

Задание 1 – добавить в cron скрипт/команду, которая будет очищать кэш apt (кэшируемые пакеты, пакеты, которые не могут быть загружены) раз в месяц в 16 часов.

Посмотрим что уже есть в кронтабе командой nano /etc/crontab

```
GNU nano 6.2 /etc/crontab
# /etc/crontab: system-wide crontab
# Unlike any other crontab you don't have to run the `crontab'
# command to install the new version when you edit this file
# and files in /etc/cron.d. These files also have username fields,
# that none of the other crontabs do.

SHELL=/bin/sh
# You can also override PATH, but by default, newer versions inherit it from the environment
#PATH=/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin

# Example of job definition:
# .----- minute (0 - 59)
# | .----- hour (0 - 23)
# | | .----- day of month (1 - 31)
# | | | .----- month (1 - 12) OR jan,feb,mar,apr ...
# | | | | .----- day of week (0 - 6) (Sunday=0 or 7) OR sun,mon,tue,wed,thu,fri,sat
# | | | | |
# * * * * * user-name command to be executed
17 * * * * root cd / && run-parts --report /etc/cron.hourly
25 6 * * * root test -x /usr/sbin/anacron || ( cd / && run-parts --report /etc/cron.daily )
47 6 * * 7 root test -x /usr/sbin/anacron || ( cd / && run-parts --report /etc/cron.weekly )
52 6 1 * * root test -x /usr/sbin/anacron || ( cd / && run-parts --report /etc/cron.monthly )
#
```

Видим что уже есть команды на выполнение ежедневных/недельных/месячных заданий из подпапок. В случае если нас устраивает 6:52 каждое первое число месяца можно добавить задачу (баш скрипт) в /etc/cron.monthly/

Так же существуют пользовательские кронтабы (у меня лежат в /var/spool/cron/crontabs/) в которых задачи выполняются от конкретных пользователей и редактируются через crontab -e [-u username]

Но нам необходимо запускать задачу в 16 часов собственно добавив задачу в кронтаб напрямую.

```
# | | | | .----- day of week (0 - 6) (Sunday=0 or 7) OR sun,mon,tue,wed,thu,fri,sat
# | | | | |
# * * * * * user-name command to be executed
17 * * * * root cd / && run-parts --report /etc/cron.hourly
25 6 * * * root test -x /usr/sbin/anacron || ( cd / && run-parts --report /etc/cron.daily )
47 6 * * 7 root test -x /usr/sbin/anacron || ( cd / && run-parts --report /etc/cron.weekly )
52 6 1 * * root test -x /usr/sbin/anacron || ( cd / && run-parts --report /etc/cron.monthly )
0 16 1 * * root apt autoclean
```

Задание 2 – в соответствии с нижеуказанным примером, запустить демон nodejs-приложения через systemd

Установим nodejs

```
sudo apt-get update
sudo apt-get install -y ca-certificates curl gnupg
sudo mkdir -p /etc/apt/keyrings
curl -fsSL https://deb.nodesource.com/gpgkey/nodesource-repo.gpg.key | sudo gpg --dearmor -o
/etc/apt/keyrings/nodesource.gpg
```

```
NODE_MAJOR=20
echo "deb [signed-by=/etc/apt/keyrings/nodesource.gpg]
https://deb.nodesource.com/node_${NODE_MAJOR}.x nodistro main" | sudo tee
/etc/apt/sources.list.d/nodesource.list
```

```
sudo apt-get update
sudo apt-get install nodejs -y
```

проверим

```
anex13@anextmshwsv:~$ node -v
v20.12.2
anex13@anextmshwsv:~$
```

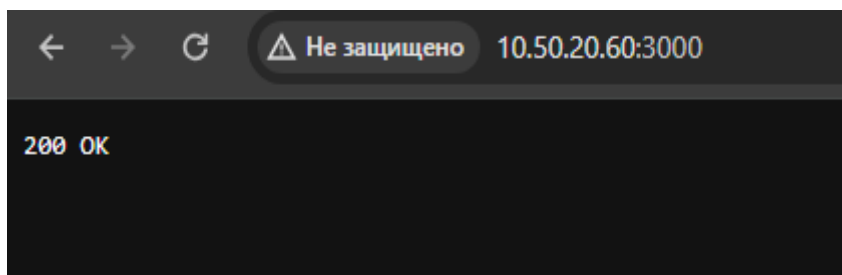
Создадим файл /usr/local/www/myapp/index.js

