



Bash get exit code of command on a Linux / Unix

last updated December 4, 2018 in [BASH Shell](#), [Linux](#), [UNIX](#)

I am a new Linux system user. How do I get the exit code of a command?
How do I get the exit code or status of Linux or Unix shell command and store it into a shell variable?



Introduction – Each Linux or Unix shell command returns a status when it terminates normally or abnormally. For example, if backup.sh script is unsuccessful, and it returns a code which tells the shell script to send an e-mail to sysadmin.



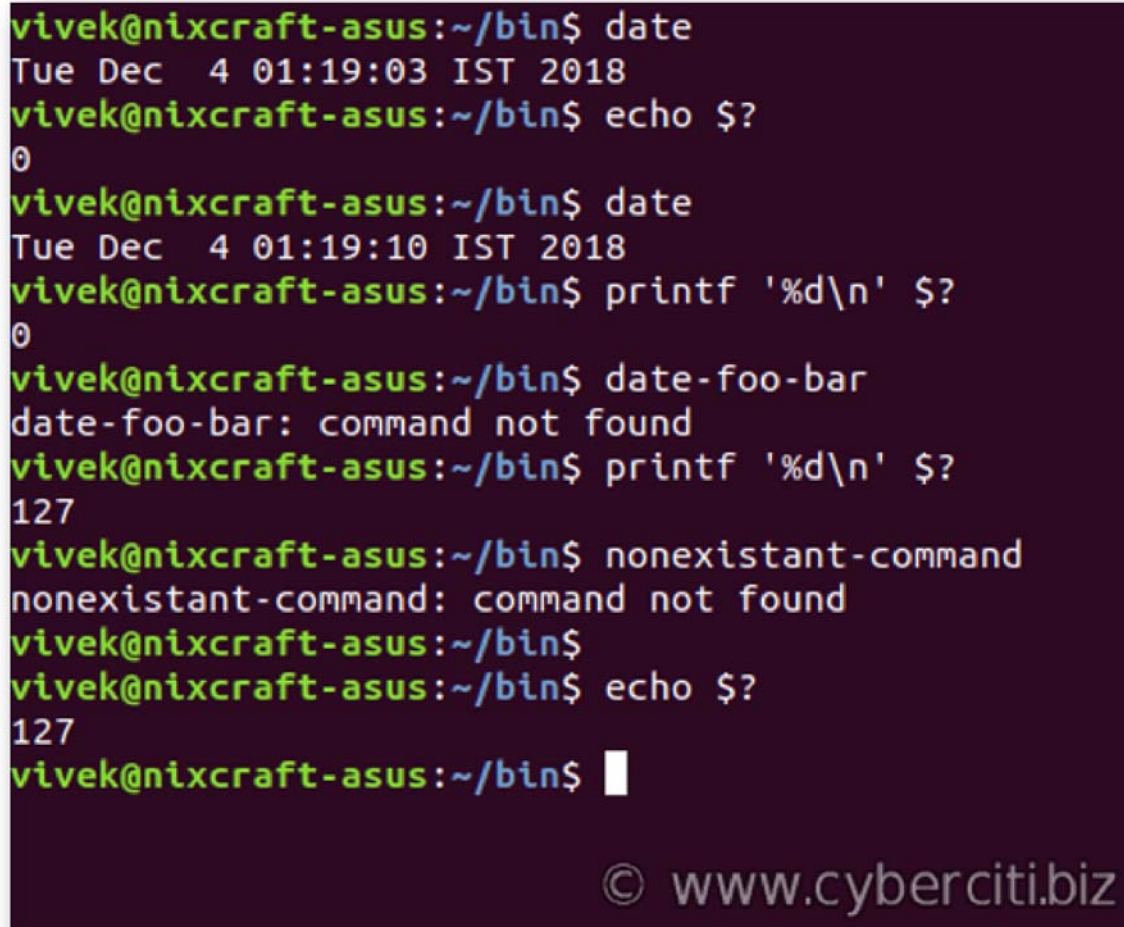
What is an exit code in bash shell?

