

# Linux and CinePaint

## Open Source Software in Hollywood

Southern California Linux Expo 4x  
Los Angeles, California  
Saturday 16:30-17:30, February 11th, 2006



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[www.LinuxMovies.org](http://www.LinuxMovies.org)




[www.CinePaint.org](http://www.CinePaint.org)

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## A Short Time Ago, in a Galaxy Not Far Away...



In August 1991 Linus Torvalds posts this humble USENIX message about something that would later be called Linux:

**I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386 (486) AT clones.**

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## Titanic wins 11 Academy Awards



*First Linux Renderfarm  
At Digital Domain for Paramount*

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## Shrek Worth One Billion \$\$\$



*Linux End-to-End, Desktops and Renderfarm*

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## Star Wars, Episode II

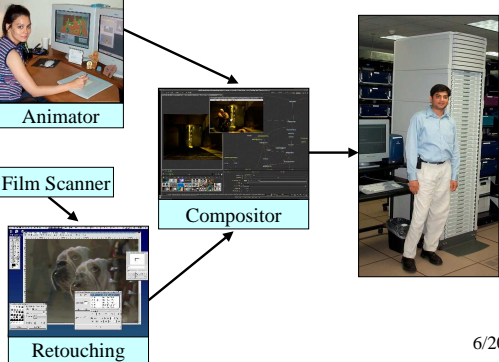


*Linux Conversion During Full Scale Production  
at ILM*

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## The Studio Pipeline



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**Maya, RenderMan and Shake**




*At Double Negative  
for Paramount's Captain Corelli's Mandolin* 7/20

**War's Over, LinuxWon!**

- Feature animation and visual effects
- Linux dominates all the top movie studios
- But not in television, except South Park
- Mostly RH/Fedora, SUSE at ILM and RnH
- Linux won, but what about OSS apps?
- OSS office apps come with distros
- What film apps are the studios running?

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**Proprietary Linux Apps**



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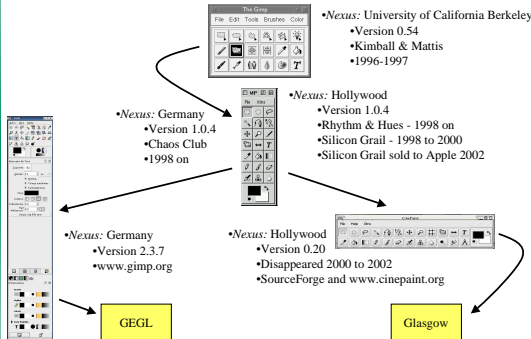
**CinePaint**



CinePaint Film Gimp  
The only OSS app used for feature film production

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**CinePaint Lineage**



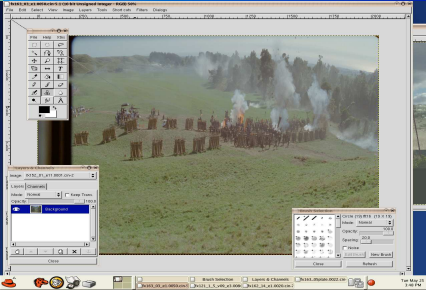
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**CinePaint at Movie Studios**

- Amalgamated Pixels
  - Elf, Looney Tunes ...*
- Computer Café
  - League of Extraordinary Gentlemen ...*
- Flash Film Works
  - Duplex, The Last Samurai ...*
- Hammerhead
  - Showtime, Blue Crush, 2 Fast, 2 Furious ...*
- ILM
  - Considering, contributed code
  - Rhythm & Hues
    - Scooby-Doo, Harry Potter, Stuart Little ...*
- Sony Pictures Imageworks
  - Stuart Little 2, Spider-Man movies ...*
- Rising Sun
  - Harry Potter, Goblet of Fire*

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## The Last Samurai



Flash Film Works won a Visual Effects Society Award this year for Best Supporting Effects for work on *THE LAST SAMURAI*. They used CinePaint to add the flying arrows. No real arrows were shot in filming. In this shot the film crew visible under umbrella toward left of screen is being removed.

