

ScreenCasting on Linux

Recording demonstration videos on Linux

*A short introduction for
Hampshire Linux User Group*

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ubuntu

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- **Why ScreenCasting?**
- **What are the options?**
- **How do they stack up?**
- **What do I use?**
- **What should you use?**

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- **Why ScreenCasting?**
 - **Many people learn by being shown**
 - **You can show many people**
 - **Can be watched again and again**
 - **You will eventually get tired of explaining the same thing over and over and over again***

*** unless you're getting paid for it of course‡**

‡ and even then it's still tedious!

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- **Use Case #1**

“I have installed Linux for some computer users who are not experts . They sometimes need things explained to them.”

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- **Use Case #2**

“I would like to demonstrate a product I have developed to people who are not geographically close to me.”

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- **Use Case #3**

“We need to log everything a user does for usability studies.”

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- **Use Case #4**

“?”

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- **Recording options**
 - **Using only one computer**
 - Record exactly what you do
 - Record yourself vnc'ed into another user on local PC
 - Record a VM on your local machine
 - **Use two or more computers**
 - Recording application on one computer, application being recorded on another.
 - Use VNC to do the remote control

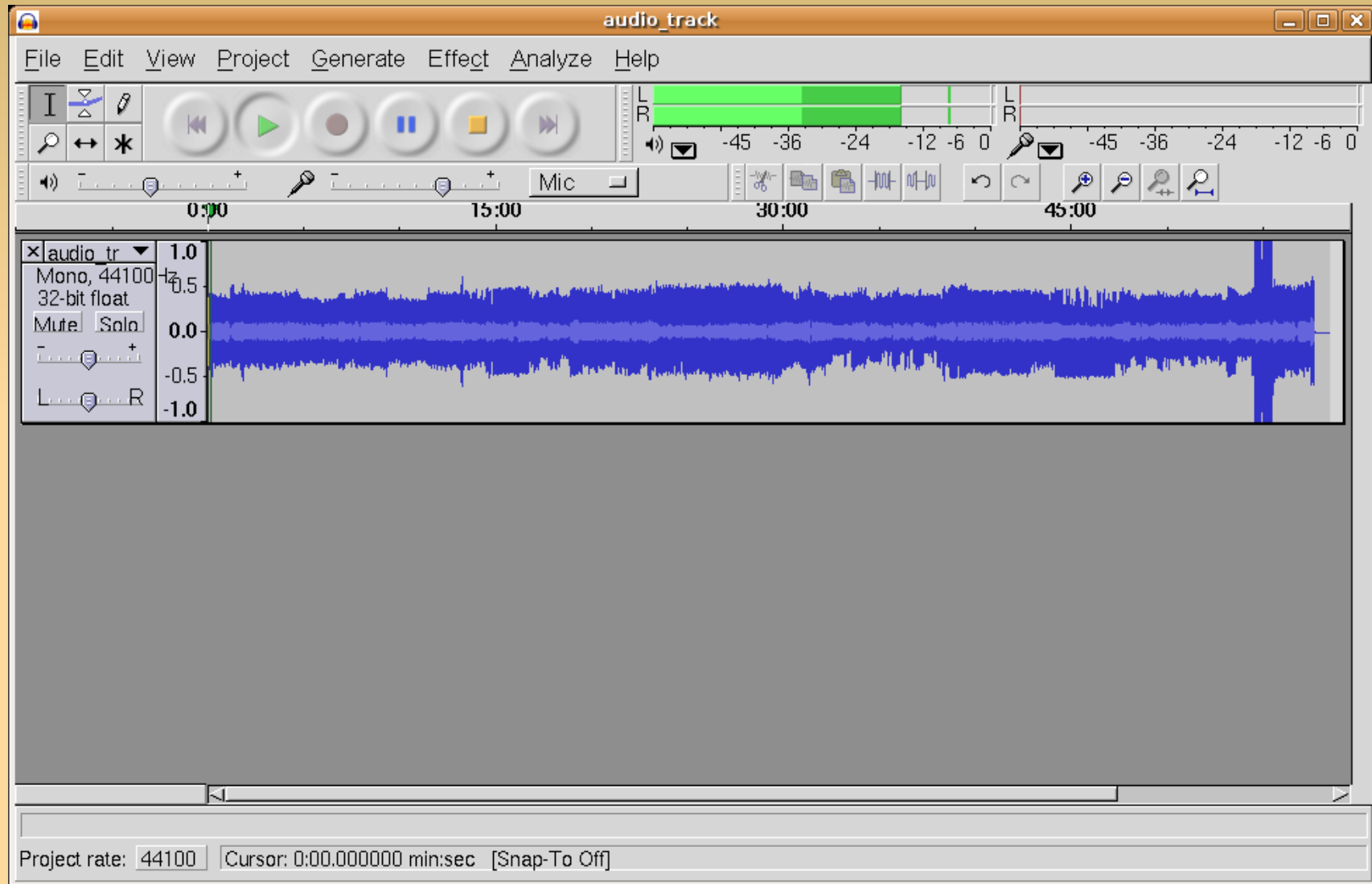
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- **What are the options?**
 - **Single stage recording:-**
 - Records what's going on and encodes it at the same time
 - Can be CPU intensive, so high spec PC required
 - Simple
 - **Two stage recording:-**
 - Record to an intermediate format
 - Convert to another video format later
 - Usually less demanding on CPU

