

[PATCH][RESEND] Force mouse detection as imps/2 (and fix my KVM switch)

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2003-08/8251.html>

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To: vojtech@suse.cz

After working out the symptoms of a problem I was having using my scroll mouse with my KVM switch when running 2.6 kernels, I made this patch which fixes the problem for me. I think it would be useful to have this in the kernel, especially since it has other uses too.

I have a Logitech mouse with a scroll wheel that 2.6 kernels detect as supporting the Logitech ps2++ protocol, and enable it as such. My KVM switch supports only the Microsoft imps2 protocol for using the scroll wheel, so after switching away from a box running a 2.6 kernel and back again, my scroll wheel no longer works; evbug doesn't see any mouse events at all when I turn the scroll wheel.

2.4 (and Windows) don't have this problem because they use imps2 drivers, which my mouse is compatible with. So the appended patch creates a new module/boot parameter, psmouseimps2, largely copied from psmouse_noext. With the option, the mouse detection is limited to only the base ps2 protocol and the imps2 extensions, my mouse is detected as a generic imps/2 device, and the scroll wheel works properly again.

I've been using this patch for about a month. I've since seen another use for this parameter; with it it is possible to disable the synaptics touchpad driver and still use an external imps2 mouse.

I'm not sure if short-circuiting the mouse detection this way might leave some mice wedged, or cause them to be improperly detected though. Do the tests for imps/2 mice depend on any of the commands in the detection this patch skips to initialize the mouse somehow?

This patch is against -test4; it applies to -test4-mm4 with offsets (I'm running -mm4). More than half the length of the patch is indentation. Is there a possibility of getting this applied?

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```
diff -urN linux-2.6.0-test4/Documentation/kernel-parameters.txt
linux-2.6.0-test4_changed/Documentation/kernel-parameters.txt
--- linux-2.6.0-test4/Documentation/kernel-parameters.txt 2003-08-31 08:08:00.000000000 -0400
+++ linux-2.6.0-test4_changed/Documentation/kernel-parameters.txt 2003-08-31 08:15:29.000000000
-0400
@@ -785,6 +785,8 @@
```

psmouse_noext [HW,MOUSE] Disable probing for PS2 mouse protocol extensions

+ psmouseimps2 [HW,MOUSE] Probe only for Intellimouse PS2 mouse protocol extensions
+

pss= [HW,OSS] Personal Sound System (ECHO ESC614)

Format: <io>,<mss_io>,<mss_irq>,<mss_dma>,<mpu_io>,<mpu_irq>

```
diff -urN linux-2.6.0-test4/drivers/input/mouse/psmouse-base.c
linux-2.6.0-test4_changed/drivers/input/mouse/psmouse-base.c
--- linux-2.6.0-test4/drivers/input/mouse/psmouse-base.c 2003-07-27 12:58:51.000000000 -0400
+++ linux-2.6.0-test4_changed/drivers/input/mouse/psmouse-base.c 2003-08-31 08:15:29.000000000
-0400
@@ -25,6 +25,8 @@
```

```
MODULE_DESCRIPTION("PS/2 mouse driver");
MODULE_PARM(psmouse_noext, "i");
MODULE_PARM_DESC(psmouse_noext, "Disable any protocol extensions. Useful for KVM switches.");
+MODULE_PARM(psmouseimps2, "i");
+MODULE_PARM_DESC(psmouseimps2, "Limit protocol extensions to the Intellimouse protocol.");
MODULE_PARM(psmouse_resolution, "i");
MODULE_PARM_DESC(psmouse_resolution, "Resolution, in dpi.");
MODULE_PARM(psmouse_smartscroll, "i");
@@ -34,6 +36,7 @@
#define PSMOUSE_LOGITECH_SMARTSCROLL 1
```

```
static int psmouse_noext;
+static int psmouseimps2;
int psmouse_resolution;
int psmouse_smartscroll = PSMOUSE_LOGITECH_SMARTSCROLL;
```

