

Отчёт по лабораторной работе №7

Управление журналами событий в системе

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Цель работы

Цель

Получить навыки работы с журналами мониторинга различных событий в системе.

Выполнение лабораторной работы

Мониторинг системных событий



A screenshot of a terminal window titled "root@localhost:~ - sudo -i". The window contains the following command history:

```
spborisenkova@localhost:~$ whoami  
spborisenkova  
spborisenkova@localhost:~$ id  
uid=1000(spborisenkova) gid=1000(spborisenkova) groups=1000(spborisenkova),10(wheel) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
spborisenkova@localhost:~$ sudo -i  
[sudo] password for spborisenkova:  
root@localhost:~# id  
uid=0(root) gid=0(root) groups=0(root) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023  
root@localhost:~# exit  
bash: exit: command not found...  
root@localhost:~#
```

Рис. 1: Ошибка аутентификации при su

Мониторинг системных событий

```
#012#5 0x00007fd708b283c9 __libc_start_main@@GLIBC_2.34 (libc.so.6 + 0x2a3c9)#012#6 0x00000000004044
aa n/a (n/a + 0x0)#012ELF object binary architecture: AMD x86-64
Sep 28 13:02:41 dsyakovleva systemd[1]: systemd-coredump@101-4924-0.service: Deactivated successfully.
Sep 28 13:02:44 dsyakovleva dsyakovleva[4930]: hello
Sep 28 13:02:45 dsyakovleva dsyakovleva[4932]: hello
Sep 28 13:02:45 dsyakovleva dsyakovleva[4939]: hello
Sep 28 13:02:46 dsyakovleva kernel: traps: VBoxClient[4944] trap int3 ip:41dd1b sp:7fd6fa4cfcd0 error:
0 in VBoxClient[1dd1b,400000+bb000]
Sep 28 13:02:46 dsyakovleva systemd-coredump[4945]: Process 4941 (VBoxClient) of user 1000 terminated
abnormally with signal 5/TRAP, processing...
Sep 28 13:02:46 dsyakovleva systemd[1]: Started systemd-coredump@102-4945-0.service - Process Core Dum
p (PID 4945/UID 0).
Sep 28 13:02:46 dsyakovleva systemd-coredump[4946]: Process 4941 (VBoxClient) of user 1000 dumped core
.#012#012Module libXau.so.6 from rpm libXau-1.0.11-8.el10.x86_64#012Module libxcb.so.1 from rpm libxcb
-1.17.0-3.el10.x86_64#012Module libX11.so.6 from rpm libX11-1.8.10-1.el10.x86_64#012Module libffi.so.8
from rpm libffi-3.4-4-9.el10.x86_64#012Module libwvland-client.so.0 from rpm wvland-1.23.0-2.el10.x
```

Рис. 2: Сообщение logger hello

Мониторинг системных событий

```
root@dsyakovleva:/home/dsyakovleva# tail -n 20 /var/log/secure
Sep 23 14:43:07 dsyakovleva su[6243]: pam_unix(su:session): session closed for user root
Sep 28 12:52:40 dsyakovleva sshd[1242]: Server listening on 0.0.0.0 port 22.
Sep 28 12:52:40 dsyakovleva sshd[1242]: Server listening on :: port 22.
Sep 28 12:52:41 dsyakovleva (systemd)[1293]: pam_unix(systemd-user:session): session opened for user g
dm(uid=42) by gdm(uid=0)
Sep 28 12:52:43 dsyakovleva gdm-launch-environment][1286]: pam_unix(gdm-launch-environment:session): s
ession opened for user gdm(uid=42) by (uid=0)
Sep 28 12:53:08 dsyakovleva gdm-password][1962]: gkr-pam: unable to locate daemon control file
Sep 28 12:53:08 dsyakovleva gdm-password][1962]: gkr-pam: stashed password to try later in open sessio
n
Sep 28 12:53:08 dsyakovleva (systemd)[2020]: pam_unix(systemd-user:session): session opened for user d
syakovleva(uid=1000) by dsyakovleva(uid=0)
Sep 28 12:53:09 dsyakovleva gdm-password][1962]: pam_unix(gdm-password:session): session opened for us
er dsyakovleva(uid=1000) by dsyakovleva(uid=0)
Sep 28 12:53:09 dsyakovleva gdm-password][1962]: gkr-pam: gnome-keyring-daemon started properly and un
locked keyring
Sep 28 12:53:20 dsyakovleva gdm-launch-environment][1286]: pam_unix(gdm-launch-environment:session): s
ession closed for user gdm
Sep 28 13:00:14 dsyakovleva (systemd)[4472]: pam_unix(systemd-user:session): session opened for user r
oot(uid=0) by root(uid=0)
Sep 28 13:00:15 dsyakovleva su[4445]: pam_unix(su:session): session opened for user root(uid=0) by dsy
akovleva(uid=1000)
Sep 28 13:00:20 dsyakovleva su[4517]: pam_unix(su:session): session opened for user root(uid=0) by dsy
akovleva(uid=1000)
Sep 28 13:00:28 dsyakovleva su[4565]: pam_unix(su:session): session opened for user root(uid=0) by dsy
akovleva(uid=1000)
Sep 28 13:01:58 dsyakovleva su[4445]: pam_unix(su:session): session closed for user root
Sep 28 13:02:01 dsyakovleva unix_chkpwd[4819]: password check failed for user (root)
Sep 28 13:02:01 dsyakovleva su[4810]: pam_unix(su:auth): authentication failure; logname=dsyakovleva u
id=1000 euid=0 tty=/dev/pts/2 ruser=dsyakovleva rhost= user=root
Sep 28 13:02:07 dsyakovleva unix_chkpwd[4833]: password check failed for user (root)
Sep 28 13:02:07 dsyakovleva su[4831]: pam_unix(su:auth): authentication failure; logname=dsyakovleva u
id=1000 euid=0 tty=/dev/pts/2 ruser=dsyakovleva rhost= user=root
root@dsyakovleva:/home/dsyakovleva#
```

