

# 3D for the Linux Desktop

compiz, beryl, metisse

Linux-Infotag, 24.3.2007

Hanno Böck, <http://www.hboeck.de/>



# Why we want fancy desktops?

- Can improve usability (virtual desktop -> side of a cube)
- A nicer system »feels« more usable
- People like MacOS X, there must be a reason



# XFree86/Xorg Fork

- 2004 – xfree86 license change
- Xorg-project forks last version
- Lot's of new development:  
composite, modularization,  
input-hotplug, mpX, randr++
- 3D-Desktops



# Composite Extension

- Renders window-content offscreen
- xcompmgr lets you have shadows and transparent windows
- Composite + texture from pixmap:  
Fancy 3D-stuff



# What else going on with X?

- Input Hotplug – Autodetection of plugged devices, less (no?) configuration
- MPX – more than one mouse cursor
- randr++ - New Standard for stuff like resolution changing, monitor port control



# First look on XGL and friends

- Summer 2005, first impressions of XGL, rotating cube
- Around the same time, Luminocity presents wobbly windows



# XGL

- David Reveman (Novell)
- Xserver based on OpenGL
- Xserver on another Xserver (Solution : EGL/XEGL)
- All cards with DRI
- Not much activity lately



# AIGLX

- Kristian Høgsberg, Fedora
- Extension to already existing Xserver
- Same functionality as XGL
- All cards with free drivers
- Usually preferred way





# Compiz / Beryl

- Composite and Windowmanager
- Very modular
- Lot's of plugins - rotating cube, wobbly windows
- Beryl: Fork, but most development ported back



# Metisse

- Project by Mandrake, based on fvwm with own Xserver
- Uses Input Redirection (use/click windows in transformation)
- ToDo: Input Redirection for xorg-xserver (draft by David Beveeman)



# KDE / GNOME ?

- compiz has gtk-window-decorator and kde-window-decorator
- GNOME has a libcm-based solution with metacity
- Experimental kwin-branch for KDE 4



# Binary drivers suck

- Security, Bugs
- Functionality (Composite, AIGLX, Realtime etc.)
- No/delayed updates for new kernels/xorg, old cards
- Bad for development



# Free drivers

- Intel cards pretty well supported
- ATI cards below X1300 well supported
- Only vesa for  $\geq$  ATI X1300
- Very limited support for nvidia (next pages)



# Nouveau project

- Working on free nvidia-drivers
- EXA/2D-Support works
- Very limited GL works, glxgears runs
- Looks very promising, what one hears from the team they're motivated
- [nouveau.freedesktop.org](http://nouveau.freedesktop.org)



# What do I need for the fun?

- pretty much every distro has aiglx and packages for compiz
- all necessary patches upstream included in latest releases
- if you rely on prop. ATI-drivers you'll still need XGL



# Live-CDs

- Kororaa – Gentoo-based, looks dead/outdated
- Latest Knoppix has beryl (didn't work in my tests)
- Metisse-CD by Mandrake





# Questions?

Hanno Böck

<http://www.hboeck.de>

