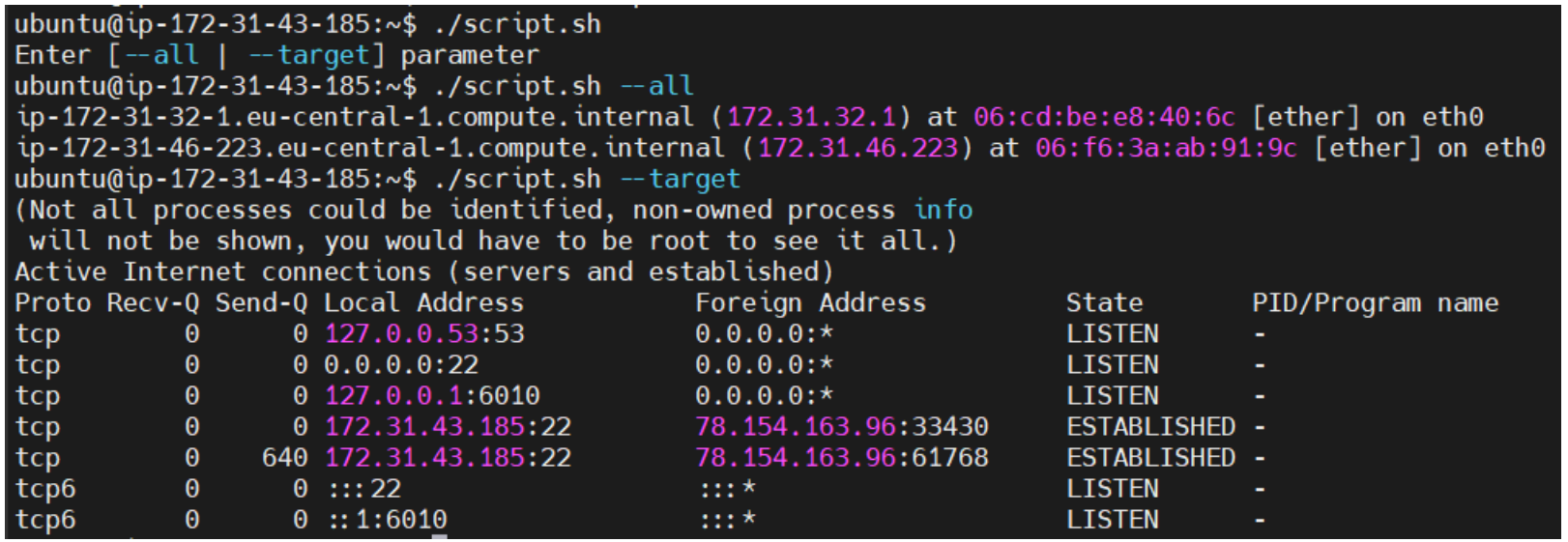
Linux administration with bash. Home task

Tsykalenko Dmytro

A. Create a script that uses the following keys:

1. When starting without parameters, it will display a list of possible keys and their description.
2. The --all key displays the IP addresses and symbolic names of all hosts in the current subnet
3. The --target key displays a list of open system TCP ports. The code that performs the functionality of each of the subtasks must be placed in a separate function