Изменение правил rsyslog.conf

```
Installing      : mod_http2-2.0.29-2.el10_0.1.x86_64          9/11
Installing      : mod_lua-2.4.63-1.el10_0.2.x86_64          10/11
Installing      : httpd-2.4.63-1.el10_0.2.x86_64          11/11
Running scriptlet: httpd-2.4.63-1.el10_0.2.x86_64          11/11

Installed:
  apr-1.7.5-2.el10.x86_64                               apr-util-1.6.3-21.el10.x86_64
  apr-util-lmdb-1.6.3-21.el10.x86_64                  apr-util-openssl-1.6.3-21.el10.x86_64
  httpd-2.4.63-1.el10_0.2.x86_64                      httpd-core-2.4.63-1.el10_0.2.x86_64
  httpd-filesystem-2.4.63-1.el10_0.2.noarch           httpd-tools-2.4.63-1.el10_0.2.x86_64
  mod_http2-2.0.29-2.el10_0.1.x86_64                 mod_lua-2.4.63-1.el10_0.2.x86_64
  rocky-logos-httpd-100.4-7.el10.noarch

Complete!
root@dsyakovleva:/home/dsyakovleva# systemctl start httpd
root@dsyakovleva:/home/dsyakovleva# systemctl enable httpd
Created symlink '/etc/systemd/system/multi-user.target.wants/httpd.service' → '/usr/lib/systemd/system/httpd.service'.
root@dsyakovleva:/home/dsyakovleva#
```

Рис. 4: Установка и запуск Apache

Изменение правил rsyslog.conf

```
root@dsyakovleva:/home/dsyakovleva# tail -f /var/log/httpd/error_log
[Sun Sep 28 13:06:41.350959 2025] [suexec:notice] [pid 5702:tid 5702] AH01232: suEXEC mechanism enabled (wrapper: /usr/sbin/suexec)
[Sun Sep 28 13:06:41.425686 2025] [lbmethod_heartbeat:notice] [pid 5702:tid 5702] AH02282: No slotmem from mod_heartmonitor
[Sun Sep 28 13:06:41.427898 2025] [systemd:notice] [pid 5702:tid 5702] SELinux policy enabled; httpd running as context system_u:system_r:httpd_t:s0
[Sun Sep 28 13:06:41.436591 2025] [mpm_event:notice] [pid 5702:tid 5702] AH00489: Apache/2.4.63 (Rocky Linux) configured -- resuming normal operations
[Sun Sep 28 13:06:41.436624 2025] [core:notice] [pid 5702:tid 5702] AH00094: Command line: '/usr/sbin/httpd -D FOREGROUND'
^C
root@dsyakovleva:/home/dsyakovleva#
```

