login shell.	echo $SHELL
DISPLAY	Set X display name	echo $DISPLAY export DISPLAY=:0.1
EDITOR	Set name of default text editor.	export EDITOR=/usr/bin/vim

Fig.04: Common bash environment variables

Warning: It is always a good idea not to change the following environment variables. Some can be changed and may results into unstable session for you:

```
SHELL
UID
RANDOM
PWD
PPID
SSH_AUTH_SOCK
USER
HOME
LINENO
```

Displays the values of environment variables

Use any one of the following command to show the values of environment variable called HOME:

```
## Use printenv ##
printenv HOME

## or use echo ##
echo "$HOME"

# or use printf for portability ##
printf "%s\n" "$HOME"
```

Sample outputs:

```
/home/vivek
```

Adding or setting a new variables

The syntax is as follows in bash or zsh or sh or ksh shell:

```
## The syntax is ##
VAR=value
FOO=bar

## Set the default editor to vim ##
EDITOR=vim
export $EDITOR
```

```
## Set default shell timeout for security ##
TMOUT=300
export TMOUT

## You can directly use export command to set the search path for commands ##
export PATH=$PATH:$HOME/bin:/usr/local/bin:/path/to/mycoolapps
```

Again, use the `printenv` or `echo` or `printf` command to see the values of environment variables called PATH, EDITOR, and TMOUT:

```
printenv PATH
echo "$EDITOR"
printf "%s\n" $TMOUT
```

How do I change an existing environment variables?

The syntax is as follows:

```
export VAR=value
## OR ##
VAR=value
export $VAR

## Change the default editor from vim to emacs ##
echo "$EDITOR" ## <--- print vim
EDITOR=emacs   ## <--- change it
export $EDITOR ## <--- export it for next session too
echo "$EDITOR" ## <--- print emacs
```

The syntax is as follows for the **tcsh shell for adding or changing a variables**:

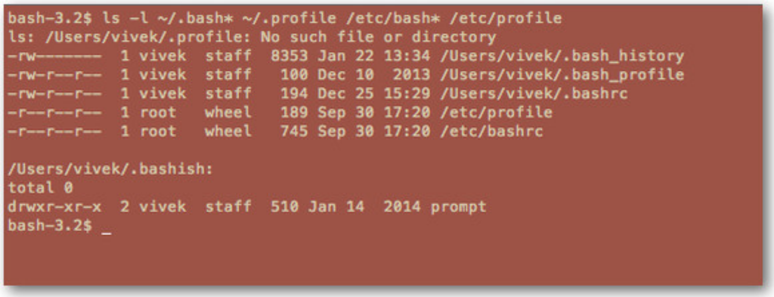
```
## Syntax
setenv var value
printenv var

## Set foo variable with bar as a value ##
setenv foo bar
echo "$foo"
printenv foo

## Set PATH variable ##
setenv PATH $PATH\:$HOME/bin
echo "$PATH"

## set PAGER variable ##
setenv PAGER most
printf "%s\n" $PAGER
```

Finding your bash shell configuration files

Type the following command to list your bash shell files, enter:

```
ls -l ~/.bash* ~/.profile /etc/bash* /etc/profile
```

Sample output:



```
bash-3.2$ ls -l ~/.bash* ~/.profile /etc/bash* /etc/profile
ls: /Users/vivek/.profile: No such file or directory
-rw-------  1 vivek  staff  8353 Jan 22 13:34 /Users/vivek/.bash_history
-rw-r--r--  1 vivek  staff   100 Dec 10  2013 /Users/vivek/.bash_profile
-rw-r--r--  1 vivek  staff   194 Dec 25 15:29 /Users/vivek/.bashrc
-r--r--r--  1 root   wheel   189 Sep 30 17:20 /etc/profile
-r--r--r--  1 root   wheel   745 Sep 30 17:20 /etc/bashrc

/Users/vivek/.bashish:
total 0
drwxr-xr-x  2 vivek  staff  510 Jan 14  2014 prompt
bash-3.2$ _
```

Fig.05: List all bash environment configuration files

To look at all your bash config files, enter:

```
less ~/.bash* ~/.profile /etc/bash* /etc/profile
```

You can edit bash config files one by one using the text editor such as vim or emacs:

```
vim ~/.bashrc
```

To edit files located in /etc/, type:

```
## first make a backup.. just in case
sudo cp -v /etc/bashrc /etc/bashrc.bak.22_jan_15
```

```
########################################################################
## Alright, edit it to your hearts content and by all means, have fun ##
## with your environment or just increase the productivity :)         ##
########################################################################
sudo vim /etc/bashrc
```

Confused by Bash shell Initialization files?

