

---

Subject: [PATCH] Don't create tunnels with '%' in name.  
Posted by [Pavel Emelianov](#) on Thu, 21 Feb 2008 12:05:27 GMT  
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Four tunnel drivers (ip\_gre, ipip, ip6\_tunnel and sit) can receive a pre-defined name for a device from the userspace. Since these drivers call the register\_netdevice() after this (rtnl\_lock is held), the device's name may contain a '%' character.

Not sure how bad is this to have a device with a '%' in its name, but all the other places either use the register\_netdev(), or explicitly call dev\_alloc\_name() before registering, i.e. do not allow for such names.

Signed-off-by: Pavel Emelyanov <xemul@openvz.org>

---

```
diff --git a/net/ipv4/ip_gre.c b/net/ipv4/ip_gre.c
index 63f6917..6b9744f 100644
--- a/net/ipv4/ip_gre.c
+++ b/net/ipv4/ip_gre.c
@@ -274,19 +274,24 @@ static struct ip_tunnel * ipgre_tunnel_locate(struct ip_tunnel_parm
 *parms, int
 if (!dev)
 return NULL;

+ if (strchr(name, '%')) {
+ if (dev_alloc_name(dev, name) < 0)
+ goto failed_free;
+ }
+
 dev->init = ipgre_tunnel_init;
 nt = netdev_priv(dev);
 nt->parms = *parms;

- if (register_netdevice(dev) < 0) {
- free_netdev(dev);
- goto failed;
- }
+ if (register_netdevice(dev) < 0)
+ goto failed_free;

 dev_hold(dev);
 ipgre_tunnel_link(nt);
 return nt;
```

```

+failed_free:
+ free_netdev(dev);
failed:
    return NULL;
}
diff --git a/net/ipv4/ipip.c b/net/ipv4/ipip.c
index da28158..118e7d9 100644
--- a/net/ipv4/ipip.c
+++ b/net/ipv4/ipip.c
@@ -236,19 +236,24 @@ static struct ip_tunnel * ipip_tunnel_locate(struct ip_tunnel_parm
*parms, int c
    if (dev == NULL)
        return NULL;

+ if (strchr(name, '%')) {
+ if (dev_alloc_name(dev, name) < 0)
+ goto failed_free;
+ }
+
    nt = netdev_priv(dev);
    dev->init = ipip_tunnel_init;
    nt->parms = *parms;

- if (register_netdevice(dev) < 0) {
- free_netdev(dev);
- goto failed;
- }
+ if (register_netdevice(dev) < 0)
+ goto failed_free;

    dev_hold(dev);
    ipip_tunnel_link(nt);
    return nt;

+failed_free:
+ free_netdev(dev);
failed:
    return NULL;
}
diff --git a/net/ipv6/ip6_tunnel.c b/net/ipv6/ip6_tunnel.c
index cd94064..fa83d70 100644
--- a/net/ipv6/ip6_tunnel.c
+++ b/net/ipv6/ip6_tunnel.c
@@ -245,17 +245,22 @@ static struct ip6_tnl *ip6_tnl_create(struct ip6_tnl_parm *p)
    if (dev == NULL)
        goto failed;

+ if (strchr(name, '%')) {

