Back to the Future:
Linux Thin Client

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Today's Session

1. What is LTSP?
2. How LTSP Works
3. Benefits and Drawbacks
4. Actual Install of K12LTSP
5. My Experiences with LTSP
6. Q & A

Caveat Emptor

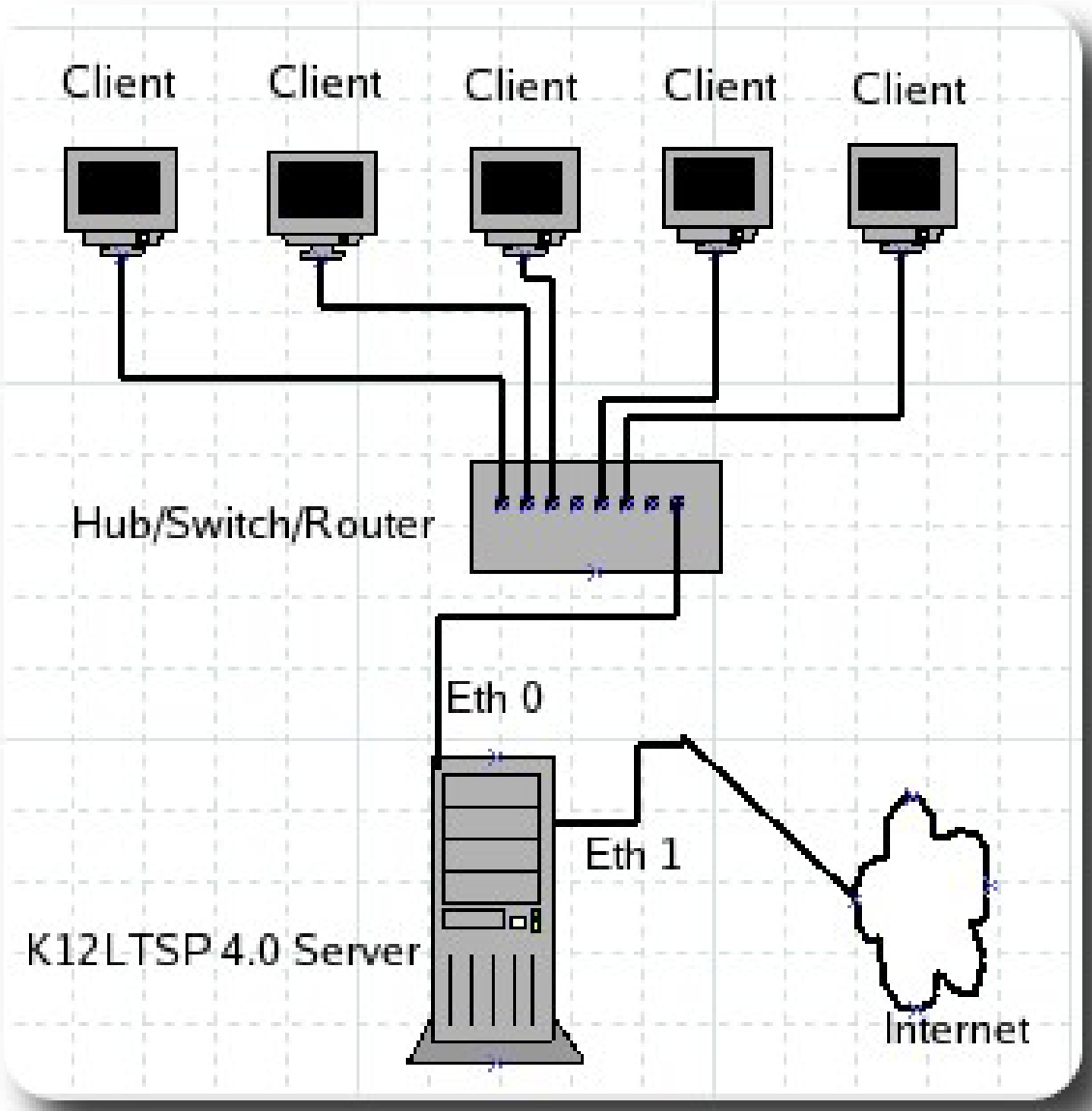
I am not a Linux expert!
There is a lot that I have to learn.
Be kind…

What is LTSP?

