

Debian Edu / Skolelinux Stretch 9+edu0 Manual

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Índice

1. Manual for Debian Edu 9+edu0 Codename Stretch	1
2. Acerca de Debian Edu y Skolelinux.	1
2.1. Un poco de historia, y el porqué de dos nombres	1
3. Arquitectura	2
3.1. Red	2
3.1.1. La configuración de red predeterminada	3
3.1.2. Servidor principal (tjener)	3
3.1.3. Servicios que corren en el servidor principal	3
3.1.4. LTSP server(s)	5
3.1.5. Clientes ligeros	5
3.1.6. Estaciones sin disco	5
3.1.7. Clientes en red.	5
3.2. Administración	5
3.2.1. Instalación	5
3.2.2. Configuración del acceso al sistema de archivos	6
4. Requisitos	6
4.1. Requisitos de hardware	6
4.2. Hardware conocido que funciona	7
5. Requerimientos para una instalación de red	7
5.1. Configuración por defecto	7
5.2. Enrutador de Internet	8
6. Instalación y opciones de descarga	8
6.1. Donde encontrar información adicional	8
6.2. Download the installation media for Debian Edu 9+edu0 Codename Stretch	8
6.2.1. Imagen en CD de instalación por red para i386, amd64	8
6.2.2. USB drive ISO image for i386 and amd64	8
6.2.3. Sources	8
6.3. Solicite un CD / DVD por correo	8
6.4. Instalacion de Debian Edu	9
6.4.1. Installation types and options	9
6.4.2. El proceso de instalación	12
6.4.3. Notas en algunas características	13
6.4.4. Instalación utilizando memorias USB lugar de CD / Blu-ray	14
6.4.5. Instalación a través de la red (PXE) e inicio de estaciones sin disco.	14
6.4.6. Imágenes personalizadas	15
6.5. Captura de pantalla del paseo	16
7. Iniciando	31
7.1. Pasos mínimos para iniciar	31
7.1.1. Servicios que corren en el servidor principal	32
7.2. Introducción a GOsa ²	32
7.2.1. GOsa ² Login plus Overview	33
7.3. Gestión de usuarios con GOsa ²	33
7.3.1. Agregar usuarios	34
7.3.2. Buscar, modificar y borrar usuarios	34
7.3.3. Establecer contraseñas	35
7.3.4. Administración avanzada de usuarios	35
7.4. Gestión de usuarios con GOsa ²	36
7.4.1. Gestión de grupos en la linea de comando	37
7.5. Administración de equipos con GOsa ²	37
7.5.1. Buscar y eliminar computadoras	39
7.5.2. Modificar equipos existentes / Manejo del grupo de red	39

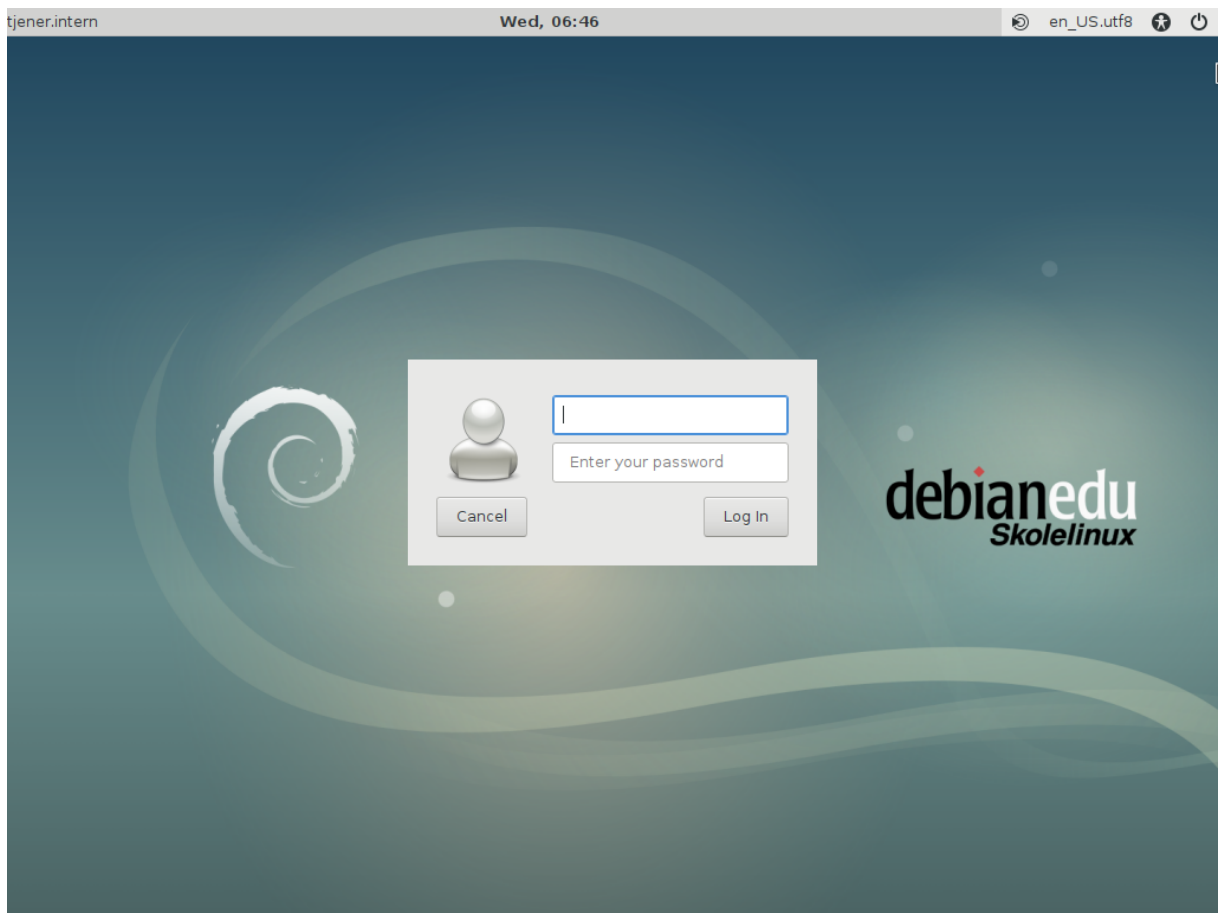
8. Printer Management	40
9. Sincronización del reloj	41
10.Redimensionando particiones completas	41
11.Maintenance	41
11.1. Actualizar el software	41
11.1.1. Mantente informado sobre actualizaciones de seguridad	41
11.2. Gestión de las copias de seguridad	41
11.3. Monitorización del servidor	42
11.3.1. Munin	42
11.3.2. Icinga	42
11.3.3. Sitesummary	43
11.4. Más información sobre personalizaciones de Debian Edu	43
12.Actualizaciones	44
12.1. Notas generales sobre la actualización	44
12.2. Upgrades from Debian Edu Jessie	44
12.2.1. Upgrade the server side	44
12.2.2. Upgrade LTSP chroot (default arch i386)	45
12.2.3. Recrear un chroot LTSP	45
12.3. Upgrades from older Debian Edu / Skolelinux installations (before Jessie)	45
13.Guías	45
14.Guías para administración general	45
14.1. Seguimiento de /etc usando el sistema de control de versiones git	46
14.1.1. Ejemplos de uso	46
14.2. Redimensionando Particiones	46
14.2.1. Gestión de volúmenes lógicos	46
14.3. Installing a graphical environment on the main-server to use GOsa ²	47
14.4. Usar ldapvi	47
14.5. JXplorer, una interfaz gráfica para LDAP	47
14.6. ldap-createuser-krb, una herramienta para línea de comando	47
14.7. Using stable-updates	47
14.8. Using backports.debian.org to install newer software	48
14.9. Actualizar con un CD o similar	48
14.10Automatic cleanup of leftover processes	48
14.11Instalación automática de actualizaciones de seguridad	49
14.12Apagado automático de las computadoras durante la noche	49
14.12.1.Como configurar shutdown-at-night	49
14.13Acceso a servidores Debian-Edu ubicados detrás de un firewall	49
14.14Installing additional service machines for spreading the load from main-server	50
14.15HowTos de wiki.debian.org	50
15.Advanced administration	50
15.1. Personalizaciones de usuarios con GOsa ²	50
15.1.1. Create Users in Year Groups	50
15.2. Other User Customisations	51
15.2.1. Crear directorios en el directorio home de los usuarios	51
15.2.2. Fácil acceso a dispositivos USB y CDRoms/DVDs	51
15.3. Use a dedicated storage server	52
15.4. Restrict ssh login access	53
15.4.1. Setup without LTSP clients	53
15.4.2. Setup with LTSP clients	53
15.4.3. A note for more complex setups	53

16. HowTos for the desktop	54
16.1. Using MATE, GNOME, LXDE, Xfce and/or KDE Plasma together	54
16.2. Flash	54
16.3. Reproducir DVDs	54
16.4. Uso del repositorio multimedia	54
16.5. Handwriting fonts	55
17. HowTos para clientes en red	55
17.1. Introducción a clientes ligeros y estaciones de trabajo sin disco	55
17.1.1. LTSP client type selection	56
17.2. Configurar el menú PXE	56
17.2.1. Configurar la instalación de PXE	56
17.2.2. Agregar un repositorio personalizado para instalaciones PXE	56
17.2.3. Cambiar el menú PXE en un servidor combinado (servidor principal y LTSP)	57
17.2.4. Separate main and LTSP server	57
17.2.5. Use a different LTSP client network	57
17.3. Changing network settings	57
17.4. LTSP en detalle	58
17.4.1. Configuración del cliente LTSP en LDAP (y en lts.conf)	58
17.4.2. Force all thin clients to use LXDE as default desktop environment	58
17.4.3. Load-balancing LTSP servers	58
17.4.4. Sonido con clientes LTSP	59
17.4.5. Use printers attached to LTSP clients	59
17.4.6. Actualización del entorno LTSP	60
17.4.7. Slow login and security	60
17.5. Connecting Windows machines to the network / Windows integration	60
17.5.1. Joining a domain	60
17.5.2. XP home	61
17.5.3. Managing roaming profiles	61
17.5.4. Redirecting profile directories	62
17.5.5. Avoiding roaming profiles	63
17.6. Remote Desktop	63
17.6.1. Remote Desktop Service	63
17.6.2. Clientes de escritorio remoto disponible	63
17.7. HowTos de wiki.debian.org	63
18. Samba en Debian Edu	64
18.1. Cómo empezar	64
18.1.1. Acceder los archivos mediante Samba	64
18.2. Domain Membership	64
18.2.1. Windows hostname	65
18.2.2. Unirse al dominio SKOLELINUX con Windows XP	65
18.2.3. Unirse al dominio SKOLELINUX con Windows Vista/7	65
18.3. First Domain Logon	66
19. HowTos for teaching and learning	66
19.1. Moodle	66
19.2. Teaching Prolog	66
19.3. Monitoring pupils	66
19.4. Restricting pupils' network access	66
19.5. Smart-Board integration	66
19.5.1. Providing the repository on tñener	67
19.5.2. Add the needed packages to the PXE installation image	67
19.5.3. Adding the SmartBoard software manually after installation	67
19.6. HowTos de wiki.debian.org	67

20. HowTos for users	68
20.1. Changing passwords	68
20.2. Java	68
20.2.1. Running standalone Java applications	68
20.2.2. Running Java applications in the web browser	68
20.3. Using email	68
20.3.1. KMail	68
20.3.2. Icedove	69
20.3.3. Obtener un ticket Kerberos para leer correos en las estaciones de trabajo sin disco	69
20.4. Volume control	69
21. Contribuir	70
21.1. Déjenos saber que existes	70
21.2. Contribute locally	70
21.3. Contribuye a nivel global	70
21.4. Documentación para editores y traductores	70
22. Soporte	71
22.1. Soporte basado en voluntarios	71
22.1.1. in English	71
22.1.2. in Norwegian	71
22.1.3. in German	71
22.1.4. in French	71
22.1.5. in Spanish	71
22.2. Soporte profesional	71
23. New features in Debian Edu Stretch	71
23.1. New features for Debian Edu 9+edu0 Codename Stretch	71
23.1.1. Known issues	71
23.1.2. Installation changes	71
23.1.3. Actualizaciones de software	72
23.1.4. Actualizaciones en documentación y traducciones	72
23.1.5. Other changes compared to the previous release	72
24. Copyright y autores	72
25. Copyright de la traducción y Autores	73
26. Traducciones de este documento	73
26.1. HowTo translate this document	73
27. Appendix A - The GNU General Public License	74
27.1. Manual for Debian Edu 9+edu0 Codename Stretch	74
27.2. LICENCIA PUBLICA GENERAL GNU	74
27.3. TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION	74
28. Appendix B - no Debian Edu Live CD/DVDs for Stretch yet	77
28.1. Features of the Standalone image	77
28.2. Features of the Workstation image	77
28.3. Activando el soporte regional y traducciones	77
28.4. Cosas para saber	77
28.5. Problemas conocidos con la imagen	78
28.6. Descarga	78
29. Apéndice C - Características de publicaciones anteriores	78
29.1. New features for Debian Edu 8+edu0 Codename Jessie released 2016-07-02	78
29.1.1. Installation changes	78
29.1.2. Actualizaciones de software	78
29.1.3. Actualizaciones en documentación y traducciones	78
29.1.4. Other changes compared to the previous release	79

29.2. New features in Debian Edu 7.1+edu0 Codename Wheezy released 2013-09-28	79
29.2.1. User visible changes	79
29.2.2. Installation changes	79
29.2.3. Actualizaciones de software	79
29.2.4. Actualizaciones en documentación y traducciones	80
29.2.5. LDAP related changes	80
29.2.6. Other changes	80
29.2.7. Known issues	80
29.3. Cambios en Debian Edu 6.0.7+r1 nombre código "Squeeze" publicado el 03-03-2013	80
29.4. New features in Debian Edu 6.0.4+r0 Codename "Squeeze" released 2012-03-11	81
29.4.1. User visible changes	81
29.4.2. Installation changes	81
29.4.3. Actualizaciones de software	82
29.4.4. Infrastructural changes	82
29.4.5. Actualizaciones en documentación y traducciones	82
29.4.6. Regressions	83
29.4.7. New administration tool: GOsa ²	83
29.4.8. More software changes	83
29.4.9. Other LDAP related changes	84
29.4.10. Other changes	84
29.5. Nuevas características en 5.0.6+edu1 nombre código "Lenny", publicado el 05-10-2010	84
29.6. Nuevas características en Debian Edu 5.0.4+edu0 "Lenny" publicado el 2010-02-08	85
29.7. Nuevas características en Debian 5.0.4, sistema en el cual esta basado Debian Edu 5.0.4+edu0	86
29.8. Características nuevas en la versión "3.0 Terra" publicado el 12-05-2007	86
29.9. New features in the "3.0r0 Terra" release 2007-07-22	86
29.10. Características de la versión 2.0 publicada el 14-03-2006	87
29.11. Características de la versión "1.0 venus" publicado el 20-06-2004	87
29.12. Más información sobre versiones más anteriores	87

1. Manual for Debian Edu 9+edu0 Codename Stretch



This is the manual for the Debian Edu Stretch 9+edu0 release.

The version at <http://wiki.debian.org/DebianEdu/Documentation/Stretch> is a wiki and updated frequently.

Las **Traducciones** son parte del paquete `debian-edu-doc` que puede ser instalado en un servidor web, y que está disponible [en línea](#).

2. Acerca de Debian Edu y Skolelinux.

Debian Edu a.k.a Skolelinux es una distribución basada en Debian, proporcionando un ambiente "fuera de la caja", completamente configurado para una red escolar.

Directly after installation of a school server all services needed for a school network are set up (see the next chapter [details of the architecture of this setup](#)) and the system is ready to be used. Only users and machines need to be added via GOSa², a comfortable Web-UI, or any other LDAP editor. A netbooting environment using PXE has also been prepared, so after initial installation of the main server from CD, Blu-ray disc or USB flash drive all other machines can be installed via the network, this includes "roaming workstations" (ones that can be taken away from the school network, usually laptops or netbooks) as well as PXE booting for diskless machines like traditional thin-clients.

Múltiples aplicaciones educativas como celestia, drgeo, gcompris, kalzium, kgeography, solfege y scratch, han sido incluidas en el escritorio predeterminado, el cual puede fácilmente ser extendido casi ilimitadamente, vía el universo Debian.

2.1. Un poco de historia, y el porqué de dos nombres

Skolelinux es una distribución de Linux, hecha por el proyecto Debian Edu. Siendo una distribución **mezclada de Debian** es un sub-proyecto oficial de **Debian**

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.

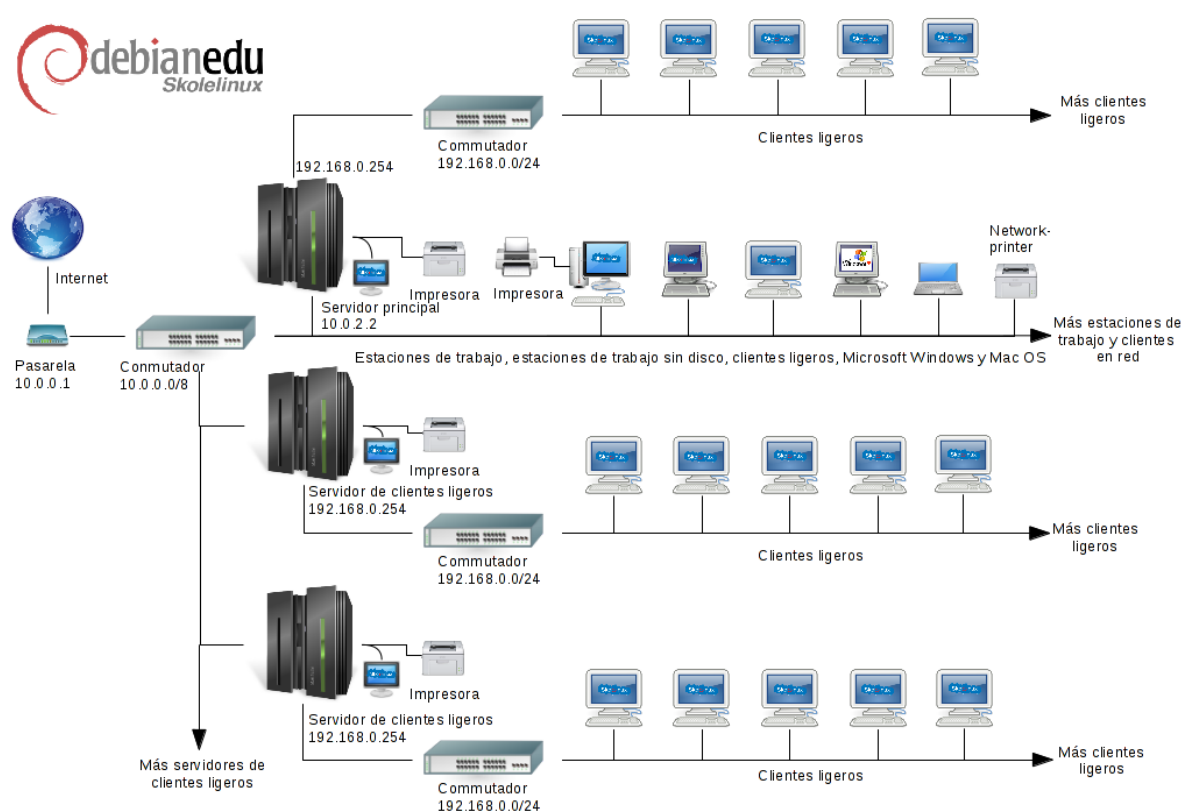
El proyecto Skolelinux fué fundado en Noruega el 2 de julio de 2001, y casi a la vez Raphaël Hertzog iniciaba el proyecto Debian Edu en Francia. Desde el 2003, ambos proyectos trabajaron unidos, aunque los nombres permanecieron separados. "Skole" y (Debian-) "Educativo" son dos términos bien conocidos en estas regiones.

En Noruega, donde Skolelinux se inició, el grupo principal de alcance son las escuelas con grupos de estudiantes desde los 6 a 16 años. Actualmente, el sistema es utilizado en muchos países alrededor del mundo, con un número mayor en Noruega, España, Alemania y Francia.

3. Arquitectura

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

3.1. Red



The figure is a sketch of the assumed network topology. The default setup of a Skolelinux network assumes that there is one (and only one) main-server, while allowing the inclusion of both normal workstations and LTSP-servers (with associated thin-clients and/or diskless workstations). The number of workstations can be as large or small as you want (starting from none to a lot). The same goes for the LTSP servers, each of which is on a separate network so that the traffic between the clients and the LTSP server doesn't affect the rest of the network services.

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. La configuración de red predeterminada

El DHCP en el servidor «Tjener» sirve la red 10.0.0.0/8 vía PXE Boot, en la que recibirá un menú de syslinux donde podrá seleccionar si instalar un servidor nuevo / estación de trabajo, iniciar un cliente delgado, estación sin disco, prueba de memoria o iniciar desde disco local.

Esto está diseñado para ser modificado, es decir, usted puede tener la raíz NFS en el punto syslinux a uno de los servidores LTSP o cambiar la opción next-server (almacenado en LDAP) del servicio DHCP para que los clientes puedan arrancar por medio de PXE desde el servidor de terminales.

El servicio DHCPD en el servidor LTSP únicamente ofrece una red dedicada en la segunda interfaz (las opciones preconfiguradas son 192.168.0.0/24 y 192.168.1.0/24) y raramente necesitan ser cambiadas.

La configuración de todas las subredes es almacenada en LDAP.

3.1.2. Servidor principal (tjener)

A Skolelinux network needs one main server (also called "tjener" which is Norwegian and means "server") which per default has the IP address 10.0.2.2 and is installed by selecting the main server profile. It's possible (but not required) to also select and install the LTSP-server and workstation profiles in addition to the main server profile.

3.1.3. 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 LTSP-server(s) should be separate (though it is possible to install both the main server and LTSP 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 set up 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.

Abajo se encuentra una lista de los servicios que se tienen por defecto en una red Skolelinux, con el nombre de DNS en cada servicio. Si es posible, todos los archivos de configuración harán referencia al servicio por su nombre (sin el nombre del dominio), haciendo más fácil para las escuelas el cambio de dominio (si se tiene un dominio DNS) o la dirección IP que utilizan.

Table of services		
Descripción de servicios	Nombre común	Nombre de servicio DNS
Registros centralizados	rsyslog	syslog
Sistema de Nombre de Dominio	DNS (BIND)	domain
Configuración automática de equipos	DHCP	bootps
Sincronización de reloj	NTP	ntp
Directorios de usuarios vía sistema de archivos de red	SMB / NFS	homes
Correo Electrónico	IMAP (Dovecot)	postoffice
Servicio de Directorio	OpenLDAP	ldap
Administración de usuarios	GOsa ²	---
Servidor Web	Apache/PHP	www
Respaldo Central	sl-backup, slbackup-php	backup

Caché Web	Proxy (Squid)	webcache
Impresión	CUPS	ipp
Inicio de sesión remoto seguro	OpenSSH	ssh
Configuración Automática	Cfengine	cfengine
LTSP Server/s	LTSP	ltsp
Monitoreo de servicios y equipos, reportes de fallas, histórico vía web. Reportes de fallos vía correo.	munin, icinga and site-summary	site-summary

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 opera sin importar el sistema operativo. Ofrece tanto NFS para clientes UNIX, como SMB para Windows y clientes Macintosh.

Por defecto, el correo está configurado para envío local (dentro de la escuela), aunque se puede configurar el envío a todo Internet si la escuela tiene una conexión a Internet fija. Las listas de correo están configuradas utilizando la información en la base de datos de usuario, dando a cada clase su propia lista de correo. Los clientes están configurados para enviar correo al servidor (usando 'smarthost'), y los usuarios pueden **acceder a su correo personal** mediante 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.

Network configuration on the clients is done automatically using DHCP. Normal clients are allocated IP addresses in the private subnet 10.0.0.0/8, while thin clients are connected to the corresponding LTSP-server via the separate subnet 192.168.0.0/24 (this is to ensure that the network traffic of the thin clients doesn't interfere with the rest of the network services).

El registro de sucesos está centralizado, de forma que todas las computadoras 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 profesores pueden publicar sitios web. El servidor web proporciona mecanismos para autenticar los usuarios, y para limitar el acceso a páginas individuales y subdirectorios a ciertos usuarios y grupos. Los usuarios pueden crear páginas web dinámicas, ya que el servidor web puede ejecutar programas del lado del servidor.

La información sobre las computadoras 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. Esto 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 mediante web, y sigue estándares establecidos. Son funcionales en los navegadores que incluye Skolelinux. Es posible delegar 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. Para lograr esto, el servidor Skolelinux tiene configurado un servidor NTP, y todas las estaciones y clientes se configuran para sincronizar sus relojes con el servidor. El servidor debe sincronizar su propio reloj mediante NTP con alguna de las máquinas disponibles en Internet para asegurarse de que toda la red tenga la hora correcta.

Printers are connected where convenient, either directly onto the main network, or connected to a server, workstation or LTSP-server. Access to printers can be controlled for individual users according to the groups

they belong to; this will be achieved by using quota and access control for printers.

3.1.4. LTSP server(s)

A Skolelinux network can have many LTSP servers (which we called "thin client servers" in releases before Stretch), which are installed by selecting the LTSP server profile.

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

3.1.5. Clientes ligeros

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

Los clientes delgados son una buena forma de usar máquinas viejas, de poca capacidad, ya que los programas se ejecutan en el servidor LTSP. Funciona así: El servicio usa DHCP y TFTP para conectarse a la red y arrancar desde la red. Después, se monta el sistema de archivos vía NFS desde el servidor LTSP, y finalmente se arranca X11 y el administrador de pantalla se conecta al mismo servidor LTSP vía SSH con X-forwarding, de esta manera, todos los datos enviados por la red, son encriptados. Para clientes delgados extremadamente antiguos y lentos para la encriptación, puede modificarse el comportamiento para funcionar como versiones anteriores, usando conexión para X vía XDMCP

3.1.6. Estaciones sin disco

Las estaciones sin disco, también reciben los nombres de "clientes delgados", "clientes livianos", "estaciones tontas". Para efectos de claridad de este manual utilizaremos el término "estaciones sin disco".

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

Diskless workstations are an excellent way of reusing older (but powerful) hardware with the same low maintenance cost as with thin clients. Software is administered and maintained on the server with no need for local installed software on the clients. Home directories and system settings are stored on the server too.

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

3.1.7. 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 con el instalador de Skolelinux se pueden administrar desde una computadora 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, que es la que usan los clientes para autenticarse.

