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Elo Multiple Touchscreen Linux Driver - Single Touch (ST) USB

Intel i686 (32 bit) or AMD64/Intel (64 bit) or ARMv7l (32 bit)

List of New Features & Changes

Version 5.0.0
February 22, 2018
Elo Touch Solutions

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Summary of new features & changes in driver v5.0.0 :
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1. Added onboard calibration feature to the elova calibration utility to align touch coordinates reported by certain touch controllers like 2701, 2218, etc.

2. Added TouchPro branding for Elo PCAP products.

3. Added single touch support for Touch Pro PCAP 9200xx products with VID:PID (0x04e7:0x0090, 0x04e7:0x0091).

4. Added single touch support for TouchPro PCAP controllers with VID:PID (04e7:080b and 04e7:080c) and 3243L TouchPro PCAP.

5. Updated support for latest Intellitouch eSAW 3200XX controller firmware.

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Previous Versions:

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Version 4.4.0
July 24, 2017
Elo Touch Solutions

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Summary of new features & changes in driver v4.4.0 :
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1. Added support for 12 touch Intellitouch Pro PCAP products (0x04e7:0x240c).

2. Added support for 10 & 20 touch IR products (0x1ff7:0x0013).

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Version 4.3.1
September 15, 2016
Elo Touch Solutions

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Summary of new features & changes in driver v4.3.1 :
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1. Added single touch support for Elo Intellitouch SAW Multi Touch(MT) HID and non-HID controllers with VID:PID(04e7:0022, 04e7:0027, 04e7:0124, 04e7:0126)

2. Added single touch support for Elo Intellitouch Pro PCAP controllers with VID:PID(04e7:0063, 04e7:0064, 04e7:0067, 0eef:7200, 0eef:7402, 0eef:a800)

3. Added support for Linux ARM distributions(requires Xwindows support) with ARMv7l 32 bit platform. The ARMv7l driver was built and tested using a PandaBoard ES running Ubuntu 12.04.5 LTS(ARMv7l).

4. Added elo.service systemd startup script and instructions to enable elo driver startup on Linux distributions with systemd init system.

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Version 4.2.0
July 21, 2016
Elo Touch Solutions

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Summary of new features & changes in driver v4.2.0 :
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1. Added Right Click On Hold(RCOH) feature for all supported touchscreens. The RCOH feature is disabled by default and can be enabled using the command line control panel utility(cplcmd) or eloconvertconfig utility.

2. Added RCOH parameters(RCOHFlag, RCOHToleranceArea and RCOHDelay) which can be used to configure the RCOH settings for each specific touchscreen. The command line control panel utility(cplcmd) or eloconvertconfig utility can be used to view the current RCOH parameters and set them as needed.

3. Added single touch support for Elo Intellitouch Pro PCAP controllers with VID:PID(03eb:8a6e, 04e7:00c0, 04e7:1d00, 04e7:1c00, 04e7:240b, 04e7:2410, 2149:3ab8, 2149:42cf, 04e7:2003 & 04e7:2100)

4. Elo Intellitouch Pro PCAP controllers with VID:PID(03eb:8a6e, 04e7:00c0, 04e7:1d00, 04e7:2003, etc) that do not contain a valid serial number will only work in single touchscreen mode. Driver requires unique serial numbers to work with multiple touchscreens.

5. Fixed a driver issue where the active touch controller with no serial number could be mistaken for a new touch device, resulting in some unwanted initialization errors - "Device 1: Could not claim interface 1"

6. Initialized the Serial Number string to "None", so touch controllers that have no serial number will now report "None" instead of unprintable characters in the driver log.

7. Added driver commandline option "--ignoreserialnumber" to ignore serial number matching for using the touch driver configuration data.

8. Added more protection in the code to avoid any race condition or any errors when the Elo driver is killed manually.

9. Added a commandline option "--file" to the eloautocalib utility to read the touchscreen calibration parameters from a specified file and apply it to the driver.

10. Renamed Intellitouch 2800XX series eSAW controllers to 3200XX series.

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Version 4.1.0-b3
December 31, 2015
Elo Touch Solutions

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Summary of new features & changes in driver v4.1.0 :
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1. Added single touch support for Elo Intellitouch Pro PCAP and Intellitouch 2800XX series SAW controllers.

2. Added support for touch controller serial numbers greater than 8 characters.

3. Added a new tool to display or modify current global and device specific touchscreen parameters [eloconvertconfig]. Type the command "/etc/opt/elo-usb/eloconvertconfig --help" for available command line parameters and usage.

4. Converted beep parameters(BeepOnTouch, BeepTime and BeepFreq) to device specific parameters. Each touchscreen device can now be configured with different beep settings.

5. Modified the default videoscreen to touchscreen association. Previously, if a valid video2touch association is not found then the touchscreen would be assigned to videoscreen 0. Now, the touchscreen is assigned to the same videoscreen (example: touch 0 => video 0, touch 1 => video 1, etc.). Running the calibration utility, elova will overwrite this default association.

