

# Scenario 5

## Continuously monitor and restart web server if it is not running.

### [Aim]

To monitor the web server's status continuously at particular intervals and to restart the web server if it has stopped running.

### [Pre-Requisites]

- Apache web server installed and configured.
- Permissions to schedule Cron jobs.

### [“Algorithm”]

- 1) *Read Argument: Web server's listening port.*
- 2) *Run: 'netstat' command to find all the listening ports of the server.*
- 3) *Filter the above list with the web server's list port.*
- 4) *If the filtered list is empty, then restart the web server.*

# [Command Explanations]

- 1) **if** : This block will process if specified condition is true.

```
if [ expression ]  
then  
    statement  
fi
```

- 2) **grep** : The grep filter searches a file for a particular pattern of characters, and displays all lines that contain that pattern. The pattern that is searched in the file is referred to as the regular expression (grep stands for globally search for regular expression and print out).

```
grep [options] pattern [files]  
grep -c : Print only count of lines  
grep -i : Ignore case while searching  
grep -w : Search for specific word  
grep -q : Search without printing output
```

- 3) **echo** : echo command in Linux is used to display line of text/string that are passed as an argument . This is a built-in command that is mostly used in shell scripts and batch files to output status text to the screen or a file.

```
echo [string]
```

- 4) **netstat** : netstat (network statistics) is a command line tool for monitoring network connections both incoming and outgoing as well as viewing routing tables, interface statistics etc.

```
netstat [options]  
netstat -l : To view all listening port.  
netstat -au : To view both internal server and user connection .  
netstat -lu : To view internal servers connection.
```

# [Code]

```
# bin/bash

a=`echo $?`

read -p "Enter listening port : " listening_port

//Used to ask for input of listening port.

netstat -au | grep -q ":listening_port"

b=`echo $?`

if [ $b != $a ];

//Gives status if that port is on or not

then

echo "ERROR, Web server is not running" >&2

/etc/init.d/apache2 restart

//Prints error if not running and restarts the server

fi

backupfolder="/home/kshitiz/backups"

cp /var/log/apache2/ $backupfolder

//Backups the logs in a backup folder

netstat -au

netstat -lt

//Prints status of web server.
```

```

kshitiz@ubuntu:~$ ./lab5.sh
Enter listening port : 34201
ERROR, Web server is not running
[ ok ] Restarting apache2 (via systemctl): apache2.service.
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp        0      0 0.0.0.0:mdns            0.0.0.0:*
udp        0      0 localhost:domain        0.0.0.0:*
udp        0      0 0.0.0.0:bootpc         0.0.0.0:*
udp        0      0 0.0.0.0:57664          0.0.0.0:*
udp        0      0 0.0.0.0:ipp            0.0.0.0:*
udp6       0      0 [::]:mdns              [::]:*
udp6       0      0 [::]:38945             [::]:*
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 ubuntu:43248            secondary.economy.:http ESTABLISHED
tcp        0      0 ubuntu:58712            oscp-router02.gno:https ESTABLISHED
tcp        0      0 ubuntu:34626            keeton.canonical.c:http ESTABLISHED
tcp        0      0 ubuntu:56334            151.101.130.49:https   ESTABLISHED
tcp        0      0 ubuntu:58722            oscp-router02.gno:https ESTABLISHED
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State      I-Node  Path
unix   2      [ ]         DGRAM      45368     /run/user/1000/systemd/notify
unix   2      [ ]         DGRAM      39433     /run/user/121/systemd/notify
unix   2      [ ]         DGRAM      205957    /var/spool/postfix/dev/log
unix   3      [ ]         DGRAM      21408     /run/systemd/notify
unix   2      [ ]         DGRAM      21416     /run/systemd/journal/syslog
unix  31      [ ]         DGRAM      21431     /run/systemd/journal/dev-log
unix   9      [ ]         DGRAM      21435     /run/systemd/journal/socket
unix   2      [ ]         STREAM     CONNECTING 0         private/smtp
unix   3      [ ]         STREAM     CONNECTED  47379     /run/user/1000/bus
unix   3      [ ]         STREAM     CONNECTED  45931     @/tmp/dbus-PCokAWEG45
unix   3      [ ]         STREAM     CONNECTED  42181     /run/user/121/bus
unix   3      [ ]         STREAM     CONNECTED  39786     /run/systemd/journal/stdout
unix   3      [ ]         STREAM     CONNECTED  39352
unix   3      [ ]         STREAM     CONNECTED  46206     /run/systemd/journal/stdout
unix   3      [ ]         STREAM     CONNECTED  44440
unix   3      [ ]         STREAM     CONNECTED  635127
unix   3      [ ]         DGRAM      369461
unix   3      [ ]         STREAM     CONNECTED  47589
unix   3      [ ]         STREAM     CONNECTED  46575
unix   3      [ ]         STREAM     CONNECTED  45481
unix   3      [ ]         STREAM     CONNECTED  42629     @/tmp/dbus-SVbhFWN6Na
unix   3      [ ]         STREAM     CONNECTED  42186
unix   3      [ ]         STREAM     CONNECTED  81590
unix   3      [ ]         STREAM     CONNECTED  47730     /run/systemd/journal/stdout
unix   3      [ ]         STREAM     CONNECTED  46470
unix   3      [ ]         STREAM     CONNECTED  44707
unix   3      [ ]         STREAM     CONNECTED  43621
unix   3      [ ]         STREAM     CONNECTED  47114     /run/systemd/journal/stdout
unix   3      [ ]         STREAM     CONNECTED  45483     /run/systemd/journal/stdout
unix   3      [ ]         STREAM     CONNECTED  612731    /run/systemd/journal/stdout
unix   3      [ ]         STREAM     CONNECTED  47570
unix   3      [ ]         STREAM     CONNECTED  46626

```

<https://www.digitalocean.com/community/tutorials/how-to-install-the-apache-web-server-on-ubuntu-16-04>