B. Using Apache log example create a script to answer the following questions:

1. From which ip were the most requests?
2. What is the most requested page?
3. How many requests were there from each ip?
4. What non-existent pages were clients referred to?
5. What time did site get the most requests?
6. What search bots have accessed the site? (UA + IP)

```
ubuntu@ip-172-31-44-234:~$ ./script.sh access.log
From which ip were the most requests?
     30 45.132.51.36
Most requested page
      1 /administrator/%22
      1 /administrator/index.php
      1 /images/bg_raith.jpg
      1 /images/stories/raith/almenland_logo.jpg
      1 /images/stories/raith/almhuette_raith.jpg
      1 /images/stories/raith/garage.jpg
      1 /images/stories/raith/grillplatz.jpg
      1 /images/stories/raith/oststeiermark.png
      1 /images/stories/raith/steiermark_herz.png
      1 /images/stories/raith/wohnraum.jpg
      1 /images/stories/slideshow/almhuette_raith_01.jpg
      1 /images/stories/slideshow/almhuette_raith_02.jpg
      1 /images/stories/slideshow/almhuette_raith_03.jpg
      1 /images/stories/slideshow/almhuette_raith_04.jpg
      1 /images/stories/slideshow/almhuette_raith_05.jpg
      1 /images/stories/slideshow/almhuette_raith_06.jpg
      1 /images/stories/slideshow/almhuette_raith_07.jpg
      1 /index.php?option=com_content&view=article&id=46&Itemid=54
      1 /index.php?option=com_easyblog&view=dashboard&layout=write
      1 /index.php?option=com_phocagallery&view=category&id=1%3Aalmhuette-raith&Itemid=5
3&limitstart=20
      1 /index.php?option=com_phocagallery&view=category&id=1:almhuette-raith&Itemid=53
      1 /media/system/js/caption.js
      1 /media/system/js/mootools.js
      1 /modules/mod_bowslideshow/tmpl/css/bowslideshow.css
      1 /modules/mod_bowslideshow/tmpl/images/image_shadow.png
      1 /modules/mod_bowslideshow/tmpl/js/sliderman.1.3.0.js
      1 /templates/jp_hotel/css/layout.css
      1 /templates/jp_hotel/css/menu.css
      1 /templates/jp_hotel/css/suckerfish.css
      1 /templates/jp_hotel/css/template.css
      1 /templates/jp_hotel/images/content_heading.gif
      1 /templates/jp_hotel/images/logo.jpg
      1 /templates/jp_hotel/images/module_heading.gif
      1 /templates/jp_hotel/js/moomenu.js
      2 /index.php?option=com_phocagallery&view=category&id=2%3Awinterfotos&Itemid=53
      2 /templates/_system/css/general.css
      3 /robots.txt
      5 /favicon.ico
      7 /
     10 /apache-log/access.log
    277 /index.php?option=com_contact&view=contact&id=1
```

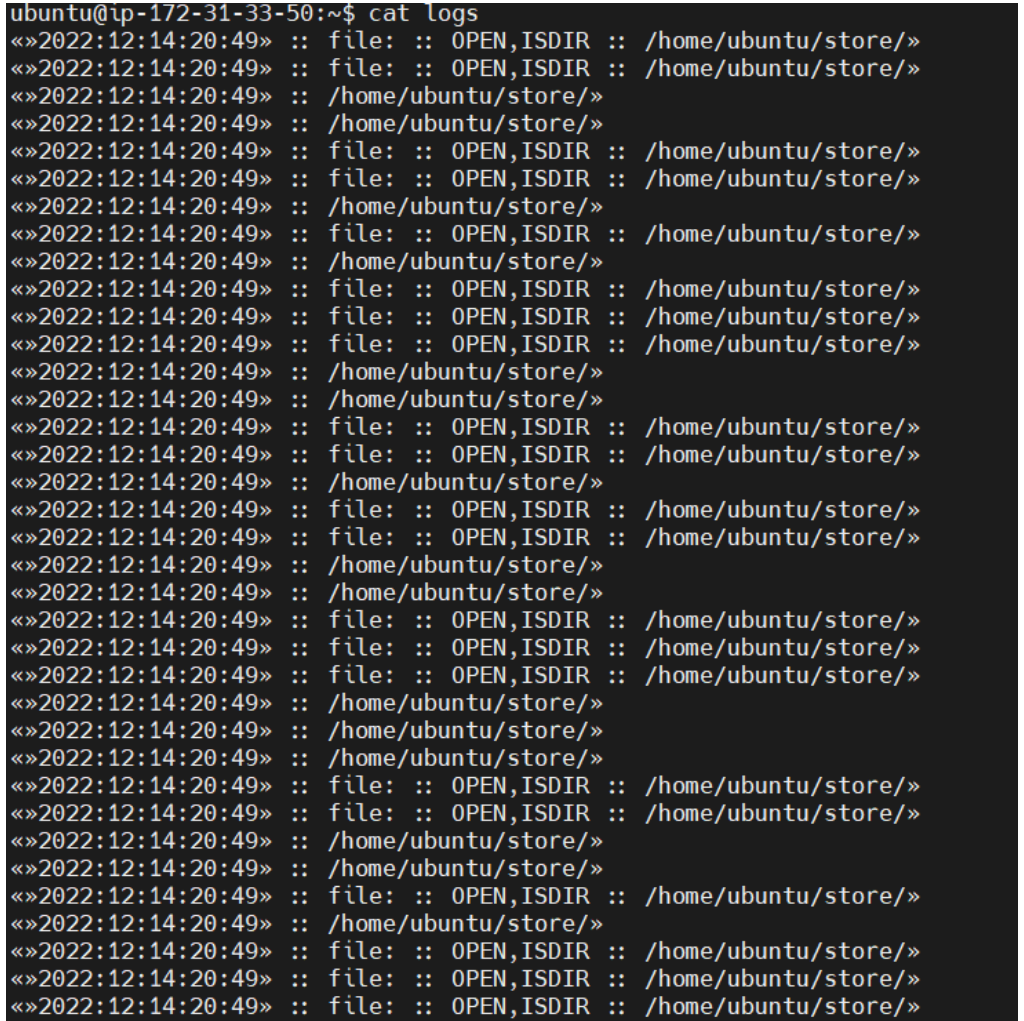
```
What non-existent pages were clients referred t
      1 /administrator/%22
      1 /index.php?option=com_easyblog&view=dashboard&layout=write
      2 /templates/_system/css/general.css
      5 /favicon.ico
What time did site get the most requests?
      3 [19/Dec/2020:15:23:23
      3 [19/Dec/2020:19:07:46
      6 [19/Dec/2020:15:23:11
      7 [19/Dec/2020:15:23:13
      9 [19/Dec/2020:15:23:12
What search bots have accessed the site? (UA + IP)
    278
      1 "-"
      5 AhrefsBot/7.0;
      1 Android
      1 Discordbot/2.0;
      1 DotBot/1.1;
      1 Googlebot/2.1;
      4 Intel
      2 MJ12bot/v1.4.8;
      1 MSIE
     12 NT
      1 Seekport
     31 U;
      1 bingbot/2.0;
```

