

Лабораторная работа №8

Планировщики событий

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13 октября 2025

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Цель работы

Основная цель

Получение навыков работы с планировщиками событий **cron** и **at** в операционной системе Linux.

Ход выполнения работы

Проверка службы cron

```
haoladar@haoladar:~$ su
Password:
root@haoladar:/home/haoladar#
root@haoladar:/home/haoladar# systemctl status crond
● crond.service - Command Scheduler
    Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled; preset: enabled)
    Active: active (running) since Wed 2025-10-08 15:04:25 MSK; 15min ago
      Invocation: eae2c9b7975144a796e43c1542f4dd3a
        Main PID: 1202 (crond)
          Tasks: 1 (limit: 24779)
        Memory: 1M (peak: 1.1M)
          CPU: 6ms
        CGroup: /system.slice/crond.service
                  └─1202 /usr/sbin/crond -n

Oct 08 15:04:25 haoladar.localdomain systemd[1]: Started crond.service - Command Scheduler.
Oct 08 15:04:25 haoladar.localdomain crond[1202]: (CRON) STARTUP (1.7.0)
Oct 08 15:04:25 haoladar.localdomain crond[1202]: (CRON) INFO (Syslog will be used instead of sendmail.)
Oct 08 15:04:25 haoladar.localdomain crond[1202]: (CRON) INFO (RANDOM_DELAY will be scaled with factor 85%)
Oct 08 15:04:25 haoladar.localdomain crond[1202]: (CRON) INFO (running with inotify support)
```

Рис. 1: Проверка статуса службы crond

Файл /etc/crontab

```
root@haoladar:/home/haoladar# cat /etc/crontab
SHELL=/bin/bash
PATH=/sbin:/bin:/usr/sbin:/usr/bin
MAILTO=root

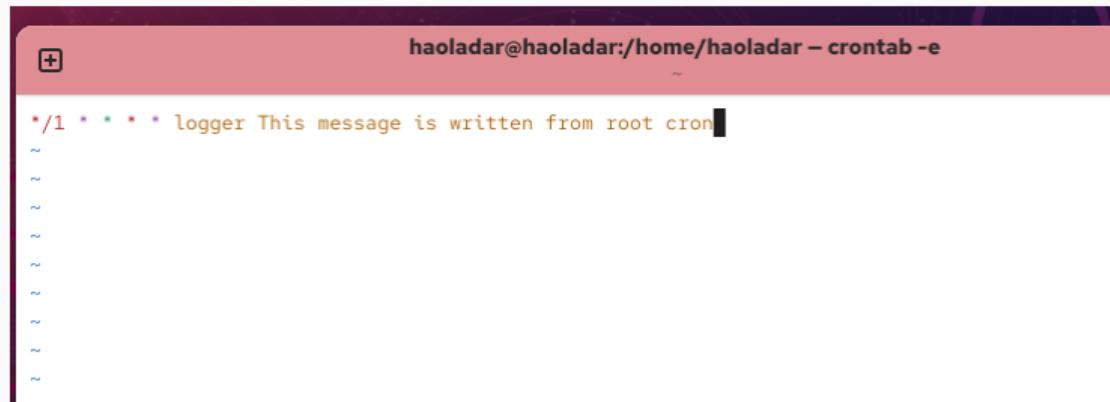
# For details see man 4 crontabs

# 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

root@haoladar:/home/haoladar#
```

Рис. 2: Содержимое файла /etc/crontab

Создание задания через crontab -e



The screenshot shows a terminal window with a dark theme. The title bar reads "haoladar@haoladar:/home/haoladar – crontab -e". The main area of the terminal contains the following text:

```
*/1 * * * * logger This message is written from root cron
```

The terminal window has a vertical scroll bar on the left side.