```

```

+ if (dev_alloc_name(dev, name) < 0)
+ goto failed_free;
+ }
+
+ t = netdev_priv(dev);
+ dev->init = ip6_tnl_dev_init;
+ t->parms = *p;

- if ((err = register_netdevice(dev)) < 0) {
- free_netdev(dev);
- goto failed;
- }
+ if ((err = register_netdevice(dev)) < 0)
+ goto failed_free;
+
+ dev_hold(dev);
+ ip6_tnl_link(t);
+ return t;
+
+failed_free:
+ free_netdev(dev);
+ failed:
+ return NULL;
+ }
diff --git a/net/ipv6/sit.c b/net/ipv6/sit.c
index e77239d..a09a6b0 100644
--- a/net/ipv6/sit.c
+++ b/net/ipv6/sit.c
@@ -179,6 +179,11 @@ static struct ip_tunnel * ipip6_tunnel_locate(struct ip_tunnel_parm
*parms, int
if (dev == NULL)
return NULL;

+ if (strchr(name, '%')) {
+ if (dev_alloc_name(dev, name) < 0)
+ goto failed_free;
+ }
+
+ nt = netdev_priv(dev);
+ dev->init = ipip6_tunnel_init;
+ nt->parms = *parms;
@@ -186,6 +186,11 @@ static struct ip_tunnel * ipip6_tunnel_locate(struct ip_tunnel_parm
*parms, int
if (parms->i_flags & SIT_ISATAP)
dev->priv_flags |= IFF_ISATAP;

- if (register_netdevice(dev) < 0) {
- free_netdev(dev);

```

```
- goto failed;
- }
+ if (register_netdevice(dev) < 0)
+ goto failed_free;
```

```
dev_hold(dev);
```

```
ipip6_tunnel_link(nt);
return nt;
```

```
+failed_free:
+ free_netdev(dev);
failed:
return NULL;
}
```

---

Subject: Re: [PATCH] Don't create tunnels with '%' in name.  
Posted by [Patrick McHardy](#) on Thu, 21 Feb 2008 12:10:16 GMT  
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Pavel Emelyanov wrote:

```
> Four tunnel drivers (ip_gre, ipip, ip6_tunnel and sit) can
> receive a pre-defined name for a device from the userspace.
> Since these drivers call the register_netdevice() after this
> (rtnl_lock is held), the device's name may contain a '%'
> character.
>
> Not sure how bad is this to have a device with a '%' in its
> name, but all the other places either use the register_netdev(),
> or explicitly call dev_alloc_name() before registering, i.e.
> do not allow for such names.
>
> Signed-off-by: Pavel Emelyanov <xemul@openvz.org>
>
> ---
>
> diff --git a/net/ipv4/ip_gre.c b/net/ipv4/ip_gre.c
> index 63f6917..6b9744f 100644
> --- a/net/ipv4/ip_gre.c
> +++ b/net/ipv4/ip_gre.c
> @@ -274,19 +274,24 @@ static struct ip_tunnel * ipgre_tunnel_locate(struct ip_tunnel_parm
> *parms, int
> if (!dev)
> return NULL;
>
> + if (strchr(name, '%')) {
> + if (dev_alloc_name(dev, name) < 0)
```

```
> + goto failed_free;
> + }
> +
```

It would be nicer to replace the entire hand-made name allocation to remove the 100 device limit.

---

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Subject: Re: [PATCH] Don't create tunnels with '%' in name.  
Posted by [Pavel Emelianov](#) on Thu, 21 Feb 2008 12:17:27 GMT  
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Patrick McHardy wrote:

```
> Pavel Emelianov wrote:
>> Four tunnel drivers (ip_gre, ipip, ip6_tunnel and sit) can
>> receive a pre-defined name for a device from the userspace.
>> Since these drivers call the register_netdevice() after this
>> (rtnl_lock is held), the device's name may contain a '%'
>> character.
>>
>> Not sure how bad is this to have a device with a '%' in its
>> name, but all the other places either use the register_netdev(),
>> or explicitly call dev_alloc_name() before registering, i.e.
>> do not allow for such names.
>>
>> Signed-off-by: Pavel Emelianov <xemul@openvz.org>
>>
>> ---
>>
>> diff --git a/net/ipv4/ip_gre.c b/net/ipv4/ip_gre.c
>> index 63f6917..6b9744f 100644
>> --- a/net/ipv4/ip_gre.c
>> +++ b/net/ipv4/ip_gre.c
>> @@ -274,19 +274,24 @@ static struct ip_tunnel * ipgre_tunnel_locate(struct ip_tunnel_parm
>> *parms, int
>> if (!dev)
>>     return NULL;
>>
>> + if (strchr(name, '%')) {
>> + if (dev_alloc_name(dev, name) < 0)
>> + goto failed_free;
>> + }
>> +
>
>
> It would be nicer to replace the entire hand-made name
> allocation to remove the 100 device limit.
```

>

Actually, I thought the same, but fixing % in names looks like a BUG-fix for 2.6.25, while removing the hand-made name allocation looks like an enhancement for 2.6.26. No?

