Debian Edu / Skolelinux Bullseye 11 Manual

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Índice

1. Manual for Debian Edu 11 Codename Bullseye **1**

2. Acerca de Debian Edu y Skolelinux. **1**

2.1. Un poco de historia, y el porqué de dos nombres . . . 1

3. Arquitectura **1**

3.1. Red . . . 1

3.1.1. La configuración de red predeterminada . . . 2

3.1.2. Main server . . . 3

3.1.3. Servicios que corren en el servidor principal . . . 3

3.1.4. LTSP server(s) . . . 4

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 . . . 7

6. Instalación y opciones de descarga **8**

6.1. Donde encontrar información adicional . . . 8

6.2. Download the installation media for Debian Edu 11 Codename Bullseye . . . 8

6.2.1. amd64 or i386 . . . 8

6.2.2. netinst iso images for amd64 or i386 . . . 9

6.2.3. BD iso images for i386 or amd64 . . . 9

6.2.4. Verification of downloaded image files . . . 9

6.2.5. Sources . . . 9

6.3. Solicite un CD / DVD por correo . . . 9

6.4. Instalacion de Debian Edu . . . 9

6.4.1. Main server installation scenarios . . . 10

6.4.2. Desktop choice . . . 10

6.4.3. Modular installation . . . 11
6.4.4. Installation types and options . . . 11
6.4.5. El proceso de instalación . . . 12
6.4.6. Notas en algunas características . . . 13
6.4.7. Instalación utilizando memorias USB lugar de CD / Blu-ray . . . 14
6.4.8. Installation and booting over the network via PXE . . . 14
6.4.9. Modificar instalaciones PXE . . . 16
6.4.10. Imágenes personalizadas . . . 16
6.5. Captura de pantalla del paseo . . . 16

7. Iniciando **33**
7.1. Pasos mínimos para iniciar . . . 33
7.1.1. Servicios que corren en el servidor principal . . . 34
7.2. Introducción a GOsa² . . . 34
7.2.1. GOsa² Login plus Overview . . . 35
7.3. Gestión de usuarios con GOsa² . . . 35
7.3.1. Agregar usuarios . . . 35
7.3.2. Buscar, modificar y borrar usuarios . . . 36
7.3.3. Establecer contraseñas . . . 36
7.3.4. Administración avanzada de usuarios . . . 36
7.4. Gestión de usuarios con GOsa² . . . 37
7.4.1. Gestión de grupos en la linea de comando . . . 38
7.5. Administración de equipos con GOsa² . . . 38
7.5.1. Buscar y eliminar computadoras . . . 40
7.5.2. Modificar equipos existentes / Manejo del grupo de red . . . 40

8. Printer Management **41**
8.1. Use printers attached to workstations . . . 41

9. Sincronización del reloj **42**

10. Redimensionando particiones completas **42**

11. Maintenance **42**
11.1. Actualizar el software . . . 42
11.1.1. Mantente informado sobre actualizaciones de seguridad . . . 42
11.2. Gestión de las copias de seguridad . . . 43
11.3. Monitorización del servidor . . . 43
11.3.1. Munin . . . 43
11.3.2. Icinga . . . 44
11.3.3. Sitesummary . . . 45
11.4. Más información sobre personalizaciones de Debian Edu . . . 45

12. Actualizaciones **45**
12.1. Notas generales sobre la actualización . . . 45
12.2. Upgrades from Debian Edu Buster . . . 45
12.2.1. Upgrading the main server . . . 46
12.2.2. Upgrading a workstation . . . 47
12.3. Upgrades from older Debian Edu / Skolelinux installations (before Buster) . . . 47

13. Guías **47**

14. Guías para administración general **47**
14.1. Seguimiento de /etc usando el sistema de control de versiones git . . . 47
14.1.1. Ejemplos de uso . . . 48
14.2. Redimensionando Particiones . . . 48
14.2.1. Gestión de volúmenes lógicos . . . 48
14.3. Usar ldapvi . . . 48
14.4. Kerberized NFS . . . 49
14.4.1. How to change the default . . . 49
14.5. Standardskriver . . . 49
14.6. JXplorer, una interfaz gráfica para LDAP . . . 50
14.7. ldap-createuser-krb, una herramienta para línea de comando . . . 50
14.8. Using stable-updates . . . 50
14.9. Using backports to install newer software . . . 50
14.10Actualizar con un CD o similar . . . 50
14.11Automatic cleanup of leftover processes . . . 51
14.12Instalación automática de actualizaciones de seguridad . . . 51
14.13Apagado automático de las computadoras durante la noche . . . 51
14.13.1Como configurar shutdown-at-night . . . 51
14.14Acceso a servidores Debian-Edu ubicados detrás de un firewall . . . 52
14.15Installing additional service machines for spreading the load from main-server . . . 52
14.16HowTos de wiki.debian.org . . . 52

15. Advanced administration howto **53**
15.1. Personalizaciones de usuarios con GOsa^2 . . . 53
15.1.1. Create Users in Year Groups . . . 53
15.2. Other User Customisations . . . 53
15.2.1. Crear directorios en el directorio home de los usuarios . . . 53
15.2.2. Easy access to USB drives and CD-ROMs/DVDs . . . 54
15.3. Use a dedicated storage server . . . 54
15.4. Restrict ssh login access . . . 55
15.4.1. Setup without LTSP clients . . . 55
15.4.2. Setup with LTSP clients . . . 56
15.4.3. A note for more complex setups . . . 56

16. HowTos for the desktop **56**
16.1. Set up a multi-language desktop environment . . . 56
16.2. Reproducir DVDs . . . 56
16.3. Handwriting fonts . . . 57

17. HowTos para clientes en red **57**
17.1. Introducción a clientes ligeros y estaciones de trabajo sin disco . . . 57
17.1.1. LTSP client type selection . . . 57
17.1.2. Configurar el menú PXE . . . 58
17.1.3. Configurar la instalación de PXE . . . 58
17.1.4. Agregar un repositorio personalizado para instalaciones PXE . . . 58
17.1.5. Use a different LTSP client network . . . 58
17.1.6. Add LTSP chroot to support 32-bit-PC clients . . . 58
17.2. Changing network settings . . . 58
17.3. LTSP en detalle . . . 59
17.3.1. LTSP client configuration . . . 59
17.3.2. Desktop autoloader . . . 59
17.3.3. Sonido con clientes LTSP . . . 59
17.3.4. Use printers attached to LTSP clients . . . 59
17.3.5. Connecting Windows machines to the network . . . 59
17.4. Remote Desktop . . . 60
17.4.1. Xrdp . . . 60
17.4.2. X2Go . . . 60
17.4.3. Clientes de escritorio remoto disponible . . . 61

18. Samba en Debian Edu **61**
18.1. Cómo empezar . . . 61
18.1.1. Acceder los archivos mediante Samba . . . 61
18.2. Domain Membership . . . 62
18.2.1. Windows hostname . . . 62
18.3. First Domain Logon . . . 62

19. HowTos for teaching and learning **62**
19.1. Teaching Programming . . . 62
19.2. Monitoring pupils . . . 63
19.3. Restricting pupils' network access . . . 63

20. HowTos for users **63**
20.1. Changing passwords . . . 63
20.2. Running standalone Java applications . . . 63
20.3. Using email . . . 63
20.4. Thunderbird . . . 63
20.5. Obtener un ticket Kerberos para leer correos en las estaciones de trabajo sin disco . . . 64

21. Contribuir **64**
21.1. Contribute locally . . . 64
21.2. Contribuye a nivel global . . . 64
21.3. Documentación para editores y traductores . . . 64

22. Soporte **64**
22.1. Soporte basado en voluntarios . . . 64
22.1.1. in English . . . 64
22.1.2. in Norwegian . . . 65
22.1.3. in German . . . 65
22.1.4. in French . . . 65
22.2. Soporte profesional . . . 65

23. New features in Debian Edu Bullseye **65**
23.1. New features for Debian Edu 11 Codename Bullseye . . . 65
23.1.1. Installation changes . . . 65
23.1.2. Actualizaciones de software . . . 65
23.1.3. Actualizaciones en documentación y traducciones . . . 66
23.1.4. Other changes compared to the previous release . . . 66
23.1.5. Known issues . . . 66

24. Copyright y authores **66**

25. Copyright de la traducción y Autores **66**

26. Traducciones de este documento **67**
26.1. HowTo translate this document . . . 67
26.1.1. Translate using PO files . . . 67
26.1.2. Translate online using a web browser . . . 68

27. Appendix A - The GNU General Public License **68**
27.1. Manual for Debian Edu 11 Codename Bullseye . . . 68
27.2. LICENCIA PUBLICA GENERAL GNU . . . 68
27.3. TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION . . . 68

28. Appendix B - no Debian Edu Live CD/DVDs for Bullseye yet **71**
28.1. Features of the Standalone image . . . 71
28.2. Features of the Workstation image . . . 71
28.3. Activando el soporte regional y traducciones . . . 71
28.4. Cosas para saber . . . 72
28.5. Problemas conocidos con la imágen . . . 72

29. Apéndice C - Características de publicaciones anteriores **72**

29.1. New features for Debian Edu 10+edu0 Codename Buster released 2019-07-06 . . . 72

29.1.1. Installation changes . . . 72

29.1.2. Actualizaciones de software . . . 72

29.1.3. Actualizaciones en documentación y traducciones . . . 73

29.1.4. Other changes compared to the previous release . . . 73

29.2. New features for Debian Edu 9+edu0 Codename Stretch released 2017-06-17 . . . 74

29.2.1. Installation changes . . . 74

29.2.2. Actualizaciones de software . . . 74

29.2.3. Actualizaciones en documentación y traducciones . . . 74

29.2.4. Other changes compared to the previous release . . . 74

29.3. Historic information about older releases . . . 75

1. Manual for Debian Edu 11 Codename Bullseye

This is the manual for the Debian Edu 11 Bullseye release.

The version at https://wiki.debian.org/DebianEdu/Documentation/Bullseye is a wiki and updated frequently.

Translations are part of the debian-edu-doc package which can be installed on a webserver, and is available online.

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.

The chapters about hardware and network requirements and about the architecture contain basic environment details.

After installation of a main server all services needed for a school network are set up and the system is ready to be used. Only users and machines need to be added via GOsa[2], a comfortable Web-UI, or any other LDAP editor. A netbooting environment using PXE/iPXE 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). Also, machines can be booted via PXE/iPXE as diskless workstations or thin clients.

Several educational applications like GeoGebra, Kalzium, KGeography, GNU Solfege and Scratch are included in the default desktop setup, which can be extended easily and almost endlessly via the Debian universe.

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

Debian Edu / Skolelinux is a Linux distribution created by the Debian Edu project. As a Debian Pure Blend distribution it is an official Debian subproject.