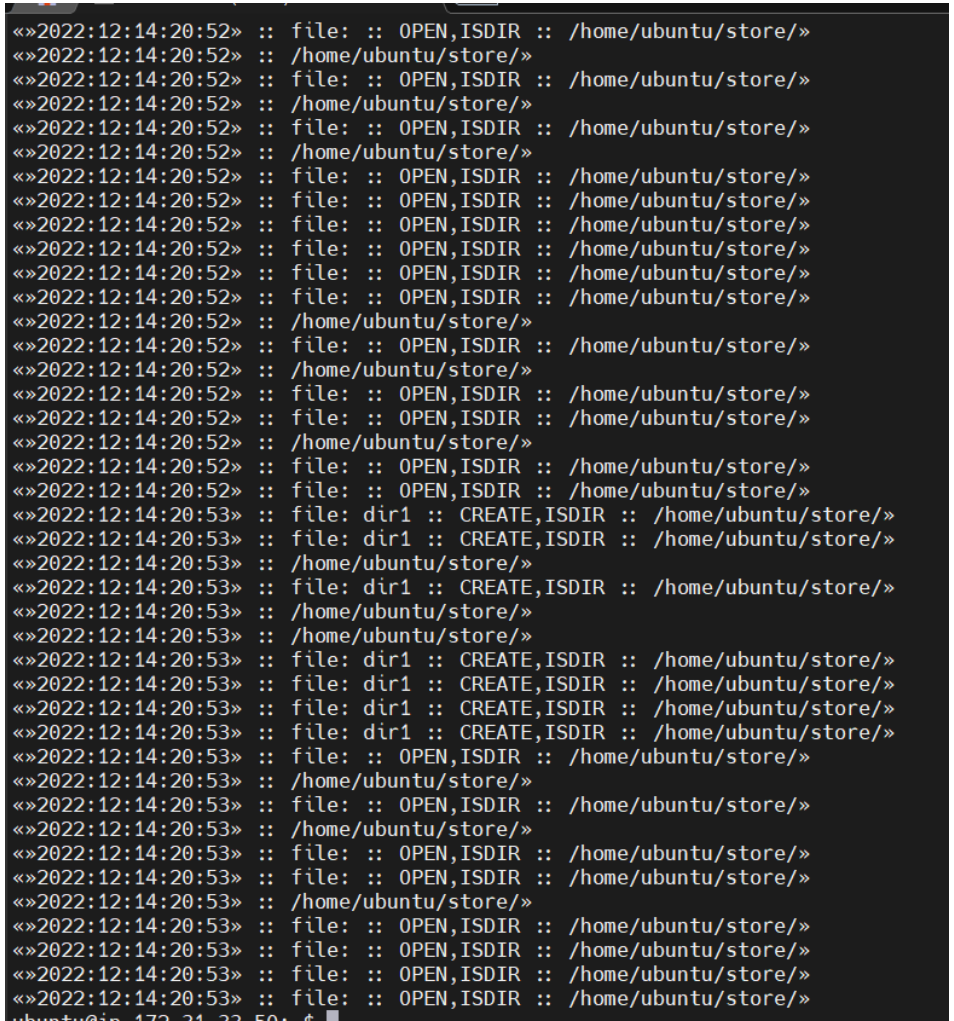
```
How many requests were there from each ip
      1 13.66.139.0
      1 162.158.203.24
      1 216.244.66.230
      1 35.237.4.214
      1 54.36.148.1
      1 54.36.148.108
      1 54.36.148.92
      1 54.36.149.55
      1 54.36.149.8
      1 66.249.64.41
      1 66.249.66.158
      1 92.101.35.224
      1 95.217.229.86
      2 157.48.153.185
      2 162.210.196.129
      2 168.91.81.164
      2 191.102.167.138
      2 73.166.162.225
      2 84.229.183.233
      3 182.239.117.249
      4 157.48.208.79
      4 45.138.4.22
      4 87.247.143.24
      5 194.156.95.20
      6 45.145.161.12
      6 45.145.161.6
      8 42.236.10.117
      8 45.138.4.35
      8 87.247.143.30
      9 42.236.10.114
     12 176.222.58.254
     12 45.138.145.106
     14 176.222.58.90
     14 42.236.10.125
     16 45.138.145.131
     16 45.144.0.179
     16 45.153.227.55
     18 45.132.207.221
     18 45.144.0.98
     20 194.156.95.52
     20 45.132.207.154
     20 45.153.227.31
     24 45.132.51.62
     30 45.132.51.36
```

