



openEuler操作系统运维经验总结

江苏润和软件股份有限公司

赵磊

- See PANIC
- How to PANIC
- What is PANIC
- Why PANIC
- Shoot PANIC

PANIC篇

Panic篇

- See
- How to
- What is
- Why
- Shoot

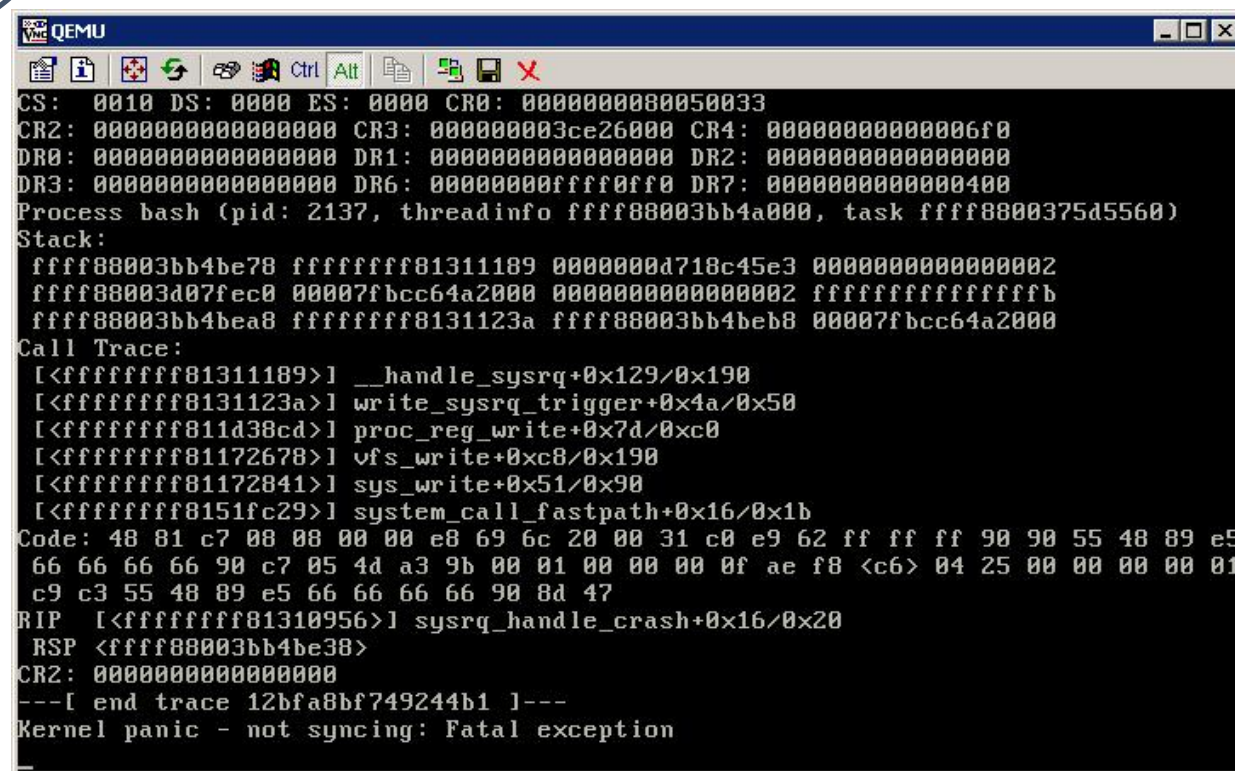
PANIC
PANIC
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PANIC
PANIC

```
syncMaster /00u
[<c0216fde>] acpi_processor_set_pdc+0x72/0x78
[<c021729b>] acpi_processor_get_performance_info+0x29/0x68
[<c0217367>] acpi_processor_register_performance+0x8b/0xc2
[<c0112cef>] acpi_cpufreq_cpu_init+0x94/0x2d4
[<c01123bf>] centrino_cpu_init_acpi+0x31a/0x326
[<c02a6da5>] cpufreq_add_dev+0x13e/0x42c
[<c01cb75d>] avc_has_perm_noaudit+0x8d/0xda
[<c014b7c5>] buffered_rmqueue+0x1c4/0x1e7
[<c01e2825>] sub_alloc+0x5c/0x130
[<c022f081>] scrup+0x63/0xce
[<c01e2825>] sub_alloc+0x5c/0x130
[<c0232812>] vt_console_print+0x0/0x2a3
[<c01e29cb>] idr_get_new_above_int+0xd2/0xe2
[<c0249a82>] sysdev_driver_register+0x7b/0x8e
[<c02a7b8d>] cpufreq_register_driver+0x14b/0x271
[<c03b8714>] do_initcalls+0x49/0x8e
[<c010043c>] init+0x0/0x1d8
[<c01004e8>] init+0xac/0x1d8
[<c0104149>] kernel_thread_helper+0x5/0xb
Code: 00 ba 6d 04 00 00 6a 00 b8 2e a5 32 c0 ff b3 b4 01 00 00 68 7a b9 32 c0 e8
52 de ff ff 83 c4 10 83 fd 07 75 1a 8b 83 b0 01 00 00 <83> 78 10 00 75 0e 80 48
09 08 8b 83 b0 01 00 00 c6 40 1c 01 8b
<0>Fatal exception: panic in 5 seconds
Kernel panic - not syncing: Fatal exception
```



Panic篇

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```
QEMU
CS: 0010 DS: 0000 ES: 0000 CR0: 0000000080050033
CR2: 0000000000000000 CR3: 000000003ce26000 CR4: 00000000000006f0
DR0: 0000000000000000 DR1: 0000000000000000 DR2: 0000000000000000
DR3: 0000000000000000 DR6: 00000000ffff0ff0 DR7: 0000000000000400
Process bash (pid: 2137, threadinfo ffff88003bb4a000, task ffff8800375d5560)
Stack:
ffff88003bb4be78 ffffffff81311189 0000000d718c45e3 0000000000000002
ffff88003d07fec0 00007fbcc64a2000 0000000000000002 ffffffff81311189
ffff88003bb4bea8 ffffffff8131123a ffff88003bb4beb8 00007fbcc64a2000
Call Trace:
[<ffffffffff81311189>] __handle_sysrq+0x129/0x190
[<ffffffffff8131123a>] write_sysrq_trigger+0x4a/0x50
[<ffffffffff811d38cd>] proc_reg_write+0x7d/0xc0
[<ffffffffff81172678>] vfs_write+0xc8/0x190
[<ffffffffff81172841>] sys_write+0x51/0x90
[<ffffffffff8151fc29>] system_call_fastpath+0x16/0x1b
Code: 48 81 c7 08 08 00 00 e8 69 6c 20 00 31 c0 e9 62 ff ff ff 90 90 55 48 89 e5
66 66 66 66 90 c7 05 4d a3 9b 00 01 00 00 00 0f ae f8 <c6> 04 25 00 00 00 00 01
c9 c3 55 48 89 e5 66 66 66 66 90 8d 47
RIP [<ffffffffff81310956>] sysrq_handle_crash+0x16/0x20
RSP <ffff88003bb4be38>
CR2: 0000000000000000
---[ end trace 12bfa8bf749244b1 ]---
Kernel panic - not syncing: Fatal exception
```

echo c > /proc/sysrq-trigger

Panic篇



■ See PANIC
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```
static void __die_header(const char *str, struct pt_regs *regs, long err)
{
    const char *pr = "";

    /* Save the regs of the first oops for the executive summary later. */
    if (!die_counter)
        exec_summary_regs = *regs;

    if (IS_ENABLED(CONFIG_PREEMPTION))
        pr = IS_ENABLED(CONFIG_PREEMPT_RT) ? " PREEMPT_RT" : " PREEMPT";

    printk(KERN_DEFAULT
           "%s: %04lx [%#d]%s%s%s%s%s¥n", str, err & 0xffff, ++die_counter,
           pr,
           IS_ENABLED(CONFIG_SMP) ? " SMP" : "",
           debug_pagealloc_enabled() ? " DEBUG_PAGEALLOC" : "",
           IS_ENABLED(CONFIG_KASAN) ? " KASAN" : "",
           IS_ENABLED(CONFIG_PAGE_TABLE_ISOLATION) ?
           (boot_cpu_has(X86_FEATURE_PTI) ? " PTI" : " NOPTI") : "");
}
NOKPROBE_SYMBOL(__die_header);

static int __die_body(const char *str, struct pt_regs *regs, long err)
{
    show_regs(regs);
    print_modules();

    if (notify_die(DIE_OOPS, str, regs, err,
                  current->thread.trap_nr, SIGSEGV) == NOTIFY_STOP)
        return 1;

    return 0;
}
```