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

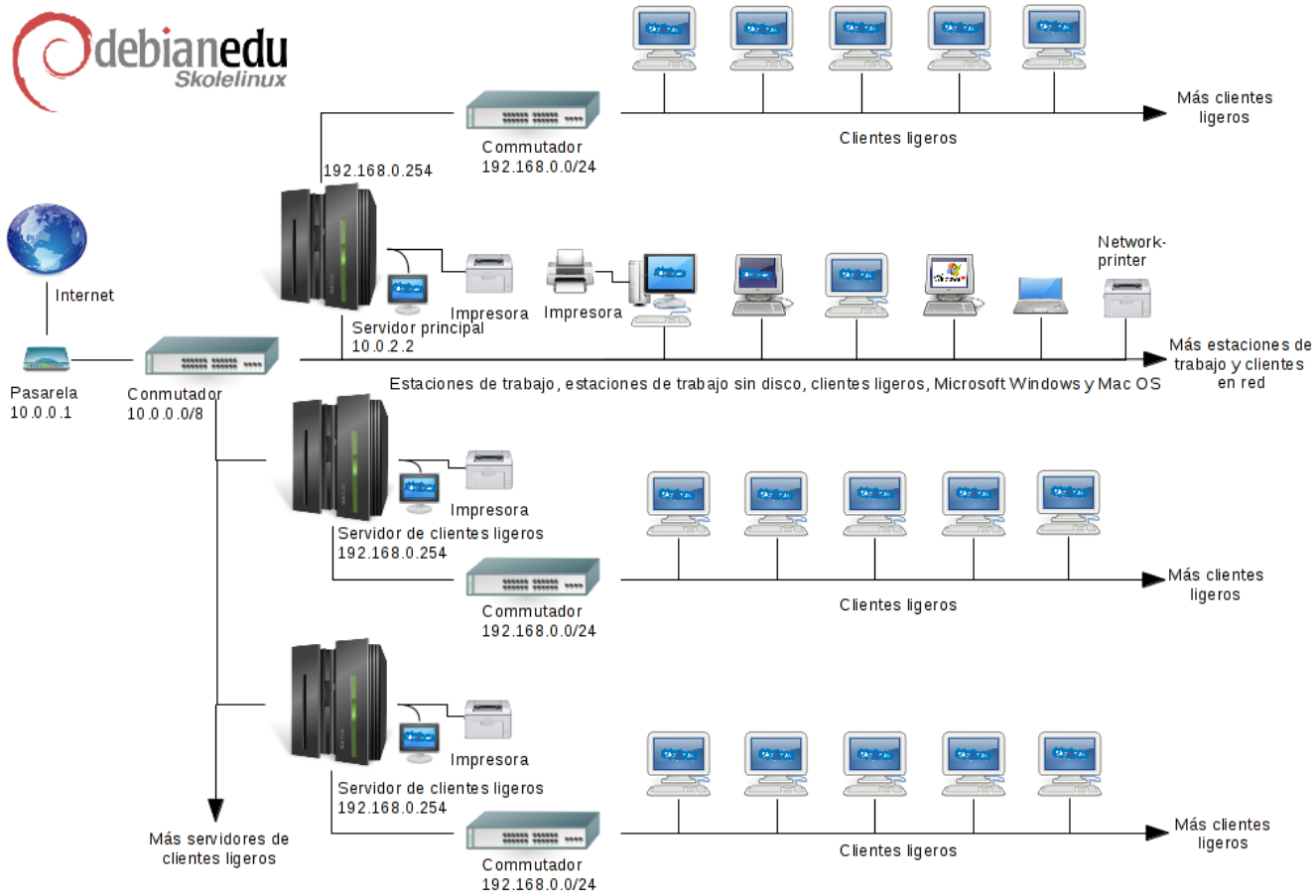
The Skolelinux project in Norway was founded on July 2nd 2001 and about the same time Raphaël Hertzog started Debian-Edu in France. Since 2003 both projects are united, but both names stayed. "Skole" and (Debian-)"Education" are just two well understood terms in these regions.

Today the system is in use in several countries around the world.

3. Arquitectura

3.1. Red

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



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. LTSP is explained in detail in the related HowTo chapter.

The reason that there can only be one main server in each school network is that the main server provides DHCP, and there can be only one machine doing so in each network. It is possible to move services from the main server to other machines by setting up the service on another machine, and subsequently updating the DNS configuration, pointing the DNS alias for that service to the right computer.

In order to simplify the standard setup of Skolelinux, the Internet connection runs over a separate router, also called gateway. See the Internet router chapter for details how to set up such a gateway if it is not possible to configure an existing one as needed.

3.1.1. La configuración de red predeterminada

DHCP on the main server serves the 10.0.0.0/8 network, providing a PXE boot menu where you can choose whether to install a new server/workstation, boot a thin client or a diskless workstation, run memtest, or boot from the local hard disk.

This is designed to be modified; for details, see the related HowTo chapter.

DHCP on the LTSP servers only serves a dedicated network on the second interface (192.168.0.0/24 and 192.168.1.0/24 are preconfigured options) and should seldom need to be changed.

La configuración de todas las subredes es almacenada en LDAP.

3.1.2. Main server

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 q ue 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
Network Block Device Server	NBD	---

Monitoreo de servicios y equipos, reportes de fallas, histórico vía web. Reportes de fallos vía correo.	Munin, Icinga and Sitesummary	sitesummary

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.

By default email is set up for local delivery (i.e. within the school) only, though email delivery to the wider Internet may be set up if the school has a permanent Internet connection. Clients are set up to deliver mail to the server (using 'smarthost'), and users can access their personal mail through 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 frecuentente 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. All types of clients can be connected to the private 10.0.0.0/8 subnet and will get according IP addresses; LTSP clients should be 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 LTSP 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 actua 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 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.

Please note:

- LTSP diskless workstations are now using the programs installed on the server.
- The client root filesystem is provided using NFS. After each modification to the LTSP server the related image has to be re-generated; run `ltsp image /` on the LTSP server.

3.1.5. Clientes ligeros

A thin client setup enables ordinary PCs to function as (X-)terminals. This means that the machine boots directly from the server using PXE without using the local client hard drive. The thin client setup now uses X2Go, because LTSP has dropped support.

Thin clients are a good way to still make use of very old (mostly 32-bit) machines as they effectively run all programs on the LTSP server. This works as follows: the service uses DHCP and TFTP to connect to the network and boot from the network. Next, the file system is mounted from the LTSP server using NFS, and finally the X2Go client is started.

3.1.6. Estaciones sin disco

A diskless workstation runs all software on the PC without a locally installed operating system. This means that client machines boot via PXE without running software installed on a local hard drive.

Diskless workstations are an excellent way of using 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.

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

All the Linux machines that are installed with the Skolelinux installer will be administrable from a central computer, most likely the server. It will be possible to log in to all machines via SSH, and thereby have full access to the machines. As root one needs to run `kinit` first to get a Kerberos TGT.

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

Currently there are two kinds of installation media images: netinst and BD. Both images can also be booted from USB sticks.

The aim is to be able to install a server from any type of medium once, and install all other clients over the network by booting from the network.

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.

If LTSP is intended to be used, take a look at the LTSP Hardware Requirements wiki page.

- 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.
- Thin clients with only 256 MiB RAM and 400 MHz are possible, though more RAM and faster processors are recommended.
- For workstations, diskless workstations and standalone systems, 1500 MHz and 1024 MiB RAM are the absolute minimum requirements. For running modern webbrowsers and LibreOffice at least 2048 MiB RAM is recommended.
- El requerimiento mínimo de espacio depende del perfil que sea instalado.
  - combined main server + LTSP server: 60 GiB (plus additional space for user accounts).
  - LTSP server: 40 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 is used for serving LTSP clients.
- 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

A list of tested hardware is provided at https://wiki.debian.org/DebianEdu/Hardware/ . This list is not nearly complete

https://wiki.debian.org/InstallingDebianOn is an effort to document how to install, configure and use Debian on some specific hardware, allowing potential buyers to know if that hardware is supported and existing owners to know how get the best out of that hardware.

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.
- You can have a lot of LTSP servers on the main network; two different subnets are preconfigured (DNS, DHCP) in LDAP, more can be added.
- 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.

In case you already have a router but are unable to configure it as needed (eg because you are not allowed to do so, or for technical reasons), an older computer with two network interfaces can be turned into a gateway between the existing network and the Debian Edu one.

A simple way is to install Debian Edu on this computer; select 'Minimal' as profile during installation.

After the installation:

- Adjust the /etc/network/interfaces file.
- Change the hostname permanently to 'gateway'.
- Remove superfluous scripts.

- Enable IP forwarding and NAT for the 10.0.0.0/8 network.
- As an option install a firewall and / or a traffic shaping tool.

```
#!/bin/sh
# Turn a system with profile 'Minimal' into a gateway/firewall.
#
sed -i 's/auto eth0/auto eth0 eth1/' /etc/network/interfaces
sed -i '/eth1/ s/dhcp/static/' /etc/network/interfaces
sed -i '/post-up/d' /etc/network/interfaces
echo 'address 10.0.0.1' >> /etc/network/interfaces
echo 'dns-nameservers 10.0.2.2' >> /etc/network/interfaces
echo 'dns-domain intern' >> /etc/network/interfaces
hostname -b gateway
hostname > /etc/hostname
rm -f /etc/dhcp/dhclient-exit-hooks.d/hostname
rm -f /etc/dhcp/dhclient-exit-hooks.d/wpad-proxy-update
rm -f /etc/dhcp/dhclient-exit-hooks.d/fetch-ldap-cert
rm -f /etc/network/if-up.d/wpad-proxy-update
sed -i 's/domain-name,//' /etc/dhcp/dhclient-debian-edu.conf
sed -i 's/domain-search,//' /etc/dhcp/dhclient-debian-edu.conf
service networking stop
service networking start
sed -i 's#NAT=#NAT="10.0.0.0/8"#' /etc/default/enable-nat
service enable-nat restart
# You might want a firewall (shorewall or ufw) and traffic shaping.
#apt update
#apt install shorewall
# or
#apt install ufw
#apt install wondershaper
```

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

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

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 Bullseye before you start installing a system for production use. There is more information about the Debian Bullseye release available in its installation manual.

Please give Debian Edu/Skolelinux a try, it should just work.

It is recommended, though, to read the chapters about hardware and network requirements and about the architecture before starting to install a main server.

Be sure to also read the getting started chapter of this manual, as it explains how to log in for the first time.

6.2. Download the installation media for Debian Edu 11 Codename Bullseye

6.2.1. amd64 or i386

`amd64` and `i386` are the names of two Debian architectures for x86 CPUs, both are or have been build by AMD, Intel and other manufacturers. `amd64` is a 64-bit architecture and `i386` is a 32-bit architecture. New installations today should be

done using `amd64`. `i386` should only be used for old hardware.

6.2.2. netinst iso images for amd64 or i386

The netinst iso image can be used for installation from CD/DVD and USB flash drives and is available for two Debian architectures: amd64 or i386. As the name implies, internet access is required for the installation.

Once Bullseye has been released these images will be available for download from:

- https://get.debian.org/cdimage/release/current/amd64/iso-cd/
- https://get.debian.org/cdimage/release/current/i386/iso-cd/

6.2.3. BD iso images for i386 or amd64

This ISO image is approximately 5 GB large and can be used for installation of amd64 or i386 machines, also without access to the Internet. Like the netinst image it can be installed on USB flash drives or disk media of sufficient size.

Once Bullseye has been released these images will be available for download from:

- https://get.debian.org/cdimage/release/current/amd64/iso-bd/
- https://get.debian.org/cdimage/release/current/i386/iso-bd/

6.2.4. Verification of downloaded image files

Detailed instructions for verifying these images are part of the Debian-CD FAQ.

6.2.5. Sources

Sources are available from the Debian archive at the usual locations, several media are linked on https://get.debian.org/cdimage/release/current/source/

6.3. Solicite un CD / DVD por correo

For those without a fast Internet connection, we can offer a CD or DVD sent for the cost of the CD or DVD and shipping. Just send an email to cd@skolelinux.no and we will discuss the payment details (for shipping and media). Recuerde incluir la dirección a la que desea le sea envíado 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 57,000 packages to choose from and a billion configuration options. For the majority of our users, our defaults should be fine. Please note: if LTSP is intended to be used, choose a lightweight desktop environment.

6.4.1. Main server installation scenarios

A. Typical school or home network with Internet access through a router providing DHCP:

- Installation of a main server is possible, but after reboot there will be no internet access (due to primary network interface IP 10.0.2.2/8).
- See the Internet router chapter for details how to set up a gateway if it is not possible to configure an existing one as needed.
- Connect all components like shown in the architecture chapter.
- The main server should have Internet connection once bootet the first time in the correct environment.

B. Typical school or institution network, similar to the one above, but with proxy use required.

- Add 'debian-edu-expert' to the kernel command line; see further below for details how this is done.
- Some additional questions must be answered, the proxy server related one included.

C. Network with router/gateway IP 10.0.0.1/8 (which does not provide a DHCP server) and Internet access:

- As soon as the automatic network configuration fails (due to missing DHCP), choose manual network configuration.
  - Enter 10.0.2.2/8 as host IP
  - Enter 10.0.0.1 as gateway IP
  - Enter 8.8.8.8 as nameserver IP unless you know better
- The main server should just work after the first boot.

D. Offline (no Internet connection):

- Use the BD ISO image.
- Make sure all (real/virtual) network cables are unplugged.
- Choose 'Do not configure the network at this time' (after DHCP failed to configure the network and you pressed 'Continue').
- Update the system once bootet the first time in the correct environment with Internet access.

