Лабораторная работа 7

Генералов Даниил, НПИбд-01-21, 1032202280

2022

[1] RUDN University, Moscow, Russian Federation

Задача

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1. Продемонстрируйте навыки работы с журналом мониторинга событий в реальном времени (см. раздел 7.4.1).

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3. Продемонстрируйте навыки работы с journalctl (см. раздел 7.4.3).

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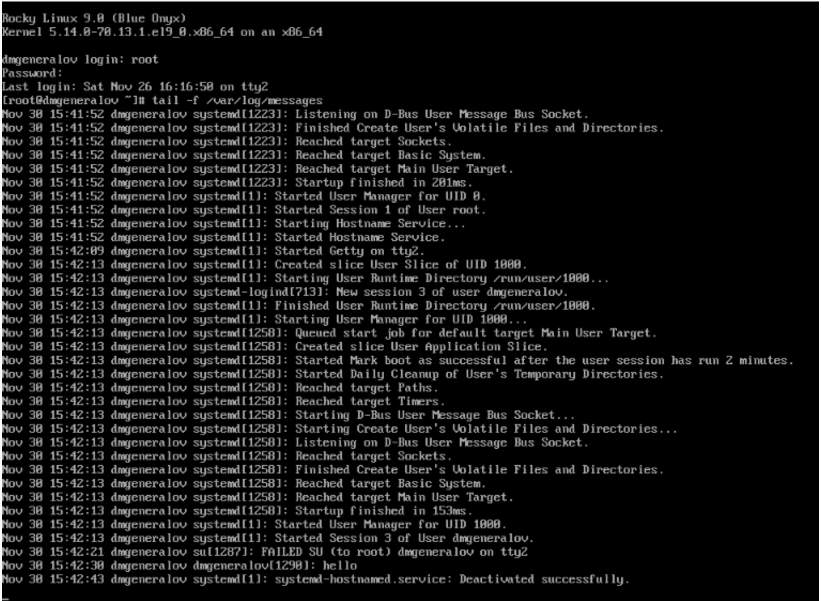
3. Продемонстрируйте навыки работы с journalctl (см. раздел 7.4.3).
4. Продемонстрируйте навыки работы с journald (см. раздел 7.4.4).

