

# Automating X11 Keystrokes

An Introduction to X11 and the xautomation package

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<http://www.CJFearnley.com/xte.mar.2011>

# xrandr

- xrandr: command line interface to RandR extension (The X Resize, Rotate and Reflect Extension (RandR) allows clients to dynamically change X screens, so as to resize, rotate and reflect the root window of a screen).

- xrandr -q

```
Screen 0: minimum 320 x 200, current 1280 x 1024, maximum 1600 x 1200
VGA-0 connected 1280x1024+0+0 (normal left inverted right x axis y axis) 376mm x 301mm
 1280x1024    60.0*+  59.9    60.0*
 1600x1024    60.0
 1400x1050    60.0
  ...
```

- xrandr -q -verbose



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# Notable Quotable

No one knows what he can do till he tries.

— Publilius Syrus, Maxim 786



## xset

● **xset:** user preference utility for X

## ● xset q

## Keyboard Control:

```
auto repeat: on      key click percent: 0      LED mask: 00000000
```

```
auto repeat delay: 500  repeat rate: 30
```

```
auto repeating keys: 00ffffffdfffbfbf
```

```
fadffffdfffdfe5ef
```

```
ffffffffffffffffff
```

```
ffffffffffffffffff
```

```
bell percent: 50      bell pitch: 400      bell duration: 100
```

## Pointer Control:

```
acceleration: 2/1      threshold: 4
```

## Screen Saver:

```
prefer blanking: yes    allow exposures: yes
```

```
timeout: 0      cycle: 600
```

## Colors:

```
default colormap: 0x20      BlackPixel: 0      WhitePixel: 16777215
```

## Font Path:

```
/usr/share/fonts/X11/misc,/usr/share/fonts/X11/100dpi/:unscaled,/usr/share/fonts/X11/75dpi/:unsca
```

## Bug Mode: compatibility mode is disabled

## DPMS (Energy Star):

```
Standby: 300      Suspend: 0      Off: 0
```

```
DPMS is Enabled
```

```
Monitor is On
```

## File paths:

```
Config file: /etc/X11/xorg.conf
```

```
Modules path: /usr/lib/xorg/modules
```

```
Log file: /var/log/Xorg.0.log
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# xwd / xwud

**xwd**: dump an image of an X window

```
xwd > junk.xwd
```

Then click on the window to dump

**xwud**: image displayer for xwd dumps

```
xwud -in junk.xwd
```

**xwdtopnm**: convert a X11 or X10 window dump file into a portable anymap

```
xwdtopnm junk.xwd > junk.pnm
```





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# ffmpeg

**ffmpeg:** FFmpeg video converter

```
ffmpeg -f x11grab -s 1280x1024 -r 25 -i :0.0 -sameq xte.demo.flv
```



# xdotool

**xdotool:** Description: simulate X11 keyboard/mouse input xdotool lets you programatically (or manually) simulate keyboard input and mouse activity, move and resize windows, etc. It does this using X11's XTEST extension and other Xlib functions.

Homepage:

<http://www.semicomplete.com/blog/projects/xdotool/>



# Notable Quotable

Civilization advances by extending the number of important operations that we can do without thinking about them.

— Alfred North Whitehead, 1911



# xautomation

**xautomation:** Description: Control X from the command line, and find things on the screen Control X from the command line for scripts, and do “visual scraping” to find things on the screen. The control interface allows mouse movement, clicking, button up/down, key up/down, etc, and uses the XTest extension so you don't have the annoying problems that xse has when apps ignore sent events. The visgrep program find images inside of images and reports the coordinates, allowing programs to find buttons, etc, on the screen to click on.

Homepage:

<http://hoopajoo.net/projects/xautomation.html>



# xte: Generates fake input using the XTest extension

`key k` Press and release key `k`

`keydown k` Press key `k` down

`keyup k` Release key `k`

`str string` Do a bunch of key X events for each char in string

`mouseclick i` Click mouse button `i`

`mousemove x y` Move mouse to screen position `x`, `y`

`mouermove x y` Move mouse relative from current location by `x`, `y`

`mousedown i` Press mouse button `i` down

`mouseup i` Release mouse button `i`

`sleep x` Sleep `x` seconds

`usleep x` Usleep `x` microseconds



# My XGoChrome Script

```
!#/bin/sh
```

```
xte 'keydown Control_L' 'key F12' 'keyup Control_L' \  
    'sleep 1' 'mousemove 500 75' 'sleep 1'\  
    'keydown Control_L' 'key t' 'keyup Control_L' \  
    'sleep 1' "str $(xclip -o)" 'key Return'
```

## My FVWM Configuration

```
*FvwmButtons(Title XGoWeb, Icon desk.xpm, Action (Mouse 1)  
              'Exec exec ~/bin/XGoChrome')
```





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# Watch Video Demo

Watch Video Demo

<http://www.CJFearnley.com/xte.mar.2011/xte.demo.flv>

<http://www.youtube.com/watch?v=I6lYhD68QJI>



# The most important video course on-line

The most important video course on-line is Physics C10/LS C70V at Berkeley.

<http://blog.cjfearnley.com/2011/02/24/>

Or go directly to Berkeley's Webcast site and start watching:

Spring 2008: [http://webcast.berkeley.edu/course\\_details.php?seriesid=1906978515](http://webcast.berkeley.edu/course_details.php?seriesid=1906978515)

Spring 2010: [http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-B-51962|2010-B-69390](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-B-51962|2010-B-69390)

Fall 2010: [http://webcast.berkeley.edu/course\\_details\\_new.php?seriesid=2010-D-52040|2010-D-69342](http://webcast.berkeley.edu/course_details_new.php?seriesid=2010-D-52040|2010-D-69342)



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# Thank You

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Any Questions?

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