

Лабораторная работа 8

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Задача

1. Выполните задания по планированию задач с помощью `crond` (см. раздел 8.4.1).

1. Выполните задания по планированию задач с помощью crond (см. раздел 8.4.1).
2. Выполните задания по планированию задач с помощью atd (см. раздел 8.4.2).

Выполнение

```
Rocky Linux 9.0 (Blue Onyx)
Kernel 5.14.0-70.13.1.el9_0.x86_64 on an x86_64

dmgeneralov login: root
Password:
Last login: Wed Nov 30 15:41:52 on tty1
[root@dmgeneralov ~]# systemctl status crond -l
● crond.service - Command Scheduler
   Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2022-12-03 13:59:36 MSK; 3min 30s ago
   Main PID: 781 (crond)
     Tasks: 2 (limit: 11104)
    Memory: 1.5M
       CPU: 157ms
    CGroup: /system.slice/crond.service
            └─ 781 /usr/sbin/crond -n
               └─ 1446 /usr/sbin/anacron -s

Dec 03 13:59:36 dmgeneralov crond[781]: (CRON) INFO (Syslog will be used instead of sendmail.)
Dec 03 13:59:36 dmgeneralov crond[781]: (CRON) INFO (RANDOM_DELAY will be scaled with factor 76% if used.)
Dec 03 13:59:36 dmgeneralov crond[781]: (CRON) INFO (running with inotify support)
Dec 03 14:01:01 dmgeneralov CROND[1435]: (root) CMD (run-parts /etc/cron.hourly)
Dec 03 14:01:01 dmgeneralov anacron[1446]: Anacron started on 2022-12-03
Dec 03 14:01:01 dmgeneralov anacron[1446]: Will run job `cron.daily' in 32 min.
Dec 03 14:01:01 dmgeneralov anacron[1446]: Will run job `cron.weekly' in 52 min.
Dec 03 14:01:01 dmgeneralov anacron[1446]: Jobs will be executed sequentially
Dec 03 14:01:01 dmgeneralov run-parts[1448]: (/etc/cron.hourly) finished 0anacron
Dec 03 14:01:01 dmgeneralov CROND[1434]: (root) CMDEND (run-parts /etc/cron.hourly)
[root@dmgeneralov ~]# 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@dmgeneralov ~]# crontab -l
-bash: crontab: command not found
[root@dmgeneralov ~]# crontab -l
no crontab for root
[root@dmgeneralov ~]#
```



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

Рис. 2: crontab -e

```
"/tmp/crontab.4E4XRm" 2L, 59B written
crontab: installing new crontab
[root@dmgeneralov ~]# crontab -l
*/1 * * * * logger This message is written from root cron

[root@dmgeneralov ~]# grep written /var/log/messages
[root@dmgeneralov ~]# grep written /var/log/messages
Dec  3 14:07:01 dmgeneralov root[1500]: This message is written from root cron
[root@dmgeneralov ~]#
```

Рис. 3: /var/log/messages


```
"/tmp/crontab.F0HgPw" 2L, 61B written
crontab: installing new crontab
[root@dmgeneralov ~]# crontab -l
0 */1 * * 1-5 logger This message is written from root cron

[root@dmgeneralov ~]#
```

Рис. 4: 1-5

```

/etc/cron.d/eachhour" [New] 1L, 64B written
root@dmgeneralov ~]# systemctl restart crond
root@dmgeneralov ~]# date
Sat Dec 3 02:16:04 PM MSK 2022
root@dmgeneralov ~]# systemctl status ntpd
Unit ntpd.service could not be found.
root@dmgeneralov ~]# systemctl status ntp
Unit ntp.service could not be found.
root@dmgeneralov ~]# date -s '2022-12-03 16:16:04'
Sat Dec 3 04:16:04 PM MSK 2022
root@dmgeneralov ~]# date
Sat Dec 3 04:16:07 PM MSK 2022
root@dmgeneralov ~]# grep 'written' /var/log/messages
Dec 3 14:07:01 dmgeneralov root[1500]: This message is written from root cron
Dec 3 14:08:01 dmgeneralov root[1504]: This message is written from root cron
Dec 3 14:09:01 dmgeneralov root[1508]: This message is written from root cron
Dec 3 14:10:01 dmgeneralov root[1512]: This message is written from root cron
root@dmgeneralov ~]# systemctl status crond
● crond.service - Command Scheduler
   Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2022-12-03 14:15:23 MSK; 2h 1min ago
     Main PID: 1546 (crond)
       Tasks: 2 (limit: 11104)
      Memory: 1.5M
         CPU: 11ms
    CGroup: /system.slice/crond.service
            └─1446 /usr/sbin/anacron -s
              └─1546 /usr/sbin/crond -n

Dec 03 14:15:23 dmgeneralov systemd[1]: crond.service: Deactivated successfully.
Dec 03 14:15:23 dmgeneralov systemd[1]: crond.service: Unit process 1446 (anacron) remains running after unit stopped.
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) STARTUP (1.5.7)
Dec 03 14:15:23 dmgeneralov systemd[1]: Stopped Command Scheduler.
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (Syslog will be used instead of sendmail.)
Dec 03 14:15:23 dmgeneralov systemd[1]: Started Command Scheduler.
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (RANDOM_DELAY will be scaled with factor 68% if used.)
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (Running with inotify support)
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (@reboot jobs will be run at computer's startup.)
root@dmgeneralov ~]#