Рис. 5: Просмотр error_log Apache

Изменение правил rsyslog.conf

```
#  
# EnableMMAP and EnableSendfile: On systems that support it,  
# memory-mapping or the sendfile syscall may be used to deliver  
# files. This usually improves server performance, but must  
# be turned off when serving from networked-mounted  
# filesystems or if support for these functions is otherwise  
# broken on your system.  
# Defaults if commented: EnableMMAP On, EnableSendfile Off  
#  
#EnableMMAP off  
EnableSendfile on  
  
# Supplemental configuration  
#  
# Load config files in the "/etc/httpd/conf.d" directory, if any.  
IncludeOptional conf.d/*.conf  
ErrorLog syslog:local1
```

Рис. 6: Настройка ErrorLog в httpd.conf

Изменение правил rsyslog.conf

```
httpd.conf      [---] 34 L:[ 1+ 0   1/  1] *(34   /  34b) <EOF>
local.* -/var/log/httpd-error.log
```

Рис. 7: Правило rsyslog для httpd

Изменение правил rsyslog.conf

```
root@dsyakovleva:/home/dsyakovleva#  
root@dsyakovleva:/home/dsyakovleva# mcedit /etc/httpd/conf/httpd.conf  
  
root@dsyakovleva:/home/dsyakovleva#  
root@dsyakovleva:/home/dsyakovleva# cd /etc/rsyslog.d/  
root@dsyakovleva:/etc/rsyslog.d# touch httpd.conf  
root@dsyakovleva:/etc/rsyslog.d# mcedit httpd.conf  
  
root@dsyakovleva:/etc/rsyslog.d#  
root@dsyakovleva:/etc/rsyslog.d# touch debug.conf  
root@dsyakovleva:/etc/rsyslog.d# echo "*.debug /var/log/messages-debug" > /etc/rsyslog.d/debug.conf  
root@dsyakovleva:/etc/rsyslog.d#
```

Рис. 8: Создание debug.conf

Изменение правил rsyslog.conf

```
94 n/a (n/a + 0x0)#012#2 0x000000000045041c n/a (n/a + 0x0)#012#3 0x00000000004355d0 n/a (n/a + 0x0)
#012#4 0x00007fd708b9311a start_thread (libc.so.6 + 0x9511a)#012#5 0x00007fd708c03c3c __clone3 (libc
.so.6 + 0x105c3c)#012#012Stack trace of thread 8293:#012#0 0x00007fd708c01a3d syscall (libc.so.6 + 0x
103a3d)#012#1 0x00000000004344e2 n/a (n/a + 0x0)#012#2 0x0000000000450066 n/a (n/a + 0x0)#012#3 0x0
0000000000416559 n/a (n/a + 0x0)#012#4 0x000000000041838a n/a (n/a + 0x0)#012#5 0x0000000000417d6a n/
a (n/a + 0x0)#012#6 0x0000000000404860 n/a (n/a + 0x0)#012#7 0x000000000045041c n/a (n/a + 0x0)#012#
8 0x00000000004355d0 n/a (n/a + 0x0)#012#9 0x00007fd708b9311a start_thread (libc.so.6 + 0x9511a)#012#
10 0x00007fd708c03c3c __clone3 (libc.so.6 + 0x105c3c)#012#012Stack trace of thread 8291:#012#0 0x000
07fd708c01a3d syscall (libc.so.6 + 0x103a3d)#012#1 0x00000000004344e2 n/a (n/a + 0x0)#012#2 0x0000000
0000450066 n/a (n/a + 0x0)#012#3 0x0000000000405123 n/a (n/a + 0x0)#012#4 0x00007fd708b2830e __libc_
start_call_main (libc.so.6 + 0x2a30e)#012#5 0x00007fd708b283c9 __libc_start_main@@GLIBC_2.34 (libc.so
.6 + 0x2a3c9)#012#6 0x00000000004044aa n/a (n/a + 0x0)#012ELF object binary architecture: AMD x86-64
Sep 28 13:19:09 dsyakovleva systemd[1]: systemd-coresdump@282-8295-0.service: Deactivated successfully.
Sep 28 13:19:10 dsyakovleva dsyakovleva[8301]: Daemon Debug Message
```

