

"Debian Edu / Skolelinux Lenny 5.0.4+edu1 Manual"

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1 Manual for Debian Edu 5.0.4+edu1 Codename "Lenny"

This is the (*still incomplete*) manual for the Debian Edu Lenny 5.0.4+edu1 release.

This document was put into the `debian-edu-doc` package on 2010-05-16.

Este documento necesita tu ayuda. Puedes ayudar en <http://wiki.debian.org/DebianEdu/Documentation/-Lenny/> es un wiki, actualizado frecuentemente.

Translations es parte del paquete `debian-edu-doc` que puede **ser instalado en un servidor web**

2 Acerca de DebianEdu y Skolelinux.

Skolelinux is a Linux distribution made by the Debian Edu project. As a **Debian Pure Blends** distribution it is an official **Debian** subproject.

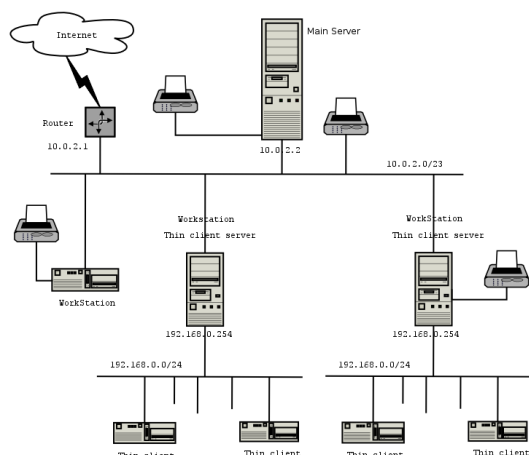
Lo que esto significa, es que Skolelinux es una versión de Debian que proporciona un ambiente "out of the box" de una red escolar completamente configurada.

In Norway, where Skolelinux was started, the main target group initially were schools serving the 6-16 years age bracket. Today the system is in use in several countries around the world, with most installations in Norway, Spain, Germany and France.

3 Arquitectura

Esta sección del documento describe la arquitectura de red y los servicios proporcionados por una instalación Skolelinux.

3.1 Red



El fuente del paquete `debian-edu-doc` incluye esta imagen como un archivo `dia`.

La figura es un esquema propuesto de la topología de red. La configuración predeterminada de Skolelinux asume que hay un (y sólo uno) servidor principal, y permite incluir tanto servidores de clientes ligeros (asociados con clientes ligeros) como puestos normales. El número de puestos puede ser tan grande o pequeña como se quiera (desde ninguno a muchísimos). Lo mismo para los servidores de clientes ligeros, cada uno de los cuales está en una red separada, de forma que el tráfico entre los clientes ligeros y su servidor no afecta al resto de los servicios de red.

La razón por la que sólo puede haber un servidor principal en cada red es que el servidor principal proporciona DHCP, y sólo puede haber una máquina haciendo eso en cada red. Es posible trasladar servicios del servidor principal a otras máquinas configurando el servicio en otra máquina, y posteriormente, actualizando la configuración de DNS para que apunte al alias DNS de ese servicio a la máquina correcta.

Para simplificar la configuración estándar de Skolelinux, la conexión a Internet va sobre un router separado. Se puede configurar Debian con un módem o una conexión RDSI, sin embargo no se ha intentado hacer tal configuración para Skolelinux por defecto. (las modificaciones necesarias para ajustar la configuración por defecto a esta situación deberían documentarse por separado).

3.1.1 Servidor principal (tjener)

Una red Skolelinux necesita un servidor principal (también llamado "tjener" que significa "servidor" en Noruego) que por defecto tenga la dirección IP 10.0.2.2 y sea instalado seleccionando el perfil servidor principal. Es posible (pero no requerido) seleccionar e instalar también los perfiles de servidor de cliente ligero y estación de trabajo

3.1.2 Servicios que corren en el servidor principal

With the exception of the control of the thin-clients, all services are initially set up on one central computer (the main server). For performance reasons, the thin-client-server should be a separate machine (though it is possible to install both the main server and thin-client server profiles on the same machine). All services are allocated a dedicated DNS-name and are offered exclusively over IPv4. The allocated DNS name makes it easy to move individual services from the main-server to a different machine, by simply stopping the service on the main-server, and changing the DNS configuration to point to the new location of the service (which should be setup on that machine first of course).

Para garantizar la seguridad, siempre que se transmitan contraseñas por la red, se hace en canal encriptado. Por tanto, no se envía ninguna contraseña en texto plano.

Below is a list of the services that are set up by default in a Skolelinux network, with the DNS name of each service given in square brackets. If possible all configuration files will refer to the service by name (without the domain name) thus making it easy for schools to change either their domain (if they have an own DNS domain) or the IP addresses they use.

- Registros centralizados [syslog]
- DNS (PowerDNS) [domain]
- Configuración automática de equipos (DHCP) [bootps]
- Sincronización de reloj (NTP) [ntp]
- Directorios raíz vía sistema de archivos de red (SMB/NFS) [homes]
- Oficina de Correo Electrónico [postoffice]
- Servicio de Directorio (OpenLDAP) [ldap]
- Administración de usuarios (lwat)
- Servidor Web (Apache/PHP) [www]
- Respaldo Central (sl-backup, slbackup-php) [backup]
- Caché Web / Proxy (Squid) [webcache]
- Impresión (CUPS) [ipp]
- Inicio de sesión remoto (OpenSSH) [ssh]
- Configuración Automática [cfengine]
- Servidor/es de Clientes Delgados (LTSP) [ltspserver\#]
- Monitoreo de servicios y equipos, reportes de fallas, histórico vía web. Reportes de fallos vía correo. (munin, nagios y resumen de sitio)

Cada usuario almacena sus archivos personales en su directorio home que está disponible en el servidor. Los directorios Home están accesibles desde todas las máquinas, dando a los usuarios acceso independientemente del puesto que estén usando. El servidor ofrece tanto NFS para clientes UNIX, como SMB para Windows y clientes Macintosh.

By default e-mail is set up for local delivery (i.e. within the school) only, though e-mail delivery to the wider Internet may be set up if the school has a fixed Internet-connection. Mailing lists are set up based on the user database, giving each class their own mailing list. Clients are set up to deliver mail to the server (using 'smarthost'), and users can **access their personal mail** through either POP3 or IMAP.

Todos los servicios usan el mismo nombre de usuario y contraseña, gracias a la base de datos centralizada para autenticación y autorización de usuarios.

Para incrementar el rendimiento al acceder frecuentemente a los mismos sitios de internet hay un proxy que cachea localmente los archivos (Squid). Junto al bloqueo de tráfico web en el router este también permite el control de acceso a Internet individualmente para cada puesto.

La configuración de red en los clientes se hace "automáticamente" con DHCP. Los clientes normales reciben direcciones IP en el rango privado 10.0.2.0/23, y los clientes ligeros se conectan a su servidor de clientes ligeros via la subred separada 192.168.0.0/24 (esto asegura que el tráfico de los clientes ligeros no interfiere con el resto de los servicios de red).

El registro de sucesos está centralizados, de forma que todas los puestos envían sus mensajes al servidor. El servicio syslog está configurado para aceptar sólo mensajes entrantes desde la red local.

Por defecto, el servidor de DNS está configurado con un dominio para uso interno (*.intern), contra un servidor de DNS real ("externo") que puede configurarse. El servidor de DNS actúa como un caché de DNS, de forma que todos los puestos de la red pueden usarlo como su servidor de DNS principal.

Los alumnos y los profesores pueden publicar sus propios sitios web. El servidor web proporciona mecanismos para autenticar los usuarios, y para limitar el acceso a páginas individuales y subdirectorios de ciertos usuarios y grupos. Los usuarios pueden crear páginas web dinámicas, ya que el servidor web se puede programar.

La información sobre los puestos y los usuarios se puede cambiar en una ubicación central y es accesible a todos los ordenadores de la red automáticamente. Para conseguirlo hay un servidor de directorio centralizado. El directorio tendrá información sobre los usuarios, grupos, máquinas y grupos de máquinas. Para evitar confusión entre los usuarios no habrá ninguna diferencia entre los grupos de archivos, listas de correo y grupos de red. Eso implica que los grupos de máquinas que tengan que estar en grupos de red, tienen el mismo tipo de nombre que los grupos de usuarios y listas de correo.

La administración de los usuarios y servicios se hace via web, y sigue estándares establecidos. Son Funcionales en los navegadores que incluye Skolelinux. Es posible la delegación de algunas tareas a usuarios o grupos de usuarios mediante los sistemas de administración.

Para evitar algunos problemas con NFS, y hacer más simple la depuración de errores, es necesario sincronizar los relojes de todas las máquinas. Esto se hace convirtiendo el servidor principal como un servidor para la red de NTP, y todas las estaciones y clientes se configuran para sincronizar sus relojes con el servidor. El servidor debe sincronizar su propio reloj via NTP con alguna de las máquinas disponibles en Internet para asegurarse de que toda la red tiene la hora correcta.

Las impresoras se conectan donde sean necesarias, bien directamente en la red, o conectadas a un servidor, puesto normal o cliente ligero. El acceso a las impresoras se puede controlar a los usuarios de acuerdo con el grupo al que pertenezcan, y puede hacerse con cuota y control de acceso a las impresoras.

3.1.3 Servidor(es) LTSP (Thin client server(s))

Una red Skolinux puede tener muchos servidores LTSP (también llamado servidor de clientes ligeros), que pueden ser instalados seleccionando el perfil servidor LTSP

The thin client servers are set up to receive syslog from the thin clients, and forward these messages to the central syslog recipient.

3.1.4 Clientes ligeros

Una configuración de cliente ligero permite a un PC ordinario funcionar como un terminal (X). Esto significa que la máquina arranca desde un disquete o desde el servidor a través de la red sin usar el disco local. La configuración que se usa es la de Linux Terminal Server Project (LTSP).

Thin clients are a good way to make use of older, weaker machines as they effectively run all programs on the LTSP-Server. This works as follows: The service uses DHCP and TFTP to connect to the network and boot from the network. Next, the file system is mounted via NFS from the LTSP-server, and finally X11 is started. The display manager (LDM) connects to the LTSP-Server via SSH with X-forwarding. That way all data is encrypted on the network. For very old thin clients which are too slow for the encryption this can be set to the behaviour from former versions: use direct X connection via XDMCP.

3.1.5 Estaciones sin disco

For diskless workstations the terms "stateless workstations", "lowfat clients" or "half-thick clients" are also used. For the sake of clarity this manual sticks to the term "diskless workstations".

Una estación sin disco, ejecuta todas las aplicaciones localmente, sin necesidad de un SO instalado. Esto significa que el equipo, inicia las aplicaciones desde el servidor, sin necesidad de tener software instalado en un disco local.

Las estaciones sin disco son una forma excelente para reutilizar hardware reciente, con el mismo costo bajo de mantenimiento que los clientes delgados. Las aplicaciones son administradas y mantenidas en el servidor, sin necesidad de instalaciones en los clientes. Los directorios home y las configuraciones de sistema son guardadas en el servidor.

Las estaciones sin disco, fueron presentadas como parte del proyecto LTSP (Linux Terminal Server Project) versión 5.0

3.1.6 Clientes en red.

El término "clientes en red" es usado en este manual para referirse tanto para clientes delgados, como terminales sin disco, o equipos utilizando MacOS o Windows.

3.2 Administración

Todas las máquinas linux que se instalan por medio del CD o DVD de Skolelinux se pueden administrar desde un ordenador central, es decir el servidor. Se puede acceder a todas las máquinas por ssh y, por tanto hay acceso completo a todos los puestos.

Usamos cfengine para editar los archivos de configuración. Estos archivos se actualizan desde el servidor a los clientes. Para cambiar la configuración del cliente, es suficiente editar la configuración en el servidor y dejar que la automatización distribuya los cambios.

Toda la información de los usuarios se guarda en un directorio LDAP. Las actualizaciones de las cuentas de usuario se hacen contra esta base de datos y es la que usan los clientes para autenticarse.

3.3 Instalación

Se puede instalar tanto desde un CD como un DVD.

La idea es poder instalar un servidor desde CD/DVD, e instalar los clientes por la red arrancando todas las demás máquinas a través de la red. La instalación del DVD funciona sin acceder a Internet.

La instalación no debería hacer ninguna pregunta, con la excepción del idioma deseado (p. ej. Noruego, Español, etc) y el perfil de la máquina (servidor, puesto normal, servidor de cliente ligero). Todas las demás configuraciones se harán automáticamente con valores razonables, y el administrador del sistema las podrá cambiar desde un sitio centralizado después de la instalación.

3.4 Configuración del acceso al sistema de archivos

Cada cuenta de usuario de Skolelinux tiene asignada una sección del sistema de archivos en el servidor de ficheros. Esta sección (directorio home) contiene los archivos de configuración del usuario, documentos y páginas web. Algunos de estos archivos deberían tener acceso de lectura para otros usuarios del sistema, algunos podrían ser de lectura para todo internet, y algunos no deberían ser accesibles por nadie que no fuera el usuario.

To ensure that all disks that are used for user directories or shared directories can be uniquely named across all the computers in the installation, they can be mounted as /skole/host/directory/. Initially, one directory is created on the file server, /skole/tjener/home0/, in which all the user accounts are created. More directories may then be created when needed, to accomodate particular user groups or particular patterns of usage.

Para tener control de acceso a los archivos compartidos, cada usuario debe asignarse a un grupo primario que no tenga otros miembros. El nombre de este grupo privado debe ser el mismo nombre de usuario. (Hay más información disponible en Redhat sobre este tema.) Esto permite que todos los archivos que crea el usuario tengan acceso completo al grupo de archivos. Junto con el bit set-gid en los directorios y la herencia de derechos, esto permite la compartición controlada de archivos entre los miembros de un grupo de archivos. Por tanto, la umask de los usuarios deb ser 00X. (Si todos los

usuarios de un grupo inicialmente pueden leer los archivos nuevos $X=2$. Si sólo se debe dar un acceso inicial a un grupo de usuarios $X=7$).

La política definirá el acceso inicial para los archivos nuevos. Puede ser dar acceso de lectura a todo el mundo, algo que luego el usuario puede cambiar explícitamente, o se puede bloquear inicialmente, necesitando una acción del usuario para hacerlos accesibles. La primera aproximación incita a compartir el conocimiento y hace el sistema más transparente, mientras que el segundo método disminuye el riesgo de distribuir información sensible o indeseada. El problema con la primera solución es que no es visible para los usuarios que el material que crean es accesible a todos los usuarios. Esto es detectable cuando se revisan los directorios de otros usuarios, donde uno puede ver los archivos que son legibles. El problema con la segunda solución es que muy poca gente acostumbra a hacer sus archivos accesibles, aunque no contengan nada sensible y el contenido sea útil para los que aprenden de como otros han resuelto los mismos problemas.

Sugerencia: Los archivos son originalmente accesibles por todos, pero solo carpetas particulares son creadas con contenidos bloqueados inicialmente. Esto simplificará el decidir adónde debería de ser accesible o no. Concretamente, umask debería de ser puesto a un valor 002, y ~/ creado con permisos de acceso 0775. Las carpetas ~/priv/ con 0750, y ~/pub/ con 0775, Los archivos que no sean accesibles por otros deberán de ser puestos en ~/priv/ y cualquiera que sea público, puesto en ~/pub/. Otros archivos que inicialmente sean accesibles, podrán ser restringidos si es necesario.

ssh requiere que el directorio home solo lo pueda ser escrito por el propietario, así que el privilegio máximo para ~/ es 755.

- - acceso a las carpetas home (*~/)? - carpetas home - carpetas compartidas?

3.5 notas sueltas

Estas son varias notas de cosas que deberían incluirse en este documento.

- La base de datos centralizada de usuarios los agrupa y tiene la capacidad de controlar que grupos tienen acceso a las máquinas.
- Grupo de máquinas y la capacidad de controlar el acceso a los servicios de la red par a esos grupos (bloqueando el acceso a internet vía squid)
- Debería considerar usar el servicio DNS de la RFC 2606.

This chapter was initially copied and pasted from <http://developer.skolelinux.no/arkitektur/arkitektur.html.en> (at that time it was Copyright © 2001, 2002, 2003, 2004 Petter Reinholdtsen < pere@hungry.com >, released under the GPL) and has since then beed edited.

4 Características

4.1 New features in the Debian Edu 5.0.4+edu0 Codename "Lenny" released 2010-02-08

- Everything that is new in Debian 5.0.4, see the [following paragraph](#) for details.
- More than 80 applications relevant for education are included based on user feedback and user statistics (through [Debian Edu popularity contest](#)). The full list of packages are listed in the [task overview page](#).
- Escritorio para los estudiantes mejorado con accesos directos a software educativo como GCompris, Kalzium, Kgeography, KPlot, KStars, Stopmotion y OpenOffice Write e Impress.
- Dynamic desktop icons and menu options that adjust based on user group.
- Gnome added as a supported desktop, see the [Installation chapter](#) to learn how to install with GNOME instead of KDE as desktop.
- Soporte para más de 50 idiomas.
- Sistema mejorado para administración de usuarios e identificación de computadoras.

- Mejoras en la configuración de clientes sin disco y clientes ligeros.
- New startup menu letting users choose diskless workstation, thin client or workstation.
- Opción de estación de trabajo sin disco es instalada pero no activada por defecto en los servidores con el perfil servidor de clientes ligeros.
- Main-server is set up as a PXE server for booting thin clients and diskless workstations and for installing to clients' hard or flash drives.
- La configurcin para DNS y DHCP esta almanecenada en LDAP y puede ser editada usando `lwat`. El servidor DNS ha sido cambiado de `bind9` a `power-dns`.
- LDAP server for directory services (NSS) are now located using a SRV record in DNS instead of hardcoding the 'ldap' DNS name. LDAP server for password checks (PAM) is still using the hardcoded 'ldap' DNS name.
- Disco de instalación por red multi arquitectura (amd64/i386/powerpc).
 - La mayoría de los paquetes se descargan de Internet.
- Multi arch (amd64/i386) installer DVD capable of installing without network.
- PulseAudio es proporcionado además de ALSA y OSS para sonido en estaciones de trabajo y estaciones de trabajo sin disco.
- The *Barebone* profile has been renamed to *Minimal*, to better reflect what it is.
- La configuración de Nagios3 ahora es automáticamente creada por `sitesummary`.
- The per-user file `~/.xsession-errors` is now truncated automatically when the user logs in to avoid filling up the home directory partition with a log that grows indefinitely. The user can disable this by creating `~/.xsession-errors-enable`. The system administrator can configure the system to redirect the file to `/dev/null` by editing `/etc/X11/Xsession.d/05debian-ed-u-truncate-xerrorlog`.
- To ease installation of Debian Edu on hardware needing non-free firmware, the CD and DVD include the following firmware packages: `firmware-bnx2`, `firmware-bnx2x`, `firmware-ipw2x00`, `firmware-iwlwifi`, `firmware-qlogic` and `firmware-ralink`.

