Subject: [PATCH 1/1] Dynamically allocate the loopback device
Posted by Daniel Lezcano on Fri, 24 Aug 2007 15:36:43 GMT
View Forum Message <> Reply to Message

From: Daniel Lezcano <dlezcano@fr.ibm.com>

Doing this makes loopback.c a better example of how to do a
simple network device, and it removes the special case
single static allocation of a struct net_device, hopefully
making maintenance easier.

Applies against net-2.6.24

Tested on i386, x86_64
Compiled on ia64, sparc

Signed-off-by: Eric W. Biederman <ebiederm@xmission.com>
Signed-off-by: Daniel Lezcano <dlezcano@fr.ibm.com>
Acked-By: Kirill Korotaev <dev@sw.ru>
Acked-by: Benjamin Thery <benjamin.thery@bull.net>
---
 drivers/net/loopback.c | 63 ++++++++++++++++++++++++++----------
 include/linux/netdevice.h | 2 +-
 net/core/dst.c | 8 ++--
 net/decnet/dn_dev.c | 4 +-
 net/decnet/dn_route.c | 14 ++++++----
 net/ipv4/devinet.c | 6 ++--
 net/ipv4/ipconfig.c | 6 ++--
 net/ipv4/ipvs/ip_vs_core.c | 2 +-
 net/ipv4/route.c | 18 +++++++----
 net/ipv4/xfrm4_policy.c | 2 +-
 net/ipv6/addrconf.c | 15 +++++++---
 net/ipv6/ip6_input.c | 2 +-
 net/ipv6/netfilter/ip6t_REJECT.c | 2 +-
 net/ipv6/route.c | 15 +++++++---
 net/ipv6/xfrm6_policy.c | 2 +-
 net/xfrm/xfrm_policy.c | 4 +-
 16 files changed, 89 insertions(+), 76 deletions(-)

diff --git a/drivers/net/loopback.c b/drivers/net/loopback.c
index 5106c23..3642aff 100644
--- a/drivers/net/loopback.c
+++ b/drivers/net/loopback.c
@@ -199,44 +199,57 @@ static const struct ethtool_ops loopback_ethtool_ops = {
  .get_rx_csum = always_on,
 };