Thanks,  
Pavel

---

---

Subject: Re: [PATCH] Don't create tunnels with '%' in name.  
Posted by [Patrick McHardy](#) on Thu, 21 Feb 2008 12:22:01 GMT  
[View Forum Message](#) <> [Reply to Message](#)

---

Pavel Emelyanov wrote:

> Patrick McHardy wrote:

>

>> It would be nicer to replace the entire hand-made name  
>> allocation to remove the 100 device limit.

>>

>

> Actually, I thought the same, but fixing % in names looks like a  
> BUG-fix for 2.6.25, while removing the hand-made name allocation  
> looks like an enhancement for 2.6.26. No?

Well, its so closely related that I guess it would still look like a bugfix :) But changing this in 2.6.26 is also fine of course, your patch just reminded me since I wanted to change this for a long time and repeatedly forgot about it again.

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---

Subject: [PATCH] Don't limit the number of tunnels with generic name explicitly.  
Posted by [Pavel Emelianov](#) on Thu, 21 Feb 2008 12:38:16 GMT  
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---

Patrick McHardy wrote:

> Pavel Emelyanov wrote:

>> Patrick McHardy wrote:

>>

>>> It would be nicer to replace the entire hand-made name  
>>> allocation to remove the 100 device limit.

>>>

>> Actually, I thought the same, but fixing % in names looks like a  
>> BUG-fix for 2.6.25, while removing the hand-made name allocation  
>> looks like an enhancement for 2.6.26. No?

>

>  
> Well, its so closely related that I guess it would still look  
> like a bugfix :) But changing this in 2.6.26 is also fine of  
> course, your patch just reminded me since I wanted to change  
> this for a long time and repeatedly forgot about it again.

Ok, point taken ;) Here's the 2nd patch that does so. If David decides it can go to 2.6.25, that would be good, otherwise this patch will fit the 2.6.26 as well.

Changelog:

Use the added dev\_alloc\_name() call to create tunnel device name, rather than iterate in a hand-made loop with an artificial limit.

Thanks Patrick for noticing this.

Signed-off-by: Pavel Emelyanov <xemul@openvz.org>

---

```
diff --git a/include/net/ip6_tunnel.h b/include/net/ip6_tunnel.h
index c17fa1f..6512d85 100644
--- a/include/net/ip6_tunnel.h
+++ b/include/net/ip6_tunnel.h
@@ -14,8 +14,6 @@
/* capable of receiving packets */
#define IP6_TNL_F_CAP_RCV 0x20000

-#define IP6_TNL_MAX 128
-
/* IPv6 tunnel */

struct ip6_tnl {
diff --git a/net/ipv4/ip_gre.c b/net/ipv4/ip_gre.c
index 6b9744f..e7821ba 100644
--- a/net/ipv4/ip_gre.c
+++ b/net/ipv4/ip_gre.c
@@ -259,16 +259,8 @@ static struct ip_tunnel * ipgre_tunnel_locate(struct ip_tunnel_parm
*parms, int

if (parms->name[0])
    strcpy(name, parms->name, IFNAMSIZ);
- else {
- int i;
- for (i=1; i<100; i++) {
- sprintf(name, "gre%d", i);
- if (dev_get_by_name(&init_net, name) == NULL)
```

```

- break;
- }
- if (i==100)
- goto failed;
- }
+ else
+ sprintf(name, "gre%%d");

dev = alloc_netdev(sizeof(*t), name, ipgre_tunnel_setup);
if (!dev)
@@ -292,7 +284,6 @@ static struct ip_tunnel * ipgre_tunnel_locate(struct ip_tunnel_parm
*parms, int

