```
pazhand_400521171@400521171: /lib/modules
pazhand_400521171@400521171:~$ cd /lib/modules
pazhand_400521171@400521171:/lib/modules$ ls
4.15.0-112-generic   4.15.0-142-generic   cloner.c
pazhand_400521171@400521171:/lib/modules$ sudo nano cloner.c
[sudo] password for pazhand_400521171:
pazhand_400521171@400521171:/lib/modules$ 
```

```
pazhand_400521171@400521171: /lib/modules
  GNU nano 2.5.3              File: cloner.c

#include <linux/init.h>
#include <linux/kernel.h>
#include <linux/module.h>

int simple_init(void){
        printk(KERN_INFO "Loading Modules\n");
        return 0;
}
void simple_exit(void){
        printk(KERN_INFO "Removing Modules\n");
}

module_init(simple_init);
module_exit(simple_exit);
MODULE_LICENSE("GPL");
MODULE_DESCRIPTION("simple module");
MODULE_AUTHOR("SGG");

                          [ Read 17 lines ]
^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File ^\ Replace   ^U Uncut Text^T To Spell  ^  Go To Line
```

LibreOffice Impress

```
  GNU nano 2.5.3              File: Makefile


obj-m += cloner.o
all:
        make -C /lib/modules/$(shell uname -r)/build M=$(shell pwd) modules
clean:
        make -C /lib/modules/$(shell uname -r)/build M=$(shell pwd) clean




                           [ Read 5 lines ]
^G Get Help   ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit       ^R Read File ^\ Replace   ^U Uncut Text^T To Spell  ^  Go To Line
```

```
pazhand_400521171@400521171:/lib/modules$ sudo make
make -C /lib/modules/4.15.0-142-generic/build M=/lib/modules modules
make[1]: Entering directory '/usr/src/linux-headers-4.15.0-142-generic'
  Building modules, stage 2.
  MODPOST 1 modules
make[1]: Leaving directory '/usr/src/linux-headers-4.15.0-142-generic'
pazhand_400521171@400521171:/lib/modules$ sudo nano Makefile
pazhand_400521171@400521171:/lib/modules$ sudo make
make -C /lib/modules/4.15.0-142-generic/build M=/lib/modules modules
make[1]: Entering directory '/usr/src/linux-headers-4.15.0-142-generic'
  Building modules, stage 2.
  MODPOST 1 modules
make[1]: Leaving directory '/usr/src/linux-headers-4.15.0-142-generic'
pazhand_400521171@400521171:/lib/modules$ ls
4.15.0-112-generic  cloner.c   cloner.mod.c  cloner.o   modules.order
4.15.0-142-generic  cloner.ko  cloner.mod.o  Makefile   Module.symvers
pazhand_400521171@400521171:/lib/modules$
```

```
😣⊜▢    pazhand_400521171@400521171: /lib/modules
pazhand_400521171@400521171:/lib/modules$ sudo insmod cloner.ko
pazhand_400521171@400521171:/lib/modules$ dmesg
[    0.000000] Linux version 4.15.0-142-generic (buildd@lgw01-amd64-039) (gcc version 5.4.0 20
160609 (Ubuntu 5.4.0-6ubuntu1~16.04.12)) #146~16.04.1-Ubuntu SMP Tue Apr 13 09:27:15 UTC 2021
(Ubuntu 4.15.0-142.146~16.04.1-generic 4.15.18)
[    0.000000] Command line: BOOT_IMAGE=/boot/vmlinuz-4.15.0-142-generic root=UUID=c0f2a3e5-e1
75-48b4-a111-6dd6d13a9060 ro quiet splash
[    0.000000] KERNEL supported cpus:
[    0.000000]   Intel GenuineIntel
[    0.000000]   AMD AuthenticAMD
[    0.000000]   Centaur CentaurHauls
[    0.000000] x86/fpu: x87 FPU will use FXSAVE
[    0.000000] e820: BIOS-provided physical RAM map:
[    0.000000] BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
[    0.000000] BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
[    0.000000] BIOS-e820: [mem 0x0000000000100000-0x00000000dffeffff] usable
[    0.000000] BIOS-e820: [mem 0x00000000dfff0000-0x00000000dfffffff] ACPI data
[    0.000000] BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
[    0.000000] BIOS-e820: [mem 0x0000000100000000-0x000000011fffffff] usable
[    0.000000] NX (Execute Disable) protection: active
[    0.000000] SMBIOS 2.5 present.
