

LinuxForum 2003, LLL Project

Alain Knaff
alain.knaff@linux.lu

Context and Goals

Linux for Luxembourgish Highschools

- Local services: file storage, printing
- Full-featured internet access: mail, www, etc.
- Ease of Administration

The work has been started as an initiative of Kiwanis Club Esch, and has been partially funded as a "*Projet d'établissement du LTNB*" (1994-2000)

Features

- Windows file and print serving
- E-mail: sendmail, Horde/IMP
- Web browsing and hosting
- Firewall
- Pdf Printer
- Client PC installation: UDPcast
- Administration via webmin

Samba file serving

- Users and passwords managed by Linux server
- Files directly accessible from Windows clients
- Fine-grained permissions
- Available drives
 - ◇ Specific to student: P:, S: and W:
 - ◇ Common to a class: G:, T:
 - ◇ Public (readable for everybody)
 - ◇ "Project"-related drives

Explorer screenshot



Samba print serving

- Printers accessible from Linux and Windows clients
- Supported connectivity:
 - ◇ HP Jet-direct (network printer)
 - ◇ Directly attached to server
 - ◇ Attached to windows workstations
- Print job accounting

Email

- Friendly email addresses: First.Last@school.lu
- E-mail accessible from within via Imap (Mozilla)
- E-mail accessible from outside via IMP/Horde webmail
- Spam filtering

Imp Webmail Screenshot

Mail :: INBOX - Konqueror

Location Edit View Go Bookmarks Tools Settings Window Help

Location: <https://lll.lgl.lu/horde/imp/mailbox.php?mailbox=INBOX>

INBOX Compose Folders Options Search Address Book Help Logout Open Folder INBOX

INBOX 1 to 7 of 7 Messages

Select: [v] Mark as: [v] Move | Copy Messages to [v]

Delete | Undelete | Blacklist Hide Deleted | Purge Deleted

<input type="checkbox"/>	#	Date	From	Subject [Thread]	Size
<input type="checkbox"/>	1	06/27/2003	swurd	[mtools] bug report: about mcopy memory leak,	2kb
<input type="checkbox"/>	2	06/06/2003	Federico G. Schwindt	[mtools] diff	3kb
<input checked="" type="checkbox"/>	3	09/16/2003	georges.schutz@tudor.lu	LinuxDays 2003 Tutorials: Basic and Advanced Descr...	2kb
<input type="checkbox"/>	4	09/22/2003	Eric Dondelinger	LinuxDays 2003	3kb
<input type="checkbox"/>	5	09/22/2003	georges.schutz@tudor.lu	Re: Laptop (fier Internetstuff Deifferdeng)	4kb
<input checked="" type="checkbox"/>	6	09/23/2003	patrick peiffer	Cours fir Formatioun	2kb
<input type="checkbox"/>	7	01:44:12 PM	Wolfgang Moser	Commodore C1581 diskette parameter for /etc/mediap...	3kb

New Seen Answered Important Deleted

Delete | Undelete | Blacklist Hide Deleted | Purge Deleted

Select: [v] Mark as: [v] Move | Copy Messages to [v]

Web browsing

- Squid web cache

- ◇ Accelerated browsing experience
- ◇ Possibility of blocking sites with questionable content
- ◇ Accountability: log of URL's visited

Web hosting

- Public school web page
- Internal school web page
- Personal web page for each student (W: drive)

Firewall

- Protects the school network against attacks from outside
- Protects the outside world against attacks by the students
- Enforces usage of web proxy
- Allows flexible allocation of IP addresses using Network Address Translation (for FTP, IRC, ...)