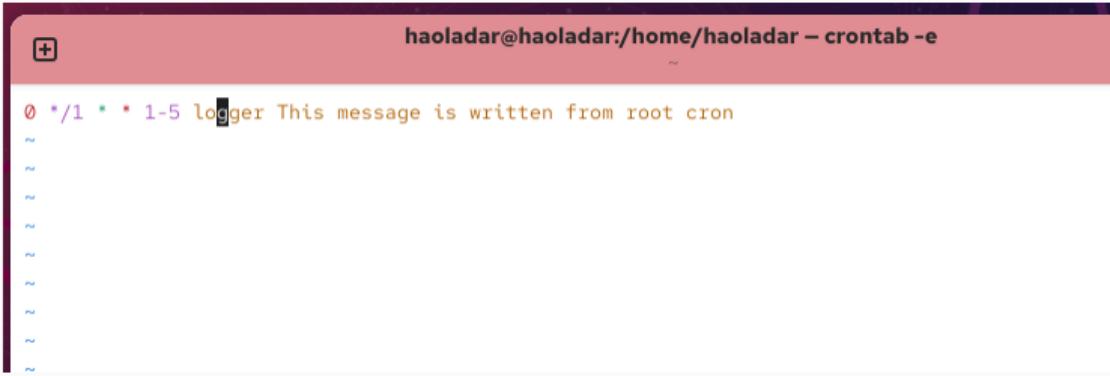
Рис. 3: Создание нового задания cron

Проверка активных заданий cron

```
root@haoladar:/home/haoladar# crontab -l
no crontab for root
root@haoladar:/home/haoladar# crontab -e
no crontab for root - using an empty one
crontab: installing new crontab
root@haoladar:/home/haoladar# crontab -l
*/1 * * * * logger This message is written from root cron
root@haoladar:/home/haoladar# grep written /var/log/messages
root@haoladar:/home/haoladar# grep written /var/log/messages
Oct  8 15:22:01 haoladar root[4341]: This message is written from root cron
Oct  8 15:23:01 haoladar root[4468]: This message is written from root cron
Oct  8 15:24:01 haoladar root[4583]: This message is written from root cron
root@haoladar:/home/haoladar#
```

Рис. 4: Проверка списка заданий cron

Изменение расписания cron



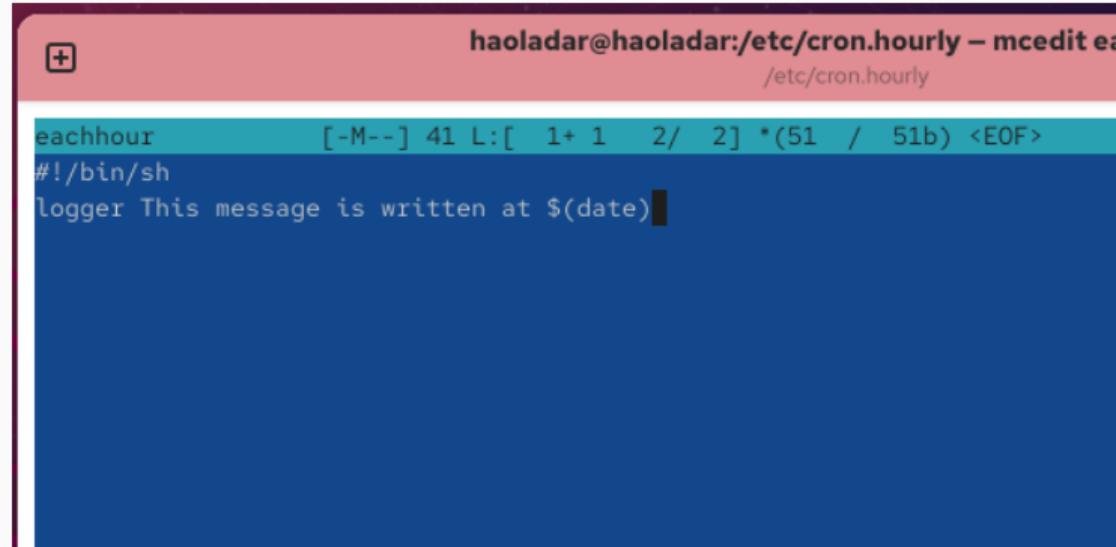
The screenshot shows a terminal window with a dark theme. The title bar reads "haoladar@haoladar:/home/haoladar – crontab -e". The main area of the terminal contains a single line of cron syntax:

```
0 */1 * * 1-5 logger This message is written from root cron
```

The line is highlighted with a yellow selection bar. The terminal interface includes a vertical scroll bar on the left and a status bar at the bottom.