3.2.1. Instalación

Actualmente hay dos medios de instalación: instalación por red desde un CD e instalación multi arquitectura desde un dispositivo USB. Ambos medios pueden ser cargados desde memorias USB.

La idea es poder instalar un servidor desde cualquier medio una sola vez e instalar los demás clientes por la red arrancando mediante la red.

Solo la instalación en red necesita acceso a Internet durante la instalación.

The installation should not ask any questions, with the exception of desired language (e.g. Norwegian Bokmål, Nynorsk, Sami) and machine profile (main server, workstation, LTSP server, ...). All other configuration will be set up automatically with reasonable values, to be changed from a central location by the system administrator subsequent to the installation.

3.2.2. 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 archivos. Esta sección (directorio home) contiene los archivos de configuración del usuario, documentos, correos electrónicos y páginas web. Algunos de los archivos deberían tener acceso de lectura para otros usuarios del sistema, algunos podrían ser de lectura para todos a través de Internet, y algunos no deberían ser accesibles por nadie que no fuera el usuario.

Para asegurar que todos los discos serán utilizados para directorios de datos de los usuarios o directorios compartidos, pueden poseer nombres únicos entre todas los ordenadores durante la instalación al ser montados como `/skole/host/directory/`. Inicialmente, un directorio es creado en el servidor de archivos, `/skole/tjener/home0/` en el que todas las cuentas de usuarios son creadas. Más directorios pueden ser creados cuando sea necesario acomodar grupos de usuarios particulares o patrones particulares de uso.

Para habilitar el acceso compartido de archivos según el sistema de permisos de UNIX, los usuarios necesitan ser parte de un grupo compartido adicional (como "students") así como al grupo inicial al que pertenecen de manera predeterminada. Si los usuarios tienen una umask apropiado para hacer artículos de nueva creación para compartir archivos en grupos accesibles (002 o 007), y si los directorios que están trabajando en son setgid para asegurar que los archivos hereden el grupo de la propiedad correcta, el resultado es controlada entre el miembros de un grupo.

The initial access settings for newly created files are a matter of policy. The Debian default umask is 022 (which would not allow group-access as described above), but Debian Edu uses a default of 002 - meaning that files are created with read access for everybody, which can later be removed by explicit user action. This can alternatively be changed (by editing `/etc/pam.d/common-session`) to a umask of 007 - meaning read access is initially blocked, necessitating user action to make them accessible. The first approach encourages knowledge sharing, and makes the system more transparent, whereas the second method decreases the risk of unwanted spreading of sensitive information. The problem with the first solution is that it is not apparent to the users that the material they create will be accessible to all other users. They can only detect this by inspecting other users' directories and seeing that their files are readable. The problem with the second solution is that few people are likely to make their files accessible, even if they do not contain sensitive information and the content would be helpful to inquisitive users who want to learn how others have solved particular problems (typically configuration issues).

4. Requisitos

Hay diferentes formas de usar una solución Skolelinux. Puede instalarse en un sólo PC o en una amplia región con muchas escuelas operadas centralmente. Esta variedad de configuraciones hace una gran diferencia en la forma de configurar las cosas dependiendo de los elementos de red, servidores y puestos de cliente.

4.1. Requisitos de hardware

El propósito de los diferentes perfiles es explicado en el capítulo [Arquitecturas de red](#).

- The computers running Debian Edu / Skolelinux must have either 32 bit (Debian architecture 'i386', oldest supported processors are 686 class ones) or 64 bit (Debian architecture 'amd64') x86 processors.
- At least 2 GiB RAM for 30 clients and 4 GiB RAM for 50-60 clients are recommended for the main and LTSP server profiles.
- Los clientes delgados pueden funcionar con 64 MB de RAM y 133 MHz de procesador, aunque se recomienda 256 MB de RAM y procesadores de mayor velocidad.
 - La paginación de memoria por red esta habilitada por defecto, tiene un tamaño de 512Mb. Si necesita más, puede modificarlo desde la variable SIZE, en el archivo `/etc/ltsp/nbdswpd.conf`.
 - Si sus terminales tienen disco duro, se recomienda que sean utilizados para paginación, ya que resulta ser más rápida que la paginación por medio de la red.

- Para estaciones de trabajo, terminales tontas e instalaciones individuales, PC's con velocidad de 800 MHz y 512 Mb de RAM son los requerimientos mínimos, para ejecutar navegadores modernos y LibreOffice 1024 Mb de RAM son recomendados.
 - En estaciones de trabajo con poca memoria RAM, el verificador ortográfico podría causar que LibreOffice deje de funcionar si el espacio de intercambio es demasiado pequeño. Si esto ocurre frecuentemente, puede ser deshabilitado por los administradores del sistema.
- El requerimiento mínimo de espacio depende del perfil que sea instalado.
 - combined main server + LTSP server: 70 GiB. As usual with disk space on a main server, "the bigger the better".
 - LTSP server: 50 GiB.
 - Estación de trabajo, o independiente: 30 Gb
- LTSP servers need two network cards when using the default network architecture:
 - eth0 conectada a la red principal (10.0.0.0/8),
 - eth1 es usada para proporcionar servicio a los clientes LTSP (192.168.0.0/24 por defecto, pero **otras son posibles**.
- Las laptops son estaciones de trabajo móviles, por lo que tienen los mismos requerimientos de las estaciones de trabajo regulares.

4.2. Hardware conocido que funciona

Una lista de hardware probado esta en <http://wiki.debian.org/DebianEdu/Hardware/> . Esta lista no está completa 😊

<http://wiki.debian.org/InstallingDebianOn> es un esfuerzo para documentar el proceso de instalación, configuración y uso de Debian en hardware específico. Por lo tanto los potenciales compradores sabrán si su hardware es soportado y los propietarios podrán saber como obtener el máximo de sus equipos.

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

5. Requerimientos para una instalación de red

5.1. Configuración por defecto

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

- Necesita exactamente, un servidor principal, el tjener.
- Puede tener hasta cientos de estaciones de trabajo en la red principal.
- Puede tener muchos servidores LTSP en la red principal; dos subredes diferentes son preconfiguradas en LDAP, aunque pueden agregarse más.
- Puede tener cientos de clientes ligeros y/o estaciones de trabajo sin disco en cada red de servidores LTSP.
- Puede tener cientos de otras computadoras que tendrán direcciones IP asignadas de manera dinámica.
- Para acceder a Internet necesita un enrutador/pasarela (ver más abajo).

5.2. Enrutador de Internet

Un enrutador/pasarela conectado a Internet en la interfaz externa y con la dirección IP 10.0.0.1 y máscara de red 255.0.0.0 en la interfaz interna, es necesario para conectarse a internet.

El enrutador no debería ejecutar un servidor DHCP, puede ejecutar un servidor DNS, aunque no es necesario y no será usado.

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

Si necesita algo para un enrutador empotrado, o un punto de acceso le recomendamos usar [OpenWRT](#), así podrá usar también el firmware original. Utilizar el firmware original es más fácil, utilizar OpenWRT le proporciona más opciones y control. Revise la web de OpenwRT para una lista completa del [hardware soportado](#).

Es posible usar una configuración diferente de red (existe un [proceso documentado](#) para hacer esto), pero si usted no tiene una infraestructura de red preexistente, le recomendamos abstenerse de hacerlo, y mantener la configuración predeterminada de la [arquitectura de red](#).

6. Instalación y opciones de descarga

6.1. Donde encontrar información adicional

We recommend that you read or at least take a look at the [release notes for Debian Stretch](#) before you start installing a system for production use. Please give Debian Edu/Skolelinux a try, it should just work. 😊

⚠️ Asegúrese de leer el capítulo [Iniciando con Debian Edu](#) de este manual, ya que explica como iniciar sesión por primera vez.

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

6.2. Download the installation media for Debian Edu 9+edu0 Codename Stretch

6.2.1. Imagen en CD de instalación por red para i386, amd64

The netinstall CD, which also can be used for installation from USB flash drives, is suitable to install i386 and amd64 machines. As the name implies, internet access is required for the installation. It's available via

- [debian-edu-9+edu0~a0-CD.iso](#)

[debian-edu-9+edu0~a0-CD.iso](#)

```
rsync -v --progress ftp.skolelinux.org::skolelinux-cd/debian-edu-9+edu0~a0-CD.iso .
/debian-edu-9+edu0~a0-CD.iso
```

6.2.2. USB drive ISO image for i386 and amd64

The multi-architecture ISO image is 5.2 GiB large and can be used for installation of amd64 and i386 machines. Like the netinstall image it can be installed on USB flash drives or disk media of sufficient size. Please note that internet access during installation is needed. Like the others it can be downloaded over FTP, HTTP or rsync via:

- [debian-edu-9+edu0~a0-USB.iso](#)

[debian-edu-9+edu0~a0-USB.iso](#)

```
rsync -v --progress ftp.skolelinux.org::skolelinux-cd/debian-edu-9+edu0~a0-USB.iso
./debian-edu-9+edu0~a0-USB.iso
```

6.2.3. Sources

Sources are available from the Debian archive at the usual locations.

6.3. Solicite un CD / DVD por correo

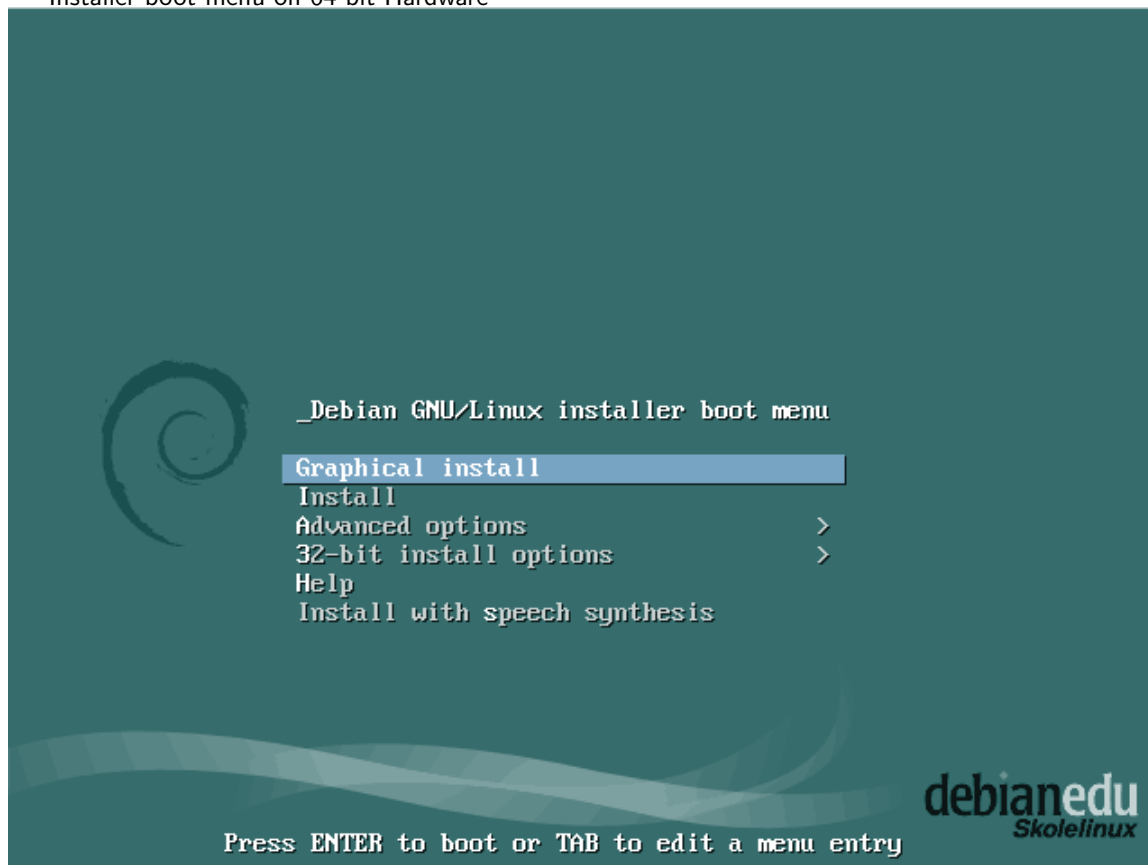
Para quienes que no poseen una conexión a Internet rápida, nosotros podríamos enviarle un CD o DVD por el precio del mismo y su envío. Solamente envíe un correo a cd@skolelinux.no podremos discutir acerca de los detalles del pago (del disco y el envío). 😊 Recuerde incluir la dirección a la que desea le sea enviado su CD / DVD dentro del email.

6.4. Instalacion de Debian Edu

When you do a Debian Edu installation, you have a few options to choose from. Don't be afraid; there aren't many. We have done a good job of hiding the complexity of Debian during the installation and beyond. However, Debian Edu is Debian, and if you want there are more than 42,000 packages to choose from and a billion configuration options. For the majority of our users, our defaults should be fine.

6.4.1. Installation types and options

Installer boot menu on 64-bit Hardware



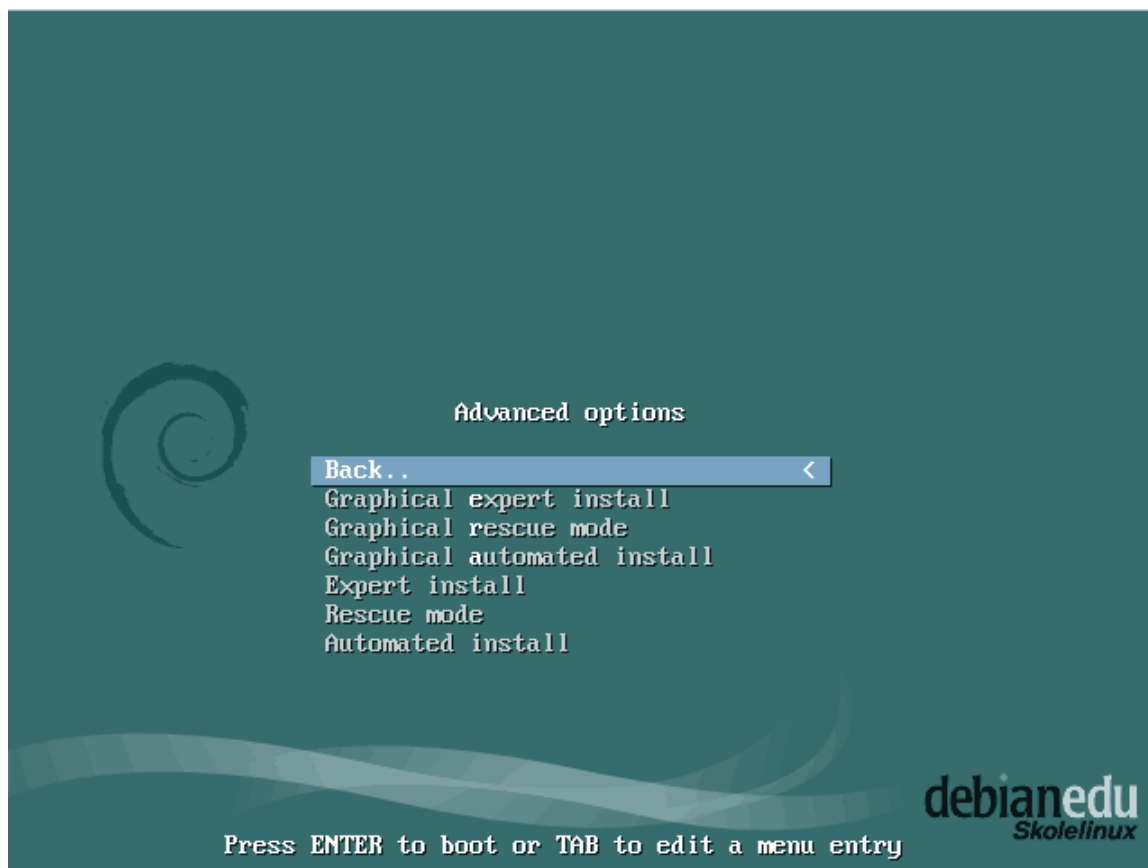
Instalador gráfico usa el instalador GTK donde puede usar el ratón.

Install uses text mode.

Advanced options > gives a sub menu with more detailed options to choose.

32-bit install options > allows a 32-bit installation on 64-bit hardware.

Help gives some hints on using the installer; see screenshot below.



Back.. brings back to the main menu.

Graphical expert install gives access to all available questions, mouse usable.

Graphical rescue mode makes this install medium become a rescue disk for emergency tasks.

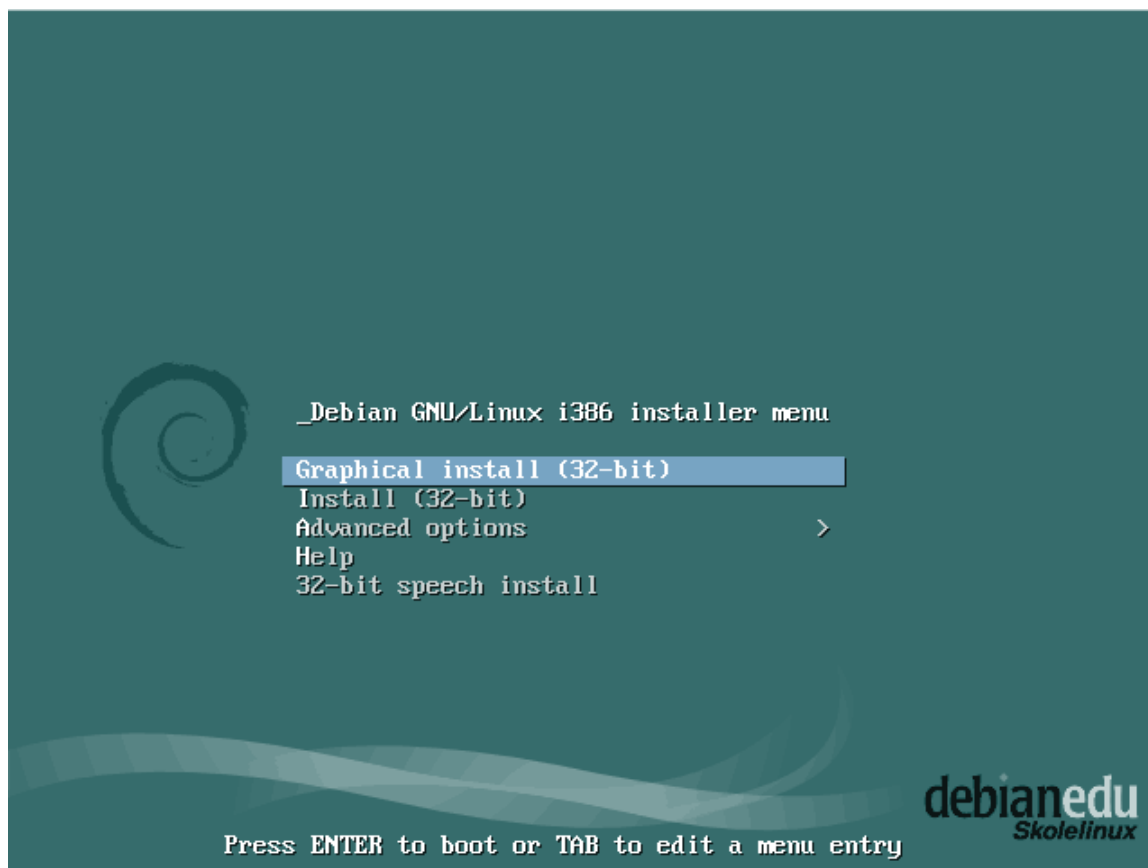
Instalación automática gráfica necesita un archivo preconfigurado.

Instalación experta le da acceso a todas las opciones disponibles en modo texto.

Rescue mode text mode; makes this install medium become a rescue disk for emergency tasks.

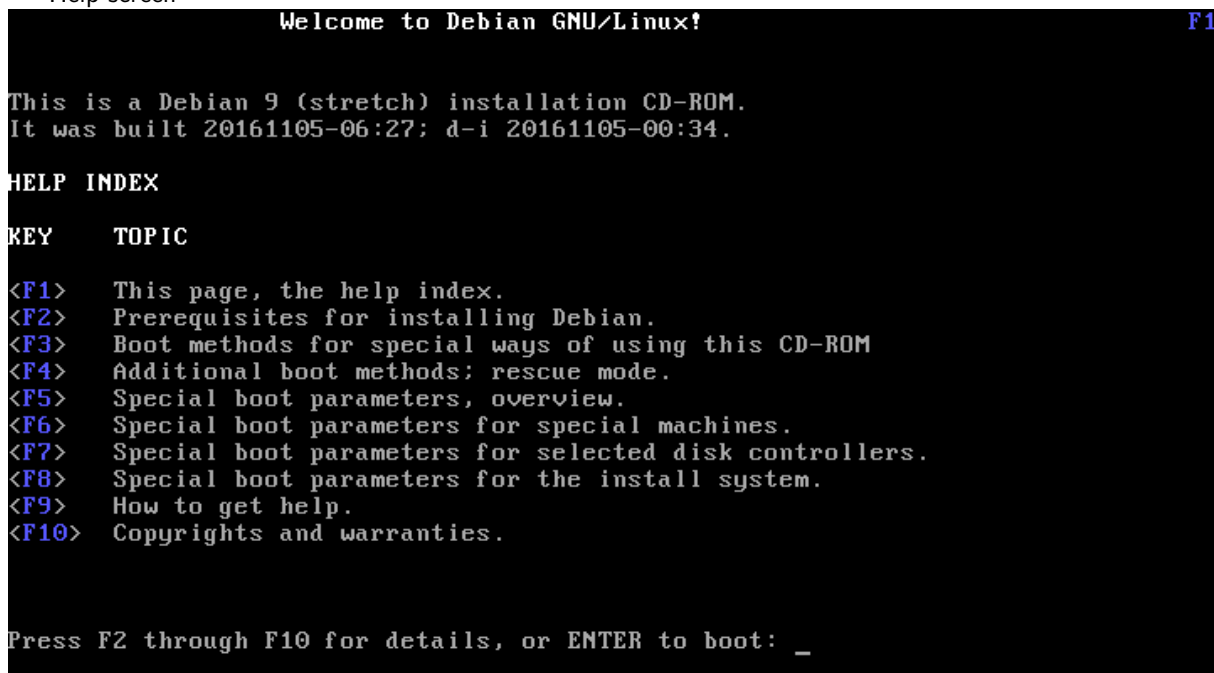
Automated install text mode; needs a preseed file.

Installer boot menu on 32-bit Hardware



Explanations are similar to those for 64-bit hardware.

Help screen



This Help screen is self explaining and enables the <F>-keys on the keyboard for getting more detailed help on the topics described.

Additional boot parameters for installations

In both cases, boot options can be edited by pressing the TAB key in the boot menu.

- Puede utilizar un servicio proxy HTTP existente en la red para agilizar la instalación del servidor principal desde CD. Agregue `mirror/http/proxy=http://10.0.2.2:3128/` como un parámetro adicional de carga.

- Si ya tiene instalador el perfil de servidor principal en una computadora, futuras instalaciones se podrían hacer vía PXE, ya que utilizará automáticamente el proxy del servidor principal.
- To install the **GNOME** desktop instead of the **MATE** desktop, add `desktop=gnome` to the kernel boot parameters.
- Para instalar el escritorio **LXDE**, agregue `desktop=lxde` a los parámetros de carga del kernel.
- Para instalar el escritorio **Xfce**, agregue `desktop=xfce` a los parámetros de carga del kernel.
- And to install the **KDE Plasma** desktop instead, add `desktop=kde` to the kernel boot parameters.

6.4.2. El proceso de instalación

Remember the **system requirements** and make sure you have at least two network cards (NICs) if you plan on setting up an LTSP server.

- Elige el idioma (para la instalación y el sistema instalado)
- Elige un lugar que normalmente sería el lugar donde vives.
- Seleccione una disposición de teclado (la predeterminada para su país es la mejor opción)
- Elige el(los) perfil(es) de la siguiente lista:
 - **Main-Server**
 - This is the main server (tjener) for your school providing all services 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 LTSP-Server in addition to this one.
 - **Workstation**
 - Una computadora que inicia desde su disco duro, y funciona con todos los programas y dispositivos localmente como una computadora común, pero el usuario será autenticado por el servidor principal, donde los archivos de los usuarios y las configuraciones para escritorio son guardados.
 - **Roaming workstation**
 - Same as workstation but capable of authentication using cached credentials, meaning it can be used outside the school network. The users' files and profiles are stored on the local disk. For single user notebooks and laptops this profile should be selected and not 'Workstation' or 'Standalone' as suggested in earlier releases.
 - **LTSP-Server**
 - A thin client (and diskless workstation) server, is called an 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. Choosing this profile also enables the workstation profile (even if it is not selected) - an LTSP server can always be used as a workstation, too.
 - **Standalone**
 - Una computadora común que puede funcionar sin un servidor (esto quiere decir, que no necesita estar en la red). Incluye laptops.
 - **Minimal**
 - Este perfil instalará los paquetes básicos y configurará la computadora para integrarse en la red Debian Edu, pero sin ningún servicio ni aplicaciones. Es útil como plataforma para servicios simples manualmente migrados desde el servidor principal.

The **Main Server**, **Workstation** and **LTSP Server** profiles are preselected. These profiles can be installed on one machine together if you want to install a so called combined main server. This means the main server will be an LTSP server and also be used as a workstation. This is the default choice, since we assume most people will install **via PXE** afterwards. Please note that you must have 2 network cards installed in a machine which is going to be installed as a combined main server or as an LTSP server to become usefull after the installation.

⚠ El orden de las tarjetas de red después de la instalación puede cambiar del orden durante la instalación. El orden deseado puede conseguirse editando el archivo `/etc/udev/rules.d/70-persistent-net.rules`: Usualmente, si esto pasa, querrá reemplazar `eth0` con `eth1` y `eth1` con `eth0`; un reinicio del equipo es necesario para que los cambios tengan efecto.

- Seleccione "sí" o "no" para particionamiento automático. Este consciente que al seleccionar sí, ¡se eliminarán todos los datos en el disco duro!, al seleccionar no, se requerirá más trabajo y necesitará que las particiones requeridas sean creadas y tengan suficiente espacio.
- Por favor, seleccione "sí" para enviar información a <http://popcon.skolelinux.org/> para permitirnos saber que paquetes son populares y deberían de mantenerse para futuras versiones. Usted no esta obligado a hacerlo, pero es la manera más fácil de que colabore. 😊
- Wait. If the selected profiles include LTSP-server then the installer will spend quite some time at the end, "Finishing the installation - Running debian-edu-profile-udeb..."
- Después de introducir la contraseña de root, se le solicitará crear una cuenta de usuario normal "para tareas no administrativas". Para Debian Edu esta cuenta de usuario es muy importante: es la cuenta que se usará para administrar la red Skolelinux.