[    0.000000] DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
[    0.000000] Hypervisor detected: KVM
[    0.000000] e820: update [mem 0x00000000-0x00000fff] usable ==> reserved
[    0.000000] e820: remove [mem 0x000a0000-0x000fffff] usable
[    0.000000] e820: last_pfn = 0x120000 max_arch_pfn = 0x400000000
[    0.000000] MTRR default type: uncachable
[    0.000000] MTRR fixed ranges disabled:
[    0.000000]   00000-FFFFF uncachable
[    0.000000] MTRR variable ranges disabled:
[    0.000000]   0 disabled
[    0.000000]   1 disabled
[    0.000000]   2 disabled
[    0.000000]   3 disabled
[    0.000000]   4 disabled
[    0.000000]   5 disabled
[    0.000000]   6 disabled
[    0.000000]   7 disabled
[    0.000000] MTRR: Disabled
[    0.000000] x86/PAT: MTRRs disabled, skipping PAT initialization too.
```

```
[    0.000000] e820: last_pfn = 0xdfff0 max_arch_pfn = 0x400000000
[    0.000000] found SMP MP-table at [mem 0x0009fff0-0x0009ffff]
[    0.000000] Scanning 1 areas for low memory corruption
[    0.000000] RAMDISK: [mem 0x3143e000-0x34a16fff]
[    0.000000] ACPI: Early table checksum verification disabled
[    0.000000] ACPI: RSDP 0x00000000000E0000 000024 (v02 VBOX  )
[    0.000000] ACPI: XSDT 0x00000000DFFF0030 00003C (v01 VBOX   VBOXXSDT 00000001 ASL  0000006
1)
[    0.000000] ACPI: FACP 0x00000000DFFF00F0 0000F4 (v04 VBOX   VBOXFACP 00000001 ASL  0000006
1)
[    0.000000] ACPI: DSDT 0x00000000DFFF0620 002353 (v02 VBOX   VBOXBIOS 00000002 INTL 2010052
8)
[    0.000000] ACPI: FACS 0x00000000DFFF0200 000040
[    0.000000] ACPI: FACS 0x00000000DFFF0200 000040
[    0.000000] ACPI: APIC 0x00000000DFFF0240 000064 (v02 VBOX   VBOXAPIC 00000001 ASL  0000006
1)
[    0.000000] ACPI: SSDT 0x00000000DFFF02B0 00036C (v01 VBOX   VBOXCPUT 00000002 INTL 2010052
8)
[    0.000000] ACPI: Local APIC address 0xfee00000
[    0.000000] No NUMA configuration found
[    0.000000] Faking a node at [mem 0x0000000000000000-0x000000011fffffff]
[    0.000000] NODE_DATA(0) allocated [mem 0x11ffd1000-0x11fffbfff]
[    0.000000] kvm-clock: cpu 0, msr 1:1ff50001, primary cpu clock
[    0.000000] kvm-clock: Using msrs 4b564d01 and 4b564d00
[    0.000000] kvm-clock: using sched offset of 4997697233 cycles
[    0.000000] clocksource: kvm-clock: mask: 0xffffffffffffffff max_cycles: 0x1cd42e4dffb, max
_idle_ns: 881590591483 ns
[    0.000000] Zone ranges:
[    0.000000]   DMA      [mem 0x0000000000001000-0x0000000000ffffff]
[    0.000000]   DMA32    [mem 0x0000000001000000-0x00000000ffffffff]
[    0.000000]   Normal   [mem 0x0000000100000000-0x000000011fffffff]
[    0.000000]   Device   empty
[    0.000000] Movable zone start for each node
[    0.000000] Early memory node ranges
[    0.000000]   node   0: [mem 0x0000000000001000-0x000000000009efff]
[    0.000000]   node   0: [mem 0x0000000000100000-0x00000000dffeffff]
[    0.000000]   node   0: [mem 0x0000000100000000-0x000000011fffffff]
[    0.000000] Reserved but unavailable: 98 pages
[    0.000000] Initmem setup node 0 [mem 0x0000000000001000-0x000000011fffffff]
[    0.000000] On node 0 totalpages: 1048462
[    0.000000]   DMA zone: 64 pages used for memmap
[    0.000000]   DMA zone: 21 pages reserved
[    0.000000]   DMA zone: 3998 pages, LIFO batch:0
```

```
[    0.000000]     Normal zone: 2048 pages used for memmap
[    0.000000]     Normal zone: 131072 pages, LIFO batch:31
[    0.000000] ACPI: PM-Timer IO Port: 0x4008
[    0.000000] ACPI: Local APIC address 0xfee00000
[    0.000000] IOAPIC[0]: apic_id 3, version 32, address 0xfec00000, GSI 0-23
[    0.000000] ACPI: INT_SRC_OVR (bus 0 bus_irq 0 global_irq 2 dfl dfl)
[    0.000000] ACPI: INT_SRC_OVR (bus 0 bus_irq 9 global_irq 9 low level)
[    0.000000] ACPI: IRQ0 used by override.
