

# MDM

“Multiseat Display Manager”

Paulo Ricardo Zanoni  
paulo@c3sl.ufpr.br

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# Explanation

*I've written this presentation in English because I want to add it to the repository documentation =)*

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# Assumptions

- *I assume you know how multiseat works =)*
  - or should work
- *If you don't, read this:*
  - [wiki.c3sl.ufpr.br/multiseat](http://wiki.c3sl.ufpr.br/multiseat)
- *If you speak Portuguese:*
  - [www.inf.ufpr.br/prz05/presentations/multiterminal.pdf](http://www.inf.ufpr.br/prz05/presentations/multiterminal.pdf)
- *If you don't know what's PRD, mt2, sibi, DINF, UFPR or any other words I used here, no problem, just keep reading*

# The problem

- *Make a generic package for all multiseat technologies*
  - GDM, KDM, XDM, XDMCP, “sibi”, “Sistema de provas UFPR”
  - Xephyr, Xnest, Multiple X Servers, Xat, VNC
- *Here, we use XDMCP and Xephyr, at home people might want to use GDM and Xephyr, soon we'll use multiple X servers*
- *What can we do?*

# MDM

- *Multiseat Display Manager is a “wrapper” on the actual display manager*
- *It detects hardware, associates seats with devices and then calls the real display manager*

# Modes

- *The “mode” is a bash script, which is included and do the “display-manager-dependent” part*
- *Same idea as a “driver” or “plugin”*
- *Add file in /usr/share/mdm/modes/*
- *Change “MULTISEAT\_MODE” variable in mdm.conf*
- *Do any other configuration changes needed (like changing the XDMCP server address)*

# The scripts

*mdm -> mdm-bin -> mdm-start-seat*

- *mdm*
  - is the /etc/init.d/ guy
- *mdm-bin*
  - calls create-xorg-conf
  - finds out how many seats we have
  - starts any needed underneath X server
  - calls multiple instances of mdm-start-seat



# The scripts

- *mdm-start-seat*
  - asks user to press keys and buttons associated with the seat
  - tells the “mode” to start the X server
  - reconfigures devices after the X server dies

# Everyone uses:

- *mdm-common*
  - useful functions
  - loads `mdm.conf`
  - loads `multiseat-mode`
- *mdm.conf*
  - the config file
- *discover-devices*
  - finds video cards and input devices
  - I'm really NOT happy with its implementation

# Other guys

- *create-xorg-conf*
  - creates xorg.conf!
- *read-devices*
  - used to detect key or button press
- *write-message*
  - our user interface!
  - writes things like “Press F1” on the screen

# The mode

- *Is a “sourced” bash script*
- *Has to define these functions:*
  - display\_manager\_init
  - display\_manager\_start\_monoseat
  - display\_manager\_start\_underneath\_xserver
  - display\_manager\_start\_seat
  - display\_manager\_stop

# Current modes:

- *xephyr-xdmcp*:
  - runs X on a (possibly) remote XDMCP server
  - doesn't use \*DM
  - should be used in DINF and PRD
- *xephyr-gdm*:
  - runs stuff locally, using GDM
  - uses “gdmdynamic” to start servers
  - small and simple code =)

# The packages

- *mdm*:
  - has the main scripts and the “default modes”
  - “default modes” are modes which do not depend on anything that the *mdm* package already depends
    - currently, only “xephyr-xdmcp”
    - we could write one for “sibi” and one for the “sistema de provas UFPR”
- *mdm-`mode-name`*
  - depends on something that *mdm* doesn't (like GDM)
  - the only one I've written is “xephyr-gdm”

# The dependency

- *libx11-6*:
  - we need a modified version of libx11-6
  - so Xephyr won't keep randomly crashing
  - [bugs.freedesktop.org/show\\_bug.cgi?id=6820](https://bugs.freedesktop.org/show_bug.cgi?id=6820)

# The repository

```
paulo@mt2:~/mdm$ ls -F
```

*AUTHORS*

*COPYING*

*doc/*

*MAINTAINERS*

*README*

*compiled/*

*dependencies/*

*extra-modes/*

*mdm/*

*TODO*



# The repository

- *dependencies: libx11-6 patch*
- *mdm: main “mdm” package (with default modes)*
- *extra-modes: any other extra modes (currently, xephyr-gdm only)*
- *doc: this presentation and other documents*
- *compiled: stuff already compiled (not guaranteed to be the most recent)*

# Compiling

- *Usually, choose one of those:*

```
$ make DESTDIR=$destdir {,install}
```

```
$ make ${DISTRO_NAME}{,-install}
```

- *Example:*

```
$ cd mdm
```

```
$ make ubuntu-8.04
```

```
$ sudo dpkg -i packages/mdm_0.0.1_i386.deb
```

- *Or*

```
$ cd mdm && sudo make ubuntu-8.04-install
```

# TODO

- *Add internationalization support!*
- *Add support for cards with multiple outputs (Aramis working on it)*
- *Find a reliable way to detect input and output devices*
  - input: hal?
  - output: fix Xorg? (and wait years for the distros)
- *Other stuff: read the TODO file*

# TODO

- *Fix the ugly Makefiles*
- *Update the WIKI with the new stuff*
- *Fix the “/ ? ° ¿” abnt2 key*
- *Fix “ctrl+alt+backspace” in Xephyr*
- *Tell everyone about the package*
- *Update this document after fixing stuff*

# Xorg-related problems

- *detect which cards can have multiple outputs*
  - need to do this before launching X, so we can set the “Virtual” parameter in xorg.conf
    - extend xrandr to change “virtual”?
- *detect the cards, their PCI devices and drivers*
  - if you run X with no xorg.conf, only one screen will start
    - IMHO, this should be fixed in Xorg
- *launch X with the maximum possible resolution*
  - WITHOUT knowing the monitor frequency!!
    - can xrandr do this for us?

# DINF/PRD

- *Atualizar X e drivers*
  - os do Debian Etch não suportam as plaquinhas novas
  - os Xephyrs mais novos precisam só do patch do “-geometry”
- *Vou tentar fazer um backport do Lenny assim que tiver tempo disponível*
  - trocentos pacotes necessários!
- *Pro PRD, será necessário de mais um pacotinho pra “adaptar” o mdm com o sistema de boot remoto (mdm-netboot-aufs ?)*

# Conclusion

- *Finally something that works everywhere*
  - After 1 year of waiting
  - Implemented in less than 3 weeks!

Questions?  
Suggestions?  
Complaints?

*Thank you!*

*:wq*