```

```

No match for argument: atd
Error: Unable to find a match: atd
[root@dmgeneralov ~]# dnf install at
Last metadata expiration check: 0:01:04 ago on Sat 03 Dec 2022 02:21:17 PM MSK.
Dependencies resolved.
=====
Package                Architecture      Version           Size              Repository
=====
Installing:
at                     x86_64            3.1.23-11.el9    68 k              baseos
=====
Transaction Summary
=====
Install 1 Package

Total download size: 68 k
Installed size: 124 k
Is this ok [y/N]: y
Downloading Packages:
at-3.1.23-11.el9.x86_64.rpm                                296 kB/s | 68 kB | 00:00
-----
Total                                                    103 kB/s | 68 kB | 00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      :
  Installing     : at-3.1.23-11.el9.x86_64                                1/1
  Running scriptlet: at-3.1.23-11.el9.x86_64                                1/1
Created symlink /etc/systemd/system/multi-user.target.wants/atd.service → /usr/lib/systemd/system/atd.service.

( 1378.766461) systemd-rc-local-generator[1054]: /etc/rc.d/rc.local is not marked executable, skipping.
Verifying       : at-3.1.23-11.el9.x86_64                                1/1

Installed:
  at-3.1.23-11.el9.x86_64

Complete!
[root@dmgeneralov ~]# systemctl status at
Unit at.service could not be found.
[root@dmgeneralov ~]# systemctl status atd
* atd.service - Deferred execution scheduler
   Loaded: loaded (/usr/lib/systemd/system/atd.service; enabled; vendor preset: enabled)
   Active: inactive (dead)
     Docs: man:atd(8)
[root@dmgeneralov ~]# systemctl start atd
[root@dmgeneralov ~]# systemctl enable atd
( 1393.076694) systemd-rc-local-generator[1093]: /etc/rc.d/rc.local is not marked executable, skipping.
[root@dmgeneralov ~]#

```

```
[root@dmgeneralov ~]# date
Sat Dec  3 02:25:21 PM MSK 2022
[root@dmgeneralov ~]# at 14:26
warning: commands will be executed using /bin/sh
at> logger message from at
at> <EOT>
job 2 at Sat Dec  3 14:26:00 2022
[root@dmgeneralov ~]# atq
2          Sat Dec  3 14:26:00 2022 a root
[root@dmgeneralov ~]# grep " /var/log/messages
> ^C
[root@dmgeneralov ~]# grep "message from at" /var/log/messages
Dec  3 14:25:00 dmgeneralov root[1916]: message from at
[root@dmgeneralov ~]# date
Sat Dec  3 02:25:57 PM MSK 2022
[root@dmgeneralov ~]#
[root@dmgeneralov ~]#
[root@dmgeneralov ~]#
[root@dmgeneralov ~]#
[root@dmgeneralov ~]# date
Sat Dec  3 02:26:00 PM MSK 2022
[root@dmgeneralov ~]# grep "message from at" /var/log/messages
Dec  3 14:25:00 dmgeneralov root[1916]: message from at
Dec  3 14:26:00 dmgeneralov root[1930]: message from at
[root@dmgeneralov ~]#
```

