How to get your keyboard supported in keyTouch 2.1

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1 Introduction

Of course it may be possible that your keyboard is not supported yet. However there is a simple procedure to get your keyboard supported by keyTouch. This document describes this procedure. To get your keyboard supported you will have to create a so called keyboard file, that contains information about the keyboard and its extra function keys. At the moment there is no program with a graphical userinterface to create such file, which means you will have to use the commandline. However, even if you are afraid of the commandline, it is very easy to create the keyboard file when you follow the steps described in this document.

2 The keyboard file

The keyboard file is an XML document that contains information about the keyboard and its extra function keys. Create a new file and open it with your favorite text editor (examples: emacs, vi(m), gedit, nedit, kwrite). Now copy the following text to the file:

```
<keyboard>
  <file-info>
    <syntax-version>1.1</syntax-version>
    <last-change format="%d-%m-%Y">date</last-change>
    <author>your name</author>
  </file-info>
  <keyboard-info>
    <keyboard-name>
      <manufacturer>your keyboards manufacturer</manufacturer>
      <model>your keyboards manufacturer</model>
    </keyboard-name>
  </keyboard-info>
  <key-list>
    ...
  </key-list>
</keyboard>
```

Replace "date" by today's date in format "day-month-year". If you want to use the format "month-day-year", you have to replace "%d-%m-%Y" by "%m-%d-%Y". Replace "your name", "your keyboards manufacturer" and "your keyboards model" by your name, your keyboard's manufacturer and your keyboard's model respectively.

The three dots between the "key-list" tags will be replaced by data for every extra function key of the keyboard. Add for every key the following data:

```
<key>
  <name>key name</name>
  <scancode>key scancode</scancode>
  <keycode>key keycode</keycode>
  <default-action action-type="action type">
    ..
  </default-action>
</key>
```

Replace "key name" by an appropriate name for the key. Is there for example a text label on the key, use the label as the key's name. Replace "key scancode" by the key's scancode. How to retrieve such code is described in section 5. If you are working on a notebook and the key does not produce a scancode then it is most likely that it is an ACPI hotkey. See section 3 for making these keys work.

Replace "key keycode" by one of the keycodes listed in section 6. It actually doesn't matter which keycode you choose. However it is recommended that you choose a keycode that matches the best the function of the key. A keycode may only be used once in a keyboard file.

The "default-action" element will contain the default action for the key. It is important to realize that this is not the action you want to use for this key, but an action that corresponds to the function of the key. You can replace "action type" by "plugin" or "program". If you choose "program" the two dots will be replaced by the name of a program. If you choose "plugin" you will have to replace the two dots by:

```
<plugin-name>name</plugin-name>
<plugin-function>function</plugin-function>
```

Replace "name" by the name of the plugin and "function" by the function of the plugin. To get a list of all plugin names, start keyTouch and go to the preferences tab. Select the plugin and click the "Information..." button to get the functions of the plugin. Note that the name and function you fill in are case sensitive.

When your keyboard file is finished you can import it in keyTouch. It is also very important that your keyboard file is available for other people so that they do not need to create a keyboard file. I should be most grateful to you if you send the keyboard file to marvinr (at) users.sourceforge.net .

3 ACPI hotkeys

ACPI hotkeys are not really a part of your keyboard and because of that they do not produce scancodes. KeyTouch also supports these keys. Instead of

being recognized by their scancode, ACPI hotkeys are recognized by their event description. Because of that the "key" element in the keyboard file will look different than for an ordinary key. Instead of ...

```
<key>
  <name>key name</name>
  <scancode>key scancode</scancode>
  <keycode>key keycode</keycode>
  <default-action action-type="action type">
    ..
  </default-action>
</key>
```

... the "key" element will look like:

```
<key key-type="acpi-hotkey">
  <name>key name</name>
  <event-descr>event descr</event-descr>
  <keycode>key keycode</keycode>
  <default-action>
    ..
  </default-action>
</key>
```

As you can see the only differnce within the "key" element is that the "scancode" element is replaced by the "event-descr" element, so we will only discuss the "event-descr" element here. We can retrieve the event description of the key by running:

```
$ acpi_listen
```

"acpid" needs to be started to use this program. Every time you press an ACPI hotkey you will see the its event description. For example:

```
button/sleep SLPB 00000080 00000001
```

Copy the event description, except the last part of it (00000001 in the example), to the "event-descr" element. So in our example the "event-descr" element will look like:

```
<event-descr>button/sleep SLPB 00000080</event-descr>
```

Below you can see an example of a complete "key" element:

```
<key key-type="acpi-hotkey">
  <name>Zz</name>
  <event-descr>button/sleep SLPB 00000080</event-descr>
  <keycode>SLEEP</keycode>
  <default-action>xmessage Zz</default-action>
</key>
```