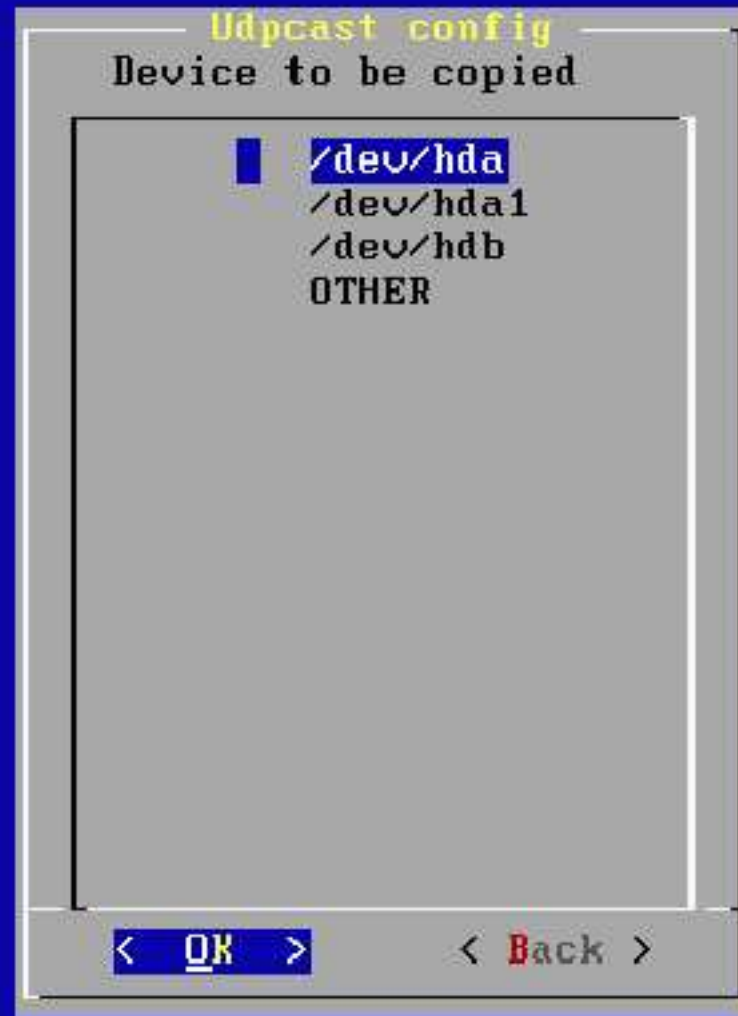
Pdf Printer

- Convert Office documents to PDF format by printing them to a special network printer
- There is also an email-based converter:
`office2pdf@office2pdf.l111.lu`

Udpcast

- "Cloning" of client PCs
 - ◇ For "first time" installation
 - ◇ For "repairing" PCs after students had their fun with them
- Takes advantage of Ethernet multicast to send to multiple destinations at once simultaneously
- Example: partition of 5 GB can be copied to a whole classroom in under 8 minutes
- Easy-to-use menu driven boot disk
- Available at <http://www.UDPcast.linux.lu>

Udpcast screenshot



Webmin administration interface

- User management
- Firewall administration
- Fine-grained access control (access to network services, shared folders and exam classes)

Webmin screenshot

The screenshot shows a Konqueror browser window titled "Administration des utilisateurs - Konqueror". The address bar contains the URL "http://localhost:10001/school/addUser.cgi?cat=ELE". The browser's menu bar includes "Location", "Edit", "View", "Go", "Bookmarks", "Tools", "Settings", "Window", and "Help". The toolbar contains various navigation icons. Below the toolbar, there are several bookmarked sites: "Adm", "Projects", "Activism", "News", "Linux", "Misc", "Fun", "Search engines", "Software", and "Listes".

The main content area of the browser displays the Webmin interface. On the left, there is a navigation menu with links: "Index de Webmin", "Index du Module", "Aide", "Configuration du Module", and "Aide". The main heading is "Administration des utilisateurs".

The primary section is titled "Création d'un nouvel étudiant" (Creation of a new student). It contains a form with the following fields and values:

- Catégorie: **Élève**
- Nom:
- Prénom:
- Date: M 2003
- Classe:
- Alias Mail:
- Numéro de sécurité social (optionnel):
- Mot de passe:
- Mot de passe (pour confirmation):

At the bottom of the form is a button labeled "Créer l'étudiant".

Below the form, there is a link "Retourner à index" with a left-pointing arrow.

The status bar at the bottom of the browser window displays "Page loaded."

Client side Linux

- Client-side Linux at the LGL, Sainte Sophie and Wilwerwiltz
- "Programming" classes, networked games
- Access to server via NIS and NFS

Key figures

- 4 schools
- 4000 students
 - ◇ 1000 at LTNB (since 1994)
 - ◇ 1250 at LGL (since spring 1999)
 - ◇ 1250 at LTML (since fall 1999)
 - ◇ 625 at EPND (since spring 2001)
 - ◇ InternetStuff Wilwerwiltz (since summer 2003)

Contact

- <http://www.lll.lu>
- alain.knaff@lll.lu