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How to emulate a numpad key ?

T **By trentanel**
January 29, 2014 in How To

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trentanel
Posted January 29, 2014

Hello,

I would like to record on my remote the keys from a numpad (1,2,3,4,5,6,7,8,9).

This is easy, thanks to Flirc .. but ...

This is to emulate a mouse on my PC and the key emulated must be regarded not as a number, but as a key from the numpad.

More : i dont know the difference between the two, a number as "4" does not work. The key "4" of the numpad works fine.

If someone knows how to do ...

Regards

➕ Quote

luziferius
Posted February 6, 2014

Hi,

below is the solution for your problem:

You will need to use the command line. You should know how to navigate through your file system and call programs using the command line.

---Theory:---

For the OS, the numpad keys are different keys than the main field number-keys. The operating system maps the same symbol (the number) to both keys.

To get your mouse emulation, you need to map the low level keypad values, instead of the main key field keys. The Flirc GUI can map the main field keys only, but not the numpad keys.

---Obtaining the needed values:---

To program the numpad keys, you need the raw USB-HID values as decimal numbers, and program them with the command line tool and the tool's record_api function.

You can get the raw values from here:
http://www.freebsddiary.org/APC/usb_hid_usages

I've quoted the relevant part below:

For reference, this is the main keyboard that the GUI programs into Flirc:

> **Quote**
>
> ```
>     0x1E    Keyboard 1 and !
>     0x1F    Keyboard 2 and @
>     0x20    Keyboard 3 and #
>     0x21    Keyboard 4 and $
>     0x22    Keyboard 5 and %
>     0x23    Keyboard 6 and ^
>     0x24    Keyboard 7 and &
>     0x25    Keyboard 8 and *
> ```

```
          0x26      Keyboard 9 and (
          0x27      Keyboard 0 and )
```

using a Hex to decimal number converter (like this online one:
http://www.statman.info/conversions/hexadecimal.html), you can convert those to
decimal numbers. This is range 30-39 decimal.

But you will need those:

> **⌄ Quote**
>
> ```
>           0x53      Keypad Num Lock and Clear
>           0x54      Keypad /
>           0x55      Keypad *
>           0x56      Keypad -
>           0x57      Keypad +
>           0x58      Keypad ENTER
>           0x59      Keypad 1 and End
>           0x5A      Keypad 2 and Down Arrow
>           0x5B      Keypad 3 and PageDn
>           0x5C      Keypad 4 and Left Arrow
>           0x5D      Keypad 5
>           0x5E      Keypad 6 and Right Arrow
>           0x5F      Keypad 7 and Home
>           0x60      Keypad 8 and Up Arrow
>           0x61      Keypad 9 and PageUp
>           0x62      Keypad 0 and Insert
>           0x63      Keypad . and Delete
> ```

the Keypad numbers 1-0 have decimal values of 89 to 98. You can calculate the other
values (+, -, / keys, etc), if needed, by simply counting down from 89.

--- Programming Flirc:---

First, unlearn all the keys you want to use for the mouse emulation (with the GUI or
command line tool).

(For linux, the command line tool we will use is called **flirc_util**. For windows it *might*
be called **flirc_util.exe**. I don't know, as I don't use windows, look in the program's
install folder)

Now you use the command line tool to program the Keypad keys, by using the program's record_api function:

Quote from the program's internal help:

> ⊙ **Quote**
>
> Send the raw HID value down to flirc to be linked with button recorded
> usage:
>   record_api 'arg1 arg2'   arg1 is key-modifier
>   arg2 is HID key
> example:
>   flirc record_api 136 4   '136' represents right cmd + left cmd
>   '4' represents 'a' in HID
>
> Key modifiers are defined in the IEEE HID Spec as follows:
> LEFT CONTROL   1
> LEFT SHIFT   2
> LEFT ALT   4
> LEFT CMD|WIN   8
> RIGHT CONTROL   16
> RIGHT SHIFT   32
> RIGHT ALT   64
> RIGHT CMD|WIN   128
>
> To record Control + Shift, logically or 1 & 2 to make 3

You don't want any modifiers, so the first argument is 0 and the command is: **flirc_util record_api 0 <arg>** or **flirc_util.exe record_api 0 <arg>**, where <arg> is a number between 89 and 98.

eg.: *flirc_util record_api 0 89* to program the keypad 1, *flirc_util record_api 0 90* to program the keypad 2, etc...

so you start the program with the proper arguments for the key you want to program, then the program waits until you press a key on your remote, programs it and exits.

you redo that for every key you want to map, entering the correct value as a start parameter.

BTW: note for windows users: you cannot simply click a command-line program, that won't work. You have to start the command line from the menu, navigate to the exe's folder (use **cd** command) and then type the program name and its parameters.

<Tab> can be used for auto-completion, <Arrow up> and <Arrow down> to recall the last entered commands (so you don't need to retype the command 10 times, but can use <Arrow up> and edit the last command.)

I hope that helps

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2 weeks later...

trentanel
Posted February 15, 2014

Thank you very much for your remarks. This is what I wanted.
I did and it works perfectly on my raspberryPi that runs Archlinux.

Thank you again.

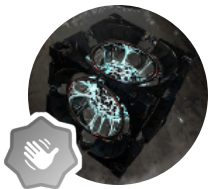➕ Quote

3 years later...

Enigma
Posted September 18, 2017

Thanks for this - this is what I needed as well.

But surely, a profile named 'Full Keyboard' ought to actually have the numpad keys presented for easier programming, right?

Alternatively, this works for GNOME:

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Edited September 18, 2017 by Enigma

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