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Subject: [patch 1/3][NETNS][IPV6] anycast - handle several network namespace

Posted by [Daniel Lezcano](#) on Wed, 26 Mar 2008 12:28:33 GMT

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Make use of the network namespace information to have this protocol to handle several network namespace.

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---

```
include/net/addrconf.h | 3 +-
include/net/ipv6.h     | 17 ++++++-----
net/ipv6/af_inet6.c   | 12 ++++++-----
net/ipv6/anycast.c    | 38 ++++++-----
net/ipv6/ndisc.c      | 2 +-
5 files changed, 37 insertions(+), 35 deletions(-)
```

Index: net-2.6.26/net/ipv6/anycast.c

=====

--- net-2.6.26.orig/net/ipv6/anycast.c

+++ net-2.6.26/net/ipv6/anycast.c

```
@@ -82,6 +82,7 @@ int ipv6_sock_ac_join(struct sock *sk, i
    struct net_device *dev = NULL;
    struct inet6_dev *idev;
    struct ipv6_ac_socklist *pac;
+ struct net *net = sock_net(sk);
    int ishost = !ipv6_devconf.forwarding;
    int err = 0;
```

```
@@ -89,7 +90,7 @@ int ipv6_sock_ac_join(struct sock *sk, i
    return -EPERM;
    if (ipv6_addr_is_multicast(addr))
        return -EINVAL;
- if (ipv6_chk_addr(&init_net, addr, NULL, 0))
+ if (ipv6_chk_addr(net, addr, NULL, 0))
    return -EINVAL;
```

```
    pac = sock_kmalloc(sk, sizeof(struct ipv6_ac_socklist), GFP_KERNEL);
```

```
@@ -101,7 +102,7 @@ int ipv6_sock_ac_join(struct sock *sk, i
    if (ifindex == 0) {
        struct rt6_info *rt;
```

```
- rt = rt6_lookup(&init_net, addr, NULL, 0, 0);
```

```
+ rt = rt6_lookup(net, addr, NULL, 0, 0);
```

```
    if (rt) {
        dev = rt->rt6i_dev;
        dev_hold(dev);
```

```
@@ -112,10 +113,10 @@ int ipv6_sock_ac_join(struct sock *sk, i
```

```

} else {
/* router, no matching interface: just pick one */

- dev = dev_get_by_flags(&init_net, IFF_UP, IFF_UP|IFF_LOOPBACK);
+ dev = dev_get_by_flags(net, IFF_UP, IFF_UP|IFF_LOOPBACK);
}
} else
- dev = dev_get_by_index(&init_net, ifindex);
+ dev = dev_get_by_index(net, ifindex);

if (dev == NULL) {
err = -ENODEV;
@@ -176,6 +177,7 @@ int ipv6_sock_ac_drop(struct sock *sk, i
struct ipv6_pinfo *np = inet6_sk(sk);
struct net_device *dev;
struct ipv6_ac_socklist *pac, *prev_pac;
+ struct net *net = sock_net(sk);

write_lock_bh(&ipv6_sk_ac_lock);
prev_pac = NULL;
@@ -196,7 +198,7 @@ int ipv6_sock_ac_drop(struct sock *sk, i

write_unlock_bh(&ipv6_sk_ac_lock);

- dev = dev_get_by_index(&init_net, pac->acl_ifindex);
+ dev = dev_get_by_index(net, pac->acl_ifindex);
if (dev) {
ipv6_dev_ac_dec(dev, &pac->acl_addr);
dev_put(dev);
@@ -210,6 +212,7 @@ void ipv6_sock_ac_close(struct sock *sk)
struct ipv6_pinfo *np = inet6_sk(sk);
struct net_device *dev = NULL;
struct ipv6_ac_socklist *pac;
+ struct net *net = sock_net(sk);
int prev_index;

write_lock_bh(&ipv6_sk_ac_lock);
@@ -224,7 +227,7 @@ void ipv6_sock_ac_close(struct sock *sk)
if (pac->acl_ifindex != prev_index) {
if (dev)
dev_put(dev);
- dev = dev_get_by_index(&init_net, pac->acl_ifindex);
+ dev = dev_get_by_index(net, pac->acl_ifindex);
prev_index = pac->acl_ifindex;
}
if (dev)
@@ -422,14 +425,15 @@ static int ipv6_chk_acast_dev(struct net
/*