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- **If an audio track is required**
 - **Record at the same time as the video**
 - **Will end up with a finished product very quickly**
 - **Tend to get more “uhms” and background noise (e.g mouse clicks)**
 - **May be ok if this is not for public consumption**
 - **Record it later**
 - **Watch the video a couple of times, then record the audio track as you watch it**
 - **Use tools like audacity to record and process audio**

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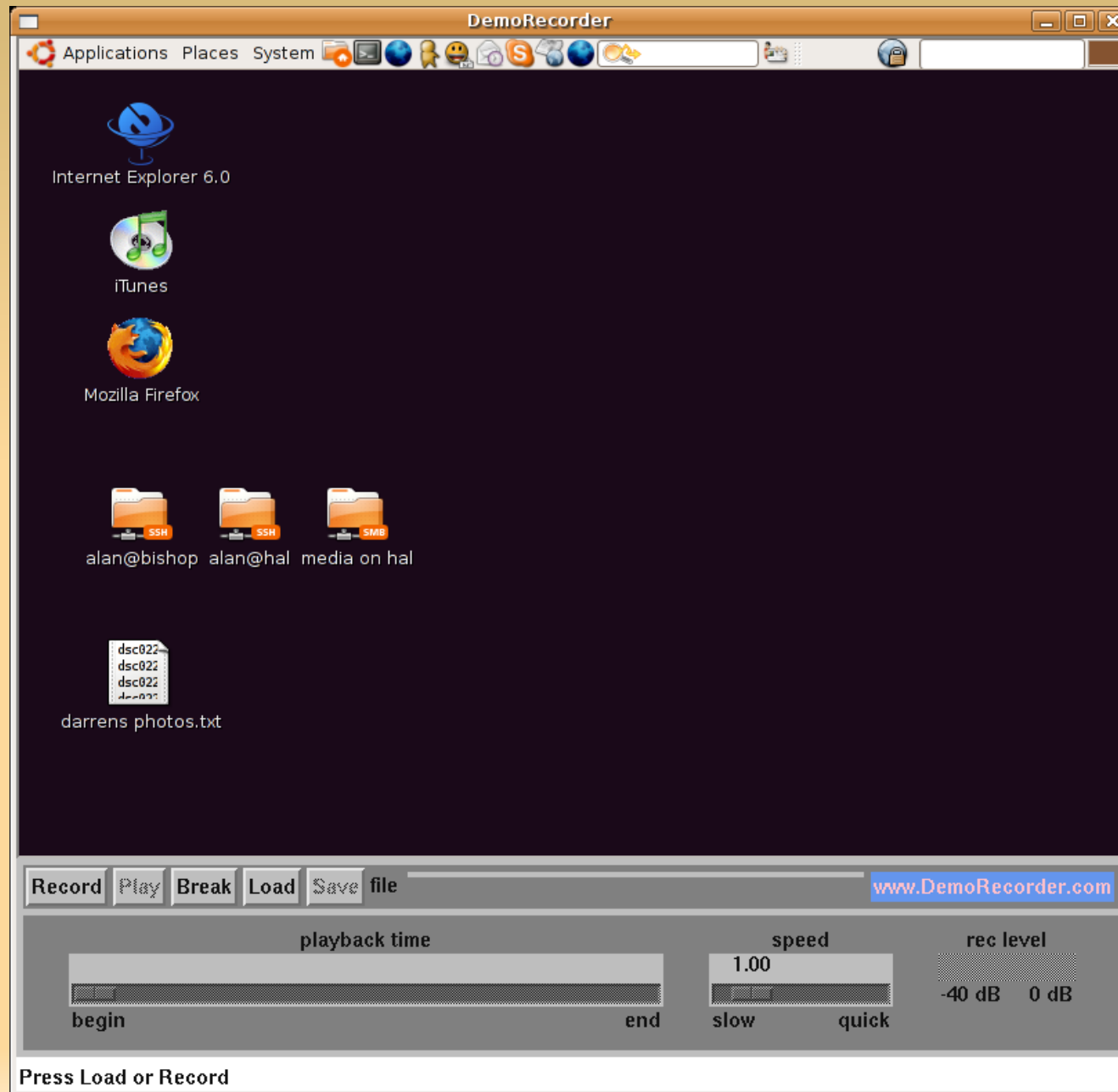
- **Recording platform**
 - **On Windows or Mac?**
 - A few high quality proprietary tools are available.
 - Some of the free tools are cross platform, many aren't.
 - **On Linux?**
 - DemoRecorder, Istanbul, XvidCap, VNCRec, VNC2swf, ffmpeg, gstreamer..

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- **DemoRecorder**

- **Proprietary license – pricing from \$49 (~£25+VAT)**
 - **Product range recently changed, major price drop**
 - **Further 25% off with coupon code “GOODPRICE0806”**
- **Built on top of free software – X11, ffmpeg**
- **Excellent support from the author**
- **Records an entire X session**
- **Two stage record/encode**

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- **Istanbul**
 - **Open licence**
 - **Mostly written in Python, uses gstreamer**
 - **Under active development**
 - **Author responsive to bug reports**
 - **Records entire screen or region of it**
 - **Single stage record/encode**
 - **Bug reported to change to two stage**

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```
alan@hactar: /home/alan
alan@hactar:~$ istanbul
DEBUG: final pipeline: istximagesrc name=videosource display-name=:0.0 screen-num=0 ! video/x-raw-rgb,framerate=10/1 ! videorate ! ffmpegcolorspace ! videoscale method=1 ! video/x-raw-yuv,width=1920,height=1200,framerate=10/1 ! theoraenc ! oggmux name=mux ! filesink location=/tmp/tmpNDYHk7
```

Save Screenshot

Applications Places System

Name: testvideo.ogg

Save in folder: Documents

▶ Browse for other folders