Рис. 9: Сообщение Daemon Debug Message

Использование journalctl

```
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec0ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee0ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000010000000-0x0000000011fffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: NX (Execute Disable) protection: active
Sep 28 12:52:11 dsyakovleva.localdomain kernel: APIC: Static calls initialized
Sep 28 12:52:11 dsyakovleva.localdomain kernel: SMBIOS 2.5 present.
Sep 28 12:52:11 dsyakovleva.localdomain kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS Virtual
Sep 28 12:52:11 dsyakovleva.localdomain kernel: DMI: Memory slots populated: 0/0
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Hypervisor detected: KVM
Sep 28 12:52:11 dsyakovleva.localdomain kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
Sep 28 12:52:11 dsyakovleva.localdomain kernel: kvm-clock: using sched offset of 12780091978 cycles
Sep 28 12:52:11 dsyakovleva.localdomain kernel: clocksource: kvm-clock: mask: 0xfffffffffffffff max_
Sep 28 12:52:11 dsyakovleva.localdomain kernel: tsc: Detected 2600.000 MHz processor
Sep 28 12:52:11 dsyakovleva.localdomain kernel: e820: update [mem 0x00000000-0x00000fff] usable ==> r
Sep 28 12:52:11 dsyakovleva.localdomain kernel: e820: remove [mem 0x000a0000-0x000fffff] usable
Sep 28 12:52:11 dsyakovleva.localdomain kernel: last_pfn = 0x120000 max_arch_pfn = 0x400000000
Sep 28 12:52:11 dsyakovleva.localdomain kernel: total RAM covered: 4096M
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Found optimal setting for mtrr clean up
Sep 28 12:52:11 dsyakovleva.localdomain kernel: gran_size: 64K      chunk_size: 1G      num_re
Sep 28 12:52:11 dsyakovleva.localdomain kernel: MTRR map: 6 entries (3 fixed + 3 variable; max 35), b
Sep 28 12:52:11 dsyakovleva.localdomain kernel: x86/PAT: Configuration [0-7]: WB WC UC- UC WB WP >
Sep 28 12:52:11 dsyakovleva.localdomain kernel: e820: update [mem 0xe0000000-0xffffffff] usable ==> r
Sep 28 12:52:11 dsyakovleva.localdomain kernel: last_pfn = 0xe0000 max_arch_pfn = 0x400000000
Sep 28 12:52:11 dsyakovleva.localdomain kernel: found SMP MP-table at [mem 0x0009fbf0-0x0009fbff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: RAMDISK: [mem 0x343a1000-0x361c8fff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: ACPI: Early table checksum verification disabled
lines 1-35
```

Рис. 10: Просмотр журнала journalctl

Использование journalctl

```
.4-.el10.x86_64
wayland-1.23.0-2.el10.x86_64
Module libwayland-client.so.0 from rpm
Stack trace of thread 8744:
#0 0x000000000041dd1b n/a (n/a + 0x0)
#1 0x000000000041dc94 n/a (n/a + 0x0)
#2 0x000000000045041c n/a (n/a + 0x0)
#3 0x00000000004355d0 n/a (n/a + 0x0)
#4 0x00007fd708b9311a start_thread (l
ibc.so.6 + 0x9511a)
#5 0x00007fd708c03c3c __clone3 (libc.
so.6 + 0x105c3c)

Stack trace of thread 8741:
#0 0x00007fd708c01a3d syscall (libc.s
o.6 + 0x103a3d)
#1 0x00000000004344e2 n/a (n/a + 0x0)
#2 0x0000000000450066 n/a (n/a + 0x0)
#3 0x0000000000405123 n/a (n/a + 0x0)
#4 0x00007fd708b2830e __libc_start_ca
ll_main (libc.so.6 + 0x2a30e)
#5 0x00007fd708b283c9 __libc_start_ma
in@@GLIBC_2.34 (libc.so.6 + 0x2a3c9)
#6 0x00000000004044aa n/a (n/a + 0x0)
ELF object binary architecture: AMD x8
6-64
Sep 28 13:22:20 dsyakovleva.localdomain systemd[1]: systemd-coredump@317-8745-0.service: Deactivated s
uccessfully.
root@dsyakovleva:/etc/rsyslog.d#
```

Рис. 11: Вывод без пейджера

Использование journalctl

```
#0 0x0000000000041dd1b n/a (n/a + 0x0)
#1 0x0000000000041dc94 n/a (n/a + 0x0)
#2 0x0000000000045041c n/a (n/a + 0x0)
#3 0x000000000004355d0 n/a (n/a + 0x0)
#4 0x00007fd708b9311a start_thread (l
ibc.so.6 + 0x9511a)
#5 0x00007fd708c03c3c __clone3 (libc.
so.6 + 0x105c3c)

Stack trace of thread 8816:
#0 0x00007fd708c01a3d syscall (libc.s
o.6 + 0x103a3d)
#1 0x0000000004344e2 n/a (n/a + 0x0)
#2 0x00000000000450066 n/a (n/a + 0x0)
#3 0x00000000000405123 n/a (n/a + 0x0)
#4 0x00007fd708b2830e __libc_start_ca
ll_main (libc.so.6 + 0x2a30e)
#5 0x00007fd708b283c9 __libc_start_ma
in@@GLIBC_2.34 (libc.so.6 + 0x2a3c9)
#6 0x000000000004044aa n/a (n/a + 0x0)
ELF object binary architecture: AMD x8
6-64
Sep 28 13:22:42 dsyakovleva.localdomain systemd[1]: systemd-coredump@321-8820-0.service: Deactivated s
uccessfully.
```