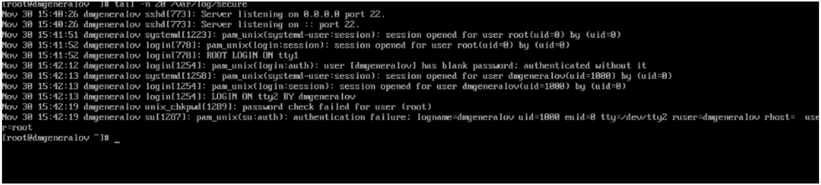
Выполнение

/var/log/messages



```
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: Sat Nov 26 16:16:50 on tty2
[root@dmgeneralov ~]# tail -f /var/log/messages
Nov 30 15:41:52 dmgeneralov systemd[1223]: Listening on D-Bus User Message Bus Socket.
Nov 30 15:41:52 dmgeneralov systemd[1223]: Finished Create User's Volatile Files and Directories.
Nov 30 15:41:52 dmgeneralov systemd[1223]: Reached target Sockets.
Nov 30 15:41:52 dmgeneralov systemd[1223]: Reached target Basic System.
Nov 30 15:41:52 dmgeneralov systemd[1223]: Reached target Main User Target.
Nov 30 15:41:52 dmgeneralov systemd[1223]: Startup finished in 201ms.
Nov 30 15:41:52 dmgeneralov systemd[1]: Started User Manager for UID 0.
Nov 30 15:41:52 dmgeneralov systemd[1]: Started Session 1 of User root.
Nov 30 15:41:52 dmgeneralov systemd[1]: Starting Hostname Service...
Nov 30 15:41:52 dmgeneralov systemd[1]: Started Hostname Service.
Nov 30 15:42:09 dmgeneralov systemd[1]: Started Getty on tty2.
Nov 30 15:42:13 dmgeneralov systemd[1]: Created slice User Slice of UID 1000.
Nov 30 15:42:13 dmgeneralov systemd[1]: Starting User Runtime Directory /run/user/1000...
Nov 30 15:42:13 dmgeneralov systemd-logind[713]: New session 3 of user dmgeneralov.
Nov 30 15:42:13 dmgeneralov systemd[1]: Finished User Runtime Directory /run/user/1000.
Nov 30 15:42:13 dmgeneralov systemd[1]: Starting User Manager for UID 1000...
Nov 30 15:42:13 dmgeneralov systemd[1258]: Queued start job for default target Main User Target.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Created slice User Application Slice.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Started Mark boot as successful after the user session has run 2 minutes.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Started Daily Cleanup of User's Temporary Directories.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Reached target Paths.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Reached target Timers.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Starting D-Bus User Message Bus Socket...
Nov 30 15:42:13 dmgeneralov systemd[1258]: Starting Create User's Volatile Files and Directories...