C. Create a data backup script that takes the following data as parameters:

1. Path to the syncing directory.
2. The path to the directory where the copies of the files will be stored.

In case of adding new or deleting old files, the script must add a corresponding entry to the log file indicating the time, type of operation and file name. [The command to run the script must be added to crontab with a run frequency of one minute]





[The command to run the script must be added to crontab with a run frequency of one minute]

```
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
* * * * * /home/ubuntu/script.sh
```

Task A. Script Code

```
#! /bin/bash
case $1 in
    --all)
      arp -a
      ;;
    --target)
      netstat -tlpan
      ;;
    *)
      echo "Enter [--all | --target] parameter"
      ;;
esac
```

Task B. Script Code

```
#! /bin/bash
file=$1
echo "From which ip were the most requests? "
awk -F ' ' '{print $1}' $file | sort | uniq -c | sort |
tail -n1
echo "Most requested page"
awk -F ' ' '{print $7}' $file  | sort | uniq -c | sort
echo "How many requests were there from each ip"
awk -F ' ' '{print $1}' $file | sort | uniq -c | sort
echo "What non-existent pages were clients referred to"
awk -F ' ' '$9 == 404 {print $7}’  $file | sort | uniq -c
| sort
echo "What time did site get the most requests? "
awk '{print $4}’ $file | sort | uniq -c | sort | tail -n5
echo "What search bots have accessed the site? (UA + IP)"
awk -F ' ' '{print $14}’ $file | sort | uniq -c
```

Task C. Script Code

```
#! /bin/bash
sync_dir=/home/ubuntu/sync
stored_dir=/home/ubuntu/store
logfile=/home/ubuntu/logs
cp -n -r $sync_dir/* $stored_dir

while : ; do
inotifywait $stored_dir | while read path action file; do
ts=$(date +»%C%y:%m:%d:%H:%M»)
echo $ts  file $file  $action  $path>>$logfile
done
done
```