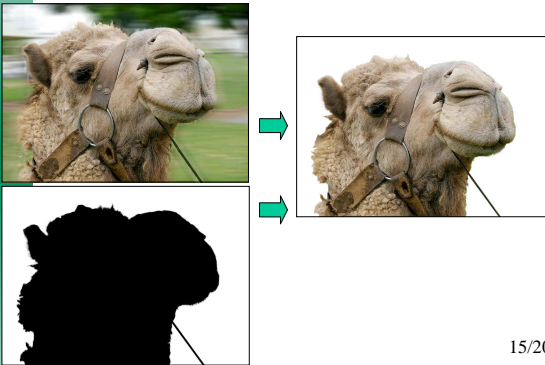
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## CinePaint Uses

- Paint in 8-bit, 16-bit, 32-bit per Channel Color
- Image Retouching
- CIN, DPX, EXR, TIFF, JPEG, PNG...
- Flipbook Movie Player (no sound, RAM only)
- Texture Painting
- Dirt and Wire Rig Removal
- Render Repair
- Background Plates
- Roto
- 16-bit Printing Based on GutenPrint
- HDR
- CMS Based on LCMS

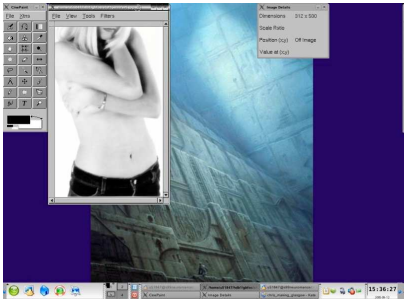
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## CinePaint Roto



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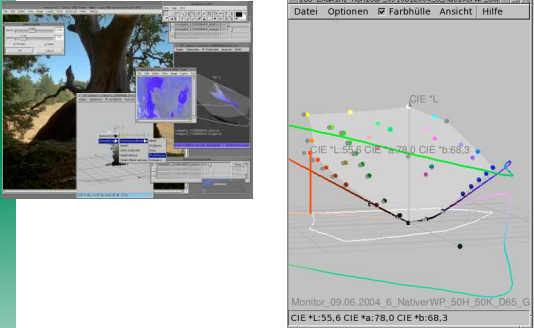
## CinePaint Glasgow



CinePaint Glasgow

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## Glasgow CMS



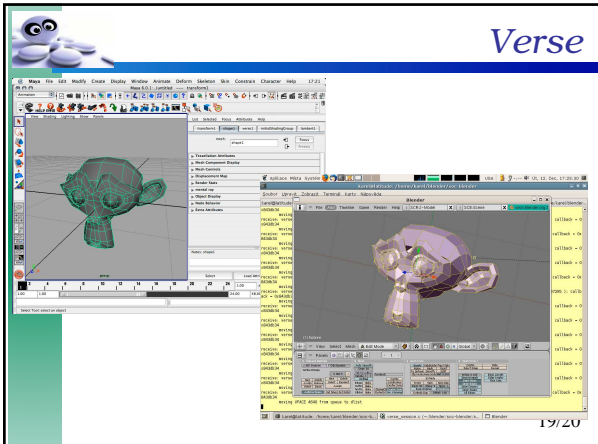
Monitor: 09.06.2004, 6, Natiker/WP\_50H\_50K\_D65\_G  
CIE \*L\*:55.6 CIE \*a\*:78.0 CIE \*b\*:68.3

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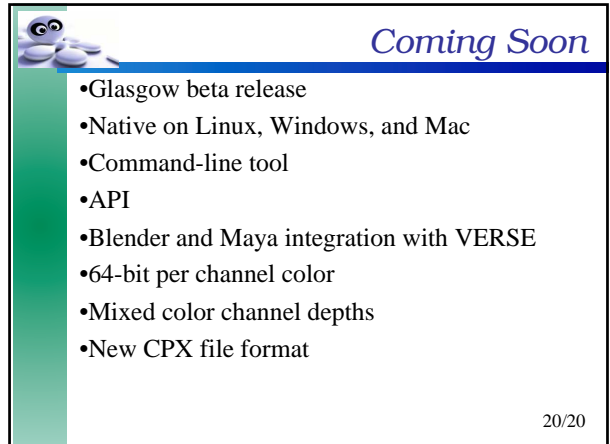
## Glasgow HDR