Panic篇

- See
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PANIC
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PANIC



PANIC

n. 恐慌, 惊慌;

vt. 使恐慌

vi. 十分惊慌

adj. 恐慌的, 惊慌失措的

一种强烈的突然性的感觉。恐慌的出现会支配人的正常思维和逻辑, 取而代之的是焦虑感和本能的战斗或逃跑的行动。恐慌很可能在大型团体聚会或人群中出现, 从而造成大规模恐慌。

WIKI

Panic is a sudden sensation of fear which is so strong as to dominate or prevent reason and logical thinking, replacing it with overwhelming feelings of anxiety and frantic agitation consistent with an animalistic fight-or-flight reaction. Panic may occur singularly in individuals or manifest suddenly in large groups as mass panic (closely related to herd behavior).

Panic篇

- See PANIC
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A kernel panic is an action taken by an operating system upon detecting an internal fatal error from which it cannot safely recover.

A failure in the operating system kernel that causes the OS to abend (crash).

操作系统在监测到内部的致命错误，并无法安全处理此错误时采取的动作。



Panic篇

- See PANIC
- How to PANIC
- What is PANIC
-  Why PANIC
- Shoot PANIC



NO WAY
in
Kernel Space

- See PANIC
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- Shoot PANIC



- 1: No next step
- 2: Error can't handle

- See PANIC
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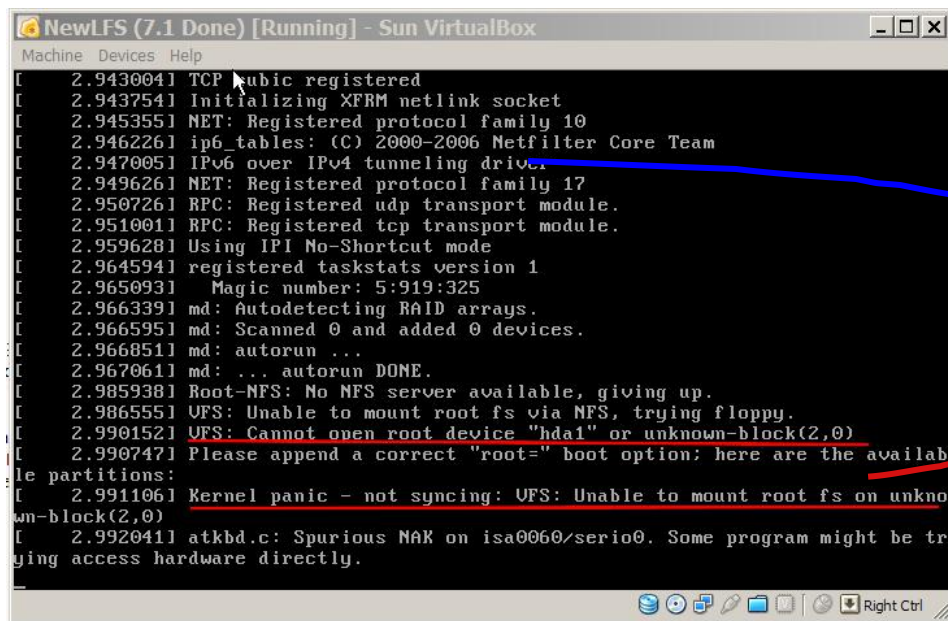


Why

```
NewLFS (7.1 Done) [Running] - Sun VirtualBox
Machine  Devices  Help
[ 2.943004] TCPv4 registered
[ 2.943754] Initializing XFRM netlink socket
[ 2.945355] NET: Registered protocol family 10
[ 2.946226] ip6_tables: (C) 2000-2006 Netfilter Core Team
[ 2.947005] IPv6 over IPv4 tunneling driver
[ 2.949626] NET: Registered protocol family 17
[ 2.950726] RPC: Registered udp transport module.
[ 2.951001] RPC: Registered tcp transport module.
[ 2.959628] Using IPI No-Shortcut mode
[ 2.964594] registered taskstats version 1
[ 2.965093] Magic number: 5:919:325
[ 2.966339] md: Autodetecting RAID arrays.
[ 2.966595] md: Scanned 0 and added 0 devices.
[ 2.966851] md: autorun ...
[ 2.967061] md: ... autorun DONE.
[ 2.985938] Root-NFS: No NFS server available, giving up.
[ 2.986555] UFS: Unable to mount root fs via NFS, trying floppy.
[ 2.990152] UFS: Cannot open root device "hda1" or unknown-block(2,0)
[ 2.990747] Please append a correct "root=" boot option; here are the available partitions:
[ 2.991106] Kernel panic - not syncing: UFS: Unable to mount root fs on unknown-block(2,0)
[ 2.992041] atkbd.c: Spurious NAK on isa0060/serio0. Some program might be trying access hardware directly.
```

1: No next step

2: Error can't handle



```
[ 2.9430041] TCP cubic registered
[ 2.9437541] Initializing XFRM netlink socket
[ 2.9453551] NET: Registered protocol family 10
[ 2.9462261] ip6_tables: (C) 2000-2006 Netfilter Core Team
[ 2.9470051] IPv6 over IPv4 tunneling driver
[ 2.9496261] NET: Registered protocol family 17
[ 2.9507261] RPC: Registered udp transport module.
[ 2.9510011] RPC: Registered tcp transport module.
[ 2.9596281] Using IPI No-Shortcut mode
[ 2.9645941] registered taskstats version 1
[ 2.9650931] Magic number: 5:919:325
[ 2.9663391] md: Autodetecting RAID arrays.
[ 2.9665951] md: Scanned 0 and added 0 devices.
[ 2.9668511] md: autorun ...
[ 2.9670611] md: ... autorun DONE.
[ 2.9859381] Root-NFS: No NFS server available, giving up.
[ 2.9865551] VFS: Unable to mount root fs via NFS, trying floppy.
[ 2.9901521] VFS: Cannot open root device "hda1" or unknown-block(2,0)
[ 2.9907471] Please append a correct "root=" boot option; here are the available partitions:
[ 2.9911061] Kernel panic - not syncing: VFS: Unable to mount root fs on unknown-block(2,0)
[ 2.9920411] atkbd.c: Spurious NAK on isa0060/serio0. Some program might be trying access hardware directly.
```