```

```

failed_free:
free_netdev(dev);
-failed:
return NULL;
}

```

```

diff --git a/net/ipv4/ipip.c b/net/ipv4/ipip.c
index 118e7d9..dbaed69 100644
--- a/net/ipv4/ipip.c
+++ b/net/ipv4/ipip.c
@@ -221,16 +221,8 @@ static struct ip_tunnel * ipip_tunnel_locate(struct ip_tunnel_parm
*parms, int c

```

```

if (parms->name[0])
strcpy(name, parms->name, IFNAMSIZ);
- else {
- int i;
- for (i=1; i<100; i++) {
- sprintf(name, "tunl%d", i);
- if (__dev_get_by_name(&init_net, name) == NULL)
- break;
- }
- if (i==100)
- goto failed;
- }
+ else
+ sprintf(name, "tunl%%d");

```

```

dev = alloc_netdev(sizeof(*t), name, ipip_tunnel_setup);
if (dev == NULL)
@@ -254,7 +246,6 @@ static struct ip_tunnel * ipip_tunnel_locate(struct ip_tunnel_parm *parms,
int c

```

```

failed_free:
free_netdev(dev);

```



-failed:

```
return NULL;
}
```

diff --git a/net/ipv6/ip6\_tunnel.c b/net/ipv6/ip6\_tunnel.c

index fa83d70..78f4388 100644

--- a/net/ipv6/ip6\_tunnel.c

+++ b/net/ipv6/ip6\_tunnel.c

```
@@ -229,18 +229,11 @@ static struct ip6_tnl *ip6_tnl_create(struct ip6_tnl_parm *p)
    char name[IFNAMSIZ];
    int err;
```

```
- if (p->name[0]) {
+ if (p->name[0])
    strcpy(name, p->name, IFNAMSIZ);
- } else {
-     int i;
-     for (i = 1; i < IP6_TNL_MAX; i++) {
-         sprintf(name, "ip6tnl%d", i);
-         if (__dev_get_by_name(&init_net, name) == NULL)
-             break;
-     }
-     if (i == IP6_TNL_MAX)
-         goto failed;
- }
+ else
+     sprintf(name, "ip6tnl%%d");
+
+     dev = alloc_netdev(sizeof(*t), name, ip6_tnl_dev_setup);
+     if (dev == NULL)
+         goto failed;
```

diff --git a/net/ipv6/sit.c b/net/ipv6/sit.c

index a09a6b0..1656c00 100644

--- a/net/ipv6/sit.c

+++ b/net/ipv6/sit.c

```
@@ -164,16 +164,8 @@ static struct ip_tunnel * ipip6_tunnel_locate(struct ip_tunnel_parm
*parms, int
```

```
    if (parms->name[0])
        strcpy(name, parms->name, IFNAMSIZ);
- else {
-     int i;
-     for (i=1; i<100; i++) {
-         sprintf(name, "sit%d", i);
-         if (__dev_get_by_name(&init_net, name) == NULL)
-             break;
-     }
-     if (i==100)
```

```
- goto failed;
- }
+ else
+ sprintf(name, "sit%%d");

dev = alloc_netdev(sizeof(*t), name, ipip6_tunnel_setup);
if (dev == NULL)
```

---

---

Subject: Re: [PATCH] Don't limit the number of tunnels with generic name explicitly.  
Posted by [Patrick McHardy](#) on Thu, 21 Feb 2008 12:45:15 GMT  
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---