6.4.2. Desktop choice

- KDE and GNOME both have good language support, but too big a footprint for both older computers and for LTSP clients.
- MATE is lighter than the two above, but is missing good language support for several countries.
- LXDE has the smallest footprint and supports 35 languages.
- LXQt is a lightweight desktop (language support similar to LXDE) with a more modern look and feel (based on Qt just like KDE).
- Xfce has a slightly bigger footprint than LXDE but a very good language support (106 languages).

Debian Edu as an international project has chosen to use Xfce as the default desktop; see below how to set a different one.

6.4.3. Modular installation

- When installing a system with profile *Workstation* included, a lot of education related programs are installed. To install only the basic profile, remove the *desktop=xxxx* kernel command line param before starting the installation; see further below for details how this is done. This allows one to install a site specific system and could be used to speed up test installations.
- Please note: If you want to install a desktop afterwards, don't use the Debian Edu meta-packages like e.g. education-desktop-mate because these would pull in all education related programs; rather install e.g. task-mate-desktop instead. One or more of the new school level related meta-packages *education-preschool*, *education-primaryschool*, *education-secondaryschool*, *education-highschool* could be installed to match the use case.
- For details about Debian Edu meta-packages, see the Debian Edu packages overview page.

6.4.4. Installation types and options

Installer boot menu on 64-bit Hardware

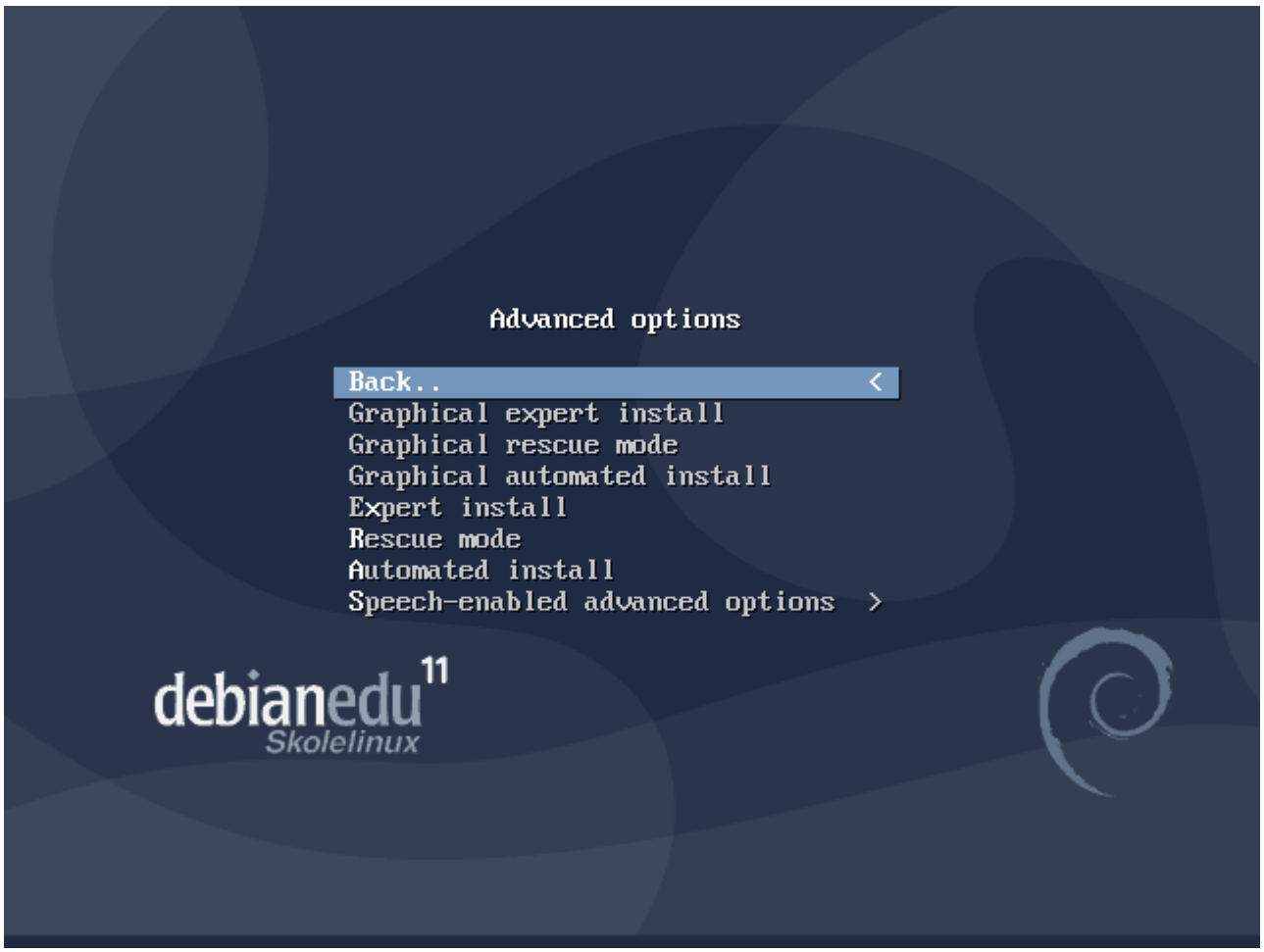
64-bit Installer boot menu

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.

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.

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.

Add or change boot parameters for installations

In both cases, boot options can be edited by pressing the TAB key in the boot menu; the screenshot shows the command line for **Graphical install**.

Edit command line options

- You can use an existing HTTP proxy service on the network to speed up the installation of the main server profile from CD. Add e.g. `mirror/http/proxy=http://10.0.2.2:3128` as an additional boot parameter.
- 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 default **Xfce** desktop, replace `xfce` with `gnome` in the `desktop=xfce` parameter.
- To install the **LXDE** desktop instead, use `desktop=lxde`.
- To install the **LXQt** desktop instead, use `desktop=lxqt`.
- To install the **KDE Plasma** desktop instead, use `desktop=kde`.
- To install the **Cinnamon** desktop instead, use `desktop=cinnamon`.
- And to install the **MATE** desktop instead, use `desktop=mate`.

6.4.5. 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.

- Choose a language (for the installation and the installed system).
- Elige un lugar que normalmente sería el lugar donde vives.
- Choose a keyboard keymap (the country's default is usually fine).
- 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 install only 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 interfaces, 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 want it. 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 useful after the installation.

- Seleccione "si" 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.
- Please say "yes" to submitting information to `https://popcon.debian.org/` to allow us to know which packages are popular and should be kept for future releases. Although you don't have to, it is a simple way for you to help.
- 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.

  The password for this user **must** have a length of **at least 5 characters** and **must differ** from the **username** - otherwise login will not be possible (even though a shorter password and also a password matching the username will be accepted by the installer).
- Sonríe :)

6.4.6. Notas en algunas características

6.4.6.1. 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).

6.4.6.2. A note on USB flash drive / Blu-ray disc image installs

After you install from the USB flash drive / Blu-ray disc image, `/etc/apt/sources.list` will only contain sources from that image. If you have an Internet connection, we strongly suggest adding the following lines to it so that available security updates can be installed:

```
deb http://deb.debian.org/debian/ bullseye main
deb http://security.debian.org/ bullseye-security/updates main
```

6.4.6.3. 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 varia 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.

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

It is possible to directly copy a CD/BD `.iso` image to USB flash drives (also known as "USB sticks") and boot from them. Simply execute a command like this, just adapting the file and device name to your needs:

```
sudo cat debian-edu-amd64-XXX.iso > /dev/sdX
```

To determine the value of X, run this command before and after the USB device has been inserted:

```
lsblk -p
```

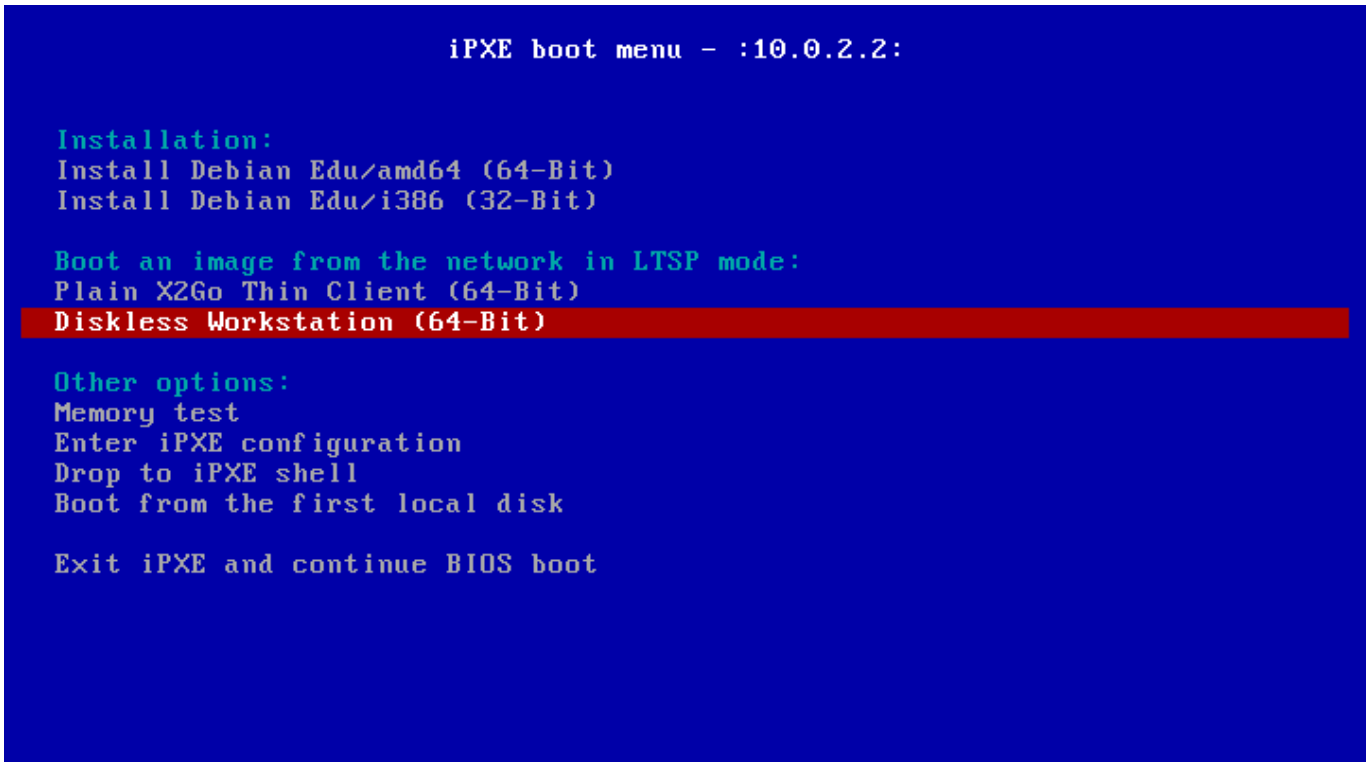
Please note that copying will take quite some time.