Load Kernel

Init device

Mount root fs

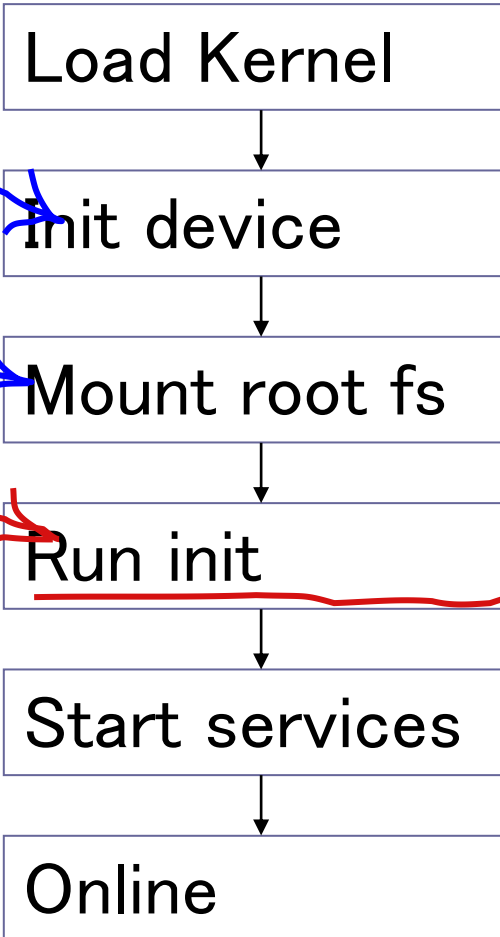
Run init

Start services

Online

Can't mount root fs

```
registered taskstats version 1
No TPM chip found, activating TPM-bypass!
rtc_cmos 00:04: setting system clock to 2011-05-04 14:43:12 UTC (1304520192)
input: ImPS/2 Generic Wheel Mouse as /devices/platform/i8042/serio1/input/input3
md: Waiting for all devices to be available before autodetect
md: If you don't use raid, use raid=noautodetect
md: Autodetecting RAID arrays.
md: Scanned 0 and added 0 devices.
md: autorun ...
md: ... autorun DONE.
RAMDISK: gzip image found at block 0
UFS: Mounted root (ext2 filesystem) on device 1:0.
devtmpfs: mounted
Freeing unused kernel memory: 1044k freed
Write protecting the kernel read-only data: 6932k
Kernel panic - not syncing: No init found. Try passing init= option to kernel.
Pid: 1, COMM: swapper not tainted 2.6.32 #1
Call Trace:
[<ffffffff814a493e>] panic+0x78/0x137
[<ffffffff8100a2cc>] init_post+0x3c/0x110
[<ffffffff818537e5>] kernel_init+0x213/0x21e
[<ffffffff810140aa>] child_rip+0xa/0x20
[<ffffffff818535d2>] ? kernel_init+0x0/0x21e
[<ffffffff810140a0>] ? child_rip+0x0/0x20
```



Can't run init

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Why

```
Booting command-list
root (hd0,0)
Filesystem type is ext2fs, partition type 0x83
kernel /vmlinuz-2.6.18-8.el5 ro root=LABEL=/ rhgb quiet
[Linux-bzImage, setup=0x1e00, size=0x1ad054]
initrd /initrd-2.6.18-8.el5.img
[Linux-initrd @ 0xfd6c000, 0x173382 bytes]

Red Hat nash version 5.1.19.6 starting
sda: assuming drive cache: write through
sda: assuming drive cache: write through
EXT3-fs error (device sda5): ext3_get_inode_loc: unable to read inode block - in
ode=1845889, block=1867778
setuproot: moving /dev failed: Not a directory
EXT3-fs error (device sda5): ext3_get_inode_loc: unable to read inode block - in
ode=1262977, block=1277954
setuproot: error mounting /proc: Not a directory
ERROR opening /dev/console: Permission denied
Trying to use fd 0 instead.
EXT3-fs error (device sda5): ext3_get_inode_loc: unable to read inode block - in
ode=2104961, block=2129922
/bin/sh: ro: No such file or directory
Kernel panic - not syncing: Attempted to kill init!
```