И скопируем в него содержимое из задания

Сохраним и запустим

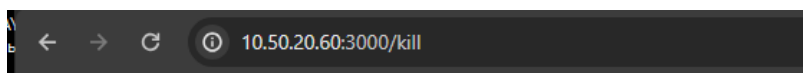
```
anex13@anextmshwsv:~$ MYAPP_PORT=3000 node /usr/local/www/myapp/index.js
Request GET /
```

Проверим работу



Ну и попробуем убить процесс

И попробуем убить приложение



```

anex13@anextmshwsrv:~$ MYAPP_PORT=3000 node /usr/local/www/myapp/index.js
/usr/local/www/myapp/index.js:9
    throw new Error('Someone kills me');
    ^
Error: Someone kills me
    at Server.<anonymous> (/usr/local/www/myapp/index.js:9:19)
    at Server.emit (node:events:518:28)
    at parserOnIncoming (node:_http_server:1137:12)
    at HTTPParser.parserOnHeadersComplete (node:_http_common:119:17)
Node.js v20.12.2

```

Всё работает

Создадим unit файл сервиса

```

anex13@anextmshwsrv:~$ sudo nano /etc/systemd/system/myapp.service

```

```

GNU nano 6.2 /etc/systemd/system/myapp.service *
[Service]
Environment=MYAPP_PORT=3000
ExecStart=/usr/local/bin/node /usr/local/www/myapp/index.js

```

Запустим и проверим статус

```

anex13@anextmshwsrv:~$ sudo service myapp status
x myapp.service
   Loaded: loaded (/etc/systemd/system/myapp.service; static)
   Active: failed (Result: exit-code) since Fri 2024-04-12 06:16:21 UTC; 6s ago
     Process: 25861 ExecStart=/usr/local/bin/node /usr/local/www/myapp/index.js (code=exited, status=203/EXEC)
    Main PID: 25861 (code=exited, status=203/EXEC)
      CPU: 3ms

Apr 12 06:16:21 anextmshwsrv systemd[1]: Started myapp.service.
Apr 12 06:16:21 anextmshwsrv systemd[25861]: myapp.service: Failed to locate executable /usr/local/bin/node
Apr 12 06:16:21 anextmshwsrv systemd[25861]: myapp.service: Failed at step EXEC spawning /usr/local/bin/node
Apr 12 06:16:21 anextmshwsrv systemd[1]: myapp.service: Main process exited, code=exited, status=203/EXEC
Apr 12 06:16:21 anextmshwsrv systemd[1]: myapp.service: Failed with result 'exit-code'.

```

Не работает потомучто ноджс лежит в другом месте

```

anex13@anextmshwsrv:~$ which node
/usr/bin/node
anex13@anextmshwsrv:~$

```

Исправим и попробуем снова

```

GNU nano 6.2 /etc/systemd/system/myapp.service *
[Service]
Environment=MYAPP_PORT=3000
ExecStart=/usr/bin/node /usr/local/www/myapp/index.js

```

Ругается что что поменялось , сделаем что просит и попробуем опять

```

anex13@anextmshwsrv:~$ sudo service myapp start
Warning: The unit file, source configuration file or drop-ins of myapp.service changed on disk. Run 'systemctl daemon-reload' to reload units.
anex13@anextmshwsrv:~$ sudo systemctl daemon-reload

