
Subject: PATCH 4/4] driver core: Implement shadow directory support for device classes.

Posted by [ebiederm](#) on Fri, 22 Jun 2007 07:39:06 GMT

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This patch enables shadowing on every class directory if struct class has shadow_ops.

In addition device_del and device_rename were modified to use sysfs_delete_link and sysfs_rename_link respectively to ensure when these operations happen on devices whos classes have shadow operations that they work properly.

Signed-off-by: Eric W. Biederman <ebiederm@xmission.com>

```
drivers/base/class.c | 30 ++++++
drivers/base/core.c  | 45 ++++++
include/linux/device.h | 2 ++
3 files changed, 52 insertions(+), 25 deletions(-)
```

diff --git a/drivers/base/class.c b/drivers/base/class.c

index 4d22226..c981f75 100644

--- a/drivers/base/class.c

+++ b/drivers/base/class.c

```
@ @ -134,6 +134,17 @ @ static void remove_class_attrs(struct class * cls)
{
}
```

```
+static int class_setup_shadowing(struct class *cls)
```

```
+{
```

```
+ const struct shadow_dir_operations *shadow_ops;
```

```
+
```

```
+ shadow_ops = cls->shadow_ops;
```

```
+ if (!shadow_ops)
```

```
+ return 0;
```

```
+
```

```
+ return sysfs_enable_shadowing(&cls->subsys.kobj, shadow_ops);
```

```
+}
```

```
+
```

```
int class_register(struct class * cls)
```

```
{
```

```
int error;
```

```
@ @ -152,11 +163,22 @ @ int class_register(struct class * cls)
```

```
subsys_set_kset(cls, class_subsys);
```

```
error = subsystem_register(&cls->subsys);
```

```
- if (!error) {
```

```
- error = add_class_attrs(class_get(cls));
```

```

- class_put(cls);
- }
+ if (error)
+ goto out;
+
+ error = class_setup_shadowing(cls);
+ if (error)
+ goto out_unregister;
+
+ error = add_class_attrs(cls);
+ if (error)
+ goto out_unregister;
+
+out:
    return error;
+out_unregister:
+ subsystem_unregister(&cls->subsys);
+ goto out;
}

```

```
void class_unregister(struct class * cls)
```

```
diff --git a/drivers/base/core.c b/drivers/base/core.c
```

```
index c7543bc..b1a5241 100644
```

```
--- a/drivers/base/core.c
```

```
+++ b/drivers/base/core.c
```

```
@@ -622,8 +622,14 @@ static struct kobject * get_device_parent(struct device *dev,
    return kobj;

```

```
/* or create a new class-directory at the parent device */
```

```

- return kobject_kset_add_dir(&dev->class->class_dirs,
+ kobj = kobject_kset_add_dir(&dev->class->class_dirs,
    parent_kobj, dev->class->name);
+
+ /* If we created a new class-directory setup shadowing */
+ if (kobj && dev->class->shadow_ops)
+ sysfs_enable_shadowing(kobj, dev->class->shadow_ops);
+
+ return kobj;
}

```

```
if (parent)
```

```
@@ -920,8 +926,8 @@ void device_del(struct device * dev)
```

```
/* If this is not a "fake" compatible device, remove the
```

```
 * symlink from the class to the device. */
```

```
if (dev->kobj.parent != &dev->class->subsys.kobj)
```

```

- sysfs_remove_link(&dev->class->subsys.kobj,
- dev->bus_id);
+ sysfs_delete_link(&dev->class->subsys.kobj,

```

```

+    &dev->kobj, dev->bus_id);
+    if (parent) {
+        #ifdef CONFIG_SYSFS_DEPRECATED
+            char *class_name = make_class_name(dev->class->name,
@@ -1219,6 +1225,13 @@ int device_rename(struct device *dev, char *new_name)
+            strcpy(old_device_name, dev->bus_id, BUS_ID_SIZE);
+            strcpy(dev->bus_id, new_name, BUS_ID_SIZE);

+ if (dev->class && (dev->kobj.parent != &dev->class->subsys.kobj)) {
+ error = sysfs_rename_link(&dev->class->subsys.kobj,
+ &dev->kobj, old_device_name, new_name);
+ if (error)
+ goto out;
+ }
+
+ error = kobject_rename(&dev->kobj, new_name);
+ if (error) {
+     strcpy(dev->bus_id, old_device_name, BUS_ID_SIZE);
@@ -1227,27 +1240,17 @@ int device_rename(struct device *dev, char *new_name)

+ #ifdef CONFIG_SYSFS_DEPRECATED
+     if (old_class_name) {
+ error = -ENOMEM;
+     new_class_name = make_class_name(dev->class->name, &dev->kobj);
+     if (new_class_name) {
+         error = sysfs_create_link(&dev->parent->kobj,
+             &dev->kobj, new_class_name);
+         if (error)
+             goto out;
+         sysfs_remove_link(&dev->parent->kobj, old_class_name);
+     }
+ }
+ #endif
+ if (!new_class_name)
+     goto out;

- if (dev->class) {
-     sysfs_remove_link(&dev->class->subsys.kobj, old_device_name);
-     error = sysfs_create_link(&dev->class->subsys.kobj, &dev->kobj,
-         dev->bus_id);
-     if (error) {
-         /* Uh... how to unravel this if restoring can fail? */
-         dev_err(dev, "%s: sysfs_create_symlink failed (%d)\n",
-             __FUNCTION__, error);
-     }
+ error = sysfs_rename_link(&dev->parent->kobj, &dev->kobj,
+     old_class_name, new_class_name);
+ if (error)

```

```
+ goto out;
}
+#endif
out:
    put_device(dev);

diff --git a/include/linux/device.h b/include/linux/device.h
index be2debe..918dfa3 100644
--- a/include/linux/device.h
+++ b/include/linux/device.h
@@ -200,6 +200,8 @@ struct class {

    int (*suspend)(struct device *, pm_message_t state);
    int (*resume)(struct device *);
+
+ const struct shadow_dir_operations *shadow_ops;
};

extern int __must_check class_register(struct class *);
--
1.5.1.1.181.g2de0
```

Containers mailing list
Containers@lists.linux-foundation.org
<https://lists.linux-foundation.org/mailman/listinfo/containers>