1: No next step

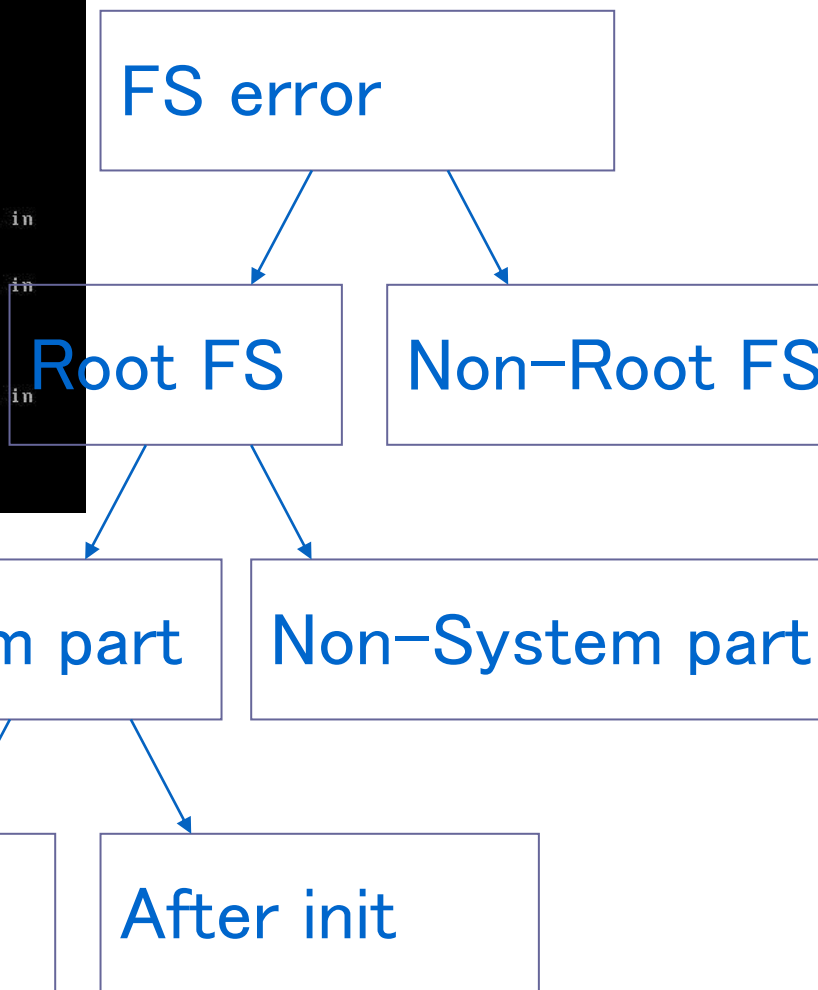
2: Error can't handle

Panic篇

```
Booting command-list

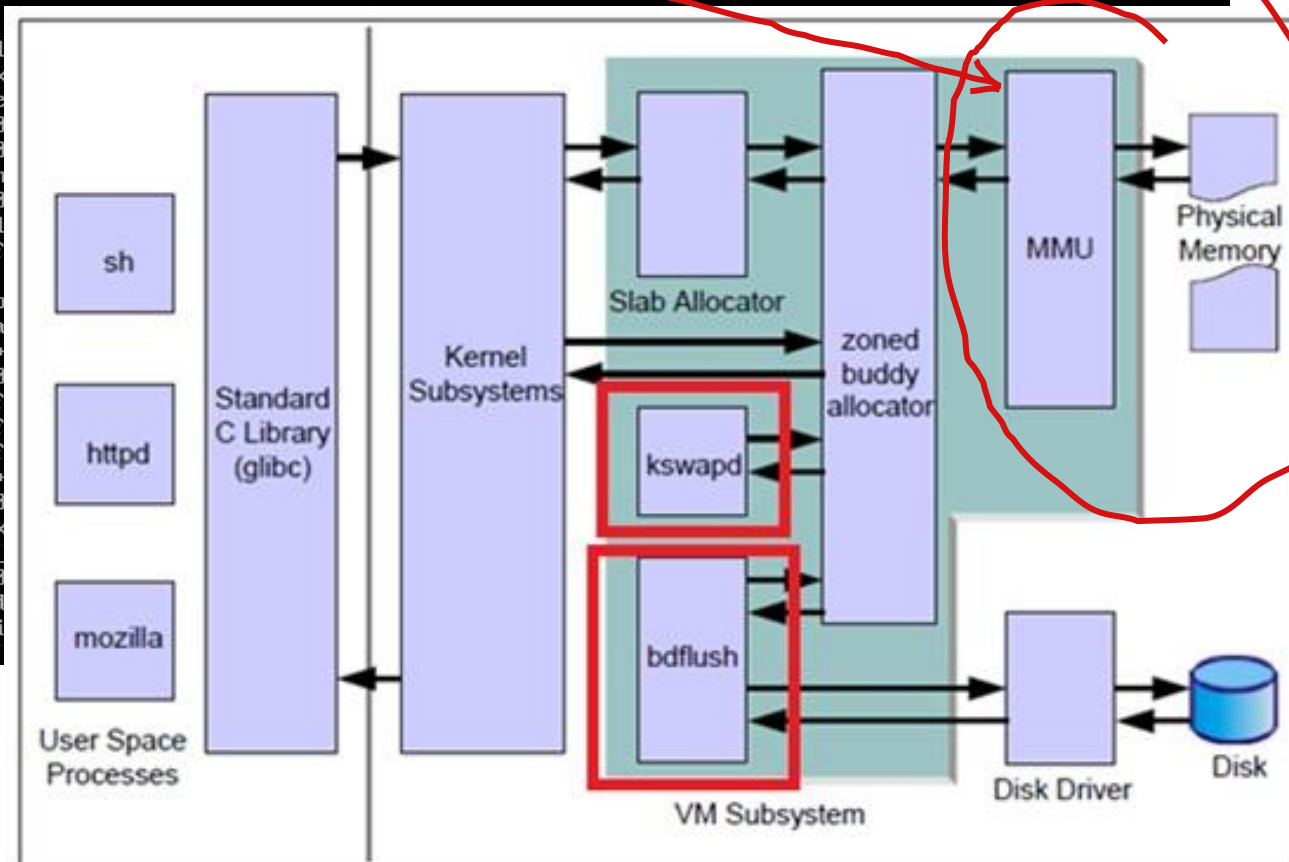
root (hd0,0)
  Filesystem type is ext2fs, partition type 0x83
  kernel /vmlinuz-2.6.18-8.el5 ro root=LABEL=/ rhgb quiet
    [Linux-bzImage, setup=0x1e00, size=0x1ad054]
  initrd /initrd-2.6.18-8.el5.img
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ode=2104961, block=2129922
/bin/sh: ro: No such file or directory
Kernel panic - not syncing: Attempted to kill init!
```



Panic篇

```
Unable to handle kernel NULL pointer dereference at virtual address 00000004
printing eip.
c014b300
*pid = 040b0067
Ops: 0002 [#1]
Modules linked in: msg(U) filter(U) md5 ipv6 dm_mod button battery ac snd_ens1371 snd_rawmidi snd_seq_device snd_pcm_oss snd_
er_oss snd_pcm snd_timer snd_page_alloc snd_ac97_codec snd soundcore pnet32 mii floppy ext3 jbd mptscsih mptbase sd_mod scsi
d
CPU: 0
EIP: 0060:[<c014b300>]
EFLAGS: 00010006 (2.6.9-11
EIP is at free_block+0x3a/0x
eax: 00000000 ebx: c3d398e
esi: c4eeffe8 edi: 0000000
ds: 007b es: 007b ss: 00
Process events/0 (pid: 3, th
Stack: c4e62090 c4e62090 000
00000003 c03fe900 c01
c01337cc c014bc3a fff
Call Trace:
[<c014bc1e>] drain_array_lo
[<c014bce8>] cache_reap+0xa
[<c01337cc>] worker_thread+
[<c014bc3a>] cache_reap+0x0
[<c011c056>] default_wake_f
[<c03015e7>] schedule+0x43f
[<c011c056>] default_wake_f
[<c01335e1>] worker_thread+
[<c01385a9>] kthread+0x69/0
[<c0138540>] kthread+0x0/0x
[<c01041d9>] kernel_thread
Code: 48 24 39 fd 0f 8d 99 0
8b 03 <89> 50 04 89 02 31 d
<0>Fatal exception: panic i
Kernel panic - not syncing:
```



- See PANIC
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- *Shoot*  PANIC

- 1: Screen output
- 2: Log file
- 3: Tools

Panic篇

```
Unable to handle kernel NULL pointer dereference at virtual address 00000004
printing eip:
c014b300
*pde = 040b0067
Oops: 0002 [#1]
Modules linked in: msg(U) filter(U) md5 ipv6 dm_mod button battery ac snd_ens1371 snd_pcm_oss snd_timer snd_page_alloc snd_ac97_codec snd_soundcore pcnet32 mii floppy ext3 jbd mptscsih mptbase sd_mod scsi
CPU: 0
EIP: 0060:[<c014b300>] Not tainted ULI
EFLAGS: 00010006 (2.6.9-11.EL)
EIP is at free_block+0x3a/0xb8
eax: 00000000 ebx: c3d398e0 ecx: c1e2e000 edx: 00000000
esi: c4eeffe80 edi: 00000005 ebp: 00000000 esp: c4e18f30
ds: 007b es: 007b ss: 0068
Process events/0 (pid: 3, threadinfo=c4e18000 task=c4e1cbd0)
Stack: c4e62090 c4e62090 00000005 c4e62000 c4eeffe80 c014bc1e c4eeffe80 c4eeff08
00000003 c03fe900 c014bce8 c03fe940 c03fe940 00000283 00000000 c4e41180
c01337cc c014bc3a ffffffff ffffffff 00000001 00000000 c011c856 00010000
Call Trace:
[<c014bc1e>] drain_array_locked+0x59/0x75
[<c014bce8>] cache_reap+0xae/0x273
[<c01337cc>] worker_thread+0x1eb/0x2f0
[<c014bc3a>] cache_reap+0x0/0x273
[<c011c856>] default_wake_function+0x0/0xc
[<c03015e7>] schedule+0x43f/0x552
[<c011c856>] default_wake_function+0x0/0xc
[<c01335e1>] worker_thread+0x0/0x2f0
[<c01385a9>] kthread+0x69/0x91
[<c0138540>] kthread+0x0/0x91
[<c01041d9>] kernel_thread_helper+0x5/0xb
Code: 48 24 39 fd 0f 8d 99 00 00 00 8b 04 24 8b 15 d0 4a 40 c0 8b 0c a8 8d 81 00 00 00 40 c1 e8 0c c1 e0 05 8b 5c 10 1c 8b 53
8b 03 <89> 50 04 89 02 31 d2 2b 4b 0c c7 03 00 01 10 00 c7 43 04 00 02
<0>Fatal exception: panic in 5 seconds
Kernel panic - not syncing: Fatal exception
```

reason

module info

register

Task info

stack

call trace

code

Panic篇

```
root@ZLLINUX:/var/log
[root@ZLLINUX log]# ls /var/log/
anaconda.ifcfg.log  gdm          secure
anaconda.log        httpd        secure-20121021
anaconda.program.log lastlog      secure-20121028
anaconda.storage.log libvirt      secure-20121104
anaconda.syslog     maillog      secure-20121111
anaconda.xlog       maillog-20121021 spice-vdagentd
anaconda.yum.log     maillog-20121028 spooler
audit               maillog-20121104 spooler-20121021
boot.log            maillog-20121111 spooler-20121028
btmp                messages     spooler-20121104
btmp-20121101       messages-20121021 spooler-20121111
ConsoleKit          messages-20121028 squid
cron                messages-20121104 ssd
cron-20121021       messages-20121111 tallylog
cron-20121028       ntpstats     tuned
cron-20121104       pm-powersave.log wpa_supplicant.log
cron-20121111       ppp          wtmp
cups                prelink      Xorg.0.log
dmesg               rhsm         Xorg.0.log.old
dmesg.old           sa           Xorg.9.log
dracut.log          samba        yum.log
[root@ZLLINUX log]#
```