4.2 New features in Debian 5.0.4 upon which Debian Edu 5.0.4+edu0 is based

- El nuevo Kernel Linux 2.6.26 soporta ms hardware
- With this release, Debian GNU/Linux updates from X.Org 7.1 to X.Org 7.3 (which includes support of newer hardware) and now includes the desktop environments KDE 3.5.10 and GNOME 2.22. Updates of other desktop applications include Iceweasel (version 3.0.6, which is the unbranded Firefox web browser), Icedove (version 2.0.0.19, which is the unbranded Thunderbird mail client) as well as upgrades to Evolution 2.22.3, [OpenOffice.org](#) 2.4.1, and Pidgin 2.4.3 (formerly known as Gaim).
- Instalación desde CD desde windows
- Se cambio de syslogd a rsyslog como el colector de registros del sistema.
- For more information see the page [New in Lenny](#) on wiki.debian.org

4.3 New features in the "3.0r1 Terra" release 2007-12-05

- Much improved documentation with updated translations to German, Norwegian Bokmal and Italian
- Includes more than 40 bug fixes, improvements and security updates that came to our attention after the 3.0r0 release

4.4 New features in the "3.0r0 Terra" release 2007-07-22

- Basado en Debian 4.0 Etch publicación en 2007-04-08
- Instalador gráfico con soporte para mouse
- Boot splash con usplash
- compatible con LSB 3.1
- Versión del kernel linux 2.6.18
 - soporte para controladoras SATA y discos rígidos
- Versión de X 7.1.
- Ambiente gráfico KDE 3.5.5
- OpenOffice versión 2.0
- LTSP5 (versión 0.99debian12)
- Inventario automático de equipos instalados utilizando Sitesummary.
- Configuración automática de munin utilizando los datos de Sitesummary.
- Control automático de versiones de configuración en /etc/ por medio de svk.
- Tamaño del sistema de archivos pueden ser ampliados mientras el sistema de archivos esta montado.
 - Soporte automático ampliando el sistema de archivos basándose en reglas predefinidas.
- Soporte de dispositivos locales en Clientes ligeros.
- Nuevas arquitecturas de procesadores: amd64 (soporte completo) y ppc (soporte experimental, el sistema de instalación funciona únicamente en la nueva subarquitectura newworld).
- DVDs multi-arquitectura para i386, amd64 y powerpc
- Regression: the CD-install requires Internet access during installation. Previous versions could be installed from one CD without Internet access.
- Regression: webmin is now removed from Debian because of problems supporting it. We've added a new web based user administration tool named lwat, which doesn't has the same functionality as wplus, the old user administration tool. But wplus requires webmin.
- Regression: swi-prolog is not part of etch, but was part of sarge. The [HowTo teach and learn](#) Chapter describes how to install swi-prolog on etch.

4.5 Features in 2.0 release 2006-03-14

- Based on Debian 3.1 Sarge released 2005-06-06.
- Linux kernel version 2.6.8.
- XFree86 version 4.3.
- KDE version 3.3.
- OpenOffice.org 1.1.

4.6 Features in "1.0 Venus" release 2004-06-20

- Based on Debian 3.0 Woody released 2002-07-19.
- Linux kernel version 2.4.26.
- XFree86 version 4.1.
- KDE version 2.2.

4.7 Más información sobre lanzamientos anteriores

Más información sobre lanzamientos anteriores puede ser encontrado en <http://developer.skolelinux.no/info/cdbygging/news.html>.

5 Requisitos

There are different ways of setting up a Skolelinux solution. It can be installed on just one standalone PC or a regional wide solution at many schools operated centrally. This variety of configurations makes a huge difference on how things are set up regarding network components, servers and client machines.

5.1 Requisitos de hardware

The purpose of the different profiles is explained in the [network architecture](#) chapter.

- The computers running Debian Edu / Skolelinux must have either i386, amd64 or powerpc processors.
 - On powerpc, the installation media will only boot on machines of the newworld sub-architecture, which are the systems from Apple with a translucent case.
- Thin client servers need two network cards when using the default network architecture:
 - eth0 is connected to the main network (10.0.2.0/23),
 - eth1 is used for serving the thin-clients (192.168.0.0/24) .
 - Consider 2 GB RAM for 30 clients and 4 GB RAM for 50-60 clients.
- Disk space requirements depend on profiles used, but any disk larger than 10 GiB will be sufficient for a workstation or standalone installation, 15 Gib for a thin-client server and at least 30 GiB on the main server. As usual with disk space on a main-server: the bigger the better.
- Thin clients can run on as low as 64 MiB RAM and 133 MHz processor, though 128 MiB RAM and somewhat faster processors are recommended.
 - For running Iceweasel/Firefox and OpenOffice.org, 128 MiB RAM is a minimum requirement.
- For workstations, diskless workstations and standalone PCs 800 MHz, 256 MiB RAM are minimum requirements, though 512 or 1024 MiB RAM will perform considerable better. Just a faster CPU will speed things up.
 - Swapping over the network is automatically enabled, the swap size is 32 MiB, if you need more you can tune this by editing /etc/ltsp/nbdswpd.conf on tjener to set the SIZE variable. Please *tune up the swap size* either locally on the pc or on the server.
 - * If your diskless workstations have harddrives, it is recommended to use them for swap as it is a lot faster than network swapping.
 - On workstations with little RAM the spell checker can cause OpenOffice.org to hang if the swap space is too small. Then the system administrator has to disable the spell checker on OpenOffice.org or students have to kill OpenOffice.org, resulting in loss of work. Enabling at least 512 MiB swap on a 256 MiB RAM workstation solves this, and the spell checker runs smoothly.
- Laptops have the same requirements as for workstations since they are just movable workstations.

5.2 Hardware conocido que funciona

A list of tested hardware is provided from <http://wiki.debian.org/DebianEdu/Hardware/> . This list is not nearly complete :)

<http://wiki.debian.org/InstallingDebianOn> is an effort to document how to install, configure and use Debian on some specific hardware. Therefore potential buyers would know if that hardware is supported and owner would know how to get the best out of that hardware.

Una excelente base de datos sobre hardware soportado por Debian está disponible en <http://kmuto.jp/debian/hcl/>.

6 Requerimientos para una instalación de red

6.1 Configuración por defecto

Se aplican las siguientes reglas cuando se usa la arquitectura de red por defecto:

- necesitas un servidor principal, el tjener
- puedes tener más de 50 estaciones de trabajo (sin disco) en la red principal
- puedes tener más de 20 servidores ltsp en la red principal
 - puedes tener cientos de clientes ligeros y/o estaciones de trabajo sin disco en cada red de servidores ltsp
- puedes tener cientos de otras computadoras que tendrán direcciones ip asignadas de manera dinámica
- para tener acceso a Internet necesitas un enrutador/pasarela (ver más abajo)

6.2 Enrutador de internet

A router/gateway, connected to the internet on the external interface and running on the IP address 10.0.2.1 with netmask 255.255.254.0 on the internal interface, is needed to connect to the internet.

The router should not run a DHCP server, it can run a DNS server, though this is not needed and will not be used. (If the router runs a DHCP server you must disable the DHCP server on the main server and you will lose some features and certain documented procedures will work differently. So better disable the DHCP server on the router.)

Si buscas una solución basada en i386 (para poder rehusar una PC vieja) recomendamos [IPCop](#) o [floppyfw](#).

If you need something for an embedded router or accesspoint we recommend using [OpenWRT](#), though of course you can also use the original firmware. Using the original firmware is easier, using OpenWRT gives you more choices and control. Check the OpenWRT webpages for a list of [supported hardware](#).

It is possible to use a different network setup, this is the [documented procedure](#) to do this. If you are not forced to do this by an existing network infrastructure, we recommend against doing so and recommend you stay with the default [network architecture](#).

7 Instalación

7.1 Donde encontrar información adicional

We recommend that you read or at least take a look at the [release notes for Debian Lenny](#) before you start installing a system for production use. If you just want to give Debian Edu/Skolelinux a try, you don't have to though, it should just work. :-)

Even more [information about the Debian Lenny release](#) is available in its installation manual.

7.2 Download the installation media for Debian Edu 5.0.4+edu0 Codename "Lenny"

7.2.1 DVDs para i386, amd64 y powerpc

The multiarch DVD ISO image is 4.4 GiB large and can be used for installation of amd64 and i386 machines. To download it, use any of these methods:

- `ftp://ftp.skolelinux.org/skolelinux-cd/debian-edu-5.0.4+edu0-DVD.iso`
`http://ftp.skolelinux.org/skolelinux-cd/debian-edu-5.0.4+edu0-DVD.iso`
`rsync ftp.skolelinux.org::skolelinux-cd/debian-edu-5.0.4+edu0-DVD.iso`

The netinstall CD, which can be used for installation of i386, amd64 and powerpc machines, is available via

- `ftp://ftp.skolelinux.org/skolelinux-cd/debian-edu-5.0.4+edu0-CD.iso`
`http://ftp.skolelinux.org/skolelinux-cd/debian-edu-5.0.4+edu0-CD.iso`
`rsync ftp.skolelinux.org::skolelinux-cd/debian-edu-5.0.4+edu0-CD.iso`

The powerpc port has not been tested as much as the other architectures, though it should work just fine and has been reported to work. Still, we consider the port an experimental release of Debian Edu, which we might not be able to support as the other archs.

The Sources are available via

- `ftp://ftp.skolelinux.org/skolelinux-cd/debian-edu-5.0.4+edu0-source-DVD-.iso`
`http://ftp.skolelinux.org/skolelinux-cd/debian-edu-5.0.4+edu0-source-DV-D.iso`
`rsync ftp.skolelinux.org::skolelinux-cd/debian-edu-5.0.4+edu0-source-DV-D.iso`

7.3 Solicita un CD/DVD por correo

For those without a fast internet connection, we offer to send you a CD or DVD for the cost of the CD or DVD and shipping. Just send an email to cd@skolelinux.no and we will discuss the payment details (for shipping and media) :) Remember to include the address you want the CD or DVD to be sent to in the email.

7.4 Instalando Debian Edu

7.4.1 El proceso de instalación

When you do a Debian Edu installation, you have a few options to choose. Don't be afraid; there aren't many. We have done a good job hiding the complexity of Debian during the installation and beyond. However, Debian Edu is Debian, and if you want there are more than 15000 packages to choose from and a billion configuration options. For the majority of our users, our defaults should be fine.

- Selecciona el tipo de instalación
 - `Install` is the default text mode installation on i386 and amd64.
 - `64 bit install` does an amd64 text-mode install.
 - Select `Graphical install` to have the GTK installer where you can use the mouse.
 - Select `64 bit graphical install` to have the amd64 GTK installer where you can use the mouse.
 - The `debian-edu-expert` boot-option adds the **minimal** profile to the profile options, and switches to manual partitioning.
 - Further notes:
 - * On i386/amd64 boot-options can be edited by pressing the *tabulator-key* in the boot menu.

- * The powerpc installer does neither support the graphical installation nor the boot menu that i386 and amd64 have.
 - * On powerpc, enter `install debian-edu-expert` at the yaboot prompt to enter expert mode.
 - * If you want to boot the amd64 text mode with the multiarch DVD it would be `amd64--install`.
 - * Likewise you can choose `amd64-expertgui` to get the GUI version on amd64.
 - * If you want to boot the i386 mode with the multiarch DVD on an amd64 machine you need to manually select `install` (text mode) or `expertgui` (graphical mode).
 - * The multiarch DVD defaults to use `amd64-installgui` on x86 64-bits machines, and `installgui` on x86 32-bits machines.
 - * Si haz instalado el perfil de servidor principal en una computadora, puedes usar el servicio `http proxy` para acelerar las siguientes instalaciones. Agregar `d-i mirror/http/proxy string http://10.0.2.2:3128/` como una opción adicional de carga
 - * para instalar el escritorio **GNOME** en lugar del escritorio **KDE** desktop, agrega `desktop=gnome` a los parámetros de carga del kernel
- Elige el idioma (para la instalacin y el sistema instalado)
 - Elige una zona horaria
 - Choose a keyboard keymap (usually the countrys default is fine)
 - Elige un **perfil**:
 - servidor
 - * This is the main server (tjener) for your school providing the following services: file, print, intranet, proxy, DNS, DHCP, LDAP, backup, nagios, sitesummary, and munin. All services are pre-configured to work out of the box. You must only install one main server per school! This profile does not include a graphical user interface. If you want a graphical user interface, then select Workstation or Thin-Client-Server in addition to this one.
 - Estación de trabajo
 - * A computer booting from its local hard drive, and running all software and devices locally like an ordinary computer, but the user login is authenticated by the main server, where the user's files and desktop profile are stored.
 - Servidor de clientes ligeros
 - * Thin client (and diskless workstation) server, also called LTSP server. Clients without hard drives boot and run software from this server. This computer needs two network cards, a lot of memory, and ideally more than one processor or core. See the chapter about **networked clients** for more information on this subject. Chosing this profile also enables the workstation profile (even if it is not selected), a thin client server can always be used as a workstation, too.
 - Standalone
 - * An ordinary computer that can function without a main server, ie. doesn't need to be on the network. Includes laptops.
 - Minimo
 - * This profile is only available when using the 'debian-edu-expert' boot option. It will install the base packages and configure the machine to integrate into the Debian Edu network, but without any services and applications. It is useful as a platform for single services manually moved out from the main-server.

The first 3 profiles can all be installed on the same machine. That means the main server can be a thin client server and also used as a workstation.

- Say yes or no to automatic partitioning

- Be aware that saying yes will destroy all data on the hddrives! Saying no on the other hand will require more work and one will need to make sure that the required partitions are created and are big enough.
- Please say yes to submit information to <http://popcon.skolelinux.org/> to allow us to know which packages are popular and should be kept for future releases. Though you don't have to, it is a simple way for you to help. :)
- Espera
 - if thin client server is among the selected profiles, then the installer will spent quite some time at the end, "Finishing the installation - Running debian-edu-profile-udeb..."
- Sonríe :)

7.4.2 A note on manual partitioning

As a general advice: if you choose manual partitioning and your system fails to boot, try automatic partitioning first.

If you decide to do manual partitioning for the main-server, you should consider this:

- Make sure the directory `/skole/tjener/home0` exists, usually you will also be mounting a partition there. If you don't create that directory you will only be able to login as root. The reason is that the user creation system require this directory to exist to be able to create users home directories, and without a users home directory the user can not log in.
- If `/var/spool/squid` is on a seperate partition, 3GiB free space is a good recommendation. Squids cache size will be set to 80% of the partition size.
- `/boot` should have its own partition.

7.4.3 A note on notebooks

In principal it makes sense either to install notebooks with the workstation or with the standalone profile. Keep in mind that the workstation profile uses LDAP for the user accounts and NFS for the home directories, so those workstations will only work while in the network where they can access the server. If you plan to use your laptop at home or on the road, then choose the standalone profile.

It is possible to reconfigure workstations to cache authentication information and sync the home directories to local disk (and resync to the server when in the network) with `unison`, but there is currently no howto available for this.

7.4.4 A note on DVD installs

If you install from a DVD, `/etc/apt/sources.list` it will only contain sources from the DVD afterwards. If you have an internet connection we strongly suggest adding the following lines to it so that available (security) updates can be installed:

```
deb http://ftp.debian.org/debian/ lenny main
deb http://security.debian.org/ lenny/updates main
deb http://ftp.skolelinux.org/skolelinux lenny local
```

7.4.5 A note on CD installs

The netinst installation (which is the type of installation our CD provides) will fetch some packages from the CD and the rest from the net. The amount of packages fetched from the net varies from profile to profile:

- Main server: 8 of 115 MiB downloaded.
- Main server and Thin client server: 618 of 1082 MiB downloaded.
- Main server and Workstation: 618 of 1081 MiB downloaded.

- Thin client server: 618 of 1052 MiB downloaded.
- Workstation: 618 of 1051 MiB downloaded.
- Standalone: 618 of 1020 MiB downloaded.
- Minimal: 12 of 83 MiB downloaded.

7.4.6 A note on some RAID controllers

When using a USB drive to add missing firmware during install, with some RAID-controllers GRUB is installed to the USB drive. So a reboot after installation results in a GRUB-error. A workaround for this problem is to remove the USB drive after the firmware is loaded, and preferably before partitioning starts.

More information is available in [Debian-Edu bug #1395](#) and Debian bug [516280](#).

7.4.7 A note on thin-client-server installations

First of all, this profile name is confusing due to historic reasons: the profile actually installs a LTSP server environment for thin-clients and for workstations. So for the next release of Debian Edu the name of this profile will be changed.

By providing the kernel argument `edu-skip-ltsp-make-client` it is possible to skip the step which converts the LTSP chroot from a thin-client chroot into a combined thin-client/diskless workstation chroot.

This is useful in certain situations, e.g. if one wants a pure thin client chroot or if there is already a diskless chroot on another server, which can be rsynced. For these situations skipping this step will cut down the installation time considerably.

Except for the longer installation time there is no harm creating combined chroots always and this is why this is done by default.