The following "bash file initialization" graph will help you:

Depending on which shell is set up as your default, your user profile or system profile can be one of the following:

Finding your zsh shell configuration files

The zsh wiki recommend the following command:

```
strings =zsh | grep zshrc
```

Sample outputs:

```
/etc/zshrc
.zshrc
```

Type the following command to list your zsh shell files, enter:

```
ls -l /etc/zsh/* /etc/profile ~/.z*
```

To look at all your zsh config files, enter:

```
less /etc/zsh/* /etc/profile ~/.z*
```

Finding your ksh shell configuration files

1. See `~/.profile` or `/etc/profile` file.

Finding your tcsh shell configuration files

1. See `~/.login`, `~/.cshrc` for the C shell.
2. See `~/.tcshrc` and `~/.cshrc` for the TC shell.

Can I have a script like this execute automatically every time I login?

Yes, add your commands or aliases or other settings to `~/.bashrc` (bash shell) or `~/.profile` (sh/ksh/bash) or `~/.login` (csh/tcsh) file.

Can I have a script like this execute automatically every time I logout?

Yes, add your commands or aliases or other settings to `~/.bash_logout` (bash) or `~/.logout` (csh/tcsh) file.

History: Getting more info about your shell session

Just type the history command to see session history:

```
history
```

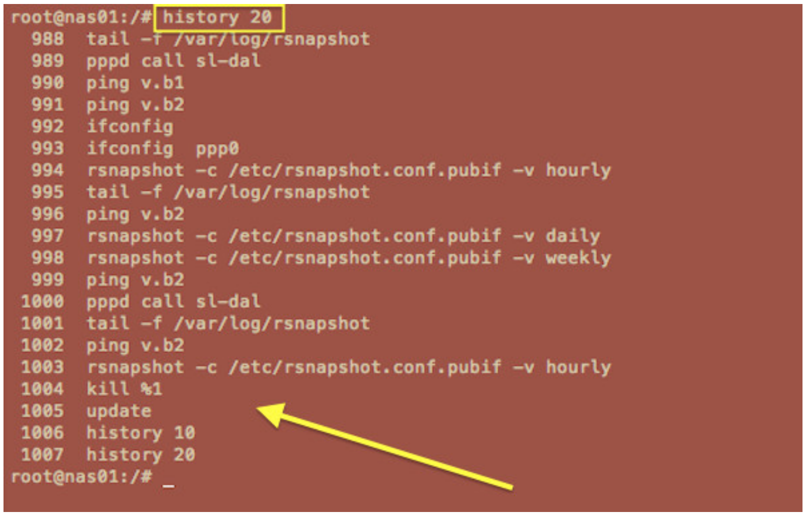
Sample outputs:

```
    9  ls
   10  vi advanced-cache.php
   11  cd ..
   12  ls
   13  w
   14  cd ..
   15  ls
   16  pwd
   17  ls
   ....
   ..
   ...
   91  hddtemp /dev/sda
   92  yum install hddtemp
   93  hddtemp /dev/sda
   94  hddtemp /dev/sg0
   95  hddtemp /dev/sg1
   96  smartctl -d ata -A /dev/sda | grep -i temperature
   97  smartctl -d ata -A /dev/sg1 | grep -i temperature
   98  smartctl  -A /dev/sg1 | grep -i temperature
   99  sensors
```

Type `history 20` to see the last 20 commands from your history:

```
history 20
```

Sample outputs:



```
root@nas01:/# history 20
  988  tail -f /var/log/rsnapshot
  989  pppd call sl-dal
  990  ping v.b1
  991  ping v.b2
  992  ifconfig
  993  ifconfig  ppp0
  994  rsnapshot -c /etc/rsnapshot.conf.pubif -v hourly
  995  tail -f /var/log/rsnapshot
  996  ping v.b2
  997  rsnapshot -c /etc/rsnapshot.conf.pubif -v daily
  998  rsnapshot -c /etc/rsnapshot.conf.pubif -v weekly
  999  ping v.b2
 1000  pppd call sl-dal
 1001  tail -f /var/log/rsnapshot
 1002  ping v.b2
 1003  rsnapshot -c /etc/rsnapshot.conf.pubif -v hourly
 1004  kill %1
 1005  update
 1006  history 10
 1007  history 20
root@nas01:/# _
```

