
Subject: Re: [PATCH 1/14][NETNS]: Introduce the net-subsys id generator.

Posted by [Daniel Lezcano](#) on Thu, 10 Apr 2008 20:52:44 GMT

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Pavel Emelyanov wrote:

```
> To make some per-net generic pointers, we need some way to
> address them, i.e. - IDs. This is simple IDA-based IDs
> generator for pernet subsystems. They will be used in the
> next patches.
>
> Since it will be used by devices only (tun and vlan), I make
> it resemble the register_pernet_device functionality.
>
> The new ids is stored in the *id pointer _before_ calling the
> init callback to make this id available in this callback.
>
> Signed-off-by: Pavel Emelyanov <xemul@openvz.org>
>
> ---
> include/net/net_namespace.h | 2 ++
> net/core/net_namespace.c | 36 ++++++
> 2 files changed, 38 insertions(+), 0 deletions(-)
>
> diff --git a/include/net/net_namespace.h b/include/net/net_namespace.h
> index 0ab62ed..6971fdb 100644
> --- a/include/net/net_namespace.h
> +++ b/include/net/net_namespace.h
> @@ -181,6 +181,8 @@ extern int register_pernet_subsys(struct pernet_operations *);
> extern void unregister_pernet_subsys(struct pernet_operations *);
> extern int register_pernet_device(struct pernet_operations *);
> extern void unregister_pernet_device(struct pernet_operations *);
> +extern int register_pernet_gen_device(int *id, struct pernet_operations *);
> +extern void unregister_pernet_gen_device(int id, struct pernet_operations *);
>
> struct ctl_path;
> struct ctl_table;
> diff --git a/net/core/net_namespace.c b/net/core/net_namespace.c
> index 7b66083..7ef3bac 100644
> --- a/net/core/net_namespace.c
> +++ b/net/core/net_namespace.c
> @@ -5,6 +5,7 @@
> #include <linux/list.h>
> #include <linux/delay.h>
> #include <linux/sched.h>
> +#include <linux/idr.h>
> #include <net/net_namespace.h>
>
> /*
```

```

> @@ -253,6 +254,8 @@ static void unregister_pernet_operations(struct pernet_operations
*ops)
> }
> #endif
>
> +static DEFINE_IDA(net_generic_ids);
> +
> /**
> *   register_pernet_subsys - register a network namespace subsystem
> * @ops: pernet operations structure for the subsystem
> @@ -330,6 +333,28 @@ int register_pernet_device(struct pernet_operations *ops)
> }
> EXPORT_SYMBOL_GPL(register_pernet_device);
>
> +int register_pernet_gen_device(int *id, struct pernet_operations *ops)
> +{
> + int error;
> + mutex_lock(&net_mutex);
> +again:
> + error = ida_get_new_above(&net_generic_ids, 1, id);
> + if (error) {
> + if (error == -EAGAIN) {
> + ida_pre_get(&net_generic_ids, GFP_KERNEL);
> + goto again;
> + }
>
> goto out;

> + }
> + error = register_pernet_operations(first_device, ops);
> + if (error)
> + ida_remove(&net_generic_ids, *id);
> + else if (first_device == &pernet_list)
> + first_device = &ops->list;

out:

> + mutex_unlock(&net_mutex);
> + return error;
> +}
> +EXPORT_SYMBOL_GPL(register_pernet_gen_device);
> +
> /**
> *   unregister_pernet_device - unregister a network namespace netdevice
> * @ops: pernet operations structure to manipulate
> @@ -348,3 +373,14 @@ void unregister_pernet_device(struct pernet_operations *ops)
> mutex_unlock(&net_mutex);
> }

```

```
> EXPORT_SYMBOL_GPL(unregister_pernet_device);
> +
> +void unregister_pernet_gen_device(int id, struct pernet_operations *ops)
> +{
> + mutex_lock(&net_mutex);
> + if (&ops->list == first_device)
> + first_device = first_device->next;
> + unregister_pernet_operations(ops);
> + ida_remove(&net_generic_ids, id);
> + mutex_unlock(&net_mutex);
> +}
> +EXPORT_SYMBOL_GPL(unregister_pernet_gen_device);
```

--

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