**Linux and CinePaint**

**Open Source Software in Hollywood**

Southern California Linux Expo 4x
Los Angeles, California
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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**

- Animator
- 2k Film Scanner
- Compositor
- Retouching
Maya, RenderMan and Shake

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

War’s Over, Linux Won!

• 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?
8/20

Proprietary Linux Apps

CinePaint

The only OSS app used for feature film production
9/20

CinePaint Lineage

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
10/20
11/20
12/20
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 director visible under umbrella towards left of screen is being interviewed.

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

CinePaint Roto

CinePaint Glasgow

Glasgow CMS

Glasgow HDR
Verse

Coming Soon

- 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

Glasgow Components

- 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

Glasgow Audio

Glasgow NLE

Glasgow 3D