Every Linux or Unix command executed by the shell script or user has an exit status. Exit status is an integer number. 0 exit status means the command was successful without any errors. A non-zero (1-255 values) exit status means command was a failure.

How to find out the exit code of a command

You need to use a particular shell variable called `$?` to get the exit status of the previously executed command. To print `$?` variable use the `echo` command or `printf` command:

```
date
echo $?
date-foo-bar
printf '%d\n' $?
```

A terminal window with a dark purple background and green text. It shows a series of commands and their outputs, including the exit status of each command. The commands are: 'date', 'echo \$?', 'date', 'printf '%d\n' \$?', 'date-foo-bar', 'printf '%d\n' \$?', 'nonexistant-command', and 'echo \$?'. The outputs show the date, the exit code 0 for successful commands, and the error message 'command not found' for the non-existent command. The exit code 127 is shown for the non-existent command. A watermark '© www.cyberciti.biz' is visible in the bottom right corner.

```
vivek@nixcraft-asus:~/bin$ date
Tue Dec  4 01:19:03 IST 2018
vivek@nixcraft-asus:~/bin$ echo $?
0
vivek@nixcraft-asus:~/bin$ date
Tue Dec  4 01:19:10 IST 2018
vivek@nixcraft-asus:~/bin$ printf '%d\n' $?
0
vivek@nixcraft-asus:~/bin$ date-foo-bar
date-foo-bar: command not found
vivek@nixcraft-asus:~/bin$ printf '%d\n' $?
127
vivek@nixcraft-asus:~/bin$ nonexistent-command
nonexistent-command: command not found
vivek@nixcraft-asus:~/bin$
vivek@nixcraft-asus:~/bin$ echo $?
127
vivek@nixcraft-asus:~/bin$
```

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How to get the exit code of a command such as date and date-foo-bar

From the above outputs, it is clear that the exit code is 0 indicates that date command was successful. Further, the exit code is 127 (non-zero) as the nonexistent-command was not successful.

Bash get exit code of command – How to use exit codes in shell scripts

So how do you store exit status of the command in a shell variable? Simply assign \$? to a shell variable. The syntax is:

```
command
status=$?
## run date command ##
cmd="date"
$cmd
## get status ##
status=$?
## take some decision ##
[ $status -eq 0 ] && echo "$cmd command was successful" || echo "$cmd failed"
```

How do I set an exit code for my own shell scripts?

The exit command cause normal shell script termination. It exits the shell with a status of N. The syntax is:

```
exit N
exit 1
exit 999
```

For example:

```
#!/bin/bash
/path/to/some/command
[ $? -eq 0 ] || exit 1
```

A sample shell script to get the exit code of a command

```
#!/bin/bash
#
# Sample shell script to demo exit code usage #
#
set -e

## find ip in the file ##
grep -q 192.168.2.254 /etc/resolv.conf

## Did we found IP address? Use exit status of the grep command ##
if [ $? -eq 0 ]
then
    echo "Success: I found IP address in file."
    exit 0
else
    echo "Failure: I did not found IP address in file. Script failed" >&2
    exit 1
fi
```

How to deal with the exit codes of all piped commands

See "[Bash Find out the exit codes of all piped commands](#)" for more info.

Conclusion

This page showed how to use exit codes on Linux or Unix based system and how to get the exit status/code of command. For more info see:

- [The exit status of a command](#)
- [Bourne Shell Exit Status Examples](#)
- GNU/bash man page online [here](#)

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The author is the creator of nixCraft and a seasoned sysadmin, DevOps engineer, and a trainer for the Linux operating system/Unix shell scripting. Get the **latest tutorials on SysAdmin, Linux/Unix and open source topics** via [RSS/XML feed](#) or [weekly email newsletter](#).

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