[    0.000000] ACPI: IRQ9 used by override.
[    0.000000] Using ACPI (MADT) for SMP configuration information
[    0.000000] smpboot: Allowing 3 CPUs, 0 hotplug CPUs
[    0.000000] PM: Registered nosave memory: [mem 0x00000000-0x00000fff]
[    0.000000] PM: Registered nosave memory: [mem 0x0009f000-0x0009ffff]
[    0.000000] PM: Registered nosave memory: [mem 0x000a0000-0x000effff]
[    0.000000] PM: Registered nosave memory: [mem 0x000f0000-0x000fffff]
[    0.000000] PM: Registered nosave memory: [mem 0xdfff0000-0xdfffffff]
[    0.000000] PM: Registered nosave memory: [mem 0xe0000000-0xfebfffff]
[    0.000000] PM: Registered nosave memory: [mem 0xfec00000-0xfec00fff]
[    0.000000] PM: Registered nosave memory: [mem 0xfec01000-0xfedfffff]
[    0.000000] PM: Registered nosave memory: [mem 0xfee00000-0xfee00fff]
[    0.000000] PM: Registered nosave memory: [mem 0xfee01000-0xfffbffff]
[    0.000000] PM: Registered nosave memory: [mem 0xfffc0000-0xffffffff]
[    0.000000] e820: [mem 0xe0000000-0xfebfffff] available for PCI devices
[    0.000000] Booting paravirtualized kernel on KVM
[    0.000000] clocksource: refined-jiffies: mask: 0xffffffff max_cycles: 0xffffffff, max_idle
_ns: 7645519600211568 ns
[    0.000000] random: get_random_bytes called from start_kernel+0x99/0x51e with crng_init=0
[    0.000000] setup_percpu: NR_CPUS:8192 nr_cpumask_bits:3 nr_cpu_ids:3 nr_node_ids:1
[    0.000000] percpu: Embedded 45 pages/cpu s147456 r8192 d28672 u524288
[    0.000000] pcpu-alloc: s147456 r8192 d28672 u524288 alloc=1*2097152
[    0.000000] pcpu-alloc: [0] 0 1 2 -
[    0.000000] PV qspinlock hash table entries: 256 (order: 0, 4096 bytes)
[    0.000000] Built 1 zonelists, mobility grouping on.  Total pages: 1032057
[    0.000000] Policy zone: Normal
[    0.000000] Kernel command line: BOOT_IMAGE=/boot/vmlinuz-4.15.0-142-generic root=UUID=c0f2
a3e5-e175-48b4-a111-6dd6d13a9060 ro quiet splash
[    0.000000] Calgary: detecting Calgary via BIOS EBDA area
[    0.000000] Calgary: Unable to locate Rio Grande table in EBDA - bailing!
[    0.000000] Memory: 3977532K/4193848K available (12300K kernel code, 2482K rwdata, 4224K ro
data, 2440K init, 2724K bss, 216316K reserved, 0K cma-reserved)
[    0.000000] SLUB: HWalign=64, Order=0-3, MinObjects=0, CPUs=3, Nodes=1
[    0.000000] ftrace: allocating 39412 entries in 154 pages
[    0.004000] Hierarchical RCU implementation.