7.4.8 Custom CD/DVDs

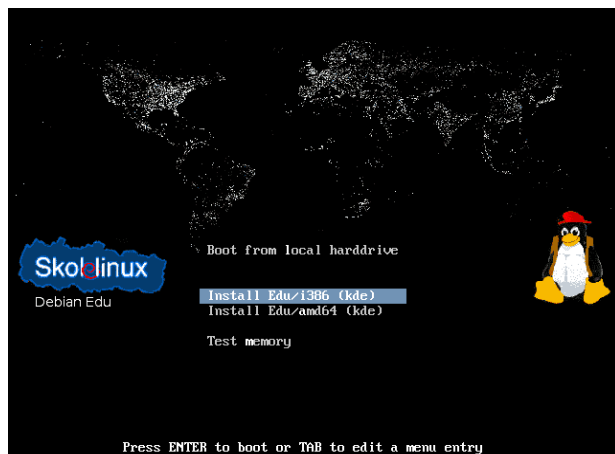
Creating custom CDs or DVDs is possibly quite easy since we use the [debian installer](#), which has a modular design and other nice features. [Preseeding](#) allows you to define answers to the questions normally asked.

So all you need to do is to create a preseeding file with your answers (this is described in the appendix of the debian installer manual) and [remaster the CD/DVD](#).

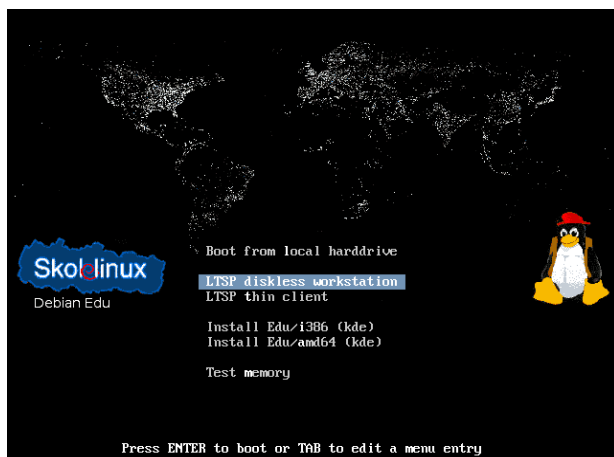
7.4.9 Installation over the network (PXE) and booting diskless clients

For this installation method it is required that you have a running main server. When clients boot via the main network, a new PXE menu with installer and boot selection options is displayed.

This is how the PXE menu looks like with the **Main-Server** profile only:



Así es como el menú PXE se mira con el perfil **Servidor-Principal** y **Servidor-Clientes-Ligeros**



This setup also allows to boot diskless workstations and thin clients on the main network. Diskless workstations must be added with LWAT just like normal workstations or thin client servers.

More information about network clients can be found in the [Network clients HowTo](#) chapter.

7.4.9.1 Modificando instalaciones PXE The PXE installation is using a debian-installer preseed file, and this file can be modified to ask for more packages to install.

A line like the following needs to be added to `tjener:/etc/debian-edu/www/debian-edu--install.dat`

```
d-i    pkgsel/include string my-extra-package(s)
```

The PXE installation uses the files `/var/lib/tftpbboot/debian-edu/install.cfg` and the preseeding file in `/etc/debian-edu/www/debian-edu-install.dat`. These files can be changed to adjust the preseeding used during installation, i.e. to avoid more questions when installing over the net. Another possibility to achieve the same is to provide extra settings in `/etc/debian-edu/pxeinstall.conf` and `/etc/debian-edu/www/debian-edu-install.dat.local` and to run `/usr/sbin/debian-edu-pxeinstall` to update the generated files.

Further information can be found in the [manual of the Debian Installer](#).

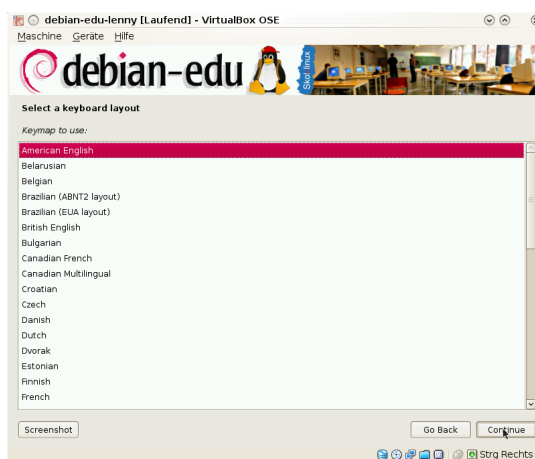
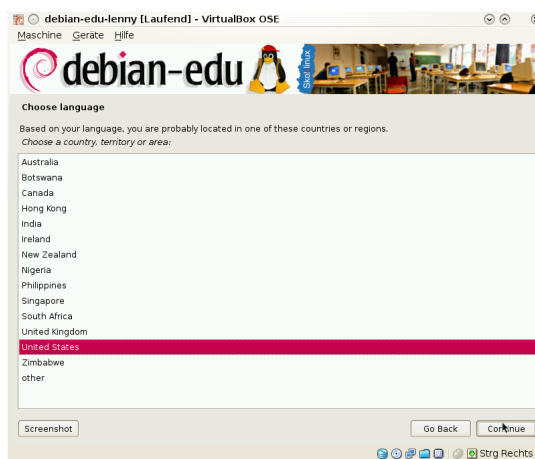
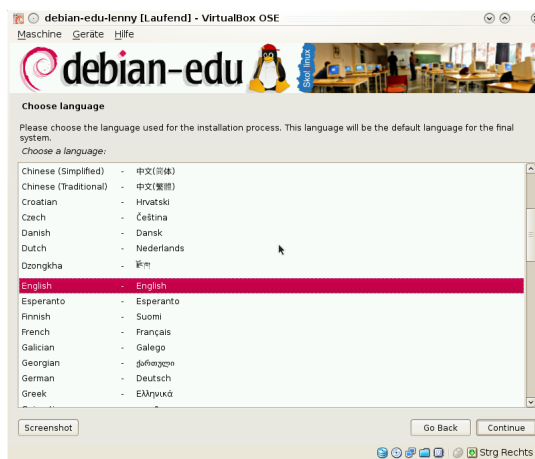
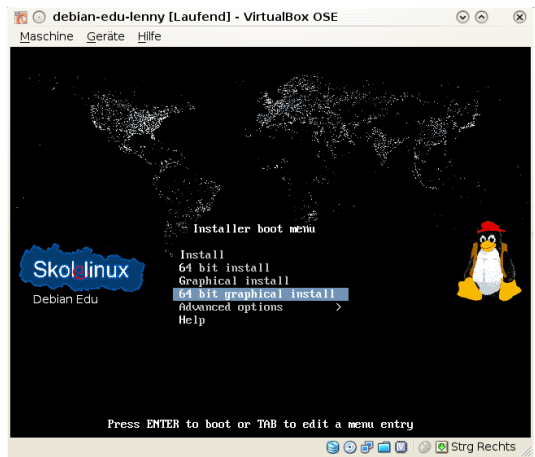
To disable or change the use of the proxy when installing via PXE, the lines containing `mirror/http/proxy`, `mirror/ftp/proxy` and `preseed/early_command` in `tjener:/etc/debian-edu/www/debian-edu-install.dat` need to be changed. To disable the use of a proxy when installing, put '#' in front of the first two lines, and remove the `"export xhttp_proxy="http://webcache:-3128"; "` part from the last one.

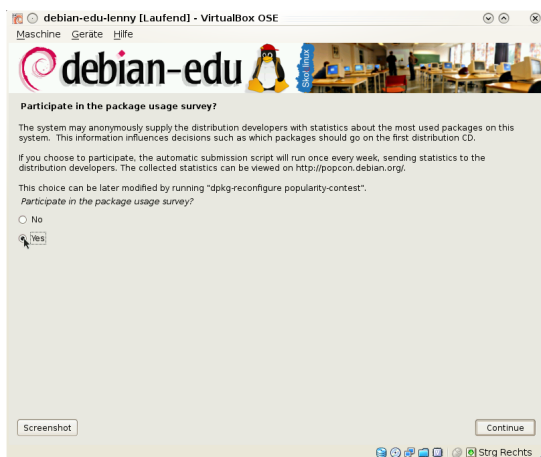
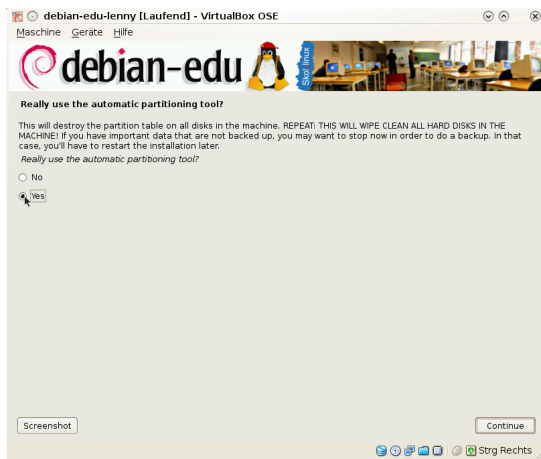
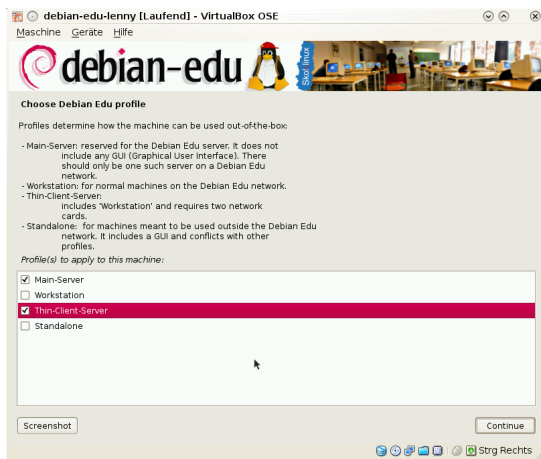
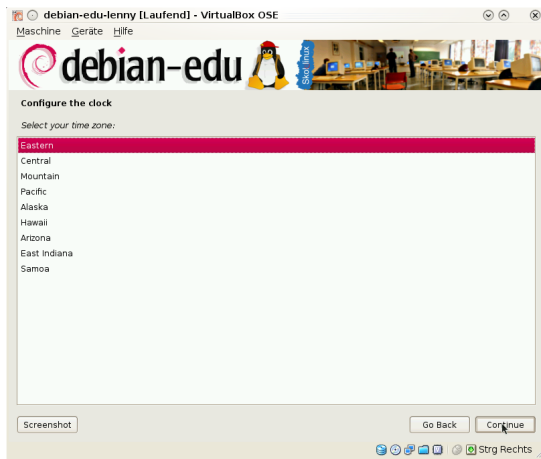
Some settings can not be preseeded because they are needed before the preseeding file is downloaded. These are configured in the pxelinux based boot arguments available from `/var/lib/tftpbboot/debian-edu/install.cfg`. Language, keyboard layout and desktop are examples of such settings.

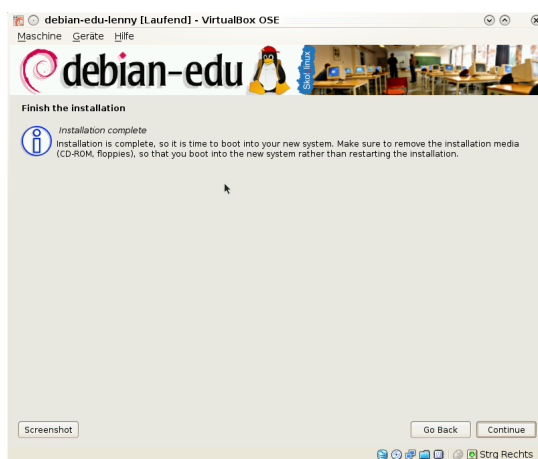
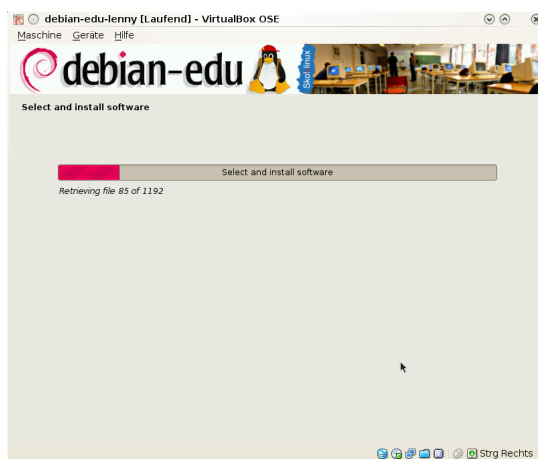
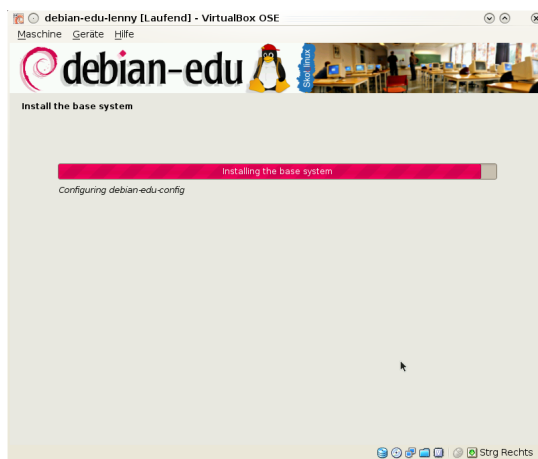
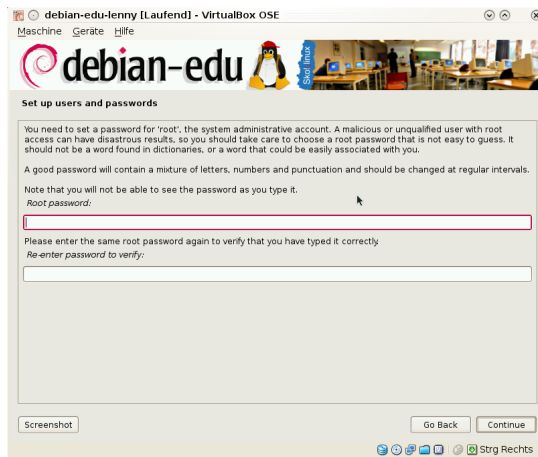
7.5 Screenshot tour

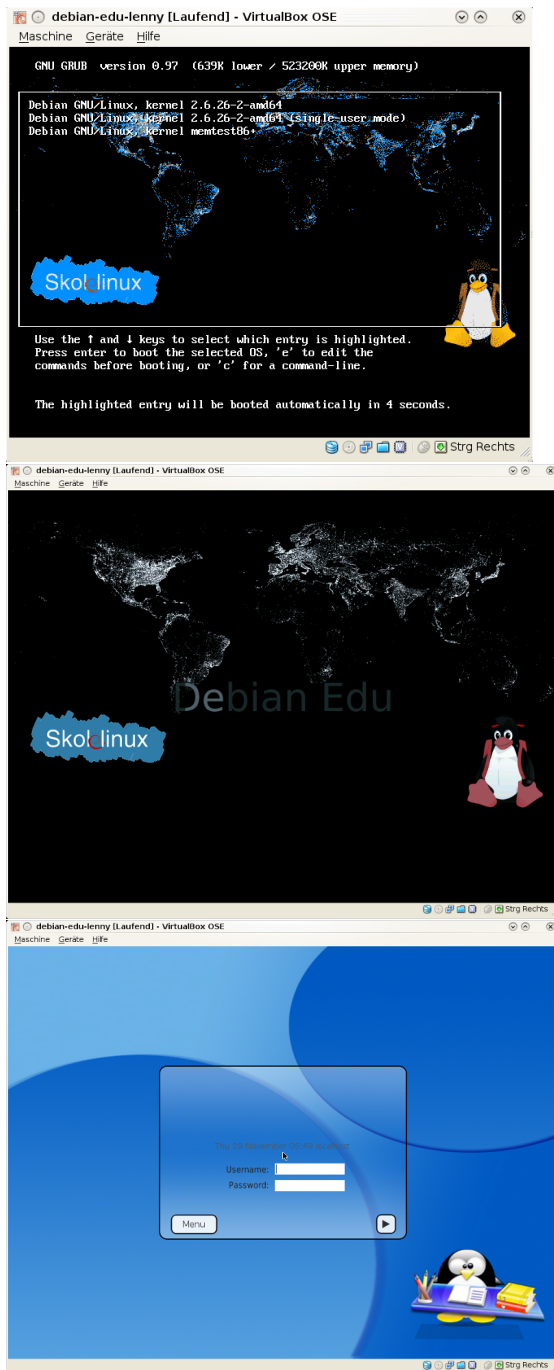
The text mode and the graphical installation are identical, only the appearance is different. The graphical mode offers you the opportunity to use a mouse. Of course the graphical mode looks much nicer and more modern. Unless the hardware has trouble with the graphical mode, there is no reason not to use it.

So here is a screenshot tour through a graphical Main-Server + Thin-Client-Server installation:









8 Para empezar

8.1 Minimum steps to get started

This chapter describes the first steps you need to do after the installation to get started. The minimum you need to do is:

- add users
- add workstations to host netgroups (for exporting home-directories via NFS)
 - thin clients don't need to be added, only workstations. And workstations no matter if with disk or diskless.

This is described below, please read this chapter completely. It covers how to do these minimum steps correctly as well as other stuff probably everybody will need to do.

The following **HowTo** chapter covers more tips and tricks and some frequently asked questions. Debian Edu desktop

9 Servicios que corren en el servidor principal

Hay varios servicios en el servidor principal que se pueden gestionar con un interfaz web. Los describiremos aquí.

9.1 Gestión basada en web, usando lwat

Lwat is a web based management tool, that will help you manage some important parts of your Debian Edu setup. You can manage this four main groups (add, modify, delete):

- Administración de usuarios
- Administración de grupos
- Automount Informations
- Administración de computadoras
- Administración DNS

Para acceder a lwat entra a <https://www.lwat> en tu navegador web.

- In case you **are not** using a new Debian Edu Lenny machine, you will get an error message about the ssl certificate. Just tell your browser to accept and ignore that.
- In case you **are** using a new Debian Edu Lenny machine, the override rule will be already in place and you can't be bothered.

You will then see the login page of LWAT. If you visit this site the first time after installation, the login name there is: admin and the password is the password you entered during the installation for the root account.



