

X.Org Rootless Compositing Window Manager

Jeremy Huddleston Jamey Sharp Josh Triplett

October 17, 2011

X Window System

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

X Window System

- Application
- XCB

Client: an application; browser, game, ...

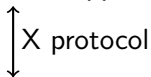


Server: hardware abstraction; monitor, keyboard, ...

X Window System

- Application
- XCB

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

- Device-Independent X (DIX)
- Device-Dependent X (DDX)

X Window System

- Application
- XCB

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

- Device-Independent X (DIX)
- X.Org Device-Dependent X (DDX)
- X.Org video driver (intel, ati, nouveau, ...)
- Graphics device

X Window System

- Application
- XCB

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

- Device-Independent X (DIX)
- X.Org Device-Dependent X (DDX)
- X.Org nested video driver (Fall 2010 Capstone)
- Backend X server

X Window System

- Window Manager
- XCB

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

- Device-Independent X (DIX)
- X.Org Device-Dependent X (DDX)
- X.Org video driver (intel, ati, nouveau, ...)
- Graphics device

X Window System

- Compositing Window Manager
- XCB

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

- Device-Independent X (DIX)
- X.Org Device-Dependent X (DDX)
- X.Org video driver (intel, ati, nouveau, ...)
- Graphics device

X Window System

- **Rootless Compositing Window Manager (your project)**
- XCB

Client: an application; browser, game, ...



Server: hardware abstraction; monitor, keyboard, ...

- Device-Independent X (DIX)
- X.Org Device-Dependent X (DDX)
- X.Org video driver (dummy driver)

Primary Goals

Your project: **X.Org Rootless Compositing Window Manager**

Required Features:

- Support for one of the following native platforms:
 - Mac OS X
 - Wayland
 - X
 - Windows
- Draw X11 windows as native platform windows
- Basic window manager functionality: move, resize, minimize, maximize, close
- Translate native input events into X11 input events
- Well abstracted API for extension to other platforms

Secondary Goals

Your project: **X.Org Rootless Compositing Window Manager**

Extra credit:

- Support for additional platforms
- Advanced window manager functionality:
 - Fullscreen
 - Integration with native virtual desktops
- Other native platform integration:
 - Clipboard
 - Tray icons
- Multitouch
- Accelerated rendering: 2D, 3D (OpenGL/GLX)

Similar Projects

Existing projects with similar goals:

- XQuartz
- XWin

How do they differ from this project?

- Server versus client managed windows
- Ancient codebase predates modern extensions (DAMAGE, COMPOSITE)

Please, help us throw them away in favor of your code!

X Community

Getting help and reporting results

- Us
- Portland X experts (Intel and elsewhere)
- IRC: #xorg-devel, #xquartz
- `xorg-devel@lists.x.org`,
`xquartz-dev@lists.macosforge.org`

Summary

- Join the bearded X gurus (beard optional)
- Hack on an Open Source project
- Do something highly visible

Questions?