Nov 30 15:42:13 dmgeneralov systemd[1258]: Listening on D-Bus User Message Bus Socket.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Reached target Sockets.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Finished Create User's Volatile Files and Directories.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Reached target Basic System.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Reached target Main User Target.
Nov 30 15:42:13 dmgeneralov systemd[1258]: Startup finished in 153ms.
Nov 30 15:42:13 dmgeneralov systemd[1]: Started User Manager for UID 1000.
Nov 30 15:42:13 dmgeneralov systemd[1]: Started Session 3 of User dmgeneralov.
Nov 30 15:42:21 dmgeneralov su[1287]: FAILED SU (to root) dmgeneralov on tty2
Nov 30 15:42:30 dmgeneralov dmgeneralov[1290]: hello
Nov 30 15:42:43 dmgeneralov systemd[1]: systemd-hostnamed.service: Deactivated successfully.
_
```

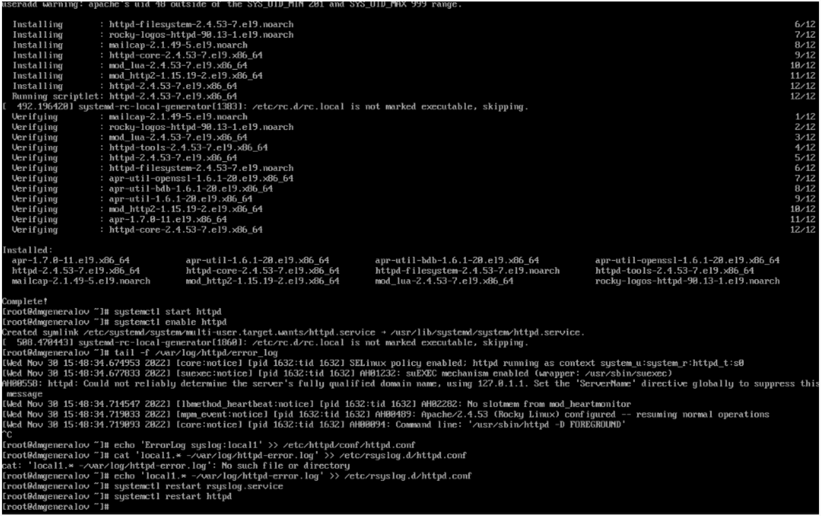
/var/log/secure



```
[root@dmgeneralov ~]# tail -n 20 /var/log/secure
Nov 30 15:40:26 dmgeneralov sshd[773]: Server listening on 0.0.0.0 port 22.
Nov 30 15:40:26 dmgeneralov sshd[773]: Server listening on :: port 22.
Nov 30 15:41:51 dmgeneralov systemd[1223]: pam_unix(systemd-user:session): session opened for user root(uid=0) by (uid=0)
Nov 30 15:41:52 dmgeneralov login[778]: pam_unix(login:session): session opened for user root(uid=0) by (uid=0)
Nov 30 15:41:52 dmgeneralov login[778]: ROOT LOGIN ON tty1
Nov 30 15:42:12 dmgeneralov login[1254]: pam_unix(login:auth): user [dmgeneralov] has blank password; authenticated without it
Nov 30 15:42:13 dmgeneralov systemd[1258]: pam_unix(systemd-user:session): session opened for user dmgeneralov(uid=1000) by (uid=0)
Nov 30 15:42:13 dmgeneralov login[1254]: pam_unix(login:session): session opened for user dmgeneralov(uid=1000) by (uid=0)
Nov 30 15:42:13 dmgeneralov login[1254]: LOGIN ON tty2 BY dmgeneralov
Nov 30 15:42:19 dmgeneralov unix_chkpwd[1289]: password check failed for user (root)
Nov 30 15:42:19 dmgeneralov su[1287]: pam_unix(su:auth): authentication failure; logname=dmgeneralov uid=1000 euid=0 tty=/dev/tty2 ruser=dmgeneralov rhost=  use
r=root
[root@dmgeneralov ~]# _
```