⚠ La contraseña para este usuario **debe** tener una longitud de **al menos 5 caracteres**, de los contrario, el ingreso al sistema no será posible (aunque el instalador acepte una contraseña menor).

- Sonríe :)

6.4.3. Notas en algunas características

6.4.3.1. Nota sobre equipos portátiles. Most likely you will want to use the 'Roaming workstation' profile (see above). Be aware that all data is stored locally (so take some extra care over backups) and login credentials are cached (so after a password change, logins may require your old password if you have not connected your laptop to the network and logged in with the new password).

6.4.3.2. Nota sobre instalaciones con imagen multiarquitectura USB / Blu-ray Después de instalar desde una imagen multiarquitectura USB / Blu-ray, `/etc/apt/sources.list` contendrá fuentes de esa imagen. Si tiene conexión a Internet, le sugerimos agregar las siguientes líneas para que las actualizaciones de seguridad disponible se puedan instalar:

```
deb http://ftp.debian.org/debian/ stretch main
deb http://security.debian.org/ stretch/updates main
```

6.4.3.3. Nota acerca de de la instalación con CD Una instalación por red (que es el tipo de instalación que ofrece nuestro CD) tomará algunos paquetes del CD y el resto lo tomará de Internet. El monto de paquetes tomados desde la red varía de perfil en perfil pero se mantiene menor a un gigabyte (al menos que elija instalar todos los escritorios posibles). Una vez que tiene instalado el servidor principal (ya sea un servidor principal o un servidor combinado), futuras instalaciones usarán el proxy para prevenir la descarga de los mismos paquetes muchas veces desde Internet.

6.4.3.4. A note on LTSP-server installations using only Thin-Clients Providing the kernel boot parameter `edu-skip-ltsp-make-client` makes it possible to skip one 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, such as if you want 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.

Excepto por el extenso tiempo de instalación, no hay problema en crear un chroot combinado y por eso se hace de forma predeterminada.

6.4.4. Instalación utilizando memorias USB lugar de CD / Blu-ray

Desde el lanzamiento de Squeeze es posible copiar directamente las imágenes .iso de CD/DVD/BD a una unidad USB (también conocido como "memoria USB") e iniciar desde ellos. Solamente ejecute un comando como este, ponga el nombre del archivo y la ruta al dispositivo que desee instalar.

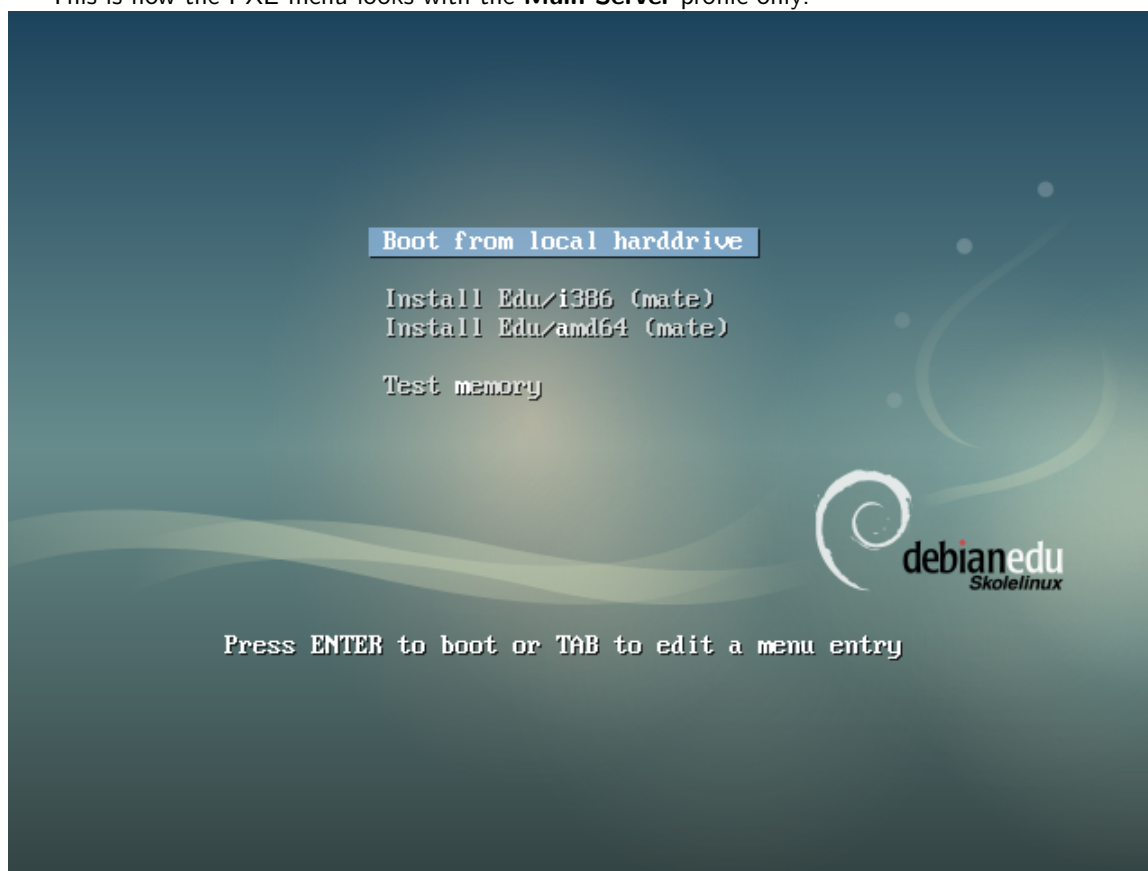
```
sudo dd if=debian-edu-amd64-i386-XXX.iso of=/dev/sdX bs=1024
```

Dependiendo de la imagen seleccionada, la unidad USB se comportará como un CD o Blu-ray.

6.4.5. Instalación a través de la red (PXE) e inicio de estaciones sin disco.

Para este método de instalación es necesario que el servidor principal esté encendido. Cuando los clientes cargan a través de la red principal, un nuevo menú PXE con un instalador y opciones de selección de carga se mostrará. Si la instalación PXE falla con un mensaje de error mencionando que un archivo XXX.bin no se encuentra, es más probable que la tarjeta de red del cliente requiera un firmware no libre. En este caso el initrd del instalador de Debian debe ser modificado. Esto se puede lograr ejecutando el comando `/usr/share/debian-edu-config/tools/pxe-addfirmware` en el servidor.

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



This is how the PXE menu looks with the **Main-Server** and **LTSP-Server** profiles:



Esta configuración permite iniciar a las estaciones sin disco y clientes ligeros a través de la red principal. A diferencia de las estaciones de trabajo, las estaciones de trabajo sin disco no necesitan ser agregadas a LDAP con GOSa², pero pueden agregarse, si necesita forzar el nombre del host.

Más información acerca de los clientes de red puede ser encontrada en el capítulo [clientes de red](#).

6.4.5.1. Modificar instalaciones PXE La instalación PXE utiliza un archivo de preconfiguración para debian-installer, que puede ser modificado y solicitar más paquetes para instalar.

Una línea como esta debe ser agregada a `tjener:/etc/debian-edu/www/debian-edu-install.dat`

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

La instalación PXE usa el archivo `/var/lib/tftpboot/debian-edu/install.cfg` y el archivo de preconfiguración `/etc/debian-edu/www/debian-edu-install.dat`. Estos archivos pueden modificarse para ser ajustados a la configuración usada durante la instalación y así evitar las preguntas cuando se realicen instalaciones por red. Otra manera de lograr esto es agregar configuraciones extras a los archivos `/etc/debian-edu/pxeinstall.conf` y `/etc/debian-edu/www/debian-edu-install.dat.local` y ejecutar `/usr/sbin/debian-edu-pxeinstall` para actualizar los archivos generados.

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

Para desactivar o cambiar el uso del proxy cuando instale vía PXE, necesita cambiar las líneas que contengan `mirror/http/proxy`, `mirror/ftp/proxy` y `preseed/early_command` en el archivo `tjener:/etc/debian-edu/www/debian-edu-install.dat`. Para desactivar el uso de proxy cuando instale, anteponga el signo '#' al inicio de las primeras dos líneas y elimine `"export http-proxy="http://webcache:3128";"` de la última línea.

Algunas configuraciones no pueden preconfigurarse porque son necesarias antes que el archivo de preconfiguración sea descargado. Estas son configuradas en los argumentos de carga PXELinux-based disponibles en `/var/lib/tftpboot/debian-edu/install.cfg`. Idioma, disposición del teclado y escritorio son algunas de estas configuraciones.

6.4.6. Imágenes personalizadas

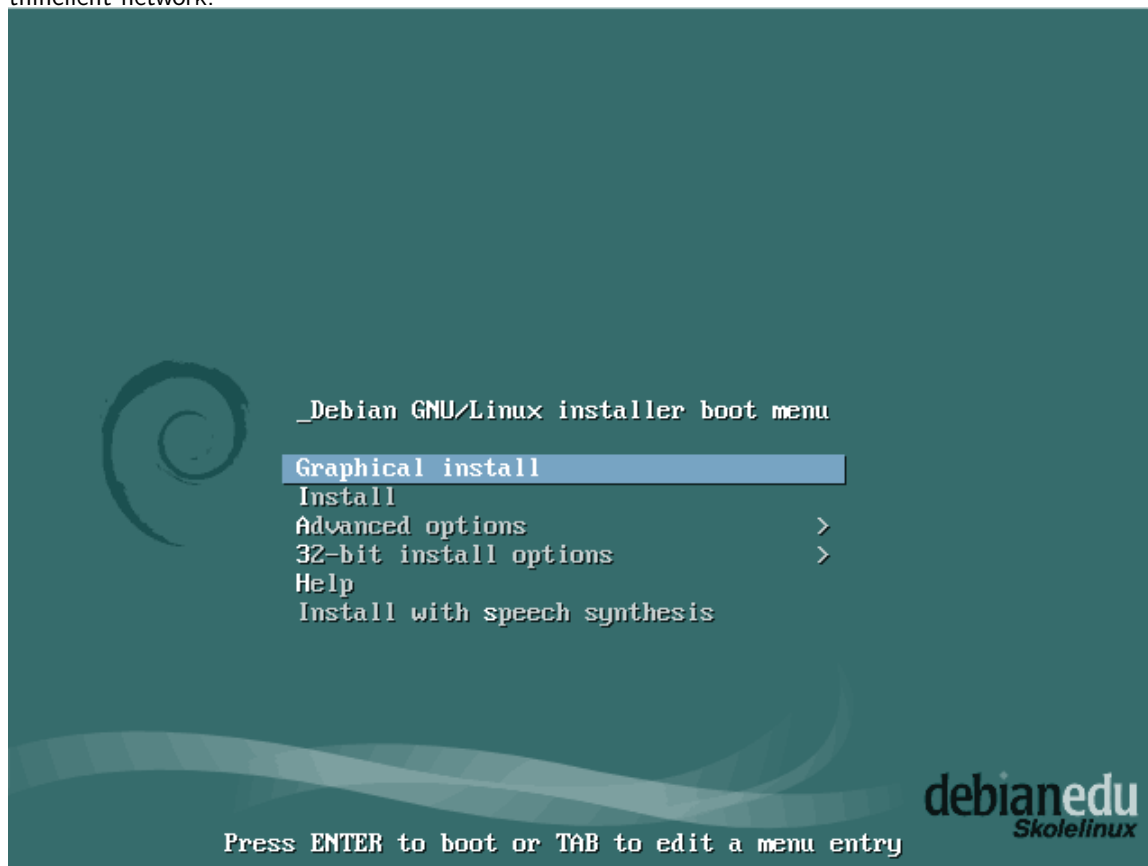
Creating custom CDs, DVDs or Blu-ray discs can be quite easy since we use the [Debian Installer](#), which has a modular design and other nice features. [Preseeding](#) allows you to define answers to the questions normally asked.


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](#).

6.5. Captura de pantalla del paseo

El modo de texto y modo gráfico de instalación son idénticos, sólo la apariencia es diferente. El modo gráfico le ofrece la oportunidad de utilizar un ratón y por supuesto, el modo gráfico se ve mucho mejor y más moderno. A menos que el hardware presente problemas con el modo gráfico, no hay razón para no usarlo.

So here is a screenshot tour through a graphical 64-bit Main-Server + Workstation + LTSP Server installation and how it looks at the first boot of the tjener, a PXE boot on the workstation network and on the thinclient network:





Select a language

Choose the language to be used for the installation process. The selected language will also be the default language for the installed system.

Language:

Chinese (Simplified)	-	中文(简体)
Chinese (Traditional)	-	中文(繁體)
Croatian	-	Hrvatski
Czech	-	Čeština
Danish	-	Dansk
Dutch	-	Nederlands
Dzongkha	-	ཇོངཀལ
English	-	English
Esperanto	-	Esperanto
Estonian	-	Eesti
Finnish	-	Suomi
French	-	Français
Galician	-	Galego
Georgian	-	ქართული
German	-	Deutsch
Greek	-	Ελληνικά

[Screenshot](#)[Go Back](#)[Continue](#)



Hong Kong

India

Ireland

Israel

New Zealand

Nigeria

Philippines

Singapore

South Africa

United Kingdom

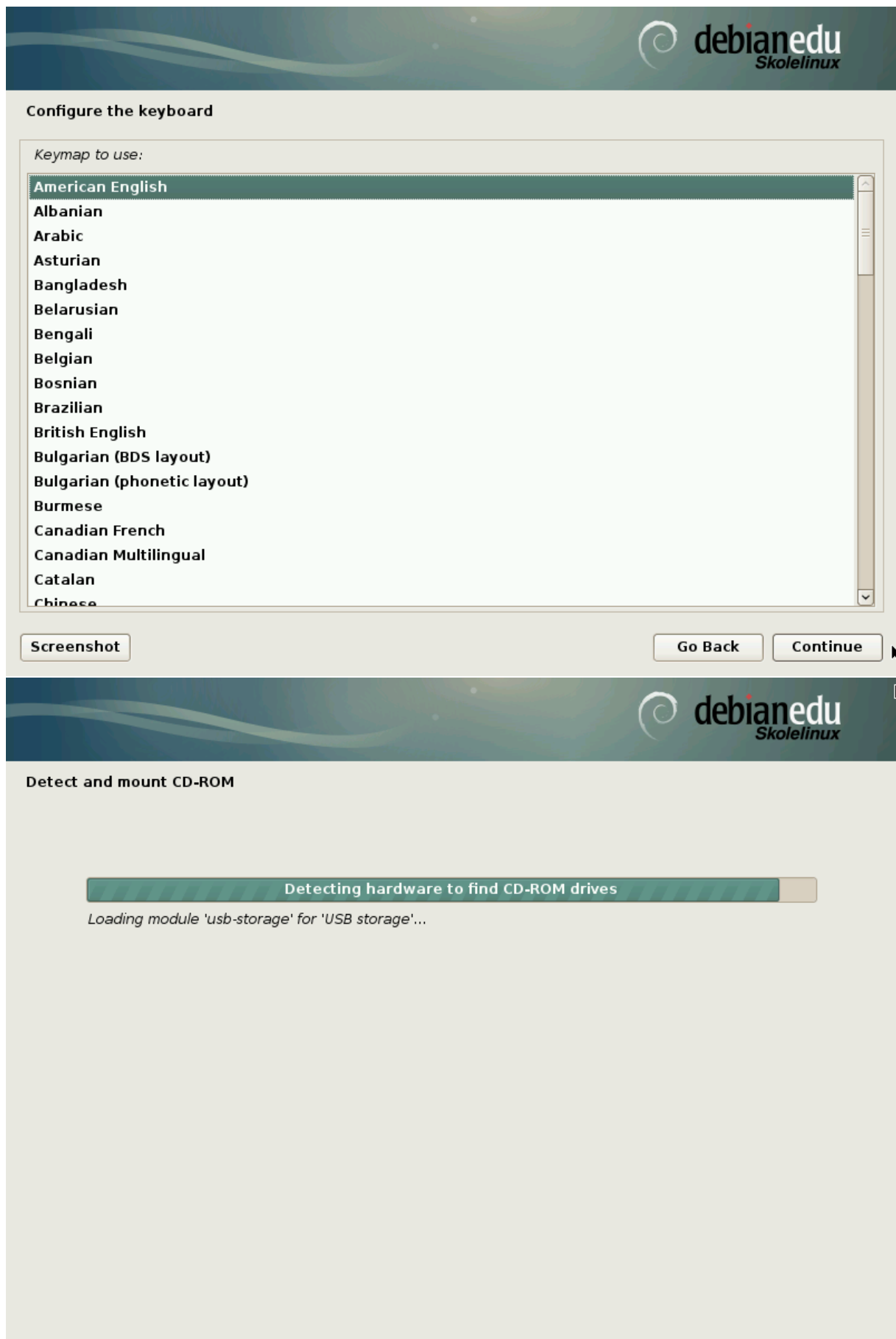
United States

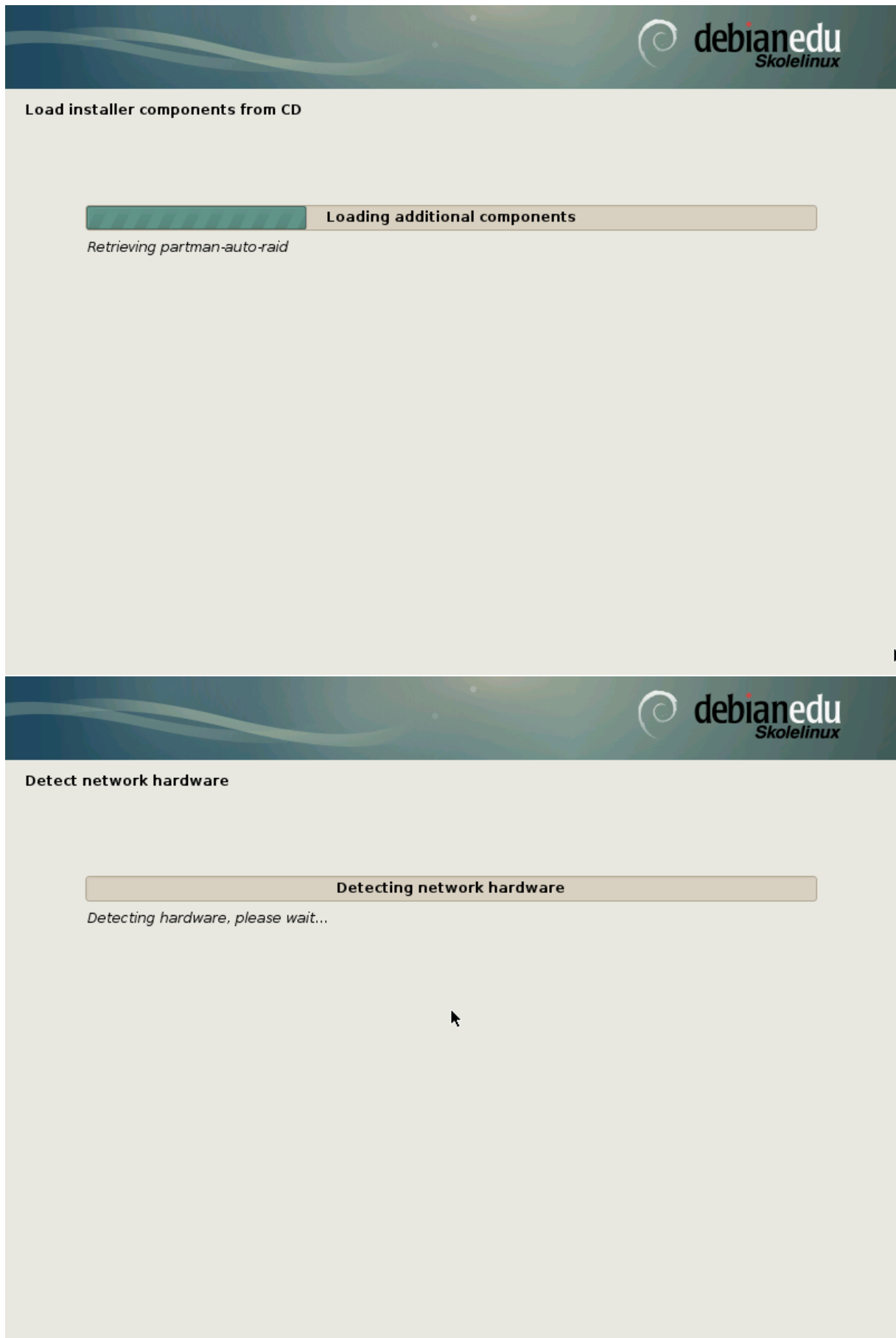
Zambia


Zimbabwe

other

[Screenshot](#)[Go Back](#)[Continue](#)







Choose Debian Edu profile

Profiles determine how the machine can be used out-of-the-box:


- **Main Server:** reserved for the Debian Edu server. It does not include any GUI (Graphical User Interface). There should only be one such server on a Debian Edu network.
- **Workstation:** for normal machines on the Debian Edu network.
- **Roaming Workstation:** for single user machines on the Debian Edu network which some times travel outside the network.
- **LTSP Server:** includes 'Workstation' and requires two network cards.
- **Standalone:** for machines meant to be used outside the Debian Edu network. It includes a GUI and conflicts with other profiles.
- **Minimal:** fully integrated into the Debian Edu network but contains only a basic system without any GUI.

Profile(s) to apply to this machine:

☒ **Main Server**
☒ **Workstation**
☐ **Roaming Workstation**
☒ **LTSP Server**
☐ **Standalone**
☐ **Minimal**

Screenshot

Continue



Really use the automatic partitioning tool?


This will destroy the partition table on all disks in the machine. REPEAT: THIS WILL WIPE CLEAN ALL HARD DISKS IN THE MACHINE! If you have important data that are not backed up, you may want to stop now in order to do a backup. In that case, you'll have to restart the installation later.

Really use the automatic partitioning tool?

☒ No
☐ Yes

Screenshot

Continue



Really use the automatic partitioning tool?

This will destroy the partition table on all disks in the machine. REPEAT: THIS WILL WIPE CLEAN ALL HARD DISKS IN THE MACHINE! If you have important data that are not backed up, you may want to stop now in order to do a backup. In that case, you'll have to restart the installation later.


Really use the automatic partitioning tool?

☐ No

☒ Yes

Screenshot

Continue



Participate in the package usage survey?

The system may anonymously supply the distribution developers with statistics about the most used packages on this system. This information influences decisions such as which packages should go on the first distribution CD.

If you choose to participate, the automatic submission script will run once every week, sending statistics to the distribution developers. The collected statistics can be viewed on <http://popcon.debian.org/>.

This choice can be later modified by running "dpkg-reconfigure popularity-contest".


Participate in the package usage survey?

☒ No

☐ Yes

Screenshot

Continue



Set up users and passwords

You need to set a password for 'root', the system administrative account. A malicious or unqualified user with root access can have disastrous results, so you should take care to choose a root password that is not easy to guess. It should not be a word found in dictionaries, or a word that could be easily associated with you.

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

The root user should not have an empty password. If you leave this empty, the root account will be disabled and the system's initial user account will be given the power to become root using the "sudo" command.

Note that you will not be able to see the password as you type it.

Root password:

●●●●●●●●

☐ Show Password in Clear

Please enter the same root password again to verify that you have typed it correctly.


Re-enter password to verify:

●●●●●●●●

☐ Show Password in Clear

Screenshot

Go BackContinue



Set up users and passwords

A user account will be created for you to use instead of the root account for non-administrative activities.


Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.

Full name for the new user:

John Doe

Screenshot

Go BackContinue




Set up users and passwords

Select a username for the new account. Your first name is a reasonable choice. The username should start with a lower-case letter, which can be followed by any combination of numbers and more lower-case letters.

Username for your account:

Screenshot

Go BackContinue



Set up users and passwords

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

Choose a password for the new user:

☐ Show Password in Clear

Please enter the same user password again to verify you have typed it correctly.