-/*

```
- * The loopback device is special. There is only one instance and
- * it is statically allocated. Don't do this for other devices.
- */
-struct net_device loopback_dev = {
- .name    = "lo",
- .get_stats  = &get_stats,
- .mtu   = (16 * 1024) + 20 + 20 + 12,
- .hard_start_xmit = loopback_xmit,
- .hard_header  = eth_header,
- .hard_header_cache = eth_header_cache,
- .header_cache_update = eth_header_cache_update,
- .hard_header_len = ETH_HLEN, /* 14 */
- .addr_len  = ETH_ALEN, /* 6 */
- .tx_queue_len  = 0,
- .type   = ARPHRD_LOOPBACK, /* 0x0001*/
- .rebuild_header  = eth_rebuild_header,
- .flags   = IFF_LOOPBACK,
- .features   = NETIF_F_SG | NETIF_F_FRAGLIST
+static void loopback_setup(struct net_device *dev)
+{
+ dev->get_stats  = &get_stats;
+ dev->mtu  = (16 * 1024) + 20 + 20 + 12;
+ dev->hard_start_xmit = loopback_xmit;
+ dev->hard_header = eth_header;
+ dev->hard_header_cache = eth_header_cache;
+ dev->header_cache_update = eth_header_cache_update;
+ dev->hard_header_len = ETH_HLEN; /* 14 */
+ dev->addr_len  = ETH_ALEN; /* 6 */
+ dev->tx_queue_len = 0;
+ dev->type  = ARPHRD_LOOPBACK; /* 0x0001*/
+ dev->rebuild_header = eth_rebuild_header;
+ dev->flags  = IFF_LOOPBACK;
+ dev->features   = NETIF_F_SG | NETIF_F_FRAGLIST
 #ifdef LOOPBACK_TSO
       | NETIF_F_TSO
 #endif
       | NETIF_F_NO_CSUM | NETIF_F_HIGHDMA
-      | NETIF_F_LLTX,
- .ethtool_ops  = &loopback_ethtool_ops,
-};
+      | NETIF_F_LLTX;
+ dev->ethtool_ops = &loopback_ethtool_ops;
+}

 /* Setup and register the loopback device. */
 static int __init loopback_init(void)
 {
- int err = register_netdev(&loopback_dev);
```

```
+ struct net_device *dev;
+ int err;
+
+ err = -ENOMEM;
+ dev = alloc_netdev(0, "lo", loopback_setup);
+ if (!dev)
+  goto out;
+
+ err = register_netdev(dev);
+ if (err)
+  goto out_free_netdev;

+ err = 0;
+ loopback_dev = dev;
+
+out:
  if (err)
   panic("loopback: Failed to register netdevice: %d\n", err);
-
  return err;
+out_free_netdev:
+ free_netdev(dev);
+ goto out;
 };

-module_init(loopback_init);
+fs_initcall(loopback_init);

+struct net_device *loopback_dev;
 EXPORT_SYMBOL(loopback_dev);
diff --git a/include/linux/netdevice.h b/include/linux/netdevice.h
index 8d12f02..7cd0641 100644
--- a/include/linux/netdevice.h
+++ b/include/linux/netdevice.h
@@ -680,7 +680,7 @@ struct packet_type {
 #include <linux/interrupt.h>
 #include <linux/notifier.h>

-extern struct net_device  loopback_dev;  /* The loopback */
+extern struct net_device  *loopback_dev;  /* The loopback */
 extern struct list_head   dev_base_head;  /* All devices */
 extern rwlock_t    dev_base_lock;  /* Device list lock */

diff --git a/net/core/dst.c b/net/core/dst.c
index c6a0587..ad8549e 100644
--- a/net/core/dst.c
+++ b/net/core/dst.c
@@ -236,13 +236,13 @@ static inline void dst_ifdown(struct dst_entry *dst, struct net_device
```

```
*dev,
  if (!unregister) {
   dst->input = dst->output = dst_discard;
  } else {
-  dst->dev = &loopback_dev;
-  dev_hold(&loopback_dev);
+  dst->dev = loopback_dev;
+  dev_hold(dst->dev);
   dev_put(dev);
   if (dst->neighbour && dst->neighbour->dev == dev) {
-   dst->neighbour->dev = &loopback_dev;
+   dst->neighbour->dev = loopback_dev;
    dev_put(dev);
-   dev_hold(&loopback_dev);
+   dev_hold(dst->neighbour->dev);
   }
  }
 }
diff --git a/net/decnet/dn_dev.c b/net/decnet/dn_dev.c
index fa6604f..9fea83e 100644
--- a/net/decnet/dn_dev.c
+++ b/net/decnet/dn_dev.c