Рис. 2: /var/log/secure

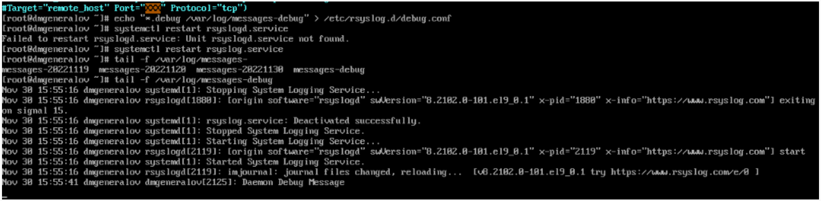
httpd и syslog



```
useradd warning: apache's uid 48 outside of the SYS_UID_MIN 201 and SYS_UID_MAX 999 range.

  Installing       : httpd-filesystem-2.4.53-7.el9.noarch                                           6/12
  Installing       : rocky-logos-httpd-90.13-1.el9.noarch                                           7/12
  Installing       : mailcap-2.1.49-5.el9.noarch                                                    8/12
  Installing       : httpd-core-2.4.53-7.el9.x86_64                                                 9/12
  Installing       : mod_lua-2.4.53-7.el9.x86_64                                                   10/12
  Installing       : mod_http2-1.15.19-2.el9.x86_64                                                11/12
  Installing       : httpd-2.4.53-7.el9.x86_64                                                     12/12
  Running scriptlet: httpd-2.4.53-7.el9.x86_64                                                     12/12
[  492.196420] systemd-rc-local-generator[1383]: /etc/rc.d/rc.local is not marked executable, skipping.
  Verifying        : mailcap-2.1.49-5.el9.noarch                                                    1/12
  Verifying        : rocky-logos-httpd-90.13-1.el9.noarch                                           2/12
  Verifying        : mod_lua-2.4.53-7.el9.x86_64                                                    3/12
  Verifying        : httpd-tools-2.4.53-7.el9.x86_64                                                4/12
  Verifying        : httpd-2.4.53-7.el9.x86_64                                                      5/12
  Verifying        : httpd-filesystem-2.4.53-7.el9.noarch                                           6/12
  Verifying        : apr-util-openssl-1.6.1-20.el9.x86_64                                           7/12
  Verifying        : apr-util-bdb-1.6.1-20.el9.x86_64                                               8/12
  Verifying        : apr-util-1.6.1-20.el9.x86_64                                                   9/12
  Verifying        : mod_http2-1.15.19-2.el9.x86_64                                                10/12
  Verifying        : apr-1.7.0-11.el9.x86_64                                                       11/12
  Verifying        : httpd-core-2.4.53-7.el9.x86_64                                                12/12

Installed:
  apr-1.7.0-11.el9.x86_64          apr-util-1.6.1-20.el9.x86_64        apr-util-bdb-1.6.1-20.el9.x86_64         apr-util-openssl-1.6.1-20.el9.x86_64
  httpd-2.4.53-7.el9.x86_64        httpd-core-2.4.53-7.el9.x86_64      httpd-filesystem-2.4.53-7.el9.noarch     httpd-tools-2.4.53-7.el9.x86_64
  mailcap-2.1.49-5.el9.noarch      mod_http2-1.15.19-2.el9.x86_64      mod_lua-2.4.53-7.el9.x86_64              rocky-logos-httpd-90.13-1.el9.noarch

Complete!
[root@dmgeneralov ~]# systemctl start httpd
[root@dmgeneralov ~]# systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[  508.470443] systemd-rc-local-generator[1860]: /etc/rc.d/rc.local is not marked executable, skipping.
[root@dmgeneralov ~]# tail -f /var/log/httpd/error_log
[Wed Nov 30 15:48:34.674953 2022] [core:notice] [pid 1632:tid 1632] SELinux policy enabled; httpd running as context system_u:system_r:httpd_t:s0
[Wed Nov 30 15:48:34.677833 2022] [suexec:notice] [pid 1632:tid 1632] AH01232: suEXEC mechanism enabled (wrapper: /usr/sbin/suexec)
AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this
 message
[Wed Nov 30 15:48:34.714547 2022] [lbmethod_heartbeat:notice] [pid 1632:tid 1632] AH02282: No slotmem from mod_heartmonitor
[Wed Nov 30 15:48:34.719033 2022] [mpm_event:notice] [pid 1632:tid 1632] AH00489: Apache/2.4.53 (Rocky Linux) configured -- resuming normal operations
[Wed Nov 30 15:48:34.719093 2022] [core:notice] [pid 1632:tid 1632] AH00094: Command line: '/usr/sbin/httpd -D FOREGROUND'
^C
[root@dmgeneralov ~]# echo 'ErrorLog syslog:local1' >> /etc/httpd/conf/httpd.conf
[root@dmgeneralov ~]# cat 'local1.* -/var/log/httpd-error.log' >> /etc/rsyslog.d/httpd.conf
cat: 'local1.* -/var/log/httpd-error.log': No such file or directory
[root@dmgeneralov ~]# echo 'local1.* -/var/log/httpd-error.log' >> /etc/rsyslog.d/httpd.conf
[root@dmgeneralov ~]# systemctl restart rsyslog.service
[root@dmgeneralov ~]# systemctl restart httpd
[root@dmgeneralov ~]#
```

