KDE
The Composited Desktop

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Contents

• boring part
• the other part
Non-composited X

- window contents are painted directly to the screen
- not-visible parts are thrown away
- no way to affect/transform painting
Non-composited X
Composited X

- window contents are painted to an offscreen pixmap
- regardless of their visibility on the screen
- by default they are also painted to the screen
- a compositing manager can perform the painting to the screen instead
Composited X
Composited X
AIGLX, XGL, nVidia

- from the compositing manager's point of view, they seem about the same, except for different bugs
- different implementations of accelerated indirect rendering (video, OpenGL)
- having one that works should be generally enough :)
Compositing manager in KDE

• can be a separate application (Kompmgr)
• separate is not powerful enough, needs to be integrated with window manager
• Compiz - also replaces KWin as the window manager
• KWin - with compositing support
KWin compositing

- added one more pass for composited painting
- whenever changes are detected (XDamage extension for window contents), repaint is triggered
- added support for tracking unmanaged (override redirect) windows
- various small changes
Painting pass

paint

screen

windows

E1 → E2 → E3 → E4 → E5

E6 → E7 → E8 → E9

E6 → E7 → E8 → E9

E6 → E7 → E8 → E9
Effects

- can affect painting of windows or the whole screen
- get notified about various events in the window system
- X/OpenGL code not necessary for many features
- API still under development
- no, can't use Compiz plugins
Example
Status

- Under development
- Unstable
- Kind of works
- Needs more (useful) effects
Future

(upto people to fill up)
Questions

• docs?
  - kwin/COMPOSITE_HOWTO

• where to help?
  - kwin@kde.org

• will it be absolutely cool?
  - don't ask me

• will it be useful?
  - that's the plan

...