Linux at Three Regional Universities

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Nationwide Usage

- Ha!
- Double Ha!
- Educate me???
Why do you care?

- It's OK not to care about something far away.
  
  - However --

- Reflective of what's goin' on.
- Reflective of the future.
- Maybe you've been out of school and are curious.
Which Three Universities

- Our peninsula is very remote and forested.
- Population less than Christchurch.
- We got ~7 meters of snow last year. It's -15C.
- On the Peninsula, we have four different colleges.
  - Serious research school
  - Mid level, mid-size
  - Small, regional university
  - Community College
So far away
Notice the deer
Surfing and Sailing
Michigan Tech

- Serious research school
- 7,000 students including 1,300 grad students
- 200 CS majors
- Lots of Sysadmin Majors
- CS PhD program
Linux at MTU

- Linux is used in several sysadmin courses such as Computer Networking.
- Linux is the main subject of two sysadmin courses.
- Linux is used in the security course.
- The researchers use Linux "alot".
- Inactive L.U.G.
Sysadmin at MTU

• Study of computer systems administration using standalone and networked systems. Topics include user and process management, backup/restore, adding devices, installation, maintenance, networking hardware and protocols. This course includes a 3-hour lab period per week. Not only will this prepare students for CompTIA’s Linux+ Certification, the course will equip all students with the information necessary to remain current with industry changes.
Scripting Languages at MTU

- Yes, and lots of them.
- Perl, Python, etc.
Northern Michigan

- Regional University
- ~9,000 students
- ~140 CS majors
- Growing CIS major
- No PhD Programs
- Olympic Programs
Linux at NMU

- Required for a sophomore and senior network programming course.
- Option Linux sysadmin course.
- Inactive L.U.G.
Linux Sysadmin at NMU

• One main teacher (me).
• App of the week (Apache, NFS, Email, etc.)
• Shell scripting at the end.
• Big project at the very end.
  – Menu of things to set up for points
  – Lots of apps
  – Compile kernel is on there too
  – Write shell scripts is on there too.
  – Beer offer.
Teaching Linux Sysadmin

- No problem picking distributions.
- No problem picking topics.
- Huge problems with disparate incoming knowledge.
  - Let them pair up (but help the clueless).
  - Make sure it's not a one-carries-all situation.

- Theory???
Kernel Hacking at NMU

- Difficult to do
- Difficult to teach
- Best students did great, but you cannot teach to the best students.
Lake Superior State

- ~2,600 students
- ~70 CS majors (combined with Math)
- Budget cuts
- Banned word list
  Swag, cra-cra
Linux at Lake State

- One professor who does it (Evan).
- Teaches system admin and PHP/MySQL.
- No L.U.G.
- Not lots of research
What's Missing

- Big Power Universities
  - 40,000 students at both Michigan and Michigan State.
- Community Colleges
  - Anecdotally, no usage.
  - They teach Windows(tm)
- Canada
  - I think it's the same
- High Schools
  - Robot club
Usage for Projects

- When students do stuff, what platform do they pick
  - Robots with Arduino (Linux)
  - PHP/MySQL hosted on Linux
  - Apps hosted on iOS or Android
  - App with a web site back end (Traffic tickets)
  - Video games (never on Linux)
  - Galactic simulations (sometimes on Linux)
  - Predicting football games (not for profit)
Usage for Infrastructure

• Web sites
  – All of them

• Beowulf Clusters
  – All of them

• Databases (grades, payroll, etc)
  – Most of them
  – BSD is also a thing
Obstacles

- No usage in the high schools
- Need to attract liberal studies students
- Uni will support Windows and Macs but not Linux
  - They have good reasons
  - They totally know Linux though
- Does not meet educational needs??????
  - Is sysadmin a core concept?
  - Is there a sysadmin major?
What Would Make it Better

- Really, maybe it's OK
  - Servers but not desktops might reflect real world usage??
- No, we don't need an edu-distro.

- A very easy compiler Visual C++/Java is pretty cool.
- Add system administration to the CS core.
- Money to go to PenguinCon
Questions?