Рис. 5: Изменённая запись crontab

Создание сценария /etc/cron.hourly/eachhour

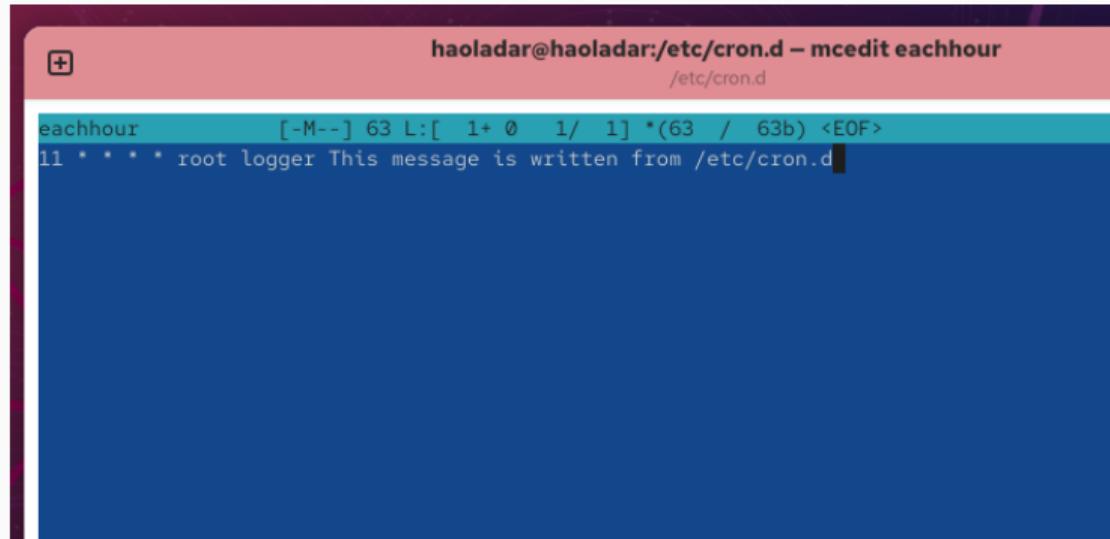


The screenshot shows a terminal window with a red header bar. The header contains the text "haoladar@haoladar:/etc/cron.hourly – mcedit ea" and "/etc/cron.hourly". On the left side of the header is a small icon with a plus sign. The main area of the terminal shows the contents of a file named "eachhour". The file contains the following text:

```
eachhour      [-M--] 41 L:[ 1+ 1  2/  2] *(51   /  51b) <EOF>
#!/bin/sh
logger This message is written at $(date)
```

Рис. 6: Создание сценария eachhour

Создание задания /etc/cron.d/eachhour



The screenshot shows a terminal window with a pink header bar. The header bar contains the text "haoladar@haoladar:/etc/cron.d – mcedit eachhour" and "/etc/cron.d". In the main terminal area, there is a single line of text:

```
eachhour      [-M--] 63 L:[ 1+ 0 1/ 1] *(63 / 63b) <EOF>
11 * * * * root logger This message is written from /etc/cron.d
```

Рис. 7: Создание задания eachhour в /etc/cron.d

Проверка службы atd

```
root@haoladar:/etc/cron.d# systemctl status atd
● atd.service - Deferred execution scheduler
  Loaded: loaded (/usr/lib/systemd/system/atd.service; enabled; preset: enabled)
  Active: active (running) since Wed 2025-10-08 15:04:25 MSK; 25min ago
    Invocation: a1fac4918b8b4635988189b8ce936381
      Docs: man:atd(8)
   Main PID: 1199 (atd)
     Tasks: 1 (limit: 24779)
    Memory: 320K (peak: 1.1M)
       CPU: 2ms
      CGroup: /system.slice/atd.service
              └─1199 /usr/sbin/atd -f

Oct 08 15:04:25 haoladar.localdomain systemd[1]: Started atd.service - Deferred execution scheduler.
Oct 08 15:04:25 haoladar.localdomain (atd)[1199]: atd.service: Referenced but unset environment variable ev
root@haoladar:/etc/cron.d# at 15:31
warning: commands will be executed using /bin/sh
at Wed Oct  8 15:31:00 2025
at> logger message from at
at> <EOT>
job 1 at Wed Oct  8 15:31:00 2025
root@haoladar:/etc/cron.d# atq
1      Wed Oct  8 15:31:00 2025 a root
root@haoladar:/etc/cron.d# grep 'from at' /var/log/messages
Oct  8 15:31:00 haoladar root[5835]: message from at
root@haoladar:/etc/cron.d#
```

Рис. 8: Проверка статуса службы atd

Итоги работы

- Освоены принципы планирования заданий в Linux с помощью **cron** и **at**
- Получены навыки создания, редактирования и проверки расписаний
- Изучены способы ограничения доступа пользователей к планировщику
- Закреплены умения анализа системных журналов для контроля выполнения задач