```

```

* check if given interface (or any, if dev==0) has this anycast address
*/
-int ipv6_chk_acast_addr(struct net_device *dev, struct in6_addr *addr)
+int ipv6_chk_acast_addr(struct net *net, struct net_device *dev,
+ struct in6_addr *addr)
{
    int found = 0;

    if (dev)
        return ipv6_chk_acast_dev(dev, addr);
    read_lock(&dev_base_lock);
- for_each_netdev(&init_net, dev)
+ for_each_netdev(net, dev)
    if (ipv6_chk_acast_dev(dev, addr)) {
        found = 1;
        break;
@@ -441,6 +445,7 @@ int ipv6_chk_acast_addr(struct net_devic

#ifdef CONFIG_PROC_FS
struct ac6_iter_state {
+ struct seq_net_private p;
    struct net_device *dev;
    struct inet6_dev *idev;
};
@@ -451,9 +456,10 @@ static inline struct ifacaddr6 *ac6_get_
{
    struct ifacaddr6 *im = NULL;
    struct ac6_iter_state *state = ac6_seq_private(seq);
+ struct net *net = seq_file_net(seq);

    state->idev = NULL;
- for_each_netdev(&init_net, state->dev) {
+ for_each_netdev(net, state->dev) {
    struct inet6_dev *idev;
    idev = in6_dev_get(state->dev);
    if (!idev)
@@ -551,8 +557,8 @@ static const struct seq_operations ac6_s

static int ac6_seq_open(struct inode *inode, struct file *file)
{
- return seq_open_private(file, &ac6_seq_ops,
- sizeof(struct ac6_iter_state));
+ return seq_open_net(inode, file, &ac6_seq_ops,
+ sizeof(struct ac6_iter_state));
}

static const struct file_operations ac6_seq_fops = {
@@ -560,20 +566,20 @@ static const struct file_operations ac6_

```

```

.open = ac6_seq_open,
.read = seq_read,
.llseek = seq_lseek,
- .release = seq_release_private,
+ .release = seq_release_net,
};

-int __init ac6_proc_init(void)
+int ac6_proc_init(struct net *net)
{
- if (!proc_net_fops_create(&init_net, "anycast6", S_IRUGO, &ac6_seq_fops))
+ if (!proc_net_fops_create(net, "anycast6", S_IRUGO, &ac6_seq_fops))
    return -ENOMEM;

    return 0;
}

-void ac6_proc_exit(void)
+void ac6_proc_exit(struct net *net)
{
- proc_net_remove(&init_net, "anycast6");
+ proc_net_remove(net, "anycast6");
}
#endif

```

Index: net-2.6.26/include/net/ipv6.h

```

=====
--- net-2.6.26.orig/include/net/ipv6.h
+++ net-2.6.26/include/net/ipv6.h
@@ -591,8 +591,8 @@ extern int ip6_mc_msfgget(struct sock *sk
    int __user *optlen);

#ifdef CONFIG_PROC_FS
-extern int ac6_proc_init(void);
-extern void ac6_proc_exit(void);
+extern int ac6_proc_init(struct net *net);
+extern void ac6_proc_exit(struct net *net);
extern int raw6_proc_init(void);
extern void raw6_proc_exit(void);
extern int tcp6_proc_init(struct net *net);
@@ -607,15 +607,10 @@ extern int snmp6_register_dev(struct inet6_dev *idev);
extern int snmp6_unregister_dev(struct inet6_dev *idev);

#else
-static inline int snmp6_register_dev(struct inet6_dev *idev)
-{-
- return 0;
-}