@@ -868,10 +868,10 @@ last_chance:
   rv = dn_dev_get_first(dev, addr);
   read_unlock(&dev_base_lock);
   dev_put(dev);
-  if (rv == 0 || dev == &loopback_dev)
+  if (rv == 0 || dev == loopback_dev)
    return rv;
  }
- dev = &loopback_dev;
+ dev = loopback_dev;
  dev_hold(dev);
  goto last_chance;
 }
diff --git a/net/decnet/dn_route.c b/net/decnet/dn_route.c
index a4a6209..8c04ebc 100644
--- a/net/decnet/dn_route.c
+++ b/net/decnet/dn_route.c
@@ -883,7 +883,7 @@ static int dn_route_output_slow(struct dst_entry **pprt, const struct flowi
*old
      .scope = RT_SCOPE_UNIVERSE,
         } },
        .mark = oldflp->mark,
-       .iif = loopback_dev.ifindex,
+       .iif = loopback_dev->ifindex,
        .oif = oldflp->oif };
  struct dn_route *rt = NULL;
```

```
  struct net_device *dev_out = NULL, *dev;
@@ -900,7 +900,7 @@ static int dn_route_output_slow(struct dst_entry **pprt, const struct flowi
*old
          "dn_route_output_slow: dst=%04x src=%04x mark=%d"
          " iif=%d oif=%d\n", dn_ntohs(oldflp->fld_dst),
          dn_ntohs(oldflp->fld_src),
-         oldflp->mark, loopback_dev.ifindex, oldflp->oif);
+         oldflp->mark, loopback_dev->ifindex, oldflp->oif);

  /* If we have an output interface, verify its a DECnet device */
  if (oldflp->oif) {
@@ -953,7 +953,7 @@ source_ok:
   err = -EADDRNOTAVAIL;
   if (dev_out)
    dev_put(dev_out);
-  dev_out = &loopback_dev;
+  dev_out = loopback_dev;
   dev_hold(dev_out);
   if (!fl.fld_dst) {
    fl.fld_dst =
@@ -962,7 +962,7 @@ source_ok:
    if (!fl.fld_dst)
     goto out;
   }
-  fl.oif = loopback_dev.ifindex;
+  fl.oif = loopback_dev->ifindex;
   res.type = RTN_LOCAL;
   goto make_route;
  }
@@ -1008,7 +1008,7 @@ source_ok:
      if (dev_out)
       dev_put(dev_out);
      if (dn_dev_islocal(neigh->dev, fl.fld_dst)) {
-      dev_out = &loopback_dev;
+      dev_out = loopback_dev;
       res.type = RTN_LOCAL;
      } else {
       dev_out = neigh->dev;
@@ -1029,7 +1029,7 @@ source_ok:
   /* Possible improvement - check all devices for local addr */
   if (dn_dev_islocal(dev_out, fl.fld_dst)) {
    dev_put(dev_out);
-   dev_out = &loopback_dev;
+   dev_out = loopback_dev;
    dev_hold(dev_out);
    res.type = RTN_LOCAL;
    goto select_source;
@@ -1065,7 +1065,7 @@ select_source:
```

```
    fl.fld_src = fl.fld_dst;
   if (dev_out)
    dev_put(dev_out);
-  dev_out = &loopback_dev;
+  dev_out = loopback_dev;
   dev_hold(dev_out);
   fl.oif = dev_out->ifindex;
   if (res.fi)
diff --git a/net/ipv4/devinet.c b/net/ipv4/devinet.c
index 5b77bda..808f529 100644
--- a/net/ipv4/devinet.c
+++ b/net/ipv4/devinet.c
@@ -203,7 +203,7 @@ static void inetdev_destroy(struct in_device *in_dev)
  ASSERT_RTNL();

  dev = in_dev->dev;
- if (dev == &loopback_dev)
+ if (dev == loopback_dev)
   return;

  in_dev->dead = 1;
@@ -1058,7 +1058,7 @@ static int inetdev_event(struct notifier_block *this, unsigned long event,
    in_dev = inetdev_init(dev);
    if (!in_dev)
     return notifier_from_errno(-ENOMEM);
-   if (dev == &loopback_dev) {
+   if (dev == loopback_dev) {
     IN_DEV_CONF_SET(in_dev, NOXFRM, 1);
     IN_DEV_CONF_SET(in_dev, NOPOLICY, 1);
    }
@@ -1074,7 +1074,7 @@ static int inetdev_event(struct notifier_block *this, unsigned long event,
  case NETDEV_UP:
   if (dev->mtu < 68)
    break;
-  if (dev == &loopback_dev) {
+  if (dev == loopback_dev) {
    struct in_ifaddr *ifa;
    if ((ifa = inet_alloc_ifa()) != NULL) {
     ifa->ifa_local =