[/var/log/message: General message and system related stuff](#)

[/var/log/auth.log: Authentication logs](#)

[/var/log/kern.log: Kernel logs](#)

[/var/log/cron.log: Crond logs \(cron job\)](#)

[/var/log/maillog: Mail server logs](#)

[/var/log/qmail/ : Qmail log directory \(more files inside this directory\)](#)

[/var/log/httpd/: Apache access and error logs directory](#)

[/var/log/lighttpd: Lighttpd access and error logs directory](#)

[/var/log/boot.log : System boot log](#)

[/var/log/mysql.log: MySQL database server log file](#)

[/var/log/secure: Authentication log](#)

[/var/log/utmp or /var/log/wtmp : Login records file](#)

[/var/log/yum.log: Yum log files](#)

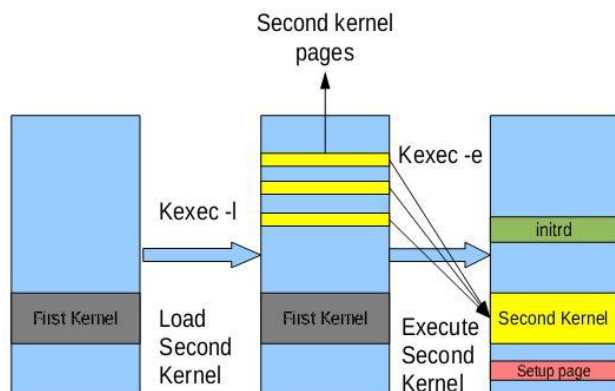
Panic篇

```
Jun 13 04:39:51 luke kernel: ACPI: Critical trip point
Jun 13 04:39:51 luke kernel: Critical temperature reached (3342 C), shutting down.
Jun 13 04:39:51 luke shutdown[5858]: shutting down for system halt
Jun 13 04:39:56 luke mountd[2148]: Caught signal 15, un-registering and exiting.
Jun 13 04:40:00 luke kernel: nfsd: last server has exited
Jun 13 04:40:00 luke kernel: nfsd: unexporting all filesystems
Jun 13 04:40:04 luke smartd[2031]: smartd received signal 15: Terminated
Jun 13 04:40:04 luke smartd[2031]: smartd is exiting (exit status 0)
Jun 13 04:40:05 luke xinetd[2079]: Exiting...
Jun 13 04:40:06 luke kernel: Critical temperature reached (63 C), shutting down.
Jun 13 04:40:09 luke kernel: md: stopping all md devices.
Jun 13 04:40:09 luke kernel: md: md0 still in use.
Jun 13 04:40:09 luke kernel: md: md1 still in use.
Jun 13 04:40:10 luke kernel: Synchronizing SCSI cache for disk sdb:
Jun 13 04:40:10 luke kernel: Synchronizing SCSI cache for disk sda:
Jun 13 04:40:10 luke ntpd[2098]: ntpd exiting on signal 15
Jun 13 04:40:11 luke kernel: ACPI: PCI interrupt for device 0000:02:02.0 disabled
```

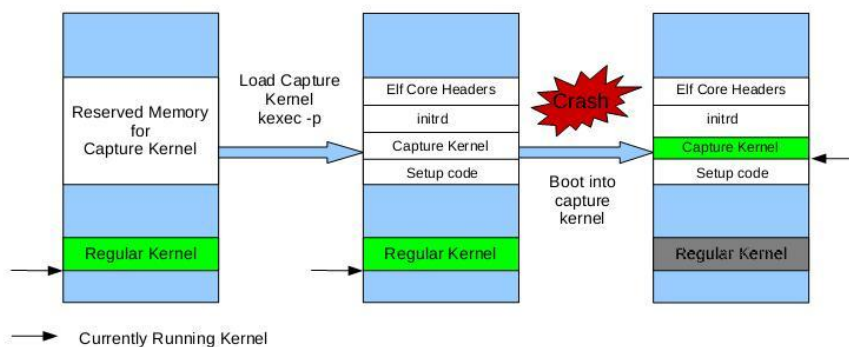
Panic篇

KDump

Kexec design



Kdump design



The Pict From Vivek Goyal's Presentation's Slides

```
root@jynode1:~# ls -l /var/crash/
total 24
drwxr-xr-x 2 root root 4096 Feb  5 2012 127.0.0.1-2012-02-05-22:01:26
drwxr-xr-x 2 root root 4096 Feb  5 2012 127.0.0.1-2012-02-05-22:45:11
drwxr-xr-x 2 root root 4096 Mar 15 2012 127.0.0.1-2012-03-15-17:19:26
drwxr-xr-x 2 root root 4096 Mar 15 2012 127.0.0.1-2012-03-15-17:49:29
drwxr-xr-x 2 root root 4096 Mar 23 2012 127.0.0.1-2012-03-23-14:24:06
drwx----- 2 root root 4096 Mar 15 2012 lost+found
[root@jynode1 ~]# ls -l /var/crash/127.0.0.1-2012-02-05-22:01:26/
total 21034368
-rw----- 1 root root      87539 Feb  5 2012 summary
-rw----- 1 root root 21457866528 Feb  5 2012 vmcore
-rwxr-xr-x 1 root root    60184798 Feb  5 2012 vmlinux
[root@jynode1 ~]#
```

```
crash> bt -f
PID: 0      TASK: 1011000e030      CPU: 1  COMMAND: "sw
#0 [101118b9e70] schedule at ffffffff8030bc9d
101118b9e78: ffffffff8030bcf5
#1 [101118b9e78] thread_return at ffffffff8030bcf5
101118b9e80: 0000010208f317f0 0000000000000073
101118b9e90: 000001011005e760 0000000000000000
101118b9ea0: 0000000000000000 0000000000000000
101118b9eb0: 0000000000000000 0000000000000001
101118b9ec0: 00000000000000407 0000000000000002
101118b9ed0: 0000000000000000 0000000000000008
101118b9ee0: 00000101118b8000 0000000000000000
101118b9ef0: 0000000000000018 ffffffff8010e749
101118b9f00: 000001011000e030 000001011005e760
101118b9f10: ffffffff8010e769 ffffffff8010e769
#2 [101118b9f18] default_idle at ffffffff8010e769
101118b9f20: 0000000000000010 0000000000000246
101118b9f30: 00000101118b9f48 0000000000000018
101118b9f40: 0000000000000001 ffffffff8010e7dc
#3 [101118b9f48] cpu_idle at ffffffff8010e7dc
```