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

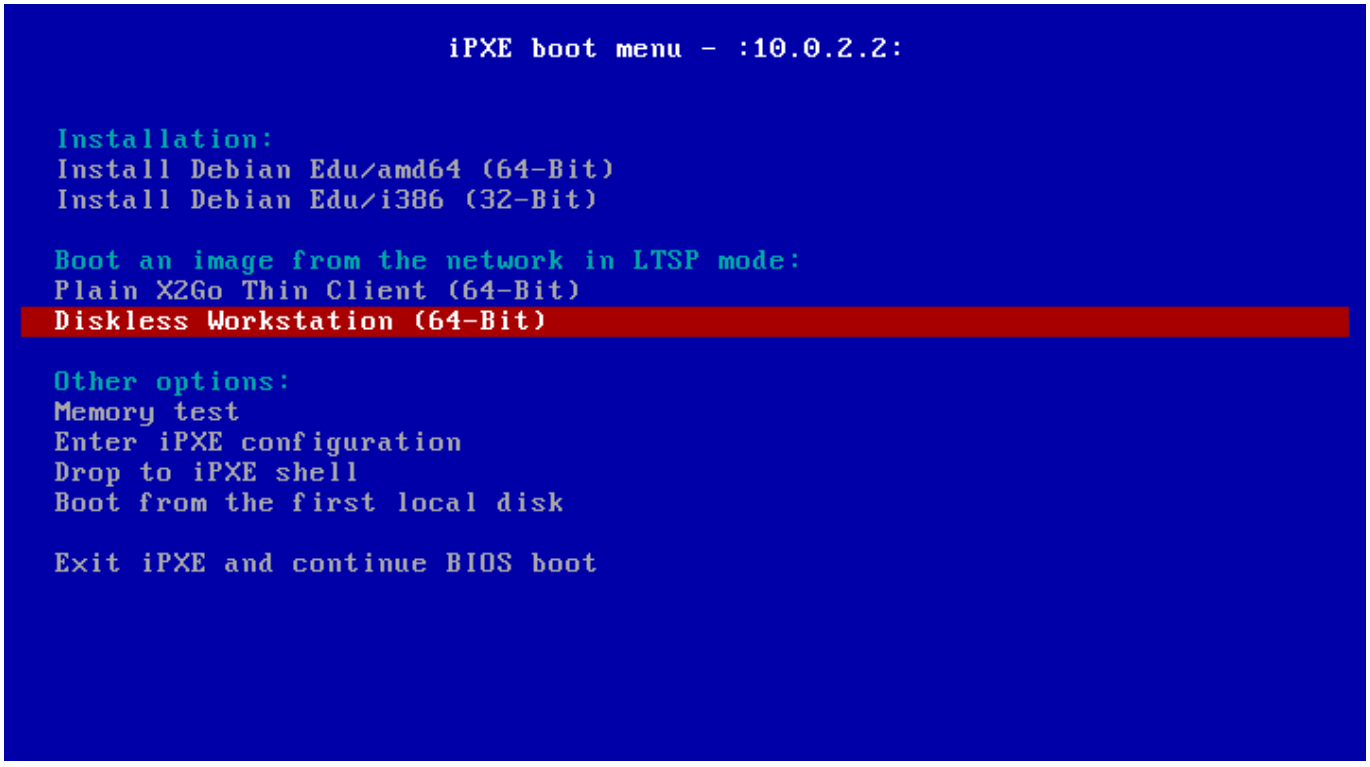
6.4.8. Installation and booting over the network via PXE

For this installation method it is required that you have a running main server. When clients boot via the main network, an iPXE menu with installer and boot selection options is displayed. If PXE installation fails with an error message claiming a XXX.bin file is missing, then most probably the client's network card requires nonfree firmware. In this case the Debian Installer's initrd must be modified. This can be achieved by executing the command: `/usr/share/debian-edu-config/tools/pxe-add` on the server.

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



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



To install a desktop environment of your choice instead of the default one, press TAB and edit the kernel boot options (like explained above).

This setup also allows diskless workstations and thin clients to be booted on the main network. Unlike workstations and separate LTSP servers, diskless workstations don't have to be added to LDAP with GOsa[2].

Más información acerca de los clientes de red puede ser encontrada en el capítulo clientes de red.