6. Modified the default initialization behaviour for PCAP touchscreens such that they would be aligned to the associated videoscreen out of the box and would not require calibration. Running the calibration utility, elova will overwrite this default alignment.

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Version 4.0.1
November 11, 2014
Elo Touch Solutions

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Summary of new features & changes in driver v4.0.1 :
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1. Fixed a device handle leak that caused the driver to quit or stop functioning after a few hours.

2. Fixed a file write error that resulted in loss of device specific information including calibration data in a multiple touchscreen setup.

3. Fixed a stale data issue that resulted in loss of new calibration data after unplug and replug of a USB touchscreen.

4. Fixed a minor issue that prevented the use of certain commandline
   parameters in the driver binary(--xwarppointer, --displaycoordinates, etc).

5. Fixed a X authentication issue in the driver that occured during system
   startup on SUSE Linux Enterprise Desktop (SLED) 11 SP3.

6. Verified support for multiple videoscreen setup based on multiple X
   videoscreens(Xinerama or separate X videoscreens). Use the "--xwarppointer"
   driver commandline parameter to use XWarpPointer call to send touch events
   to X window system. This option is essential if the target Linux
   platform has multiple video screens configured in separate X video screen
   mode or Xinerama mode. The default call to send touch events,
   XTestFakeMotionEvent has a bug that prevents the switching of cursor across
   video screens in Xinerama mode or separate X video screen mode [Xorg v7.4
   or later].

7. Enabled the --xwarppointer option in the driver by default in the driver
   startup script (/etc/opt/elo-usb/loadEloTouchUSB.sh).

8. Added X videoscreen information to the touch events that are displayed when
   the --displaycoordinates option is enabled in the driver.

9. Improved the robustness of the driver to be tolerant to errors during
   dynamic memory allocation.

10. Improved the robustness of the data read and writes to driver configuration
    file.

11. The USB driver log file(EloUsbErrorLog.txt) that was previously located in
    the driver folder (/etc/opt/elo-usb/) has been moved to /var/log/elo-usb/
    folder.

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Version 4.0.0
November 08, 2013
Elo Touch Solutions

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Summary of new features & changes in driver v4.0.0 :
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1. Supports multiple ST(Single Touch) touchscreens (maximum: 32) and multiple
   videoscreens (maximum: 32)

2. Supports Linux 3.x.x and 2.6.x kernels

3. Supports latest Xorg Xserver versions (v1.14.3 or newer)

4. Video monitor to touchscreen associations for multiple touchscreens
   enables touch routing to correct video monitor, based on unique touchscreen
   serial number.[Video2Touch.txt]

Supported System Configurations:

The current version of the USB driver will support the following
video and touchscreen configurations:

1. Single video and single touchscreen.
2. Multiple video and single touchscreen.
3. Multiple video and multiple touchscreens.

3. Multiple video and multiple touchscreen.

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Version 3.5.4-beta1
April 30, 2013
Elo Touch Solutions

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Summary of new features & changes in driver v3.5.4-beta1 :
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1. Precalibration support using touchscreen controller's NVRAM (Non Volatile Random Access Memory), if available.

2. Desktop position independent calibration using precalibration feature in a multiple monitor setup. Requires USB configuration file (/etc/opt/elo-usb/USBConfigData) to be stored on the hard drive of target Linux system.

3. Dynamic adjustment of touchscreen calibration to suit current video resolution using precalibration feature [eloautocalib].Type "/etc/opt/elo-usb/eloautocalib --help" for available command line parameters and usage.

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Version 3.5.3
December 14, 2012
Elo Touch Solutions

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Summary of new features & changes in driver v3.5.3 :
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1. Added command line parameters for the 'elousbd' driver. All parameters use the long command line option with the "--" format. Use the "--help" option to see all the available commandline options.

2. Added help section for the 'elousbd' driver. The "--help" driver commandline parameter displays all the available commandline options and some driver usage examples.

3. Added "--version" driver commandline parameter to display the USB touchscreen driver version information.

4. Added "--displaycoordinates" driver commandline parameter to display the touch data, corresponding to each touch, on a terminal. This option is used for testing the touchscreen, hence touch data is only displayed and not sent to Xserver to move the mouse pointer.

5. Added "--xwarppointer" driver commandline parameter to use XWarpPointer call to send touch events to X window system. Use this option if the target Linux platform has multiple video screens configured in separate X video screen mode (not twinview mode). The default call to send touch events, XTestFakeMotionEvent has a bug that prevents the switching of cursor across video screens in separate X video screen mode [Xorg v7.4 or later].

6. Added "--activetoucharea" driver commandline parameter to enable the mouse
   pointer to respond to touch input within the specified area only. This option
   needs the following parameters to specify the touch area: OriginX, OriginY,
   Width and Height.