diff --git a/net/ipv4/ipconfig.c b/net/ipv4/ipconfig.c
index c5b2470..3ec7690 100644
--- a/net/ipv4/ipconfig.c
+++ b/net/ipv4/ipconfig.c
@@ -189,11 +189,11 @@ static int __init ic_open_devs(void)
  rtnl_lock();

  /* bring loopback device up first */
- if (dev_change_flags(&loopback_dev, loopback_dev.flags | IFF_UP) < 0)
```

```
-  printk(KERN_ERR "IP-Config: Failed to open %s\n", loopback_dev.name);
+ if (dev_change_flags(loopback_dev, loopback_dev->flags | IFF_UP) < 0)
+  printk(KERN_ERR "IP-Config: Failed to open %s\n", loopback_dev->name);

  for_each_netdev(dev) {
-  if (dev == &loopback_dev)
+  if (dev == loopback_dev)
    continue;
   if (user_dev_name[0] ? !strcmp(dev->name, user_dev_name) :
       (!(dev->flags & IFF_LOOPBACK) &&
diff --git a/net/ipv4/ipvs/ip_vs_core.c b/net/ipv4/ipvs/ip_vs_core.c
index f005a2f..7450326 100644
--- a/net/ipv4/ipvs/ip_vs_core.c
+++ b/net/ipv4/ipvs/ip_vs_core.c
@@ -961,7 +961,7 @@ ip_vs_in(unsigned int hooknum, struct sk_buff **pskb,
   * ... don't know why 1st test DOES NOT include 2nd (?)
   */
  if (unlikely(skb->pkt_type != PACKET_HOST
-       || skb->dev == &loopback_dev || skb->sk)) {
+       || skb->dev == loopback_dev || skb->sk)) {
   IP_VS_DBG(12, "packet type=%d proto=%d daddr=%d.%d.%d.%d ignored\n",
      skb->pkt_type,
      ip_hdr(skb)->protocol,
diff --git a/net/ipv4/route.c b/net/ipv4/route.c
index c7ca94b..4f13385 100644
--- a/net/ipv4/route.c
+++ b/net/ipv4/route.c
@@ -1404,8 +1404,8 @@ static void ipv4_dst_ifdown(struct dst_entry *dst, struct net_device
*dev,
 {
  struct rtable *rt = (struct rtable *) dst;
  struct in_device *idev = rt->idev;
- if (dev != &loopback_dev && idev && idev->dev == dev) {
-  struct in_device *loopback_idev = in_dev_get(&loopback_dev);
+ if (dev != loopback_dev && idev && idev->dev == dev) {
+  struct in_device *loopback_idev = in_dev_get(loopback_dev);
   if (loopback_idev) {
    rt->idev = loopback_idev;
    in_dev_put(idev);
@@ -1557,7 +1557,7 @@ static int ip_route_input_mc(struct sk_buff *skb, __be32 daddr,
__be32 saddr,
 #endif
  rth->rt_iif =
  rth->fl.iif = dev->ifindex;
- rth->u.dst.dev = &loopback_dev;
+ rth->u.dst.dev = loopback_dev;
  dev_hold(rth->u.dst.dev);
  rth->idev = in_dev_get(rth->u.dst.dev);
```

```
  rth->fl.oif = 0;
@@ -1814,7 +1814,7 @@ static int ip_route_input_slow(struct sk_buff *skb, __be32 daddr,
__be32 saddr,
  if (res.type == RTN_LOCAL) {
   int result;
   result = fib_validate_source(saddr, daddr, tos,
-          loopback_dev.ifindex,
+           loopback_dev->ifindex,
           dev, &spec_dst, &itag);
   if (result < 0)
    goto martian_source;
@@ -1881,7 +1881,7 @@ local_input:
 #endif
  rth->rt_iif =
  rth->fl.iif = dev->ifindex;
- rth->u.dst.dev = &loopback_dev;
+ rth->u.dst.dev = loopback_dev;
  dev_hold(rth->u.dst.dev);
  rth->idev = in_dev_get(rth->u.dst.dev);
  rth->rt_gateway = daddr;
@@ -2151,7 +2151,7 @@ static int ip_route_output_slow(struct rtable **rp, const struct flowi
*oldflp)
         RT_SCOPE_UNIVERSE),
           } },
        .mark = oldflp->mark,
-       .iif = loopback_dev.ifindex,
+       .iif = loopback_dev->ifindex,
        .oif = oldflp->oif };
  struct fib_result res;
  unsigned flags = 0;
@@ -2245,9 +2245,9 @@ static int ip_route_output_slow(struct rtable **rp, const struct flowi
*oldflp)
    fl.fl4_dst = fl.fl4_src = htonl(INADDR_LOOPBACK);
   if (dev_out)
    dev_put(dev_out);
-  dev_out = &loopback_dev;
+  dev_out = loopback_dev;