6.4.9. 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    pkgsel/include string my-extra-package(s)
```

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

Further information can be found in the manual of the Debian Installer.

Para desactivar o cambiar el uso del proxy cuando instale vía PXE, necesita cambiar las lineas 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 lineas y elimine "`export http_proxy="http://webcache:3128";` " de la última linea.

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

6.4.10. 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.

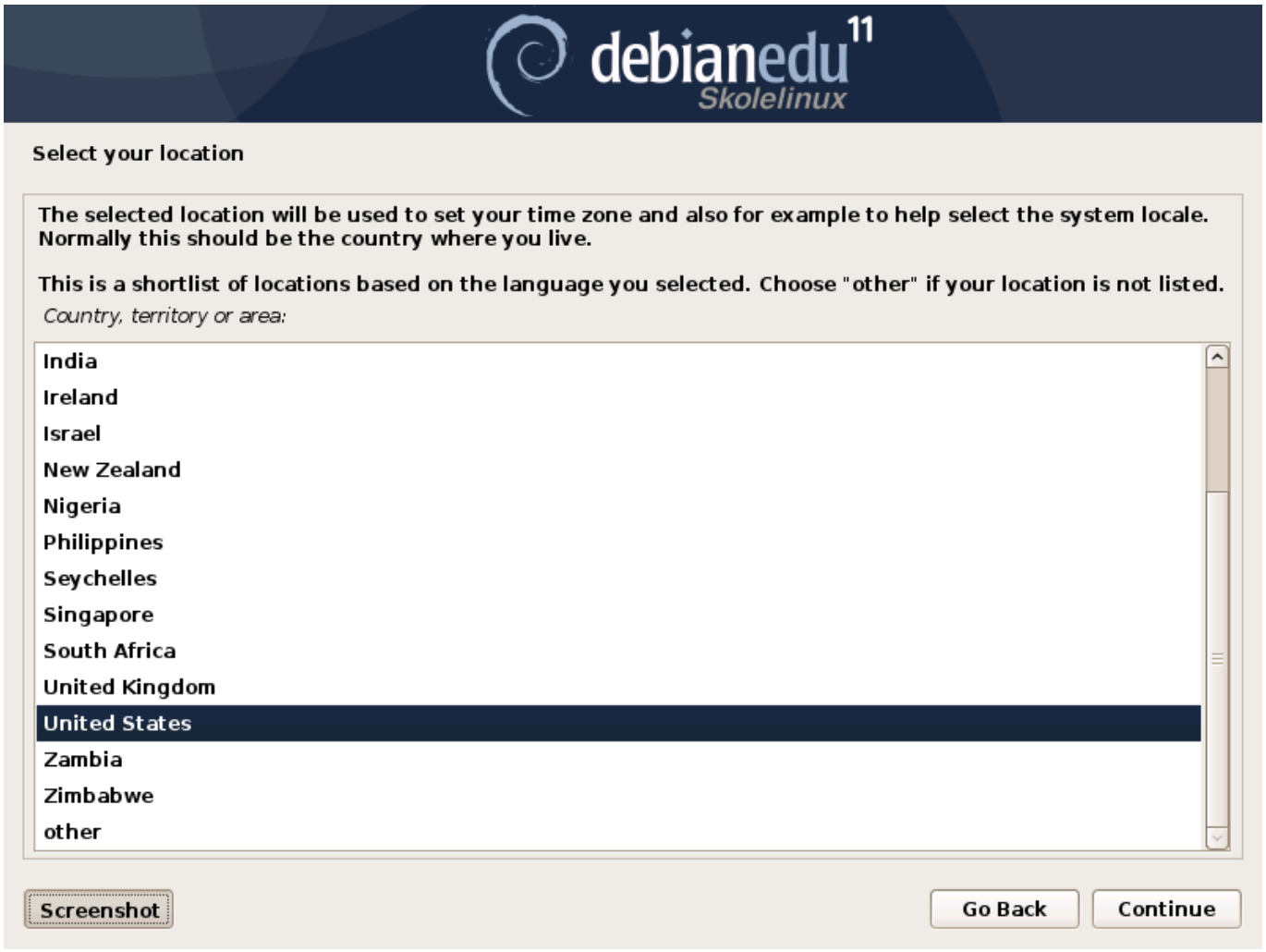
6.5. Captura de pantalla del paseo

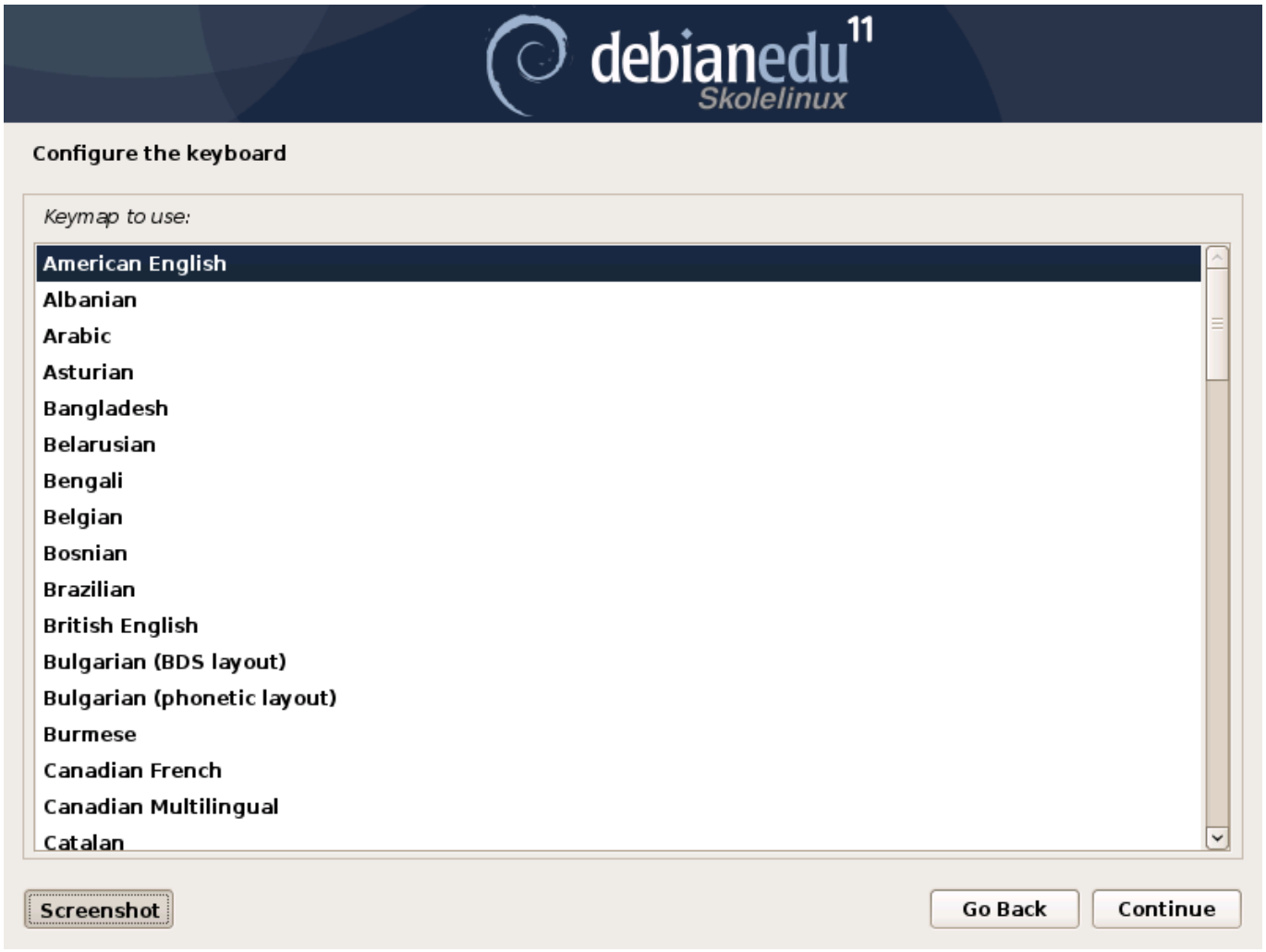
El modo de texto y modo gráfico de instalación son idénticos, sólo la apariencia es diferente. El modo gráfico le ofrece la oportunidad de utilizar un ratón y por supuesto, el modo gráfico se ve mucho mejor y más moderno. A menos que el hardware presente problemas con el modo gráfico, no hay razón para 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 main server and a PXE boot on the LTSP client network (thin client session screen - and login screen after the session on the right has been clicked).

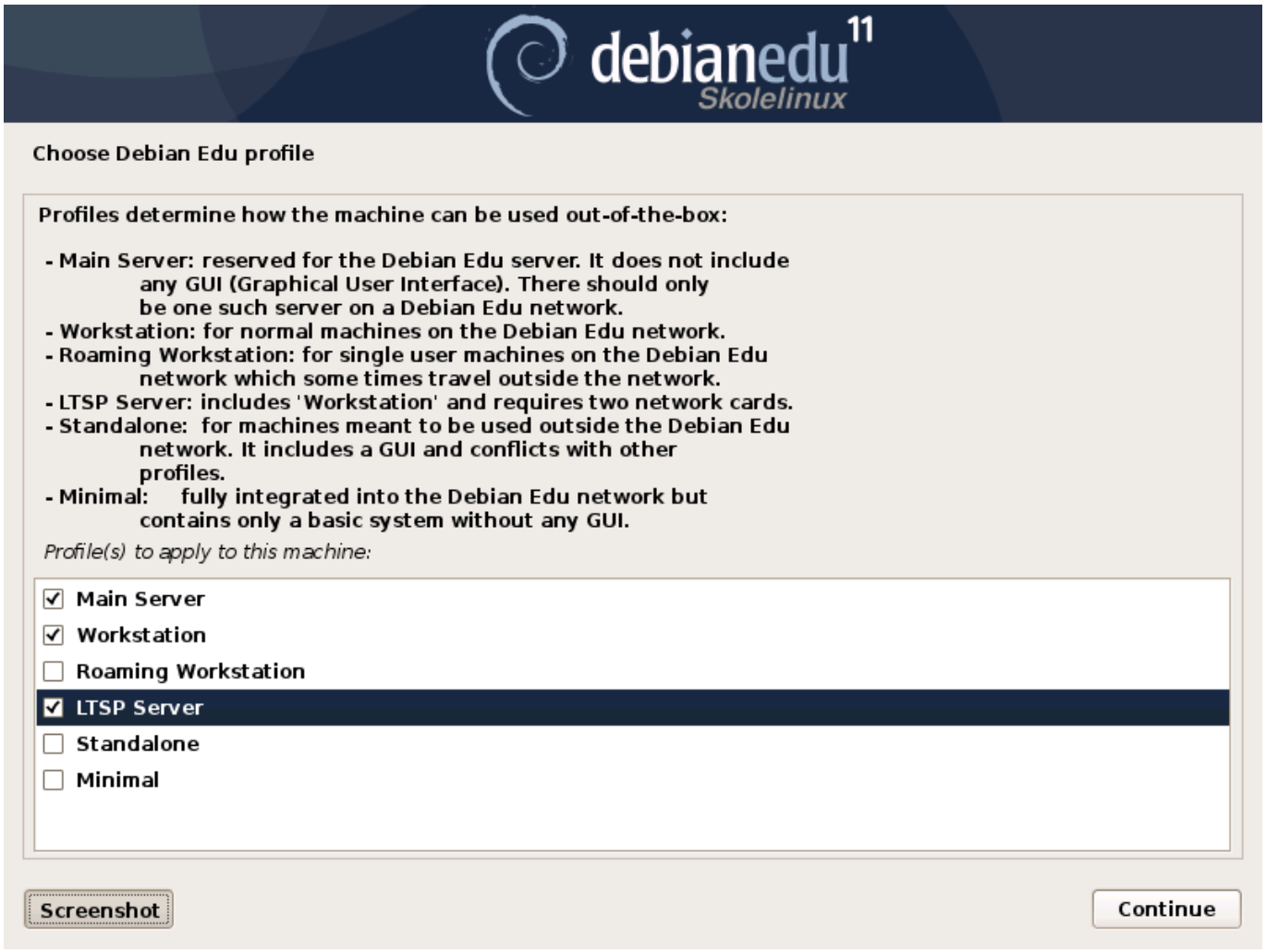
./debian-edu-bullseye-manual-images-tmp/22-Tjener_GRUB_boot_menu.pdf

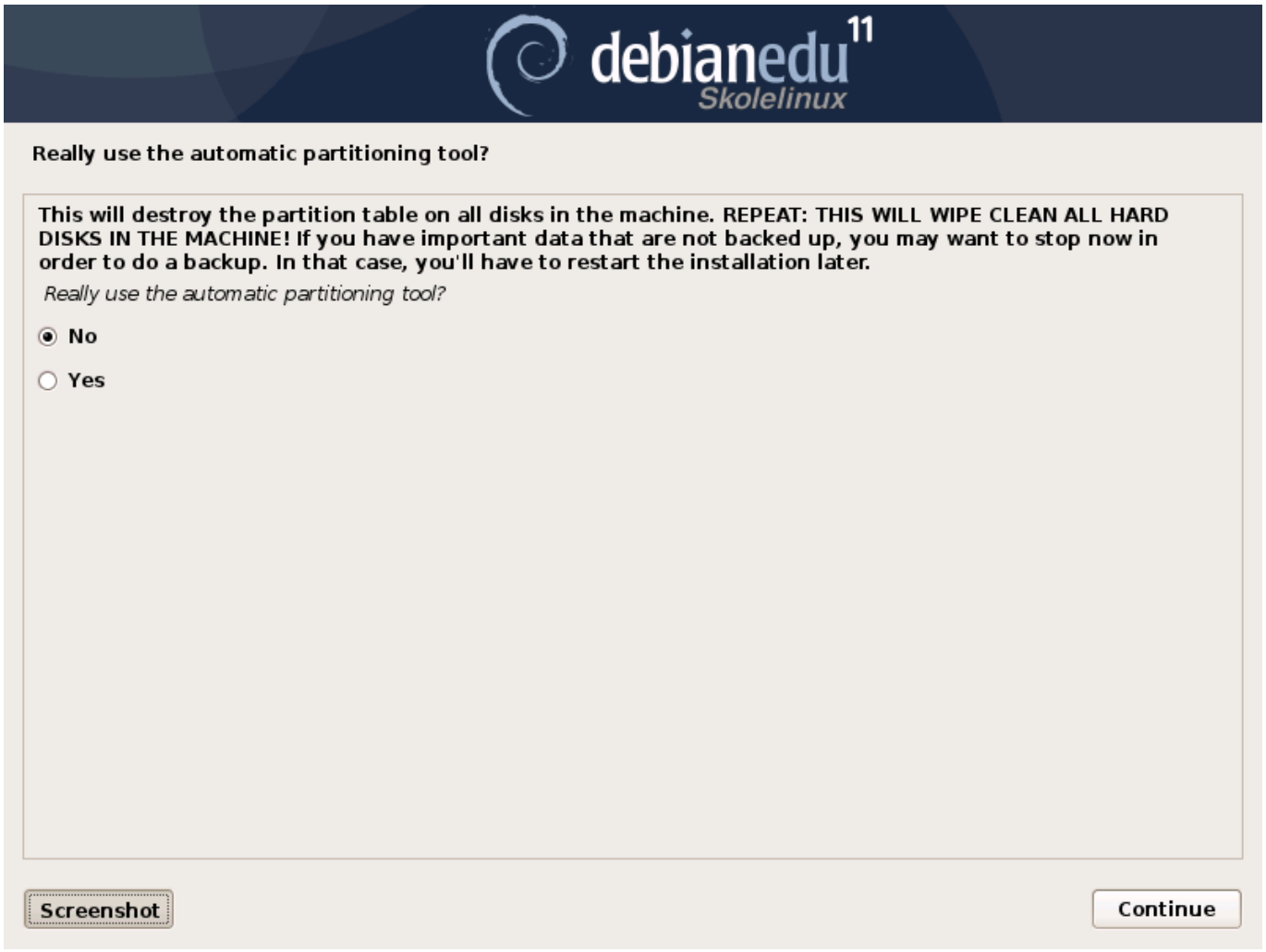
debianedu 11
Skolelinux
Select a language
Choose the language to be used for the installation process. The selected language will also be the default language for the installed system.
Language:
Chinese (Simplified) - 中文(简体)
Chinese (Traditional) - 中文(繁體)
Croatian - Hrvatski
Czech - Čeština
Danish - Dansk
Dutch - Nederlands
Dzongkha - རྫོང་ཁ
English - English
Esperanto - Esperanto
Estonian - Eesti
Finnish - Suomi
French - Français
Galician - Galego
Georgian - ქართული
German - Deutsch
Screenshot
Go Back
Continue

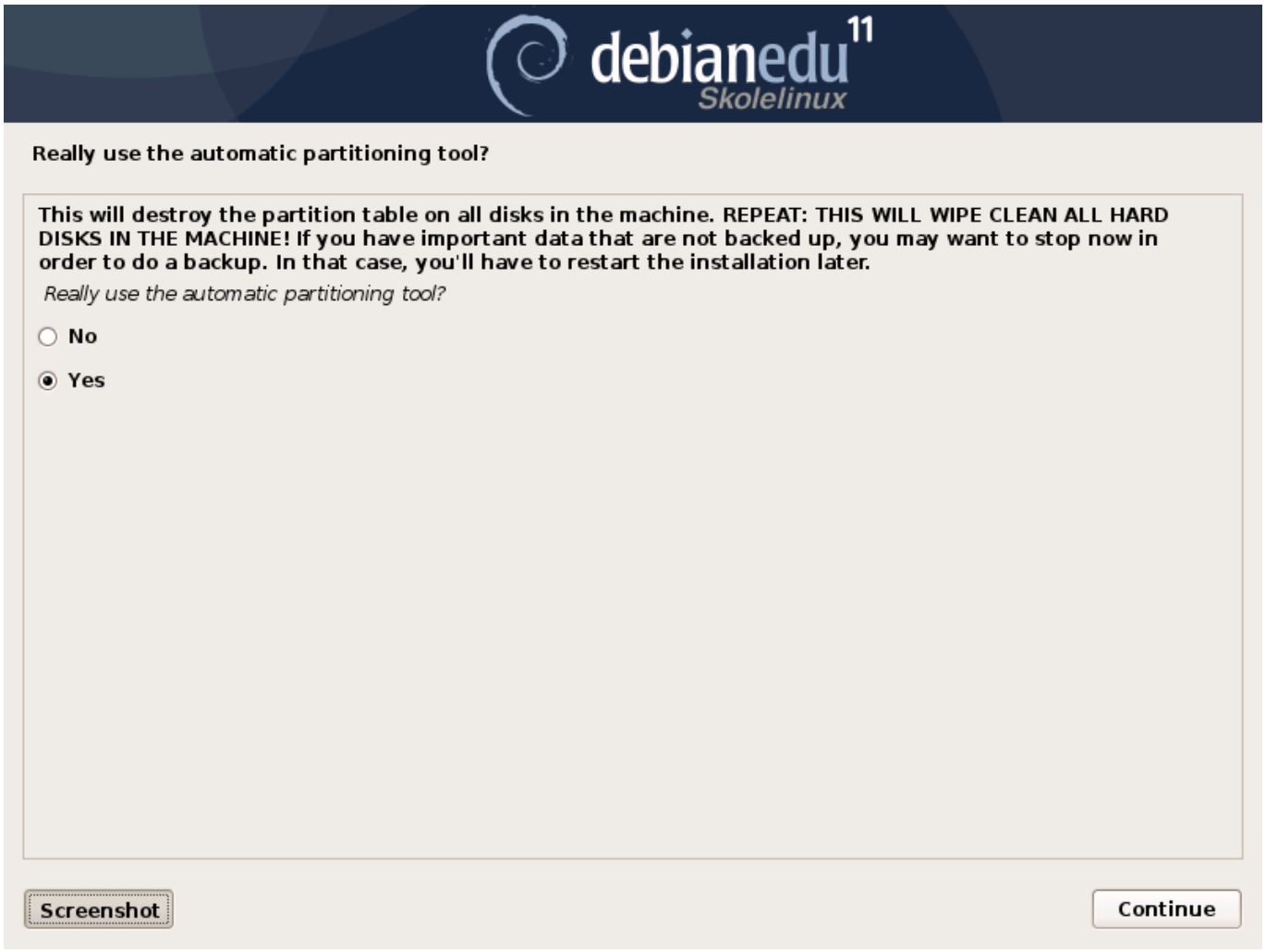

debianedu 11
Skolelinux
Select your location
The selected location will be used to set your time zone and also for example to help select the system locale. Normally this should be the country where you live.
This is a shortlist of locations based on the language you selected. Choose "other" if your location is not listed.