Re-enter password to verify:

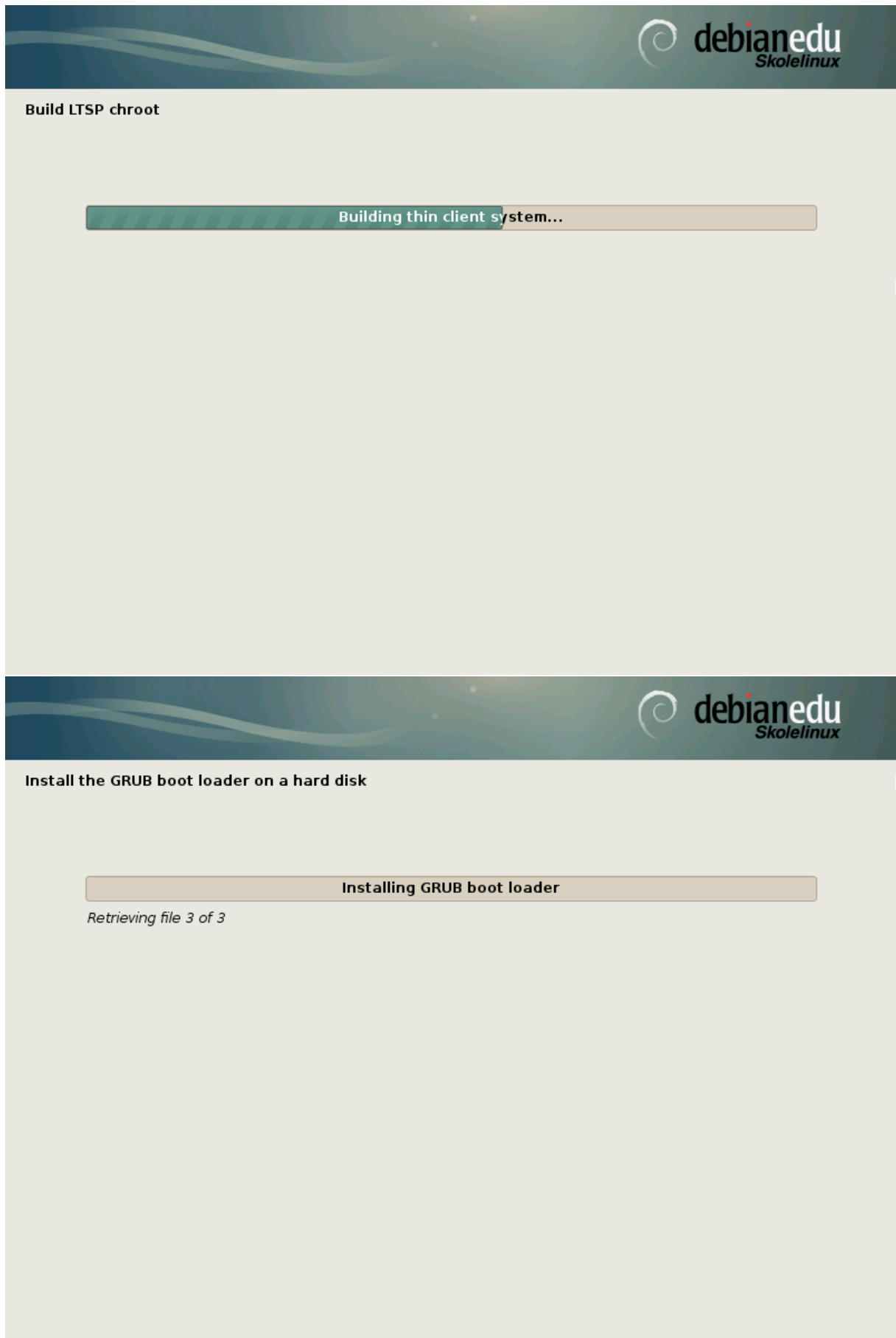
☐ Show Password in Clear

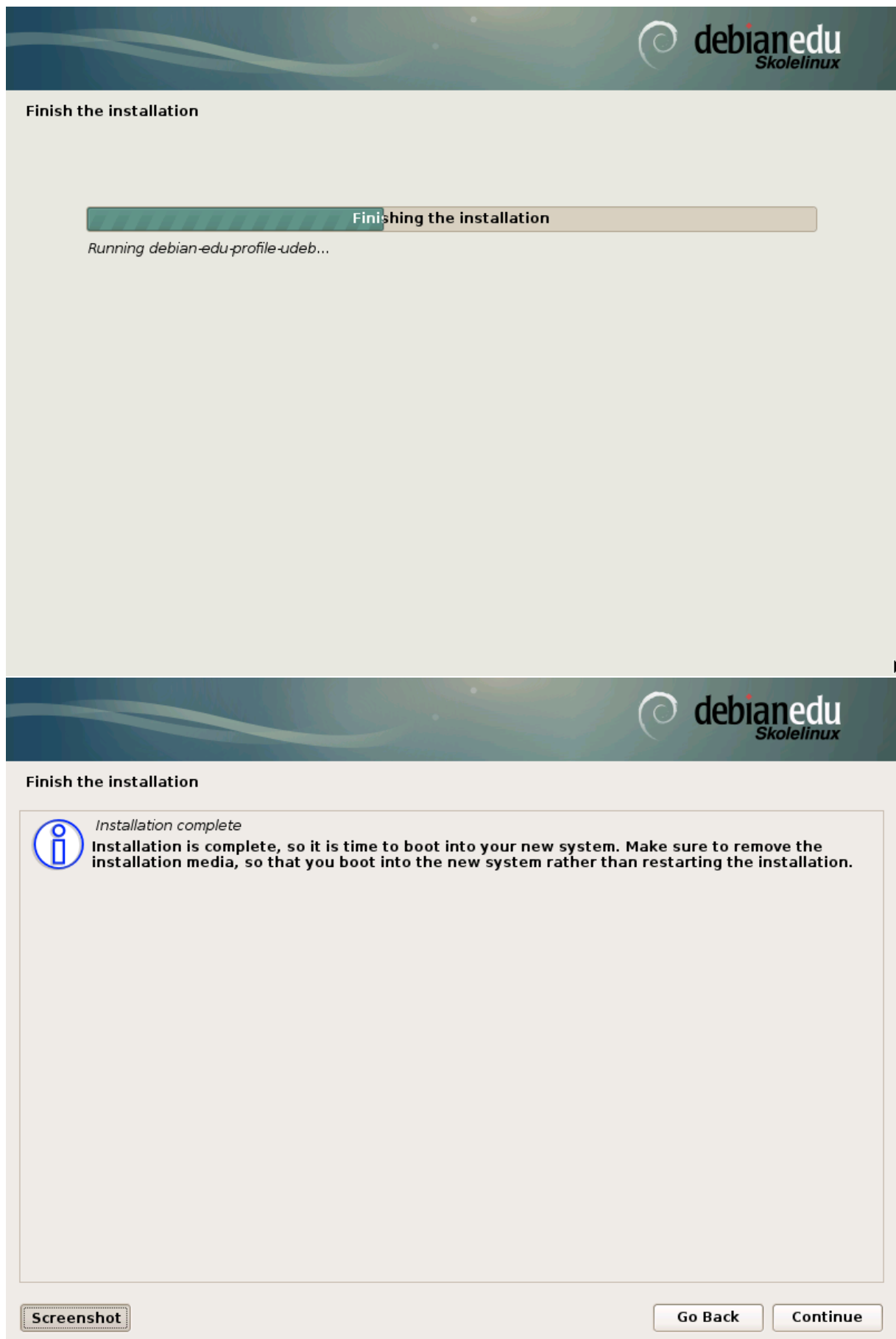
Screenshot

Go BackContinue



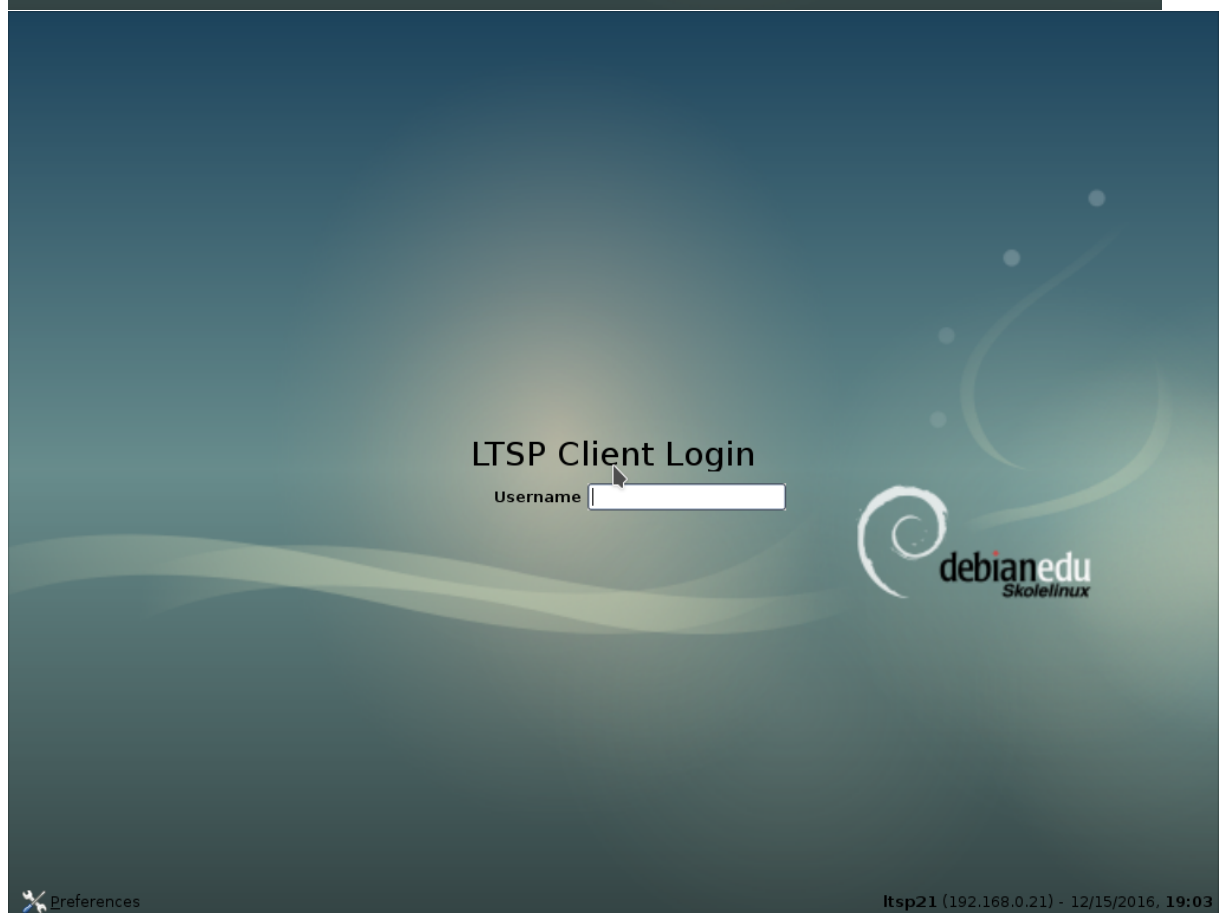


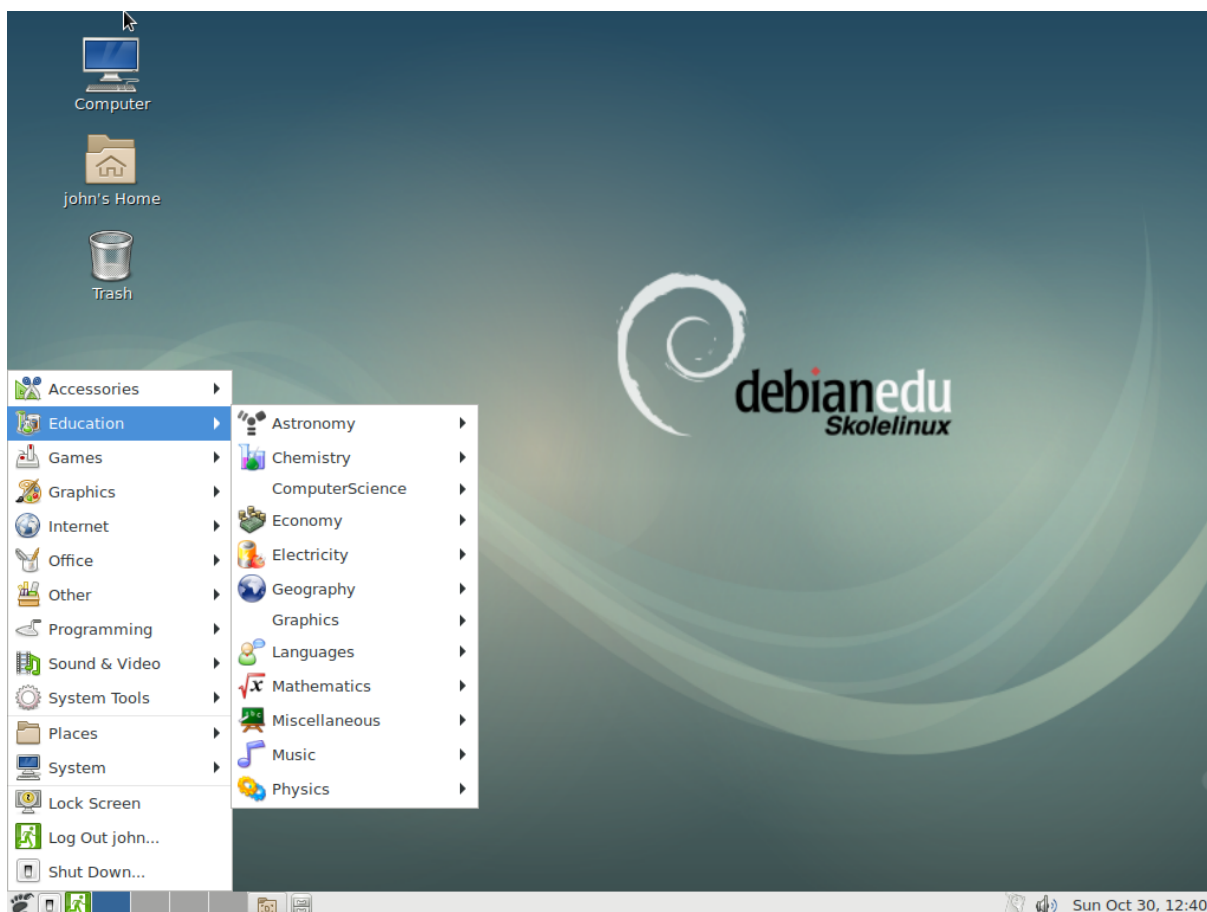












7. Iniciando

7.1. Pasos mínimos para iniciar

Durante la instalación del servidor principal, fue creada una primera cuenta de usuario. A continuación, esta cuenta se llamará "primer usuario". Esta cuenta es especial, ya que no existe una cuenta de Samba (puede agregarse vía GOsa²), los permisos para el directorio del usuario están establecidos en 700 (es necesario ejecutar `chmod o+x ~` para que el sitio web personal sea accesible), el primer usuario puede usar `sudo` para convertirse en root.

Después de la instalación, las primeras cosas que necesita hacer como usuario son:

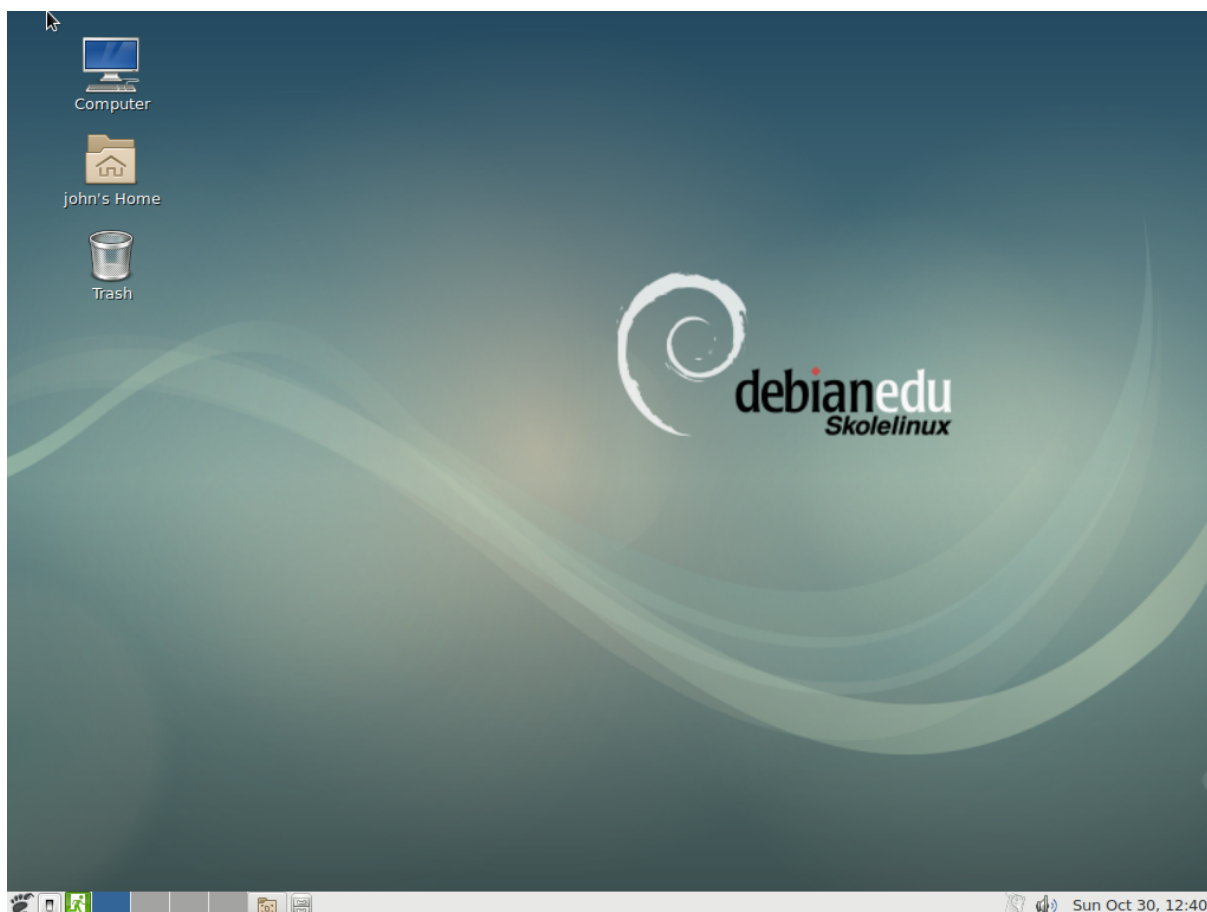
1. Iniciar sesión en el servidor. Con la cuenta de roor puede ingresar en modo gráfico.
2. Agregar usuarios con GOsa²
3. Agregar estaciones de trabajo con GOsa² - clientes ligeros y estaciones de trabajo sin disco pueden ser usados directamente sin ser agregados.

Como agregar usuarios y estaciones de trabajo es descrito con más detalle a continuación. Por favor, lea este capítulo completamente. Abarca como realizar estos pasos mínimos correctamente, además de otras cosas que probablemente todos necesitan hacer.

There is additional information available elsewhere in this manual: the [New features in Stretch](#) chapter should be read by everyone who is familiar with previous releases. And for those upgrading from a previous release, make sure to read the [Upgrades](#) chapter.

⚠ If generic DNS traffic is blocked out of your network and you need to use some specific DNS server to look up internet hosts, you need to tell the DNS server to use this server as its "forwarder". Update `/etc/bind/named.conf.options` and specify the IP address of the DNS server to use.

El capítulo [HowTo](#) describe más trucos, pistas y algunas preguntas de uso frecuente.



7.1.1. Servicios que corren en el servidor principal

Hay varios servicios ejecutándose en el servidor principal que se pueden gestionar con una interfaz web. Describiremos estos servicios a continuación.

7.2. Introducción a GOsa²

GOsa² es una herramienta de administración web, que le ayudará a administrar algunas de las partes importantes de su configuración de Debian Edu. Podrá administrar (agregar, modificar o eliminar) estos principales grupos:

- Administración de usuarios
- Administración de grupos
- Administración de grupos de red NIS
- Administración de computadoras
- Administración DNS
- Administración DHCP

For GOsa² access you need the Skolelinux main server and a (client) system with a web browser installed which can be the main server itself if it was installed as a so called combined server (main server + LTSP server + workstation). If all of the mentioned before is not available, see: [Installing a graphical environment on the main-server to use GOsa²](#).

Desde un navegador web, utilice <https://www.gosa> para acceder a GOsa² e ingrese por primera vez.

- If you are using a new Debian Edu Stretch machine, the site certificate will be known by the browser.
- Caso contrario, obtendrá un mensaje de error sobre certificado SSL equivocado. Si sabe que solamente usted se encuentra conectado a la red, acepte e ignórelo.

Para información general sobre GOsa², revise: <https://oss.gonicus.de/labs/gosa/wiki/documentation>

7.2.1. GOsa² Login plus Overview



After logging in to GOsa² you will see the overview page of GOsa².

Next, you can choose a task in the menu or click any of the task icons on the overview page. For navigation, we recommend using the menu on the left side of the screen, as it will stay visible there on all administration pages offered by GOsa².

In Debian Edu, account, group, and system information is stored in an LDAP directory. This data is used not only by the main server, but also by the (diskless) workstations, the LTSP servers and the Windows machines on the network. With LDAP, account information about students, pupils, teachers, etc. only needs to be entered once. After information has been provided in LDAP, the information will be available to all systems on the whole Skolelinux network.

GOsa² es una herramienta de administración que usa LDAP para almacenar su información y provee una estructura jerárquica por departamento. Para cada "departamento" puede agregar cuentas de usuario, grupos, sistemas, grupos de red y demás. En dependencia de la estructura de su institución, puede usar la estructura en GOsa²/LDAP para transferir su estructura organizacional al árbol de datos LDAP del servidor principal Debian Edu.

A default Debian Edu main server installation currently provides two "departments": Teachers and Students, plus the base level of the LDAP tree. Student accounts are intended to be added to the "Students" department, teachers to the "Teachers" department; systems (servers, Skolelinux workstations, Windows machines, printers etc.) are currently added to the base level. Find your own scheme for customising this structure. (You can find an example how to create users in year groups, with common home directories for each group in the [HowTo/AdvancedAdministration](#) chapter of this manual.)

En dependencia de la tarea que desee realizar (administrar usuarios, grupos, sistemas, etc) GOsa² le mostrará una vista diferente en el departamento seleccionado (o el nivel básico).

7.3. Gestión de usuarios con GOsa²

En primer lugar, haga clic en "Usuarios" en el menú de navegación de la izquierda. El lado derecho de la pantalla cambiará para mostrar una tabla con las carpetas de departamento para "Estudiantes" y "maestros" y la cuenta GOsa² Super-Administrador (el primer usuario creado). Por encima de esta tabla se puede ver un

campo llamado **Base** que le permite navegar a través de su estructura de árbol (mueva el ratón sobre esa zona y aparecerá un menú desplegable) y seleccione una carpeta de base para sus operaciones previstas (por ejemplo, la adición de un nuevo usuario).

7.3.1. Agregar usuarios

Al lado de ese elemento de navegación de árbol se puede ver el menú "Acciones". Mueva su ratón sobre este ítem y un submenú aparecerá en la pantalla; seleccione "Crear", y luego "Usuario". Desde aquí será guiado por el asistente de creación de usuarios.

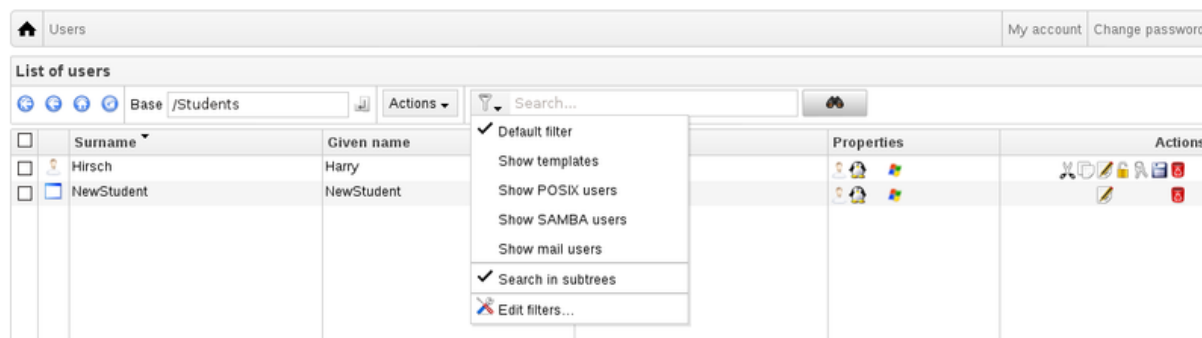
- Lo más importante es el agregar un perfil (nuevoestudiante o nuevoprofesor) y el nombre completo del usuario (ver imagen)
- As you follow the wizard, you will see that GOsa² generates a username automatically based on the real name. It automatically chooses a username that doesn't exist yet, so multiple users with the same full name are not a problem. Note that GOsa² can generate invalid usernames if the full name contains non-ASCII characters.
- If you don't like the generated username you can select another username offered in the drop-down box, but you do not have a free choice here in the wizard. (If you want to be able to edit the proposed username, open `/etc/gosa/gosa.conf` with an editor and add `allowUIDProposalModification="true"` as an additional option to the "location definition".)
- When the wizard has finished, you are presented with the GOsa² screen for your new user object. Use the tabs at the top to check the completed fields.

After you have created the user (no need to customise fields the wizard has left empty for now), click on the "Ok" button in the bottom-right corner.

As the last step GOsa² will ask for a password for the new user. Type that in twice and then click "Set password" in the bottom-right corner. ⚠ Some characters may not be allowed as part of the password.

If all went well, you can now see the new user in the user list table. You should now be able to log in with that username on any Skolelinux machine within your network.

7.3.2. Buscar, modificar y borrar usuarios



To modify or delete a user, use GOsa² to browse the list of users on your system. On the middle of the screen you may open the "Filter" box, a search tool provided by GOsa². If you don't know the exact location of your user account in your tree, change to the base level of the GOsa²/LDAP tree and search there with the option marked "Search in subtrees".

When using the "Filter" box, results will immediately appear in the middle of the text in the table list view. Every line represents a user account and the items farthest to the right on each line are little icons that provide actions for you: cut entry, copy entry, edit user, lock account, set password, take snapshot (not usable) and remove user.

Una nueva página se mostrará donde podrá modificar la información pertinente al usuario directamente, cambiar su contraseña y modificar la lista de grupos a los que pertenece.

The screenshot shows the user profile page for 'harhir'. The top navigation bar includes 'Users' and 'harhir'. The page is divided into several sections:

- Personal information:** Includes fields for Last name (King), First name (Harry), Login (harhir), Personal title, Academic title, Date of birth, Sex, Preferred language, and Base (/Students). There is also a 'Change picture...' button.
- Address:** Includes fields for Address, Private phone, Homepage, Password storage (ssh), and Certificates (Edit certificates...).
- Restrict login to:** Includes a field for Restrict login to and an 'Add' button.
- Organizational information:** Includes fields for Organization, Department, Department No., Employee No., Employee type, Manager, Room No., Phone, Mobile, Pager, Fax, Location, State, and Address.

At the bottom right, there are buttons for 'OK', 'Apply', and 'Cancel'.

7.3.3. Establecer contraseñas

Los estudiantes pueden cambiar sus contraseñas ingresando a GOSa² con sus propios usuarios. Para facilitar el acceso a GOSa², un acceso directo llamado Gosa se encuentra en el menú escritorio (o en configuración del sistema). Una sesión de estudiante tendrá una versión mínima de GOSa² que solamente le brinda acceso a la hoja de información del usuario y a la opción de cambio de contraseña.

Los profesores que ingresan con sus propios nombres de usuarios, tienen privilegios especiales en GOSa². Ellos poseen una vista con más privilegios y pueden cambiar la contraseña de todas las cuentas de estudiantes. Esto puede ser muy práctico durante clases.

Para establecer una nueva contraseña para el usuario

1. Busque el usuario que desea modificar, tal como se explicó anteriormente
2. Haga clic en la flecha al final del usuario
3. En la siguiente página, puede escribir la nueva contraseña

The screenshot shows the 'Change password' page. The top navigation bar includes 'Users' and 'My account'. The page contains the following fields:

- New password:** A text input field.
- Repeat new password:** A text input field.
- Strength:** A red progress bar indicating the strength of the password.

At the bottom right, there are buttons for 'Set password' and 'Cancel'.

¡Tenga cuidado con las consecuencias a la seguridad, debido a la facilidad de las contraseñas!