Рис. 12: Режим реального времени

Использование journalctl

```
root@dsyakovleva:/etc/rsyslog.d#  
root@dsyakovleva:/etc/rsyslog.d# journalctl  
Display all 128 possibilities? (y or n)  
_AUDIT_LOGINUID=          JOB_TYPE=  
_AUDIT_SESSION=           JOURNAL_NAME=  
AVAILABLE=                JOURNAL_PATH=  
AVAILABLE_PRETTY=         _KERNEL_DEVICE=  
_BOOT_ID=                 _KERNEL_SUBSYSTEM=  
_CAP_EFFECTIVE=           KERNEL_USEC=  
_CMDLINE=                 LEADER=  
CODE_FILE=                LIMIT=  
CODE_FUNC=                LIMIT_PRETTY=  
CODE_LINE=                _LINE_BREAK=  
_COMM=                    _MACHINE_ID=  
CONFIG_FILE=              MAX_USE=  
CONFIG_LINE=              MAX_USE_PRETTY=  
COREDUMP_CGROUP=           MEMORY_PEAK=  
COREDUMP_CMDLINE=          MEMORY_SWAP_PEAK=  
COREDUMP_COMM=             MESSAGE=  
COREDUMP_CWD=              MESSAGE_ID=  
COREDUMP_ENVIRON=          NM_DEVICE=  
COREDUMP_EXE=              NM_LOG_DOMAINS=  
COREDUMP_FILENAME=         NM_LOG_LEVEL=  
COREDUMP_GID=              _PID=  
COREDUMP_HOSTNAME=         PODMAN_EVENT=  
COREDUMP_OPEN_FDS=          PODMAN_TIME=  
COREDUMP_OWNER_UID=        PODMAN_TYPE=  
COREDUMP_PACKAGE_JSON=     PRIORITY=  
COREDUMP_PID=              REALMD_OPERATION=  
COREDUMP_PROC_AUXV=        _RUNTIME_SCOPE=  
COREDUMP_PROC_CGROUP=      SEAT_ID=  
COREDUMP_PROC_LIMITS=      _SELINUX_CONTEXT=  
COREDUMP_PROC_MAPS=        SESSION_ID=  
COREDUMP_PROC_MOUNTINFO=   _SOURCE_BOOTTIME_TIMESTAMP=  
COREDUMP_PROC_STATUS=      _SOURCE_MONOTONIC_TIMESTAMP=
```

Использование journalctl

```
root@dsyakovleva:/etc/rsyslog.d# journalctl _UID=0
Sep 28 12:52:11 dsyakovleva.localdomain systemd-journald[303]: Collecting audit messages is disabled.
Sep 28 12:52:11 dsyakovleva.localdomain systemd-journald[303]: Journal started
Sep 28 12:52:11 dsyakovleva.localdomain systemd-journald[303]: Runtime Journal (/run/log/journal/c45e9
Sep 28 12:52:11 dsyakovleva.localdomain systemd-modules-load[304]: Module 'msr' is built in
Sep 28 12:52:11 dsyakovleva.localdomain systemd-modules-load[304]: Inserted module 'fuse'
Sep 28 12:52:11 dsyakovleva.localdomain systemd-modules-load[304]: Module 'scsi_dh_alua' is built in
Sep 28 12:52:11 dsyakovleva.localdomain systemd-modules-load[304]: Module 'scsi_dh_emc' is built in
Sep 28 12:52:11 dsyakovleva.localdomain systemd-modules-load[304]: Module 'scsi_dh_rdac' is built in
Sep 28 12:52:11 dsyakovleva.localdomain systemd-sysusers[317]: Creating group 'nobody' with GID 65534.
Sep 28 12:52:11 dsyakovleva.localdomain systemd[1]: Finished systemd-sysctl.service - Apply Kernel Va
Sep 28 12:52:11 dsyakovleva.localdomain systemd-sysusers[317]: Creating group 'users' with GID 100.
Sep 28 12:52:11 dsyakovleva.localdomain systemd-sysusers[317]: Creating group 'systemd-journal' with >
Sep 28 12:52:11 dsyakovleva.localdomain systemd[1]: Finished systemd-sysusers.service - Create System>
Sep 28 12:52:11 dsyakovleva.localdomain systemd[1]: Starting systemd-tmpfiles-setup-dev.service - Cre>
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Finished systemd-vconsole-setup.service - Virtual>
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: dracut-cmdline-ask.service - dracut ask for addit>
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Starting dracut-cmdline.service - dracut cmdline >
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Finished systemd-tmpfiles-setup-dev.service - Cre>
Sep 28 12:52:12 dsyakovleva.localdomain dracut-cmdline[332]: dracut-105-4.el10_0
Sep 28 12:52:12 dsyakovleva.localdomain dracut-cmdline[332]: Using kernel command line parameters: >
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Finished dracut-cmdline.service - dracut cmdline >
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Starting dracut-pre-udev.service - dracut pre-ude>
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Finished dracut-pre-udev.service - dracut pre-ude>
Sep 28 12:52:12 dsyakovleva.localdomain systemd[1]: Starting systemd-udevd.service - Rule-based Manag
```