Fig.06: View session history in the bash shell using history command

You can reuses commands. Simply hit `[Up]` and `[Down]` arrow keys to see previous commands. Press `[CTRL-r]` from the shell prompt to search backwards through history buffer or file for a command. To repeat last command just type `!!` at a shell prompt:

```
ls -l /foo/bar
!!
```

To see command #93 (`hddtemp /dev/sda`)from above history session, type:

```
!93
```

Changing your identity with sudo or su

The syntax is as follows:

```
su userName

## To log in as a tom user ##
su tom

## To start a new login shell for tom user ##
su tom

## To login as root user ##
su -

## The sudo command syntax (must be configured on your system) ##
```

```
sudo -s
sudo tom
```

See "Linux Run Command As Another User" post for more on sudo, su and runuser commands.

Shell aliases

An alias is nothing but shortcut to commands.

Listing aliases

Type the following command:

```
alias
```

Sample outputs:

```
alias ..='cd ..'
alias ...='cd ../../../'
alias ....='cd ../../../../'
alias .....='cd ../../../../'
alias .4='cd ../../../../'
alias .5='cd ../../../../..'
alias bc='bc -l'
alias cd..='cd ..'
alias chgrp='chgrp --preserve-root'
alias chmod='chmod --preserve-root'
alias chown='chown --preserve-root'
alias cp='cp -i'
alias dnstop='dnstop -l 5 eth1'
alias egrep='egrep --color=auto'
alias ethtool='ethtool eth1'
```

Create an alias

The bash/zsh syntax is:

```
alias c='clear'
alias down='sudo /sbin/shutdown -h now'
```

Type c alias for the system command clear, so we can type c instead of clear command to clear the screen:

```
c
```

Or type down to shutdown the Linux based server:

```
down
```

You can create as many aliases you want. See "30 Handy Bash Shell Aliases For Linux / Unix / Mac OS X" for practical usage of aliases on Unix-like system.

Shell functions

Bash/ksh/zsh functions allows you further customization of your environment. In this example, I'm creating a simple bash function called memcpu() to display top 10 cpu and memory eating process:

```
memcpu() { echo "*** Top 10 cpu eating process ***"; ps auxf | sort -nr -k 3 | head -10;
echo  "*** Top 10 memory eating process ***"; ps auxf | sort -nr -k 4 | head -10;  }
```

Just type memcpu to see the info on screen:

```
memcpu

*** Top 10 cpu eating process ***
nginx    39559 13.0  0.2 264020 35168 ?        S    04:26   0:00      \_ /usr/bin/php-cgi
nginx    39545  6.6  0.1 216484 13088 ?        S    04:25   0:04      \_ /usr/bin/php-cgi
nginx    39471  6.2  0.6 273352 81704 ?        S    04:22   0:17      \_ /usr/bin/php-cgi
nginx    39544  5.7  0.1 216484 13084 ?        S    04:25   0:03      \_ /usr/bin/php-cgi
nginx    39540  5.5  0.1 221260 19296 ?        S    04:25   0:04      \_ /usr/bin/php-cgi
nginx    39542  5.4  0.1 216484 13152 ?        S    04:25   0:04      \_ /usr/bin/php-cgi
nixcraft 39543  5.3  0.1 216484 14096 ?        S    04:25   0:04      \_ /usr/bin/php-cgi
nixcraft 39538  5.2  0.1 221248 18608 ?        S    04:25   0:04      \_ /usr/bin/php-cgi
nixcraft 39539  5.0  0.1 216484 16272 ?        S    04:25   0:04      \_ /usr/bin/php-cgi
nixcraft 39541  4.8  0.1 216484 14860 ?        S    04:25   0:04      \_ /usr/bin/php-cgi

*** Top 10 memory eating process ***
498      63859  0.5  4.0 2429652 488084 ?      Ssl   2014 177:41 memcached -d -p 11211 -u memcached -m 2048 -c 18288 -P /var/run/memcached/me
mysql    64221  4.2  3.4 4653600 419868 ?      Sl    2014 1360:40  \_ /usr/libexec/mysqld --basedir=/usr --datadir=/var/lib/mysql --user=mys
nixcraft 39418  0.4  1.1 295312 138624 ?       S    04:17   0:02  |   \_ /usr/bin/php-cgi
nixcraft 39419  0.5  0.9 290284 113036 ?       S    04:18   0:02  |   \_ /usr/bin/php-cgi
nixcraft 39464  0.7  0.8 294356 99200 ?        S    04:20   0:02  |   \_ /usr/bin/php-cgi
nixcraft 39469  0.3  0.7 288400 91256 ?        S    04:20   0:01  |   \_ /usr/bin/php-cgi
nixcraft 39471  6.2  0.6 273352 81704 ?        S    04:22   0:17      \_ /usr/bin/php-cgi
vivek    39261  2.2  0.6 253172 82812 ?        S    04:05   0:28      \_ /usr/bin/php-cgi
squid     9995  0.0  0.5 175152 72396 ?        S     2014  27:00  \_ (squid) -f /etc/squid/squid.conf
```

```
cybercit  3922  0.0  0.4 303380 56304 ?        S    Jan10   0:13  |   \_ /usr/bin/php-cgi
```