7.3.4. Administración avanzada de usuarios

Es posible crear usuarios masivamente con GOSa² usando un archivo CSV, que puede ser creado con un software de hoja de cálculo (localc por ejemplo). Se deben proveer, al menos, datos para los siguientes campos: uid, last name (sn), first name (givenName) y password. Asegúrese de no duplicar datos en el campo uid. Note que la revisión de duplicados debe incluir los registros ya existentes en LDAP (que puede ser obtenido ejecutando `getent passwd | grep tjener/home | cut -d":" -f1` en la línea de comando).

These are the format guidelines for such a CSV file (GOsa² is quite intolerant about them):

- Use ",," como separador de campos
- Do not use quotes
- El archivo CSV **no debe** contener un encabezado (no debe tener el nombre de la columna)
- El orden de los campos no es relevante, y puede ser definido en GOsa² durante la importación masiva

Los pasos para importe masivo son:

1. Haga clic en el enlace "LDAP Manager" en el menú de navegación a la izquierda
2. Haga clic en la pestaña "Importar" al lado derecho de la pantalla
3. Busque en su disco local el archivo CSV con la lista de usuarios que desea importar
4. Elija una plantilla de usuarios disponible que se aplicará durante la importación masiva (como NewTeacher o NewStudent)
5. Haga clic en el botón "Importar" en la esquina inferior derecha

Es una buena idea el hacer pruebas antes, de preferencia con un archivo CSV con usuarios ficticios, que pueden ser eliminados después.

7.4. Gestión de usuarios con GOsa²

The screenshot shows the 'class_22_2013' group configuration page in the GOsa2 LDAP Manager. The interface includes a top navigation bar with 'Groups', 'class_22_2013', 'My account', and 'Change password'. Below this is a tabbed interface with 'Generic', 'Startmenu', 'ACL', and 'References'. The 'Generic' tab is active, showing fields for 'Group name' (class_22_2013), 'Description' (Class 22 Start|2013), and 'Base' (/). There are checkboxes for 'Force GID' (1004) and 'Samba group' (checked), with a dropdown for 'in domain' (SKOLELINUX). A 'System trust' section shows 'Trust mode' set to 'disabled'. On the right, the 'Group members' section is empty with an 'Add' button. At the bottom right are 'OK', 'Apply', and 'Cancel' buttons.

The screenshot shows the 'List of groups' page in the GOsa2 LDAP Manager. It includes a top navigation bar with 'Groups', 'My account', and 'Change password'. Below this is a search bar and a table of groups. The table has columns for 'Name', 'Description', 'Properties', and 'Actions'. The 'class_22_2013' group is selected.

Name	Description	Properties	Actions
Students [all students]			
Teachers [all teachers]			
admins	All system administrators in the institution		
class_22_2013	Class 22 Start 2013		
domain-admins	SAMBA Domain Administrators		
domain-users	SAMBA Domain Users		
gosa-admins	GOsa ² Administrators		
jadmins	All junior admins in the institution		
nonetbik	Users that should be unaffected by network blocking		
petra	Group of user petra		

La gestión de grupos es muy similar a la gestión de usuarios.

Puede ingresar un nombre y una descripción por grupo. Asegúrese de elegir el nivel correcto en el árbol LDAP cuando cree un nuevo grupo.

By default, the appropriate Samba group isn't created. If you forgot to check the Samba group option during group creation, you can modify the group later on.

Adding users to a newly created group takes you back to the user list, where you most probably would like to use the filter box to find users. Check the LDAP tree level, too.

Los grupos incluidos en el manejo de grupos, son también grupos regulares de Unix, así que pueden utilizarse también para los permisos de archivos.

7.4.1. Gestión de grupos en la línea de comando

```
# Muestra el mapeo existente entre grupos UNIX y Windows.
net groupmap list

# Agrega un grupo nuevo o faltante:
net groupmap add unixgroup=GRUPO_NUEVO type=domain ntgroup="GRUPO_NUEVO_GRUPO"\
comment="DESCRIPCIÓN DEL GRUPO NUEVO"
```

Esto se explica detalladamente en el capítulo [HowTo/NetworkClients](#) de este manual.

7.5. Administración de equipos con GOsa²

Machine management basically allows you to manage all networked devices in your Debian Edu network. Every machine added to the LDAP directory using GOsa² has a hostname, an IP address, a MAC address and a domain name (which is usually "intern"). For a fuller description of the Debian Edu architecture see the [architecture](#) chapter of this manual.

Diskless workstations and thin-clients work out-of-the-box when connected to the main network. Only workstations with disks **have** to be added with GOsa², but all **can**.

To add a machine, use the GOsa² main menu, systems, add. You can use an IP address/hostname from the preconfigured address space 10.0.0.0/8. Currently there are only two predefined fixed addresses: 10.0.2.2 (tjener) and 10.0.0.1 (gateway). The addresses from 10.0.16.20 to 10.0.31.254 (roughly 10.0.16.0/20 or 4000 hosts) 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 in GOsa² you have to enter the MAC address, the hostname and the IP; alternatively you might click the Propose ip button which will show the first free fixed address in 10.0.0.0/8, most probably something like 10.0.0.2 if you add the first machine this way. It may be better to first think about your network: for example you could use 10.0.0.x with x>10 and x<50 for servers, and x>100 for workstations. Don't forget to activate the just added system. With the exception of the main server all systems will then have a matching icon.

If the machines have booted as thin clients/diskless workstations or have been installed using any of the networked profiles, the sitesummary2ldapdhcp script can be used to automatically add machines to GOsa². For simple machines it will work out of the box, for machines with more than one mac address the actually used one has to be chosen, sitesummary2ldapdhcp -h shows usage information. Please note, that the IP addresses shown after usage of sitesummary2ldapdhcp belong to the dynamic IP range. These systems can then be modified though to suit your network: rename each new system, activate DHCP and DNS, add it to netgroups, if needed; reboot the system afterwards. The following screenshots show how this looks in practice:

```
root@tjener:~# sitesummary2ldapdhcp -a -i ether-00:04:76:d3:28:b7 -t workstations
info: Create GOsa machine for auto-mac-00-04-76-d3-28-b7.intern [10.0.16.21] id ←
ether-00:04:76:d3:28:b7.
```

```
Enter password if you want to activate these changes, and ^c to abort.
```

```
Connecting to LDAP as cn=admin,ou=ldap-access,dc=skole,dc=skolelinux,dc=no
enter password:
```

The screenshot displays the GOSa² web interface. The top navigation bar includes 'Administration' and 'Addons' sections. The 'Administration' section contains links for 'Directory structure', 'Users', 'Groups', 'Access control', 'Object groups', 'Sudo rules', 'NIS Netgroups', and 'Systems'. The 'Addons' section includes 'Preferences' and 'LDAP tools'. The main content area shows the 'List of systems' table, which lists various system entries including 'Students [all students]', 'Teachers [all teachers]', 'auto-mac-00-04-76-d3-28-b7', 'gateway', 'shell intern', and 'tjener'. The 'auto-mac-00-04-76-d3-28-b7' entry is selected, and its configuration page is displayed below. This page includes fields for 'Workstation name', 'Description', 'Location', and 'Base', as well as 'Mode' (Activated), 'Syslog server' (default), and 'Network settings' (IP-address: 10.0.16.21, MAC-address: 00:04:76:d3:28:b7). The 'Enable DHCP for this device' checkbox is checked.

List of systems

Name	Description	Release	Actions
Students [all students]			
Teachers [all teachers]			
auto-mac-00-04-76-d3-28-b7			
gateway			
shell intern			
tjener	Main server, modify only if 100% sure.		

Configuration for auto-mac-00-04-76-d3-28-b7

Properties

Workstation name: auto-mac-00-04-76-d3-28-b7
 Description:
 Location:
 Base: /

Mode: Activated
Syslog server: default

☐ Inherit time server attributes NTP server
 ntp

Network settings

IP-address: 10.0.16.21 **Propose IP**
 MAC-address: 00:04:76:d3:28:b7 **Auto detect**

☒ Enable DHCP for this device

The screenshot shows the configuration interface for a NetGroup. The top bar indicates the system is 'auto-mac-00-04-76-d3-28-b7'. The 'Properties' section includes fields for 'Workstation name' (ws01.intern), 'Description', 'Location' (Basement), and 'Base' (/). The 'Mode' is set to 'Activated' and the 'Syslog server' is 'default'. There is a checkbox for 'Inherit time server attributes NTP server' and a list of NTP servers with 'ntp' selected. The 'Network settings' section shows 'IP-address' (10.0.0.2) and 'MAC-address' (00:04:76:d3:28:b7) with an 'Auto detect' button. It also has a checkbox for 'Enable DHCP for this device' (checked) and a 'Parent node' dropdown set to '(tjener) dhcp'. The 'DNS' section has a checkbox for 'Enable DNS for this device' (checked), a 'Zone' dropdown set to 'TJENER/intern', a 'TTL' field, and a 'DNS records' section with an 'Add' button. The bottom section, titled 'Please select the desired NIS Netgroups', shows a list of netgroups with checkboxes. The 'Common name' is 'Base /'. The netgroups listed are: Students [all students], Teachers [all teachers], all-hosts, cups-queue-autoflush-hosts, cups-queue-autoreenable-hosts, fsautoresize-hosts, ltsp-server-hosts, netblock-hosts, printer-hosts, server-hosts, shutdown-at-night-hosts, winstation-hosts, and workstation-hosts. The descriptions for each netgroup are provided in the adjacent column.

A cronjob updating DNS runs every hour; `su -c ldap2bind` can be used to trigger the update manually.

7.5.1. Buscar y eliminar computadoras

Buscar computadoras para ser eliminadas, es bastante similar a buscar usuarios para eliminar, por lo que esa información no se repite aquí.

7.5.2. Modificar equipos existentes / Manejo del grupo de red

After adding a machine to the LDAP tree using GOSa², you can modify its properties using the search functionality and clicking on the machine name (as you would with users).

The format of these system entries is similar to the one you already know from modifying user entries, but the fields mean different things in this context.

For example, adding a machine to a NetGroup does not modify the file access or command execution permissions for that machine or the users logged in to that machine; instead it restricts the services that machine can use on your main-server.

La instalación por defecto proporciona la Grupo de Red

- cups-queue-autoflush-hosts
- cups-queue-autoreenable-hosts
- fs-autoresize-hosts
- ltsp-server-hosts
- netblock-hosts

- printer-hosts
- server-hosts
- shutdown-at-night-hosts
- winstation-hosts
- workstation-hosts

Actualmente, la funcionalidad de NetGroup se utiliza para

- NFS.
 - The home directories are exported by the main-server to be mounted by the workstations and the LTSP servers. For 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 these kinds of machines properly in the LDAP tree using GOSa² and to configure them to use static IP addresses from LDAP.
 - ⚠ Recuerde configurar las estaciones de trabajos y los servidores ltsp de manera correcta con GOSa², o sus usuarios no tendrán acceso a sus directorios personales. Las estaciones de trabajo sin disco y los clientes ligeros no usan NFS, por lo que no necesitan ser configurados.
- fs-autoresize
 - Los equipos con Debian Edu en este grupo, automáticamente acondicionarán las particiones LVM que estén próximas a quedarse sin espacio disponible.
- shutdown at night
 - Los equipos con Debian Edu en este grupo, se apagará automáticamente por las noches para ahorrar energía.
- CUPS (cups-queue-autoflush-hosts and cups-queue-autoreenable-hosts)
 - Debian Edu machines in these groups will automatically flush all print queues every night, and re-enable any disabled print queue every hour.
- netblock-hosts
 - Debian Edu machines in this group will only be allowed to connect to machines on the local network. Combined with web proxy restrictions this might be used during exams.

Another important part of 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 need 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.

8. Printer Management

For Printer Management point your web browser to <https://www:631>. This is the normal CUPS management interface where you can add/delete/modify your printers and can clean up the printing queue. By default only root is allowed but this can be changed: Open `/etc/cups/cups-files.conf` with an editor and add one or more valid group names matching your site policy to the line containing `SystemGroup lpadmin`. Existing GOSa² groups that might be used are `gosa-admins` (with the first user as member), `teachers` and `jradmins` (no members after installation).

9. 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 be synchronised with an external source by default. This can cause machines to keep the external Internet connection open if it is created when used.

⚠ Si usa conexión dialup o ISDN y paga por minuto, es posible que desee cambiar esta configuración predefinida.

To disable synchronisation with an external clock, the file `/etc/ntp.conf` on the main-server and all clients and LTSP chroots need to be modified. Add comment ("`#`") marks in front of the `server` entries. After this, the NTP server needs to be restarted by running `/etc/init.d/ntp restart` as root. To test if a machine is using the external clock sources, run `ntpq -c lpeer`.

10. Redimensionando particiones completas

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.

11. Maintenance

11.1. Actualizar el software

This section explains how to use `apt-get upgrade`.

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

As Debian Edu uses `libpam-tmpdir`, setting a per user TMP directory, it is a good idea to run `apt-get` without the TMP and TMPDIR variables set in the LTSP chroot. It is also a good idea to upgrade using the C locale to get known output and sorting order, even though that making a difference is a bug in a package.

```
LC_ALL=C apt-get update ; LC_ALL=C TMP= TMPDIR= ltsp-chroot apt-get update
LC_ALL=C apt-get upgrade -y
LC_ALL=C TMP= TMPDIR= ltsp-chroot -p apt-get upgrade -y
ltsp-update-kernels # If a new kernel was installed
```

⚠ It is important to run `ltsp-update-kernels` if a new kernel was installed in the LTSP chroot, to keep the kernel and kernel modules in sync. The kernel is handed out via TFTP when the machine does PXE boot, and the kernel modules are fetched from the LTSP chroot.

También es buena idea instalar `cron-apt` y `apt-listchanges` y configurarlos para que le envíe correo electrónico.

`cron-apt` will notify you once a day via email about any packages that can be upgraded. It does not install these upgrades, but does download them (usually in the night), so you don't have to wait for the download when you do `apt-get upgrade`.

Automatic installation of updates can be done easily if desired, it just needs the `unattended-upgrades` package to be installed and configured as described on wiki.debian.org/UnattendedUpgrades.

`apt-listchanges` can send new changelog entries to you via email, or alternatively display them in the terminal when running `aptitude` or `apt-get`.

11.1.1. Mantente informado sobre actualizaciones de seguridad

Running `cron-apt` as described above is a good way to learn when security updates are available for installed packages. Another way to stay informed about security updates is to subscribe to the [Debian security-announce mailinglist](#), which has the benefit of also telling you 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.

11.2. Gestión de las copias de seguridad

For backup management point your browser to <https://www.slbackup-php>. Please note that you need 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. Note: the site will only work if you temporarily allow ssh root login on the backup server (tjener by default).

By default tjener will back up /skole/tjener/home0, /etc/, /root/.svk and LDAP to /skole/backup which is under the LVM. If you only want to have spare copies of things (in case you delete them) this setup should be fine for you.

⚠ Tome en cuenta que este esquema de respaldo no le protege de daños en el disco duro.

If you want to back up your data to an external server, a tape device or another hard drive 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>
```

Esto pondrá el contenido de /skole/tjener/home0/user para <date> en el directorio /skole/tjener/home0/user_<date>.

Si desea restablecer un archivo, debería de ser capaz de seleccionar el archivo (y la versión) de la interfaz web y descargar solamente ese archivo.

Si desea deshacerse de los respaldos viejos, elija "Maintenance" en el menú de la página respaldo y seleccione la instantánea más vieja que desee conservar:



11.3. Monitorización del servidor

11.3.1. Munin

Los reportes de Munin están disponible en <https://www.munin/>. Le provee gráficos de medición en una vista diaria, semanal, mensual y anual. Además le provee ayuda al administrador de sistemas al momento de buscar cuellos de botella y el origen de problemas en el sistema.

La lista de computadoras monitoreadas por Munin es automáticamente generada, basada en la lista de hosts reportados a sitesummary. Todos los hosts con el paquete munin-node instalado son registrados para ser monitoreados por Munin. Normalmente tomará un día desde que la computadora es instalada hasta que Munin inicie a monitorear, debido a la orden de ejecución de las tareas del cron. Para acelerar el proceso, ejecute sitesummary-update-munin como usuario root en el servidor sitesummary (generalmente el servidor principal). Esto actualizará el archivo /etc/munin/munin.conf.

El conjunto de mediciones es automáticamente generado en cada computadora usando el programa munin-node-configure, que prueba los complementos disponibles en /usr/share/munin/plugins/ y realiza los enlaces simbólicos de los complementos relevantes a /etc/munin/plugins/.

Información sobre munin está disponible en <http://munin.projects.linpro.no/>.

11.3.2. Icinga

Icinga system and service monitoring is available from <https://www.icinga/>. 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 LTSP-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 icingaadmin and the default password is skolelinux. For security reasons, avoid using the same password as root. To change the password you can run the following command as root:

```
htpasswd /etc/icinga/htpasswd.users icingaadmin
```


By default Icinga 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/icinga/sitesummary-template-contacts.cfg`.

The Icinga configuration file used is `/etc/icinga/sitesummary.cfg`. The sitesummary cron job generates `/var/lib/sitesummary/icinga-generated.cfg` with the list of hosts and services to monitor.

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

Information about Icinga is available from <https://www.icinga.com/> or in the `icinga-doc` package.

11.3.2.1. Common Icinga warnings and how to handle them Here are instructions on how to handle the most common Icinga warnings.

11.3.2.1.1. DISK CRITICAL - free space: /usr 309 MB (5 % inode=47 %): La partición (`/usr/` en el ejemplo) está llena. Existen dos maneras para resolver esto: (1) elimine algunos archivos o (2) aumente el tamaño de la partición. Si la partición es `/var/`, purgando el caché de APT ejecutando `apt-get clean` debería eliminar algunos archivos. Si hay más espacio disponible en el volumen LVM, ejecutar el programa `debian-edu-fsautoresize` para aumentar las particiones debería ayudar. Para ejecutar este programa cada hora, el equipo debe de ser añadido al grupo de red `fsautoresize-hosts`.

11.3.2.1.2. APT CRITICAL: 13 packages available for upgrade (13 critical updates). New package are available for upgrades. The critical ones are normally security fixes. To upgrade, run `'apt-get upgrade && apt-get dist-upgrade'` as root in a terminal or log in via ssh to do the same. On LTSP servers, remember to also update the LTSP chroot using `ltsp-chroot apt-get update && ltsp-chroot apt-get upgrade`.

Si usted no quiere actualizar paquetes manualmente y confía en que Debian hace un buen trabajo con las nuevas versiones, puede instalar el paquete `unattended-upgrades` y configurarlo para que actualice automáticamente todos los paquetes cada noche. Esto no actualizará los chroot LTSP.

Para actualizar el chroot LTSP, puede usar `ltsp-chroot apt-get update && ltsp-chroot apt-get upgrade`. En servidores de 64 bits, tendrá que agregar como argumento a `ltsp-chroot -a i386`. Es buena idea actualizar el chroot cuando actualice el sistema de la computadora.

11.3.2.1.3. WARNING - Reboot required : running kernel = 2.6.32-37.81.0, installed kernel = 2.6.32-38.83.0 El kernel en ejecución es más viejo que el kernel más actual instalado, y un reinicio del equipo es necesario para ejecutar el kernel más nuevo instalado. Normalmente esto es urgente, ya que los nuevos kernels corrigen fallos de seguridad en Debian Edu.

11.3.2.1.4. WARNING: CUPS queue size - 61 The printer queues in CUPS have a lot of jobs pending. This is most likely because of a unavailable printer. Disabled print queues are enabled every hour on hosts that are member of the `cups-queue-autoreenable-hosts` netgroup, so for such hosts no manual action should be required. The print queues are emptied every night on hosts that are member of the `cups-queue-autoflush-hosts` netgroup. If a host have a lot of jobs in their queue, consider adding this host to one or both of these netgroups.

11.3.3. Sitesummary

Sitesummary es usado para obtener información de cada computadora y enviarla al servidor principal. La información obtenida se encuentra disponible en `/var/lib/sitesummary/entries/`. Scripts en `/usr/lib/sitesummary/`, están disponibles para generar reportes.

Un reporte sencillo de sitesummary sin de talles se encuentra disponible en <https://www/sitesummary/>.

Documentación sobre sitesummary se encuentra disponible en <http://wiki.debian.org/DebianEdu/HowTo/SiteSummary>

11.4. Más información sobre personalizaciones de Debian Edu

Más información sobre personalizaciones de Debian Edu útil para administradores de sistema puede encontrarse en el capítulo [Administración](#) y en el capítulo [Administración avanzada](#)

12. Actualizaciones

⚠ Antes de leer esta guía de actualización, tenga en cuenta que las actualizaciones en su servidor en producción la hace bajo su propio riesgo. **Debian Edu/Skoletlinux no tiene ABSOLUTAMENTE NINGUNA GARANTÍA más allá de las que indique la ley aplicable.**

Please read this chapter and the [New features in Stretch](#) chapter of this manual completely before attempting to upgrade.

12.1. Notas generales sobre la actualización

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

En general, actualizar los servidores es más difícil que las estaciones de trabajo y el servidor principal es el más difícil de actualizar. Las estaciones de trabajo sin disco son más fáciles, ya que su entorno chroot puede ser eliminado y recreado si no lo ha modificado. Si lo ha modificado, el chroot es básicamente un chroot de estación de trabajo, así que es bastante fácil de actualizar.

Si quiere asegurarse de que después de la actualización todo va como antes, debería probarlo en un sistema de pruebas o en un sistema configurado igual que su servidor en producción. Ahí puede probar la actualización sin riesgo y ver si todo funciona como debiera.

Asegúrese de leer la información sobre la versión estable de Debian actual en el [manual de instalación](#).

También sería inteligente esperar un poco y seguir con la versión anterior durante algunas semanas más, para que otros prueben la actualización y documenten algunos problemas que experimenten. La versión estable anterior de Debian Edu continuará recibiendo soporte por algún tiempo después de la publicación de la siguiente versión estable, pero cuando Debian [cese el soporte a la versión estable anterior](#), Debian Edu hará lo mismo.

12.2. Upgrades from Debian Edu Jessie

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

Please note that the following recipe applies to a default Debian Edu main server installation (desktop=kde, profiles Main-Server, Workstation, LTSP-Server). (For a general overview concerning jessie to stretch upgrade, see: <https://www.debian.org/releases/stretch/releasenotes>)

Don't use X, use a virtual console, log in as root. Read all debconf information carefully, choose 'keep the local version currently installed'; in most cases hitting return will be fine. Press 'q' to quit the apt-listchanges pager once you've read the information.

12.2.1. Upgrade the server side

- Make sure the current system is up-to-date.

```
apt-get update
apt-get -y upgrade
```

- Do the actual upgrade.

```
sed -i 's/jessie/stretch/g' /etc/apt/sources.list
apt-get update
apt-get -y dist-upgrade
```

If apt-get finishes with an error, try to fix it and/or run `apt-get -f install` and then `apt-get -y dist-upgrade` once again.

- Check if the upgraded system works.

Reboot and test if it works like before: Log in as first user and test if the GOSa² gui is working, if you're able to connect LTSP clients and workstations, if you can add/remove a netgroup membership of a system, if you can send and receive internal email, if you can manage printers, and maybe other site specific things. Use the testsuite scripts if you spot an error.

12.2.2. Upgrade LTSP chroot (default arch i386)

```
sed -i '/stretch/ s/deb/#deb/g' /opt/ltsp/i386/etc/apt/sources.list
ltsp-chroot -m -a i386 apt-get update
ltsp-chroot -m -a i386 apt-get -y upgrade
sed -i '/s/jessie/stretch/g' /opt/ltsp/i386/etc/apt/sources.list
ltsp-chroot -m -a i386 apt-get update
ltsp-chroot -m -a i386 apt-get -y dist-upgrade
ltsp-chroot -m -a i386 apt-get -f install
ltsp-chroot -m -a i386 apt-get -y dist-upgrade
```

If apt-get still finishes with an error, try to fix it and/or run the apt-get commands again, esp. apt-get -f install.

- Cleaning up.

```
ltsp-chroot -m -a i386 apt-get --purge autoremove
```

- Update LTSP support on the server side.