Рис. 14: UID=0

Использование journalctl

```
root@dsyakovleva:/etc/rsyslog.d# journalctl -n 20
Sep 28 13:24:14 dsyakovleva.localdomain kernel: traps: VBoxClient[9077] trap int3 ip:41dd1b sp:7fd6fa>
Sep 28 13:24:14 dsyakovleva.localdomain systemd-coredump[9078]: Process 9074 (VBoxClient) of user 100>
Sep 28 13:24:14 dsyakovleva.localdomain systemd[1]: Started systemd-coredump@338-9078-0.service - Pro>
Sep 28 13:24:14 dsyakovleva.localdomain systemd-coredump[9080]: [..] Process 9074 (VBoxClient) of user 100>
                                                               Module libXau.so.6 from rpm libXau-1.>
                                                               Module libxcb.so.1 from rpm libxcb-1.>
                                                               Module libX11.so.6 from rpm libX11-1.>
                                                               Module libffi.so.8 from rpm libffi-3.>
                                                               Module libwayland-client.so.0 from rp>
                                                               Stack trace of thread 9077:
                                                               #0 0x0000000000041dd1b n/a (n/a + 0x0)
                                                               #1 0x0000000000041dc94 n/a (n/a + 0x0)
                                                               #2 0x0000000000045041c n/a (n/a + 0x0)
                                                               #3 0x000000000004355d0 n/a (n/a + 0x0)
                                                               #4 0x00007fd708b9311a start_thread (libc)
                                                               #5 0x00007fd708c03c3c __clone3 (libc)

                                                               Stack trace of thread 9076:
                                                               #0 0x00007fd708c01a3d syscall (libc)
                                                               #1 0x000000000004344e2 n/a (n/a + 0x0)
                                                               #2 0x00000000000450066 n/a (n/a + 0x0)
                                                               #3 0x00000000000416559 n/a (n/a + 0x0)
                                                               #4 0x0000000000041838a n/a (n/a + 0x0)
```

Рис. 15: Последние 20 строк

Использование journalctl

```
root@dsyakovleva:/etc/rsyslog.d# journalctl -p err
Sep 28 12:52:13 dsyakovleva.localdomain kernel: vmwgfx 0000:00:02.0: [drm] *ERROR* vmwgfx seems to be>
Sep 28 12:52:13 dsyakovleva.localdomain kernel: vmwgfx 0000:00:02.0: [drm] *ERROR* This configuration>
Sep 28 12:52:13 dsyakovleva.localdomain kernel: vmwgfx 0000:00:02.0: [drm] *ERROR* Please switch to a>
Sep 28 12:52:29 dsyakovleva.localdomain kernel: Warning: Unmaintained driver is detected: e1000
Sep 28 12:52:33 dsyakovleva.localdomain alsactl[961]: alsa-lib main.c:1554:(snd_use_case_mgr_open) er>
Sep 28 12:52:39 dsyakovleva.localdomain kernel: Warning: Unmaintained driver is detected: ip_set
Sep 28 12:53:08 dsyakovleva.localdomain gdm-password][1962]: gkr-pam: unable to locate daemon control>
Sep 28 12:53:28 dsyakovleva.localdomain systemd-coredump[2919]: [.] Process 2892 (VBoxClient) of user>

                                                Module libXau.so.6 from rpm libXau-1.>
                                                Module libxcb.so.1 from rpm libxcb-1.>
                                                Module libX11.so.6 from rpm libX11-1.>
                                                Module libffi.so.8 from rpm libffi-3.>
                                                Module libwayland-client.so.0 from rp>
Stack trace of thread 2896:
#0 0x0000000000041dd1b n/a (n/a + 0x0)
#1 0x0000000000041dc94 n/a (n/a + 0x0)
#2 0x00000000000450401c n/a (n/a + 0x0)
#3 0x000000000004355d0 n/a (n/a + 0x0)
#4 0x00007fd708b9311a start_thread (>
#5 0x00007fd708c03c3c __clone3 (libc>

Stack trace of thread 2895:
#0 0x00007fd708c01a3d syscall (libc.>
```

