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Apr 3, 2019 · 3 min read · Member-only · Listen

100 Days of DevOps — Day 52-Conditional Testing in Shell

Welcome to Day 52 of 100 Days of DevOps, Focus for today is Conditional Testing in Bash.

Today I am going to discuss test command

```
test - check file types and compare values
```

- *In your script you generally see, it starts with left bracket([ ) when need to perform some testing.*

Exit Status

- *In bash after running any command, the exit status is returned and stored in variable $?*

```
0 --> good
1 or some other code --> issue
```

Test Integers

```
# test 1 -eq 1;echo $?

0
```

- *Here we are trying to check if 1 is equal to 1 and then perform command chaining to merge two command*
- *As mentioned above exit status 0 mean good*

```
# test 1 -eq 2;echo $?

1
```

- *Exit status other than zero, in the above case, means some issue*
- *The same way we can test* **less than** *or* **greater than** *or* **not equal to**

```
# less then
# test 1 -lt 2;echo $?

0

OR

# greater then

# test 1 -gt 2;echo $?

1

# not equal to

OR

# test 1 -ne 2;echo $?

0
```

Test Strings

- *To compare string, use a single equal sign(this is different as compare to other programming languages where single equal sign is assignment operator(=))*

```
# test hello = hello; echo $?

0
```

- *Same way you can test not equal to by using !*

```
# test hello != hello; echo $?

1
```

Test Files

- *Here I have two files(file1 and file2), where you can see file2(created at 05.15) is newer then file1(created at 05:14)*

```
# ls -l file?

-rw-r--r-- 1 root root 0 Apr  3 05:14 file1

-rw-r--r-- 1 root root 0 Apr  3 05:15 file2
```

- *To test if file2 is newer is than file1*

```
# test file2 -nt file1;echo $?

0
```

- *To check for block and character device*

```
# To check block device
# test -b /dev/xvda;echo $?

0

# To check character device
# test -c /dev/tty1;echo $?

0
```

- *To check if the file exists*

```
# test -e file1; echo $?

0
```

- *To check if the file exists and its a regular file(use -f)*

```
# mkdir file3

# test -e file3; echo $?

0

# test -f file3; echo $?

1
```

- *To check if the file exists and it's non-zero*

```
# test -s file2; echo $?

1

# echo "hello"> file2

# test -s file2; echo $?

0
```

- *Let put together everything in the script we use in our day/today life, to check if the file exists*

```
#!/bin/bash
FILE="/etc/passwd"
if [ -f $FILE ]; then
    echo "The file '$FILE' exists."
else
    echo "The file '$FILE' in not found."
fi
```

file_exist.sh hosted with ❤ by GitHub view raw

- *We can further improve this script by asking input from a user rather than hardcode the filename using positional parameter*

```
#!/bin/bash
FILE="$1"
if [ -f $FILE ]; then
    echo "The file '$FILE' exists."
else
    echo "The file '$FILE' in not found."
fi
```

fileexist1.sh hosted with ❤ by GitHub view raw

- *When we execute this script*

```
# ./fileexist.sh testfile

The file 'testfile' in not found.

# ./fileexist.sh /etc/shadow

The file '/etc/shadow' exists.
```

- *Some other functionality you can test*

```
-b FILE

FILE exists and is block special

-c FILE

FILE exists and is character special

-d FILE

FILE exists and is a directory

-e FILE

FILE exists

-f FILE

FILE exists and is a regular file

-g FILE

FILE exists and is set-group-ID

-G FILE

FILE exists and is owned by the effective group ID

-h FILE

FILE exists and is a symbolic link (same as -L)

-k FILE

FILE exists and has its sticky bit set

-L FILE

FILE exists and is a symbolic link (same as -h)

-O FILE

FILE exists and is owned by the effective user ID

-p FILE

FILE exists and is a named pipe

-r FILE

FILE exists and read permission is granted

-s FILE

FILE exists and has a size greater than zero

-S FILE

FILE exists and is a socket

-t FD  file descriptor FD is opened on a terminal

-u FILE

FILE exists and its set-user-ID bit is set

-w FILE

FILE exists and write permission is granted

-x FILE

FILE exists and execute (or search) permission is granted
```

Looking forward from you guys to join this journey and spend a minimum an hour every day for the next 100 days on DevOps work and post your progress using any of the below medium.

- *Twitter: @100daysofdevops OR @lakhera2015*
- *Facebook: https://www.facebook.com/groups/795382630808645/*
- *Medium: https://medium.com/@devopslearning*
- *Slack: https://devops-myworld.slack.com/messages/CF41EFG49/*
- *GitHub Link:https://github.com/100daysofdevops*

Reference

100 Days of DevOps — Day 0
D-day is just one day away and finally, this is a continuation of the post(I posted a month earlier)
medium.com