

Linux Kernel Programming

`goto` samples

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Sample 1

drivers/input/keyboard/omap-keypad.c

```

1  static int omap_kp_probe(struct
      platform_device *pdev)
2  {
3      /* ... */
4      ret = device_create_file(&pdev->dev, &
      dev_attr_enable);
5      if (ret < 0)
6          goto err2;
7      /* ... */
8      ret = input_register_device(omap_kp->input
      );
9      if (ret < 0) {
10         printk(KERN_ERR "Unable to register omap
      -keypad input device\n");
11         goto err3;
12     }
13     /* ... */
14     omap_kp->irq = platform_get_irq(pdev, 0);
15
16     if (omap_kp->irq >= 0) {
17         if (request_irq(omap_kp->irq,
      omap_kp_interrupt, 0,
18             "omap-keypad", omap_kp) < 0)
19             goto err4;
20     }

```

```

19     omap_writew(0, OMAP1_MPUIO_BASE +
      OMAP_MPUIO_KBD_MASKIT);
20
21     return 0;
22
23 err4:
24     input_unregister_device(omap_kp->input);
25     input_dev = NULL;
26 err3:
27     device_remove_file(&pdev->dev, &
      dev_attr_enable);
28 err2:
29     for (i = row_idx - 1; i >= 0; i--)
30         gpio_free(row_gpios[i]);
31     /* ... */
32
33     return -EINVAL;
34 }

```

- ▶ Upwards goto within function boundaries
- ▶ Rather safe

Sample 2

fs/ubifs/journal.c

```

1  static int make_reservation(struct
      ubifs_info *c, int jhead, int len)
2  {
3      int err, cmt_retries = 0, nospc_retries
      = 0;
4
5  again:
6      down_read(&c->commit_sem);
7      err = reserve_space(c, jhead, len);
8      if (!err)
9          return 0;
10     up_read(&c->commit_sem);
11
12     if (err == -ENOSPC) {
13         /* ... */
14     }
15
16     if (err != -EAGAIN)
17         goto out;
18
19     /* ... */
20
21     err = ubifs_run_commit(c);
22     if (err)
23         return err;
24     goto again;

```

```

25 out:
26     ubifs_err(c, "cannot reserve %d bytes in
      jhead %d, error %d",
27         len, jhead, err);
28     if (err == -ENOSPC) {
29         /* This are some budgeting problems,
      print useful information */
30         down_write(&c->commit_sem);
31         dump_stack();
32         ubifs_dump_budg(c, &c->bi);
33         ubifs_dump_lprops(c);
34         cmt_retries = dbg_check_lprops(c);
35         up_write(&c->commit_sem);
36     }
37     return err;
38 }

```

- ▶ Backward goto for looping
- ▶ Could probably be replaced by an actual loop

More info

- ▶ **Never goto outside the calling function!**



- ▶ *Dijkstra*, Go To Statement Considered Harmful
 - ▶ <http://homepages.cwi.nl/~storm/teaching/reader/Dijkstra68.pdf>