
Subject: [patch -mm 08/17] nsproxy: add hashtable
Posted by [Cedric Le Goater](#) on Tue, 05 Dec 2006 10:28:00 GMT
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From: Cedric Le Goater <clg@fr.ibm.com>

This patch adds a hashtable of nsproxy using the nsproxy as a key.
init_nsproxy is hashed at init with key 0. This is considered to be
the 'host' nsproxy.

Signed-off-by: Cedric Le Goater <clg@fr.ibm.com>

include/linux/nsproxy.h | 3 +++
kernel/nsproxy.c | 43 +++++++++++++++++++++++++++++++++++++
2 files changed, 46 insertions(+)

Index: 2.6.19-rc6-mm2/include/linux/nsproxy.h

```
=====
--- 2.6.19-rc6-mm2.orig/include/linux/nsproxy.h
+++ 2.6.19-rc6-mm2/include/linux/nsproxy.h
@@ -2,6 +2,7 @@
#define _LINUX_NSProxy_H

#include <linux/spinlock.h>
+#include <linux/list.h>

struct task_struct;

@@ -34,6 +35,8 @@ struct nsproxy {
    struct pid_namespace *pid_ns;
    struct net_namespace *net_ns;
    struct user_namespace *user_ns;
+
+ struct hlist_node ns_hash_node;
};
extern struct nsproxy init_nsproxy;
```

Index: 2.6.19-rc6-mm2/kernel/nsproxy.c

```
=====
--- 2.6.19-rc6-mm2.orig/kernel/nsproxy.c
+++ 2.6.19-rc6-mm2/kernel/nsproxy.c
@@ -22,6 +22,15 @@
#include <linux/pid_namespace.h>
#include <linux/net_namespace.h>

+#define NS_HASH_BITS 3 /* this might need some configuration */
+#define NS_HASH_SIZE (1 << NS_HASH_BITS)
+#define NS_HASH_MASK (NS_HASH_SIZE - 1)
```

```

+#define ns_hashfn(id) (((id >> NS_HASH_BITS) + id) & NS_HASH_MASK)
+#define ns_hash_head(id) &ns_hash[ns_hashfn(id)]
+
+static struct hlist_head ns_hash[NS_HASH_SIZE];
+static DEFINE_SPINLOCK(ns_hash_lock);
+
+struct nsproxy init_nsproxy = INIT_NS_PROXY(init_nsproxy);

static inline void get_nsproxy(struct nsproxy *ns)
@@ -190,37 @@ void put_nsproxy(struct nsproxy *ns)
    free_nsproxy(ns);
}
}
+
+/*
+ * This routine must be called with the ns_hash spin_locked
+ */
+static inline struct nsproxy *ns_hash_find(int id)
+{
+ struct hlist_node *elem;
+ struct nsproxy *ns;
+
+ hlist_for_each_entry(ns, elem, ns_hash_head(id), ns_hash_node) {
+ if (ns->id == id) {
+ get_nsproxy(ns);
+ return ns;
+ }
+ }
+
+ return NULL;
+}
+
+static int __init nshash_init(void)
+{
+ int i;
+
+ for (i = 0; i < NS_HASH_SIZE; ++i)
+ INIT_HLIST_HEAD(&ns_hash[i]);
+
+ spin_lock_irq(&ns_hash_lock);
+ hlist_add_head(&init_nsproxy.ns_hash_node, ns_hash_head(0));
+ spin_unlock_irq(&ns_hash_lock);
+
+ return 0;
+}
+
+module_init(nshash_init);

```

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