   dev_hold(dev_out);
-  fl.oif = loopback_dev.ifindex;
+  fl.oif = loopback_dev->ifindex;
   res.type = RTN_LOCAL;
   flags |= RTCF_LOCAL;
   goto make_route;
@@ -2292,7 +2292,7 @@ static int ip_route_output_slow(struct rtable **rp, const struct flowi
*oldflp)
    fl.fl4_src = fl.fl4_dst;
   if (dev_out)
    dev_put(dev_out);
```

```
-  dev_out = &loopback_dev;
+  dev_out = loopback_dev;
   dev_hold(dev_out);
   fl.oif = dev_out->ifindex;
   if (res.fi)
diff --git a/net/ipv4/xfrm4_policy.c b/net/ipv4/xfrm4_policy.c
index 4ff8ed3..29ab3de 100644
--- a/net/ipv4/xfrm4_policy.c
+++ b/net/ipv4/xfrm4_policy.c
@@ -306,7 +306,7 @@ static void xfrm4_dst_ifdown(struct dst_entry *dst, struct net_device
*dev,

  xdst = (struct xfrm_dst *)dst;
  if (xdst->u.rt.idev->dev == dev) {
-  struct in_device *loopback_idev = in_dev_get(&loopback_dev);
+  struct in_device *loopback_idev = in_dev_get(loopback_dev);
   BUG_ON(!loopback_idev);

   do {
diff --git a/net/ipv6/addrconf.c b/net/ipv6/addrconf.c
index 91ef3be..d806f89 100644
--- a/net/ipv6/addrconf.c
+++ b/net/ipv6/addrconf.c
@@ -2399,7 +2399,7 @@ static int addrconf_ifdown(struct net_device *dev, int how)

  ASSERT_RTNL();

- if (dev == &loopback_dev && how == 1)
+ if (dev == loopback_dev && how == 1)
   how = 0;

  rt6_ifdown(dev);
@@ -4203,16 +4203,19 @@ int __init addrconf_init(void)
   * device and it being up should be removed.
   */
  rtnl_lock();
- if (!ipv6_add_dev(&loopback_dev))
+ if (!ipv6_add_dev(loopback_dev))
   err = -ENOMEM;
  rtnl_unlock();
  if (err)
   return err;

- ip6_null_entry.rt6i_idev = in6_dev_get(&loopback_dev);
+ ip6_null_entry.u.dst.dev = loopback_dev;
+ ip6_null_entry.rt6i_idev = in6_dev_get(loopback_dev);
 #ifdef CONFIG_IPV6_MULTIPLE_TABLES
- ip6_prohibit_entry.rt6i_idev = in6_dev_get(&loopback_dev);
```

```
- ip6_blk_hole_entry.rt6i_idev = in6_dev_get(&loopback_dev);
+ ip6_prohibit_entry.u.dst.dev = loopback_dev;
+ ip6_prohibit_entry.rt6i_idev = in6_dev_get(loopback_dev);
+ ip6_blk_hole_entry.u.dst.dev = loopback_dev;
+ ip6_blk_hole_entry.rt6i_idev = in6_dev_get(loopback_dev);
 #endif

  register_netdevice_notifier(&ipv6_dev_notf);
@@ -4267,7 +4270,7 @@ void __exit addrconf_cleanup(void)
    continue;
   addrconf_ifdown(dev, 1);
  }
- addrconf_ifdown(&loopback_dev, 2);
+ addrconf_ifdown(loopback_dev, 2);

  /*
   * Check hash table.
diff --git a/net/ipv6/ip6_input.c b/net/ipv6/ip6_input.c
index 30a5cb1..15d7910 100644
--- a/net/ipv6/ip6_input.c
+++ b/net/ipv6/ip6_input.c
@@ -86,7 +86,7 @@ int ipv6_rcv(struct sk_buff *skb, struct net_device *dev, struct packet_type
*pt
   *
   * BTW, when we send a packet for our own local address on a
   * non-loopback interface (e.g. ethX), it is being delivered
-  * via the loopback interface (lo) here; skb->dev = &loopback_dev.
+  * via the loopback interface (lo) here; skb->dev = loopback_dev.
   * It, however, should be considered as if it is being
   * arrived via the sending interface (ethX), because of the
   * nature of scoping architecture. --yoshfuji
diff --git a/net/ipv6/netfilter/ip6t_REJECT.c b/net/ipv6/netfilter/ip6t_REJECT.c
index 2f487cd..5086053 100644
--- a/net/ipv6/netfilter/ip6t_REJECT.c
+++ b/net/ipv6/netfilter/ip6t_REJECT.c
@@ -167,7 +167,7 @@ static inline void
 send_unreach(struct sk_buff *skb_in, unsigned char code, unsigned int hooknum)
 {
  if (hooknum == NF_IP6_LOCAL_OUT && skb_in->dev == NULL)
-  skb_in->dev = &loopback_dev;
+  skb_in->dev = loopback_dev;