After login the you can choose a task in the menu.

9.2 User Management with lwat

In Debian Edu account information is stored in a LDAP directory. This data is used not only by the main server, but also by the (diskless) workstations and thin client servers on the network. In this way data about students, pupils, teachers, etc. needs to be entered only once. After that it is available to all systems on the network.

To get the work done efficiently lwat will assist you on getting your user's data entered to the LDAP directory.

You can add users, group them in usergroups (for example to refer the members of a class more easily), update them and remove them again. By pointing the mouse onto the menu entries "Users" or "Groups" you can choose the action: Add any, or search for existing users or groups to modify or delete them.

9.2.1 Agregando usuarios

To add users you only have to choose "Add" in the "Users" section of the menu. After choosing this entry you will see a form where you can enter the data of the user you want to add. The most important thing to add is the full name of your user (see image). As you enter you will see, that lwat will generate a user name automatically based on the real name. It automatically chooses a user name that doesn't exist yet, so multiple users with the same full name are not a problem. If you don't like the generated user name you can change it in the corresponding field. Second you need to choose the role of your account, which is used by lwat to determine the privileges the user has for system administration. Currently lwat knows the following roles:

role	granted privileges
Estudiantes	Login and use the system
Profesores	Lo mismo que estudiantes
jrAdmins	Same as Teachers, but can also change other user's passwords (except for the Admins' ones)
Admins	Admins have ultimate privileges. They can add/modify/delete users/groups/machines/automounts and let windows systems join the Skolelinux domain

After choosing a suitable role you can hit the "Save" button and the user is added. **Do not hit the enter key**, or your progress will be lost. This is to avoid security problems with PHP.

If all went well, you will see a short notice at the end of page with the data added to the ldap directory (also the form gets reset):

```

Usuario agregado: Usuario Demo
username: demuse
password: secret

```

/!\ It might take several minutes until the new added user's home directory is created. Until that is done he won't be able to log in on any server, workstation or thin client.

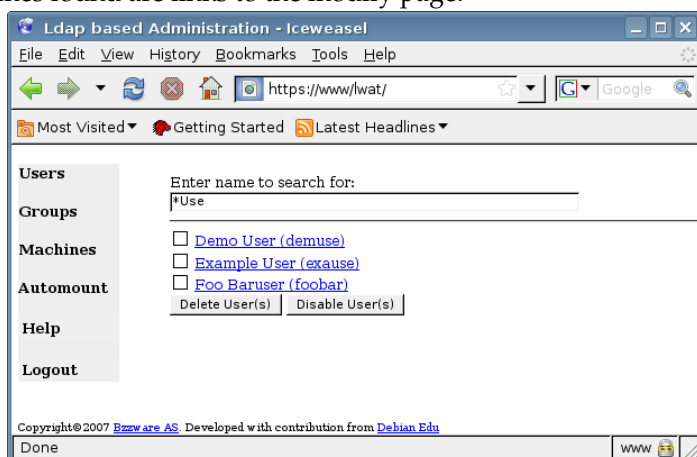
You may miss the option to set a password, that has been set automatically. The user can change its own password by clicking on the key icon on his desktop or directly browsing to `http://www.lwat-/chguserpw.php`.

You can also set another password by modifying the user added (see below).

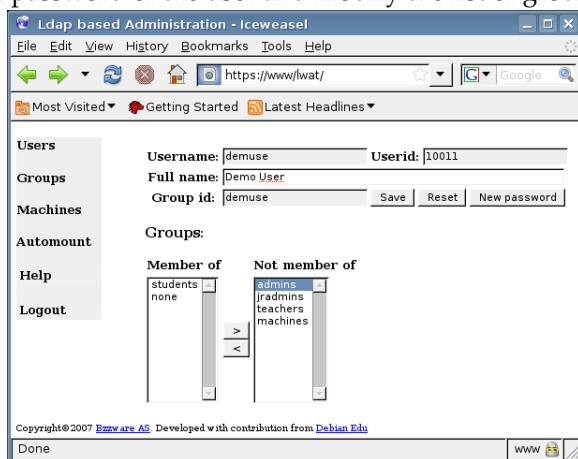
9.2.2 Buscar y borrar usuarios

To modify or delete a user you need to first find her using the search menu entry. You will find the form shown in the screenshot where you can enter either the real name or the user name of the user. The results will show up below. On the left of every result line there is a checkbox you can use to delete or

disable one or more users with the two buttons below. If you want to modify a user, just click on it, all names found are links to the modify page.



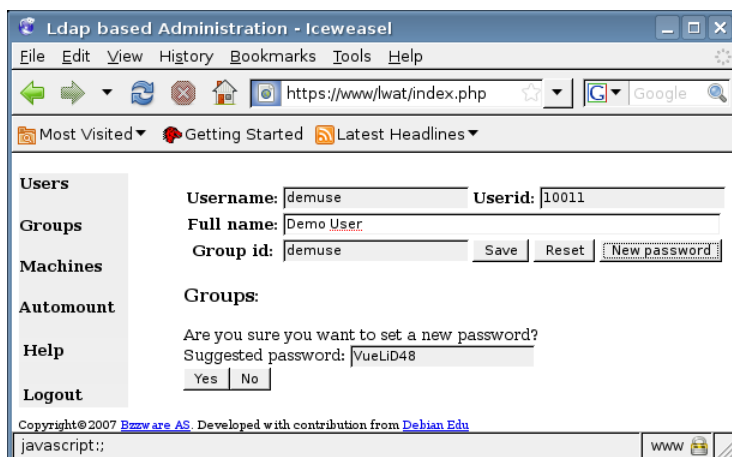
A new page will show up where you can modify information directly belonging to the user, change the password of the user and modify the list of groups the user belongs to.



9.2.3 Set passwords

To set a new password for a user

- search the user to be modified like explained above and click on the username once found.
- haz click en el botón Nueva contraseña
- en la siguiente pagina, puede poner una nueva contraseña generada automáticamente
- note that by default it is not possible to set a self-chosen password, as the corresponding field is not writable



To allow setting self-chosen passwords you need to edit `/etc/lwat/config.php` on the tjener:

- Ejecute `nano /etc/lwat/config.php`
- Cambia `$allowPwSet = false ; a $allowPwSet = true ;`
- Presiona CTRL+X
- Presiona Y
- Presiona Enter

You can now set any password you like, as long as it is at least 5 digits long. **Beware of security implications due to easy to guess passwords!**

9.2.4 Advanced user management

It is possible to mass-create users with *lwat* by using a .csv file, which can be created with any good spreadsheet software (for example *oocalc*).

The import script expects a file formatted with all data for one user on one row, with each field separated with a semicolon. The minimum information needed is the full name of the user. If `fullname` is not given, the script expects to have both `firstname` and `lastname`. The maximum information it expects is "User template; Fullname; Username; Password; Additional group membership".

If a password column is missing, an easy to remember, pronounceable password will be created.

If users are put into groups, these groups have to exist, so you need to create them manually (with *lwat*, see below) before importing the users.

It's a good idea to do some tests first, best with a .csv file with a few fictional users, which can be deleted later.

9.3 Group Management with *lwat*

The management of groups is very similar to the management of users. You can enter a name and a description per group. When searching for groups you can also delete or disable all users of the groups found. From the modification page you can access all the users of that group.

The groups entered in the group management are also regular unix groups, so you can use them for file permissions too.

9.4 Gestión de grupos en la línea de comando

Here's how:

```
# List existing group mapping between UNIX and Windows groups.
net groupmap list

# Add your new or otherwise missing groups:
net groupmap add unixgroup=NEW_GROUP type=domain ntgroup="NEW_GROUP"\
    comment="DESCRIPTION OF NEW GROUP"
```

This is explained in more detail in the [HowTo/NetworkClients](#) chapter of this manual.

9.4.1 Advanced group management

Using *lwat* it's easy to put users in a specific group (for example named after the year they enter or finish school) and to create all their home directories in a dedicated directory.

To achieve that, add a stanza like the following to the file `/etc/lwat/admin.ini`:

```
[2009]
ou = "ou=People,%base%"
objectClass = top posixAccount shadowAccount imapUser sambaSamAccount
homeDirectory = /skole/tjener/home0/2009/%username%
groups = none students 2009
loginShell = /bin/bash
mailMessageStore = /var/lib/maildirs/%username%
```

To make this work, the 2009 group has to be created before adding the users.

The above stanza simply adds them on top of home0. If you want them somewhere else, using another automount, then you use lwat to add that automount, and change the homeDirectory string in admini.ini correspondingly.

9.5 Machine Management with lwat

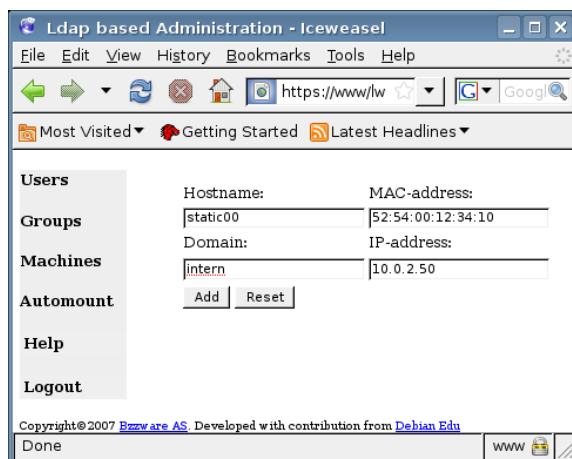
With the machine management you can basically manage all IP based devices in your Debian Edu network. Every machine added to the LDAP directory using lwat has a hostname, an IP-address, a MAC-address and a domain name which usually is "intern". For a more verbose description about the Debian Edu architecture see the [architecture](#) chapter of this manual.

If you add a machine, you can use an ip/hostname from the preconfigured address space. The following ip ranges are predefined:

First address	Last address	hostname
10.0.2.10	10.0.2.29	ltspserverxx
10.0.2.30	10.0.2.49	printerxx
10.0.2.50	10.0.2.99	staticxx

The addresses from 10.0.2.100 till 10.0.2.255 and 10.0.3.0 till 10.0.3.243 are reserved for dhcp and are assigned dynamically.

To assign a host with the MAC-address 52:54:00:12:34:10 a static IP-address you only have to enter the MAC-address and the hostname static00, the remaining fields will be filled automatically according to the predefined configuration:

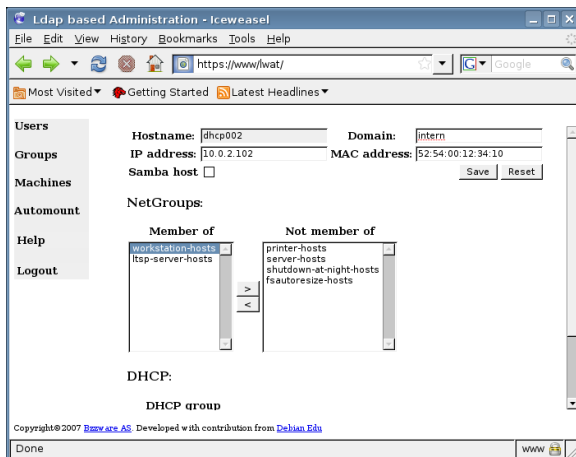


9.5.1 Buscar y eliminar computadoras

Searching for and deleting machines is quite similar to searching and deleting users, so that information is not repeated here.

9.5.2 Modify existing machines / Netgroup management

After adding a machine to the ldap tree using lwat, you can modify its properties using the search functionality and clicking on the machine (as you would with users).



The form that is behind these machine links is in one way similar to the one you already know from modifying user entries, but in an other way the informations do mean different things in this context.

For example, adding a machine to a NetGroup does not modify the permissions that machine or the users logged into that machine have on accessing files or programs on the server. But it restricts the services that machine can use on your main-server.

The default installation provides the NetGroups

- printer-hosts
- workstation-hosts
- ltsp-server-hosts
- server-hosts
- shutdown-at-night-hosts
- fs-autoresize-hosts

Currently the NetGroup functionality is used for

- NFS.
 - The home directories are exported by the main-server to be mounted by the workstations and the ltsp-servers. Because of security reasons only hosts within the workstation-hosts, ltsp-server-hosts and server-hosts NetGroups can mount the exported NFS shares. So it is rather important to remember to configure this kinds of machines properly in the ldap tree using lwat and configuring them to use the static IPs from ldap. /!\ Remember to configure workstations and ldap-servers properly with lwat, or your users won't be able to access their home directories.
- fs-autoresize
 - debian edu machines in this group will automatically resize lvm partitions that run out of space
- shutdown at night
 - debian edu machines in this group will automatically shutdown at night to save energy

Another important part of the machine configuration is the 'Samba host' flag (in the 'Host information' area). If you plan to add existing Windows systems to the Skolelinux Samba domain, you have to add the Windows host to the ldap tree and set this flag to be able to join the Windows host to the domain. For more information about adding Windows hosts to the Skolelinux network see the [HowTo/NetworkClients](#) chapter of this manual.

9.5.3 More lwat documentation

Documentación completa sobre lwat puede ser encontrada en `/usr/share/doc/lwat/` on the main server or [online](#).

9.6 Gestión de impresoras

For Printer Management point your web browser to <https://www.631> This is the normal cups management site where you can add/delete/modify your printers and can clean up the printing queue. Changes that require to login as root need ssl encryption.

If you connect the printer for the first time, we suggest to run `printconf` as root. **FIXME:** explain what to do when `printconf` does not accomplish anything.

9.7 Sincronización del reloj

The default configuration in Debian Edu is to keep the clocks on all machines synchronous but not necessarily correct. NTP is used to update the time. The clocks will not be synchronized with an external source by default, to make sure the machines to not use external network connections active all the time. This was configured like this after a school discovered their ISDN network was up all the time, giving them a nasty extra phone bill.

To enable synchronization with an external clock, the file `/etc/ntp.conf` on the main-server need to be modified. The comments in front of the `server` entries need to be removed. After this, the `ntp` server need to be restarted by running `/etc/init.d/ntp restart` as root. To test if the server is using the external clock sources, run `ntpq -c lpeer`.

9.8 Extending full partitions

Because of a possible bug with automatic partitioning, some partitions might be too full after installation. To extend these partitions, run `debian-edu-fsautoresize -n` as root. See the "Resizing Partitions" *HowTo* in the [administration HowTo chapter](#) for more information.

10 Mantenimiento

10.1 Actualizar el software

This section explains how to use `aptitude upgrade` and `kde-update-notifier`.

Using `aptitude` is really simply. To update a system you need to execute two commands on the command line as root: `aptitude update` (updates the lists of available packages) and `aptitude upgrade` (upgrades the packages for which an upgrade is available).

Instead of using the command line you can also use `kde-update-notifier`. **FIXME:** Explain how to use `kde-update-notifier`, best with screenshots.

It is also a good idea to install `cron-apt` and `apt-listchanges` and configure them to send mail to an address you are reading.

`cron-apt` will notify you once a day via email, which packages need an update. It does not install these updates, but downloads them (usually in the night), so you don't have to wait for the download, when you do `aptitude upgrade`.

`apt-listchanges` can send new changelog entries to you.

10.1.1 Keep yourself informed about security updates

Running `cron-apt` as described above is a good way to learn that for an installed package a security update is available. Another way to get informed about security updates is to subscribe to the [Debian security-announce mailinglist](#), which has the benefit of also informing what the security update is about. The downside (compared to `cron-apt`) is that it also includes information about updates for packages which aren't installed.

10.2 Gestión de las copias de seguridad

For the backup management point your browser to <https://www.slbackup-php>. Please note that you have to access this site via ssl, since you have to enter the root password there. If you try to access this site without using ssl it will fail.

Per default the `tjener` will backup `/skole/tjener/home0, /etc/, /root/.svk` and the `ldap` to `/skole/backup` which is in the `lvm`. If you only want to have things twice (if you delete something) this setup should be fine for you.

/!\ Be aware that this backup doesn't protect you from failing harddrives.

If you want to backup your data to an external server, a tape device or another harddrive you'll have to modify the existing configuration a bit.

Si quieres restaurar un directorio. la mejor opción es usar la línea de comandos:

```
$ sudo rdiff-backup -r <date> \
  /skole/backup/tjener/skole/tjener/home0/user \
  /skole/tjener/home0/user_<date>
```

this will leave the content from /skole/tjener/home0/user from <date> in the folder /skole/tjener/home0/user_<date>

If you want to restore a single file, then you should be able to select the file (and the version) from the web-interface, and download only that file.

- FIXME: continue description of slbackup-php usage, maybe with screenshots

10.3 Monitorización del Servidor

10.3.1 Munin

Munin trend reporting system is available from <https://www.munin/>. It provides system status measurement graphs on a daily, weekly, monthly and yearly basis, and allow the system administrator help when looking for bottlenecks and the source of system problems.

The list of machines being monitored using munin is generated automatically based on the list of hosts reporting to sitesummary. All hosts with the package munin-node installed is registered for munin monitoring. It will normally take two days from a machine is installed until munin monitoring start, because of the order the cron jobs are executed. To speed up the process, run sitesummary-client as root on the freshly installed machine, and /etc/cron.daily/sitesummary as root on the sitesummary server (normally the main-server).

Informacion sobre munin esta disponible en <http://munin.projects.linpro.no/>.

10.3.2 Nagios

Nagios system and service monitoring is available from <https://www.nagios3/>. The set of machines and services being monitored is automatically generated using information collected by the sitesummary system. The machines with the profile Main-server and Thin-client-server receive full monitoring, while workstations and thin clients receive simple monitoring. To enable full monitoring on a workstation, install the nagios-nrpe-server package on the workstation.

The username is nagiosadmin and the password is undefined, you must set your own password before you can login and use nagios. For security reasons, avoid using the same password as root. To change the password you can run the following command as root:

```
htpasswd /etc/nagios3/htpasswd.users nagiosadmin
```

By default Nagios does not send email. This can be changed by replacing notify-by-nothing with host-notify-by-email and notify-by-email in the file /etc/nagios3/sitesummary-template-contacts.cfg.