Country, territory or area:
India
Ireland
Israel
New Zealand
Nigeria
Philippines
Seychelles
Singapore
South Africa
United Kingdom
United States
Zambia
Zimbabwe
other
Screenshot
Go Back
Continue

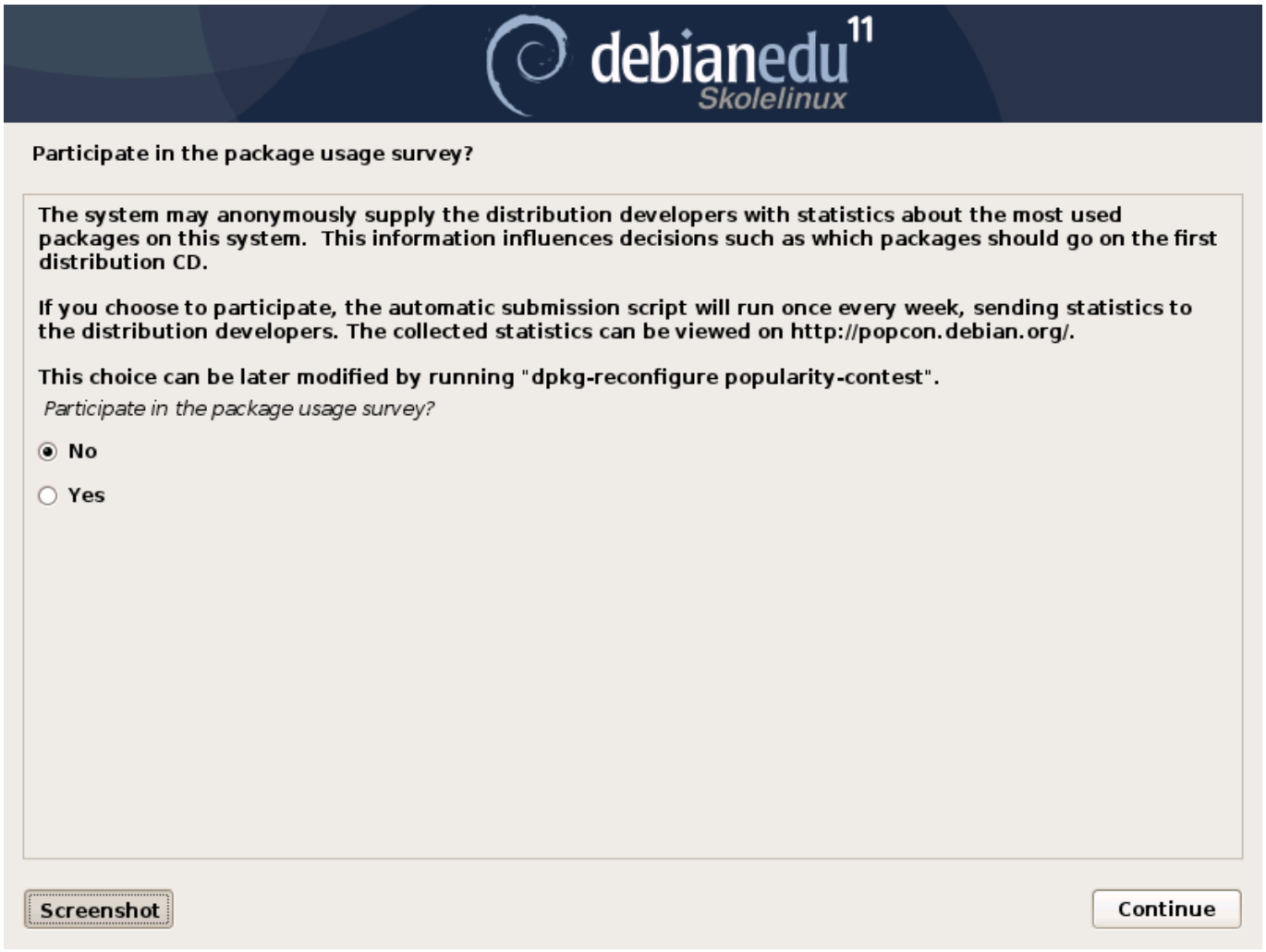

debianedu 11
Skolelinux
Configure the keyboard
Keymap to use:
American English
Albanian
Arabic
Asturian
Bangladesh
Belarusian
Bengali
Belgian
Bosnian
Brazilian
British English
Bulgarian (BDS layout)
Bulgarian (phonetic layout)
Burmese
Canadian French
Canadian Multilingual
Catalan
Screenshot
Go Back
Continue

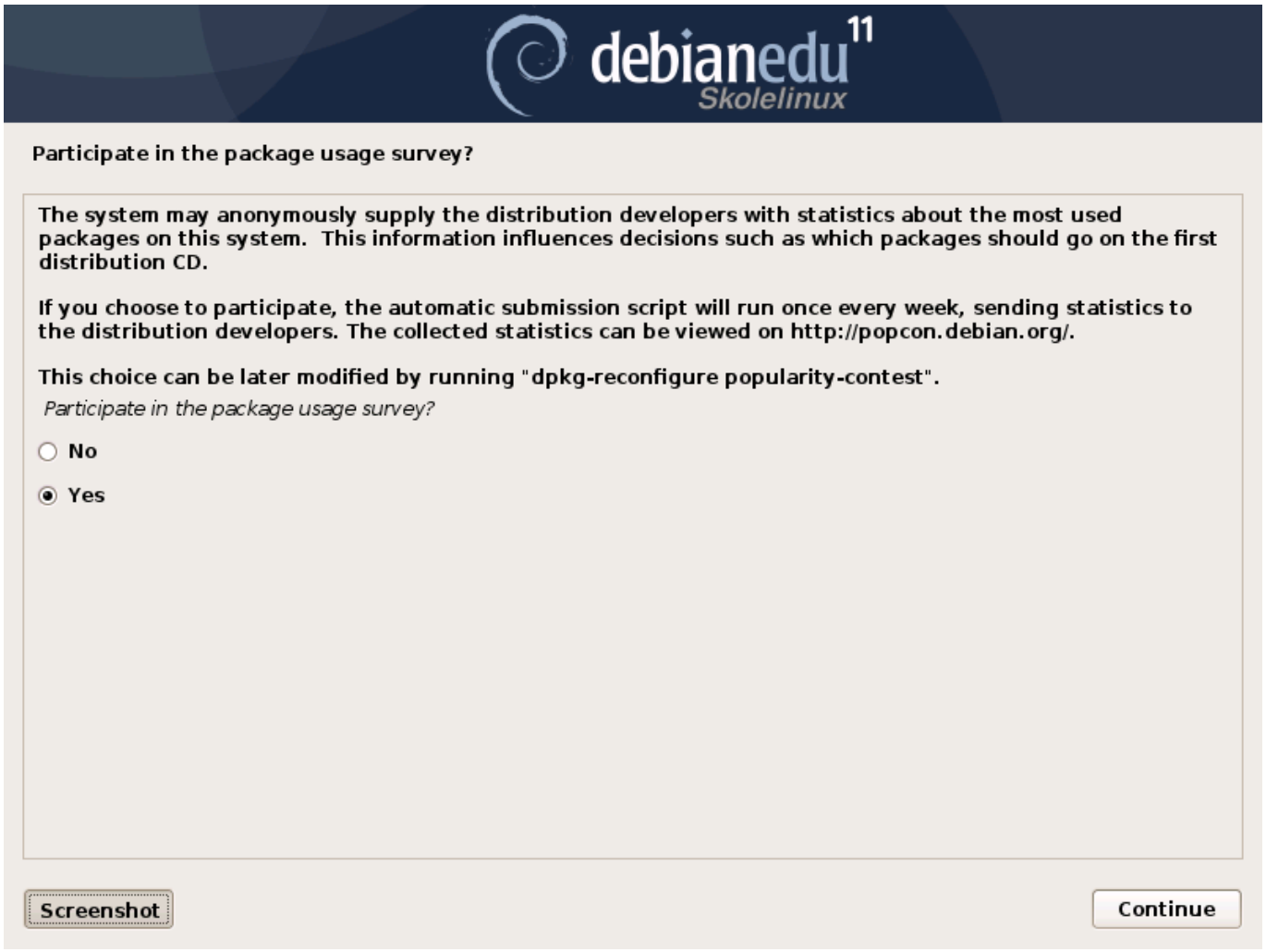
debianedu 11
Skolelinux
Configure the network
Your system has multiple network interfaces. Choose the one to use as the primary network interface during the installation. If possible, the first connected network interface found has been selected.
Primary network interface:
enp0s3: Intel Corporation 82540EM Gigabit Ethernet Controller
enp0s8: Intel Corporation 82540EM Gigabit Ethernet Controller
Screenshot
Go Back
Continue


debianedu 11
Skolelinux
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

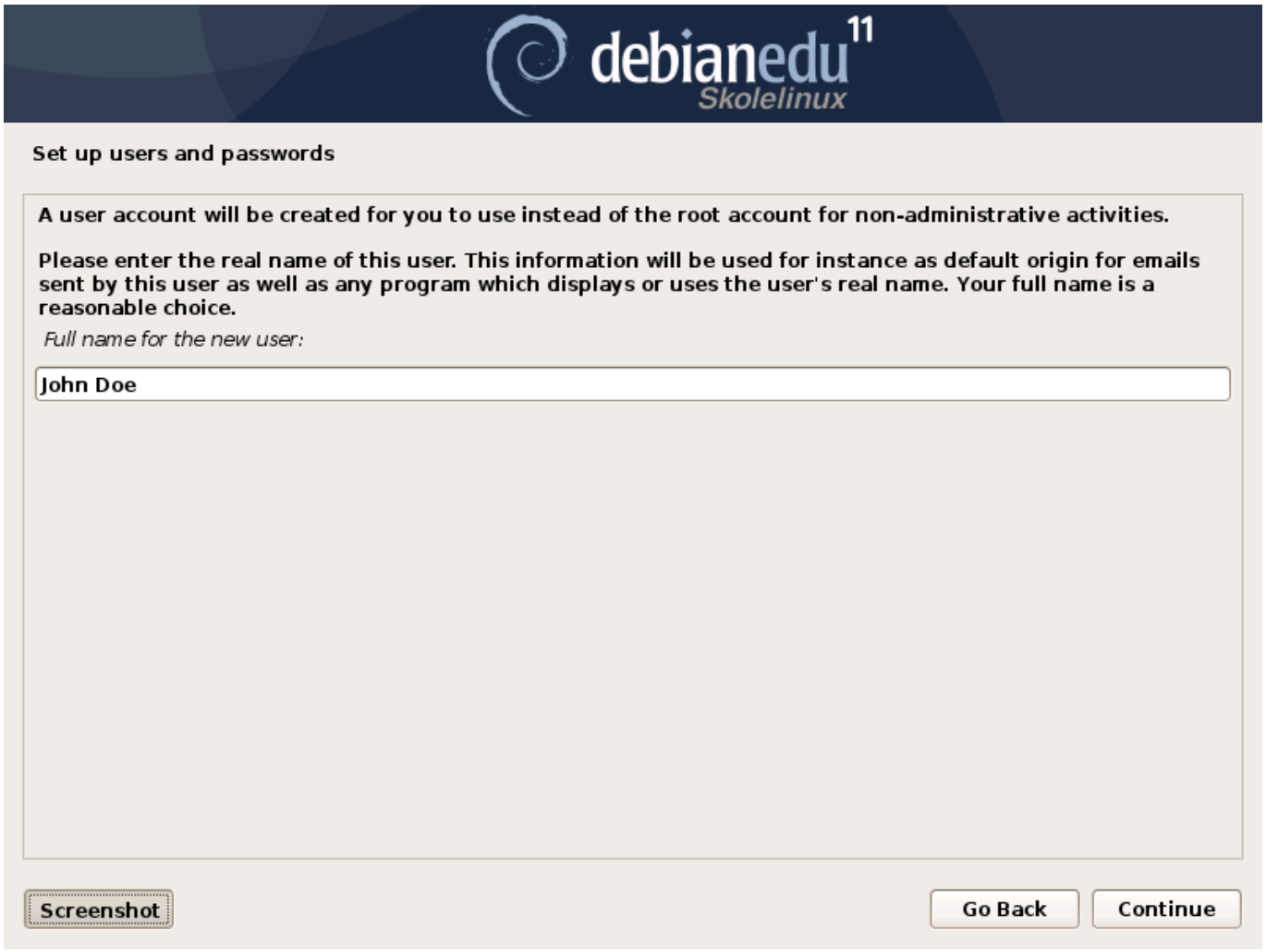

debianedu 11
Skolelinux
Really use the automatic partitioning tool?
This will destroy the partition table on all disks in the machine. REPEAT: THIS WILL WIPE CLEAN ALL HARD DISKS IN THE MACHINE! If you have important data that are not backed up, you may want to stop now in order to do a backup. In that case, you'll have to restart the installation later.
Really use the automatic partitioning tool?
No
Yes
Screenshot
Continue


debianedu 11
Skolelinux
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


debianedu 11
Skolelinux
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


debianedu 11
Skolelinux
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

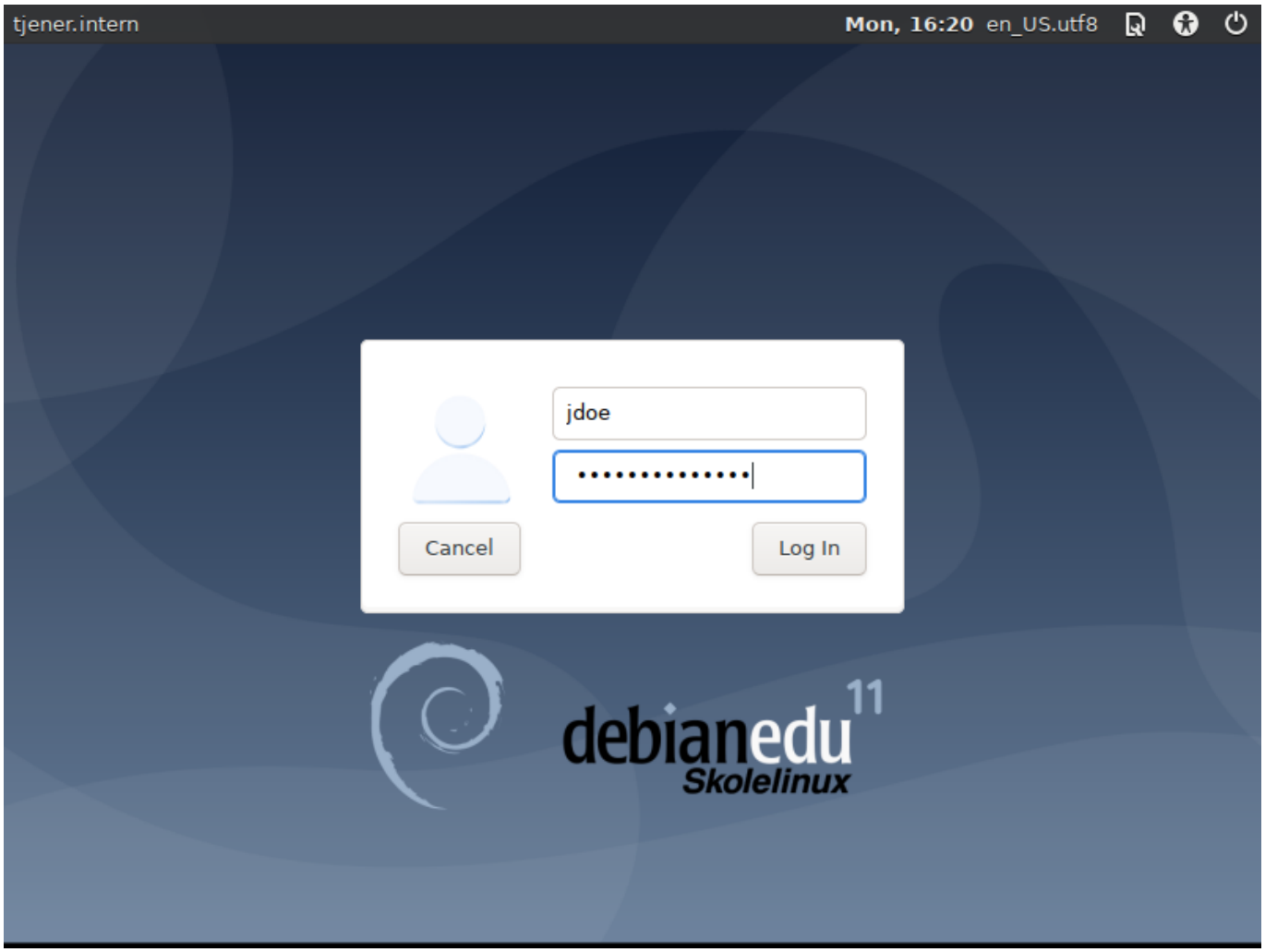
debianedu 11
Skolelinux
Set up users and passwords
You need to set a password for 'root', the system administrative account. A malicious or unqualified user with root access can have disastrous results, so you should take care to choose a root password that is not easy to guess. It should not be a word 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 Back