```

```
pazhand_400521171@400521171: /lib/modules
[    0.004000] Hierarchical RCU implementation.
[    0.004000]  RCU restricting CPUs from NR_CPUS=8192 to nr_cpu_ids=3.
[    0.004000]  Tasks RCU enabled.
[    0.004000] RCU: Adjusting geometry for rcu_fanout_leaf=16, nr_cpu_ids=3
[    0.004000] NR_IRQS: 524544, nr_irqs: 448, preallocated irqs: 16
[    0.004000] Console: colour VGA+ 80x25
[    0.004000] console [tty0] enabled
[    0.004000] ACPI: Core revision 20170831
[    0.004000] ACPI: 2 ACPI AML tables successfully acquired and loaded
[    0.004000] APIC: Switch to symmetric I/O mode setup
[    0.004000] ..TIMER: vector=0x30 apic1=0 pin1=2 apic2=-1 pin2=-1
[    0.004000] tsc: Detected 3110.408 MHz processor
[    0.004000] Calibrating delay loop (skipped) preset value.. 6220.81 BogoMIPS (lpj=12441632)
[    0.004000] pid_max: default: 32768 minimum: 301
[    0.004000] Security Framework initialized
[    0.004000] Yama: becoming mindful.
[    0.004000] AppArmor: AppArmor initialized
[    0.015634] Dentry cache hash table entries: 524288 (order: 10, 4194304 bytes)
[    0.019441] Inode-cache hash table entries: 262144 (order: 9, 2097152 bytes)
[    0.019560] Mount-cache hash table entries: 8192 (order: 4, 65536 bytes)
[    0.019674] Mountpoint-cache hash table entries: 8192 (order: 4, 65536 bytes)
[    0.020368] Last level iTLB entries: 4KB 0, 2MB 0, 4MB 0
[    0.020368] Last level dTLB entries: 4KB 0, 2MB 0, 4MB 0, 1GB 0
[    0.020370] Spectre V1 : Mitigation: usercopy/swapgs barriers and __user pointer sanitizati
on
[    0.020371] Spectre V2 : Mitigation: Enhanced IBRS
[    0.020371] Spectre V2 : Spectre v2 / SpectreRSB mitigation: Filling RSB on context switch
[    0.020372] Speculative Store Bypass: Vulnerable
[    0.020501] Freeing SMP alternatives memory: 36K
[    0.130774] smpboot: CPU0: 12th Gen Intel(R) Core(TM) i5-12500H (family: 0x6, model: 0x9a,
stepping: 0x3)
[    0.131048] Performance Events: unsupported p6 CPU model 154 no PMU driver, software events
 only.
[    0.131098] Hierarchical SRCU implementation.
[    0.131425] NMI watchdog: Perf event create on CPU 0 failed with -2
[    0.131425] NMI watchdog: Perf NMI watchdog permanently disabled
[    0.131624] smp: Bringing up secondary CPUs ...
[    0.132000] x86: Booting SMP configuration:
[    0.132000] .... node  #0, CPUs:      #1
[    0.004000] kvm-clock: cpu 1, msr 1:1ff50041, secondary cpu clock
[    0.132000] TSC synchronization [CPU#0 -> CPU#1]:
[    0.132000] Measured 214153 cycles TSC warp between CPUs, turning off TSC clock.