"Breathe new life into used machines"

- Open-source Software
- Server
- Workstations (boot off of server)
- Back to the Future
- Magic

How LTSP Works



Demonstration

Log into LTSP Using VNC
Log into Windows from LTSP
Log into home LTSP Using VNC
Log into Hawaii LTSP Using VNC

The Story

Schools' Computer Problems

You know them as well or better than I do:

- Budget Woes
- Technical Woes
  - Maintenance
  - Viruses
  - David and Junior High
- Time Woes
- Non-working, Unused, or Unusable Equipment
- Donations: Often Just "Dumpstered"

Benefits of LTSP--Maintenance

- Ease of installation
- Client/Server
  - One Machine
  - Easier Backup, Maintenance
  - Login Machine Independent: Kids Fighting in Hawaii
- Other Reduced Maintenance Issues
  - Linux Reliability (3X Help)
  - Viruses (lack thereof)
  - No Individual PC Maintenance (plug and play)
  - Remote Access for Troubleshooting
  - Reduced Wear & Tear – Solid State…
- Ease of Expansion or Replacement
- Greatly Reduced TCO
- Community of Users Used to Working for Free

Benefits of LTSP--Financial

- Reduced Acquisition Costs
  - Server
  - Can Accept Donated PCs
  - E-Rate Client-Server Technology
- Utilizes Open Source Software for client boot
- Can Utilize Open Source Software for users
  - More Software Choices for Less Money
  - OpenOffice Recent Reviews
  - No License Fees
  - No Upgrade Fees

Benefits of LTSP—Usability

- Linux
  - Becoming Better Known
- Windowing GUI—kids have no problem using
- Can Run Microsoft ™ Software, Server Editions
- Users Can Remotely Access System with Free Software Over Internet

Benefits of LTSP—Refurbishers

- Reduced PC Refurbishment Tasks
- Can Use P1 PCs
- Saves Landfill
- Reuse, not “Recycling”
- Can Remove Hard Drives

Drawbacks to LTSP

- Linux
  - Jim Lynch Story
- Not Microsoft ™
- Microsoft ™ Windows ™ Software Difficult to Run or Requires Server Edition
- Software Installation, Configuration Require Learning
- Floppy & CD Access Not Perfected, Sound

Pickup vs. Van

- Different Purposes
- Shift on the fly

Setting Up the Thin Clients

- Boot
  - Floppy
  - CD
  - Hard Drive
  - NIC
- Configuration Issues
  - Mouse
  - Video
  - Sound

K12OS.org
K12Linux.org

K12LTSP.org
Linux Terminal Server Project
Home Page

Welcome to the K12 Linux Terminal Server Project!

Supported by LinuxFund.org

K12LTSP 4.1.0 is out!!!

K12LTSP is based on RedHat Fedora Linux and the LTSP terminal server packages. It's easy to install and configure. It's distributed under the GNU General Public License . That means it's free and it's based on Open Source software.

Once installed K12LTSP lets you boot diskless workstations from an applications server. You can use old PC's as diskless clients or buy new ones for under $200 each.

All applications run on the terminal server. Workstations are "thin." They have no software or hard drives. Thin-clients are perfect for schools because they are easy to install and require little maintenance. They are reliable and immune to malicious tampering and viruses.

Recent / Quick Links:

- K12LTSP 4.1.0 is released!!!
- OS-X Mini HowTO
- Riverdale High - K12LTSP Case Study
- K12OSN Listserv | Archives
- Order a CD Set - $15.00
- Free Downloads
- Linux Classroom Tour
- Application for FREE Intel processors for schools and information about STRUT .
- K12LTSP Case Studies
- K12LTSP News Links
- Back by popular demand: Toaster Oven Linux Appliance!
- Terminal Hardware Guide with Prices - Use this page to find vendors for hardware...

