Fun with the Linux Desktop

3D-Desktop with XGL/AIGLX and compiz

come2linux, Essen, 9. + 10.9.2006
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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
Linux-Desktop in the past

- Xfree86 - very slow development, rarely new features
- »Nice« stuff only with strange workarounds (kompose, 3ddesk)
- E17 - the default desktop for GNU Hurd?
Xorg

- Spring 2004 - license change at xfree86
- Xorg-project forks last version
- Lot's of new development: composite, modularization, xgl, aiglx
Composite Extension

- Renders window-content offscreen
- xcompmgr lets you have shadows and transparent windows
- Not very spectacular, but base for future stuff
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
- (currently) Xserver on another Xserver
- All cards with DRI
Problem: XGL needs already running Xserver

EGL: direct interface to GL, no Xserver needed

XEGL: XGL running on EGL

Not working yet
Compiz

- Composite and Windowmanager
- Very modular
- Lot's of plugins - rotating cube, wobbly windows
AIGLX

- Kristian Høgsberg, Fedora
- Extension to already existing Xserver
- Same functionality as XGL
- All cards with free drivers
We need better drivers

- Fast
- Stable
- Full-Featured
- Free!
Binary drivers suck

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

- Best free drivers
- Intel released source before card in shops
- BUT: binary interface (DRM, HDCP)
ATI

- Limited 3D support for all cards before X1300
- No 2D/3D support at all (only VESA) for past X1300
- ATI very uncooperative (don't even talk to devs)
r300 and above

• r300-project did very good work on reverse engineering
• with latest versions of mesa (6.5.1) and driver (6.6.2), quite stable on many cards
Nvidia

- Always had their binary-only drivers
- No free 3D-support at all
Nouveau project

- Working on better nvidia-drivers
- EXA-Support (2D-acceleration) works pretty well
- Promising work, but still a lot to do for 3D
- nouveau.freedesktop.org
Should I use AIGLX or XGL?

- (personal opinion) use AIGLX if you can, if not use XGL
- AIGLX for all Intel, all ATI below X1300, all SIS, VIA and others (if you have DRI)
- XGL for Nvidia, ATI X1300 and above
What do I need for AIGLX?

- mesa git-snapshot (6.5.1 to come)
- working DRI (direct rendering)
- xserver 1.1.1 + patches
- compiz from git + patches
- http://people.freedesktop.org/~krh/compiz-on-aiglx/
What do I need for XGL?

- mesa 6.5
- working DRI (direct rendering)
- compiz from git
- XGL from git
Gentoo

• Overlay (both aiglx and xgl) at http://www.hboeck.de/item/384
• AIGLX-patches already in (masked) xorg-server-1.1.1-r1
• Full AIGLX-support in portage very soon
• XGL already working quite well in Dapper
• AIGLX-packages for dapper and edgy at: http://gandalfn.wordpress.com/
SUSE

- Created XGL, so it's supposed to work
- Look at http://en.opensuse.org/Xgl
Fedora

- Created AIGLX, but not yet in FC release
- Packages in Rawhide
Mandriva

• Announced to support both XGL and AIGLX, depending on what suits better
• Packages in Cooker
Debian

• Don't ask!
Kororaa

- XGL-LiveCD
- Development stopped due to legal situation with binary drivers
- New version with only free drivers to come soon
- http://www.kororaa.org/
Questions?

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