[    0.132000] tsc: Marking TSC unstable due to check_tsc_sync_source failed
```

و در اخر:

```
GNU nano 2.5.3                          File: cloner.c                                    Modified

#include <linux/init.h>
#include <linux/kernel.h>
#include <linux/module.h>
#include <linux/list.h>
#include <linux/slab.h>
#include <linux/types.h>

struct birthday {
        int day;
        int month;
        int year;
        struct list_head list;
};

static LIST_HEAD(birthday_list);

int simple_init(void){
        struct birthday *person;
        int counter = 1;

        printk(KERN_INFO "Loading Modules\n");
        for(counter = 1 ; counter < 5 ; counter++){
                person = kmalloc(sizeof(*person), GFP_KERNEL);
                person->day = counter;
                person->month = counter;
                person->year = counter+ 1380;
                INIT_LIST_HEAD(&person->list);
                list_add_tail(&person->list, &birthday_list);
        }
        list_for_each_entry(person, &birthday_list, list){
                printk(KERN_INFO "Birthday : %d/%d/%d\n", person->month, person->day, person->year);
        }

        return 0;
}
void simple_exit(void){
        struct birthday *ptr;
        struct birthday *next;

^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur Pos     ^Y Prev Page   M- First Line
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell    ^  Go To Line  ^V Next Page   M-/ Last Line
```

```
GNU nano 2.5.3                        File: cloner.c                              Modified

        printk(KERN_INFO "Loading Modules\n");
        for(counter = 1 ; counter < 5 ; counter++){
                person = kmalloc(sizeof(*person), GFP_KERNEL);
                person->day = counter;
                person->month = counter;
                person->year = counter+ 1380;
                INIT_LIST_HEAD(&person->list);
                list_add_tail(&person->list, &birthday_list);
        }
        list_for_each_entry(person, &birthday_list, list){
                printk(KERN_INFO "Birthday : %d/%d/%d\n", person->month, person->day, person->year);
        }

        return 0;
}
void simple_exit(void){
        struct birthday *ptr;
        struct birthday *next;

        printk(KERN_INFO "Removing Modules\n");
        list_for_each_entry_safe(ptr, next, &birthday_list, list){
                printk(KERN_INFO "Removing Birthday : %d/%d/%d\n", ptr->month, ptr->day, ptr->year);
                list_del(&ptr->list);
                kfree(ptr);
        }
        printk(KERN_INFO "FREED MEMORY\n");

}

module_init(simple_init);
module_exit(simple_exit);
MODULE_LICENSE("GPL");
MODULE_DESCRIPTION("simple module");
MODULE_AUTHOR("SGG");


^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur Pos     ^Y Prev Page   M-\ First Line
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell    ^  Go To Line  ^V Next Page   M-/ Last Line
```

```
pazhand_400521171@400521171:/lib/modules$ sudo nano cloner.c
pazhand_400521171@400521171:/lib/modules$ sudo make
[sudo] password for pazhand_400521171:
make -C /lib/modules/4.15.0-142-generic/build M=/lib/modules modules
make[1]: Entering directory '/usr/src/linux-headers-4.15.0-142-generic'
  CC [M]  /lib/modules/cloner.o
  Building modules, stage 2.
  MODPOST 1 modules
  CC      /lib/modules/cloner.mod.o
  LD [M]  /lib/modules/cloner.ko
make[1]: Leaving directory '/usr/src/linux-headers-4.15.0-142-generic'
pazhand_400521171@400521171:/lib/modules$
```

```
pazhand_400521171@400521171:/lib/modules$ sudo insmod cloner.ko
insmod: ERROR: could not insert module cloner.ko: File exists
pazhand_400521171@400521171:/lib/modules$ sudo rmmod cloner
pazhand_400521171@400521171:/lib/modules$ sudo insmod cloner.ko
pazhand_400521171@400521171:/lib/modules$ sudo dmesg -c
[    0.000000] Linux version 4.15.0-142-generic (buildd@lgw01-amd64-039) (gcc version 5.4.0 20160609 (Ubuntu 5.4.0-6ubuntu1~16.
04.12)) #146~16.04.1-Ubuntu SMP Tue Apr 13 09:27:15 UTC 2021 (Ubuntu 4.15.0-142.146~16.04.1-generic 4.15.18)
[    0.000000] Command line: BOOT_IMAGE=/boot/vmlinuz-4.15.0-142-generic root=UUID=c0f2a3e5-e175-48b4-a111-6dd6d13a9060 ro quie
t splash
[    0.000000] KERNEL supported cpus:
[    0.000000]   Intel GenuineIntel
[    0.000000]   AMD AuthenticAMD
[    0.000000]   Centaur CentaurHauls
[    0.000000] x86/fpu: x87 FPU will use FXSAVE
[    0.000000] e820: BIOS-provided physical RAM map:
[    0.000000] BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
[    0.000000] BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
[    0.000000] BIOS-e820: [mem 0x0000000000100000-0x00000000dffeffff] usable
[    0.000000] BIOS-e820: [mem 0x00000000dfff0000-0x00000000dfffffff] ACPI data
[    0.000000] BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
[    0.000000] BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
[    0.000000] BIOS-e820: [mem 0x0000000100000000-0x000000011fffffff] usable
[    0.000000] NX (Execute Disable) protection: active
[    0.000000] SMBIOS 2.5 present.