The Nagios configuration file used is /etc/nagios3/sitesummary.cfg. The sitesummary cron job generate /var/lib/sitesummary/nagios-generated.cfg with the list of hosts and services to monitor.

Extra nagios checks can be put in the file /var/lib/sitesummary/nagios-generated.cfg. -post to get them included in the generated file.

Information about the nagios system is available from <http://www.nagios.org/> or in the nagios3-doc package.

10.3.3 Sitesummary

Sitesummary is used to collect information from each computer and submit it to the central server. The information collected is available in /var/lib/sitesummary/entries/. Scripts in /usr/lib/sitesummary/ are available to generate reports.

A simple report from sitesummary without any details is available from <https://www/sitesummary/>.

Some documentation on sitesummary is available from <http://wiki.debian.org/DebianEdu/HowTo/SiteSummary>

10.4 Más información sobre personalizaciones de Debian Edu

More information about Debian Edu customisations useful for system administrators can be found in the [Administration Howto chapter](#).

11 Actualizaciones

/!\ Before explaining how to upgrade, please note, that you do this update on your productive server on your own risk. **Debian Edu/Skolelinux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.**

Please read this chapter completely before attempting to upgrade.

11.1 General notes on upgrading

Upgrading Debian from one distribution to the next is generally rather easy. For Debian Edu this is unfortunately not yet true as we heavily modify configuration files in ways we shouldn't do. (See Debian bug [311188](#) for more information.) Upgrading is still possible but might require some work.

In general, upgrading the servers is more difficult than the workstations and the main-server is the most difficult to upgrade. The diskless machines are easy, as their chroot environment can be deleted and recreated, if you haven't modified it. If you have, the chroot is basically a workstation chroot anyway, so rather easy to upgrade.

If you want to be sure that after the upgrade everything works like before, you should test the upgrade on (a) test systems, which are configured the same way as your production machines. There you can test the upgrade without risk and see if everything works as it should.

Make sure to also read the [information about the Debian lenny release](#) from its installation manual.

Also it might be wise to wait a bit and keep running etch for some more weeks, so that others can test the upgrade, experience problems and document them here. Debian Edu etch will receive continued support for some time in the future, but when Debian [ceases support for etch](#), Debian Edu will (have to) do that too. This is expected to happen on February 16th, 2010.

12 Upgrades from Debian Edu etch

/!\ Be prepared: make sure you have tested the upgrade from Etch in a test environment or have backups ready to be able to go back.

12.1 The basic upgrade operation

1. Edit `/etc/apt/sources.list` and replace all occurrences of "etch" with "lenny".
2. run `apt-get update`
3. run `apt-get upgrade`
4. run `apt-get dist-upgrade`

12.2 LDAP service needs to be repaired

Upgrading the `debian-edu-config` package on tjener is likely to disrupt some services:

1. **slapd wouldn't start.**

It may keep running until next restart, then if it gives:

```
tjener:~# invoke-rc.d slapd start
Starting OpenLDAP: slapd - failed.
The operation failed but no output was produced. For hints on what went
wrong please refer to the system's logfiles (e.g. /var/log/syslog) or
try running the daemon in Debug mode like via "slapd -d 16383" (warning:
this will create copious output).

Below, you can find the command line options used by this script to
run slapd. Do not forget to specify those options if you
want to look to debugging output:
slapd -h 'ldap:/// ldaps:///' -g openldap -u openldap -f /etc/ldap/slapd.conf ↵
                                -4
```

And searching /var/log/syslog yields something like:

```
tjener slapd[8894]: could not stat config file "/etc/ldap/schema/dnsdomain2.schema": No such file or directory (2)
```

then as a temporary measure to get it running until DNS is sorted.

1. Comment out the line include /etc/ldap/schema/dnsdomain2.schema in /etc/ldap/slapd.conf.
2. Ejecuta invoke-rc.d slapd start

Some new indexes have been added to openldap's configuration. in order to benefit from these you need to regenerate indexes:

1. stop slapd. invoke-rc.d slapd stop
2. check syslog or ps output that it have truly stopped.
3. run sudo -u openldap slapindex
4. start slapd with invoke-rc.d slapd start

12.3 DHCP service needs to be repaired

1. **dhcp3-server wouldn't start.**

If starting dhcp3-server gives:

```
tjener:~# invoke-rc.d dhcp3-server start
dhcpd self-test failed. Please fix the config file.
The error was:
Internet Systems Consortium DHCP Server V3.1.1
Copyright 2004-2008 Internet Systems Consortium.
All rights reserved.
For info, please visit http://www.isc.org/sw/dhcp/
/etc/dhcp3/dhcpd.conf line 2: semicolon expected.
ldap-server "ldap"
      ^
/etc/dhcp3/dhcpd.conf line 3: semicolon expected.
ldap-port 389;
      ^
/etc/dhcp3/dhcpd.conf line 4: semicolon expected.
ldap-base-dn "dc=skole,dc=skolelinux,dc=no"
      ^
/etc/dhcp3/dhcpd.conf line 5: semicolon expected.
ldap-dhcp-server-cn "dhcp"
      ^
/etc/dhcp3/dhcpd.conf line 6: semicolon expected.
ldap-method dynamic;
      ^
Configuration file errors encountered -- exiting
invoke-rc.d: initscript dhcp3-server, action "start" failed.
```

Then installing `dhcp3-server-ldap` is needed install it. Use your favorite package management front-end or run:

```
tjener:~# apt-get -q=2 update
tjener:~# apt-get -q=2 install dhcp3-server-ldap
```

If starting `dhcp3-server` gives:

```
tjener:~# invoke-rc.d dhcp3-server start
dhcpd self-test failed. Please fix the config file.
The error was:
Internet Systems Consortium DHCP Server V3.1.1
Copyright 2004-2008 Internet Systems Consortium.
All rights reserved.
For info, please visit http://www.isc.org/sw/dhcp/
Connecting to LDAP server ldap:389
Successfully logged into LDAP server ldap
Cannot find host LDAP entry dhcp (&(objectClass=dhcpServer)(cn=dhcp))
Configuration file errors encountered -- exiting
invoke-rc.d: initscript dhcp3-server, action "start" failed.
```

La configuración DHCP necesita cargarse en LDAP. Dos maneras de hacerlo son:

a. Cargar una configuración existente en la base de datos:

1. Locate the appropriate `dhcp.conf`, the last one should be in `/etc/dhcp3/dhcpd-debian-edu.conf.dpkg-old` or get one from backups.
2. Extract `/usr/share/doc/dhcp3-server-ldap/dhcpd-conf-to-ldap.pl.gz`
3. Set `/usr/share/doc/dhcp3-server-ldap/dhcpd-conf-to-ldap.pl` executable.
4. Run `/usr/share/doc/dhcp3-server-ldap/dhcpd-conf-to-ldap.pl`, optionally with `--help` first or read the comments in code.
5. View and check the resulting `ldif` file. Though DHCP is likely to function fine with this file, to keep as close as possible to the default configuration it is probably best to keep the entries for the configured individual hosts and replace the general entries (i.e. `dhcpService`, `dhcpSharedNetwork`, `dhcpSubnet`, etc.) with those from `etc/ldap/dhcp.ldif`.
6. Load the resulting `ldif` file to the LDAP database.
7. Start `dhcp3-server`.

```
tjener:~# cd /usr/share/doc/dhcp3-server-ldap/
tjener:/usr/share/doc/dhcp3-server-ldap# gunzip dhcpd-conf-to-ldap.pl. ↵
gz
tjener:/usr/share/doc/dhcp3-server-ldap# chmod 0744 dhcpd-conf-to-ldap. ↵
pl
tjener:/usr/share/doc/dhcp3-server-ldap#
tjener:/usr/share/doc/dhcp3-server-ldap# ./dhcpd-conf-to-ldap.pl -- ↵
server "dhcp" \
> --basedn "dc=skole,dc=skolelinux,dc=no" \
> --dhcpdn "cn=DHCP Config,dc=skole,dc=skolelinux,dc=no" \
> --conf "/etc/dhcp3/dhcpd-debian-edu.conf.dpkg-old" --ldif "/etc/ ↵
ldap/migrate-dhcp.ldif"
```

Creating LDAP Configuration with the following options:

```
Base DN: dc=skole,dc=skolelinux,dc=no
DHCP DN: cn=DHCP Config,dc=skole,dc=skolelinux,dc=no
Server DN: cn=dhcp, dc=skole,dc=skolelinux,dc=no
```

Done.

```
tjener:/usr/share/doc/dhcp3-server-ldap#
tjener:/usr/share/doc/dhcp3-server-ldap# cd /etc/ldap/
tjener:/etc/ldap#
tjener:/etc/ldap#
```

```
tjener:/etc/ldap# # At this point it's recommended to view migrate-dhcp ↵
.ldif side by side
tjener:/etc/ldap# # with dhcp.ldif and make some manual adjustments, ↵
before running:
tjener:/etc/ldap#
tjener:/etc/ldap# ldapadd -xZWD 'cn=admin,ou=People,dc=skole,dc= ↵
skolelinux,dc=no' \
> -f /etc/ldap/migrate-dhcp.ldif
Enter LDAP Password:
adding new entry "cn=dhcp, dc=skole,dc=skolelinux,dc=no"
....
tjener:/etc/ldap#
tjener:/etc/ldap# invoke-rc.d dhcp3-server start
* Starting DHCP server dnchpd3 ↵
[ ok ]
tjener:/etc/ldap#
```

- b. To load The fresh configuration into the database:

If there are only few configured host and adding them later to the configuration is no bother just run `ldapadd -xZWD 'cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no' -f /etc/ldap/dhcp.ldif`

2. Squid wouldn't start.

If starting Squid gives:

```
tjener:~# invoke-rc.d squid start
* Starting Squid HTTP proxy squid
2009/08/23 00:20:56| ACL name 'localnet' not defined!
FATAL: Bungled squid.conf line 2577: http_access allow localnet
Squid Cache (Version 2.7.STABLE3): Terminated abnormally.
```

It's complaint is self explanatory. Two options to overcome this are:

- To keep the old `/etc/squid/squid.conf` just comment-out or remove the offending line `http_access allow localnet`.
- To stay current copy the new `squid.conf` distributed in the squid package:

```
tjener:~# cd /etc/squid/
tjener:/etc/squid# mv squid.conf etch-squid.conf
tjener:/etc/squid# cp /usr/share/doc/squid/examples/squid.conf squid. ↵
conf
```

- Para tener la configuración por defecto de Debian Edu ejecuta el `cfengine-debian--edu`
- Any customized settings in the old configuration should be copied from the old file (dropping lines `acl schoolnet*`, `acl ltspnet*`, `http_access allow schoolnet` and `http_access allow ltspnet` these were replaced by the `acl localnet*` and `*access allow localnet` lines).

12.4 User logins from Windows machines needs to repaired

1. Users can't login from Windows machines.

A change in Samba that has become apparent in Lenny (see [532859](#)) prevents users login to Samba unless `sambaPwdLastSet` attribute is set other than zero in their LDAP entry.

- To add the `'sambaPwdLastSet'` attribute for new users to be created in `lwat` make sure `/etc/lwat/admin.ini` contain the line `'sambaPwdLastSet = 1'` for each group. See also: [Debian Edu bug#1364](#).
- To find which users are affected try:

```
ldapsearch -xZLLLWD 'cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no' -b ←
'ou=People,dc=skole,dc=skolelinux,dc=no' -s one '(&(objectClass= ←
sambaSamAccount)(!(sambaPwdLastSet=*)))(sambaPwdLastSet=0))' uid | ←
less
```

3. To add the 'sambaPwdLastSet' attribute to users where it isn't set try:

```
ldapsearch -xZLLLWD 'cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no' -b ←
'ou=People,dc=skole,dc=skolelinux,dc=no' -s one '(&(objectClass= ←
sambaSamAccount)(!(sambaPwdLastSet=*)))' dn | sed '/.\+/a\changetype: ←
modify\nadd:sambaPwdLastSet\nsambaPwdLastSet: 2\n-' > /etc/ldap/ ←
fixamba.ldif

ldapmodify -xZWD 'cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no' \
-f /etc/ldap/fixamba.ldif
```

4. If users with 'sambaPwdLastSet = 0' were found and allowing them to login is desired, try:

```
ldapsearch -xZLLLWD 'cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no' -b ←
'ou=People,dc=skole,dc=skolelinux,dc=no' -s one '(&(objectClass= ←
sambaSamAccount)(sambaPwdLastSet=0))' dn | sed '/.\+/a\changetype: ←
modify\nreplace:sambaPwdLastSet\nsambaPwdLastSet: 2\n-' > /etc/ldap/ ←
fixamba.ldif

ldapmodify -xZWD 'cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no' \
-f /etc/ldap/fixamba.ldif
```

See also [SambaLDAP](#).

12.5 DNS service needs to repaired

For lenny Debian Edu has switched to powerdns as nameserver. It's however possible to stay with bind9.

12.5.1 Bind

If you want to continue running bind, you must add the RFC 2782 entries in /etc/bind/debian-edu/db.intern:

```
;RFC2782
_ldap._tcp                IN      SRV     0 100 389 tjener
_syslog._udp              IN      SRV     0 100 514 tjener
```

12.5.2 powerdns

Para cambiar a powerdns:

1. install the packages pdns-server, pdns-recursor and pdns-backend-ldap.

```
tjener:~# apt-get -q=2 update
tjener:~# apt-get -q=2 install pdns-server pdns-recursor pdns-backend-ldap
```

2. In /etc/ldap/slapd.conf:

1. Uncomment the line include /etc/ldap/schema/dnsdomain2.schema, if it was commented-out earlier (1.1).
2. It's recommended to index associatedDomain, at the indices area add the lines:

```
# PowerDNS index
index associatedDomain      pres,eq,sub
```

3. Restart slapd `invoke-rc.d slapd restart`.
4. Load the DNS data into LDAP either using the default Debian Edu or the existing Bind9 configuration:

a. To use the default Debian Edu configuration:

1. Add the contents of `/etc/ldap/dns_skole.ldif` and `/etc/ldap/dns_arpa.ldif` using `ldapadd`.

```
tjener:~# ldapadd -xZWD 'cn=admin,ou=People,dc=skole,dc=skolelinux, ↵
dc=no' \
> -f '/etc/ldap/dns_skole.ldif'
tjener:~# ldapadd -xZWD 'cn=admin,ou=People,dc=skole,dc=skolelinux, ↵
dc=no' \
> -f '/etc/ldap/dns_arpa.ldif'
```

b. To **migrate** Bind's configuration:

1. There is a utility called `zone2ldap` provided in the PowerDNS distribution which convert zone files used by BIND to the ldif format, it is broken in Lenny (504061), fixed packages are available in Squeeze.

Para usar el que viene con Etch:

1. Download **etch-i386-pdns-backend-ldap**.
2. Unpack it using `dpkg` or `dpkg-deb` and replace the faulty `/usr/bin/zone2ldap`:

```
tjener:/tmp# dpkg-deb -x pdns-backend-ldap_2.9.20-8+etch1_i386. ↵
deb \
> pdns-backend-ldap_2.9.20
tjener:/tmp# cp pdns-backend-ldap_2.9.20/usr/bin/zone2ldap /usr/ ↵
bin/zone2ldap
```

3. Apparently PowerDNS in Lenny (2.9.21.2) doesn't understand **AFSDB records** same for `'zone2ldap'`, when reading an AFSDB record it will quit with an error message. To workaround this limitation comment-out (with `' ; '`) AFSDB records in the named `db.*` files, `grep -rl AFSDB /etc/bind/*` will disclose them.

4. At last the conversion can be executed:

```
tjener:~# zone2ldap --basedn='ou=hosts,dc=skole,dc=skolelinux,dc= ↵
no' --layout=tree \
> --named-conf='/etc/bind/debian-edu/named- ↵
bind9.conf' --resume \
> > /etc/ldap/skole-zone2ldap
```

2. Before the data in the new ldif file can be added to the database the "basedn" must be created:

```
tjener:~# ldapadd -xZWD 'cn=admin,ou=People,dc=skole,dc=skolelinux, ↵
dc=no'
Enter LDAP Password:
dn: ou=hosts,dc=skole,dc=skolelinux,dc=no
objectClass: organizationalUnit
objectClass: domainRelatedObject
ou: hosts
associatedDomain: intern
```

3. The format of the ldif file created by `zone2ldap` is suitable for `'ldapmodify'`:

```
tjener:~# ldapmodify -xZWD 'cn=admin,ou=People,dc=skole,dc= ↵
skolelinux,dc=no' \
> -f /etc/ldap/skole-zone2ldap
```

5. Time to stop `bind9` and start `pdns` and `pdns-recursor`:

```
tjener:~# invoke-rc.d bind9 stop
tjener:~# invoke-rc.d pdns start
tjener:~# invoke-rc.d pdns-recursor start
```

6. After testing the new PowerDNS setup Bind9 may be disabled/removed/purged.

12.6 Nagios setup has changed

Nagios2 is not available in lenny anymore, so nagios3 is now installed.

The nagios3 configuration will already be installed and functional, though the nagios2 configuration won't be functional anymore. If you changed the nagios2 configuration, your changes will be saved in .dpkg-old files, but the changes will not be applied to the nagios3 configuration. So these changes have to be redone manually.

12.7 Recreating an LTSP chroot

On the LTSP server(s) the LTSP chroot should be recreated. The new chroot will automatically support both thin-clients and diskless workstations.

Remove /opt/ltsp/i386 (or /opt/ltsp/amd64, depending on your setup. If you have enough disk space, consider backing it up.

Recreate the chroot by running `debian-edu-ltsp && ltsp-make-client` as root.

13 Upgrades from older Debian Edu / Skolelinux installations (before etch)

To upgrade from any older release, you will need to upgrade to the etch based Debian Edu release first, before you can follow the instructions provided above. How to upgrade to etch is described in the [Manual for Debian Edu etch](#).

[CategoryPermalink](#)

14 HowTo

- HowTos for [general administration](#)
- HowTos for [the desktop](#)
- HowTos for [networked clients](#)
- HowTos for [teaching and learning](#)
- HowTos for [Users](#)

15 HowTos for general administration

The [Getting Started](#) and [DebianEdu/Documentation/Lenny/Maintainance](#) chapters describe how to get started with Debian Edu and how to do the basic maintainance work. The howtos in this chapter have some more "advanced" tips and tricks.