```
ltsp-update-kernels
ltsp-update-sshkeys
```

12.2.3. Recrear un chroot LTSP

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

Elimine /opt/ltsp/i386 (o /opt/ltsp/amd64, dependiendo de su configuración). Si tiene suficiente espacio en disco, considere respaldarlo.

Recreate the chroot by running `debian-edu-ltsp --arch i386` (or `debian-edu-ltsp --arch amd64`) as root.

12.3. Upgrades from older Debian Edu / Skolelinux installations (before Jessie)

To upgrade from any older release, you will need to upgrade to the Jessie based Debian Edu release first, before you can follow the instructions provided above. Instructions are given in the [Manual for Debian Edu Jessie](#) about how to upgrade to Jessie from the previous release, Wheezy. Likewise the Wheezy manual describes how to upgrade from Squeeze and the Squeeze manual covers the one before that! (Lenny was it's name and before that there was even another one, based on what was called Etch.)

13. Guías

- Guía para [Administración general](#).
- Guía para [Administración avanzada](#).
- Guía para [el escritorio](#).
- Guía para [clientes en red](#).
- Guía para [Samba](#).
- Guía para [enseñar y aprender](#).
- HowTos for [users](#)

14. Guías para administración general

Los capítulos [Iniciando](#) y [Mantenimiento](#) describen como empezar con Debian Edu y como realizar el trabajo de mantenimiento básico. Las guías en estos capítulos, tienen también trucos y recomendaciones más "avanzadas".

14.1. Seguimiento de /etc usando el sistema de control de versiones git

Con la introducción de `etckeeper` en Debian Edu Squeeze (las versiones anteriores utilizaban `etcinsv` el cual fué removido de Debian), todos los archivos en `/etc/` son seguidos utilizando `git` como sistema de control de versiones.

Esto hace posible ver cuando un archivo es agregado, modificado o eliminado, también ver lo que se cambió si el archivo es un archivo de texto. El repositorio de `git` es guardado en `/etc/.git/`.

Cualquier cambio, es registrado cada hora, permitiendo tener un histórico de la configuración para ser extraído y revisado.

To look at the history, the command `etckeeper vcs log` is used. To check the differences between two points in time, a command like `etckeeper vcs diff` can be used.

Revise la salida de `man etckeeper` para más información.

Lista de comandos útiles:

```
etckeeper vcs log
etckeeper vcs status
etckeeper vcs diff
etckeeper vcs add .
etckeeper vcs commit -a
man etckeeper
```

14.1.1. Ejemplos de uso

En un sistema recién instalado pruebe esto para ver todos los cambios realizados desde que el sistema fue instalado:

```
etckeeper vcs log
```

Vea que archivos no están siendo seguidos, o los que no están actualizados:

```
etckeeper vcs status
```

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

```
etckeeper vcs commit -a /etc/resolv.conf
```

14.2. Redimensionando Particiones

In Debian Edu, all partitions other than the `/boot/` partition are on logical LVM volumes. With Linux kernels since version 2.6.10, it is possible to extend partitions while they are mounted. Shrinking partitions still needs to happen while the partition is unmounted.

It is a good idea to avoid creating very large partitions (over, say, 20GiB), because of the time it takes to run `fsck` on them or to restore them from backup if the need arises. It is better, if possible, to create several smaller partitions than one very large one.

The helper script `debian-edu-fsautoresize` is provided to make it easier to extend full partitions. When invoked, it reads the configuration from `/usr/share/debian-edu-config/fsautoresizetab`, `/site/etc/fsautoresizetab` and `/etc/fsautoresizetab`. It then proposes to extend partitions with too little free space, according to the rules provided in these files. If run with no arguments, it will only show the commands needed to extend the file system. The argument `-n` is needed to actually execute these commands to extend the file systems.

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

When the partition used by the Squid proxy is resized, the value for cache size in `etc/squid/squid.conf` needs 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.

14.2.1. Gestión de volúmenes lógicos

Logical Volume Management (LVM) enables resizing the partitions while they are mounted and in use. You can learn more about LVM from 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 30GiB you use the following commands:

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

To extend home0 by additional 30GiB, you insert a '+' (-L+30G)

14.3. Installing a graphical environment on the main-server to use GOsa²

If you (probably accidentally) installed a pure main-server profile and don't have a client with a web-browser handy, it's easy to install a minimal desktop on the main server using this command sequence in a (non-graphical) shell as the user you created during the main server's installation (first user):

```
$ sudo apt-get update
$ sudo apt-get install gnome-session gnome-terminal firefox xorg
# después de la instalación, inicie una sesión en modo gráfico para el primer usuario ↩
$ startx
```


14.4. Usar ldapvi

ldapvi es una herramienta para editar la base de datos LDAP con un editor de texto en la línea de comandos. Lo siguiente necesita ser ejecutado:

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

Nota: ldapvi usará el editor de texto predeterminado. Ejecutar `export EDITOR=vim` en el intérprete de comandos puede configurar el entorno para tener un clon de vi como editor.

To add an LDAP object using ldapvi, use object sequence number with the string add in front of the new LDAP object.

 **Advertencia:** ldapvi es una herramienta poderosa. Sea cuidadoso y no dañe la base de datos de LDAP, la misma advertencia aplica para JXplorer.

14.5. JXplorer, una interfaz gráfica para LDAP

If you prefer a GUI to work with the LDAP database, check out the `jxplorer` package, which is installed by default. To get write access connect like this:

```
host: ldap.intern
port:636
Base dn:dc=skole,dc=skolelinux,dc=no
Security level: ssl + user + password
User dn: cn=admin,ou=ldap-access

Click "This session only" if asked for the certificate.
```

14.6. ldap-createuser-krb, una herramienta para línea de comando

`ldap-createuser-krb` is a small command line tool to create LDAP users and set their passwords in Kerberos. It's mostly useful for testing, though.

14.7. Using stable-updates

Since the Squeeze release in 2011, Debian has included packages formerly maintained in volatile.debian.org in the [stable-updates suite](#).

While you can use stable-updates directly, you don't have to: stable-updates are pushed into the stable suite regularly when stable point releases are done, which roughly happens every two months.

14.8. Using backports.debian.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 than you like. This is where backports.debian.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 individual backports which fit your needs, and not to use all backports available there.**

Usar backports es sencillo:

```
echo "deb http://ftp.debian.org/debian/ stretch-backports main" >> /etc/apt
sources.list
apt-get update
```

After which one can install backported packages easily, the following command will install a backported version of tuxtype:

```
apt-get install -t stretch-backports tuxtype
```

Backports are automatically updated (if available) just like other packages. (Previously, extra configuration was needed to achieve this, but since 2011 this [http://backports.debian.org/news/squeeze-backports_and_lenny-backports-sloppy_started/] is not needed anymore).

Like the normal archive, backports has three sections: main, contrib and non-free.

14.9. Actualizar con un CD o similar

If you want to upgrade from one version to another (for example from Stretch 9.1+edu0 to 9.3+edu1) but you do not have Internet connectivity, only physical media, follow these steps:

Inserte el CD/DVD/Disco Blu-ray/Dispositivo USB en la unidad, montelo y use el comando apt-cdrom:

```
mount /media/cdrom
apt-cdrom add -m
```

Para citar el manual de referencia de apt-cdrom(8):

- apt-cdrom se utiliza para añadir un disco óptico nuevo a la lista de fuentes disponibles de APT. apt-cdrom examina la estructura del disco, corrige los posibles errores de grabación y verifica los ficheros de índice.
- Se requiere utilizar apt-cdrom para añadir los discos al sistema APT, no se puede hacer manualmente. Además, debe insertar y analizar cada disco de un conjunto de discos por separado, para poder detectar los posibles errores de grabación.

Luego ejecute estos dos comandos para actualizar el sistema:

```
apt-get update
apt-get upgrade
```

14.10. Automatic cleanup of leftover processes

killer es un script hecho en perl que elimina trabajos en segundo plano. Trabajos en segundo plano son definidos como procesos que pertenecen a usuarios que no tienen una sesión activa en la computadora. Se ejecuta cada hora por un cron.

Para instalarlo ejecuta el siguiente comando como root:

```
apt-get install killer
```

14.11. Instalación automática de actualizaciones de seguridad

`unattended-upgrades` is a Debian package which will install security (and other) updates automatically. If you plan to use it, you should have some means to monitor your systems, such as installing the `apt-listchanges` package and configuring it to send you emails about updates. And there is always `/var/log/dpkg.log`.

Para instalar estos paquetes, ejecute el siguiente comando como root:

```
apt-get install unattended-upgrades apt-listchanges
```

14.12. Apagado automático de las computadoras durante la noche

It is possible to save energy and money by automatically turning client machines off at night and back on in the morning. The package will try to turn off the machine every hour on the hour from 16:00 in the afternoon, but will not turn it off if it seems to have users. It will try to tell the BIOS to turn on the machine around 07:00 in the morning, and the main-server will try to turn on machines from 06:30 by sending wake-on-lan packets. These times can be changed in the crontabs of individual machines.

Some considerations should be kept in mind when setting this up:

- The clients should not be shut down when someone is using them. This is ensured 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 blowing 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 requires a working and correct hardware clock, as well as a motherboard and BIOS version supported by `nvrwakeup`; the other requires clients to have support for wake-on-lan, and the server to know about all the clients that need to be woken up.

14.12.1. Como configurar shutdown-at-night

On clients that should turn off at night, touch `/etc/shutdown-at-night/shutdown-at-night`, or add the hostname (that is, 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 `G0sa2` 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 packets to the clients even if the clients are turned off. Some switches fail to pass on packets to clients that are missing in the ARP table on the switch, and this blocks the WOL packets.

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, followed by MAC address (ethernet address), separated by a space; or create a script `/etc/shutdown-at-night/clients-generator` to generate the list of clients on the fly.

Aquí tiene un ejemplo de `/etc/shutdown-at-night/clients-generator` para usar con `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
```

14.13. Acceso a servidores Debian-Edu ubicados detrás de un firewall

To access machines behind a firewall from the Internet, consider installing the package `autossh`. It can be used to set up an SSH tunnel to a machine on the Internet that you have access to. From that machine, you can access the server behind the firewall via the SSH tunnel.

14.14. Installing additional service machines for spreading the load from main-server

En la instalación predeterminada, todos los servicios están ejecutándose en el servidor principal, tjener. Para mover algunos servicios a otra computadora de manera sencilla, existe un perfil mínimo de instalación disponible. Instalar con este perfil le proporcionará una computadora, que es parte de la red de Debian Edu, pero que no cuenta con un servicio ejecutándose (todavía)

Estos son los pasos que se deben seguir para configurar un servicio dedicado en una computadora:

- Instale el perfil mínimo usando la opción de carga `debian-edu-expert`.
- Instale los paquetes del servicio.
- Configure el servicio.
- Deshabilite el servicio en el servidor principal.
- Actualice el servicio DNS (via LDAP/GOSA²) en el servidor principal.

14.15. HowTos de wiki.debian.org

FIXME: 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

15. Advanced administration

In this chapter advanced administration tasks are described.

15.1. Personalizaciones de usuarios con GOSA²

15.1.1. Create Users in Year Groups

In this example we want to create users in year groups, with common home directories for each group (home0/2014, home0/2015, etc.) We want to create the users by csv import.

(como root en Tjener)

- Make the necessary year group directories

```
mkdir /skole/tjener/home0/2014
```

(como super usuarios en Gosa)

- Departamento

Main menu: goto 'Directory structure', click the 'Students' department. The 'Base' field should show '/Students'. From the drop box 'Actions' choose 'Create'/'Department'. Fill in values for Name (2014) and Description fields (students graduating in 2014), leave the Base field as is (should be '/Students'). Save it clicking 'Ok'. Now the new department (2014) should show up below /Students. Click it.

- Grupo

Elije "Groups" del menú principal; "Actions"/Create/Group. Escriba el nombre del grupo (deje "Base", debería estar en /Students/2014) y haga clic en la caja de selección de la izquierda de "Samba group". "ok" para guardar.

- Planitlla

Choose 'users' from the main menu. Change to 'Students' in the Base field. An Entry 'NewStudent' should show up, click it. This is the 'students' template, not a real user. As you'll have to create such a template (to be able to use csv import for your structure) based on this one, notice all entries showing up in the Generic, POSIX and Samba tabs, maybe take screenshots. Now change to /Students/2014 in the Base field; choose Create/Template and start to fill in your desired values, first the Generic tab (add your new 2014 group under Group Membership, too), then add POSIX and Samba account.

- Importar usuarios

Elija su nueva plantilla cuando importe el archivo csv; probarlo con pocos usuarios es lo recomendable.

15.2. Other User Customisations

15.2.1. Crear directorios en el directorio home de los usuarios

Con este script, el administrador puede crear directorios en cada directorio personal de usuario y establecer los permisos de acceso y propiedad.

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.

```
#!/bin/bash
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 have been created"
```

15.2.2. Fácil acceso a dispositivos USB y CDRoms/DVDs

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

When users insert a USB drive or a DVD / CDRom into a thin client there is only a notify-window showing up for a few seconds. The media is automatically mounted and it is possible to access it browsing to the /media/\$user folder. This is quite difficult for many non experienced users.

It is possible to have the default KDE "Plasma" file manager Dolphin showing up if KDE "Plasma" (or LDxE, if installed in parallel to KDE "Plasma") is in use as desktop environment. To configure this, simply execute /usr/share/debian-edu-config/ltspfs-mounter-kde enable on the terminal server. (When using GNOME, device icons will be placed on the desktop allowing easy access).

In addition the following script could be used to create the symlink "media" for all users in their home folder for easy access to USB drives, CDRom / DVD or whatever media is connected to the thin client. This might come in handy if users want to edit files directly on their plugged in media.

```
#!/bin/bash
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"
```

15.2.2.1. Advertencia sobre medios removibles en servidores LTSP ⚠ Warning: When inserted into an LTSP server USB drives and other removable media cause popup messages on remote LTSP clients.

If remote users acknowledge the popup or use `pmount` from the console, they can even mount the removable devices and access the files.

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

15.3. Use a dedicated storage server

Take these steps to set up a dedicated storage server for user home directories and possibly other data.

- Add a new system of type server using GOSa² as outlined in the [Getting started](#) chapter of this manual.
- This example uses 'nas-server.intern' as the server name. Once 'nas-server.intern' is configured, check if the NFS export points on the new storage server are exported to the relevant subnets or machines:

```
root@tjener:~# showmount -e nas-server
Export list for nas-server:
/storage          10.0.0.0/8
root@tjener:~#
```

Here everything on the backbone network is granted access to the `/storage` export. (This could be restricted to netgroup membership or single IP addresses to limit NFS access like it is done in the `tjener:/etc/exports` file.)

- Add automount information about 'nas-server.intern' in LDAP to allow all clients to automatically mount the new export on request.
- This can't be done using GOSa², because a module for automount is missing. Instead, use `ldapvi` and add the required LDAP objects using an editor.

```
ldapvi --ldap-conf -ZD '(cn=admin)' -b ou=automount,dc=skole,dc=skolelinux,dc=no
```

When the editor shows up, add the following LDAP objects at the bottom of the document. (The `"/&"` part in the last LDAP object is a wild card matching everything 'nas-server.intern' exports, removing the need to list individual mount points in LDAP.)

```
add cn=nas-server,ou=auto.skole,ou=automount,dc=skole,dc=skolelinux, ←
    dc=no
objectClass: automount
cn: nas-server
automountInformation: -fstype=autofs --timeout=60 ldap:ou=auto.nas- ←
    server,ou=automount,dc=skole,dc=skolelinux,dc=no

add ou=auto.nas-server,ou=automount,dc=skole,dc=skolelinux,dc=no
objectClass: top
objectClass: automountMap
ou: auto.nas-server

add cn=/,ou=auto.nas-server,ou=automount,dc=skole,dc=skolelinux,dc= ←
    no
```

```
objectClass: automount
cn: /
automountInformation: -fstype=nfs,tcp,rsize=32768,wsiz=32768,rw, ↵
intr,hard,nodev,nosuid,noatime nas-server.intern:/&
```

- Add the relevant entries in `tjener.intern:/etc/fstab`, because `tjener.intern` does not use `automount` to avoid mounting loops:
 - Create the mount directories using `mkdir`, edit `'/etc/fstab'` as adequate and run `mount -a` to mount the new resources.

Now users should be able to access the files on `'nas-server.intern'` directly by just visiting the `'/tjener/nas-server/storage/'` directory using any application on any workstation, LTSP client or LTSP server.

15.4. Restrict ssh login access

There are several ways to restrict ssh login, some are listed here.

15.4.1. Setup without LTSP clients

If no LTSP clients are used a simple solution is to create a new group (say `sshusers`) and to add a line to the machine's `/etc/ssh/sshd_config` file. Only members of the `sshusers` group will then be allowed to ssh into the machine from everywhere.

Managing this case with GOSa is quite simple:

- Create a group `sshusers` on the root level (where already other system management related groups like `gosa-admins` show up).
- Add users to the new group `sshusers`.
- Add `AllowGroups sshusers` to `/etc/ssh/sshd_config`.
- Execute `service ssh restart`.

15.4.2. Setup with LTSP clients

The default LTSP client setup uses ssh connections to the LTSP server. So a different approach using PAM is needed.

- Enable `pam.access.so` in the LTSP server's `/etc/pam.d/sshd` file.
- Configure `/etc/security/access.conf` to allow connections for (sample) users `alice`, `jane`, `bob` and `john` from everywhere and for all other users only from the internal networks by adding these lines:

```
+ : alice jane bob john : ALL
+ : ALL : 10.0.0.0/8 192.168.0.0/24 192.168.1.0/24
- : ALL : ALL
#
```

If only dedicated LTSP servers are used, the `10.0.0.0/8` network could be dropped to disable internal ssh login access. Note: someone plugging in his box into the dedicated LTSP client network(s) will gain ssh access to the LTSP server(s) as well.

15.4.3. A note for more complex setups

If LTSP clients were attached to the backbone network `10.0.0.0/8` (combi server or LTSP cluster setup) things would be even more complicated and maybe only a sophisticated DHCP setup (in LDAP) checking the `vendor-class-identifier` together with appropriate PAM configuration would allow to disable internal ssh login.

16. HowTos for the desktop

16.1. Using MATE, GNOME, LXDE, Xfce and/or KDE Plasma together

To install other desktop environments after installation, simply use apt:

```
apt update
apt install gnome lxde xfce4 kde-standard
```

Users will then be able to choose any of the five desktop environment via the login manager before logging in. Of course, you can also choose to give less choices.

The usage of LXDE as default on thin clients can be forced; see [networked clients](#) for details.

If you don't want to do installations with the default desktop MATE, you can also [install with one of the four alternative desktops, GNOME, LXDE, Xfce or KDE](#) directly.

16.2. Flash

While the free software flash-player gnash is not installed by default anymore, as it has been removed from Jessie, installing a non-free flash player is still an option. Please note that upgrading is special in this case.

To install the (non-free) Adobe Flash Player web browser plugin, install the flashplugin-nonfree Debian package from contrib. This requires contrib enabled in /etc/apt/sources.list. Use update-flashplugin-nonfree --status to check for a newer version and update-flashplugin-nonfree --install to install it.

The solution for Chromium is similar, it needs the package pepperflashplugin-nonfree (also from contrib) to be installed, which will install the (non-free) Adobe Flash Player web browser plugin. Use update-pepperflashplugin-nonfree --status to check for a newer version and update-pepperflashplugin-nonfree --install to install it.

Please note that the pepperflashplugin-nonfree package implements a more recent version of the Flash specification than does the flashplugin-nonfree, however.

16.3. Reproducir DVDs

FIXME: this has changed in 2016... there is the libdvd-pkg package in contrib now (also in jessie-backports) which can be used to build libdvdcss and which makes adding the debian multimedia apt repository moot. Someone should describe here how to use it...

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 deb-multimedia.org. Add the multimedia repository (as described in the following section) and install the required libraries:

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

16.4. Uso del repositorio multimedia

Para usar www.deb-multimedia.org haga lo siguiente:

```
# instale debian-keyring:
apt-get install debian-keyring
# descargue la llave deb-multimedia:
gpg --keyserver pgpkeys.pca.dfn.de --recv-keys 07DC563D1F41B907
# revise de manera segura si la llave es correcta y agreguela al keyring usado ←
por APT:
gpg --keyring /usr/share/keyrings/debian-keyring.gpg --check-sigs 07 ←
DC563D1F41B907 && gpg --export 07DC563D1F41B907 | apt-key add -
# agregue el repositorio a sources.list - revise el sitio web para buscar ←
réplicas!
echo "deb http://deb-multimedia.org stretch main" >> /etc/apt/sources.list
# Actualice la lista de paquetes disponibles::
apt-get update
```

16.5. Handwriting fonts

The package `fonts-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 para clientes en red

17.1. Introducción a clientes ligeros y estaciones de trabajo sin disco

Un término genérico para clientes ligeros y estaciones de trabajo sin disco es cliente LTSP. **LTSP es el acrónimo en Inglés para Linux Terminal Server Project.**

Cliente ligero

A thin client setup enables an 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.

Estaciones de trabajo sin disco

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 (inside of the LTSP chroot), 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 older (but powerful) hardware with the same low maintenance cost as with thin clients.

LTSP defines 320MB as the default minimum amount of RAM for diskless workstations. If the amount of RAM is less, the machine will boot as thin client. The related LTSP parameter is `FAT_RAM_THRESHOLD` with the default value 300. So if (for example) the clients should only boot as diskless workstations if they have 1 GB RAM add `FAT_RAM_THRESHOLD=1000` to `lts.conf` (or set this in LDAP). Unlike workstations, diskless workstations run without any need to add them with `GOsa2`, cause LDM is used to login and connect to the LTSP server. The home directory is by default mounted using `sshfs`, and not automount and NFS. This causes shared directories available via NFS to not be available on diskless workstations.

The following steps can be used to get back the behaviour from Debian Edu Squeeze, using automount, NFS and a display manager other than `ldm`:

- Agregue `DEFAULT_DISPLAY_MANAGER=/path/to/dm` a `lts.conf` (o configúrelo en LDAP). Asegúrese que el manejador de pantalla esté instalado en el chroot LTSP.
- Add the diskless workstations to LDAP with `GOsa2`.

LTSP client firmware

LTSP client boot will fail if the client's network card requires a non-free firmware. A PXE installation can be used for troubleshooting problems with netbooting a machine; if the Debian Installer complains about a missing `XXX.bin` file then non-free firmware has to be added to the `initrd` used by LTSP clients.

En este caso, ejecute los siguientes comandos en un servidor LTSP.

```
# First get information about firmware packages
apt-get update && apt-cache search ^firmware-

# Decide which package has to be installed for the network card(s).
# Most probably this will be firmware-linux-nonfree.
# Things have to take effect in the LTSP chroot for architecture i386.
ltsp-chroot -a i386 apt-get update
ltsp-chroot -d -a i386 apt-get -y -q install <package name>

# copy the new initrd to the server's tftpboot directory
ltsp-update-kernels
```

Una manera más corta sería instalar todos los firmware disponibles y actualizar el directorio `tftpboot`, podría ejecutar:

```
/usr/share/debian-edu-config/tools/ltsp-addfirmware
```

17.1.1. LTSP client type selection

Cada servidor LTSP tiene dos tarjetas de red: una configurada en la subred principal 10.0.0.0/8 (compartida con el servidor principal), y otra que forma una subred local 192.168.0.0/24 (una subred para cada servidor LTSP).

En la subred principal tendrá el menú PXE completo; la subred separada para cada servidor LTSP le permite seleccionar solo clientes sin discos y ligeros LTSP.

Using the default PXE menu on the main subnet 10.0.0.0/8, a machine could be started as diskless workstation or thin client. By default clients in the separate subnet 192.168.0.0/24 will run as diskless workstations if the amount of RAM is sufficient. If all clients in this LTSP client subnet should run as thin clients, the following has to be done.

```
(1) Open the file /opt/ltsp/i386/etc/ltsp/update-kernels.conf with an editor
and replace the line
CMDLINE_LINUX_DEFAULT="init=/sbin/init-ltsp quiet"
with
CMDLINE_LINUX_DEFAULT="init=/sbin/init-ltsp LTSP_FATCLIENT=False quiet"
(2) Execute 'ltsp-chroot -a i386 /usr/share/ltsp/update-kernels'
(3) Execute 'ltsp-update-kernels'
```

17.2. Configurar el menú PXE

La configuración PXE se genera usando el script `debian-edu-pxeinstall`. Se permite que algunas configuraciones sean reconfiguradas agregando el archivo `/etc/debian-edu/pxeinstall.conf` con los valores que desea reemplazar.

17.2.1. Configurar 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$7d6KvA1VCJKRkCijtVSPfveuWPM$
```

The password hash should be replaced with an MD5 hash for the desired 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.

More information about modifying PXE installations can be found in the [Installation](#) chapter.

17.2.2. Agregar un repositorio personalizado para instalaciones PXE

For adding a custom repository add something like this to `/etc/debian-edu/www/debian-edu-install.dat.local`:

```
#add the skole projects local repository
d-i apt-setup/local1/repository string http://example.org/debian stable ↔
    main contrib non-free
d-i apt-setup/local1/comment string Example Software Repository
d-i apt-setup/local1/source boolean true
d-i apt-setup/local1/key string http://example.org/key.asc
```

y luego ejecute una vez `/usr/sbin/debian-edu-pxeinstall`

17.2.3. Cambiar el menú PXE en un servidor combinado (servidor principal y LTSP)

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`.

If all clients should boot as diskless workstations instead of getting the full PXE menu, this can be implemented by changing the symlink:

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

If all clients should 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>.

17.2.4. Separate main and LTSP server

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 (10.0.0.0/8) network, when `tjener` is not a combined server, follow these steps:

- copy the `ltsp` directory from `/var/lib/tftpboot` on `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 for the IP address of `ltspserver00` on the main network:

```
DEFAULT ltsp/i386/vmlinuz initrd=ltsp/i386/initrd.img nfsroot=10.0.2.10:/opt/ ↵
    ltsp/i386 init=/sbin/init-ltsp boot=nfs ro quiet ipappend 2
```

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


As an alternative, you could use `ldapvi`, search for 'next server `tjener`' and replace `tjener` with `ltspserver00`.

17.2.5. Use a different LTSP client network

192.168.0.0/24 is the default LTSP client network if a machine is installed using the LTSP profile. If lots of LTSP clients are used or if different LTSP servers should serve both i386 and amd64 chroot environments the second preconfigured network 192.168.1.0/24 could be used as well. Edit the file `/etc/network/interfaces` and adjust the `eth1` settings accordingly. Use `ldapvi` or any other LDAP editor to inspect DNS and DHCP configuration.

17.3. Changing network settings

The `debian-edu-config` package comes with a tool which helps in changing the network from 10.0.0.0/8 to something else. Have a look at `/usr/share/debian-edu-config/tools/subnet-change`. It is intended for use just after installation on the main server, to update LDAP and other files that need to be edited to change the subnet.

 Note that changing to one of the subnets already used elsewhere in Debian Edu will not work. 192.168.0.0/24 and 192.168.1.0/24 are already set up as LTSP client networks. Changing to these subnets will require manual editing of configuration files to remove duplicate entries.

There is no easy way to change the DNS domain name. Changing it would require changes to both the LDAP structure and several files in the main server file system. There is also no easy way to change the host and DNS name of the main server (`tjener.intern`). To do so would also require changes to LDAP and files in the main-server and client file system. In both cases the Kerberos setup would have to be changed, too.

17.4. LTSP en detalle

17.4.1. Configuración del cliente LTSP en LDAP (y en `lts.conf`)

To configure specific thin clients with particular features, you can add settings in LDAP or edit the file `/opt/ltsp/i386/etc/lts.conf`.

⚠ We recommend to configure clients in LDAP (and not edit `lts.conf` directly, however, configuration webforms for LTSP are currently not available in GOSa², you have to use a plain LDAP browser/explorer or `ldapvi`), as this makes it possible to add and/or replace LTSP servers without loosing (or having to redo) configuration.

The default values in LDAP are defined in the `cn=ltspConfigDefault,ou=ltsp,dc=skole,dc=skolelinux,dc=no` LDAP object using the `ltspConfig` attribute. One can also add host specific entries in LDAP.

Install the package `ltsp-docs` and run `"man lts.conf"` to have a look at available configuration options (see `/usr/share/doc/ltsp/LTSPManual.html` for detailed information about LTSP).

The default values are defined under `[default]`; to configure one client, specify it in terms of its MAC address or IP address like this: `[192.168.0.10]`.

Example: To make the thin client `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.

To force usage of a specific xserver on an LTSP client, set the `XSERVER` variable. For example:

```
[192.168.0.11]
XSERVER = nvidia
```

Depending on what changes you make, it may be necessary to restart the client.

To use IP addresses in `lts.conf` you need to add the client MAC address to your DHCP server. Otherwise you should use the client MAC address directly in your `lts.conf` file.

17.4.2. Force all thin clients to use LXDE as default desktop environment

Make sure that LXDE is installed on the LTSP server; then add a line like this below `[default]` in `"lts.conf"`:

```
LDM_SESSION=/usr/bin/startlxde
```

Note, that users will still be able to select other installed desktop environments using the "Settings" feature of LDM.

17.4.3. Load-balancing LTSP servers

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

First of all, you must choose one LTSP server to be the load-balancing 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.

The load-balancing server must be announced to the clients as the `"next-server"` via DHCP. As DHCP configuration is in LDAP, modifications have to be done there. Use `ldapvi --ldap-conf -ZD '(cn=admin)'` to edit the appropriate entry in LDAP. (Enter the main server's root password at the prompt; if `VISUAL` isn't set, the default editor will be `nano`.) Search for a line reading `dhcpStatements:next-server tjener`. Next-server should be the IP address or hostname of the server you chose to be the load-balancing server. If you use hostname you must have a working DNS. Remember to restart the DHCP service.

Now you have to move your clients from the 192.168.0.0 network to the 10.0.0.0 network; attach them to the backbone network instead of the network attached to the LTSP server's second network card. This is because when you use load-balancing, the clients need direct access to the server chosen by LDM. If you leave your clients on the 192.168.0.0 network, all of the clients' traffic will go through that server before it reaches the chosen LDM server.

17.4.3.2. 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 name, in random order.


Edite "/opt/ltsp/i386/etc/lts.conf" y agregue algo como esto:

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

Replace xxxx with either the IP addresses or hostnames of the servers as a space-separated list. Then, put the following script in /opt/ltsp/i386/usr/lib/ltsp/get_hosts on the server you chose to be the load-balancing server.

