
Subject: [patch 11/38][IPV6] ip6_fib - dynamically allocate fib tables

Posted by [Daniel Lezcano](#) on Mon, 03 Dec 2007 16:16:47 GMT

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The fib tables are dynamically allocated in init and exit functions.
That provides the ability to do multiple instantiations of these tables.

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net/ipv6/ip6_fib.c | 43 ++++++-----
1 file changed, 25 insertions(+), 18 deletions(-)

Index: linux-2.6-netns/net/ipv6/ip6_fib.c

=====

--- linux-2.6-netns.orig/net/ipv6/ip6_fib.c

+++ linux-2.6-netns/net/ipv6/ip6_fib.c

@@ -166,22 +166,14 @@ static __inline__ void rt6_release(struct
dst_free(&rt->u.dst);
}

-static struct fib6_table __fib6_main_tbl = {
- .tb6_id = RT6_TABLE_MAIN,
- .tb6_root = {
- .leaf = &ip6_null_entry,
- .fn_flags = RTN_ROOT | RTN_TL_ROOT | RTN_RTINFO,
- },
-};
-

-static struct fib6_table *fib6_main_tbl = &__fib6_main_tbl;
+static struct fib6_table *fib6_main_tbl;

#ifdef CONFIG_IPV6_MULTIPLE_TABLES

#define FIB_TABLE_HASHSZ 256

#else

#define FIB_TABLE_HASHSZ 1

#endif

-static struct hlist_head fib_table_hash[FIB_TABLE_HASHSZ];

+static struct hlist_head *fib_table_hash;

static void fib6_link_table(struct fib6_table *tb)

{
@@ -203,15 +195,8 @@ static void fib6_link_table(struct fib6_
}

#ifdef CONFIG_IPV6_MULTIPLE_TABLES

-static struct fib6_table __fib6_local_tbl = {

- .tb6_id = RT6_TABLE_LOCAL,

```

- .tb6_root = {
- .leaf = &ip6_null_entry,
- .fn_flags = RTN_ROOT | RTN_TL_ROOT | RTN_RTINFO,
- },
-};

-static struct fib6_table *fib6_local_tbl = &__fib6_local_tbl;
+static struct fib6_table *fib6_local_tbl;

static struct fib6_table *fib6_alloc_table(u32 id)
{
@@ -1489,6 +1474,28 @@ void __init fib6_init(void)
    0, SLAB_HWCACHE_ALIGN|SLAB_PANIC,
    NULL);

+ fib_table_hash = kzalloc(sizeof(*fib_table_hash)*FIB_TABLE_HASHSZ, GFP_KERNEL);
+ if (!fib_table_hash)
+   panic("IPV6: Failed to allocate fib_table_hash.\n");
+
+ fib6_main_tbl = kzalloc(sizeof(*fib6_main_tbl), GFP_KERNEL);
+ if (!fib6_main_tbl)
+   panic("IPV6: Failed to allocate fib6_main_tbl.\n");
+
+ fib6_main_tbl->tb6_id = RT6_TABLE_MAIN;
+ fib6_main_tbl->tb6_root.leaf = &ip6_null_entry;
+ fib6_main_tbl->tb6_root.fn_flags = RTN_ROOT | RTN_TL_ROOT | RTN_RTINFO;
+
+ #ifdef CONFIG_IPV6_MULTIPLE_TABLES
+ fib6_local_tbl = kzalloc(sizeof(*fib6_local_tbl), GFP_KERNEL);
+ if (!fib6_local_tbl)
+   panic("IPV6: Failed to allocate fib6_local_tbl.\n");
+
+ fib6_local_tbl->tb6_id = RT6_TABLE_LOCAL;
+ fib6_local_tbl->tb6_root.leaf = &ip6_null_entry;
+ fib6_local_tbl->tb6_root.fn_flags = RTN_ROOT | RTN_TL_ROOT | RTN_RTINFO;
+ #endif
+
+   fib6_tables_init();

__rtnl_register(PF_INET6, RTM_GETROUTE, NULL, inet6_dump_fib);

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```

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