```
@@ -250,66 +253,68 @@
    if (psmouse_noext)
        return PSMOUSE_PS2;
```

```
_*
- * Try Synaptics TouchPad magic ID
- */
-
- param[0] = 0;
- psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
- psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
- psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
- psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
- psmouse_command(psmouse, param, PSMOUSE_CMD_GETINFO);
+ if (!psmouseimps2) {
```

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```
- if (param[1] == 0x47) {
- psmouse->vendor = "Synaptics";
- psmouse->name = "TouchPad";
- if (!synaptics_init(psmouse))
- return PSMOUSE_SYNAPTICS;
- else
- return PSMOUSE_PS2;
- }
+ /*
+ * Try Synaptics TouchPad magic ID
+ */
- /*
- * Try Genius NetMouse magic init.
- */
+ param[0] = 0;
+ psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
+ psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
+ psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
+ psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
+ psmouse_command(psmouse, param, PSMOUSE_CMD_GETINFO);
+
+ if (param[1] == 0x47) {
+ psmouse->vendor = "Synaptics";
+ psmouse->name = "TouchPad";
+ if (!synaptics_init(psmouse))
+ return PSMOUSE_SYNAPTICS;
+ else
+ return PSMOUSE_PS2;
+ }
- param[0] = 3;
- psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
- psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
- psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
- psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
- psmouse_command(psmouse, param, PSMOUSE_CMD_GETINFO);
+ /*
+ * Try Genius NetMouse magic init.
+ */
- if (param[0] == 0x00 && param[1] == 0x33 && param[2] == 0x55) {
+ param[0] = 3;
+ psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
+ psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
+ psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
+ psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
+ psmouse_command(psmouse, param, PSMOUSE_CMD_GETINFO);
- set_bit(BTN_EXTRA, psmouse->dev.keybit);
```

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```
- set_bit(BTN_SIDE, psmouse->dev.keybit);
- set_bit(REL_WHEEL, psmouse->dev.relbit);
+ if (param[0] == 0x00 && param[1] == 0x33 && param[2] == 0x55) {

- psmouse->vendor = "Genius";
- psmouse->name = "Wheel Mouse";
- return PSMOUSE_GENPS;
- }
+ set_bit(BTN_EXTRA, psmouse->dev.keybit);
+ set_bit(BTN_SIDE, psmouse->dev.keybit);
+ set_bit(REL_WHEEL, psmouse->dev.relbit);

-/*
- * Try Logitech magic ID.
- */
+ psmouse->vendor = "Genius";
+ psmouse->name = "Wheel Mouse";
+ return PSMOUSE_GENPS;
+ }

- param[0] = 0;
- psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
- psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
- psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
- psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
- param[1] = 0;
- psmouse_command(psmouse, param, PSMOUSE_CMD_GETINFO);
+ /*
+ * Try Logitech magic ID.
+ */

- if (param[1]) {
- int type = ps2pp_detect_model(psmouse, param);
- if (type)
- return type;
+ param[0] = 0;
+ psmouse_command(psmouse, param, PSMOUSE_CMD_SETRES);
+ psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
+ psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
+ psmouse_command(psmouse, NULL, PSMOUSE_CMD_SETSCALE11);
+ param[1] = 0;
+ psmouse_command(psmouse, param, PSMOUSE_CMD_GETINFO);
+
+ if (param[1]) {
+ int type = ps2pp_detect_model(psmouse, param);
+ if (type)
+ return type;
+ }
-
- /*
```

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```
* Try IntelliMouse magic init.
```

```
*/
```

```
@@ -555,6 +560,12 @@
```

```
    return 1;
```

```
}
```

```
+static int __init psmouseimps2_setup(char *str)
```

```
+
```

```
+ psmouseimps2 = 1;
```

```
+ return 1;
```

```
+
```

```
+
```

```
static int __init psmouse_resolution_setup(char *str)
```

```
{
```

```
    get_option(&str, &psmouse_resolution);
```

```
@@ -568,6 +579,7 @@
```

```
}
```

```
__setup("psmouse_noext", psmouse_noext_setup);
```

```
+__setup("psmouseimps2", psmouseimps2_setup);
```

```
__setup("psmouse_resolution=", psmouse_resolution_setup);
```

```
__setup("psmouse_smartscroll=", psmouse_smartscroll_setup);
```

```
--
```

```
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```
"Linus, please apply. Breaks everything. But is cool." -- Rusty Russell.
```

```
-
```

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