Рис. 3: httpd и syslog

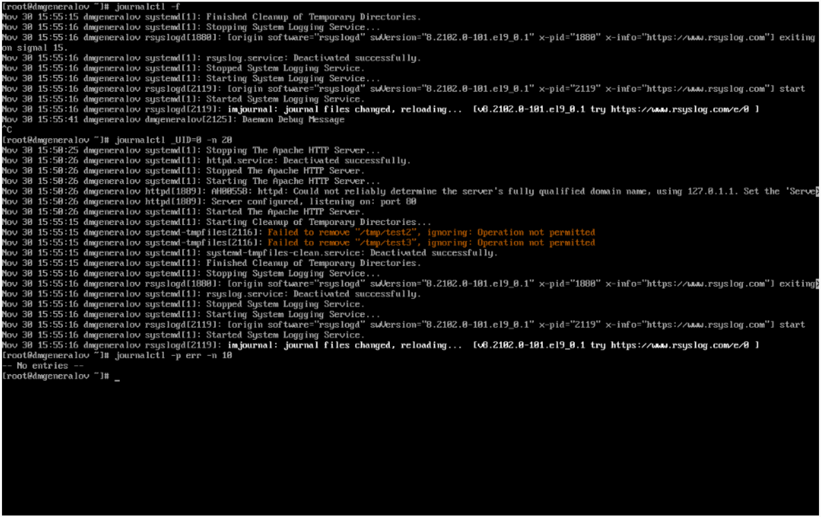
*.debug



```
#Target="remote_host" Port="XXX" Protocol="tcp")
[root@dmgeneralov ~]# echo "*.debug /var/log/messages-debug" > /etc/rsyslog.d/debug.conf
[root@dmgeneralov ~]# systemctl restart rsyslogd.service
Failed to restart rsyslogd.service: Unit rsyslogd.service not found.
[root@dmgeneralov ~]# systemctl restart rsyslog.service
[root@dmgeneralov ~]# tail -f /var/log/messages-
messages-20221119  messages-20221120  messages-20221130  messages-debug
[root@dmgeneralov ~]# tail -f /var/log/messages-debug
Nov 30 15:55:16 dmgeneralov systemd[1]: Stopping System Logging Service...
Nov 30 15:55:16 dmgeneralov rsyslogd[1880]: [origin software="rsyslogd" swVersion="8.2102.0-101.el9_0.1" x-pid="1880" x-info="https://www.rsyslog.com"] exiting
on signal 15.
Nov 30 15:55:16 dmgeneralov systemd[1]: rsyslog.service: Deactivated successfully.
Nov 30 15:55:16 dmgeneralov systemd[1]: Stopped System Logging Service.
Nov 30 15:55:16 dmgeneralov systemd[1]: Starting System Logging Service...
Nov 30 15:55:16 dmgeneralov rsyslogd[2119]: [origin software="rsyslogd" swVersion="8.2102.0-101.el9_0.1" x-pid="2119" x-info="https://www.rsyslog.com"] start
Nov 30 15:55:16 dmgeneralov systemd[1]: Started System Logging Service.
Nov 30 15:55:16 dmgeneralov rsyslogd[2119]: imjournal: journal files changed, reloading...  [v8.2102.0-101.el9_0.1 try https://www.rsyslog.com/e/0 ]
Nov 30 15:55:41 dmgeneralov dmgeneralov[2125]: Daemon Debug Message
_
```