15.1 Seguimiento de /etc usando el sistema de control de versiones svk

With the introduction of the `etcinsvk` script in Debian Edu, all files in `/etc/` are tracked using `svk` as a version control system.

This makes it possible to see when a file is added, changed and removed, as well as what was changed if the file is a text file. The svk repository is stored in `~root/.svk/`. Every hour any changes are automatically recorded, allowing configuration history to be extracted and reviewed.

To look at the history, the command `etcinsvk log` is used. To check the differences between two points in time, a command like `etcinsvk diff -r6:8` can be used. The numbers 6 and 8 here represent revision numbers, which can be found by using `etcinsvk log`. See below for some examples.

See the output of `etcinsvk --help` for verbose information.

Lista de comandos útiles:

```
etcinsvk diff
etcinsvk log
etcinsvk status
etcinsvk commit
etcinsvk ignore
```

15.1.1 Usage examples

In a freshly installed system try this to see all changes done since the system was installed:

```
etcinsvk diff -r6 | less
```

To see the list of changes done in `/etc/`, use this command:

```
etcinsvk log | less
```

Here check revision numbers by date and time. To see all changes done since revision N say:

```
etcinsvk diff -rN | less
```

To see the changes done to a specific file between specific revisions, specify the file and both revisions:

```
etcinsvk diff -r46 -r64 /etc/resolv.conf | less
```

To revert a change, use the `diff` command to look at the change, and edit the file to undo the change, or use a command like this to do it automatically:

```
( cd /etc && etcinsvk diff -r6 /etc/resolv.conf | patch -p0 -R )
```

To manually commit a file, because you don't want to wait up to an hour:

```
etcinsvk commit /etc/resolv.conf
```

If you don't want a specific file to be tracked in `svk`, you can tell to ignore it. But this is rarely useful :)

```
etcinsvk ignore /etc/path/to/file/to/be/ignored
```

15.1.2 For those who upgraded from Etch

`debian-edu-etc-svk` was moved to a separate package and renamed to `etcinsvk` for Lenny. Those used to using `debian-edu-etc-svk` should start to use `etcinsvk` instead.

15.2 Redimensionando Particiones

Most partitions in Debian Edu are logical LVM volumes. Only the `/boot/` partition is not. With the Debian/Etch release of Debian Edu, it is possible to extend partitions while they are mounted. This is a feature of the Linux kernel since version 2.6.10. Shrinking partitions still need to happen while the partition is unmounted.

It is a good idea to avoid creating very large partitions, as large partitions will take a long time to restore from backup if the need should arise, and file system checks take a very long time for large partitions. A good limit can be 20 GiB. It is better, if possible, to create several smaller partitions than one very large one.

To make it easier to extend full partitions, the `debian-edu-fsautoresize` script is provided. When invoked, it reads the configuration from `/usr/share/debian-edu-config/fsautoresiz-etab`, `/site/etc/fsautoresizetab` and `/etc/fsautoresizetab`. It proposes to extend partitions with too little free space based on the rules provided in these files. Without any arguments, it

will only show the commands needed to extend the file system. The argument `-n` is needed to actually execute this commands to extend the file systems.

The script is executed automatically every hour on every client listed in the `fsautoresize-hosts` netgroup.

When resizing the partition used by the Squid proxy, the cache size in `etc/squid/squid.conf` need to be updated as well. The helper script `/usr/share/debian-edu-config/tools/squid--update-cachedir` is provided to do this automatically, checking the current partition size of `/var/spool/squid/` and configuring Squid to use 80% of this as its cache size.

15.2.1 Logical Volumne Management

Logical Volume Management (LVM) enables resizing the partitions while they are mounted and in use. You can learn more about LVM in the [LVM HowTo](#).

To extend a logical volume manually you simply tell the `lvextend` command how large you want it to grow to. For example, to extend `home0` to 30GB you use the following commands:

```
lvextend -L30G /dev/vg_system/skole+tjener+home0
resize2fs /dev/vg_system/skole+tjener+home0
```

15.3 Using ldapvi

`ldapvi` is a tool to edit the LDAP database with a normal text editor on the commandline.

The following needs to be executed:

```
ldapvi --host ldap -ZZ --bind simple --tls allow -D 'cn=admin,ou=People,dc=skole, ↵
dc=skolelinux,dc=no'
```

Then make your changes, save and quit the editor. That's it!

Alternatively, to save key-strokes try:

```
ldapvi --ldap-conf -ZD '(cn=admin)'
```

Note: `ldapvi` will use whatever is the default editor. By executing `export EDITOR=vim` in the shell prompt one can configure the enviroment to get a vi clone as editor.

/!\ Warning: `ldapvi` is a very powerful tool. Be careful and don't mess up the LDAP database.

15.4 Using volatile.debian.org

15.4.1 Que es debian volatile?

Quoting from the webpage:

- Some packages aim at fast moving targets, such as spam filtering and virus scanning, and even when using updated data patterns, they do not really work for the full time of a stable release. The main goal of volatile is allowing system administrators to update their systems in a nice, consistent way, without getting the drawbacks of using unstable, even without getting the drawbacks for the selected packages. So `debian-volatile` will only contain changes to stable programs that are necessary to keep them functional.

15.4.2 Como usar volatile

Since the Lenny release, the volatile archive is enabled and used by default.

15.5 Using backports.org to install newer software

You are running Debian Edu, because you prefer the stability of Debian Edu. It runs great, there is just one problem: Sometimes software is a little bit more outdated as you like. This is where `backports.org` steps in.

Backports are recompiled packages from Debian testing (mostly) and Debian unstable (in a few cases only, e.g. security updates), so they will run without new libraries (wherever this is possible) on a stable Debian distribution like Debian Edu. **We recommend you to pick out single backports which fits**

your needs, and not to use all backports available there. Please follow the instructions on <http://www.backports.org> to use these backports.

You will need to add the backports.org archive key to root's gpg keyring, so that apt can use this repository **securely**. This is done by running these commands as root:

```
# install the debian-keyring securely:
aptitude install debian-keyring
# fetch the backports.org key insecurely:
gpg --keyserver pgpkeys.pca.dfn.de --recv-keys 16BA136C
# check securely if the key is correct and add it the keyring used by apt if it ←
is:
gpg --keyring /usr/share/keyrings/debian-keyring.gpg --check-sigs 16BA136C && gpg ←
--export 16BA136C | apt-key add -
# add backports.org repo to /etc/apt/sources.list
echo "deb http://www.backports.org/debian lenny-backports main contrib non-free" ←
>> /etc/apt/sources.list
# update the list of available packages:
aptitude update
# Install the keyring package for backports
aptitude install debian-backports-keyring
```

Then you can either use `aptitude -t lenny-backports install <packagename>` to install or update packages once, or you can configure a package to be always installed from backports.org though `/etc/apt/preferences`. The latter is described in the [instructions on backports.org](http://www.backports.org).

The second variant has the advantage, that updates to backports are installed automatically when they are available. With the first variant you need to update manually.

15.6 Java

15.6.1 running standalone Java applications

Standalone Java applications are supported out of the box by the OpenJDK Java runtime.

15.6.2 running Java applications in the webbrowser

The version of the OpenJDK Java runtime available in Debian Edu Lenny does not support to run Java applications in the webbrowser, this will be fixed in the next release. On Lenny, the non-free (but freely available) Java from Sun needs to be installed.

To install Java from Sun you need to edit the `/etc/apt/sources.list` first to make sure it will install packages from non-free. There needs to be a line like this:

```
deb http://ftp.debian.org/debian/ lenny main contrib non-free
```

Then do:

```
# apt-get update
```

Ahora estas listas para ejecutar este comando:

```
# apt-get install sun-java6-plugin sun-java6-jre sun-java6-fonts
```

15.7 Creando directorios en el directorio home de los usuarios

With this script the administrator can create a folder in each users home directory and set access permissions and ownership.

In the example shown below with `group=teachers` and `permissions=2770` a user can hand in an assignment by saving the file to the folder "assignments" where teachers are given write access to be able to make comments.

```
home_path="/skole/tjener/home0";
shared_folder="assignments";
permissions="2770";
created_dir=0;
```

```

        for home in $(ls $home_path);do
        . if [ ! -d "$home_path/$home/$shared_folder" ]; then
        . mkdir $home_path/$home/$shared_folder
        chmod $permissions $home_path/$home/$shared_folder
        #set the right owner and group
        #"username" = "group name" = "folder name"
        user=$home
        group=teachers
        chown $user:$group $home_path/$home/$shared_folder
        ((created_dir+=1))
        else
        . echo -e "the folder $home_path/$home/$shared_folder already exists.\n"
        . fi
        done
        echo "$created_dir folders has been created"

```

15.8 Easy access to USB drives and CDROMs/DVDs

When users insert a USB drive or DVD/CDROM into a (diskless) workstation, there is a popup windows asking what to do with it, just like in any other normal installation.

When users insert a USB drive or DVD/CDROM into a thin client there is no popup window like they are used to from their usual Desktop. Instead it is automatically mounted and they have to browse to the /media/\$user folder to access it.. This is quite difficult for many non experienced users.

With the following script the symlink "Media" is created for all users in the home folder for easy access to USB drives, CDROMs or whatever media is connected to the thin client.

```

home_path="/skole/tjener/home0"; shared_folder="Media"; permissions="775"; ↵
created_dir=0;
for home in $(ls $home_path); do
    if [ ! -d "$home_path/$home/$shared_folder" ]; then
        ln -s /media/$home $home_path/$home/$shared_folder ((created_dir+=1))
    else
        echo -e "the folder $home_path/$home/$shared_folder already exists.\n"
    fi
done
echo "$created_dir folders has been created"

```

15.8.1 A warning about removable media on LTSP servers

/!\ Warning: When inserted into a LTSP server USB drives and other removable media cause popup messages on remote LTSP clients.

When a remote users acknowledges the popup or uses pmount from console, a remote user can even mount the removable devices and access the files.

This is being tracked as [Debian Edu bug #1376](#).

15.9 Automatic cleanup of left-over processes

killer is a perl script that gets rid of background jobs. Background jobs are defined as processes that belong to users who are not currently logged into the machine. It's run by cron job once an hour.

/!\ Due to [551753](#) (also documented as [Debian Edu bug #1373](#)) killer should not be installed on thin-client servers when long usernames are used!

Para instalar ejecuta el siguiente comando como root:

```
apt-get install killer
```

15.10 Automatic shutdown of machines during the night

It is possible to save energy and money by turning off client machines at night, and turn them automatically on in the morning.

There are some considerations to make when doing this:

- The clients should not be shut down when someone is using them. This is done by checking the output from `who`, and as a special case, checking for the LDM ssh connection command to work with LTSP thin clients.
- To avoid breaking electrical fuses, it is a good idea to make sure all clients do not start at the same time.
- There are two different methods available to wake up clients. One uses a BIOS feature and require a working and correct hardware clock, as well as a motherboard and BIOS version supported by `nvrwakeup`. The other require a server with knowledge about all the clients to wake up and for all the clients to have support for wake-on-lan.

15.10.1 How to set up shutdown-at-night

On clients that should turn off at night, touch `/etc/shutdown-at-night/shutdown-at-night`, or add the hostname (ie the output from `'uname -n'` on the client) to the netgroup "shutdown-at-night-hosts". Adding hosts to the netgroup in LDAP can be done using the `lwat` web tool. The clients might need to have wake-on-lan configured in the BIOS. It is also important that the switches and routers used between the wake-on-lan server and the clients will pass the WOL packages to the clients even if the clients are turned off. Some switches fail to pass on packages to clients that are missing in the ARP table on the switch, and this block the WOL packages.

To enable wake-on-lan on the server, add the clients to `/etc/shutdown-at-night/clients`, with one line per client, IP address first, and MAC address (ethernet address) next, with space between them, or create a script `/etc/shutdown-at-night/clients-generator` to generate the list of clients on the fly.

Here is an example `/etc/shutdown-at-night/clients-generator` for use with `sitesummary`:

```
#!/bin/sh
PATH=/usr/sbin:$PATH
export PATH
sitesummary-nodes -w
```

An alternative if the netgroup is used to activate shutdown-at-night on clients is this script using the netgroup tool from the `ng-utils` package:

```
#!/bin/sh
PATH=/usr/sbin:$PATH
export PATH
netgroup -h shutdown-at-night-hosts
```

/!\ This text was originally taken from this [README](#).

15.11 Access to skolelinux server from outside a firewall

A boot script `open-backdoor` is provided in the `debian-edu-config` package to "break out" from behind a firewall. It is useful for system administrators responsible for several Debian Edu installations. It set up an SSH tunnel to another machine, allowing ssh login from the outside of the firewall.

To enable it, create a ssh key without a password, create a user on a remote host to use for ssh login, copy the public key into `~/.ssh/authorized_keys` for the remote user used for and specify the login information in `/etc/default/backdoor`.

Content of `/etc/default/backdoor` should be similar to this:

```
RHOST=admin.example.net
RPORT=1234
RUSER=backdoor
```

FIXME: paragraph about access from outside need to be completed and tested.

15.12 Instalar máquinas con servicios separados para liberar carga del servidor principal

FIXME: this is so generic its almost useless

- install the *minimal* profile using the *debian-edu-expert* boot-option
- install the packages for the service
- configure the service
- disable the service on main-server
- actualiza DNS en el servidor principal

15.13 Configurando el menú PXE

The PXE configuration is generated using the `debian-edu-pxeinstall` script. It allow some settings to be overridden by adding a file `/etc/debian-edu/pxeinstall.conf` with replacement values.

15.13.1 Configurando la instalación de PXE

The PXE installation option is by default available to anyone able to PXE boot a machine. To password protect the PXE installation options, a file `/var/lib/tftpbboot/menupassword.cfg` can be created with content similar to this:

```
MENU PASSWD $4$NDk00TUzNTQ1NTQ5$7d6KvAlVCJKRKcijtVSPfveuWPM$
```

The password hash should be replaced with a MD5 hash for the wanted password.

The PXE installation will inherit the language, keyboard layout and mirror settings from the settings used when installing the main-server, and the other questions will be asked during installation (profile, popcon participation, partitioning and root password). To avoid these questions, the file `/etc/debian-edu/www/debian-edu-install.dat` can be modified to provide preselected answers to debconf values. Some examples of available debconf values are already commented in `/etc/debian-edu/www/debian-edu-install.dat`. Your changes will be lost as soon as `debian-edu-pxeinstall` is used to recreate the PXE-installation environment. To append debconf values to `/etc/debian-edu/www/debian-edu-install.dat` during recreation with `debian-edu-pxeinstall`, add the file `/etc/debian-edu/www/debian-edu-install.dat.local` with your additional debconf values.

FIXME: Compare with [DebianEdu/Documentation/Lenny/HowTo/NetworkClients](#) and get rid of redundant information.

15.14 HowTos from wiki.debian.org

The HowTos from <http://wiki.debian.org/DebianEdu/HowTo/> are either user- or developer-specific. Let's move the user-specific HowTos over here (and delete them over there)! (But first ask the authors (see the history of those pages to find them) if they are fine with moving the howto and putting it under the GPL.)

- <http://wiki.debian.org/DebianEdu/HowTo/AutoNetRespawn>
- <http://wiki.debian.org/DebianEdu/HowTo/BackupPC>
- <http://wiki.debian.org/DebianEdu/HowTo/ChangeIpSubnet>
- <http://wiki.debian.org/DebianEdu/HowTo/SiteSummary>
- http://wiki.debian.org/DebianEdu/HowTo/Squid_LDAP_Authentication

16 HowTos for the desktop

16.1 KDE Kiosk mode

Dos perfiles por defecto son incluidos:

debian_edu_pupils (enabled for members of the students file group)

- customized set of icons appears on student desktops
- makes sure that the programs behind the desktop icons also show up in the kde panel

- adept is not started
- makes sure that students cannot start another kde session
- disables possibility to gain root access for students

debian_edu_root (enabled for the root user and members of the admins file group)

- adds a desktop icon to connect to the local webserver on tjener to provide easy access to all the administration programs

Note:: modifications to the profiles can be done using `kiosktool`. However, unless you follow the step below, your changes will be overwritten by upgrades. **FIXME:** this is broken and a bug should be filed: `kiosktool` upgrades restore default desktop icons

If you want to modify the kiosk profiles, you can either copy the existing ones and modify them, or create new kiosk profiles in (for example) `/etc/kde3/kioskprofiles/` and enable them in `/etc/-kde-user-profile`. The kiosk tool will do this for you if you click "profile properties" and browse to a new folder.

16.2 Changing kioskmode on diskless workstations

After you have made changes to the kioskmode settings with `kiosktool` like described above, you will have to copy some files inside the chroot used by the diskless workstation.

Assuming the diskless workstations are running `i386`, the following commands must be executed on the workstation server(s):

```
export LTSPCHROOT=/opt/ltsp/i386/
cp -rv /etc/kde-profile/ $LTSPCHROOT/etc/
cp -v /etc/kderc $LTSPCHROOT/etc/
cp -v /etc/kde-user-profile $LTSPCHROOT/etc/
unset LTSPCHROOT
```

Else replace `i386` with `amd64` or `powerpc` as applicable.

16.2.1 Disabling kioskmode

If you don't want to use kioskmode, either just remove the file `/etc/kderc`. Or, if you just want to temporarily disable kioskmode, comment out all entries in there.

16.3 Modifying the kdm login screen

In Debian/Etch, the way to customize the kdm login screen was changed. Now, it is done by adding a file in `/etc/default/kdm.d/` specifying variables to override the default.

Here is one example used to activate the theme in the desktop-base package:

```
USETHEME="true"
THEME="/usr/share/apps/kdm/themes/debian-moreblue"
```

See the code in `/etc/init.d/kdm` for information on how these variables are used.

16.4 Flash

The free software flash-player `gnash` is installed by default, but switching to Adobe Flash is an option. To install the (non-free) Adobe Flash Player web browser plugin, install the `flashplugin-nonfree` debian package from backports.org.

