

DEEPIN KERNEL MAINTANCE AND DEVELOPMENT

deepin内核维护与开发

关文涛、王昱力



近期工作内容



国产设备支持——飞腾

● 1. 硬件设备驱动

- stmmac-DWMAC/GMAC网卡驱动 合入FT2000支持
- IMPI BMC驱动
- spi/qspi控制器、DDMA控制器驱动
- I2C/I3C控制器驱动
- EDAC控制器驱动
- PWM支持
- MMC驱动 (Multimedia Card)
- 随机数生成器支持
- PCI串口驱动
- GPIO/SGPIO驱动
- mailbox驱动
- Phytium JPEG Engine驱动
- LPC Snoop驱动

- PMU驱动
- CAN控制器驱动
- optee驱动
- INTx驱动
- I2S驱动
- W1总线驱动
- ADC驱动
- NAND Flash驱动
- PS/2驱动
- PCIe endpoint驱动
- USB控制器驱动
- X100显卡驱动

设备支持——其它厂商

- 1. 景嘉微JM9100显卡驱动
- 2. 回合高版本瑞昱rtw88/rtw89系列驱动
支持 realtek WiFi 5/6/7 PCIe 驱动
- 3. 回合Intel NPU驱动
- 4. 裕泰微YT6801网卡驱动

修复社区反馈的各种问题

- 1. 修复部分荣耀笔记本AMD核显无法正常显示的问题
- 2. 修复ThinkBook 14 G4+ ARA设备无法使用Nouveau驱动正常显示的问题
- 3. 新增非x86内核安全启动支持（ARM、龙芯）
- 4. 解决broadcom-sta-dkms博通无线网卡驱动编译失败问题
- 5. tty界面支持中文显示
- 6. 修复部分USB打印机不能正常使用的问题
- 7. 修复联想N60z设备APST异常问题

社区贡献

- 1. 修复部分荣耀笔记本AMD核显无法正常显示的问题
 - 2. 修复ThinkBook 14 G4+ ARA设备无法使用Nouveau驱动正常显示的问题
 - 3. 新增非x86内核安全启动支持（ARM、龙芯）
 - 4. 解决broadcom-sta-dkms博通无线网卡驱动编译失败问题
 - 5. tty界面支持中文显示
- 1. 社区贡献度建设
 - openAnolis
 - oepnEuler
 - 为上游内核贡献达200条

未来工作规划



国产设备支持

- 飞腾笔记本电脑的EC和i8042适配
- 龙芯笔记本电脑的显卡驱动适配
- 兆芯笔记本电脑的显卡驱动适配
- 海光硬件的驱动适配
- 国产设备的性能优化

性能优化?

- 开机速度优化?
- pm-graph
- inet6_init:2s
- seg6_hmac_init->crypto->_request_module
- modprobe加打印-> 开机后一大堆自己加的打印
- ->?
- dump_stack!