■ KGDB

```
[root@openEuler-22 var]# grep CONFIG_KGDB /boot/config-5.10.0-136.12.0.86.oe2203sp1.x86_64
CONFIG_KGDB=y
CONFIG_KGDB_HONOUR_BLOCKLIST=y
CONFIG_KGDB_SERIAL_CONSOLE=y
CONFIG_KGDB_TESTS=y
# CONFIG_KGDB_TESTS_ON_BOOT is not set
CONFIG_KGDB_LOW_LEVEL_TRAP=y
CONFIG_KGDB_KDB=y
[root@openEuler-22 var]#
```

```
[root@ZhaoLei Documentation]# vi /export/git/mainline/Documentation/dev-tools/kgdb.rst
=====
Using kgdb, kdb and the kernel debugger internals
=====

:Author: Jason Wessel

Introduction
=====

The kernel has two different debugger front ends (kdb and kgdb) which
interface to the debug core. It is possible to use either of the
debugger front ends and dynamically transition between them if you
configure the kernel properly at compile and runtime.

Kdb is simplistic shell-style interface which you can use on a system
console with a keyboard or serial console. You can use it to inspect
memory, registers, process lists, dmesg, and even set breakpoints to
stop in a certain location. Kdb is not a source level debugger, although
you can set breakpoints and execute some basic kernel run control. Kdb
is mainly aimed at doing some analysis to aid in development or
diagnosing kernel problems. You can access some symbols by name in
kernel built-ins or in kernel modules if the code was built with
``CONFIG_KALLSYMS``.

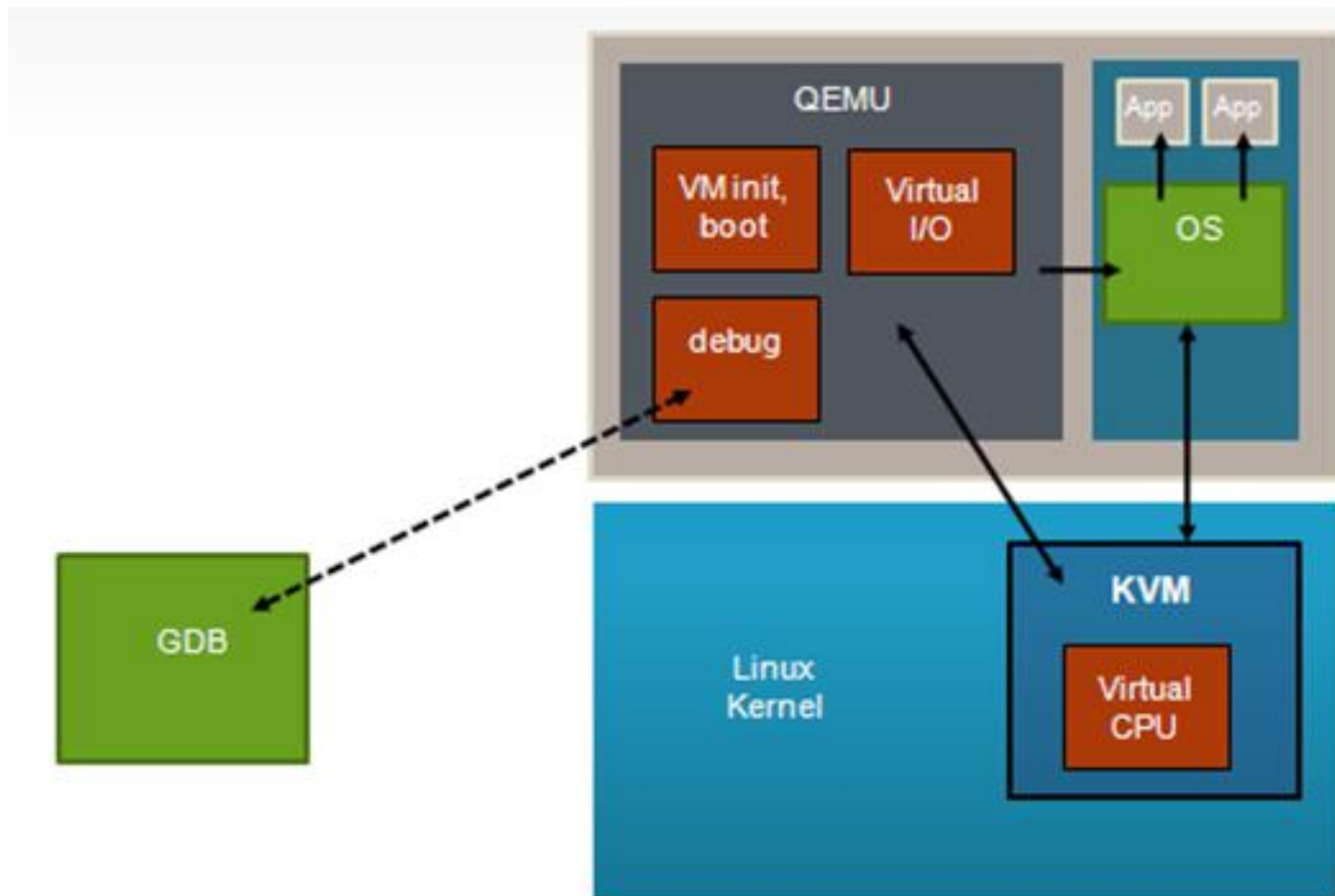
Kgdb is intended to be used as a source level debugger for the Linux
kernel. It is used along with gdb to debug a Linux kernel. The
expectation is that gdb can be used to "break in" to the kernel to
inspect memory, variables and look through call stack information
similar to the way an application developer would use gdb to debug an
application. It is possible to place breakpoints in kernel code and
perform some limited execution stepping.

Two machines are required for using kgdb. One of these machines is a
development machine and the other is the target machine. The kernel to
be debugged runs on the target machine. The development machine runs an
instance of gdb against the vmlinux file which contains the symbols (not
a boot image such as bzImage, zImage, uImage...). In gdb the developer
specifies the connection parameters and connects to kgdb. The type of
connection a developer makes with gdb depends on the availability of
kgdb I/O modules compiled as built-ins or loadable kernel modules in the
test machine's kernel.
```

```
Compiling a kernel
=====
```

Panic篇

■ qemu



- See what
- Do what
- Need what

- See what
- Do what
- Need what

```
[root@ZLLINUX ~]# httpd -e debug -X
[Fri Nov 16 17:53:56 2012] [debug] mod_so.c(246): loaded module auth_basic_module
[Fri Nov 16 17:53:56 2012] [debug] mod_so.c(246): loaded module auth_digest_module
[Fri Nov 16 17:53:56 2012] [debug] mod_so.c(246): loaded module authn_file_module
[Fri Nov 16 17:53:56 2012] [debug] mod_so.c(246): loaded module authn_alias_module
...
httpd: Could not reliably determine the server's fully qualified domain name, using 10.167.225.19 for ServerName
```

Output

```
[root@ZLLINUX /]# ls -l /var/log/httpd/
total 28
-rw-r--r--. 1 root root 1400 Nov 16 17:54 access_log
-rw-r--r--. 1 root root 850 Jul 27 11:48 access_log-20120729
-rw-r--r--. 1 root root 12932 Nov 16 17:54 error_log
-rw-r--r--. 1 root root 1114 Jul 27 19:05 error_log-20120729

[root@ZLLINUX /]# cat /var/log/httpd/error_log
[Fri Nov 16 17:30:36 2012] [notice] suEXEC mechanism enabled (wrapper: /usr/sbin/suexec)
httpd: Could not reliably determine the server's fully qualified domain name, using 10.167.225.19 for ServerName
[Fri Nov 16 17:30:36 2012] [notice] Digest: generating secret for digest authentication ...
[Fri Nov 16 17:30:36 2012] [notice] Digest: done
[Fri Nov 16 17:30:36 2012] [warn] ./mod_dnssd.c: No services found to register
[Fri Nov 16 17:30:50 2012] [error] [client 127.0.0.1] Directory index forbidden by Options directive: /var/www/html/
[Fri Nov 16 17:30:50 2012] [error] [client 127.0.0.1] File does not exist: /var/www/html/favicon.ico
[Fri Nov 16 17:30:50 2012] [error] [client 127.0.0.1] File does not exist: /var/www/html/favicon.ico
[Fri Nov 16 17:31:02 2012] [error] [client 127.0.0.1] Directory index forbidden by Options directive: /var/www/html/
[Fri Nov 16 17:31:07 2012] [error] [client 127.0.0.1] File does not exist: /var/www/html/hello
[Fri Nov 16 17:51:22 2012] [notice] suEXEC mechanism enabled (wrapper: /usr/sbin/suexec)
...
```