Рис. 4: *.debug

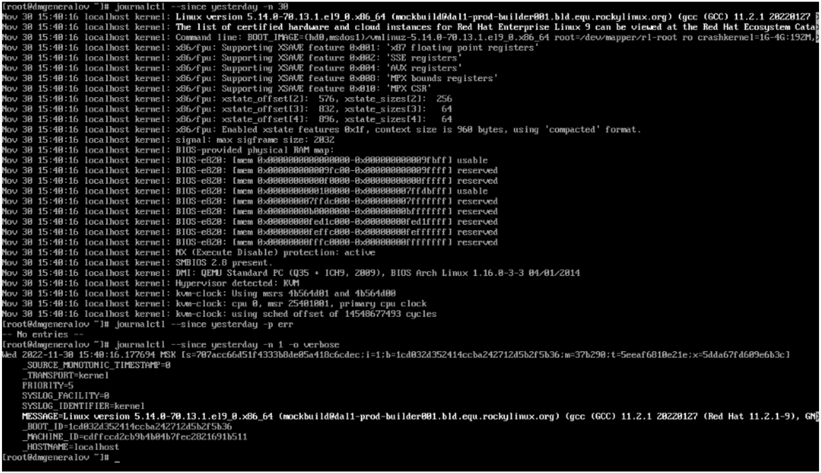
journalctl



```
[root@dmgeneralov ~]# journalctl -f
Nov 30 15:55:15 dmgeneralov systemd[1]: Finished Cleanup of Temporary Directories.
Nov 30 15:55:16 dmgeneralov systemd[1]: Stopping System Logging Service...
Nov 30 15:55:16 dmgeneralov rsyslogd[1880]: [origin software="rsyslogd" swVersion="8.2102.0-101.el9_0.1" x-pid="1880" x-info="https://www.rsyslog.com"] exiting
on signal 15.
Nov 30 15:55:16 dmgeneralov systemd[1]: rsyslog.service: Deactivated successfully.
Nov 30 15:55:16 dmgeneralov systemd[1]: Stopped System Logging Service.
Nov 30 15:55:16 dmgeneralov systemd[1]: Starting System Logging Service...
Nov 30 15:55:16 dmgeneralov rsyslogd[2119]: [origin software="rsyslogd" swVersion="8.2102.0-101.el9_0.1" x-pid="2119" x-info="https://www.rsyslog.com"] start
Nov 30 15:55:16 dmgeneralov systemd[1]: Started System Logging Service.
Nov 30 15:55:16 dmgeneralov rsyslogd[2119]: imjournal: journal files changed, reloading...  [v8.2102.0-101.el9_0.1 try https://www.rsyslog.com/e/0 ]
Nov 30 15:55:41 dmgeneralov dmgeneralov[2125]: Daemon Debug Message
^C
[root@dmgeneralov ~]# journalctl _UID=0 -n 20
Nov 30 15:50:25 dmgeneralov systemd[1]: Stopping The Apache HTTP Server...
Nov 30 15:50:26 dmgeneralov systemd[1]: httpd.service: Deactivated successfully.
Nov 30 15:50:26 dmgeneralov systemd[1]: Stopped The Apache HTTP Server.
Nov 30 15:50:26 dmgeneralov systemd[1]: Starting The Apache HTTP Server...
Nov 30 15:50:26 dmgeneralov httpd[1889]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'Serve>
Nov 30 15:50:26 dmgeneralov httpd[1889]: Server configured, listening on: port 80
Nov 30 15:50:26 dmgeneralov systemd[1]: Started The Apache HTTP Server.
Nov 30 15:55:15 dmgeneralov systemd[1]: Starting Cleanup of Temporary Directories...
Nov 30 15:55:15 dmgeneralov systemd-tmpfiles[2116]: Failed to remove "/tmp/test2", ignoring: Operation not permitted
Nov 30 15:55:15 dmgeneralov systemd-tmpfiles[2116]: Failed to remove "/tmp/test3", ignoring: Operation not permitted
Nov 30 15:55:15 dmgeneralov systemd[1]: systemd-tmpfiles-clean.service: Deactivated successfully.
Nov 30 15:55:15 dmgeneralov systemd[1]: Finished Cleanup of Temporary Directories.
Nov 30 15:55:16 dmgeneralov systemd[1]: Stopping System Logging Service...
Nov 30 15:55:16 dmgeneralov rsyslogd[1880]: [origin software="rsyslogd" swVersion="8.2102.0-101.el9_0.1" x-pid="1880" x-info="https://www.rsyslog.com"] exiting>
Nov 30 15:55:16 dmgeneralov systemd[1]: rsyslog.service: Deactivated successfully.
Nov 30 15:55:16 dmgeneralov systemd[1]: Stopped System Logging Service.
Nov 30 15:55:16 dmgeneralov systemd[1]: Starting System Logging Service...
Nov 30 15:55:16 dmgeneralov rsyslogd[2119]: [origin software="rsyslogd" swVersion="8.2102.0-101.el9_0.1" x-pid="2119" x-info="https://www.rsyslog.com"] start
Nov 30 15:55:16 dmgeneralov systemd[1]: Started System Logging Service.
Nov 30 15:55:16 dmgeneralov rsyslogd[2119]: imjournal: journal files changed, reloading...  [v8.2102.0-101.el9_0.1 try https://www.rsyslog.com/e/0 ]
[root@dmgeneralov ~]# journalctl -p err -n 10
-- No entries --
[root@dmgeneralov ~]# _
```