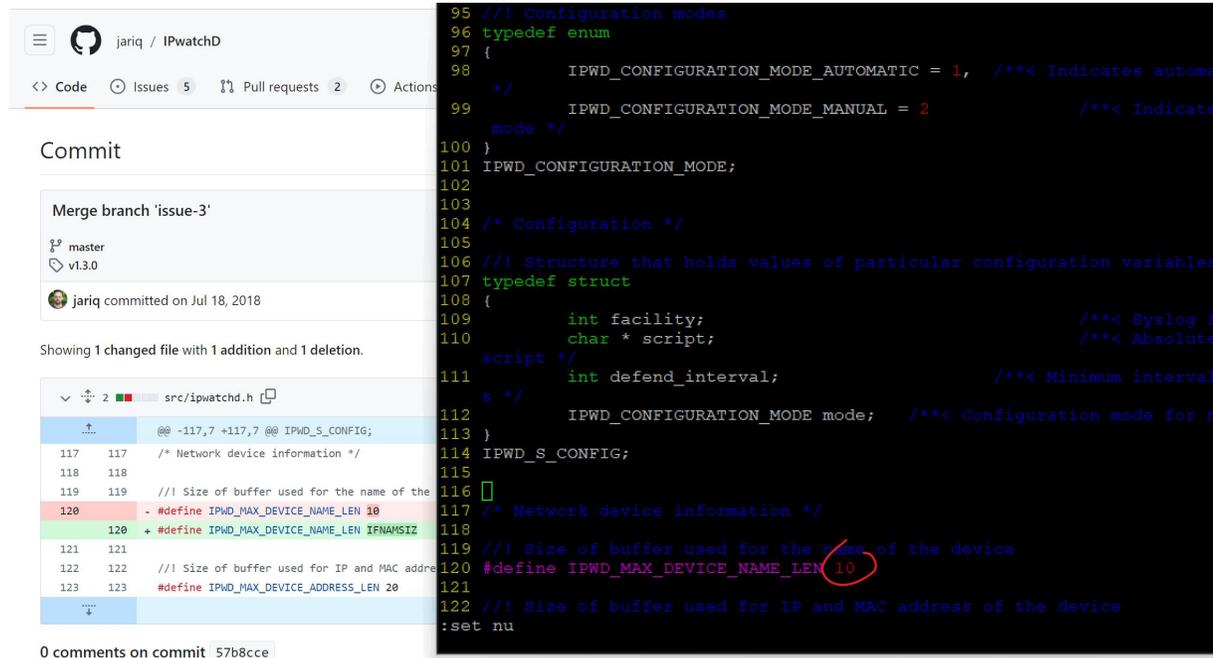
```
[ 222.719816] guanwentao subinfo /sbin/modprobe
[ 222.726034] guanwentao say: end module
[ 222.730394] guanwentao say: start module: netdev-enaphyt46
[ 222.821341] guanwentao say: /sbin/modprobe netdev-enaphyt46
[ 222.821342] guanwentao subinfo /sbin/modprobe
[ 222.828291] guanwentao say: end module
[ 222.832636] guanwentao say: start module: enaphyt46
[ 222.922974] guanwentao say: /sbin/modprobe enaphyt46
[ 222.922975] guanwentao subinfo /sbin/modprobe
[ 222.929200] guanwentao say: end module
[ 222.933560] guanwentao say: start module: netdev-enaphyt46
[ 223.024516] guanwentao say: /sbin/modprobe netdev-enaphyt46
[ 223.024517] guanwentao subinfo /sbin/modprobe
[ 223.031359] guanwentao say: end module
[ 223.035703] guanwentao say: start module: enaphyt46
[ 223.126044] guanwentao say: /sbin/modprobe enaphyt46
[ 223.126045] guanwentao subinfo /sbin/modprobe
[ 223.132313] guanwentao say: end module
[ 223.136674] guanwentao say: start module: netdev-enaphyt46
[ 223.227622] guanwentao say: /sbin/modprobe netdev-enaphyt46
[ 223.227623] guanwentao subinfo /sbin/modprobe
[ 223.234972] guanwentao say: end module
[ 223.239319] guanwentao say: start module: enaphyt46
[ 223.329661] guanwentao say: /sbin/modprobe enaphyt46
[ 223.329663] guanwentao subinfo /sbin/modprobe
[ 223.336100] guanwentao say: end module
[ 223.340468] guanwentao say: start module: netdev-enaphyt46
[ 223.431420] guanwentao say: /sbin/modprobe netdev-enaphyt46
[ 223.431421] guanwentao subinfo /sbin/modprobe
[ 223.438366] guanwentao say: end module
[ 223.442712] guanwentao say: start module: enaphyt46
[ 223.533053] guanwentao say: /sbin/modprobe enaphyt46
[ 223.533054] guanwentao subinfo /sbin/modprobe
```