LOG

■ Need what

```
[root@ZLLINUX ~]#
```

return value

Error篇

- See what
- Do what
- Need what

```
root@ZLLINUX:~# strace true
execve("/bin/true", ["true"], [/ 32 vars *]) = 0
brk(0) = 0x1d8e000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7ff6efd03000
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
open("/etc/ld.so.cache", O_RDONLY) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=99047, ...}) = 0
mmap(NULL, 99047, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7ff6efcea000
close(3) = 0
open("/lib64/libc.so.6", O_RDONLY) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0\0\0\1\0\0\0\360\355a\0268\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1918016, ...}) = 0
mmap(0x3816600000, 3741864, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x3816600000
mprotect(0x3816789000, 2093056, PROT_NONE) = 0
mmap(0x3816988000, 20480, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x188000) = 0x3816988000
mmap(0x381698d000, 18600, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x381698d000
close(3) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7ff6efce9000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7ff6efce8000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7ff6efce7000
arch_prctl(ARCH_SET_FS, 0x7ff6efce8700) = 0
mprotect(0x3816988000, 16384, PROT_READ) = 0
mprotect(0x381641f000, 4096, PROT_READ) = 0
munmap(0x7ff6efcea000, 99047) = 0
exit_group(0) = ?
[root@ZLLINUX ~]#
```

strace

```
root@ZLLINUX:~# ltrace ls
(0, 0, 0, 0x7f9f34024ac0, 88) = 0x3816421160
__libc_start_main(0x408480, 1, 0x7fff722facf8, 0x412040, 0x412030 <unfinished ...>
strchr("ls", '/') = NULL
setlocale(6, "") = "en_US.UTF-8"
bindtextdomain("coreutils", "/usr/share/locale") = "/usr/share/locale"
textdomain("coreutils") = "coreutils"
__cxa_atexit(0x40ba50, 0, 0, 0x736c6974756572, 0x381698dee8) = 0
isatty(1) = 1
getenv("QUOTING_STYLE") = NULL
getenv("LS_BLOCK_SIZE") = NULL
getenv("BLOCK_SIZE") = NULL
getenv("POSIXLY_CORRECT") = NULL
getenv("BLOCK_SIZE") = NULL
getenv("COLUMNS") = NULL
ioctl(1, 21523, 0x7fff722fab0) = 0
getenv("TABSIZ") = NULL
getopt_long(1, 0x7fff722facf8, "abcdghiklmnopqrstuvwx:ABCDPFGHI:"..., 0x619040, 0x7fff722fabd8) = -1
__errno_location() = 0x7f9f340226a0
malloc(56) = 0x2267040
memcpy(0x2267040, "", 56) = 0x2267040
__errno_location() = 0x7f9f340226a0
malloc(56) = 0x2267080
memcpy(0x2267080, "", 56) = 0x2267080
malloc(19200) = 0x22670c0
malloc(32) = 0x226bbd0
strlen(".") = 1
malloc(2) = 0x226bc00
memcpy(0x226bc00, ".", 2) = 0x226bc00
__errno_location() = 0x7f9f340226a0
opendir(".") = 0x226bc20
readdir(0x226bc20) = 0x226bc48
readdir(0x226bc20) = 0x226bc68
```

ltrace

```
root@ZLLINUX:~# vim
VIM - Vi IMproved
version 7.2.411
by Bram Moolenaar et al.
Modified by shugrill@redhat.com
Vim is open source and freely distributable

Help poor children in Uganda!
type :help iccf/shugrill for information
type :q! to exit
type :help :h or :? for on-line help
type :help version7.2.411 for version info

0,0-1 All
```

Error篇

See what
Do what
Need what

src-openEuler / arangodb

代码

Issues 2

Pull Requests 1

Wiki

统计

流水线

服务

Watch 11

Star 1

Fork 3

Issues / 详情

openEuler23.03 x86_64上的arangodb服务无法启动

待办的

#1718FL

缺陷

ostrichfly

创建于 2023-05-08 17:00

【标题描述】 openEuler23.03 x86_64上的arangodb服务无法启动

【环境信息】

硬件信息:

VMware默认参数建立的x86虚拟机

软件信息:

1) OS版本及分支

```
# cat /etc/openEuler-latest
openEulerVersion=openEuler-23.03
compileTime=2023-03-27-12-05-38
gccVersion=10.3.1-26.oe2303
kernelVersion=6.1.19-7.0.0.17.oe2303
openjdkVersion=1.8.0.362.b09-2.oe2303
#
```

2) 内核信息

状态

待办的

负责人

未设置

项目

未立项任务

Pull Requests

未关联

关联的 Pull Requests 被合并后可能会关闭此 issue

预计工期 (小时)

0

开始日期 - 截止日期

未设置 - 未设置

置顶选项

<https://gitee.com/src-openEuler>

ID	仓库	标题	类型	状态	提交人	标签	提交时间
I79UAS	src-openEuler/obs-server	【22.03-LTS-SP2 RC2】 【armv86】 obsapisetup.service 服务启动失败	缺陷	待办的	zhangpanting	sig/Others	2023-05-31 17:26:50
I79U9U	src-openEuler/iptables	【22.03-LTS-SP2 round2】 iptables从22.03-LTS-SP1向22.03-LTS-SP2升级存在冲突	缺陷	待办的	zhanglu626	sig/Networking	2023-05-31 17:25:14
I79TUV	src-openEuler/python-pysaml2	Upgrade to latest release [python-pysaml2: 7.1.2 -> 7.4.1]	任务	待办的	wu-leilei	sig/sig-python-module	2023-05-31 17:02:24
I79TTA	openEuler/native-turbo	【尚未关闭】 1d打开后未关闭	缺陷	待办的	serarcherryan	sig/A-Tune	2023-05-31 17:00:17
I79TSD	src-openEuler/grub2	update_20230531避免在开启pcmcia的场景下对grub.cfg进行两次度量	任务	已完成	zhangtao2020	sig/sig-OS-Builder	2023-05-31 16:58:23
I79TNF	src-openEuler/clang	clang 使用msan以及pie进行编译, 编译生成的二进制文件执行报错	任务	待办的	xu_lei_123	sig/Compiler	2023-05-31 16:49:29

<https://quickissue.openeuler.org/zh/issues/>

Forum | OpenEuler

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类别

Kernel

迁移

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关于“Kernel”类别

0

219

1月4日

openEuler release 22.03 LTS上编译报错“error: static declaration of ‘gettid’ follows non-static declaration”

0

2

5小时

br_netfilter的 /proc/sys/net/bridge/bridge-nf-call-iptables问题

0

54

13天

openEuler embedded 软实时能否支持 arm32架构 ?