Рис. 16: Сообщения об ошибках

Использование journalctl

```
root@dsyakovleva:/etc/rsyslog.d#
root@dsyakovleva:/etc/rsyslog.d# journalctl --since yesterday
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Linux version 6.12.0-55.12.1.el10_0.x86_64 (mockbuild)
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Command line: BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-55>
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-provided physical RAM map:
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000000100000-0x00000000dfffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000dfff0000-0x00000000dfffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000010000000-0x0000000011fffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: NX (Execute Disable) protection: active
Sep 28 12:52:11 dsyakovleva.localdomain kernel: APIC: Static calls initialized
Sep 28 12:52:11 dsyakovleva.localdomain kernel: SMBIOS 2.5 present.
Sep 28 12:52:11 dsyakovleva.localdomain kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS Virtual
Sep 28 12:52:11 dsyakovleva.localdomain kernel: DMI: Memory slots populated: 0/0
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Hypervisor detected: KVM
Sep 28 12:52:11 dsyakovleva.localdomain kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
Sep 28 12:52:11 dsyakovleva.localdomain kernel: kvm-clock: using sched offset of 12780091978 cycles
Sep 28 12:52:11 dsyakovleva.localdomain kernel: clocksource: kvm-clock: mask: 0xfffffffffffffff max_
Sep 28 12:52:11 dsyakovleva.localdomain kernel: tsc: Detected 2600.000 MHz processor
Sep 28 12:52:11 dsyakovleva.localdomain kernel: e820: update [mem 0x00000000-0x0000ffff] usable ==> r>
Sep 28 12:52:11 dsyakovleva.localdomain kernel: e820: remove [mem 0x000a0000-0x000fffff] usable
Sep 28 12:52:11 dsyakovleva.localdomain kernel: last_pfn = 0x120000 max_arch_pfn = 0x400000000
Sep 28 12:52:11 dsyakovleva.localdomain kernel: total RAM covered: 4096M
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Found optimal setting for mtrr clean up
Sep 28 12:52:11 dsyakovleva.localdomain kernel: gran_size: 64K      chunk_size: 1G      num_re>
```

Рис. 17: Со вчерашнего дня

Использование journalctl

Рис. 18: Ошибки со вчерашнего дня

Использование journalctl

```
SYSLOG_IDENTIFIER=kernel
MESSAGE=Linux version 6.12.0-55.12.1.el10_0.x86_64 (mockbuild@iad1-prod-build001.bld.equ.rockylin
_BOOT_ID=5d214b2b8577473c95527448648f8c97
_MACHINE_ID=c45e6ab54e4b49419e9e0ed8a3067adb
_HOSTNAME=dsyakovleva.localdomain
_RUNTIME_SCOPE=initrd
Sun 2025-09-28 12:52:11.716156 MSK [s=7a5c03ff2d0a4eb0d612cale6bd408;i=2;b=5d214b2b8577473c95527448]
_SOURCE_BOOTTIME_TIMESTAMP=0
_SOURCE_MONOTONIC_TIMESTAMP=0
_TRANSPORT=kernel
SYSLOG_FACILITY=0
SYSLOG_IDENTIFIER=kernel
_BOOT_ID=5d214b2b8577473c95527448648f8c97
_MACHINE_ID=c45e6ab54e4b49419e9e0ed8a3067adb
_HOSTNAME=dsyakovleva.localdomain
_RUNTIME_SCOPE=initrd
PRIORITY=6
MESSAGE=Command line: BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-55.12.1.el10_0.x86_64 root=/dev/mapper/
Sun 2025-09-28 12:52:11.716197 MSK [s=7a5c03ff2d0a4eb0d612cale6bd408;i=3;b=5d214b2b8577473c95527448]
_SOURCE_BOOTTIME_TIMESTAMP=0
_SOURCE_MONOTONIC_TIMESTAMP=0
_TRANSPORT=kernel
SYSLOG_FACILITY=0
SYSLOG_IDENTIFIER=kernel
_BOOT_ID=5d214b2b8577473c95527448648f8c97
_MACHINE_ID=c45e6ab54e4b49419e9e0ed8a3067adb
_HOSTNAME=dsyakovleva.localdomain
_RUNTIME_SCOPE=initrd
PRIORITY=6
lines 1-35
```