```
alan@hactar: /home/alan
alan@hactar:~$ istanbul
DEBUG: final pipeline: istximagesrc name=videosource display-name=:0.0 screen-num=0 ! video/x-raw-rgb,framerate=10/1 ! videorate ! ffmpegcolorspace ! videoscale method=1 ! video/x-raw-yuv,width=1920,height=1200,framerate=10/1 ! theoraenc ! oggmux name=mux ! filesink location=/tmp/tmpNDYHk7
```

00:00

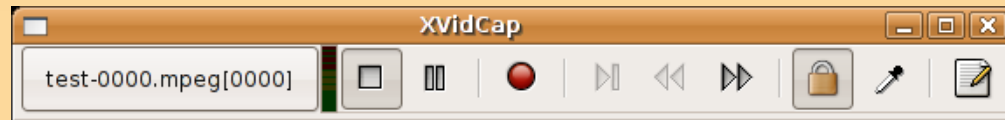
▶

Cancel Edit Save

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- **XvidCap**
 - **Open licence**
 - **Development was stalled, now restarted**
 - **Records entire desktop or a nominated window**
 - **Captures single images or video direct to mpeg**

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ScreenCasting on Linux

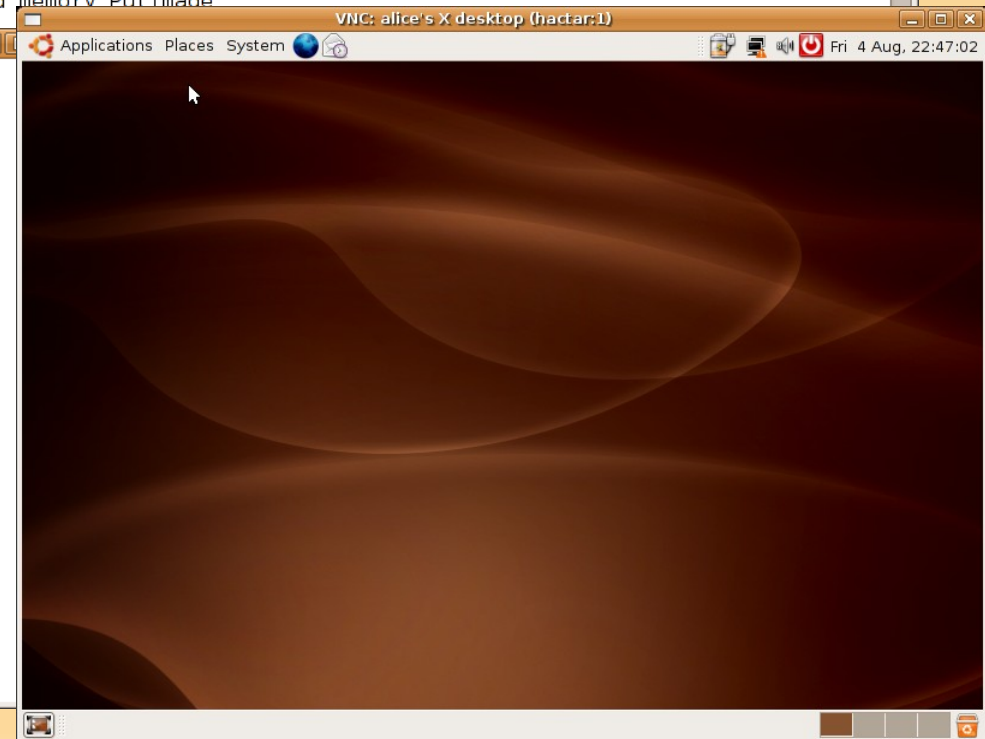
- **VNCRec**
 - **Open licence**
 - **Not actively developed although recent patch made available**
 - **Records VNC session .vnc video**
 - **Can also output still '.xpm' images**
 - **Patch changes this to '.png' images**
 - **Requires separate tool to convert to mpeg/ogg movie**
 - **mencoder/mogrify/transcode/ffmpeg etc**

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```
alice@hactar: ~  
alice@hactar:~$ vncserver -geometry 800x600 -depth 24  
  
You will require a password to access your desktops.  
  
Password:  
Verify:  
  
New 'X' desktop is hactar:1  
  
Starting applications specified in /etc/X11/Xsession  
Log file is /home/alice/.vnc/hactar:1.log  
  
alice@hactar:~$ █
```

```
alan@hactar: /home/alan/LUGTalk  
alan@hactar:~/LUGTalk$ vncrec -record recording.vnc localhost:1  
VNC server supports protocol version 3.3 (viewer 3.3)  
Password:  
VNC authentication succeeded  
Desktop name "alice's X desktop (hactar:1)"  
Connected to VNC server, using protocol version 3.3  
VNC server default format:  
 32 bits per pixel.  
Least significant byte first in each pixel.  
True colour: max red 255 green 255 blue 255, shift red 16 green 8 blue 0  
Using default colormap which is TrueColor. Pixel format:  
 32 bits per pixel.  
Least significant byte first in each pixel.  
True colour: max red 255 green 255 blue 255, shift red 16 green 8 blue 0  
Using shared memory PutImage
```