[    0.000000] DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
[    0.000000] Hypervisor detected: KVM
[    0.000000] e820: update [mem 0x00000000-0x00000fff] usable ==> reserved
[    0.000000] e820: remove [mem 0x000a0000-0x000fffff] usable
[    0.000000] e820: last_pfn = 0x120000 max_arch_pfn = 0x400000000
[    0.000000] MTRR default type: uncachable
[    0.000000] MTRR fixed ranges disabled:
[    0.000000]   00000-FFFFF uncachable
[    0.000000] MTRR variable ranges disabled:
[    0.000000]   0 disabled
[    0.000000]   1 disabled
[    0.000000]   2 disabled
[    0.000000]   3 disabled
[    0.000000]   4 disabled
[    0.000000]   5 disabled
[    0.000000]   6 disabled
```

```
/usr/bin/evince" pid=609 comm="apparmor_parser"
[    4.644852] audit: type=1400 audit(1717522715.940:3): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/usr/bin/evince//sanitized_helper" pid=609 comm="apparmor_parser"
[    4.644853] audit: type=1400 audit(1717522715.940:4): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/usr/bin/evince-previewer" pid=609 comm="apparmor_parser"
[    4.644854] audit: type=1400 audit(1717522715.940:5): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/usr/bin/evince-previewer//sanitized_helper" pid=609 comm="apparmor_parser"
[    4.644855] audit: type=1400 audit(1717522715.940:6): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/usr/bin/evince-thumbnailer" pid=609 comm="apparmor_parser"
[    4.657197] audit: type=1400 audit(1717522715.956:7): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/usr/lib/lightdm/lightdm-guest-session" pid=607 comm="apparmor_parser"
[    4.657199] audit: type=1400 audit(1717522715.956:8): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/usr/lib/lightdm/lightdm-guest-session//chromium" pid=607 comm="apparmor_parser"
[    4.660751] audit: type=1400 audit(1717522715.960:9): apparmor="STATUS" operation="profile_load" profile="unconfined" name="
/sbin/dhclient" pid=608 comm="apparmor_parser"
[    4.660754] audit: type=1400 audit(1717522715.960:10): apparmor="STATUS" operation="profile_load" profile="unconfined" name=
"/usr/lib/NetworkManager/nm-dhcp-client.action" pid=608 comm="apparmor_parser"
[    4.665107] Adding 998396k swap on /dev/sda5.  Priority:-2 extents:1 across:998396k FS
[    5.600940] IPv6: ADDRCONF(NETDEV_UP): enp0s3: link is not ready
[    5.612885] IPv6: ADDRCONF(NETDEV_UP): enp0s3: link is not ready
[    5.613107] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX
[    5.615877] IPv6: ADDRCONF(NETDEV_CHANGE): enp0s3: link becomes ready
[ 2380.034422] cloner: loading out-of-tree module taints kernel.
[ 2380.034620] cloner: module verification failed: signature and/or required key missing - tainting kernel
[ 2380.036096] Loading Modules
[ 6347.280478] Removing Modules
[ 6358.066404] Loading Modules
[ 6358.066406] Birthday : 1/1/1381
[ 6358.066406] Birthday : 2/2/1382
[ 6358.066407] Birthday : 3/3/1383
[ 6358.066408] Birthday : 4/4/1384
[ 6394.259078] Removing Modules
[ 6394.259080] Removing Birthday : 1/1/1381
[ 6394.259081] Removing Birthday : 2/2/1382
[ 6394.259081] Removing Birthday : 3/3/1383
[ 6394.259082] Removing Birthday : 4/4/1384
[ 6394.259100] FREED MEMORY
[ 6403.325714] Loading Modules
[ 6403.325715] Birthday : 1/1/1381
[ 6403.325716] Birthday : 2/2/1382
[ 6403.325716] Birthday : 3/3/1383
[ 6403.325717] Birthday : 4/4/1384
pazhand_400521171@400521171:/lib/modules$
```