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Version 3.5.2-1
June 07, 2012
Elo Touch Solutions

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Summary of new features & changes in driver v3.5.2-1 :
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1. Fixed an issue where the driver consumed 100% cpu resources
   when launched at system boot on some Linux distributions.

2. Fixed an issue where the driver could corrupt the USB touchscreen
   configuration file during system reboot.

3. Fixed an issue where the driver would exit after several hundred
   trials while recycling power to the touch controller.

4. Added delays to the USB device arrival and exit routines to allow
   more time for the touch controller to stabilize during an USB unplug
   and replug event.

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Version 3.5.2
February 15, 2011
Elo TouchSystems

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Summary of new features & changes in driver v3.5.2 :
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1. Fixed an issue where touch is lost when an user restarts an
   Xwindows session using Ctrl+Alt+Backspace key combination.

2. Fixed an issue where the driver would not work with a Xwindows
   system that does not require authentication (xauth).

3. Fixed an issue in the drag delay logic in the driver for mousemode.

4. Updated the range for Drag Delay parameter to be consistent with
   other drivers. New Drag Delay Range is from 50 ms to 2500 ms.

5. Removed the requirement for controller serial number matching
   to retrieve data from configuration file.

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Version 3.5.1

August 11, 2010
Elo TouchSystems

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Summary of new features & changes in driver v3.5.1 :
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1. Fixed an issue where the touchscreen driver (elousbd) gets terminated when an user logs out of a Xwindows session and touches the screen

2. Support for Motif verions 3.0 [libXm.so.3] and 4.0 [libXm.so.4]

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Version 3.5.0
July 14, 2009
Elo TouchSystems

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Summary of new features & changes in driver v3.5.0 :
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1. Support for 64 bit AMD/Intel x86_64 platform added. Visit the Linux downloads section at www.elotouch.com to download the 64 bit AMD/Intel x86_64 platform driver package or the standard 32 bit Intel i686 (x86) platform driver package.

2. This userspace driver adds support for recent Linux kernel versions 2.6.25 and newer.

3. The Elo Touchscreen driver components now require new libusb-1.0 library support (older libusb-0.1 library will not work). Most newer Linux distributions have started shipping this library(update to the popular libusb-0.1 library) as a part of their standard release. Customers can also download and compile the libusb-1.0 library from source (requires gcc v4.0.0 or later) available at libusb website. This driver will NOT work with the older libusb-0.1 library.

4. Eliminates the Elo Touchscreen driver requirement for USB Human Interface Device (USBHID) component to be a loadable kernel module. Hence, for Linux distributions that have USBHID component built into the kernel by default (example: Redhat, Fedora, etc), recompiling the kernel is not required to install the Elo Touchscreen driver.

5. Adds support for Xorg Xserver versions 1.5RC and newer. Older versions of Xorg Xserver are also supported.

6. Adds support for multiple video screens and single USB touchscreen configuration. Nvidia Twinview, Xorg Xinerama and Xorg non-Xinerama based multiple video screens are supported.

7. The calibration utility provides a default timeout of 30 seconds for each calibration target. The timeout can be disabled or changed using commandline option --caltargettimeout. It also provides a list of available video and touch devices for calibration and options to select specific devices for calibration. The previous calibration command line parameters -u and -s are now obsolete. All long command line options in the elova calibration utility have been modified to use the "--" format instead of the "-" format. Formatted the elova output and help information width to 80 columns for low resolution displays and text consoles. Type "/etc/opt/elo-usb/elova --help" for available command line parameters and usage.

8. Adds a new single touch alignment feature in the elova calibration utility to support the APR Smartset 7010 controller. This mode displays only 1 target instead of 3 targets to determine the video screen associated with the APR Smartset touchscreen.

9. Adds Beep-on-Touch feature. Beep can be enabled or disabled and other beep parameters can be modified using the GUI control panel (cpl - sound tab) or using the command line control panel (cplcmd).

10. The installation procedure for the Userscape USB driver is simplified compared to previous kernel USB drivers. Customers do have to build any driver components on the target system and hence do not need to have development environment installed.

11. Adds support for recent touchscreen controllers including Surface Capacitive 5020, APR Smartset 7010 and Accutouch COACh IV controllers.

12. Improved plug and play support for USB touchscreen controllers. Changed the Elo USB touchscreen device permissions to allow normal users to work with the plugged in touchscreen.

13. Adds support for Emacs text editor in the graphic control panel to view the Readme.txt file.

14. This driver release is a major change from the previous version. Hence some features, options and components from the previous driver versions are now obsolete.

Known Issues in driver v3.5.0 :
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1. In some Xserver versions the touchscreen driver (elousbd) gets terminated when a user logs out. See troubleshooting section in the readme.txt file for more details and options.

2. When the driver is started manually from a non-root user account within Xwindows, the beep-on-touch feature does not work. The driver has to be loaded from a system startup environment or root user account to get the beep-on-touch feature functioning properly.

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