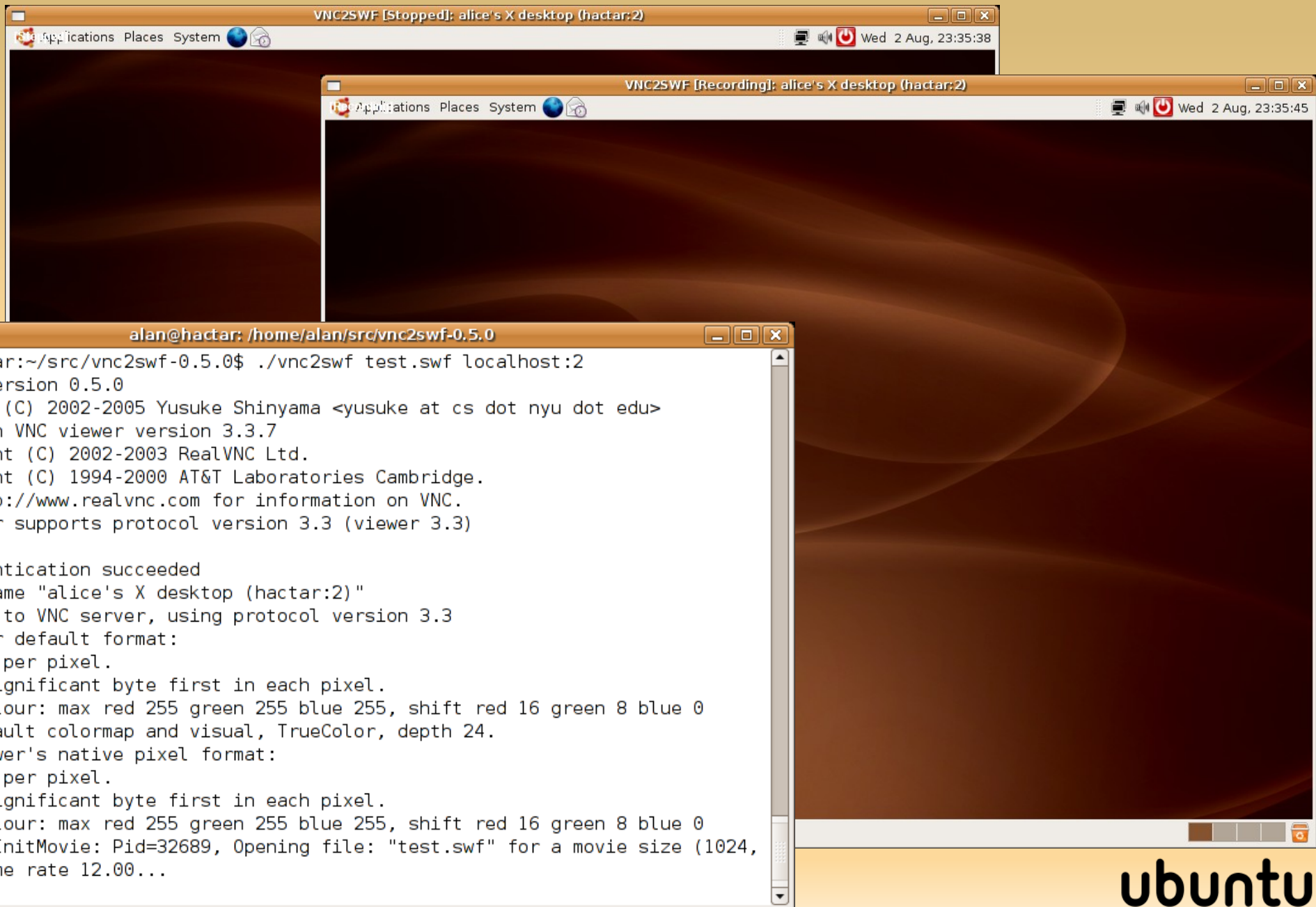
```
alan@hactar: /home/alan/LUGTalk  
alan@hactar:~/LUGTalk$ vncrec -play recording.vnc  
recording.vnc  
VNC server supports protocol version 3.3 (viewer 3.3)  
VNC authentication succeeded  
Desktop name "alice's X desktop (hactar:1)"  
Connected to VNC server, using protocol version 3.3  
VNC server default format:  
 32 bits per pixel.  
Least significant byte first in each pixel.  
True colour: max red 255 green 255 blue 255, shift red 16 green 8 blue 0  
Using default colormap which is TrueColor. Pixel format:  
 32 bits per pixel.  
Least significant byte first in each pixel.  
True colour: max red 255 green 255 blue 255, shift red 16 green 8 blue 0  
Using shared memory PutImage  
█
```