```

```

anex13@anextmshwsrv:~$ sudo service myapp start
anex13@anextmshwsrv:~$ sudo service myapp status
● myapp.service
   Loaded: loaded (/etc/systemd/system/myapp.service; static)
   Active: active (running) since Fri 2024-04-12 06:21:19 UTC; 11s ago
     Main PID: 25967 (node)
       Tasks: 7 (limit: 9389)
      Memory: 6.4M
         CPU: 40ms
    CGroup: /system.slice/myapp.service
            └─25967 /usr/bin/node /usr/local/www/myapp/index.js

Apr 12 06:21:19 anextmshwsrv systemd[1]: Started myapp.service.
anex13@anextmshwsrv:~$

```

Всё работает

Добавим опцию рестарта при падении

Без опции при запросе <http://10.50.20.60:3000/kill> сервис падает

```

anex13@anextmshwsrv:~$ sudo service myapp status
x myapp.service
   Loaded: loaded (/etc/systemd/system/myapp.service; static)
   Active: failed (Result: exit-code) since Fri 2024-04-12 06:23:38 UTC; 3s ago
     Process: 25967 ExecStart=/usr/bin/node /usr/local/www/myapp/index.js (code=exited, status=1/FAILURE)
    Main PID: 25967 (code=exited, status=1/FAILURE)
         CPU: 59ms

Apr 12 06:23:38 anextmshwsrv node[25967]:             throw new Error('Someone kills me');
Apr 12 06:23:38 anextmshwsrv node[25967]:             ^
Apr 12 06:23:38 anextmshwsrv node[25967]: Error: Someone kills me
Apr 12 06:23:38 anextmshwsrv node[25967]:     at Server.<anonymous> (/usr/local/www/myapp/index.js:9:19)
Apr 12 06:23:38 anextmshwsrv node[25967]:     at Server.emit (node:events:518:28)
Apr 12 06:23:38 anextmshwsrv node[25967]:     at parserOnIncoming (node:_http_server:1137:12)
Apr 12 06:23:38 anextmshwsrv node[25967]:     at HTTPParser.parserOnHeadersComplete (node:_http_common:119:17)
Apr 12 06:23:38 anextmshwsrv node[25967]: Node.js v20.12.2
Apr 12 06:23:38 anextmshwsrv systemd[1]: myapp.service: Main process exited, code=exited, status=1/FAILURE
Apr 12 06:23:38 anextmshwsrv systemd[1]: myapp.service: Failed with result 'exit-code'.

```

Добавим

```

GNU nano 6.2 /etc/systemd/system/myapp.serv
[Service]
Environment=MYAPP_PORT=3000
ExecStart=/usr/bin/node /usr/local/www/myapp/index.js
Restart=always

```

```

anex13@anextmshwsrv:~$ sudo systemctl daemon-reload
anex13@anextmshwsrv:~$ sudo service myapp start
anex13@anextmshwsrv:~$ sudo service myapp status
● myapp.service
   Loaded: loaded (/etc/systemd/system/myapp.service; static)
   Active: active (running) since Fri 2024-04-12 06:24:55 UTC; 5s ago
     Main PID: 26033 (node)
       Tasks: 7 (limit: 9389)
      Memory: 6.4M
         CPU: 49ms
    CGroup: /system.slice/myapp.service
            └─26033 /usr/bin/node /usr/local/www/myapp/index.js

Apr 12 06:24:55 anextmshwsrv systemd[1]: Started myapp.service.
anex13@anextmshwsrv:~$ sudo service myapp status
● myapp.service
   Loaded: loaded (/etc/systemd/system/myapp.service; static)
   Active: active (running) since Fri 2024-04-12 06:25:10 UTC; 369ms ago
     Main PID: 26071 (node)
       Tasks: 7 (limit: 9389)
      Memory: 6.4M
         CPU: 52ms
    CGroup: /system.slice/myapp.service
            └─26071 /usr/bin/node /usr/local/www/myapp/index.js

Apr 12 06:25:10 anextmshwsrv systemd[1]: Started myapp.service.