Hay tres requerimientos para hacerlo:

- add `backports.org` to `/etc/apt/sources.list` as decribed in the [general adminstration howtos](#)
- add the following lines to `/etc/apt/preferences` (the file probably does not exist, so you might have to create it):

```
Package: flashplugin-nonfree
Pin: release a=lenny-backports
Pin-priority: 999
```

- as the flashplugin-nonfree package is only an installer-package (and does not contain the flashplugin itself, for legal reasons), it also requires a working internet connection as it will download the precompiled binary from Adobes website.

16.4.1 Sonido con Flash en clientes ligeros

Additionally to the flashplugin-nonfree package (see above) you just need to install the flashp-layer-nonfree-extrasound package.

16.5 Reproducindo DVDs

libdvdcss is needed for playing most commercial! DVDs. For legal reasons it's not included in Debian (Edu). If you are legally allowed to use it, you can use the packages from debian-multimedia.org. Add the multimedia repository (as described just below this paragraph) and install multimedia and dvd libraries:

```
apt-get install libdvdcss2 w32codecs
```

16.6 Usando el repositorio multimedia

Para usar www.debian-multimedia.org has lo siguiente

```
# install the debian-keyring securily:
apt-get install debian-keyring
# fetch the debian-multimedia key insecurely:
gpg --keyserver pgpkeys.pca.dfn.de --recv-keys 1F41B907
# check securily if the key is correct and add it to the keyring used by apt if ↵
it is:
gpg --keyring /usr/share/keyrings/debian-keyring.gpg --check-sigs 1F41B907 && gpg ↵
--export 1F41B907 | apt-key add -
# add repository to sources.list - please check the homepages for mirrors!
echo "deb http://debian-multimedia.org lenny main" >> /etc/apt/sources.list
# update the list of available packages:
apt-get update
```

16.7 Handwriting fonts

The package `ttf-linux` (which is installed by default) installs the font "Abecedario" which is a nice handwriting font for kids. The font has several forms to be used with kids: dotted, and with lines.

17 HowTos for networked clients

17.1 Introduction to Thin clients and Diskless workstations

One generic term for **both** thin clients and diskless workstations is *LTSP client*. **LTSP is the Linux Terminal Server Project**.

Thin client

A thin client setup enables a ordinary PC to function as an (X-)terminal, where all software runs on the LTSP server. This means that this machine boots from a diskette or directly from the server using network-PROM (or PXE) without using a local client hard drive.

Diskless workstation

A diskless workstation runs all software locally. The client machines boot directly from the LTSP server without a local hard drive. Software is administered and maintained on the LTSP server, but it runs on the diskless workstation. Home directories and system settings are stored on the server too.

Diskless workstations are an excellent way of reusing newer hardware with the same low maintenance cost as with thin clients.

17.1.1 Machine type selection based on the network

Each LTSP server has two ethernet cards, one is configured in the 10.0.2.0/23 subnet (which is shared with the main server) and another forming a local 192.168.0.0/24 subnet (this subnet is a separate subnet for each LTSP server).

Diskless workstations get IP addresses assigned in the private subnet 10.0.2.0/23, while thin clients are connected in the separate subnet 192.168.0.0/24.

17.1.2 Changing the PXE menu on an LTSP server

The PXE menu allows network booting of LTSP clients, the installer and other alternatives. The file `/var/lib/tftpboot/pxelinux.cfg/default` is used by default if no other file in that directory matches the client, and out of the box it is set to link to `/var/lib/tftpboot/debian-edu/default-menu.cfg`.

Cmo instalar y configurar clientes ligeros

```
ln -s /var/lib/tftpboot/debian-edu/default-diskless.cfg /var/lib/tftpboot/pxelinux.cfg/default ↵
```

If one want all clients to boot as thin clients instead, change the symlink like this:

```
ln -s /var/lib/tftpboot/debian-edu/default-thin.cfg /var/lib/tftpboot/pxelinux.cfg/default ↵
```

See also the pxelinux documentation at <http://syslinux.zytor.com/wiki/index.php/PXELINUX>.

If one wants clients on the 192.168.x.x interface of a thin client server to boot as diskless workstations instead of thin clients, edit

```
/var/lib/tftpboot/ltsp/i386/pxelinux.cfg/default
```

and add a '3' (no quotes) to the end of the line. There is no need to add these workstations in `lwat`, saving you some work and some "staticxx" IP addresses (see below).

17.1.3 Separate main- and LTSP servers

For performance and security considerations it might be desired to set up a separate main server which doesn't act as LTSP server.

To have `ltspserver00` serve diskless workstations on the main (10.0.x.x) network, when `tjener` is not a combined server, one needs to follow these steps:

- copy the `ltsp` directory from `/var/lib/tftpboot` from `ltspserver00` to the same directory on `tjener`.
- copy `/var/lib/tftpboot/debian-edu/default-diskless.cfg` to the same directory on `tjener`.
- edit `/var/lib/tftpboot/debian-edu/default-diskless.cfg` to use the IP address of `ltspserver00`, the following example uses 10.0.2.10 (which is the default):

```
DEFAULT ltsp/i386/vmlinuz initrd=ltsp/i386/initrd.img nfsroot=10.0.2.10:/opt/ltsp/i386 boot=nfs ro quiet 3 ↵
```

- set the symlink in `/var/lib/tftpboot/pxelinux.cfg` on `tjener` to point to `/var/lib/tftpboot/debian-edu/default-diskless.cfg`.

17.1.4 How to extend the range of static IP addresses

Out of the box Debian Edu only has 50 static addresses available on the 10.0.2.0/23 network. To extend this to 90 addresses, you can do the following.

1. Download `ext_static.ldif`. The LDIF makes the following changes to the LDAP catalog:
 - It changes the 10.0.2.0/23 dynamic DHCP range from 10.0.2.100-10.0.3.242 to 10.0.2.100-10.0.3.213
 - It deletes the DNS records for dhcp370 (10.0.3.214) to dhcp399 (10.0.3.243)
 - It adds DNS records for static50 (10.0.3.214) to static90 (10.0.3.244)
2. Apply the changes described in `ext_static.ldif`:

```
ldapmodify -x -Z -W -D cn=admin,ou=People,dc=skole,dc=skolelinux,dc=no -f ↵
ext_static.ldif
```

When prompted, enter the LDAP admin password. You now have 40 extra static addresses, at the cost of 29 dynamic addresses.

17.2 LTSP en detalle

17.2.1 lts.conf

To make special adaptations and configurations for specific thinclients, you can edit the file `/opt/ltsp/i386/etc/lts.conf`. Have a look at `/opt/ltsp/i386/usr/share/doc/ltsp-client-core/examples/lts.conf` to see some examples and see `/usr/share/doc/ltsp-server/lts-parameters.txt.gz` for all parameters you can specify.

The default values is defined under `[default]`, to configure one client, specify which client using the client mac adress or ipadress like this `[192.168.0.10]`.

Example: To make the thinclient `ltsp010` use 1280x1024 resolution, add something like this:

```
[192.168.0.10]
X_MODE_0 = 1280x1024
X_HORZSYNC = "60-70"
X_VERTREFRESH = "59-62"
```

somewhere below the default settings.

Depending on what changes you make, it may be necessary to restart X on the client (by pressing `alt+ctrl+backspace`) or restart the client.

To use ipaddresses in `lts.conf` you should add the client mac-address to your `dhcp-server`. Otherwise you should use the client mac-address directly in you `lts.conf` file.

17.2.2 Load balancing LTSP servers

17.2.2.1 Parte 1 It is possible to set up the clients to connect to one of several servers for load balancing. This is done by providing `/opt/ltsp/i386/usr/lib/ltsp/get_hosts` as a script printing one or more servers for LDM to connect to. In addition to this, each `ltsp chroot` need to include the `ssh` host key for each of the servers.

First of all, you must choose one LTSP server to be the loadbalancing server. All the clients will PXE-boot from this server and load the Skolelinux image. After the image is loaded, LDM chooses which server to connect to by using the "get_hosts" script. How this is done you decide later on.

Now you have to move your clients from the 192.168.1.0 network to the 10.0.2.0 network. This is because when you use loadbalancing, the clients should have direct access to the server LDM chooses. If you leave your clients on the 192.168.1.0 network, all of the clients traffic will go through that server before it reaches the chosen LDM server.

To get the clients working on the 10.0.2.0 network, you have to edit `/etc/dhcp3/dhcpd.conf` on the main-server (tjener). Where it says:

`/!\ FIXME: This need to be changed as DHCP configuration is in LDAP.`

```
subnet 10.0.2.0 netmask 255.255.254.0 {
    range 10.0.2.100 10.0.3.242;
}
```

tiene que agregar esto bajo "range":

```
filename "/var/lib/tftpboot/ltsp/i386/pxelinux.0";
next-server xxx;
option root-path "/opt/ltsp/i386";
option log-servers ltspserver01;
use-host-decl-names on;
```

Next-server should be the IP-address or hostname of the server you chose to be the loadbalancing server. If you use hostname you must have a working DNS. Remember to restart the dhcp service.

17.2.2.2 Parte 2 Now you have to make a "get_hosts" script that prints a server for LDM to connect to. The parameter LDM_SERVER overrides this script. In consequence, this parameter must not be defined if the get_hosts is going to be used. The get_hosts script writes on the standard output each server IP address or host names, in the random order.

Edita "/opt/ltsp/i386/etc/ltsp.conf" y agrega algo como esto:

```
MY_SERVER_LIST = "xxxx xxxx xxxx"
```

Replace xxxx with either the IP or hostname of the servers, list must be space separated. Then, put the following script in /opt/ltsp/i386/usr/lib/ltsp/get_hosts on the server you chose to be the loadbalancing server.

```
# Randomize the server list contained in MY_SERVER_LIST parameter
TMP_LIST=""
SHUFFLED_LIST=""
for i in $MY_SERVER_LIST; do
rank=$RANDOM
let "rank %= 100"
TMP_LIST="$TMP_LIST\n${rank}_${i}"
done
TMP_LIST=$(echo -e $TMP_LIST | sort)
for i in $TMP_LIST; do
SHUFFLED_LIST="$SHUFFLED_LIST $(echo $i | cut -d_ -f2)"
done
echo $SHUFFLED_LIST
```

17.2.2.3 Part 3 Now that you've made the "get_hosts" script, it's time to make the ssh host key for the ltsp chroots. This can be done by making a file containing the content of /opt/ltsp/i386/etc/ssh/ssh_known_hosts from all the ltsp servers that will be loadbalanced. Save this file as /etc/ltsp/ssh_known_hosts.extra on all loadbalance servers. The last step is very important because ltsp-update-sshkeys runs every time a server is booted, and /etc/ltsp/ssh_known_hosts.extra is included if it exists.

!/ If you save your new host file as /opt/ltsp/i386/etc/ssh/ssh_known_hosts, it will be erased when you reboot the server.

There is some obvious weaknesses with this setup. All clients get their image from the same server, this causes high loads on the server if many clients are booted at the same time. Also the clients require that server to always be available, without it they cannot boot or get a LDM server. Therefore this setup is very dependent on one server, which isn't very good.

Your clients should now be loadbalanced!

17.2.3 Sonido con clientes LTSP

LTSP thin clients supports three different audio systems for applications, ESD, **PulseAudio** and ALSA. ESD and **PulseAudio** support networked audio and are used to pass audio from the server to the clients. ALSA is configured to redirect its sound via **PulseAudio**. For selected applications only supporting the OSS audio system, a wrapper is created by /usr/sbin/debian-edu-ltsp-audiodivert to redirect their sound to **PulseAudio**. Run this script without arguments to get a list of applications with such redirection enabled.

LTSP diskless workstations handle audio locally and have none of the special setup needed for networked audio.

17.2.4 Upgrading the LTSP environment

It is useful to upgrade the LTSP environment with new packages fairly often, to make sure security fixes and improvements are made available. To upgrade, run these commands as user root on each LTSP server:

```
chroot /opt/ltsp/i386
aptitude update
aptitude upgrade
aptitude dist-upgrade
exit
```

17.2.4.1 Installing additional software in the LTSP environment To install additional software for LTSP client you must perform the installation inside the chroot of the LTSP server.

```
chroot /opt/ltsp/i386
## optionally, edit the sources.list:
#vim /etc/apt/sources.list
aptitude update
aptitude install $new_package
exit
```

17.2.5 Slow login and security

Skolelinux has added several security features on the client network preventing unauthorised super user access, stopping password sniffing and other tricks which may be used on a local network. One such security measures is secure login using ssh wich is default with LDM. This can slow down some client machines which are older than 10 years, having as little as 160 MHz processor and 32 MB RAM. Even if not recommended, you can add the "True" value in ...

```
LDM_DIRECTX=True
```

should be added to the server in the `/opt/ltsp/i386/etc/lts.conf` file.

/!\ **Warning:** Above protects initial login but all activities after that use unencrypted XDMCP. Passwords (except the initial one) will travel in cleartext over the network, as well as anything else.

Note: Since such 10 year old thin clients may also get trouble with running newer versions of [OpenOffice.org](https://www.openoffice.org) and Firefox/Iceweasel due to pixmap caching issues, you may consider running thin clients with at least 128 MB RAM, or upgrade to hardware, which will also give you the benefit of being able to use them as diskless workstations.

17.3 Replacing LDM with KDM

Skolelinux 3.0 is running LDM as a login manager. It uses a secure ssh tunnel to log in. When using KDM a switch to XDMCP is necessary. XDMCP uses less CPU resources on the clients and on the server.

/!\ **Warning:** XDMCP does not use encryption. Passwords will travel in cleartext over the network, as well as anything else.

/!\ Note: local devices with `ltspfs` will stop working without LDM.

To check if XDMCP is running, run this command from a workstation:

```
X -query ltspserverXX
```

If you are on the thin client network, please run this command:

```
X -query 192.168.0.254
```

The goal is to let your "real" thin client to contact the xdmcp-server on the 192.168.0.254 net (given a standard Skolelinux configuration).

If by some reason xdmcp is accessible on your server which runs KDM, please add the following to `/etc/kde3/kdm/Xaccess`

```
* # any host can get a login window
```

The star before the comment '#' is important, rest is a comment of course :)
Then turn on xdmcp in kdm with the command:

```
sudo update-ini-file /etc/kde3/kdm/kdmrc Xdmcp Enable true
```

At the end please restart kdm by running:

```
sudo invoke-rc.d kdm restart
```

(in courtesy of Finn-Arne Johansen)

17.4 Connecting Windows machines to the network / Windows integration

17.4.1 Joining the domain

Para los clientes Windows está disponible el dominio Windows "SKOLELINUX" al que se pueden unir. Samba está instalado en el servidor principal, permite a los clientes Windows almacenar perfiles y datos de usuario además de autenticar a los usuarios.

Para que los clientes Windows se puedan unir al dominio deben seguirse unos (pocos) pasos:

1. Crear un usuario en el grupo "admins" (si no existiera ya)

- In order to be able to join the "SKOLELINUX" domain a member of the admins group needs to authorize the process. If not yet existing, a user with that membership needs to be added (for more information see <link to lwat docu>). The user "root" will **not** work, because there is no password for root in Samba.

2. Configurar el cliente Windows como un puesto estático

- When joining a samba domain some special data is stored on the domain controller (tjener). This data is needed to recognize the Windows client later as being allowed to authenticate users. In order to enable Samba to store this data, Samba requires an static host configuration to be present. This could be added by using the LWAT web interface (see also <link to lwat>). When adding the static host configuration it is important to check the "Samba host" option, otherwise will lack the required data to be able to join the domain.

3. On the Windows client: Make sure the network and system configuration matches the data stored on tjener (hostname and ip configuration).

- It's really important, that the Windows hosts have the same data, otherwise Samba will not find the host added in step 2.

4. Unirse al dominio como de costumbre con el usuario añadido en el paso 1.

- Depending on the version and language of you Windows installation, you should find the configuration about the domain or workgroup of your system somewhere in the system properties. A freshly installed Windows system should belong to a default workgroup. You can join the domain by selecting "Domain" instead of "Workgroup" and entering SKOLELINUX as new domain. Pressing enter will then open a new window, where the login data of the user created in step 1. can be entered. After some time the Windows client opens a popup window with a welcome message. After the obligatory reboot the loginscreen offers a option to login into the domain.

Windows sincronizará el perfil de los usuarios de dominio en todos los login y logout. Dependiendo de cuantos datos almacene el perfil esto puede tardar algo. Para minimizar el tiempo necesario, puede desactivar cosas como el caché local en los navegadores (puedes usar el proxy instalado en el servidor en su lugar) y guardar los archivos en la unidad H: en lugar de "Mis Documentos".

17.4.1.1 User groups in Windows Groupmaps must also be added for any other user groups you add through lwat. If you want your user groups to be available in Windows, eg for netlogon scripts or other group dependant actions, you can add them using variations of the following command. Samba will function without these groupmaps, but Windows machines won't be group aware.

```
/usr/bin/net groupmap add unixgroup=students \
    type=domain ntgroup="students" \
    comment="All students in the school"
```

FIXME: should user groups in windows better be explained with lwat first, and then with an example for the command line?

If you want to check user groups on Windows, you need to download the tool IFMEMBER.EXE from Microsoft. Then you can use this for example in the logon script which resides on tjener in `/etc/samba/netlogon/LOGON.BAT`.

17.4.2 XP home

Users bringing in their XP home laptop can still connect to Tjener using their skolelinux credentials, provided the workgroup is set to SKOLELINUX. However, they may need to disable the windows firewall before Tjener will appear in Network Neighbourhood (or whatever its called now).

17.4.3 Managing roaming profiles

Roaming profiles contain user work environments, which include the desktop items and settings. Some examples of these environments are personal files, desktop icons and menus, screen colors, mouse settings, window size and position, application configurations and network and printer connections. Roaming profiles are available wherever the user logs on, provided the server is available.

Since the profile is copied from the server to the machine during logon, and copied back to the server during logout, a large profile can make windows login/logout painfully slow. There can be many reasons for a large profile, but the most common problems is that users save their files on the windows desktop or in the My Documents folder instead of in their homedir. Also some badly designed programs use the profile for scratch space, and other data.