- Comm: ipwatchd?
- enahyt46 接口名应该是enahyt46i0

```
uos@uos-PC-d3000:~/Desktop/ipwatchd-2.0.1$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: ip6tnl0@NONE: <NOARP> mtu 1452 qdisc noop state DOWN group default
    link/tunnel6 :: brd :: permaddr 66eb:1381:dea7::
3: enahyt46i0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noop state UP
    link/ether 46:7b:5f:f8:dc:93 brd ff:ff:ff:ff:ff:ff
    inet 10.20.53.199/24 brd 10.20.53.255 scope global dynamic noprefixroute
        valid_lft 28033sec preferred_lft 28033sec
    inet6 fe80::fe42:ac53:4c23:ed9/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
```

```
[ 223.431420] guanwentao say: /sbin/modprobe netdev-enahyt46
[ 223.431421] guanwentao subinfo /sbin/modprobe
[ 223.438366] guanwentao say: end module
[ 223.442712] guanwentao say: start module: enahyt46
[ 223.446450] CPU: 6 PID: 1056 Comm: ipwatchd Not tainted 6.6.38 #47
[ 223.457478] Hardware name: Phytium Phytium Pd2308 Desktop/Phytium Pd2308
v1.5.0-28-g152f1b0d5 03/26/2024
[ 223.468677] Call trace:
[ 223.471109] dump_backtrace+0xf8/0x130
[ 223.474845] show_stack+0x24/0x40
[ 223.478146] dump_stack_lvl+0x84/0xb0
[ 223.481794] dump_stack+0x1c/0x30
[ 223.485095] __request_module+0x214/0x308
[ 223.489091] dev_load+0x8c/0xa8
[ 223.492219] devinet_ioctl+0x60/0x688
[ 223.495869] inet_ioctl+0x198/0x240
[ 223.499344] sock_do_ioctl+0x68/0x130
[ 223.502993] sock_ioctl+0x350/0x398
[ 223.506467] __arm64_sys_ioctl+0xa8/0xf8
[ 223.510376] invoke_syscall+0x80/0x118
[ 223.514111] el0_svc_common.constprop.0+0x68/0xf0
[ 223.518800] do_el0_svc+0x28/0x40
[ 223.522102] el0_svc+0x78/0xc8
[ 223.525143] el0t_64_sync_handler+0x88/0x140
[ 223.529399] el0t_64_sync+0x1ac/0x1b0
[ 223.533053] guanwentao say: /sbin/modprobe enahyt46
[ 223.533054] guanwentao subinfo /sbin/modprobe
```

- ipwatchd代码中搜索9和10
- <https://github.com/jariq/IPwatchD/issues/3>
- <https://packages.debian.org/sid/ipwatchd>
- https://bugzilla.redhat.com/show_bug.cgi?id=1249372



The image shows a GitHub commit page for the repository 'jariq / IPwatchD'. The commit message is 'Merge branch 'issue-3'' and it was committed by jariq on Jul 18, 2018. The commit shows one changed file: 'src/ipwatchd.h'. The diff highlights changes to the file, including the addition of a new definition for 'IPWD_MAX_DEVICE_NAME_LEN' and the removal of an old one. The code diff is as follows:

```
@@ -117,7 +117,7 @@ IPWD_S_CONFIG;
117 117 /* Network device information */
118 118
119 119 //! Size of buffer used for the name of the
120 120 - #define IPWD_MAX_DEVICE_NAME_LEN 10
121 121 + #define IPWD_MAX_DEVICE_NAME_LEN IFNAMSIZ
122 122 //! Size of buffer used for IP and MAC address
123 123 #define IPWD_MAX_DEVICE_ADDRESS_LEN 20
```

The code diff is overlaid on a dark background showing the original code. The new definition is circled in red. The original code includes configuration modes and a structure for configuration variables.

deepin-LKRG项目

- Follow 上游的LKRG项目: Linux Kernel Runtime Guard
- 为LKRG添加loongarch、riscv和sw64支持
- 利用LKRG的原理实现对一部分CVE漏洞的利用拦截
- 扩展LKRG的作用范围, 例如kprobe等

deepin kernel CI

- 为loongarch架构添加机器人和CI支持
- 日构建归档
- GitHub Action + Jenkins
- syzbot、KernelCI
- 加入启动测试和性能测试用的机器

THANK YOU

deepin community

