

Command Line Fun

Environment Variables

echo \$PATH

```
kali@kali:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr
/sbin:/usr/bin:/sbin:/bin
```

Listing 1 - Using echo to display the PATH environment variable

export b=10.11.1.220

ping -c 2 \$b

```
kali@kali:~$ export b=10.11.1.220

kali@kali:~$ ping -c 2 $b
PING 10.11.1.220 (10.11.1.220)
56(84) bytes of data.
64 bytes from 10.11.1.220:
icmp_seq=1 ttl=62 time=2.23 ms
64 bytes from 10.11.1.220:
icmp_seq=2 ttl=62 time=1.56 ms

--- 10.11.1.220 ping statistics ---
2 packets transmitted, 2 received,
0% packet loss, time 1002ms
rtt min/avg/max/mdev = 1.563/1.900
/2.238/0.340 ms
```

Listing 3 - Using export to declare an environment variable

There are many other environment variables defined by default in Kali Linux. We can view these by running `env` at the command line:

```

(togo@kali)~$ cat .ICE-unix
env
COLORFGBG=15;0
COLORTERM=truecolor
COMMAND_NOT_FOUND_INSTALL_PROMPT=1
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
DESKTOP_SESSION=lightdm-xsession
DISPLAY=:0.0
DOTNET_CLI_TELEMETRY_OPTOUT=1
GDMSESSION=lightdm-xsession
GTK_MODULES=gail:atk-bridge
HOME=/home/togo
LANG=en_US.UTF-8
LANGUAGE=
LOGNAME=togo
PANEL_GDK_CORE_DEVICE_EVENTS=0
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/local/games:/usr/games
POWERSHELL_TELEMETRY_OPTOUT=1
POWERSHELL_UPDATECHECK=Off
PWD=/home/togo
QT_ACCESSIBILITY=1
QT_AUTO_SCREEN_SCALE_FACTOR=0
QT_QPA_PLATFORMTHEME=qt5ct
SESSION_MANAGER=local/kali:@/tmp/.ICE-unix/777,unix/kali:/tmp/.ICE-unix/777
SHELL=/usr/bin/zsh
SSH_AGENT_PID=867
SSH_AUTH_SOCK=/tmp/ssh-XXXXXXnDI77u/agent.777
TERM=xterm-256color
USER=togo
WINDOWID=0
XAUTHORITY=/home/togo/.Xauthority
XDG_CONFIG_DIRS=/etc/xdg
XDG_CURRENT_DESKTOP=XFCE
XDG_DATA_DIRS=/usr/share/xfce4:/usr/local/share/:/usr/share:/usr/share
XDG_GREETER_DATA_DIR=/var/lib/lightdm/data/togo
XDG_MENU_PREFIX=xfce-
XDG_RUNTIME_DIR=/run/user/1000
XDG_SEAT=seat0
XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0
XDG_SESSION_CLASS=user
XDG_SESSION_DESKTOP=lightdm-xsession
XDG_SESSION_ID=4
XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0
XDG_SESSION_TYPE=x11
XDG_VTNR=7
_XJAVA_OPTIONS=-Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
SHLV=1
OLDPWD=/home/togo
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33:01:cd=40;33:01:or=40;31:01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tzst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wim=01;31:*.swm=01;31:*.dwm=01;31:*.esd=01;31:*.jpg=01;35:*.jpeg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.webp=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36::ow=30;44:
LESS_TERMCAP_mb=
LESS_TERMCAP_md=
LESS_TERMCAP_me=
LESS_TERMCAP_so=
LESS_TERMCAP_se=
LESS_TERMCAP_us=
LESS_TERMCAP_ue=
_=/usr/bin/env

```

Bash History

While working on a penetration test, it's important to keep a record of commands that have been entered into the shell. Fortunately, Bash maintains a history of commands that have been entered, which can be displayed with the `history` command.[1](#)

Holding down C and pressing r will invoke the *reverse-i-search* facility. Type a letter, for example, c, and you will get a match for the most recent command in your history that contains the letter "c". Keep typing to narrow down your match and when you find the desired command, press I to execute it.

```
kali@kali:~$ [CTRL-R]c  
(reverse-i-search)`ca': cat  
/etc/lsb-release
```

Listing 10 - Exploring the reverse-i-search facility

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