

# Linux at Three Regional Universities

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# Nationwide Usage

- Ha!
- Double Ha!
- Educate me???

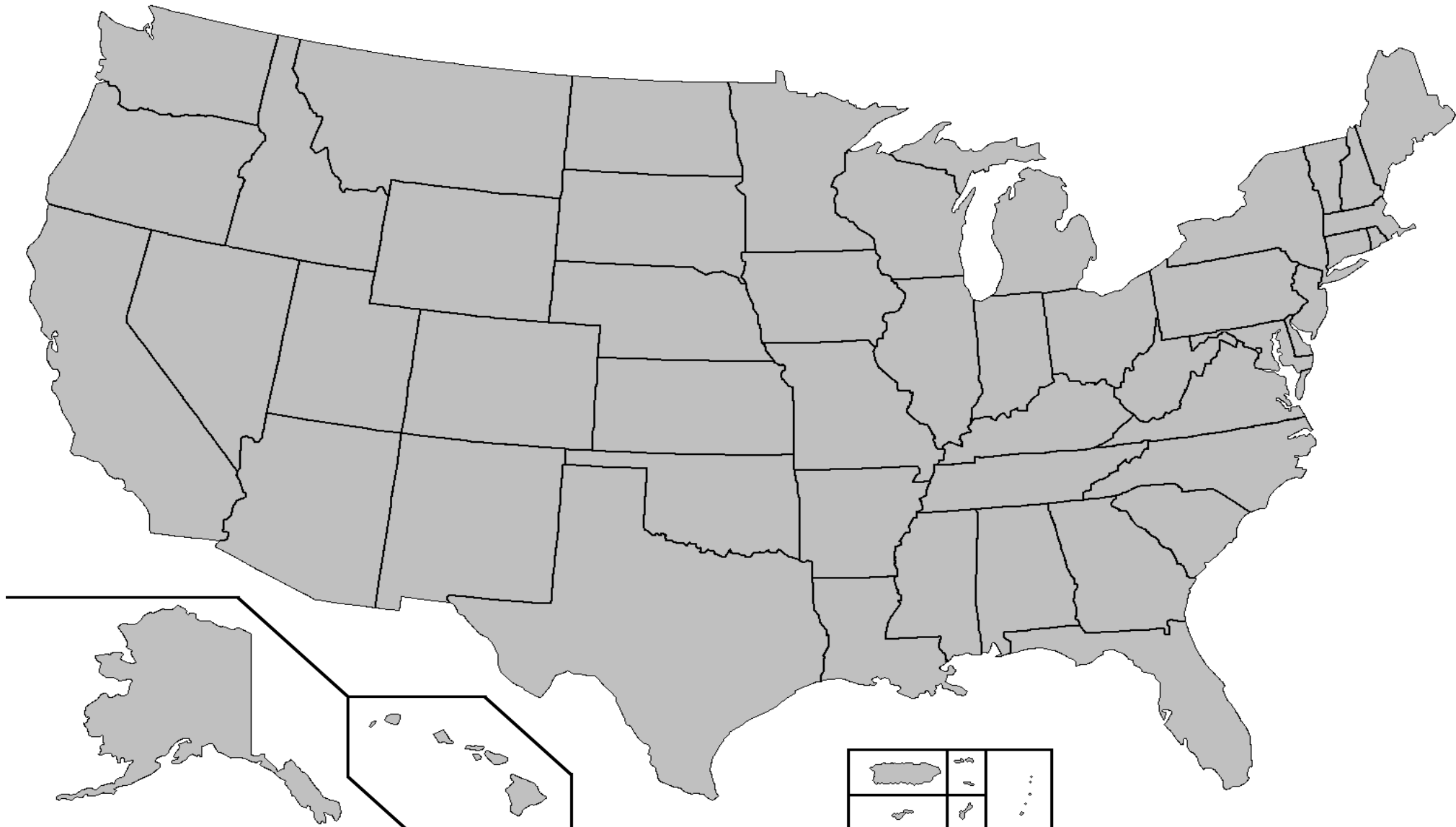
# Why do you care?

- 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?