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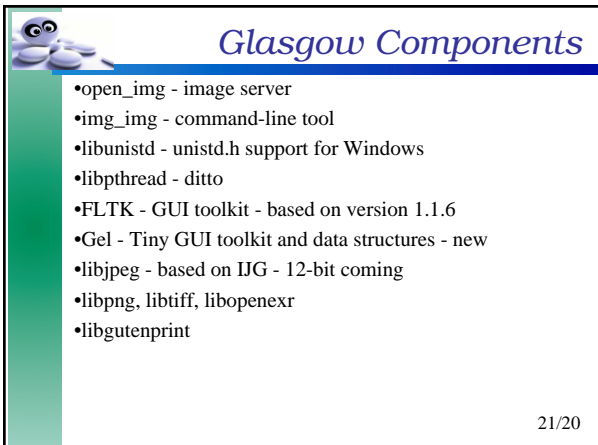


## Verse



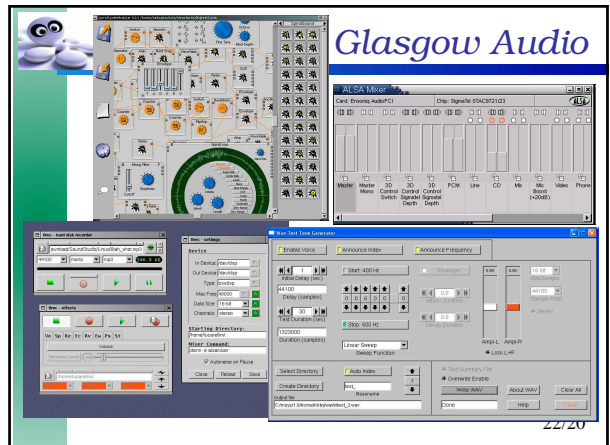
- Glasgow beta release
- Native on Linux, Windows, and Mac
- Command-line tool
- API
- Blender and Maya integration with VERSE
- 64-bit per channel color
- Mixed color channel depths
- New CPX file format

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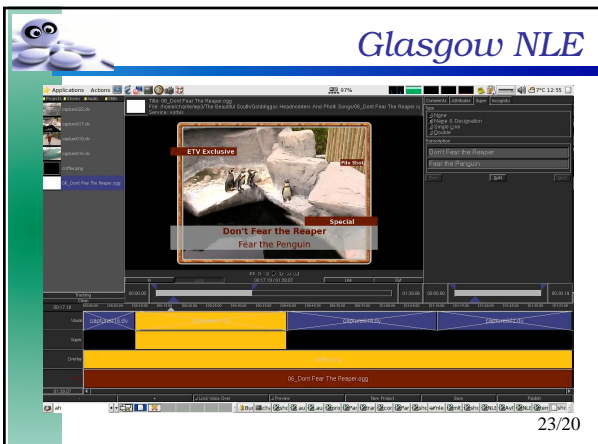


- open\_img - image server
- img\_img - command-line tool
- libunistd - unistd.h support for Windows
- libpthread - ditto
- FLTK - GUI toolkit - based on version 1.1.6
- Gel - Tiny GUI toolkit and data structures - new
- libjpeg - based on IJG - 12-bit coming
- libpng, libtiff, libopenexr
- libgutenprint

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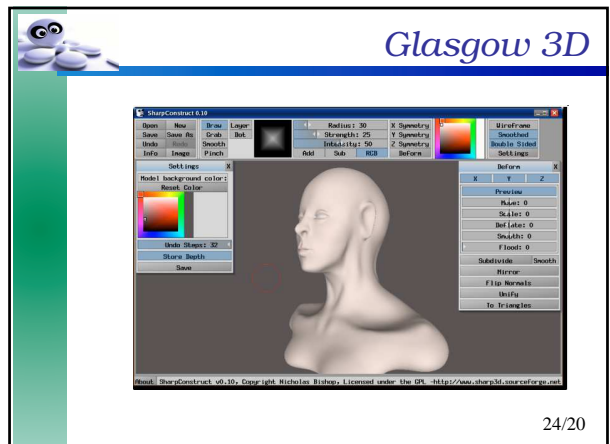


## Glasgow Audio



## Glasgow NLE

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## Glasgow 3D

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