Continue


debianedu 11
Skolelinux
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 Back
Continue

debianedu 11
Skolelinux
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:
jdoe
Screenshot
Go Back
Continue

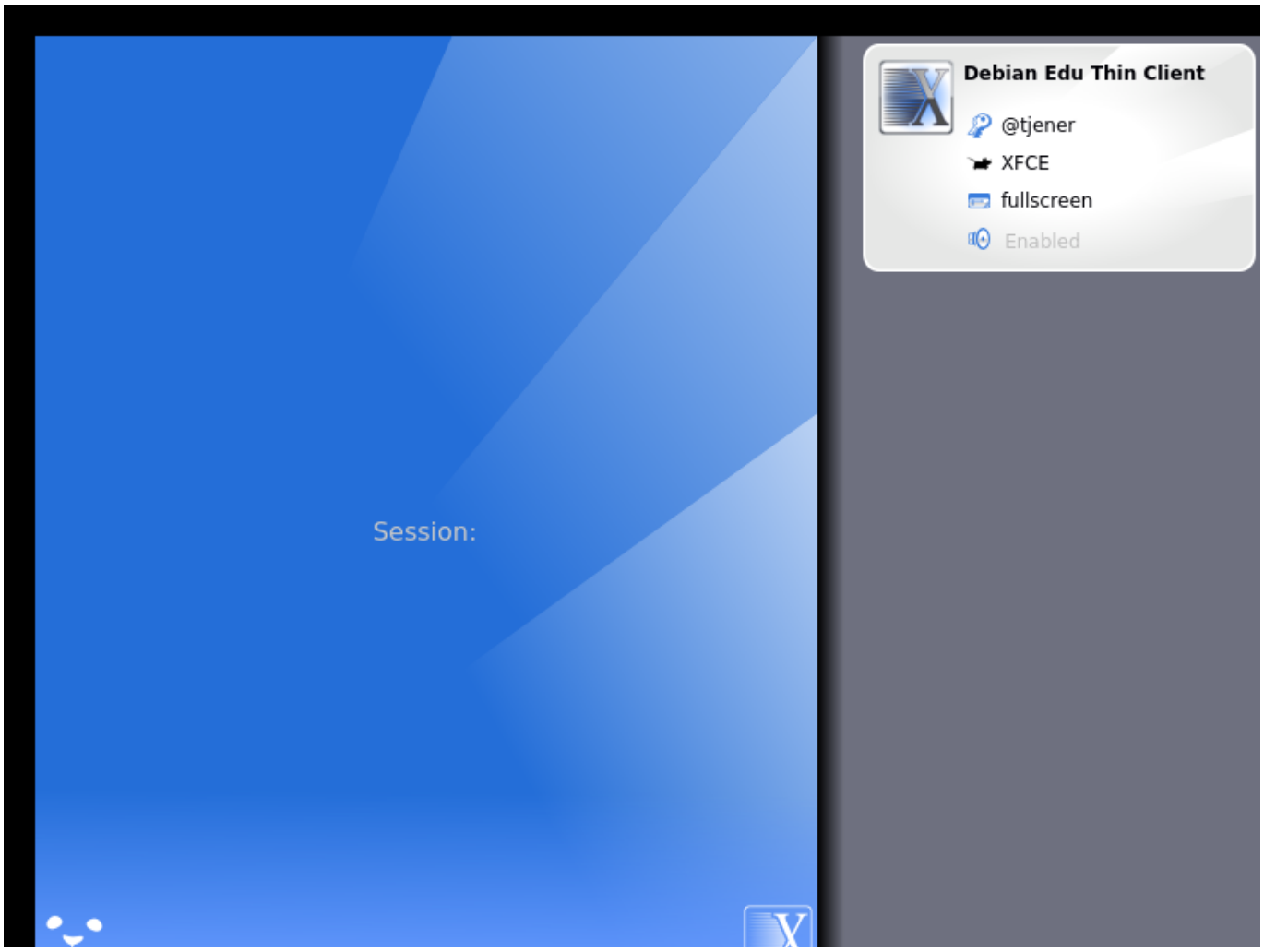
debianedu 11
Skolelinux
Set up users and passwords
A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.
Choose a password for the new user:
Show Password in Clear
Please enter the same user password again to verify you have typed it correctly.
Re-enter password to verify:
Show Password in Clear
Screenshot
Go Back
Continue

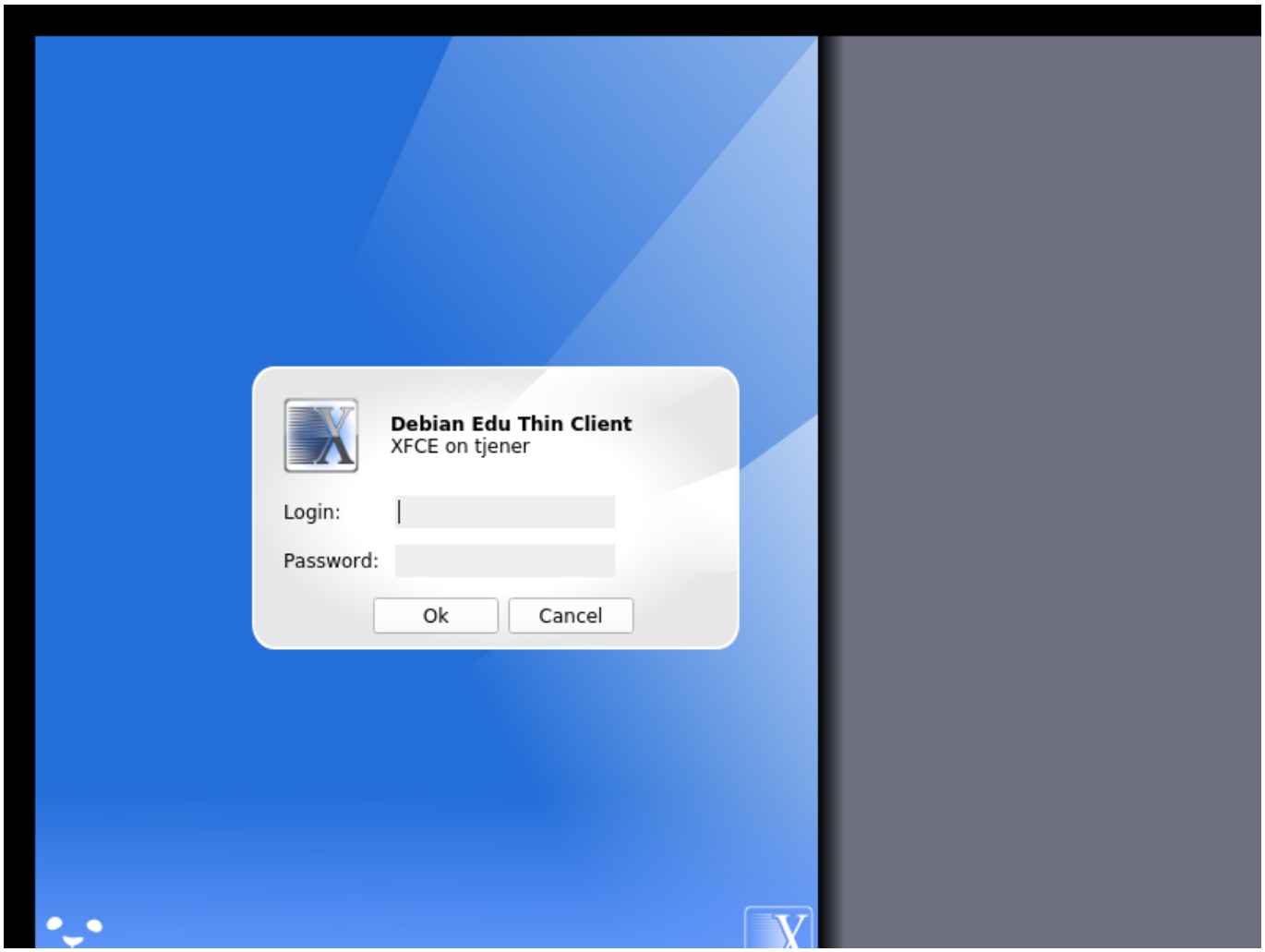
debianedu 11
Skolelinux
Finish the installation
Installation complete
Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media, so that you boot into the new system rather than restarting the installation.
Screenshot
Go Back
Continue



Xfce and Browser

Xfce Desktop


Debian Edu Thin Client
@tjener
XFCE
fullscreen
Enabled
Session:



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.

See the information about Debian Edu specific file system access configuration before adding users; adjust to your site's policy if needed.

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

1. Log into the server.
2. Add users with GOsa².
3. Agregar estaciones de trabajo con GOsa² - clientes ligeros y estaciones de trabajo sin disco pueden ser usados directamente sin ser agregados.

Adding users and workstations is described in detail below, so please read this chapter completely. It covers how to perform these minimum steps correctly as well as other stuff that everybody will probably need to do.

There is additional information available elsewhere in this manual: the New features in Bullseye 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.

{{attachment:27-Tjener-Xfce_Desktop.pdf}}

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

GOsa²es 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 profiles).

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 update
$ sudo apt install task-desktop-xfce lightdm education-menus
### after installation, run 'sudo service lightdm start'
### login as first user
```