Рис. 19: Подробный вывод verbose

Использование journalctl

```
root@dsyakovleva:/etc/rsyslog.d#  
root@dsyakovleva:/etc/rsyslog.d# journalctl _SYSTEMD_UNIT=sshd.service  
Sep 28 12:52:39 dsyakovleva.localdomain (sshd)[1242]: sshd.service: Referenced but unset environment  
Sep 28 12:52:40 dsyakovleva.localdomain sshd[1242]: Server listening on 0.0.0.0 port 22.  
Sep 28 12:52:40 dsyakovleva.localdomain sshd[1242]: Server listening on :: port 22.  
lines 1-3/3 (END)
```

Рис. 20: Журнал sshd

Постоянный журнал journald

```
root@dsyakovleva:/etc/rsyslog.d# journalctl _SYSTEMD_UNIT=sshd.service
Sep 28 12:52:39 dsyakovleva.localdomain (sshd)[1242]: sshd.service: Referenced but unset environment >
Sep 28 12:52:40 dsyakovleva.localdomain sshd[1242]: Server listening on 0.0.0.0 port 22.
Sep 28 12:52:40 dsyakovleva.localdomain sshd[1242]: Server listening on :: port 22.
root@dsyakovleva:/etc/rsyslog.d#
root@dsyakovleva:/etc/rsyslog.d# mkdir -p /var/log/journal
root@dsyakovleva:/etc/rsyslog.d# chown root:systemd-journal /var/log/journal/
root@dsyakovleva:/etc/rsyslog.d# chmod 2755 /var/log/journal/
root@dsyakovleva:/etc/rsyslog.d# killall -USR1 systemd-journald
root@dsyakovleva:/etc/rsyslog.d# journalctl -b
```

Рис. 21: Создание каталога journald

Постоянный журнал journald

```
root@dsyakovleva:/etc/rsyslog.d# 
root@dsyakovleva:/etc/rsyslog.d# mkdir -p /var/log/journal
root@dsyakovleva:/etc/rsyslog.d# chown root:systemd-journal /var/log/journal/
root@dsyakovleva:/etc/rsyslog.d# chmod 2755 /var/log/journal/
root@dsyakovleva:/etc/rsyslog.d# killall -USR1 systemd-journald
root@dsyakovleva:/etc/rsyslog.d# journalctl -b
Sep 28 12:52:11 dsyakovleva.localdomain kernel: linux version 6.12.0-55.12.1.el10_0.x86_64 (mockbuild)
Sep 28 12:52:11 dsyakovleva.localdomain kernel: Command line: BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-55
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-provided physical RAM map:
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000000000000-0x0000000000009fbff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000000009fc00-0x0000000000009ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x000000000000f0000-0x000000000000ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x0000000000100000-0x000000000dffefffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x000000000dff0000-0x000000000dffffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x000000000fec00000-0x000000000fec00ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x000000000fee00000-0x000000000fee00ffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x000000000fffc0000-0x000000000ffffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: BIOS-e820: [mem 0x00000000100000000-0x0000000011ffffffff]
Sep 28 12:52:11 dsyakovleva.localdomain kernel: NX (Execute Disable) protection: active
```

Рис. 22: Активация journald

Контрольные вопросы

Конфигурация rsyslog

- Основной файл – `/etc/rsyslog.conf`
- Файлы правил – `/etc/rsyslog.d/`
- Журнал аутентификации - `/var/log/secure`

- По умолчанию — раз в неделю
- Хранение — 4 недели (`logrotate`)

journalctl

- Режим реального времени: `journalctl -f`
- Сообщения PID 1 с 9:00 до 15:00:
`journalctl _PID=1 --since "09:00" --until "15:00"`
- После перезагрузки: `journalctl -b`

Итоги работы

Вывод

Были приобретены навыки мониторинга системных журналов и настройки регистрации событий в Linux:

работа с `tail`, настройка `rsyslog`, использование `logger`, исследование логов при помощи `journalctl` и настройка постоянного хранения с помощью `journald`.