

Keyboard notifier

One can use `register_keyboard_notifier` to get called back on keyboard events (see `kbd_keycode()` function for details). The passed structure is `keyboard_notifier_param` (see `<linux/keyboard.h>`):

- 'vc' always provide the VC for which the keyboard event applies;
- 'down' is 1 for a key press event, 0 for a key release;
- 'shift' is the current modifier state, mask bit indexes are `KG_*`;
- 'ledstate' is the current LED state;
- 'value' depends on the type of event.
- `KBD_KEYCODE` events are always sent before other events, value is the keycode.
- `KBD_UNBOUND_KEYCODE` events are sent if the keycode is not bound to a keysym. value is the keycode.
- `KBD_UNICODE` events are sent if the keycode -> keysym translation produced a unicode character. value is the unicode value.
- `KBD_KEYSYM` events are sent if the keycode -> keysym translation produced a non-unicode character. value is the keysym.
- `KBD_POST_KEYSYM` events are sent after the treatment of non-unicode keysyms. That permits one to inspect the resulting LEDs for instance.

For each kind of event but the last, the callback may return `NOTIFY_STOP` in order to "eat" the event: the notify loop is stopped and the keyboard event is dropped.

In a rough C snippet, we have:

```
kbd_keycode(keycode) {
    ...
    params.value = keycode;
    if (notifier_call_chain(KBD_KEYCODE, &params) == NOTIFY_STOP)
        || !bound) {
        notifier_call_chain(KBD_UNBOUND_KEYCODE, &params);
        return;
    }

    if (unicode) {
        param.value = unicode;
        if (notifier_call_chain(KBD_UNICODE, &params) == NOTIFY_STOP)
            return;
        emit unicode;
        return;
    }

    params.value = keysym;
    if (notifier_call_chain(KBD_KEYSYM, &params) == NOTIFY_STOP)
        return;
    apply keysym;
    notifier_call_chain(KBD_POST_KEYSYM, &params);
}
```

Note

This notifier is usually called from interrupt context.