```

```

-
-static inline int snmp6_unregister_dev(struct inet6_dev *idev)
- {
- return 0;
- }
+static inline int ac6_proc_init(struct net *net) { return 0; }
+static inline void ac6_proc_exit(struct net *net) { }
+static inline int snmp6_register_dev(struct inet6_dev *idev) { return 0; }
+static inline int snmp6_unregister_dev(struct inet6_dev *idev) { return 0; }
#endif

```

```

#ifdef CONFIG_SYSCTL

```

```

Index: net-2.6.26/net/ipv6/af_inet6.c

```

```

=====

```

```

--- net-2.6.26.orig/net/ipv6/af_inet6.c

```

```

+++ net-2.6.26/net/ipv6/af_inet6.c

```

```

@@ -862,11 +862,16 @@ static int inet6_net_init(struct net *ne
    err = tcp6_proc_init(net);
    if (err)
        goto proc_tcp6_fail;
+ err = ac6_proc_init(net);
+ if (err)
+ goto proc_ac6_fail;
out:
#endif
return err;

```

```

#ifdef CONFIG_PROC_FS

```

```

+proc_ac6_fail:
+ tcp6_proc_exit(net);
proc_tcp6_fail:
    udp6_proc_exit(net);
    goto out;
@@ -878,6 +883,7 @@ static void inet6_net_exit(struct net *n
#ifdef CONFIG_PROC_FS
    udp6_proc_exit(net);
    tcp6_proc_exit(net);
+ ac6_proc_exit(net);
#endif
}

```

```

@@ -965,9 +971,6 @@ static int __init inet6_init(void)
    goto proc_udplite6_fail;
    if (ipv6_misc_proc_init())
        goto proc_misc6_fail;

```

```

-
- if (ac6_proc_init())
- goto proc_anycast6_fail;

```

```

if (if6_proc_init())
    goto proc_if6_fail;
#endif
@@ -1039,8 +1042,6 @@ ip6_route_fail:
#ifdef CONFIG_PROC_FS
    if6_proc_exit();
proc_if6_fail:
- ac6_proc_exit();
- proc_anycast6_fail:
    ipv6_misc_proc_exit();
proc_misc6_fail:
    udplite6_proc_exit();
@@ -1101,7 +1102,6 @@ static void __exit inet6_exit(void)

```

```

/* Cleanup code parts. */
if6_proc_exit();
- ac6_proc_exit();
    ipv6_misc_proc_exit();
    udplite6_proc_exit();
    raw6_proc_exit();

```

Index: net-2.6.26/include/net/addrconf.h

```

=====
--- net-2.6.26.orig/include/net/addrconf.h
+++ net-2.6.26/include/net/addrconf.h
@@ -134,7 +134,8 @@ extern int inet6_ac_check(struct sock *s

```

```

extern int ipv6_dev_ac_inc(struct net_device *dev, struct in6_addr *addr);
extern int __ipv6_dev_ac_dec(struct inet6_dev *idev, struct in6_addr *addr);
-extern int ipv6_chk_acast_addr(struct net_device *dev, struct in6_addr *addr);
+extern int ipv6_chk_acast_addr(struct net *net, struct net_device *dev,
+    struct in6_addr *addr);

```

```

/* Device notifier */

```

Index: net-2.6.26/net/ipv6/ndisc.c

```

=====
--- net-2.6.26.orig/net/ipv6/ndisc.c
+++ net-2.6.26/net/ipv6/ndisc.c
@@ -773,7 +773,7 @@ static void ndisc_rcv_ns(struct sk_buff
    return;
}

```

```

- if (ipv6_chk_acast_addr(dev, &msg->target) ||
+ if (ipv6_chk_acast_addr(dev_net(dev), dev, &msg->target) ||
    (idev->cnf.forwarding &&
     (ipv6_devconf.proxy_ndp || idev->cnf.proxy_ndp) &&
     (pneigh = pneigh_lookup(&nd_tbl, dev_net(dev),

```

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