```
#!/bin/bash
# Randomise 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
```

17.4.3.3. 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 load-balanced. Save this file as /etc/ltsp/ssh_known_hosts.extra on all load-balanced 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 are some obvious weaknesses with this setup. All clients get their image from the same server, which causes high loads on the server if many clients are booted at the same time. Also, the clients require that server to be always available; without it they cannot boot or get an LDM server. Therefore this setup is very dependent on one server, which isn't very good.

¡Sus clientes ahora deberían tener balanceo de carga!

17.4.4. Sonido con clientes LTSP

LTSP thin clients support 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/share/debian-edu-config/tools/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.

17.4.5. Use printers attached to LTSP clients

- Attach the printer to the LTSP client machine (both USB and parallel port are supported).
- Configure this machine to run a printer in lts.conf (default location: /opt/ltsp/i386/etc/lts.conf, see the LTSP manual /usr/share/doc/ltsp/LTSPManual.html#printer for details).
- Configure the printer using the web interface <https://www.631.on.tjener>; choose network printer type AppSocket/HP JetDirect (for all printers regardless of brand or model) and set socket://<LTSP client ip>:9100 as connection URI.

17.4.6. Actualización del entorno LTSP

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:

```
ltsp-chroot -a i386 # esto hace "chroot /opt/ltsp/i386" y más, también previene ↔
    que los demonios inicien
aptitude update
aptitude upgrade
aptitude dist-upgrade
exit
```


17.4.6.1. Instalación de software adicional en el entorno LTSP To install additional software for an LTSP client you must perform the installation inside the chroot of the LTSP server.

```
ltsp-chroot -a i386
## opcionalmente, edita el archivo sources.list:
#editor /etc/apt/sources.list
aptitude update
aptitude install $new_package
exit
```

17.4.7. Slow login and security

Skolelinux has added several security features on the client network preventing unauthorised superuser access, password sniffing, and other tricks which may be used on a local network. One such security measure is secure login using SSH, which is the default with LDM. This can slow down some client machines which are more than about ten years old, with as little as a 160 MHz processor and 32 MB RAM. Although it's not recommended, you can add the value "True" in the `/opt/ltsp/i386/etc/lts.conf` file on the server:

```
LDM_DIRECTX=True
```


 **Warning:** The above protects initial login, but all activities after that use unencrypted networked X. Passwords (except the initial one) will travel in cleartext over the network, as well as anything else.

Note: Since such ten-year-old thin clients may also have trouble running newer versions of LibreOffice and Firefox due to pixmap caching issues, you may consider running thin clients with at least 128 MB RAM, or upgrade the hardware, which will also give you the benefit of being able to use them as diskless workstations.

17.5. Connecting Windows machines to the network / Windows integration

17.5.1. Joining a domain

For Windows clients the Windows domain "SKOLELINUX" is available to be joined. A special service called Samba, installed on the main-server tjener, enables Windows clients to store profiles and user data, and also authenticates the users during the login.

 Joining a domain with a Windows client requires the steps described in the [Debian Edu Stretch Samba Howto](#).

Windows will sync the profiles of domain users on every Windows login and logout. Depending on how much data is stored in the profile, this could take some time. To minimise the time needed, deactivate things like local cache in browsers (you can use the Squid proxy cache installed on tjener instead) and save files into the H: volume rather than under "My Documents".

17.5.1.1. User groups in Windows Groupmaps must also be added for any other user group you add through G0sa². If you want your user groups to be available in Windows, e.g. 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: It would be even better to first/also explain user groups for Windows with GOsa² (and then show 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`.

17.5.2. XP home

Users bringing in their XP laptops from home 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 it's called now).

17.5.3. Managing roaming profiles


Roaming profiles contain user work environments which include desktop items and settings. Examples include personal files, desktop icons and menus, screen colours, 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 problem is that users save their files on the Windows desktop or in the "My Documents" folder instead of in their home directory. Also, some badly designed programs use the profile to store data and as scratch space.

The educational approach: one way to deal with overlarge profiles is to explain the situation to 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 approach to dealing with the problem is to remove parts of the profile, and redirect other parts to regular file storage. This moves the workload 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.

17.5.3.1. Example smb.conf files for roaming profiles FIXME: Maybe it is better to purge the examples. People who want to use roaming profiles should know what they are doing ...

 **Note** The examples are outdated since in wheezy kerberos was configured for samba too!

You might find an example smb.conf in your preferred language delivered by the installation on tjener under `/usr/share/doc/debian-edu-config/examples/`. The source file is in English and is called `smb-roaming-profiles-en.conf`; look for a file with the appropriate code in the filename (the German translation, for example, will be named `smb-roaming-profiles-de.conf`). Inside the config file are a lot of explanations which you should have a look at.

17.5.3.2. Machine policies for roaming profiles 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 list of directories to exclude from the profile. The directories are internationalised and must be written in your own language the way they are in the profile. Examples 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.

17.5.3.3. Global policies for roaming profiles By using the legacy Windows policy editor (`poledit.exe`), you can create a Policy file (`NTConfig.pol`) and put it in your netlogon share on tjener. This has the advantage of working almost instantly on all Windows machines.

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

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

To make sensible use of `poledit.exe` you also need to download appropriate `.adm` files for your operating system and applications; otherwise you cannot define many settings in `poledit.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 web site on this topic.

17.5.3.4. Editar el registro de Windows You can edit the registry of the local computer, and copy this registry key to other computers

1. Iniciar el editor del registro.
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-separated list of paths to exclude (in the same way as for a machine policy)
6. Now you can choose to export this registry key as a `.reg` file. Mark a selection, right-click, and select "Export".
7. Save the file and you can double click it, or add it to a script to spread it to other machines.

Fuentes:

- <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>

17.5.4. Redirecting profile directories

Sometimes just removing directories from the profile is not enough. You may find that users lose files because they mistakenly save things into "My Documents" when this is not saved in the profiles. You may also want to redirect the directories used by some badly programmed applications to normal network shares.

17.5.4.1. Redirecting using machine policies All the instructions given above about machine policies apply here too. You can use `gpedit.msc` to edit the policy and copy it to all machines. The redirection should be available under "User Configuration" -> "Windows Settings" -> "Folder Redirection". Directories that it can be useful to redirect include "Desktop" and "My Documents".

One thing to remember is that if you enable folder redirection, those folders are automatically added to the synchronised folders list. If you do not want this, you should disable it via one of the following routes:

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

17.5.4.2. Redirecting using global policies FIXME: explain how to use profiles from global policies for Windows machines in the skolelinux network

17.5.5. Avoiding roaming profiles

17.5.5.1. Disabling roaming using a local policy Using local policies, you can disable the roaming profile on individual machines. This is often wanted on special machines - for instance on dedicated machines, or machines that have lower than usual bandwidth.

You can use the machine policy method describe above; the key is in "Administrative Templates" -> "System" -> "User Profiles" -> "Only allow local profiles".

17.5.5.2. Disabling roaming using global policies FIXME: describe roaming profile key for the global policy editor here

17.5.5.3. Disabling roaming in smb.conf If, perhaps, everyone has their own dedicated machine, and nobody else is allowed to touch it, editing the Samba configuration will let you disable roaming profiles for the entire network. You can alter the `smb.conf` file on tjener, unsetting the "logon path" and "logon home" variables, then restart samba.

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

17.6. Remote Desktop

17.6.1. Remote Desktop Service

Choosing the LTSP server profile or the combined server profile also installs `xrdp`, a package which uses the Remote Desktop Protocol to present a graphical login to a remote client. Microsoft Windows users can connect to the LTSP server running `xrdp` without installing additional software - they simply start a Remote Desktop Connection on their Windows machine and connect.

Additionally, `xrdp` can connect to a VNC server or another RDP server.

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

17.6.2. Clientes de escritorio remoto disponible

- `freerdp-x11` is installed by default and is capable of RDP and VNC.
 - RDP - the easiest way to access Windows terminal server. An alternative client package is `rdesktop`.
 - VNC client (Virtual Network Computer) gives access to Skolelinux remotely. An alternative client package is `xvncviewer`.
- 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 students since 2005. They report that the solution is stable.
- [Citrix ICA client HowTo](#) to access Windows terminal server from Skolelinux.

17.7. HowTos de 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. Samba en Debian Edu

Samba (v3), since Debian Edu Wheezy (the previous release), has been fully prepared for use as an NT4-style domain controller with Windows XP, Windows Vista and Windows 7 as clients. After a machine has joined the domain, this machine can be fully managed with GOsa².

18.1. Cómo empezar

This documentation presumes that you have installed the Debian Edu main server and maybe also a Debian Edu workstation to verify that working under Debian Edu/Skolelinux works for you. We presume that you have already created some users that can flawlessly use the Debian Edu workstation. We also presume that you have a Windows XP/Vista/7 workstation at hand, so you can test access to the Debian Edu main server from a Windows machine.

Después de la instalación del servidor principal de Debian Edu, \\TJENER debería ser visible desde computadoras con Windows. El dominio de Debian Edu en Windows es SKOLELINUX. Utilice una computadora con Windows (o Linux con smbclient) para explorar su entorno de red de Windows/Samba.

1. INICIO -> comando ejecutar.
2. Escriba \\TJENER y presione enter.
3. -> a Windows Explorer window should open and show the netlogon share on \\TJENER, and maybe printers you already have configured for printing under Unix/Linux (CUPS queues).

18.1.1. Acceder los archivos mediante Samba

Cuentas de usuarios de estudiantes y profesores que han sido configuradas mediante GOsa² pueden ingresar a \\TJENER\HOMES o \\TJENER\<username> y acceder a sus directorios personales con computadoras Windows que **no** se han unido al dominio SKOLELINUX.

1. INICIO -> comando ejecutar.
2. Escriba \\TJENER\HOMES o \\TJENER\<username> y presione enter.
3. Escriba su datos de usuario y contraseña en la ventana de autenticación que aparece.
4. -> una ventana de explorador de Windows se abrirá y le mostrará los archivos y directorios en su directorio personal de Debian Edu.

Por defecto, solamente [home] y [netlogon] son exportadas; más ejemplos para estudiantes y profesores sobre como compartir pueden encontrarse en /etc/samba/smb-debian-edu.conf en el servidor principal de Debian Edu.

18.2. Domain Membership

To use Samba on TJENER as a domain controller, your network's Windows workstations have to join the SKOLELINUX domain provided by the Debian Edu main server.

The first thing you have to do is to enable the SKOLELINUX\Administrator account. This account is not intended for day-to-day usage; its current main purpose is to add Windows machines to the SKOLELINUX domain. To enable this account log on to TJENER as the first user (created during main server installation) and run this command:

- \$ sudo smbpasswd -e Administrator

The password of SKOLELINUX\Administrator has been preconfigured during the main server's installation. Please use the system's root account when authenticating as SKOLELINUX\Administrator.

Once you are done with your administrative work make sure to disable the SKOLELINUX\Administrator account again:

- \$ sudo smbpasswd -d Administrator

18.2.1. Windows hostname

Make sure your Windows machine has the name that you want to use in the SKOLELINUX domain. If not, rename it first (and then reboot). The NetBIOS host name of the Windows machine will later on be used in GOsa² and cannot be changed there (without breaking the domain membership for this machine).

18.2.2. Unirse al dominio SKOLELINUX con Windows XP

Joining Windows XP machines (tested with Service Pack 3) works out of the box.

Nota: Windows XP Home no soporta membresía por dominio, Windows XP Profesional es requerido.

1. Ingrese a la computadora Windows XP como administrador (o cualquier cuenta con privilegios de administración).
2. Haga clic en "inicio", luego presione clic-derecho en "Computadora" y luego haga clic en "Propiedades".
3. Seleccione la pestaña "Nombre de computadora" y haga clic en "Cambiar..."
4. Debajo de "Miembro de", seleccione el botón junto a "Dominio:", escriba SKOLELINUX y luego haga clic en "OK"
5. Una ventana emergente le solicitará ingresar las credenciales de una cuenta con derechos de unirse al dominio. Escriba SKOLELINUX\Administrator en el campo nombre de usuario y la contraseña de usuario root del servidor principal, luego haga clic en "OK".
6. Una ventana emergente de confirmación le dará la bienvenida al dominio SKOLELINUX. Al hacer clic en "OK", tendrá otro mensaje informándole que necesita reiniciar la computadora para que los cambios puedan aplicarse. Haga clic en "OK".

Después del reinicio, cuando ingresa por primera vez, haga clic en el botón "Opciones >>" y seleccione el dominio SKOLELINUX en lugar del dominio local ("esta computadora").

Si el ingreso al dominio ha sido exitoso, usted podrá ver los detalles del equipo en GOsa² (en el menú "Sistemas").

18.2.3. Unirse al dominio SKOLELINUX con Windows Vista/7

Unir computadoras Windows Vista/7 al dominio SKOLELINUX, requiere la instalación de un parche en el registro del cliente Windows Vista/7. Este parche se encuentra en:

- \\tjener\netlogon\win7+samba_domain-membership\Win7_Samba3DomainMember.reg

Para más información, consulte el archivo README_Win7-Domain-Membership.txt en el mismo directorio. Asegúrese de aplicar este parche como administrador local en el sistema Windows.

Después de aplicar el parche anterior y reiniciar el cliente, podrá unirse al dominio SKOLELINUX:

1. Haga clic en "inicio", luego presione clic-derecho en "Computadora" y luego haga clic en "Propiedades".
2. the basic system information page will open. Under "Computer name, domain, and workgroup settings", click on "Change Settings"
3. on the System Properties page, click on "Change..."
4. Debajo de "Miembro de", seleccione el botón junto a "Dominio:", escriba SKOLELINUX y luego haga clic en "OK"
5. Una ventana emergente le solicitará ingresar las credenciales de una cuenta con derechos de unirse al dominio. Escriba SKOLELINUX\Administrator en el campo nombre de usuario y la contraseña de usuario root del servidor principal, luego haga clic en "OK".
6. Una ventana emergente de confirmación le dará la bienvenida al dominio SKOLELINUX. Al hacer clic en "OK", tendrá otro mensaje informándole que necesita reiniciar la computadora para que los cambios puedan aplicarse. Haga clic en "OK".

Después del reinicio, cuando ingresa por primera vez, haga clic en el botón "Opciones >>" y seleccione el dominio SKOLELINUX en lugar del dominio local ("esta computadora").

Si el ingreso al dominio ha sido exitoso, usted podrá ver los detalles del equipo en GOsa² (en el menú "Sistemas").

18.3. First Domain Logon

Debian Edu ships some logon scripts that pre-configure the Windows user profile on first logon. When logging on to a Windows workstation that has joined the SKOLELINUX domain for the first time the following tasks are run:

1. copy the user's Firefox profile to a separate location and register that with Mozilla Firefox on Windows
2. set up Web-Proxy and start page in Firefox
3. set up Web-Proxy and start page in IE
4. add a MyHome icon to the Desktop that points to drive H: and opens Windows Explorer on double-click

Other tasks are run on every logon. For further information on this, please refer to the `/etc/samba/netlogon` folder on your Debian Edu main server.

19. HowTos for teaching and learning

All the Debian packages on this page can be installed by running either `aptitude install <package>` or `apt-get install <package>` (as root).

19.1. Moodle

Moodle is a free, Open Source course management system - software designed using sound pedagogical principles to help educators create effective online learning communities. You can download and use it on any computer (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**.

19.2. Teaching Prolog

SWI-Prolog is an open source implementation of the programming language Prolog, commonly used for teaching and semantic web applications.

19.3. Monitoring pupils

Some schools use control tools like **Controlaula** or **iTALC** to supervise their students. See also the **iTALC Wiki** (and the documentation in bug **511387**).

 **Warning:** make sure you know the status of the laws about monitoring and restricting computer users' activities in your jurisdiction.

19.4. Restricting pupils' network access

Some schools use **Squidguard** or **Dansguardian** to restrict Internet access.

19.5. Smart-Board integration

Some schools use the products of **Smarttech** for their teaching. You need a workstation with drivers and software for this, Smarttech has published some working non-free Software in a Debian Repository as a download. A local copy of this repository needs to be put inside the school network, so that the smartboard software could be installed on our machines. So teachers and pupils can prepare for class on every computer:

19.5.1. Providing the repository on tjener

Download the repository as a tar.gz file from http://smarttech.com/us/Support/Browse+Support/Download+Software/Software/SMART+Notebook+collaborative+learning+software/Previous+versions/SMART+Notebook+10_2+for+Linux.

```
# move the tar.gz file to a repository directory on the school network's webroot ↔
  (by default located on tjener):
root@tjener:~#
mkdir /etc/debian-edu/www/debian
mv smartnotebook10_2sp1debianrepository.tar.gz /etc/debian-edu/www/debian
# change into the new directory
root@tjener:~# cd /etc/debian-edu/www/debian
# extract the file
root@tjener:~# tar xzvf smartnotebook10_2sp1debianrepository.tar.gz
```

19.5.2. Add the needed packages to the PXE installation image

Add the following lines to `/etc/debian-edu/www/debian-edu-install.dat.local`:

```
d-i apt-setup/local1/repository string http://www/debian/ stable non-free
d-i apt-setup/local1/comment string SMART Repo
d-i apt-setup/local1/key string http://www/debian/swbuild.asc
d-i pkgssel/include string smart-activation,smart-common,smart-gallerysetup,smart- ↔
  hwr,smart-languagesetup,smart-notebook,smart-notifier,smart-product-drivers
```

Update the preseed file:

```
/usr/sbin/debian-edu-pxeinstall
```

After this, new installations via PXE will have the **SmartBoard** software installed.

19.5.3. Adding the SmartBoard software manually after installation

The following instructions are for updating LTSP chroots.

Using an editor add the following lines to `/etc/apt/sources.list` in the chroot:

```
### SMART Repo
deb http://www/debian/ stable non-free
```

Start the editor like this:

```
ltsp-chroot -a i386 editor /etc/apt/sources.list
```

Add the repository key and install the software:

```
ltsp-chroot -a i386 wget http://www/debian/swbuild.asc
ltsp-chroot -a i386 apt-key add swbuild.asc
ltsp-chroot -a i386 rm swbuild.asc
# update the dpkg database and install the wanted packages
ltsp-chroot -a i386 aptitude update
ltsp-chroot -a i386 aptitude install smart-activation,smart-common,smart- ↔
  gallerysetup,smart-hwr,smart-languagesetup,smart-notebook,smart-notifier, ↔
  smart-product-drivers
```

19.6. HowTos de 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 if they are happy with moving them and putting them under the GPL - see the page histories to find them.)

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

20. HowTos for users

20.1. Changing passwords

Casa usuario debería cambiar su contraseña usando GOsa². Para hacerlo, solo use un navegador web y vaya a <https://www.gosa/>.

Using GOsa² to change the password ensures that Kerberos (krbPrincipalKey), LDAP (userPassword) and Samba (sambaNTPassword and sambaLMPassword) passwords are the same.

Changing passwords using PAM is working also at the GDM login prompt, but this will only update the Kerberos password, and not the Samba and GOsa² (LDAP) password. So after you changed your password at the login prompt, you really should also change it using GOsa².

20.2. Java

20.2.1. Running standalone Java applications

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

20.2.2. Running Java applications in the web browser

Running Java applets in the browser are supported out of the box by the OpenJDK Java runtime.

20.3. Using email

Todos los usuarios pueden enviar y recibir correos electrónicos en la red interna, el administrador necesita configurar el servidor de correos `exim4` para adaptarse a la situación local, iniciando con `dpkg-reconfigure exim4-config`.

Every user who wants to use KMail (or Icedove, not installed by default) needs to configure it as follows. For a user with username `jdoo` the internal email address is `jdoo@postoffice.intern`.

20.3.1. KMail

- Start KMail
- Close the tip of the day
- Cancel the Account Assistant
- Open Settings/Configure KMail
- Modify the default identity
 - enter your email address
 - make sure that 'postoffice.intern' is the default domain (tab Advanced)
 - click OK
- Choose Accounts out of the menu
 - click add
 - choose imap-server (get rid of KWallet each time it pops up)
 - enter 'intern' as account name and 'postoffice.intern' as imap server
 - check if the username is present
 - don't enter the password, as Kerberos single sign on will be used
 - click the tab Advanced
 - click 'Auto detect', then change Authentication manually from 'Login' to 'GSSAPI'
 - click ok
 - accept the certificate (forever)
 - click ok

- Open Settings/Configure KMail to configure Sending
 - click Add
 - enter 'intern' as name and set it as default, choose SMTP
 - click 'Create and Configure'
 - enter 'postoffice.intern' as outgoing server name
 - check 'server requires authentication'
 - enter username; again, omit the password
 - click OK
 - click on the just configured server entry, click 'Modify'
 - click advanced configuration
 - click detect automatically
 - click two times OK
- You should now be able to read your welcome email (next message).

20.3.2. Icedove

- Start Icedove
- Click 'Skip this and use my existing email'
- Enter your email address
- Uncheck 'Remember password'
- Don't enter your password as Kerberos single sign on will be used
- Click 'Continue'
- Click 'Manual config'
- Under Authentication, change it to 'Kerberos/GSSAPI' for SMTP as well
- Click 'Done'
- A warning pops up, check 'I understand the risks' and click 'Done'
- First time accessing the inbox click 'Confirm Security Exception' to accept the certificate

20.3.3. Obtener un ticket Kerberos para leer correos en las estaciones de trabajo sin disco

If working on a diskless workstation, you don't have a Kerberos TGT by default. To get one, click the credentials button in the system tray. Enter your password and the ticket will be granted.

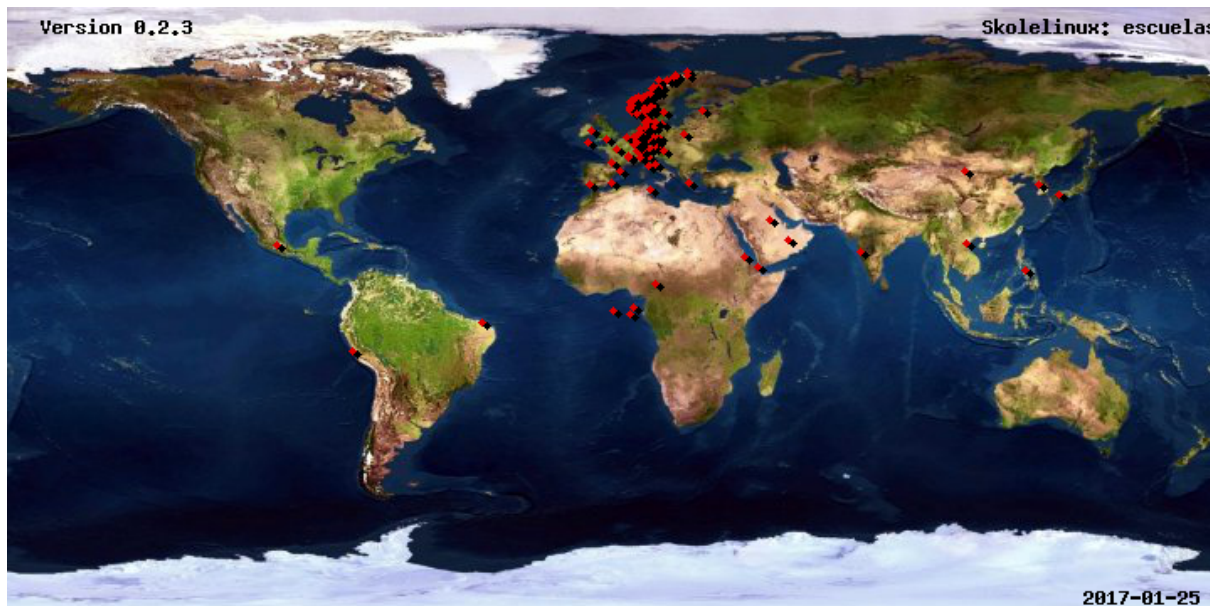
20.4. Volume control

En clientes ligeros, `pavucontrol` o `alsamixer` (pero no `kmix`) puede ser usado para ajustar el volumen.

En otras computadoras (estaciones de trabajo, servidores LTSP y estaciones de trabajo sin disco), puede usar `kmix` o `alsamixer`.

21. Contribuir

21.1. Déjenos saber que existes



Existen usuarios de Debian Edu alrededor del mundo. Una forma fácil de contribuir es dejarnos saber que existes y usas Debian Edu, esto nos motiva y, por lo tanto, ya es una contribución valiosa. 😊

El proyecto Debian Edu provee una base de datos de escuelas y usuarios del sistema para ayudar a encontrarse entre ellos mismos y también para dar una idea sobre la ubicación de los usuarios. Háganos saber sobre su instalación de Debian Edu, registrándose en esta base de datos. Para registrar su escuela, use [este formulario web](#).

21.2. Contribute locally

Actualmente hay equipos locales en Noruega, Alemania, la región de Extremadura en España, Taiwan y Francia. Contribuidores y usuarias "aislados" existen en Grecia, Holanda, Japan y otros lugares.

El [capítulo de soporte](#) contiene explicaciones y enlaces a recursos localizados, ya que contribuir y apoyar son dos lados de la misma moneda.

21.3. Contribuye a nivel global

A nivel internacional estamos organizados en varios [equipos](#) que trabajan en distintas áreas.

Most of the time, the [developer mailing list](#) is our main medium for communication, though we have monthly IRC meetings on [#debian-edu](#) on [irc.debian.org](#) and even, less frequently, 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](#).

21.4. Documentación para editores y traductores

¡Este documento necesita de su ayuda! No está finalizado todavía: si lo lee, notará varias líneas que dicen POR CORREGIR. Si usted sabe lo que se necesita corregir, considere compartir su conocimiento con nosotros.

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/Stretch/> and you can contribute easily. Note: a 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 on how to translate this document can be found in the [translations chapter](#) of this book. Please consider helping the translation effort of this book!

22. Soporte

22.1. Soporte basado en voluntarios

22.1.1. 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 😊

22.1.2. in Norwegian

- <https://init.linpro.no/mailman/skolelinux.no/listinfo/bruker> - support mailing list
- <https://init.linpro.no/mailman/skolelinux.no/listinfo/linuxiskolen> - mailing list for the development member organisation in Norway (FRISK)
- #skolelinux en irc.debian.org - canal IRC para soporte en Noruego

22.1.3. in German

- <http://lists.debian.org/debian-edu-german> - support mailing list
- <http://wiki.skolelinux.de> - wiki with lots of HowTos etc.
- #skolelinux.de en irc.debian.org - canal IRC para soporte en Alemán

22.1.4. in French

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

22.1.5. in Spanish

- <http://www.skolelinux.es> - sitio web en español

22.2. Soporte profesional

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

23. New features in Debian Edu Stretch

23.1. New features for Debian Edu 9+edu0 Codename Stretch

This is a **early ALPHA** release of Debian Edu 9+edu0. Please report feedback to debian-edu@lists.debian.org!

23.1.1. Known issues

- see [the Debian Edu Stretch status page](#).

23.1.2. Installation changes

- New version of debian-installer from Debian Stretch, see its [installation manual](#) for more details.
- The "Thin-Client-Server" profile has been renamed to "LTSP-Server" profile.
- New artwork based on the "[soft Waves](#)" theme, the default artwork for Debian 9 Stretch.

23.1.3. Actualizaciones de software

- Everything which is new in Debian 9 Stretch, eg:
 - Linux kernel 4.8
 - Desktop environments KDE Plasma Workspace 5, GNOME 3.20, Xfce 4.12, LXDE 0.x
 - new optional desktop environment: MATE 2.1
 - KDE Plasma Workspace is installed by default; to choose one of the others see this manual.
 - the browsers Firefox 47 ESR and Chromium 50
 - yes, Iceweasel has been re-renamed to Firefox! 😊
 - LibreOffice 5.1.3
 - Educational toolbox GCompris 15.02
 - Music creator Rosegarden 15.12
 - GOsa 2.7.4
 - LTSP 5.5.7
 - Debian Stretch includes more than 50000 packages available for installation.
 - More information about Debian 9 Stretch is provided in the [release notes](#) and the [installation manual](#).

23.1.4. Actualizaciones en documentación y traducciones

- Translation updates for the templates used in the installer. These templates are now available in 29 languages.
- The Debian Edu Stretch Manual is fully translated to German, French, Italian, Danish, Dutch and Norwegian Bokmål. A partly translated version exists for Spanish.
 - New translations in Stretch: Japanese.

23.1.5. Other changes compared to the previous release

- Icinga replaces Nagios as monitoring tool.
- kde-spectacle replaces ksnapshot as screenshot tool.

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26. Traducciones de este documento

Versions of this document fully translated into German, Italian, French, Danish, Dutch and Norwegian Bokmål are available. An incomplete translation exists for Spanish. This is an [online overview of all languages](#).

26.1. 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-jessie-manual-translations`. The Git 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`. If your Alioth username differs from your local one, create or edit `~/.ssh/config`. There should be an entry like:

```
Host git.debian.org
User <your-alioth-username>
```

Then check out the `debian-edu-doc` source using ssh access: `git clone git+ssh://git.debian.org/git/debian-edu/debian-edu-doc.git`

If you only want to translate, you just need to check out some files from Git (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](#). You can find some [instructions on how to submit bugs](#) here.

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

- `git clone git://anonscm.debian.org/debian-edu/debian-edu-doc.git`

Then edit the file `documentation/debian-edu-jessie/debian-edu-jessie-manual.$CC.po` (replacing `$CC` with your language code). There are many tools for translating available; we suggest using `lokalize`.

Then you either commit the file directly to Git (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:

- `git pull`

Read `/usr/share/doc/debian-edu-doc/README.debian-edu-jessie-manual-translations` to find information how to create a new PO file for your language if there isn't one yet, and how to update translations.

Please keep in mind that this manual is still under development, so don't translate any string which contains "FIXME".

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

If you are new to Git, look at the [Pro Git](#) book; it has a chapter on the [recording changes to the repository](#). Also you might want to look at the `gitk` package that provides a GUI for Git.

Please report any problems.

27. Appendix A - The GNU General Public License

Note to translators: there is no need to translate the GPL license text. ↔
 Translations are available at <https://www.gnu.org/licenses/old-licenses/gpl-2.0-translations.html>. ↔

27.1. Manual for Debian Edu 9+edu0 Codename Stretch

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END OF TERMS AND CONDITIONS

28. Appendix B - no Debian Edu Live CD/DVDs for Stretch yet

 Debian Edu Live CD/DVDs for Stretch are not available at the moment, but are being worked on...

28.1. Features of the Standalone image

- XFCE desktop
- All packages from the Standalone profile
- Todos los paquetes de la tarea «laptop»

28.2. Features of the Workstation image

- XFCE desktop
- All packages from the Workstation profile
- Todos los paquetes de la tarea «laptop»

28.3. Activando el soporte regional y traducciones

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 desired keyboard layout. Here is a list of commonly used locale codes:

Lenguaje (Región)	Valores local	Distribución del teclado
Noruego (Bokmål)	nb_NO.UTF-8	no
Noruego (Nynorsk)	nn_NO.UTF-8	no
Alemán	de_DE.UTF-8	de
Francés (Francia)	fr_FR.UTF-8	fr
Griego (Grecia)	el_GR.UTF-8	el
Japonés	ja_JP.UTF-8	jp
Sami del Norte (Noruega)	se_NO	no(smi)

La lista completa de los códigos locales esta disponible en `/usr/share/i18n/SUPPORTED`, pero únicamente los locales con UTF-8 son soportados por la imagen «live». No todas las traducciones locales tienen instalación. Las distribuciones de teclados pueden ser encontradas en `/usr/share/keymaps/i386/`.

28.4. Cosas para saber

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

28.5. Problemas conocidos con la imagen

- ⚠️ There are no images yet 😞

28.6. Descarga

The image would be (but currently isn't) available via [FTP](#), [HTTP](#) or rsync from <ftp.skolelinux.org> under `cd-stretch-live/`.

29. Apéndice C - Características de publicaciones anteriores

29.1. New features for Debian Edu 8+edu0 Codename Jessie released 2016-07-02

- read the release announcement on www.debian.org: [Debian Edu / Skolelinux Jessie — a complete Linux solution for your school](#).

29.1.1. Installation changes

- Nueva versión de debian-installer de Debian Jessie, vea el [manual de instalación](#) para más detalles.

29.1.2. Actualizaciones de software

- Everything which is new in Debian 8 Jessie, eg:
 - Linux kernel 3.16.x
 - Desktop environments KDE Plasma Workspace 4.11.13, GNOME 3.14, Xfce 4.10, LXDE 0.5.6
 - new optional desktop environment: MATE 1.8
 - KDE Plasma Workspace is installed by default; to choose one of the others see this manual.
 - the browsers Iceweasel 31 ESR and Chromium 41
 - LibreOffice 4.3.3
 - Educational toolbox GCompris 14.12
 - Music creator Rosegarden 14.02
 - GOsa 2.7.4
 - LTSP 5.5.4
 - new boot framework: systemd. More information is available in the Debian [systemd wiki page](#) and in the [systemd manual](#).
 - Debian Jessie includes about 42000 packages available for installation.
 - More information about Debian 8 Jessie is provided in the [release notes](#) and the [installation manual](#).

29.1.3. Actualizaciones en documentación y traducciones

- Translation updates for the templates used in the installer. These templates are now available in 29 languages.
- Two manual translations have been completed: Dutch and Norwegian Bokmål.
- The Debian Edu Jessie Manual is fully translated to German, French, Italian, Danish, Dutch and Norwegian Bokmål. A partly translated version exists for Spanish.

29.1.4. Other changes compared to the previous release

- squid: Shutdown and reboot of the main server takes longer than before due to a new default setting `shutdown_lifetime 30 seconds`. As an example the delay could be set to 10 seconds by appending the line `shutdown_lifetime 10 seconds` to `/etc/squid3/squid.conf`.
- ssh: The root user is no longer allowed to login via SSH with password. The old default `PermitRootLogin yes` has been replaced with `PermitRootLogin without-password`, so ssh-keys will still work.
- slbackup-php: To be able to use the slbackup-php site (which uses root logins via ssh), `PermitRootLogin yes` has to be set temporarily in `/etc/ssh/sshd_config`.
- sugar: As the Sugar desktop was removed from Debian Jessie, it is also not available in Debian Edu jessie.

29.2. New features in Debian Edu 7.1+edu0 Codename Wheezy released 2013-09-28

29.2.1. User visible changes

- Updated artwork and new Debian Edu / Skolelinux logo, visible during installation, in the login screen and as desktop wallpaper.

29.2.2. Installation changes

- New version of debian-installer from Debian Wheezy, see [installation manual](#) for more details.
- The DVD image was dropped, instead we added a USB flash drive / Blu-ray disc image, which behaves like the DVD image, but is too big to fit on a DVD.

29.2.3. Actualizaciones de software

- Todo lo nuevo en Debian Wheezy 7.1, por ejemplo:
 - Linux kernel 3.2.x
 - Desktop environments KDE "Plasma" 4.8.4, GNOME 3.4, Xfce 4.8.6, and LXDE 0.5.5 (KDE "Plasma" is installed by default; to choose GNOME, Xfce or LXDE: see manual.)
 - Web browser Iceweasel 17 ESR
 - LibreOffice 3.5.4
 - LTSP 5.4.2
 - GOsa 2.7.4
 - CUPS print system 1.5.3
 - Educational toolbox GCompris 12.01
 - Music creator Rosegarden 12.04
 - Image editor Gimp 2.8.2
 - Virtual universe Celestia 1.6.1
 - Virtual stargazer Stellarium 0.11.3
 - Scratch visual programming environment 1.4.0.6
 - New version of debian-installer from Debian Wheezy, see [installation manual](#) for more details.
 - Debian Wheezy includes about 37000 packages available for installation.
- More information about Debian Wheezy 7.1 is provided in the [release notes](#) and the [installation manual](#).

29.2.4. Actualizaciones en documentación y traducciones

- Translation updates for the templates used in the installer. These templates are now available in 29 languages.
- The Debian Edu Wheezy Manual is fully translated to German, French, Italian and Danish. Partly translated versions exist for Norwegian Bokmål and Spanish.

29.2.5. LDAP related changes

- Slight changes to some objects and acls to have more types to choose from when adding systems in GOsa. Now systems can be of type server, workstation, printer, terminal or netdevice.

29.2.6. Other changes

- New Xfce desktop task.
- LTSP diskless workstations run without any configuration.
- On the dedicated client network of LTSP servers (default 192.168.0.0/24), machines run by default as diskless workstations if they are powerful enough.
- GOsa gui: Now some options that seemed to be available, but are non functional, are greyed out (or are not clickable). Some tabs are completely hidden to the end user, others even to the GOsa admin.

29.2.7. Known issues

- Using KDE "Plasma" on standalone and roaming workstations, at least Konqueror, Chromium and Step sometimes fail to work out-of-the box when the machines are used outside the backbone network, proxy use is required to use the other network but no wpad.dat information is found. Workaround: Use Icedweasel or configure the proxy manually.

29.3. Cambios en Debian Edu 6.0.7+r1 nombre código "Squeeze" publicado el 03-03-2013

- Debian Edu 6.0.7+r1 Codename "Squeeze" is an incremental update to Debian Edu 6.0.4+r0, containing all the changes between Debian 6.0.4 and 6.0.7 as well as the following changes:
- sitesummary was updated from 0.1.3 to 0.1.8
 - Make Nagios configuration more robust and efficient
 - Comply with 3.X kernel
- debian-edu-doc from 1.4~20120310~6.0.4+r0 to 1.4~20130228~6.0.7+r1
 - Minor updates from the wiki
 - Danish translation now complete
- debian-edu-config from 1.453 to 1.455
 - Fix /etc/hosts for LTSP diskless workstations. Closes: #699880
 - Make ltsp_local_mount script work for multiple devices.
 - Correct Kerberos user policy: don't expire password after 2 days. Closes: #664596
 - Handle '#' characters in the root or first users password. Closes: #664976
 - Fixes for gosa-sync:
 - Don't fail if password contains "
 - Don't disclose new password string in syslog
 - Fixes for gosa-create:
 - Invalidate libnss cache before applying changes

- Multiple failures during mass user import into GOsa²
- gosa-netgroups plugin: don't erase entries of attribute type "memberNisNetgroup". Closes: #687256
- First user now uses the same Kerberos policy as all other users
- Add Danish web page
- debian-edu-install from 1.528 to 1.530
- Improve preseeding support and documentation

29.4. New features in Debian Edu 6.0.4+r0 Codename "Squeeze" released 2012-03-11

29.4.1. User visible changes

- Updated artwork and new Debian Edu / Skolelinux logo, visible during installation, in the login screen and as desktop wallpaper.
- Replace LWAT with GOsa² as the LDAP administration interface. See below and the [Getting started chapter](#) of the manual for more information on GOsa².
- See below for a list of updated software.
- Show welcome page to users when they first log in. This default start page for Iceweasel is fetched from LDAP at installation and boot time for networked profiles. Set to <http://www.skolelinux.org/> for Standalone installations.
- New LXDE desktop option, in addition to KDE (default) and GNOME. As the GNOME option, the LXDE desktop option is only supported by the CD installation method.
- Speed up LTSP client boot.
- Provide a KDE menu entry for changing the password in GOsa².
 - For more information on how to change passwords (including expired passwords at the KDM/GDM login prompt), please see the [HowTos for users](#) chapter of the manual.
- Add link to <http://linuxsignpost.org/> on the start page shown to new users.
- All LTSP servers are also [RDP servers](#) by default.
- Improve handling of removable media on thin clients. Show desktop notification longer when inserting new media and provide an option to start dolphin when such media is inserted.

29.4.2. Installation changes

- New version of debian-installer from Debian Squeeze, see [installation manual](#) for more details.
- Since root logins are no longer allowed when using gdm/kdm, a user in LDAP is set up during installation of the Main Server. This user is up as GOsa² administrator and is also granted sudo access. The Debian Edu menu reordering has been enabled as well, by adding the user also to the `teachers` group.
- The `.iso` images can directly be copied onto USB flash drives, for example by using `dd` or even `cat`.
- New roaming workstation profile for laptops.
- Device access for all users is handled by [PolicyKit](#), and no extra group memberships are needed to get access to devices.
- A warning will be issued when installing on too small disks for the selected profile.
- Simplify partitioning for Standalone installs to only have a separate `/home/` but no separate `/usr` anymore.
- More tests in the test suite, and fix for some of the tests that failed earlier.
- Make sure to report an error and abort the installation when trying to use the netinst images without a working Internet connection, instead of silently installing a broken system.

29.4.3. Actualizaciones de software

- Everything which is new in Debian Squeeze:
 - compatibility with the FHS v2.3 and software developed for version 3.2 of the LSB.
 - Linux kernel 2.6.32
 - Desktop environments KDE "Plasma" 4.4 and GNOME 2.30
 - Web browser Iceweasel 3.5
 - OpenOffice.org 3.2.1
 - Educational toolbox GCompris 9.3
 - Music creator Rosegarden 10.04.2
 - Image editor Gimp 2.6.10
 - Virtual universe Celestia 1.6.0
 - Virtual stargazer Stellarium 0.10.4
 - Debian Squeeze includes over 10,000 new packages available for installation, including the browser Chromium
 - Más información sobre Debian Squeeze 6.0 puede ser encontrada en las [notas de publicación](#) y el [manual de instalación](#).

29.4.4. Infrastructural changes

- The 10.0.0.0/8 network is used instead of 10.0.2.0/23, and the default gateway is 10.0.0.1/8, not 10.0.2.1/8 as used in the past.
 - The dynamic DHCP range was extended on the backbone network to around 4k IP addresses, and around 200 IP addresses for the thin client network.
 - The DHCP network for 10.0.0.0/8 has been renamed from barebone to intern
 - There are no pre-defined host entries for client systems in DNS anymore (staticXX, ..., dhcpYY...)
- MIT Kerberos5 used for user authentication, enabled for:
 - PAM
 - IMAP
 - SMTP
- NFSv4, but without added Kerberos privacy/integrity/authentication. The machines still have to be added to the workstation netgroup to be able to mount the home directories
- Full Samba NT4 domain support for Windows XP/Vista/7
- A complete PXE boot environment is setup when installing from the DVD, so that further installations can be done using PXE network installs only. A new script pxe-addfirmware is provided to support more hardware models needing firmware.
- Remove all hard coded settings on workstations, and configure workstations and roaming workstations using settings detected from the environment using DNS, DHCP and LDAP. See this [blog post with more information on the changes](#).

29.4.5. Actualizaciones en documentación y traducciones

- Translation updates for the templates used in the installer. These templates are now available in 28 languages.
- The Debian Edu Squeeze Manual has generally been cleaned up and improved. A proof-read with corrections was done by a native English linguist.
- The Debian Edu Squeeze Manual is fully translated to German, French and Italian. Partly translated versions exist for Danish (new), Norwegian Bokmål and Spanish.

- Improvements to many language tasks, especially French and Danish.
- Improvements to the welcome web page shown at first logins.
 - Add new Japanese, Portuguese and Catalan translations of the welcome web page.

29.4.6. Regressions

- **CD and DVD installs are different** - the DVD is only suitable for installing a KDE environment.
- Drop support for `powerpc` architecture from netinst installation CDs. It is still possible to run Debian Edu on `powerpc`, but installation is less automated.
- Drop `gtick` in the default installation, because it doesn't work on thin clients (BTS #566335).

29.4.7. New administration tool: GOsa²

- `gos` (2.6.11-3+squeeze1~edu+1) from the upcoming 6.0.5 Debian point release, with:
 - Fix DHCP host removal. Closes: #650258
 - Backport user generator unicode character transliteration. Closes: #657086
- Customized GOsa² configuration to better suit the Debian Edu network architecture.
 - GOsa² updates DNS and NFS exports immediately when a system is updated in LDAP, making diskless workstations work right after they are added to the required netgroup.
- Provide script `sitesummary2ldapdhcp` to update or populate GOsa² with system objects using information gathered by `sitesummary`, to make it easier to add new computers to the network.

29.4.8. More software changes

- Add video editor `Kdenlive` 0.7.7 and interactive geometry tool `Geogebra` 3.2.42
- Change default package manager from `adept` to `synaptic`, to avoid getting two graphical package managers installed by default.
- Install `openoffice.org-kde` by default ensure `OOo` uses KDE file dialogs in KDE.
- Change video player setup to install different players in KDE (`dragonplayer`), GNOME (`totem`) and LXDE (`totem`).
- Add KDE tools `freespacenotifier`, `kinfocenter`, `update-notifier-kde` to the default KDE installation.
- Replace `network-manager-kde` with `plasma-widget-networkmanagement` in the standalone KDE profile
- Install `usb-modeswitch` on laptops to handle dual mode USB devices.
- Add `cifs-utils` to the default installation to ensure SMB mounting can work in any profile.
- Drop `octave`, `gpscorrelate`, `qlandkartegt`, `viking`, `starplot`, `kig`, `kseg`, `luma`, and `valgrind` from the default installation and the DVD to make room for higher priority packages.
- Drop `libnss-mdns` from stationary profiles, to make sure DNS is the authoritative source of host names.
- `freerdp-x11` is installed by default as RDP and VNC client. (Previously `rdesktop` was installed instead.)

29.4.9. Other LDAP related changes

- Make the LDAP server handle more clients after increasing the server's file descriptor limit from 1024 to 32768.
- Add code to re-enable stopped CUPS queues every hour on the Main Server, and flush all CUPS queues every night. Both can be disabled in LDAP.
- Provide network blocking / exam mode by default, controlled by LDAP. In addition to network blocking, changes to the Squid proxy configuration is needed.
- Enable automatic extending of full file systems on the Main Server by default. This can be disabled in LDAP.
- Change SSL certificate name used by the LDAP server and adjust clients to use the new name to be able to enable certificate checking on clients.
- Switch PowerDNS to use strict LDAP mode, to allow us to simplify the LDAP setup used for DNS.
- Simplify autofs LDAP rules to make sure they work with extra home directory partitions exported from the main-server without any changes.
- Make backup system more robust in handling LDAP database dump and restart.

29.4.10. Other changes

- Root logins are denied for both KDM and GDM - see above and [Getting started](#) for details.
- Clients set up to shut down at night will stay up for at least an hour if they are turned on manually between 16:00 and 07:00.
- Additionally use local NTP clock on the main-server to ensure clients and server sync clocks also when disconnected from the Internet.
- Access to Debian repositories is always done via a proxy on the main server - read more about the implementation details [using DHCP and WPAD](#)
- The home0 partition is mounted nosuid, to increase security.
- Change KDE/Akonadi configuration to reduce the disk footprint of every user from 144 to 24 MiB.
- New tool notify-local-users to send desktop notification to all logged in users on a machine. Useful for LTSP servers.

29.5. Nuevas características en 5.0.6+edu1 nombre código "Lenny", publicado el 05-10-2010

- Everything that is new in Debian [5.0.5](#) and [5.0.6](#), which includes support for some new hardware. 5.0.5 and 5.0.6 are maintenance releases and generally don't add new features
- Several bugfixes, including fixes for Skolelinux bugs #1436, #1427, #1441, #1413, #1450 and Debian bugs #585966, #585772, #585968, #586035 and #585966 plus several which were not filed
- Merge new web pages from Squeeze - the text is the same, but it provides a new translation for zh, complete translations for all included languages (de, es, fr, it, nb, nl, ru, zh), and a rename of the .no page to .nb to reflect the language used
- Debian-edu-install: Slovak translation added, updates to German, Basque, Italian, Bokmål, Vietnamese and Chinese translations.
- Debian-edu-doc: improvements to Italian, Bokmål and German translations as well as overall content and layout
- Sitesummary: various improvements; most notably, several Nagios checks were added to monitor system health
- Shutdown-at-night: fix #1435 (did not work with the LDAP host groups populated by lwat).

29.6. Nuevas características en Debian Edu 5.0.4+edu0 "Lenny" publicado el 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 is given in the [task overview page](#).
- Escritorio para los estudiantes mejorado con accesos directos a software educativo como GCompris, Kalzium, Kgeography, KMplot, KStars, Stopmotion y OpenOffice Write e Impress.
- Iconos dinámicos del escritorio y opciones del menú son ajustadas basada en el grupo de usuarios
- 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.
- Nuevo menú inicio permite a los usuarios elegir entre estación de trabajo sin disco, cliente ligero y estación de trabajo.
- A diskless workstation option is installed but not activated by default on all servers with the LTSP-server profile.
- 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.
- The configuration for DNS and DHCP is stored in LDAP and can be edited using `lwat`. The DNS server has been switched from `bind9` to `powerdns`.
- LDAP server for directory services (NSS) is 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.
- Multi-architecture (amd64/i386/powerpc) net installer CD.
- (Most) Packages are downloaded over the Internet.
- Multi-architecture (amd64/i386) installer DVD capable of installing without network.
- PulseAudio is provided in addition to ALSA and OSS for sound on workstations and diskless workstation machines.
- El perfil Básico ha sido renombrado a Mínimo, para ser más acorde.
- La configuración de Nagios3 ahora es automáticamente creada por `sitesummary`.
- El archivo por usuario `~/.xsession-errors` seccionado automáticamente cuando el usuario inicia sesión, para evitar utilizar demasiado espacio en la partición home, con un registro que crece infinitamente. El usuario puede deshabilitar esto, creando `~/.xsession-errors-enable`. El administrador puede configurar el sistema para redireccionar el archivo a `/dev/null` editando `/etc/X11/Xsession.d/05debian-edu-truncate-xerrorlog`.
- Para una fácil instalación de Debian Edu en la que pudiese necesitar firmware no-libre, el CD como el DVD incluyen el siguiente firmware: `firmware-bnx2`, `firmware-bnx2x`, `firmware-ipw2x00`, `firmware-iwlwifi`, `firmware-qlogic` and `firmware-ralink`.

29.7. Nuevas características en Debian 5.0.4, sistema en el cual esta basado Debian Edu 5.0.4+edu0

- 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) and 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). SWI-prolog is back.
- Instalación desde CD/DVD desde windows
- Se cambio de sysklogd a rsyslog como el colector de registros del sistema.
- Para mayor información, visite la página [Lo nuevo en Lenny](#)

29.8. Características nuevas en la versión "3.0 Terra" publicado el 12-05-2007

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

29.9. 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
- comatible 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.
- File systems can be extended while the file system is mounted.
 - Support for automatically extending file systems based on predefined rules.
- 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
- El CD de instalación requiere acceso a internet durante la instalación. Versiones previas podían instalarse a partir de un CD sin acceso a internet.

- Regresión: `webmin` ha sido eliminado de Debian por problemas de mantenimiento. Hemos agregado una nueva herramienta de administración de usuarios vía web llamada `lwat`, que no tiene la misma funcionalidad que la herramienta anterior de administración de usuarios `wlus`. `wlus` requiere de `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.

29.10. Características de la versión 2.0 publicada el 14-03-2006

- Basado en Debian 3.1 Sarge publicado el 06-06-2005.
- Linux kernel versión 2.6.8.
- XFree86 versión 4.3.
- KDE versión 3.3.
- OpenOffice versión 1.1.

29.11. Características de la versión "1.0 venus" publicado el 20-06-2004

- Basado en Debian 3.0 Woody publicado el 19-07-2002
- Versión del kernel linux 2.4.26.
- XFree86 versión 4.1.
- KDE versión 2.2.

29.12. Más información sobre versiones más anteriores

Más información sobre versiones más anteriores puede encontrarse en <http://developer.skolelinux.no/info/cdbygging/news.html>.