

Лабораторная работа №8

Планировщики событий

Лабси Мохаммед

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Российский университет дружбы народов, Москва, Россия

Цель работы

Получить практические навыки работы с планировщиками событий **cron** и **at** в операционной системе Linux.

Ход выполнения



Проверка работы службы cron

```
mlabsi@mlabsi:~$ su
Password:
root@mlabsi:/home/mlabsi# systemctl status crond -l
● crond.service - Command Scheduler
   Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled; preset: enabled)
   Active: active (running) since Sat 2025-10-11 12:08:48 MSK; 2min 10s ago
 Invocation: 7f05dfdd3d894ad1810cea4981e070a0
   Main PID: 1185 (crond)
     Tasks: 1 (limit: 24779)
    Memory: 1M (peak: 1.1M)
       CPU: 3ms
    CGroup: /system.slice/crond.service
            └─1185 /usr/sbin/crond -n

Oct 11 12:08:48 mlabsi.localdomain systemd[1]: Started crond.service - Command Scheduler.
Oct 11 12:08:48 mlabsi.localdomain crond[1185]: (CRON) STARTUP (1.7.0)
Oct 11 12:08:48 mlabsi.localdomain crond[1185]: (CRON) INFO (Syslog will be used instead of sendmail)
Oct 11 12:08:48 mlabsi.localdomain crond[1185]: (CRON) INFO (RANDOM_DELAY will be scaled with factor 100)
Oct 11 12:08:48 mlabsi.localdomain crond[1185]: (CRON) INFO (running with inotify support)
root@mlabsi:/home/mlabsi#
```

Рис. 1: Проверка статуса службы crond

Просмотр системного файла crontab

```
root@mlabsi:/home/mlabsi# 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@mlabsi:/home/mlabsi# crontab -l
no crontab for root
root@mlabsi:/home/mlabsi#
```

Рис. 2: Просмотр содержимого /etc/crontab



The screenshot shows a terminal window with a pink header bar. The header bar contains a plus icon in a square on the left and the text "mlabsi@mlabsi:/home/mlabsi – crontab -e" on the right. Below the header, the terminal displays a cron job entry: "* /1 * * * logger This message is written from root cron". The entry is written in a monospaced font with some characters highlighted in color (purple for asterisks, green for the space after the first asterisk, and purple for the space after the second asterisk). Below the entry, there are several lines of tilde (~) characters, indicating the end of the file or a continuation of the file.

```
mlabsi@mlabsi:/home/mlabsi – crontab -e
*/1 * * * logger This message is written from root cron
~
~
~
~
~
~
~
~
~
~
```

Рис. 3: Создание записи в crontab для root

Проверка выполнения задания cron

```
root@mlabsi:/home/mlabsi#  
root@mlabsi:/home/mlabsi# crontab -e  
no crontab for root - using an empty one  
crontab: installing new crontab  
root@mlabsi:/home/mlabsi# crontab -l  
*/1 * * * * logger This message is written from root cron  
root@mlabsi:/home/mlabsi# grep written /var/log/messages  
root@mlabsi:/home/mlabsi# grep written /var/log/messages  
Oct 11 12:16:01 mlabsi root[4232]: This message is written from root cron  
Oct 11 12:17:01 mlabsi root[4358]: This message is written from root cron  
root@mlabsi:/home/mlabsi#
```

Рис. 4: Проверка выполнения задания cron через системный журнал



A terminal window titled "mlabsi@mlabsi:/home/mlabsi – crontab -e". The prompt is "0". The user has entered the cron job entry: "* * * * 1-5 logger This message is written from root cron". The entry is displayed in a monospaced font with color coding: asterisks are green, "1-5" is purple, and the rest is orange. The cursor is at the end of the line. Below the entry are several empty lines, each preceded by a blue tilde (~) indicating the prompt.

```
mlabsi@mlabsi:/home/mlabsi – crontab -e
0 * * * * 1-5 logger This message is written from root cron
~
~
~
~
~
~
~
~
~
```

Рис. 5: Изменение расписания cron

Создание скрипта eachhour



```
mlabsi@mlabsi:/etc/cron.hourly – nano eachhour
/etc/cron.hourly

GNU nano 8.1                                eachhour
#!/bin/sh
logger This message is written at $(date)
```

Рис. 6: Создание скрипта eachhour в /etc/cron.hourly

Настройка расписания в /etc/cron.d



```
mlabsi@mlabsi:/etc/cron.d – nano eachhour
/etc/cron.d
GNU nano 8.1      eachhour
11 * * * * root logger This message is written from /etc/cron.d
```

Рис. 7: Создание расписания в /etc/cron.d

Планирование с помощью at

Проверка службы atd

```
root@mlabsi:/etc/cron.d#  
root@mlabsi:/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 Sat 2025-10-11 12:08:48 MSK; 14min ago  
 Invocation: 44db3ea7c0694ef78d40a670abcf492  
    Docs: man:atd(8)  
   Main PID: 1184 (atd)  
      Tasks: 1 (limit: 24779)  
     Memory: 324K (peak: 1.1M)  
        CPU: 2ms  
    CGroup: /system.slice/atd.service  
            └─1184 /usr/sbin/atd -f  
  
Oct 11 12:08:48 mlabsi.localdomain systemd[1]: Started atd.service - Deferred execution scheduler.  
Oct 11 12:08:48 mlabsi.localdomain (atd)[1184]: atd.service: Referenced but unset environment vari  
root@mlabsi:/etc/cron.d# at 12:26  
warning: commands will be executed using /bin/sh  
at Sat Oct 11 12:26:00 2025  
at> logger message from at  
at> <EOT>  
job 1 at Sat Oct 11 12:26:00 2025  
root@mlabsi:/etc/cron.d# atq  
1          Sat Oct 11 12:26:00 2025 a root  
root@mlabsi:/etc/cron.d# grep 'from at' /var/log/messages  
root@mlabsi:/etc/cron.d# grep 'from at' /var/log/messages  
Oct 11 12:26:00 mlabsi root[5807]: message from at  
root@mlabsi:/etc/cron.d#
```

Рис. 8: Создание и выполнение задания через службу atd

Заключение

В ходе лабораторной работы были изучены и применены средства автоматизации в Linux — **cron** и **at**, что позволило освоить создание, редактирование и контроль выполнения заданий по расписанию.