



# Deconstructing X Server Configuration

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# Xorg Config Is Terrible

- Config-less operation barely works
- Config file has to be complete
- And is really fragile
- And poorly documented
- Encourages or forces drivers to do things only once

# What do we need to configure?

- Input
- Cards
- Monitors
- Extensions
- Core

# How do we want to configure it?

- Fully dynamic is really hard
- Even just automatic would be nice
- Automatic is a natural path to dynamic

# Automatic config: extensions

- Section "Module", Section "Extensions"
- dpms, -dpms, -tst, -x, +/-extension, +/-xinerama, +/-kb, -disableVidMode, ...
- You must be joking
- Almost none of this should need to be specified
- Most of it shouldn't even be loadable

# Automatic config: input

- Single seat vs. multiseat
- evdev vs. Xinput
- evdev hotplug working in patches
- Not feature complete yet: XKB, absolute coords...
- Have nothing like XKB geometry for pointers
- Still want device knowledge

# Automatic config: cards

- Autoconfig works sort of by luck
- Expose device ID tuples to loader
  - radeon vs. fglrx
- Probe for dumb bus cards?
- Try-harder mode for smart drivers

# Automatic config: monitors

- radeon does best, but **ugly** code
- DDC info can't always be trusted
  - At best you can trust the monitor name
  - Might need override files
- Can do a decent heuristic
- Need to pick sensible defaults
  - MergedFB/TwinView
  - Default sync ranges

# Bridge: core and userproofing

- Parser hacks – partials, includes
- Safe mode for last-known-good boot
- Ignore bogus paths, etc.
- Expose configuration to external apps
  - protocol or window properties
  - serializable config
  - Xorg -devicelist, Xorg -driveropts

# Dynamic config: extensions

- Why should you restart?
- Suggestion: Server "embryonic" mode
- Needs significant API rework
- Dependency tracking
- Wrapping any layer

# Dynamic config: input

- Terrible UI for configuration
- No good way to disambiguate
- Reassignable axes
- Server selection for multiseat
- USB makes this really hard

# Dynamic config: output

- Can be pluggable! sisusb
- Screenplug is hard
- Significant memory management work needed
- Lots of intermediate steps with RANDR
  - Simple resize
  - Resize from 0x0 for output enable
  - Limited cardplug through HAL
    - start new server on plug
    - gtk migration? hide behind Xdmx?

# Design

- Totally an open question
- HAL vs. extensions
- Need some input from the community

# Discussion