2

139

27天

k8s部署使用openEuler 22.03 LTS节点 无法正常使用创建POD

0

128

27天

hugepage size调整

0

168

4月20日

<https://forum.openeuler.org/>

■ See what

■ Do what

■ Need what

whoami

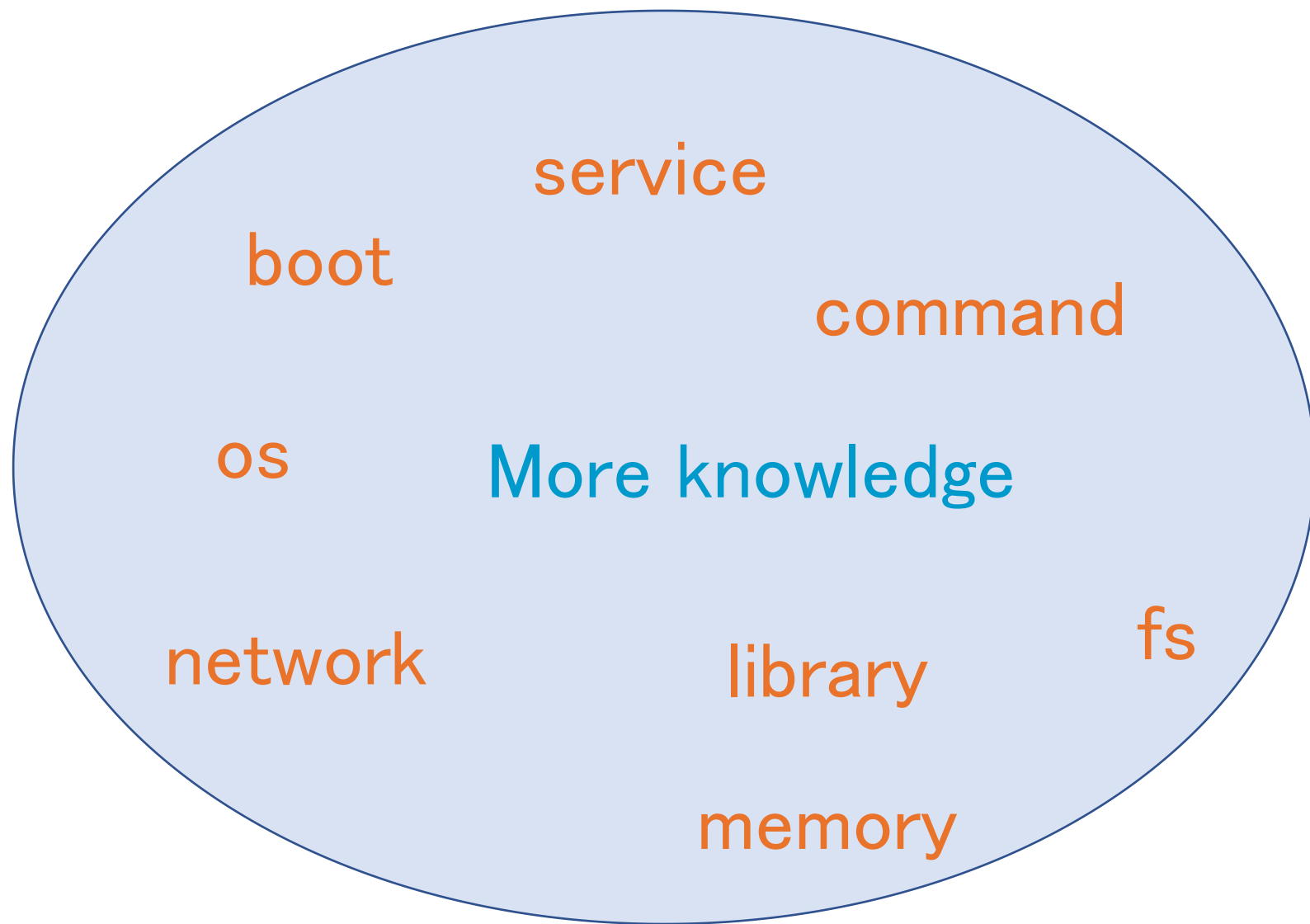
whoami: cannot find username for UID 0

```
# strace whoami
...
open("/lib/libnss_files.so.2", O_RDONLY) = -1 ENOENT (No such file or directory)
open("/lib/i686/mmxx/libnss_files.so.2", O_RDONLY) = -1 ENOENT (No such file or
directory)
...
```

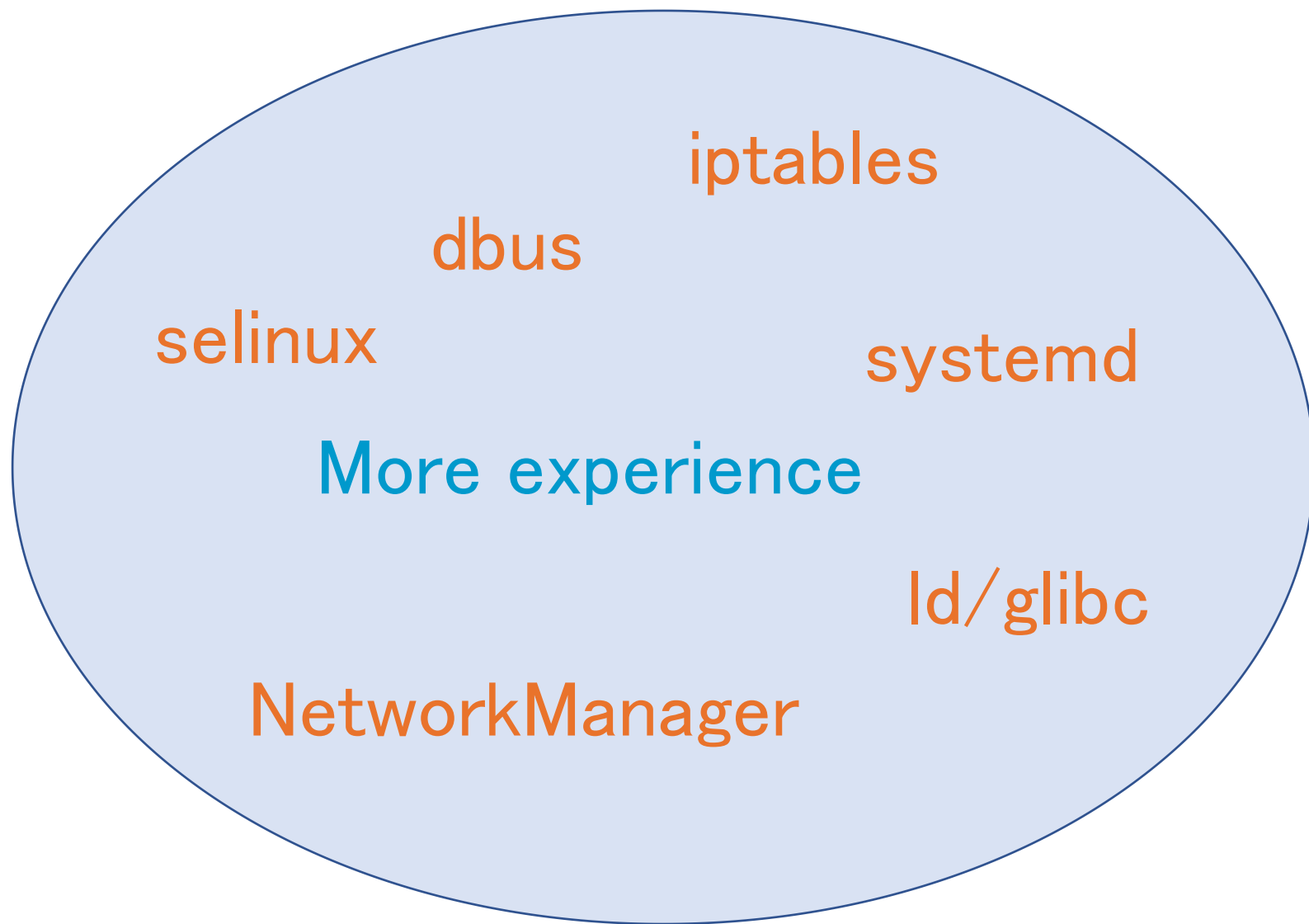
对策:

恢复libnss_files.so.2

- See what
- Do what
- Need what



- See what
- Do what
- Need what





No silver Bullet
—Frederick P. Brooks, Jr.