Overview of a K12LTSP Open Source Lab:

A default K12LTSP installation uses two ethernet cards;

Terminals

My Story

- My learning about LTSP, ACE.
- Order a Sample Server
- Visit with Local School District
  - $160k
  - 61 Windows Programs

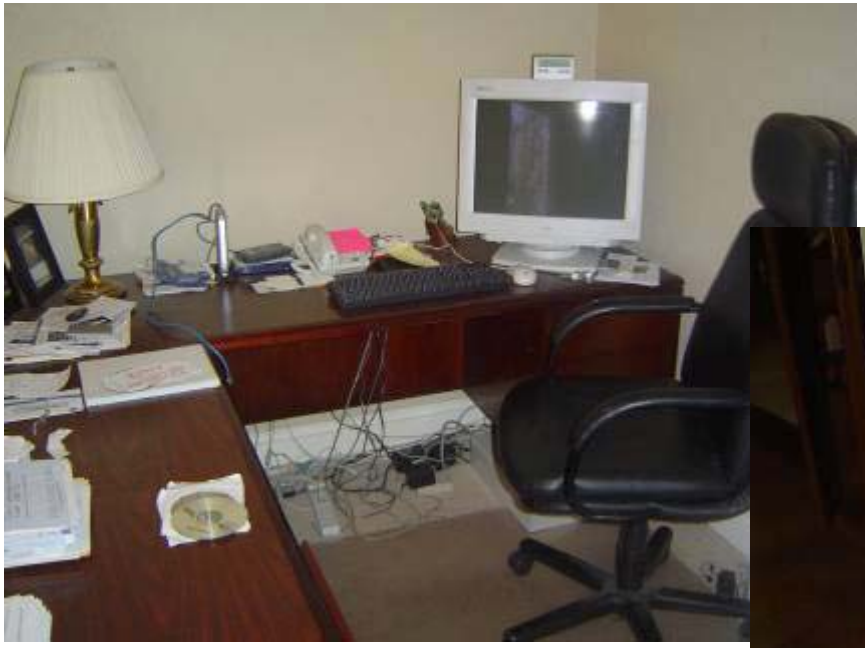
Canada

- Phone Call with Wayne Tosh
  - Visit Plans
  - Last Question
- Compaq P1, 200 MHz, 16 MB--Was There Dancing?

Canada

My Home Setup

My Home Setup II



First Install—Hilo, Hawaii

- 300 Students
- 40 Desktop Computers
- 1 Lab of 15
- Network, No Internet, No Tech

Pre-Trip

- Purchased Server, Switch, Cable Connectors, Cable (there), Print Server, etc.
- Set Up K12LTSP
- Configured the Server and Additional Software

Actual Server Install

- 15 Minutes

Cabling

- 5 Hours

Success!

- First Class Fighting
- Dual-boot Mode
- Added 3 PCs Right Away
- Tracking Memory and CPU Usage
- XLOGO

Installation

Start and Actual Installation,
switch back and forth from the slides

Things I Add after Standard Install

- Flash, Adobe, Java (included)
- Evolution Local Emailing
- TeachersTool
- VNC
- Rdesktop / Windows Terminal Services
- Network / Workstation Printers
- Specialized “Launchers”

Demonstrations

- VNC
  - Local Network
  - Home LTSP Setup
- Rdesktop
  - Local Windows Server
  - Yuba City Windows Server

Things I WANT to Add after Standard Install

- Squidguard
- Sound
- VNC reflector
- RealPlayer (? Doodle Effect)
- Multiple Server Support
- Backup Support
- LTSP on Top of Redhat Enterprise
- Superfast Servers

Ideas

- LTSP Installs (Commercial Question…)
- Consulting
- Pre-configured Bundles (e.g., 5-user)
- Pre-configured Servers
- Workstations
- Microfinance Projects?

Q&A