See "how to write and use shell functions" for more information.

Putting it all together: Customizing your Linux or Unix bash shell working environment

Now, you are ready to configure your environment using bash shell. I'm only covering bash. But the theory remains same from zsh, ksh and other common shells. Let us see how to adopt shell to my need as a sysadmin. Edit your ~/.bashrc file and append settings. Here are some useful configuration options for you.

#1: Setting up bash path and environment variables

```
# Set path ##
export PATH=$PATH:/usr/local/bin:/home/vivek/bin:/opt/firefox/bin:/opt/oraapp/bin

# Also set path for cd command
export CDPATH=.:$HOME:/var/www
```

Use less or most command as a pager:

```
export PAGER=less
```

Set vim as default text editor for us:

```
export EDITOR=vim
export VISUAL=vim
export SVN_EDITOR="$VISUAL"
```

Set Oracle database specific stuff:

```
export ORACLE_HOME=/usr/lib/oracle/xe/app/oracle/product/10.2.0/server
export ORACLE_SID=XE
export NLS_LANG=$($ORACLE_HOME/bin/nls_lang.sh)
```

Set JAVA_HOME and other paths for java as per java version:

```
export JAVA_HOME=/usr/lib/jvm/java-6-sun/jre

# Add ORACLE, JAVA to PATH
export PATH=$PATH:$ORACLE_HOME/bin:$JAVA_HOME/bin
```

Secure my remote SSH login using keychain for password less login:

```
# No need to input password again ever
/usr/bin/keychain $HOME/.ssh/id_rsa
source $HOME/.keychain/$HOSTNAME-sh
```

Finally, turn on bash command completion

```
source /etc/bash_completio
```

#2: Setting up bash command prompt

Set custom bash prompt (PS1):

```
PS1='{\u@\h:\w }\$ '
```

#3: Setting default file permissions

```
## Set default to 644 ##
umask 022
```

#4: Control your shell history settings

```
# Dont put duplicate lines in the history
HISTCONTROL=ignoreboth

# Ignore these commands
HISTIGNORE="reboot:shutdown *:ls:pwd:exit:mount:man *:history"

# Set history length via HISTSIZE and HISTFILESIZE
export HISTSIZE=10000
export HISTFILESIZE=10000

# Add timestamp to history file.
export HISTTIMEFORMAT="%F %T "

#Append to history, don't overwrite
shopt -s histappend
```

#5: Set the time zone for your session

```
## set to IST for my own session ##
TZ=Asia/Kolkata
```

#6: Setting up shell line editing interface

```
## use a vi-style line editing interface for bash from default emacs mode ##
set -o vi
```

#7: Setting up your favorite aliases

```
## add protection ##
alias rm='rm -i'
alias cp='cp -i'
alias mv='mv -i'

## Memcached ##
alias mcdstats='/usr/bin/memcached-tool 10.10.29.68:11211 stats'
alias mcdshow='/usr/bin/memcached-tool 10.10.29.68:11211 display'
alias mcdflush='echo "flush_all" | nc 10.10.29.68 11211'

## Default command options ##
alias vi='vim'
alias grep='grep --color=auto'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias bc='bc -l'
alias wget='wget -c'
alias chown='chown --preserve-root'
alias chmod='chmod --preserve-root'
alias chgrp='chgrp --preserve-root'
alias rm='rm -I --preserve-root'
alias ln='ln -i'
```

Here are some additional OS X Unix bash shell aliases:

```
# Open desktop apps from bash
alias preview="open -a '$PREVIEW'"
alias safari="open -a safari"
alias firefox="open -a firefox"
alias chrome="open -a google\ chrome"
alias f='open -a Finder '

# Get rid of those .DS_Store files
alias dsclean='find . -type f -name .DS_Store -delete'
```

