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Subject: [PATCH][RFC] Cleanup in namespaces unsharing  
Posted by [Pavel Emelianov](#) on Fri, 08 Jun 2007 09:09:16 GMT  
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Currently we have two funtions to copy the namespaces:  
copy\_namespaces() and unshare\_nsproxy\_namespaces(). The  
second one checks for unsupported functionality with

```
#ifndef CONFIG_IPC_NS
if (unshare_flags & CLONE_NEWIPC)
    return -EINVAL;
#endif
```

-like constructions, while the first one does not. One  
of the side effects of this is that clone() with the  
CLONE\_NEWXXX set will return 0 if the kernel doesn't  
support XXX namespaces thus confusing the user-level.

The proposal is to make these calls clean from the ifdefs  
and move these checks into each namespaces' stubs. This  
will make the code cleaner and (!) return -EINVAL from  
fork() in case the desired namespaces are not supported.

Did I miss something in the design or this patch worth merging?

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

---

```
diff --git a/include/linux/ipc.h b/include/linux/ipc.h
index 7c8c6d8..b5aed71 100644
--- a/include/linux/ipc.h
+++ b/include/linux/ipc.h
@@ -100,6 +100,9 @@ extern struct ipc_namespace *copy_ipcs(u
static inline struct ipc_namespace *copy_ipcs(unsigned long flags,
    struct ipc_namespace *ns)
{
+ if (flags & CLONE_NEWIPC)
+ ns = ERR_PTR(-EINVAL);
+
    return ns;
}
#endif
diff --git a/include/linux/utsname.h b/include/linux/utsname.h
index f8d3b32..230706e 100644
--- a/include/linux/utsname.h
+++ b/include/linux/utsname.h
@@ -60,6 +60,9 @@ static inline void put_uts_ns(struct uts
```

```
static inline struct uts_namespace *copy_utsname(int flags,
        struct uts_namespace *ns)
{
+ if (flags & CLONE_NEWUTS)
+ ns = ERR_PTR(-EINVAL);
+
    return ns;
}
```

```
diff --git a/kernel/nsproxy.c b/kernel/nsproxy.c
```

```
index 1bc4b55..ef26615 100644
```

```
--- a/kernel/nsproxy.c
```

```
+++ b/kernel/nsproxy.c
```

```
@@ -157,16 +157,6 @@ int unshare_nsproxy_namespaces(unsigned
    if (!(unshare_flags & (CLONE_NEWNS | CLONE_NEWUTS | CLONE_NEWIPC)))
        return 0;
```

```
ifndef CONFIG_IPC_NS
```

```
- if (unshare_flags & CLONE_NEWIPC)
```

```
- return -EINVAL;
```

```
endif
```

```
-
```

```
ifndef CONFIG_UTS_NS
```

```
- if (unshare_flags & CLONE_NEWUTS)
```

```
- return -EINVAL;
```

```
endif
```

```
-
```

```
if (!capable(CAP_SYS_ADMIN))
```

```
    return -EPERM;
```

---

Subject: Re: [PATCH][RFC] Cleanup in namespaces unsharing

Posted by [Cedric Le Goater](#) on Fri, 08 Jun 2007 09:35:57 GMT

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Pavel Emelianov wrote:

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> Did I miss something in the design or this patch worth merging?

I've sent a more brutal patch in the past removing CONFIG\_IPC\_NS  
and CONFIG\_UTS\_NS. Might be a better idea ?

Let me refresh it and resend.

C.

---

Subject: Re: [PATCH][RFC] Cleanup in namespaces unsharing  
Posted by [Pavel Emelianov](#) on Fri, 08 Jun 2007 11:23:08 GMT  
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Cedric Le Goater wrote:

> Pavel Emelianov wrote:  
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In case namespaces do not produce performance loss - yes.

By that patch I also wanted to note that we'd better make all the other namespaces check for flags themselves, not putting this in the generic code.

> Let me refresh it and resend.

>

> C.

>

---

Subject: Re: [PATCH][RFC] Cleanup in namespaces unsharing

Posted by [Cedric Le Goater](#) on Fri, 08 Jun 2007 12:01:32 GMT

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Pavel Emelianov wrote:

> Cedric Le Goater wrote:

>> Pavel Emelianov wrote:

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> putting this in the generic code.

yep. let's fix that in the coming ones if they have config option.

a similar issue is the following check done in  
unshare\_nsproxy\_namespaces() and copy\_namespaces() :

```
if (!capable(CAP_SYS_ADMIN))  
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```

it would be interesting to let the namespace handle the unshare  
permissions. CAP\_SYS\_ADMIN shouldn't be required for all namespaces.  
ipc is one example.

C.

---

---

Subject: Re: [PATCH][RFC] Cleanup in namespaces unsharing  
Posted by [Pavel Emelianov](#) on Fri, 08 Jun 2007 13:01:28 GMT  
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Cedric Le Goater wrote:

> Pavel Emelianov wrote:

>> Cedric Le Goater wrote:

>>> Pavel Emelianov wrote:

[snip]

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> ipc is one example.

Frankly, I think that some capability *\*is\** required for

cloning the namespaces.

>  
> C.  
>

Thanks,  
Pavel

---

Subject: Re: [PATCH][RFC] Cleanup in namespaces unsharing  
Posted by [serue](#) on Fri, 08 Jun 2007 14:07:58 GMT

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Quoting Pavel Emelianov ([xemul@openvz.org](mailto:xemul@openvz.org)):

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> > Pavel Emelianov wrote:  
> >> Cedric Le Goater wrote:  
> >>> Pavel Emelianov wrote:  
>  
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> > permissions. CAP\_SYS\_ADMIN shouldn't be required for all namespaces.  
> > ipc is one example.  
>  
> Frankly, I think that some capability \*is\* required for  
> cloning the namespaces.

We can

1. start a long per-namespace discussion on which namespaces really

need it

2. add a new CAP\_SYS\_UNSHARE capability so at least we're not using CAP\_SYS\_ADMIN for this
3. leave it as is

3 is really not that bad, though, since unshare activity can AFAICT always be consolidated in small setuid helpers (or helpers with file capabilities set :). Starting a vserver, starting a c-r job, and unsharing mounts namespace on login using pam, can all be easily done with privilege.

2 is unfortunately a hassle since we have (last i looked) 1 free cap. Or are we down to none?

I think had sent an email months ago starting a per-ns discussion on the safety of not requiring a capability, but finding that could be a pain. Off the bat, certain CLONE\_NEWPID seems safe, right? CLONE\_NEWNS could be safe if we automatically made all the vfsmounts in the new ns slaves of the original. CLONE\_NEWNET would be pretty worthless since presumably you'll always need CAP\_NET\_ADMIN to actually set up your virtual net devices. CLONE\_NEWIPC does seem safe. CLONE\_NEWPTS should be safe if we implement it the way Herbert suggested, with /dev/pts/0 in a child ptsns showing up in /dev/pts/child\_xyz/0 for the parent.

thanks,  
-serge