Pavel Emelyanov wrote:  
> Patrick McHardy wrote:  
>> Pavel Emelyanov wrote:  
>>> Patrick McHardy wrote:  
>>>>  
>>>> It would be nicer to replace the entire hand-made name  
>>>> allocation to remove the 100 device limit.  
>>>>  
>>> Actually, I thought the same, but fixing % in names looks like a  
>>> BUG-fix for 2.6.25, while removing the hand-made name allocation  
>>> looks like an enhancement for 2.6.26. No?  
>>  
>> Well, its so closely related that I guess it would still look  
>> like a bugfix :) But changing this in 2.6.26 is also fine of  
>> course, your patch just reminded me since I wanted to change  
>> this for a long time and repeatedly forgot about it again.  
>  
> Ok, point taken ;) Here's the 2nd patch that does so. If David  
> decides it can go to 2.6.25, that would be good, otherwise this  
> patch will fit the 2.6.26 as well.  
>  
> Changelog:  
>  
> Use the added dev\_alloc\_name() call to create tunnel device name,  
> rather than iterate in a hand-made loop with an artificial limit.  
>  
> Thanks Patrick for noticing this.  
>  
> Signed-off-by: Pavel Emelyanov <xemul@openvz.org>

Looks good to me, thanks.

---

---

Subject: Re: [PATCH] Don't limit the number of tunnels with generic name explicitly.  
Posted by [davem](#) on Sun, 24 Feb 2008 04:19:52 GMT  
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---

From: Pavel Emelyanov <xemul@openvz.org>  
Date: Thu, 21 Feb 2008 15:38:16 +0300

> Changelog:  
>  
> Use the added dev\_alloc\_name() call to create tunnel device name,  
> rather than iterate in a hand-made loop with an artificial limit.  
>  
> Thanks Patrick for noticing this.  
>  
> Signed-off-by: Pavel Emelyanov <xemul@openvz.org>

Applied, but I had to rework this in two places that didn't apply cleanly.

The ip\_gre.c and ipip.c changes remove a "failed" label but that can't be done in the current tree as there are other existing references.

---

---

Subject: Re: [PATCH] Don't limit the number of tunnels with generic name explicitly.  
Posted by [Pavel Emelianov](#) on Tue, 26 Feb 2008 07:47:44 GMT  
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---

David Miller wrote:

> From: Pavel Emelyanov <xemul@openvz.org>  
> Date: Thu, 21 Feb 2008 15:38:16 +0300  
>  
>> Changelog:  
>>  
>> Use the added dev\_alloc\_name() call to create tunnel device name,  
>> rather than iterate in a hand-made loop with an artificial limit.  
>>  
>> Thanks Patrick for noticing this.  
>>  
>> Signed-off-by: Pavel Emelyanov <xemul@openvz.org>  
>  
> Applied, but I had to rework this in two places that didn't  
> apply cleanly.

That's because you skipped the first patch titled "Don't create tunnels with '%' in name.", which adds the dev\_alloc\_name() call and tosses the error paths a bit. Without this first patch, these four drivers become broken :( When user doesn't specify the name,

the device's name will be e.g. "tunl%d", but not "tunl0" like he expects.

> The ip\_gre.c and ipip.c changes remove a "failed" label but  
> that can't be done in the current tree as there are other  
> existing references.  
>

Yup :( this code was removed in that first patch...

---

---

Subject: Re: [PATCH] Don't limit the number of tunnels with generic name explicitly.  
Posted by [davem](#) on Tue, 26 Feb 2008 21:30:54 GMT  
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---

From: Pavel Emelyanov <xemul@openvz.org>  
Date: Tue, 26 Feb 2008 10:47:44 +0300

> That's because you skipped the first patch titled "Don't create  
> tunnels with '%' in name.", which adds the dev\_alloc\_name() call  
> and tosses the error paths a bit. Without this first patch, these  
> four drivers become broken :( When user doesn't specify the name,  
> the device's name will be e.g. "tunl%d", but not "tunl0" like  
> he expects.

Please respin and post the first patch, I had no idea there was a dependency.

---