#8: Colour my world

```
# Get colored grep output
alias grep='grep --color=auto'
export GREP_COLOR='1;33'

# colored ls too
export LSCOLORS='Gxfxcxdxdxegedabagacad'
# Gnu/linux ls
ls='ls --color=auto'

# BSD/os x ls command
# alias ls='ls -G'
```

#9: Setting up your favorite bash functions

```
# Show top 10 history command on screen
function ht {
  history | awk '{a[$2]++}END{for(i in a){print a[i] " " i}}' | sort -rn | head
}

# Wrapper for host and ping command
# Accept http:// or https:// or ftps:// names for domain and hostnames
_getdomainnameonly(){
        local h="$1"
        local f="${h,,}"
        # remove protocol part of hostname
        f="${f#http://}"
        f="${f#https://}"
        f="${f#ftp://}"
        f="${f#scp://}"
        f="${f#scp://}"
        f="${f#sftp://}"
        # remove username and/or username:password part of hostname
        f="${f#*:*@}"
        f="${f#*@}"
        # remove all /foo/xyz.html*
        f=${f%%/*}
        # show domain name only
        echo "$f"
}


ping(){
        local array=( $@ )              # get all args in an array
        local len=${#array[@]}          # find the length of an array
        local host=${array[$len-1]}     # get the last arg
        local args=${array[@]:0:$len-1} # get all args before the last arg in $@ in an array
        local _ping="/bin/ping"
        local c=$(_getdomainnameonly "$host")
        [ "$t" != "$c" ] && echo "Sending ICMP ECHO_REQUEST to \"$c\"..."
        # pass args and host
        $_ping $args $c
}

host(){
        local array=( $@ )
        local len=${#array[@]}
        local host=${array[$len-1]}
        local args=${array[@]:0:$len-1}
        local _host="/usr/bin/host"
        local c=$(_getdomainnameonly "$host")
        [ "$t" != "$c" ] && echo "Performing DNS lookups for \"$c\"..."
        $_host $args $c
}
```

#10: Configure bash shell behavior via shell shopt options command

Finally, you can make changes to your bash shell environment using set and shopt commands:

```
# Correct dir spellings
shopt -q -s cdspell

# Make sure display get updated when terminal window get resized
shopt -q -s checkwinsize

# Turn on the extended pattern matching features
shopt -q -s extglob

# Append rather than overwrite history on exit
shopt -s histappend

# Make multi-line commandsline in history
shopt -q -s cmdhist

# Get immediate notification of background job termination
set -o notify

# Disable [CTRL-D] which is used to exit the shell
set -o ignoreeof
```

Conclusion

This post is by no means comprehensive. It provided a short walkthrough of how to customize your enviorment. For a thorough look at bash/ksh/zsh/csh/tcsh capabilities, I suggest you read the man page by typing the following command:

```
man bash
man zsh
man tcsh
man ksh
```

> This article was contributed by Aadrika T. J.; Editing and additional content added by admin. You can too contribute to nixCraft.

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#10 does not configure bash shell behavior via variables; it configures it with shopt, which sets shell options not variables.

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Thanks for the heads up!

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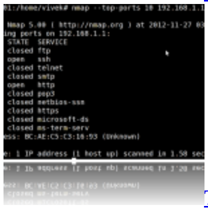
  - 
```
01:/home/vivek# nmap --top-ports 10 192.168.1.1
 Nmap 5.00 ( http://nmap.org ) at 2012-11-27 03
ing ports on 192.168.1.1:
 STATE  SERVICE
 closed ftp
 open   ssh
 closed telnet
 closed smtp
 open   http
 closed pop3
 closed netbios-ssn
 closed https
 closed microsoft-ds
 closed ms-term-serv
ess: BC:AE:C5:C3:10:93 (Unknown)

e: 1 IP address (1 host up) scanned in 1.58 sec
```
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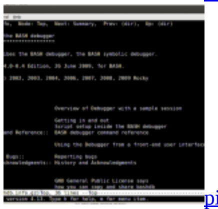
  - pinfo: Read Linux Info Documentation in Colors
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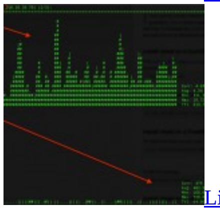
  - Linux and Unix nload App: Monitor Network Traffic and Bandwidth Usage In Real Time
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