The educational approach: One way to deal with to large profiles is to explain the situation for the users. Tell them not to store huge files on the desktop and if they fail to listen it's their own fault when login is slow.

Tweaking the profile: A different way to deal with the problem is to remove parts of the profile, and redirect other parts to regular file storage. This moves the work load from the users to the administrator, while adding complexity to the installation. There are at least three ways to edit the parts that are removed from the roaming profile.

17.4.3.1 Example smb.conf's for roaming profiles Already delivered while installation, you can find an example smb.conf hopefully in your preferred language. You can find the config example files on your tjener under `/usr/share/debian-edu-config/examples/`. The source file is in English and is called *smb-roaming-profiles-en.conf*. If it is translated to German for example, it is named *smb-roaming-profiles-de.conf*. So if you search a file translated to your preferred language, look at the country code part in the filename. Inside the config file are a lot of explanations, so you should have a look at.

17.4.3.2 Using machine policies Machine policies can be edited and copied to all the other computers.

1. Pick a freshly installed Windows computer, and run `gpedit.msc`
2. Under the selection User Configuration -> Administrative Templates -> System -> User Profiles -> Exclude directories in roaming profile, you can enter a semicolon separated string of directories to exclude from the profile, the directories are internationalized and must be written in your own language the way they are in the profile. Example of directories to exclude are
 - log
 - Locale settings
 - Temporary Internet Files
 - My Documents
 - Application Data
 - Temporary Internet Files
3. Save your changes, and exit the editor.
4. Copy `c:\windows\system32\GroupPolicy` to all other windows machines.
 - It's a good idea to copy it to your windows os deployment system to have it included at install time.

17.4.3.3 Using global policies By using the legacy windows policy editor (`poedit.exe`), you can create a Policy file (`NTConfig.pol`) file and put it in your netlogon share on tjener. This has the advantage of working almost instantly on all windows machines.

Since some time the policy editor standalone download has been removed from the Microsoft website, but it's still available as part of the ORK Tools.

With `poedit.exe` you can create `.pol` files. If you put such a file on tjener as `/etc/samba/netlogon/NTLOGON.POL` it will be read by the windows machine automatically and temporarily overwrite the registry, thus applying the changes.

To make sensible use of `poedit.exe` you also need to download appropriate `.adm` files for your operating system and applications, otherwise you cannot define many settings in `poedit.exe`.

Be aware that the new group policy tools, `gpedit.msc` and `gpmc.msc` cannot create `.pol` files, they either only work for the local machine or need an active directory server.

If you understand german, <http://gruppenrichtlinien.de> is a very good website on this topic.

17.4.3.4 Editing Windows registry You can edit the registry of the local computer, and copy this registry key to other computers

1. Start the Registry Editor.
2. Navigate to `HKEY_CURRENT_USER\Software\Microsoft\Windows NT\CurrentVersion\Winlogon`
3. Use the menu Edit menu->New->String Value.
4. Call it `ExcludeProfileDirs`
5. Enter a semicolon sepatated string of paths to exclude. (same way as machine policy)

Now you can choose to export this registry key as a `.reg` file, Mark a selection, right click and select export. Save the file and you can double click it, or add it to a script to spread it to other machines.

Sources:

- <http://technet2.microsoft.com/windowsserver/en/technologies/featured/gp/default.mspx>
- <http://www.samba.org/samba/docs/man/Samba-HOWTO-Collection/PolicyMgmt.html>
- <http://isg.ee.ethz.ch/tools/realmen/det/skel.en.html>
- <http://www.css.taylor.edu/~nehresma/samba.html>

17.4.4 Redirecting parts of profile

Sometimes just removing the directory from the profile is not enough. You may experience that users loose files because they mistakenly save things into my documents, when this is not saved in the profiles. Also you may want to redirect the directories some badly programed applications use to normal network shares.

17.4.4.1 Using machine policies Everything under Using machine policies above applies. You edit using `gpedit.msc` and copy the Policy to all machines The redirection should be available under User Configuration -> Windows Settings->Folder Redirection Things that can be nice to redirect are Desktop or My Documents.

One thing to remember is that if you enable folder redirection, those folders are automatically added to the synchroniced folders list. If you do not want this, you should also disable that in following

- User Configuration -> Administrative Templates -> Network -> Offline Files
- Computer Configuration -> Administrative Templates -> Network -> Offline Files

17.4.4.2 Using global policies FIXME explain how to use profiles from global policies for windows machines in the skolelinux network

17.4.5 Avoiding roaming profiles

17.4.5.1 Using a local policy Using local policies you can disable roaming profile on individual machines. This is often wanted on special machines, for instance on dedicated machines, or machines that have lower then usual bandwidth.

You can use the machine policy method describe above, the key is in

- Administrative Templates -> system -> User Profiles -> Only allow local profiles

17.4.5.2 Using global policies FIXME: describe roaming profile key for the global policy editor here

17.4.5.3 altering samba config By editing the samba config you can disable roaming profiles for the entire network. Perhaps everyone have their own dedicated machine? and nobody else is allowed to touch it. To disable the roaming profiles for the entire network you can alter the smb.conf file on tjener and unset the logon path and logon home variables, and restart samba.

```
logon path = " "
logon home = " "
```

17.5 Remote Desktops with RDP, VNC, NX or Citrix

Some municipalities provide a remote desktop solution so that students and teachers can access Skolelinux from their home computer running Windows, Mac or Linux.

- RDP - the easiest way to access Windows terminal server. Just install the `rdesktop` package.
- VNC client (Virtual Network Computer) gives access to Skolelinux remotely. Just install the `xvnc-cvviewer` package.
- NX graphical client gives students and teachers access to Skolelinux remotely on Windows, Mac or Linux PC. One municipality in Norway has provided NX support to all their students since 2005. They report that the solution is stable.
- [Citrix ICA client HowTo](#) to access Windows terminal server from Skolelinux.

17.6 HowTos from wiki.debian.org

The HowTos from <http://wiki.debian.org/DebianEdu/HowTo/> are either user- or developer-specific. Let's move the user-specific HowTos over here (and delete them over there)! (But first ask the authors (see the history of those pages to find them) if they are fine with moving the howto and putting it under the GPL.)

- <http://wiki.debian.org/DebianEdu/HowTo/LocalDeviceLtspfs>
- <http://wiki.debian.org/DebianEdu/HowTo/LtspDisklessWorkstation>

18 HowTos for teaching and learning

18.1 Moodle

Run `aptitude install moodle` as root to install moodle.

Moodle is a course management system (CMS) - a free, Open Source software package designed using sound pedagogical principles, to help educators create effective online learning communities. You can download and use it on any computer you have handy (including webhosts), yet it can scale from a single-teacher site to a University with 200,000 students. Some schools in France use moodle to keep track of students' facilities and credit points.

There are [moodle sites](#) all over the world, mostly concentrated in Europe and North America. Check the site of an [institution](#) near you to get an idea about it. More information is available at the [moodle project page](#), including [documentation](#) and [support](#).

18.2 Monitoring pupils

Some schools use control tools like Controlaula or Italc to supervise their students.

Take a look at their wiki: http://italc.sourceforge.net/wiki/index.php?title=Main_Page

FIXME: explain how to install and use italc - 511387 explains this quite well actually.

```
apt-get install italc-client italc-master
```

/!\ **Warning:** monitoring humans might be unethical and illegal in your jurisdiction.

18.3 Restricting pupils network access

Some schools use squidguard or dansguardian to restrict internet access. FIXME: explain how to install and use squidguard and/or dansguardian

/!\ **Warning:** restricting access to information or freedom of speech might be unethical and illegal in your jurisdiction.

18.4 Installing swi-prolog

swi-prolog was available in sarge, but was not part of etch, but it was possible to install the sarge version on etch. Lenny again ships swi-prolog so installing is very easy. Just `apt-get install swi-prolog` and be done :-)

18.5 HowTos from wiki.debian.org

The HowTos from <http://wiki.debian.org/DebianEdu/HowTo/> are either user- or developer-specific. Let's move the user-specific HowTos over here (and delete them over there)! (But first ask the authors (see the history of those pages to find them) if they are fine with moving the howto and putting it under the GPL.)

- <http://wiki.debian.org/DebianEdu/HowTo/TeacherFirstStep> - incomplete but interesting

19 HowTos for users

19.1 Changing passwords

Every student should use the shortcut on their Desktop, which should point to something like `https://ldap/lwat/chguserpw.php?username=$(id -un)`. (On Windows they have to manually put in their username.)

Using `lwat` to change their password, ensures that linux (userPassword) and samba (sambaNTPassword and smbaLMPassword) passwords are the same.

19.2 Changing the sound volume

On local machines, which are workstations and LTSP servers, and diskless workstations, `kmix` works as usual. `alsamixer` can also be used to change the sound volume.

On thin clients, `pavucontrol` works, and so does `alsamixer` but `kmix` does not work at all.

19.3 Using email

Every user can send and receive mails within the internal network. The following paragraphs describe how to configure `kmail` for each user.

To be able to send and receive mails outside the internal network, the administrator needs to configure the mailserver `exim4` according to the local situation, `dpkg-reconfigure exim4-config` is a good first step to do this.

19.3.1 Configuring KMail as a mail client

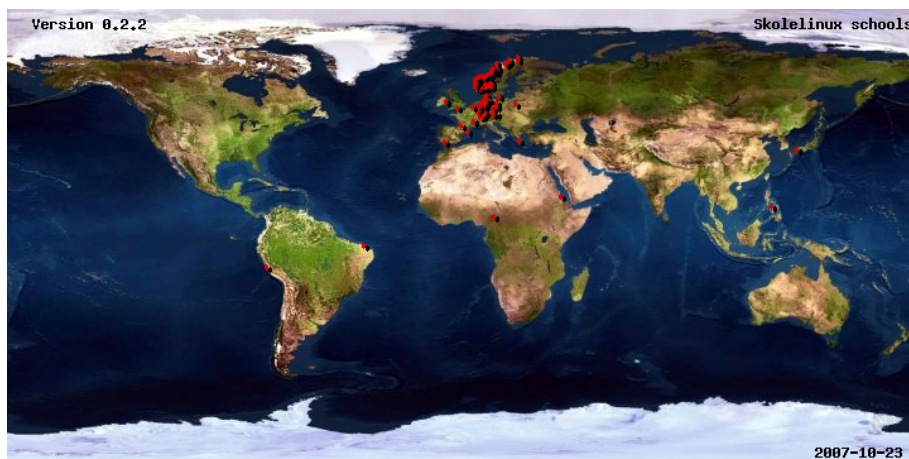
This needs to be done once by every user who wants to use email.

First, start KMail and skip the wizard ("Cancel"). Open the configuration-window and enter your identity (username and mail-address: `username@postoffice.intern`). Now move on to "Accounts" and there choose the "Sending"-tab. Add SMTP, host is "postoffice". default port 25. Do not forget to enter "postoffice.intern" as default domain and click "Apply". Send a mail to yourself (`username@postoffice.intern`) now to make sure your directory on the imap-server is created.

After that, add a new IMAP account under the "Receiving"-tab. Enter your username and password, the host is again "postoffice". Switch to the "Security"-tab and click on "Check What the Server Supports". Click "Continue" in the warning about the missing server certificate and accept that forever. Go back to the "General"-tab. Port should be 993 now. Click "Ok" and check if the mail to yourself is there. :)

20 Contribuir

20.1 Let us know you exist



There are Debian Edu users all over the world. A very easy form of contribution is to let us know you exist and use Debian Edu - this motivates us very much and therefore is already a valuable contribution. :-)

The Debian Edu projects provide a database of schools and users of the system to help the users find each other, and also to have an idea about where the users of the distribution are located. Please let us know about your installation, by registering in this database. To register your school, [use this web form](#).

20.2 Contribute locally

Currently there are local teams in Norway, Germany, the region of Extremadura in Spain, Taiwan and France. "Isolated" contributors and users exist in Greece, the Netherlands, Japan and elsewhere.

The [support chapter](#) explains and links to localized resources, as *contribute* and *support* are two sides of the same coin.

20.3 Contribute globally

Internationally we are organized in [different teams](#) working on different subjects.

The [developer mailing list](#) is most of the time our main medium for communication, though we have monthly meetings on IRC on #debian-edu on irc.debian.org and less frequently even real gatherings, where we meet each other in person. [New contributors](#) should read our <http://wiki.debian.org/DebianEdu/ArchivePolicy>.

A good way to learn what is happening in the development of Debian Edu is to subscribe to the [commit mailinglist](#).

20.4 Documentation writers and translators

This document needs your help! First and foremost, it is not finished yet: If you read it, you will notice various FIXMEs within the text. If you happen to know (a bit of) what needs to be explained there, please consider sharing your knowledge with us.

The source of the text is a wiki and can be edited with a simple webbrowser. Just go to <http://wiki.debian.org/DebianEdu/Documentation/Lenny/> and you can contribute easily. Note: An user account is needed to edit the pages, you need to [create a wiki user](#) first.

Another very good way to contribute and to help users is by translating software and documentation. Information how to translate this document can be found in the [translation chapter](#) of this book. Please consider to help the translation effort of this book!

21 Soporte

21.1 Soporte basado en voluntarios

21.1.1 in English

- <http://wiki.debian.org/DebianEdu>
- <https://init.linpro.no/mailman/skolelinux.no/listinfo/admin-discuss> - support mailing list
- #debian-edu on irc.debian.org - IRC channel, mostly development related, do not expect real time support even though it frequently happens :-)

21.1.2 in Norwegian

- <https://init.linpro.no/mailman/skolelinux.no/listinfo/bruker> - support mailing list
- <https://init.linpro.no/mailman/skolelinux.no/listinfo/linuxiskolen> - mailinglist for the development member organisation in Norway (FRISK)
- #skolelinux on irc.debian.org - IRC channel to support norwegian users

21.1.3 in German

- <http://www.skolelinux.de/mailman/listinfo/user> - support mailing list
- <http://wiki.skolelinux.de> - wiki with lots of HowTos etc.
- #skolelinux.de on irc.debian.org - IRC channel to support german users

21.1.4 in French

- <http://lists.debian.org/debian-edu-french> - support mailinglist

21.1.5 in Spanish

- <http://www.skolelinux.es> - spanish portal

21.2 Soporte profesional

Lists of companies providing professional support are available from <http://wiki.debian.org/DebianEdu/Help/ProfessionalHelp>.

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24 Traducciones de este documento

Fully translated versions of this document to German and Italian are available. Incomplete translations for Norwegian Bokmål, French, Spanish and Chinese exist, take a look for your [language](#) here.

24.1 HowTo translate this document

As in many free software projects, translations of this document are kept in .po files. More information about the process can be found in `/usr/share/doc/debian-edu-doc/README.debian-edu-lenny-manual-translations`. The svn-repository (see below) contains this file too. Take a look there and at the [language specific conventions](#) if you want to help translating this document.

To commit your translations you need to be a member of the alioth project `debian-edu`. To translate, you just need to check out some files from svn (which can be done anonymously) and create patches. Please file a bug against the `debian-edu-doc` package and attach the .po file to the [bugreport](#). Find some [instructions on how to submit bugs](#) here.

You can checkout the `debian-edu-doc` source anonymously with the following command (you need to have the `subversion` package installed for this to work):

- `svn co svn://svn.debian.org/svn/debian-edu/trunk/src/debian-edu-doc`

Then edit the `documentation/debian-edu-lenny/debian-edu-lenny-manual.$CC.po` (where you replace `$CC` with your language code). There are many tools for translating available, we suggest to use `kbabel`.

Then you either commit the file directly to svn (if you have the rights to do so) or send the file to the [bugreport](#).

To update your local copy of the repository use the following command inside the `debian-edu-doc` directory:

- `svn up`

Read `/usr/share/doc/debian-edu-doc/README.debian-edu-lenny-manual-translations` to find information how to create a new `.po` file for your language if there is none yet, and how to update translations.

Basic information about Alioth (the host where our SVN repository is located) and SVN is available at <http://wiki.debian.org/Alioth/Svn>.

If you are new to SVN, look at the [SVN book](#), it has a chapter on the [basic workflow with SVN](#). Also you might want to look at the `kdesvn` package if you prefer a GUI client for SVN instead of using the commandline client.

Please report any problems.

25 Appendix A - The GNU Public License

Note to translators: there is no need to translate the GPL license text.

25.1 Manual for Debian Edu 5.0r0+edu0 Codename "Lenny"

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25.4 END OF TERMS AND CONDITIONS

26 Appendix B - about Debian Edu Live CD/DVDs

/!\ Debian Edu Live CD/DVDs for Lenny are not available at the moment.

26.1 Features of the Standalone image

- Almost all packages from the Standalone profile
- All packages from the laptop task
- Perfil de escritorio KDE para estudiantes

26.2 Activating translations and regional support

To activate a specific translation, boot using `locale=ll_CC.UTF-8` as a boot option, where `ll_CC.UTF-8` is the locale name you want. To activate a given keyboard layout, use the `keyb=KB` option where `KB` is the wanted keyboard layout. More information on this feature is available from the [live cd build script documentation](#). Here is a list of commonly used locale codes:

Language (Region)	Locale value	Keyboard layout
Norwegian Bokmål	nb_NO.UTF-8	no
Norwegian Nynorsk	nn_NO.UTF-8	no
German	de_DE.UTF-8	de
French (France)	fr_FR.UTF-8	fr
Greek (Greece)	el_GR.UTF-8	el
Japanese	ja_JP.UTF-8	jp
Northern Sami (Norway)	se_NO	no(smi)

A complete list of locale codes is available in `/usr/share/i18n/SUPPORTED`, but only the UTF-8 locales are supported by the live images. Not all locales have translations installed, though. The keyboard layout names can be found in `/usr/share/keymaps/i386/`.

26.3 Stuff to know

- the password for the user is "user", root has no passwd set.

26.4 Known issues with the image

- /!\ there are no lenny images yet :(

26.5 Download

The image is 1.2 GiB and currently NOT available using [FTP](#), [HTTP](#) or rsync from <ftp.skolelinux.org> at [cd-lenny-live/](#).