Рис. 5: journalctl

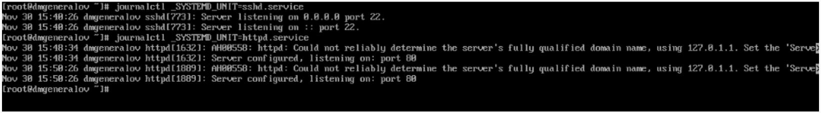
journalctl



```
[root@dmgeneralov ~]# journalctl --since yesterday -n 30
Nov 30 15:40:16 localhost kernel: Linux version 5.14.0-70.13.1.el9_0.x86_64 (mockbuild@dal1-prod-builder001.bld.equ.rockylinux.org) (gcc (GCC) 11.2.1 20220127 >
Nov 30 15:40:16 localhost kernel: The list of certified hardware and cloud instances for Red Hat Enterprise Linux 9 can be viewed at the Red Hat Ecosystem Cata>
Nov 30 15:40:16 localhost kernel: Command line: BOOT_IMAGE=(hd0,msdos1)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64 root=/dev/mapper/rl-root ro crashkernel=1G-4G:192M,>
Nov 30 15:40:16 localhost kernel: x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
Nov 30 15:40:16 localhost kernel: x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
Nov 30 15:40:16 localhost kernel: x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
Nov 30 15:40:16 localhost kernel: x86/fpu: Supporting XSAVE feature 0x008: 'MPX bounds registers'
Nov 30 15:40:16 localhost kernel: x86/fpu: Supporting XSAVE feature 0x010: 'MPX CSR'
Nov 30 15:40:16 localhost kernel: x86/fpu: xstate_offset[2]:  576, xstate_sizes[2]:  256
Nov 30 15:40:16 localhost kernel: x86/fpu: xstate_offset[3]:  832, xstate_sizes[3]:   64
Nov 30 15:40:16 localhost kernel: x86/fpu: xstate_offset[4]:  896, xstate_sizes[4]:   64
Nov 30 15:40:16 localhost kernel: x86/fpu: Enabled xstate features 0x1f, context size is 960 bytes, using 'compacted' format.
Nov 30 15:40:16 localhost kernel: signal: max sigframe size: 2032
Nov 30 15:40:16 localhost kernel: BIOS-provided physical RAM map:
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x0000000000100000-0x000000007ffdbfff] usable
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x000000007ffdc000-0x000000007fffffff] reserved
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x00000000b0000000-0x00000000bfffffff] reserved
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x00000000fed1c000-0x00000000fed1ffff] reserved
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x00000000feffc000-0x00000000feffffff] reserved
Nov 30 15:40:16 localhost kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
Nov 30 15:40:16 localhost kernel: NX (Execute Disable) protection: active
Nov 30 15:40:16 localhost kernel: SMBIOS 2.8 present.
Nov 30 15:40:16 localhost kernel: DMI: QEMU Standard PC (Q35 + ICH9, 2009), BIOS Arch Linux 1.16.0-3-3 04/01/2014
Nov 30 15:40:16 localhost kernel: Hypervisor detected: KVM
Nov 30 15:40:16 localhost kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
Nov 30 15:40:16 localhost kernel: kvm-clock: cpu 0, msr 25401001, primary cpu clock
Nov 30 15:40:16 localhost kernel: kvm-clock: using sched offset of 14548677493 cycles
[root@dmgeneralov ~]# journalctl --since yesterday -p err
-- No entries --
[root@dmgeneralov ~]# journalctl --since yesterday -n 1 -o verbose
Wed 2022-11-30 15:40:16.177694 MSK [s=707acc66d51f4333b8de05a418c6cdec;i=1;b=1cd032d352414ccba242712d5b2f5b36;m=37b290;t=5eeaf6810e21e;x=5dda67fd609e6b3c]
    _SOURCE_MONOTONIC_TIMESTAMP=0
    _TRANSPORT=kernel
    PRIORITY=5
    SYSLOG_FACILITY=0
    SYSLOG_IDENTIFIER=kernel
    MESSAGE=Linux version 5.14.0-70.13.1.el9_0.x86_64 (mockbuild@dal1-prod-builder001.bld.equ.rockylinux.org) (gcc (GCC) 11.2.1 20220127 (Red Hat 11.2.1-9), GN>
    _BOOT_ID=1cd032d352414ccba242712d5b2f5b36
    _MACHINE_ID=cdffccd2cb9b4b04b7fec2821691b511
    _HOSTNAME=localhost
[root@dmgeneralov ~]# _
```

Рис. 6: journalctl

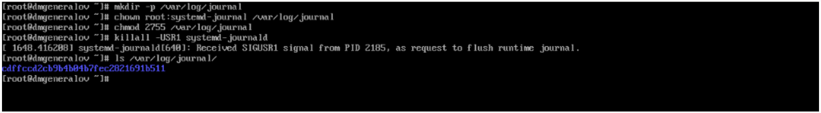
journalctl



```
[root@dmgeneralov ~]# journalctl _SYSTEMD_UNIT=sshd.service
Nov 30 15:40:26 dmgeneralov sshd[773]: Server listening on 0.0.0.0 port 22.
Nov 30 15:40:26 dmgeneralov sshd[773]: Server listening on :: port 22.
[root@dmgeneralov ~]# journalctl _SYSTEMD_UNIT=httpd.service
Nov 30 15:48:34 dmgeneralov httpd[1632]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'Serve>
Nov 30 15:48:34 dmgeneralov httpd[1632]: Server configured, listening on: port 80
Nov 30 15:50:26 dmgeneralov httpd[1889]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'Serve>
Nov 30 15:50:26 dmgeneralov httpd[1889]: Server configured, listening on: port 80
[root@dmgeneralov ~]#
```

Рис. 7: journalctl

journalctl



```
[root@dmgeneralov ~]# mkdir -p /var/log/journal
[root@dmgeneralov ~]# chown root:systemd-journal /var/log/journal
[root@dmgeneralov ~]# chmod 2755 /var/log/journal
[root@dmgeneralov ~]# killall -USR1 systemd-journald
[ 1648.416208] systemd-journald[640]: Received SIGUSR1 signal from PID 2185, as request to flush runtime journal.
[root@dmgeneralov ~]# ls /var/log/journal/
cdffccd2cb9b4b04b7fec2821691b511
[root@dmgeneralov ~]#
```

Рис. 8: journalctl

Вывод

Я получил опыт работы с rsyslogd и journald.