```

Как видно сервис сам переподнимается при вызове /kill с новым PID

Ограничим права

```
GNU nano 6.2 /etc/systemd/system/myapp.service *
[Service]
Environment=MYAPP_PORT=3000
User=www-data
Group=www-data
ExecStart=/usr/bin/node /usr/local/www/myapp/index.js
Restart=always
```

И добавим вывод логов

```
GNU nano 6.2 /etc/systemd/system/myapp.service *
[Service]
Environment=MYAPP_PORT=3000
User=www-data
Group=www-data
ExecStart=/usr/bin/node /usr/local/www/myapp/index.js
Restart=always
StandardOutput=syslog
StandardError=syslog
SyslogIdentifier=myapp
```

Пару раз уьем и проверим логи

```
anex13@anextmshsrv:~$ journalctl -u myapp.service
Apr 12 06:16:21 anextmshsrv systemd[1]: Started myapp.service.
Apr 12 06:16:21 anextmshsrv systemd[25861]: myapp.service: Failed to locate executable /usr/local/bin/node: No such file or directory
Apr 12 06:16:21 anextmshsrv systemd[25861]: myapp.service: Failed at step EXEC spawning /usr/local/bin/node: No such file or directory
Apr 12 06:16:21 anextmshsrv systemd[1]: myapp.service: Main process exited, code=exited, status=203/EXEC
Apr 12 06:16:21 anextmshsrv systemd[1]: myapp.service: Failed with result 'exit-code'.
Apr 12 06:18:50 anextmshsrv systemd[1]: Started myapp.service.
Apr 12 06:18:50 anextmshsrv systemd[25887]: myapp.service: Failed to locate executable /usr/local/bin/node: No such file or directory
Apr 12 06:18:50 anextmshsrv systemd[25887]: myapp.service: Failed at step EXEC spawning /usr/local/bin/node: No such file or directory
Apr 12 06:18:50 anextmshsrv systemd[1]: myapp.service: Main process exited, code=exited, status=203/EXEC
Apr 12 06:18:50 anextmshsrv systemd[1]: myapp.service: Failed with result 'exit-code'.
Apr 12 06:19:51 anextmshsrv systemd[1]: Started myapp.service.
Apr 12 06:19:51 anextmshsrv systemd[25913]: myapp.service: Failed to locate executable /usr/local/bin/node: No such file or directory
Apr 12 06:19:51 anextmshsrv systemd[25913]: myapp.service: Failed at step EXEC spawning /usr/local/bin/node: No such file or directory
Apr 12 06:19:51 anextmshsrv systemd[1]: myapp.service: Main process exited, code=exited, status=203/EXEC
Apr 12 06:19:51 anextmshsrv systemd[1]: myapp.service: Failed with result 'exit-code'.
Apr 12 06:21:19 anextmshsrv systemd[1]: Started myapp.service.
Apr 12 06:23:38 anextmshsrv node[25967]: /usr/local/www/myapp/index.js:9
Apr 12 06:23:38 anextmshsrv node[25967]:   throw new Error('Someone kills me');
Apr 12 06:23:38 anextmshsrv node[25967]:         ^
Apr 12 06:23:38 anextmshsrv node[25967]: Error: Someone kills me
Apr 12 06:23:38 anextmshsrv node[25967]:     at Server.<anonymous> (/usr/local/www/myapp/index.js:9:19)
```

Всё готово.

Ну и настроим немного сислог

```
GNU nano 6.2 /etc/rsyslog.d/100-myapp.conf *
$RepeatedMsgReduction off
if $programname == 'myapp' and $syslogseverity < 5 then -/var/log/myapp/error.log
if $programname == 'myapp' and $syslogseverity >= 5 then -/var/log/myapp/debug.log
```

```
GNU nano 6.2 /etc/systemd/system/myapp.service *
[Service]
Environment=MYAPP_PORT=3000
User=www-data
Group=www-data
ExecStart=/usr/bin/node /usr/local/www/myapp/index.js
Restart=always
StandardError=syslog
SyslogIdentifier=myapp
SyslogLevel=err
```

```
GNU nano 6.2 /etc/logrotate.d/myapp *
/var/log/myapp/debug.log
/var/log/myapp/error.log {
    rotate 7
    daily
    compress
    missingok
    notifempty
    postrotate
        invoke-rd.rsyslog rotate > /dev/null
    endscript
}
```

Готово.