  icmpv6_send(skb_in, ICMPV6_DEST_UNREACH, code, 0, NULL);
 }
diff --git a/net/ipv6/route.c b/net/ipv6/route.c
index 55ea80f..3f5c65f 100644
--- a/net/ipv6/route.c
+++ b/net/ipv6/route.c
```

```
@@ -137,7 +137,6 @@ struct rt6_info ip6_null_entry = {
   .dst = {
    .__refcnt = ATOMIC_INIT(1),
    .__use  = 1,
-   .dev  = &loopback_dev,
    .obsolete = -1,
    .error  = -ENETUNREACH,
    .metrics = { [RTAX_HOPLIMIT - 1] = 255, },
@@ -163,7 +162,6 @@ struct rt6_info ip6_prohibit_entry = {
   .dst = {
    .__refcnt = ATOMIC_INIT(1),
    .__use  = 1,
-   .dev  = &loopback_dev,
    .obsolete = -1,
    .error  = -EACCES,
    .metrics = { [RTAX_HOPLIMIT - 1] = 255, },
@@ -183,7 +181,6 @@ struct rt6_info ip6_blk_hole_entry = {
   .dst = {
    .__refcnt = ATOMIC_INIT(1),
    .__use  = 1,
-   .dev  = &loopback_dev,
    .obsolete = -1,
    .error  = -EINVAL,
    .metrics = { [RTAX_HOPLIMIT - 1] = 255, },
@@ -223,8 +220,8 @@ static void ip6_dst_ifdown(struct dst_entry *dst, struct net_device *dev,
  struct rt6_info *rt = (struct rt6_info *)dst;
  struct inet6_dev *idev = rt->rt6i_idev;

- if (dev != &loopback_dev && idev != NULL && idev->dev == dev) {
-  struct inet6_dev *loopback_idev = in6_dev_get(&loopback_dev);
+ if (dev != loopback_dev && idev != NULL && idev->dev == dev) {
+  struct inet6_dev *loopback_idev = in6_dev_get(loopback_dev);
   if (loopback_idev != NULL) {
    rt->rt6i_idev = loopback_idev;
    in6_dev_put(idev);
@@ -1187,12 +1184,12 @@ int ip6_route_add(struct fib6_config *cfg)
  if ((cfg->fc_flags & RTF_REJECT) ||
      (dev && (dev->flags&IFF_LOOPBACK) && !(addr_type&IPV6_ADDR_LOOPBACK))) {
   /* hold loopback dev/idev if we haven't done so. */
-  if (dev != &loopback_dev) {
+  if (dev != loopback_dev) {
    if (dev) {
     dev_put(dev);
     in6_dev_put(idev);
    }
-   dev = &loopback_dev;
+   dev = loopback_dev;
    dev_hold(dev);
```

```
    idev = in6_dev_get(dev);
    if (!idev) {
@@ -1896,13 +1893,13 @@ struct rt6_info *addrconf_dst_alloc(struct inet6_dev *idev,
  if (rt == NULL)
   return ERR_PTR(-ENOMEM);

- dev_hold(&loopback_dev);
+ dev_hold(loopback_dev);
  in6_dev_hold(idev);

  rt->u.dst.flags = DST_HOST;
  rt->u.dst.input = ip6_input;
  rt->u.dst.output = ip6_output;
- rt->rt6i_dev = &loopback_dev;
+ rt->rt6i_dev = loopback_dev;
  rt->rt6i_idev = idev;
  rt->u.dst.metrics[RTAX_MTU-1] = ipv6_get_mtu(rt->rt6i_dev);
  rt->u.dst.metrics[RTAX_ADVMSS-1] = ipv6_advmss(dst_mtu(&rt->u.dst));
diff --git a/net/ipv6/xfrm6_policy.c b/net/ipv6/xfrm6_policy.c
index 3ec0c47..cc07216 100644
--- a/net/ipv6/xfrm6_policy.c
+++ b/net/ipv6/xfrm6_policy.c
@@ -375,7 +375,7 @@ static void xfrm6_dst_ifdown(struct dst_entry *dst, struct net_device
*dev,

  xdst = (struct xfrm_dst *)dst;
  if (xdst->u.rt6.rt6i_idev->dev == dev) {
-  struct inet6_dev *loopback_idev = in6_dev_get(&loopback_dev);
+  struct inet6_dev *loopback_idev = in6_dev_get(loopback_dev);
   BUG_ON(!loopback_idev);

   do {
diff --git a/net/xfrm/xfrm_policy.c b/net/xfrm/xfrm_policy.c
index c7b2503..ca37eec 100644
--- a/net/xfrm/xfrm_policy.c
+++ b/net/xfrm/xfrm_policy.c
@@ -1947,8 +1947,8 @@ static int stale_bundle(struct dst_entry *dst)
 void xfrm_dst_ifdown(struct dst_entry *dst, struct net_device *dev)
 {
  while ((dst = dst->child) && dst->xfrm && dst->dev == dev) {
-  dst->dev = &loopback_dev;
-  dev_hold(&loopback_dev);
+  dst->dev = loopback_dev;
+  dev_hold(dst->dev);
   dev_put(dev);
  }
 }
--
```

