信息来源：Documentation/printk-formats.txt

- printk能使用的格式化specifier

int	%d or %x
unsigned int	%u or %x
long	%ld or %lx
unsigned long	%lu or %lx
long long	%lld or %llx
unsigned long long	%llu or %llx
size_t	%zu or %zx
ssize_t	%zd or %zx
pointer	%p

u64 SHOULD be printed with %llu/%llx:

```
printk("%llu", u64_var);
```

s64 SHOULD be printed with %lld/%llx:

```
printk("%lld", s64_var);
```

- How to dump buffer data

```
#ifdef CONFIG_PRINTK
extern void print_hex_dump(const char *level, const char *prefix_str,
                           int prefix_type, int rowsize, int groupsize,
                           const void *buf, size_t len, bool ascii);
#if defined(CONFIG_DYNAMIC_DEBUG)
#define print_hex_dump_bytes(prefix_str, prefix_type, buf, len) \
        dynamic_hex_dump(prefix_str, prefix_type, 16, 1, buf, len, true)
#else
extern void print_hex_dump_bytes(const char *prefix_str, int prefix_type,
                                 const void *buf, size_t len);
#endif /* defined(CONFIG_DYNAMIC_DEBUG) */
```

dump [buf, buf + len)中的内容；如果ascii为true,则在边上显示对应ASCII字符。

level:

KERN_CRIT	KERN_ERR	KERN_WARNING	KERN_INFO	KERN_DEBUG

prefix_str:

每行前面的字符串

rowsize：每行size, 16 / 32

groupsize:

number of bytes to print at a time (1, 2, 4, 8; default = 1)

即

0x01 0x02 0x03 0x04 (groupsize = 1)

0x0102 0x0304 (groupsize = 2)

0x01020304 (groupsize = 4)

prefix_type:

enum {

DUMP_PREFIX_NONE,

DUMP_PREFIX_ADDRESS, 地址

DUMP_PREFIX_OFFSET 偏移

};

一般用DUMP_PREFIX_NONE。

void hex_dump_to_buffer(const void *buf, size_t len,

int rowsize, int groupsize,

char *linebuf, size_t linebuflen, bool ascii);

hex_dump_to_buffer - convert a blob of data to "hex ASCII" in memory

把[buf, buf + len) 中的内容dump到[linebuf, linebuf + linebuflen)中。

The converted output is always NUL-terminated.

void print_hex_dump_bytes(const char *prefix_str, int prefix_type,

const void *buf, size_t len)

{

```
        print_hex_dump(KERN_DEBUG, prefix_str, prefix_type, 16, 1,
                       buf, len, true);
}
EXPORT_SYMBOL(print_hex_dump_bytes);
```