Netfilter string module example usage

stackoverflow.com/questions/13401096/netfilter-string-module-example-usage

Ask Question

Can anybody point me to some examples in using the xt_string module with netfilter or provide a example. What I am trying to do is to write netfilter module that will drop packets that contain a certain string in the skb->data field.

I initially tried simply `strnstr(skb->data, "mystring", strlen("mystring"))` but this seem to be incorrect approach to this problem (and it does not seem to be working as i dont see any packets being dropped).

Thanks in advance

asked Nov 15 '12 at 15:47

SneakyMummin
453923

3 Answers 3

up vote 5 down vote accepted

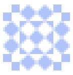
If you mean using iptables string match in user-space, here is one example:

```
iptables -I INPUT 1 -p tcp --dport 80 -m string --string "domain.com" --algo kmp -j
DROP
```

Or if you mean in kernel space, you can use textsearch API which provides KMP/BM/FSM algorithms, the following example is from kernel source lib/textsearch.c:

```
int pos;
struct ts_config *conf;
struct ts_state state;
const char *pattern = "chicken";
const char *example = "We dance the funky chicken";
conf = textsearch_prepare("kmp", pattern, strlen(pattern),
                             GFP_KERNEL, TS_AUTOLOAD);
if (IS_ERR(conf)) {
    err = PTR_ERR(conf);
    goto errout;
}
pos = textsearch_find_continuous(conf, &state, example, strlen(example));
if (pos != UINT_MAX)
    panic("Oh my god, dancing chickens at %d\n", pos);
textsearch_destroy(conf);
```

answered Nov 16 '12 at 5:12



Cong Wang
1,633811

up vote 2 down vote
what you are looking for may be this one, "skb_find_text". It uses the infra in linux mentioned by @Cong Wang. You can also find some examples in the kernel codes.

answered Oct 18 '15 at 10:34

thlin
2113

up vote -1 down vote
here after a source code of netfilter. it's a module to drop received ICMP ECHO

you can use this code to help you to develop your module. You have just to get data from skb and then check it.

```
#define __KERNEL__
#define MODULE
#include <linux/module.h>
#include <linux/kernel.h>
#include <linux/slab.h>
#include <linux/list.h>
#include <linux/netfilter_ipv4.h>
#include <linux/ip.h>
#include <linux/icmp.h>
#include <linux/netdevice.h>
#include <linux/netfilter.h>

#include <linux/skbuff.h>
#include <linux/string.h>
#include <linux/inet.h>

MODULE_LICENSE("GPL");


static struct nf_hook_ops netfilter_ops_in;/* IP PRE ROUTING */
static struct nf_hook_ops netfilter_ops_out; /* NF_IP_POST_ROUTING */
struct sk_buff *sock_buff;
struct iphdr *ip_header;
struct net_device *dev;
char *in_face = "eth0";
char *out_face = "eth1";

void log_ip(int sadd,int dadd)
{
    int b1,b2,b3,b4;
    b1 = 255 & sadd;
    b2 = (0xff00 & sadd) >> 8;
    b3 = (0xff0000 & sadd) >> 16;
    b4 = (0xff000000 &sadd) >>24;
    printk("SrcIP: %d.%d.%d.%d",b1,b2,b3,b4);

    b1 = 255 & dadd;
    b2 = (0xff00 & dadd) >> 8;
    b3 = (0xff0000 & dadd) >> 16;
    b4 = (0xff000000 & dadd) >>24;

    printk("  DstIP: %d.%d.%d.%d",b1,b2,b3,b4);
}

unsigned int main_hook(unsigned int hooknum,
                        const struct sk_buff *skb,
                        const struct net_device *in,
                        const struct net_device *out,
                        int(*okfn)(struct sk_buff*))
{
    struct icmphdr* icmp;
    sock_buff = skb_copy(skb,GFP_ATOMIC);
    ip_header = (struct iphdr*)(sock_buff->network_header);
    //ip_header = ip_hdr(sock_buff);

    icmp = (struct icmphdr*) ((char*)ip_header + sizeof(struct iphdr));
    //icmp = icmp_hdr(skb); /* do not return a good value in all cases*/
    log_ip(ip_header->saddr,ip_header->daddr);
    printk("  Dev:%s\n",sock_buff->dev);

    if (icmp->type == ICMP_ECHO)
    {
        printk("ICMP ECHO received and droped\n");
        return NF_DROP;
    }
    return NF_ACCEPT;
}

int init_module(void)
{
    netfilter_ops_in.hook       = main_hook;
    netfilter_ops_in.pf         = PF_INET;
    netfilter_ops_in.hooknum    = NF_INET_PRE_ROUTING; /*NF_INET_PRE_ROUTING;*/
    netfilter_ops_in.priority   = NF_IP_PRI_FIRST;

    nf_register_hook(&netfilter_ops_in);


    printk(KERN_INFO "sw: init_module() called\n");
    return 0;
}

void cleanup_module(void)
{
    printk(KERN_INFO "sw: cleanup_module() called\n");
    nf_unregister_hook(&netfilter_ops_in);
    //nf_unregister_hook(&netfilter_ops_out);
    printk(KERN_INFO "sw: hook unregisted, quit called\n");
}
```

answered Nov 15 '12 at 15:57

MOHAMED
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lang-c