1.5.2.4

Subject: Re: [PATCH 1/1] Dynamically allocate the loopback device
Posted by dlunev on Fri, 24 Aug 2007 15:55:47 GMT
View Forum Message <> Reply to Message

dlezcano@fr.ibm.com wrote:
> From: Daniel Lezcano <dlezcano@fr.ibm.com>
>
> Doing this makes loopback.c a better example of how to do a
> simple network device, and it removes the special case
> single static allocation of a struct net_device, hopefully
> making maintenance easier.
>
> Applies against net-2.6.24
>
> Tested on i386, x86_64
> Compiled on ia64, sparc

I think that a small note, that initialization order is changed will be
good to record. After this, loopback MUST be allocated before any other
networking subsystem initialization. And this is an important change.

Regards,
Den

Subject: Re: [PATCH 1/1] Dynamically allocate the loopback device
Posted by Daniel Lezcano on Fri, 24 Aug 2007 16:44:35 GMT
View Forum Message <> Reply to Message

Denis V. Lunev wrote:
> dlezcano@fr.ibm.com wrote:
>> From: Daniel Lezcano <dlezcano@fr.ibm.com>
>>
>> Doing this makes loopback.c a better example of how to do a
>> simple network device, and it removes the special case

>> single static allocation of a struct net_device, hopefully
>> making maintenance easier.
>>
>> Applies against net-2.6.24
>>
>> Tested on i386, x86_64
>> Compiled on ia64, sparc
>
> I think that a small note, that initialization order is changed will be
> good to record. After this, loopback MUST be allocated before any other
> networking subsystem initialization. And this is an important change.
>
> Regards,
> Den
>

Thanks Denis to point that.

-- Daniel

_____
Containers mailing list
Containers@lists.linux-foundation.org
https://lists.linux-foundation.org/mailman/listinfo/containers