4 An example keyboard file

Below you can see an example keyboard file for Logitech's Internet Navigator. It's a shortened version of the original file.

```
<keyboard>
  <file-info>
    <syntax-version>1.0</syntax-version>
    <last-change format="%d-%m-%Y">28-8-2005</last-change>
    <author>Marvin Raaijmakers</author>
  </file-info>
  <keyboard-info>
    <keyboard-name>
      <manufacturer>Logitech</manufacturer>
      <model>Internet Navigator</model>
    </keyboard-name>
  </keyboard-info>
  <key-list>
    <key>
      <name>E-Mail</name>
      <scancode>236</scancode>
      <keycode>MAIL</keycode>
      <default-action action-type="plugin">
        <plugin-name>E-mail</plugin-name>
        <plugin-function>E-mail</plugin-function>
      </default-action>
    </key>
    <key>
      <name>Webcam</name>
      <scancode>146</scancode>
      <keycode>CAMERA</keycode>
      <default-action action-type="program">
        gnomemeeting
      </default-action>
    </key>
    <key>
      <name>iTouch</name>
      <scancode>147</scancode>
      <keycode>PROG1</keycode>
      <default-action action-type="program">
        keytouch
      </default-action>
    </key>
    <key>
      <name>Favorites</name>
      <scancode>230</scancode>
      <keycode>BOOKMARKS</keycode>
      <default-action action-type="plugin">
        <plugin-name>WWW Browser</plugin-name>
        <plugin-function>Add Bookmark</plugin-function>
```

```
      </default-action>
    </key>
    <key>
      <name>My Home</name>
      <scancode>178</scancode>
      <keycode>HOMEPAGE</keycode>
      <default-action action-type="plugin">
        <plugin-name>WWW Browser</plugin-name>
        <plugin-function>Home</plugin-function>
      </default-action>
    </key>
    <key>
      <name>Audio next</name>
      <scancode>153</scancode>
      <keycode>NEXTSONG</keycode>
      <default-action action-type="plugin">
        <plugin-name>XMMS</plugin-name>
        <plugin-function>Next</plugin-function>
      </default-action>
    </key>
    <key>
      <name>Audio play/pause</name>
      <scancode>162</scancode>
      <keycode>PLAYPAUSE</keycode>
      <default-action action-type="plugin">
        <plugin-name>XMMS</plugin-name>
        <plugin-function>Play/Pause</plugin-function>
      </default-action>
    </key>
  </key-list>
</keyboard>
```

5 How to retrieve scancodes

Every key can be identified by its scancode. So if keyTouch wants to know what key you mean, it needs to know its scancode. This section describes how to find out a keys scancode.

First you have to download the program "getscancodes" from http://keytouch.sf.net . After you unpacked the downloaded archive, open a terminal program (like xterm, konsole or gnome-terminal) in the unpacked directory. If you are not using a PC (which means an x86 system), you will have to compile the program for your system by running the command "make".

The "getscancodes" program makes use of the evdev driver. So the first step is to load the evdev module. Run the following command in your terminal program to load the evdev module:

```
$ su -c "/sbin/modprobe evdev"
```

(do not type the $ character) Fill in the root password and press enter to load the module. If you are using Ubuntu (or another sudo based distribution) you

will have to run:

```
$ sudo /sbin/modprobe evdev
```

When you now look in the directory /dev/input/ you will notice that there are some files (devices) called "eventX" (where X is replaced by a number). To see the contents of /dev/input run:

```
$ ls /dev/input
```

Every event device (like a keyboard or a mouse) is related to one of these files. To find out which file belongs to your keyboard, run:

```
$ su -c "./getscancodes /dev/input/eventX"
```

Or under Ubuntu:

```
$ sudo ./getscancodes /dev/input/eventX
```

Replace the X by a number. getscancodes will first show some information about the device, including its name ("Input device name") that can tell you if you have chosen the correct event device. Press one of the extra function keys to see if getscancodes reacts on it. If not, try another event device. When you finally have found the correct device we are ready to retrieve the scancodes. Just press the key and getscancodes will show the scancode (after releasing the key, the scancode will be printed again). For example:

```
146 (0x92)
```

The number in brackets is the hexadecimal representation of the scancode. We only need the decimal value for our keyboard file.

To terminate getscancodes press Control+C.

6 Keycodes

```
AGAIN            EJECTCLOSECD     MAIL             REFRESH
ALTERASE         EMAIL            MEDIA            REWIND
BACK             EXIT             MENU             RIGHTMETA
BASSBOOST        FASTFORWARD      MOVE             SCROLLDOWN
BOOKMARKS        FILE             MSDOS            SCROLLUP
BRIGHTNESSDOWN   FINANCE          MUTE             SEARCH
BRIGHTNESSUP     FIND             NEXTSONG         SENDFILE
CALC             FORWARD          OPEN             SETUP
CAMERA           FRONT            PASTE            SHOP
CANCEL           HANGUEL          PAUSE            SLEEP
CHAT             HANJA            PAUSECD          SOUND
CLOSE            HELP             PHONE            SPORT
CLOSECD          HOMEPAGE         PLAY             STOP
COFFEE           HP               PLAYCD           STOPCD
COMPOSE          ISO              PLAYPAUSE        SUSPEND
COMPUTER         KBDILLUMDOWN     POWER            SWITCHVIDEOMODE
CONFIG           KBDILLUMTOGGLE   PREVIOUSSONG     UNDO
CONNECT          KBDILLUMUP       PRINT            VOLUMEDOWN
```

COPY	KPCOMMA	PROG1	VOLUMEUP
CUT	KPEQUAL	PROG2	WAKEUP
CYCLEWINDOWS	KPLEFTPAREN	PROG3	WWW
DELETEFILE	KPPLUSMINUS	PROG4	XFER
DIRECTION	KPRIGHTPAREN	PROPS	YEN
EDIT	LEFTMETA	QUESTION	
EJECTCD	MACRO	RECORD	