ScreenCasting on Linux

- **VNC2swf**
 - **Open licence (Flash aside)**
 - **Written in C**
 - **Records VNC session as flash video**
 - **Is therefore inherently evil :)**
- **pyvnc2swf**
 - **Includes swf to mpeg converter**
 - **Requires pymedia library**

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- **ffmpeg**
 - **Open licence**
 - **Not strictly a recorder, but a patch makes this possible**
 - **Records an entire desktop or region**
 - **Single pass record/encode direct to mpeg4 video**
 - **Command line driven**

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```
ffmpeg -g 64 \  
-r 8 \  
-s 1024x768 \  
-aspect 4:3 \  
-vcodec mpeg4 \  
-ar 16000 \  
-vd x11:0,0 \  
-qscale 1  
test.avi
```

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- **gstreamer**
 - **Open licence**
 - **Not strictly a recording tool, but can be used as such**
 - **Used in Istanbul and other recent multimedia applications**
 - **Command line driven**

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```
gst-launch-0.10 -v ximagesrc ! \
    video/x-raw-rgb! \
    ffmpegcolorspace ! \
    timeoverlay ! \
    theoraenc ! \
    oggmux ! \
    filesink location=file.ogg
```

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Links – Home pages, bug trackers and patches

- **Demo Recorder**
 - <http://www.demorecorder.com/>
- **Istanbul**
 - <http://live.gnome.org/Istanbul>
 - <http://bugzilla.gnome.org/browse.cgi?product=istanbul>
- **XvidCap**
 - <http://xvidcap.sourceforge.net/>
 - http://sourceforge.net/tracker/?group_id=81535&atid=563254
- **VNCRec**
 - <http://www.sodan.org/~penny/vncrec/>
- **VNC2swf**
 - <http://www.unixuser.org/~euske/vnc2swf/>
- **gststreamer**
 - <http://gststreamer.freedesktop.org/>
- **ffmpeg**
 - <http://ffmpeg.mplayerhq.hu/>
 - <http://clemens.endorphin.org/weblog/archives/2006-02.shtml#e206>

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Links

- **Windows Software**
 - <http://www.debugmode.com/wink/> - Wink
 - <http://www.techsmith.com/camtasia.asp> - Camtasia
- **Examples of ScreenCasts**
 - <http://screencastsonline.com/> - Professional \$\$ Mac ScreenCasts
 - <http://osvids.com/> - Tasters of O/S and applications

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Thanks!

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