cron.hourly

```
[root@dmgeneralov ~]# ls /etc/cron.hourly/
0anacron  eachhour
[root@dmgeneralov ~]# ls /etc/cron.
cron.d/      cron.daily/  cron.deny  cron.hourly/  cron.monthly/  cron.weekly/
[root@dmgeneralov ~]# cat/etc/cron.hourly/eachhour
-bash: cat/etc/cron.hourly/eachhour: No such file or directory
[root@dmgeneralov ~]# cat /etc/cron.hourly/eachhour
#!/bin/sh
logger This message is written at $(date)
[root@dmgeneralov ~]# date
Sat Dec  3 02:50:20 PM MSK 2022
[root@dmgeneralov ~]# date
Sat Dec  3 02:59:51 PM MSK 2022
[root@dmgeneralov ~]# date
Sat Dec  3 03:00:03 PM MSK 2022
[root@dmgeneralov ~]# grep "written at" /var/log/messages
[root@dmgeneralov ~]# grep "written" /var/log/messages
Dec  3 14:07:01 dmgeneralov root[1500]: This message is written from root cron
Dec  3 14:08:01 dmgeneralov root[1504]: This message is written from root cron
Dec  3 14:09:01 dmgeneralov root[1508]: This message is written from root cron
Dec  3 14:10:01 dmgeneralov root[1512]: This message is written from root cron
[root@dmgeneralov ~]# systemctl status -l crond
● crond.service - Command Scheduler
   Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2022-12-03 14:15:23 MSK; 45min ago
     Main PID: 1546 (crond)
       Tasks: 1 (limit: 1104)
      Memory: 1.2M
         CPU: 1.676s
    CGroup: /system.slice/crond.service
            └─1546 /usr/sbin/crond -n

Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (Syslog will be used instead of sendmail.)
Dec 03 14:15:23 dmgeneralov systemd[1]: Started Command Scheduler.
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (RANDOM_DELAY will be scaled with factor 68% if used.)
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (Crumming with inotify support)
Dec 03 14:15:23 dmgeneralov crond[1546]: (CRON) INFO (@reboot jobs will be run at computer's startup.)
Dec 03 14:33:11 dmgeneralov anacron[1446]: Job `cron.daily' started
Dec 03 14:33:11 dmgeneralov anacron[1446]: Job `cron.daily' terminated
Dec 03 14:53:01 dmgeneralov anacron[1446]: Job `cron.weekly' started
Dec 03 14:53:01 dmgeneralov anacron[1446]: Job `cron.weekly' terminated
Dec 03 14:53:01 dmgeneralov anacron[1446]: Normal exit (2 jobs run)
[root@dmgeneralov ~]# _
```

```
(root@dmgeneralov ~)# systemctl status -l crond
● crond.service - Command Scheduler
   Loaded: loaded (/usr/lib/systemd/system/crond.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2022-12-03 14:15:23 MSK; 1h 56min ago
     Main PID: 1546 (crond)
       Tasks: 1 (limit: 11104)
      Memory: 1.2M
         CPU: 6.962s
    CGroup: /system.slice/crond.service
            └─1546 /usr/sbin/crond -n

Dec 03 15:01:01 dmgeneralov CROND[2441]: (root) CMDEND (run-parts /etc/cron.hourly)
Dec 03 15:11:01 dmgeneralov CROND[2623]: (root) CMD (logger This message is written from /etc/cron.d)
Dec 03 15:11:01 dmgeneralov root[2623]: This message is written from /etc/cron.d
Dec 03 15:11:01 dmgeneralov CROND[2621]: (root) CMDEND (logger This message is written from /etc/cron.d)
Dec 03 16:01:01 dmgeneralov CROND[3432]: (root) CMD (run-parts /etc/cron.hourly)
Dec 03 16:01:01 dmgeneralov run-parts[3444]: (/etc/cron.hourly) starting eachhour
Dec 03 16:01:01 dmgeneralov run-parts[3450]: (/etc/cron.hourly) finished eachhour
Dec 03 16:11:01 dmgeneralov CROND[3610]: (root) CMD (logger This message is written from /etc/cron.d)
Dec 03 16:11:01 dmgeneralov root[3610]: This message is written from /etc/cron.d
Dec 03 16:11:01 dmgeneralov CROND[3608]: (root) CMDEND (logger This message is written from /etc/cron.d)
(root@dmgeneralov ~)# grep "written" /var/log/messages
Dec 3 14:07:01 dmgeneralov root[1500]: This message is written from root cron
Dec 3 14:08:01 dmgeneralov root[1504]: This message is written from root cron
Dec 3 14:09:01 dmgeneralov root[1508]: This message is written from root cron
Dec 3 14:10:01 dmgeneralov root[1512]: This message is written from root cron
Dec 3 15:01:01 dmgeneralov root[2459]: This message is written at Sat Dec 3 03:01:01 PM MSK 2022
Dec 3 15:11:01 dmgeneralov root[2623]: This message is written from /etc/cron.d
Dec 3 16:01:01 dmgeneralov root[3448]: This message is written at Sat Dec 3 04:01:01 PM MSK 2022
Dec 3 16:11:01 dmgeneralov root[3610]: This message is written from /etc/cron.d
(root@dmgeneralov ~)# _
```

Рис. 9: cron.hourly

Я получил опыт работы с cron и atd.