Or, Updating the Cataloger’s Workstation – a Linux Success Story
About Me

This is the first production Linux Mint system I have set up, but I have set up other Linux workstations and servers since about 1998.

I work as an independent consultant performing system and small network administration, and writing specialized technical documentation.
Acknowledgments

• The Linux Mint logo used under the Creative Commons Attribution-3.0 International License.
Outline

• The Cataloger's Workstation
• The motivating events
• New hardware
• New software
Usage and Requirements

Lead cataloger at Project Gutenberg – more than 30,000 bibliographic records updated.

Personal use – artwork, music, writing.

'High availability' – ‘identical’ cold spare.

Somewhat cost-sensitive.
Workstation – hardware history

1999: no-name AMD K6-2

2003: IBM Intellistation 1GHz P3s

2010: Dell Precision 390s
Old hardware details

Dell Precision 390's (2007-2008) –
3 systems from DFS, about $300 ea.
Nvidia Quadro FX 3450
Core 2 6420 @2.13 GHz, 4 MB cache
4 GB ECC memory
Old hardware details
Workstation – software history

- Red Hat
- Pink Tie
- Debian
- Ubuntu
- Ubuntu 10.04 LTS – the shark jumps
- First Mint explorations
- Precise Pangolin (Gnome) – Ubuntu’s last gasp
Mint Project

The purpose of Linux Mint is to produce a modern, elegant and comfortable operating system which is both powerful and easy to use.

Started in 2006, Linux Mint is now the 4th most widely used home operating system behind Microsoft Windows, Apple Mac OS and Canonical's Ubuntu.
Many Flavors of Mint

- Cinnamon
- Mate
- Xfce
- KDE
Cinnamon Mint 17 – Live DVD Test

LoC catalog timeouts – fixed
Youtube videos – fixed
PDF fonts in browser – fixed
Streaming audio (.m3u) fails
Fans run full speed
Getting Google was a pain
Cinnamon Mint 17 Installed

• With the recommended but NOT default video driver:
  Banshee can play streaming audio
  Setting up Google for default search better
  Turns down video card fan, but not all fans

• Figured out Precise Pangolin with Gnome
  - abandoned Mint. For now.
Motivating Events

Memory failure in workstation

Video failure in backup system

Disk errors in workstation
New hardware details
New hardware details

EGlobal Fanless MiniPC
about $400
Intel Core i5 5200U – max TDP 15W
16GB Ram, 256GB SSD
2 HDMI, 2 Gigabit Ethernet
New hardware details

4 USB 3.0, 2 USB 2.0
Dual antenna wireless
Intel Iris 6100 Graphics

& Gigabyte BRIX as spare
($200 on CL)
New hardware disadvantages

Hard to purchase

Would not recognize LG USB 2.0 external DVD GE24NU40 – used IDE DVD and USB adapter.
Cinnamon Mint 18

- Uneventful install

- Still won’t recognize LG external DVD

- Mouse button not recognized after waking from hibernation.
Cinnamon Mint 18 – post install

- Difference: flash drives mount as /media/username/XXXX-XXXX, instead of /media/XXXX-XXXX. Requires change to backup script.

- Find packages I need to install:
  deborphan -a -p 2 | sort > old.txt
  deborphan -a -p 2 | sort > new.txt
  diff new.txt old.txt | grep "->" >listToGet.txt
Cinnamon Mint 18 – post install

• Canon printer support?

• Install
  LinuxUFRII_PrinterDriver_V320_us_EN.tar

• Not where I found it last time

• Hard to find, look on Canon Europe or Canon Australia site
Lessons

● Linux works well on old hardware; it works best on mainstream hardware.

● Unexpected hardware incompatibilities can bite you at any time.

● Avoid Canon printers for use with Linux

● More than one way to solve a problem – hardware vs. software

● Live DVDs are a useful but not perfect test
Or, Updating the Cataloger’s Workstation – a Linux Success Story
I gave a Linux Mint presentation about 2 years ago, when it looked very likely that I would update the system that is describe here to Mint.

This tells you how things actually turned out. The system I will describe has been in use about four months.
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RedHat, Pink Tie, Debian, Ubuntu, Mint

XML or SGML based mil-spec documents

Run the Visual C++ debugger or read a switchbox schematic.

Generate 'picture books' for custom test program sets using Python and MS Word.
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Outline

- The Cataloger's Workstation
- The motivating events
- New hardware
- New software

Here's what we'll cover...

I provide technical support for the lead cataloger of Project Gutenberg.

What prompted this second round of Mint exploration

What new hardware I used

What new software I used
Usage and Requirements

Lead cataloger at Project Gutenberg – more than 30,000 bibliographic records updated.

Personal use – artwork, music, writing.

'High availability' – ‘identical’ cold spare.

Somewhat cost-sensitive.

Subjects, authors, LoC Class number, content notes, etc.

Informal measurements show increased downloads after cataloging.

This system has a backup of /home and /etc 1/month, three rotating backup media.

No, it doesn't use Bacula.
Workstation – hardware history

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Nvidia Quadro FX 3450
Core 2 6420 @2.13 GHz, 4 MB cache
4 GB ECC memory

Or Better – specs from weakest system.

Acquired 2010
Old hardware details

- Large tower, big power supply
- Easy to work on
- Hard to move
Workstation – software history

- Red Hat
- Pink Tie
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Pink Tie was from CheapBytes – a Red Hat based distro.
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Started in 2006, Linux Mint is now the 4th most widely used home operating system behind Microsoft Windows, Apple Mac OS and Canonical's Ubuntu.

This message brought to you by the number 7 and the letter G.
Many Flavors of Mint

- Cinnamon
- Mate
- Xfce
- KDE

Mint was on Release 17.

Cinnamon most popular.

The other versions get less developer attention.
Cinnamon Mint 17 – Live DVD Test

LoC catalog timeouts – fixed
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Fans run full speed
Getting Google was a pain

1.2 GB
Cinnamon Mint 17 Installed

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  - abandoned Mint. For now.

Some problems fixed by video driver install.

https://bugs.launchpad.net/linuxmint/+bug/1330300

and 1330301

Lesson: Live DVDs are useful, but not perfect test run tool.
Motivating Events

- Memory failure in workstation
- Video failure in backup system
- Disk errors in workstation
New hardware details

Hold up highlighter.

Hold up BRIX.

Inspired by 3 Feb 16 Blog entry at ‘Coding Horror’ titled ‘The Scooter Computer’
New hardware details

EGlobal Fanless MiniPC
about $400
Intel Core i5 5200U – max TDP 15W
16GB Ram, 256GB SSD
2 HDMI, 2 Gigabit Ethernet
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New hardware disadvantages

Hard to purchase

Would not recognize LG USB 2.0 external DVD GE24NU40 – used IDE DVD and USB adapter.

Purchasing from AliExpress with my credit card was a major challenge – Tried customer service, then fraud prevention, and finally travel department made it happen.
Cinnamon Mint 18

- Uneventful install

- Still won’t recognize LG external DVD

- Mouse button not recognized after waking from hibernation.

Hibernation matters less with very low power consumption.
Cinnamon Mint 18 – post install

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Ask for questions and discussion.