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 Bullseye 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.

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, 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

First, click on "Users" in the left navigation menu. The right side of the screen will change to show a table with department folders for "Students" and "Teachers" and the account of the GOsa² Administrator (the first created user). Above this table you can see a field called *Base* that allows you to navigate through your tree structure (move your mouse over that area and a drop-down menu will appear) and to select a base folder for your intended operations (e.g. adding a new user).

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 guíado 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 imágen)
- 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: edit user, lock account, set password 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.

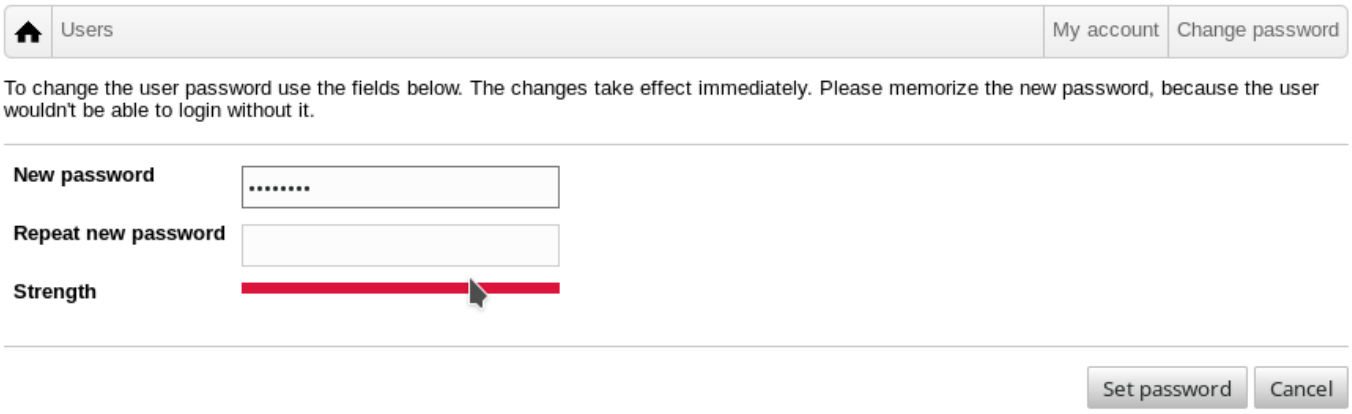
7.3.3. Establecer contraseñas

Los estudiantes pueden cambiar sus contraseñas ingresando a GOsa² son 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 practico 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



¡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 linea de comando).

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

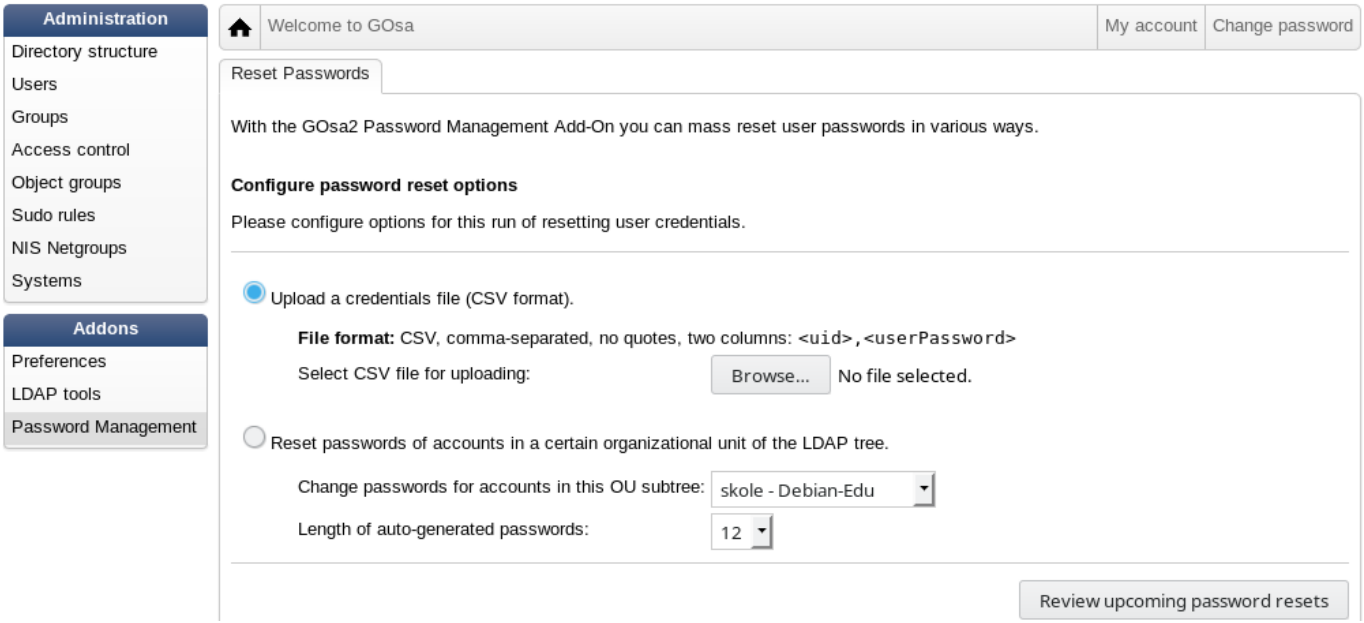
- Use "," como separador de campos
- Do not use quotes
- El archivo CSV **no debe** contener un encabezado (no debe tener el nombre de la columna)
- El orden de los campos no es relevante, y puede ser definido en GOsa² durante la importación masiva

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. Eliga 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.

Same applies to the password management module, which allows to reset a lot of passwords using a CSV file or to re-generate new passwords for users belonging to a special LDAP subtree.



7.4. Gestión de usuarios con GOsa²

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 linea de comando

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

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

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.

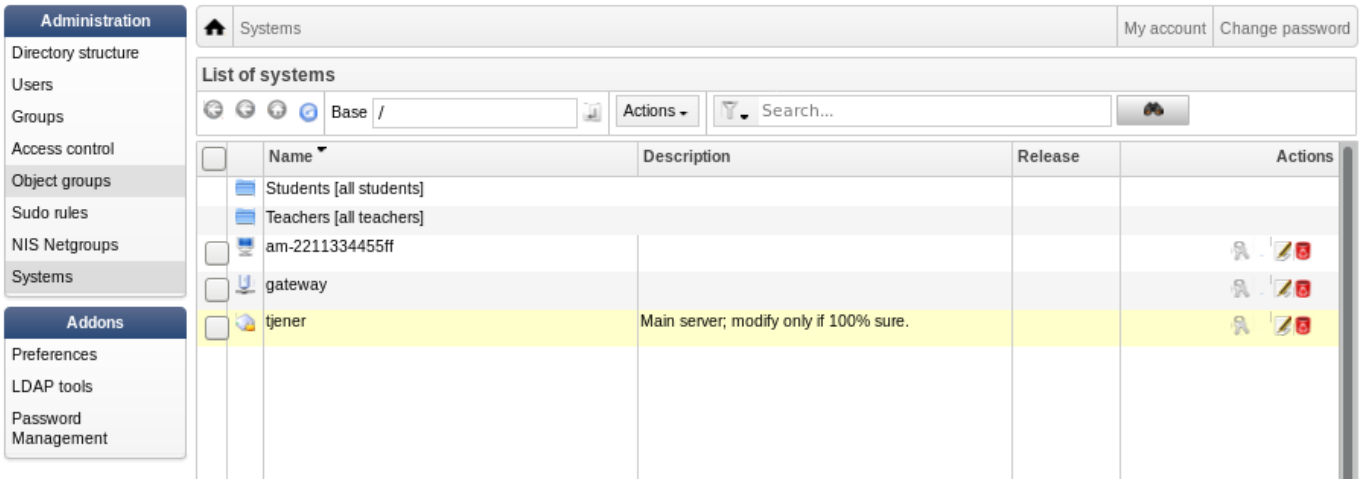
Diskless workstations and thin-clients work out-of-the-box when connected to the main network. Only workstations with disks **have to** be added with GOsa², but all **can**.

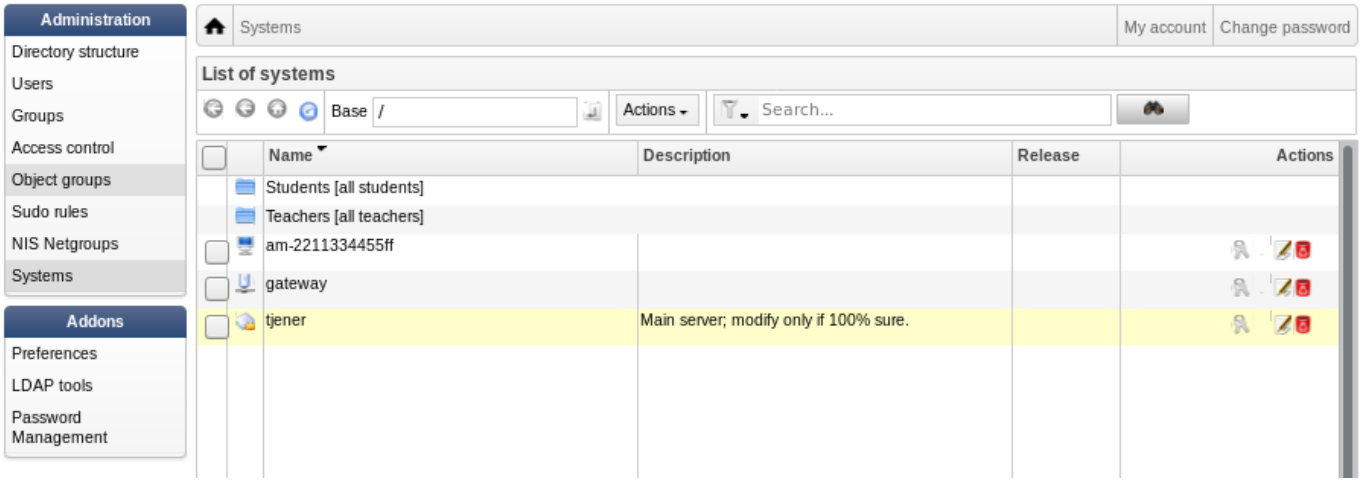
To add a machine, use the GOsa² main menu, systems, add. You can use an IP address/hostname from the preconfigured address space 10.0.0.0/8. Currently there are only two predefined fixed addresses: 10.0.2.2 (tjener) and 10.0.0.1 (gateway). The addresses from 10.0.16.20 to 10.0.31.254 (roughly 10.0.16.0/20 or 4000 hosts) are reserved for DHCP and are assigned dynamically.

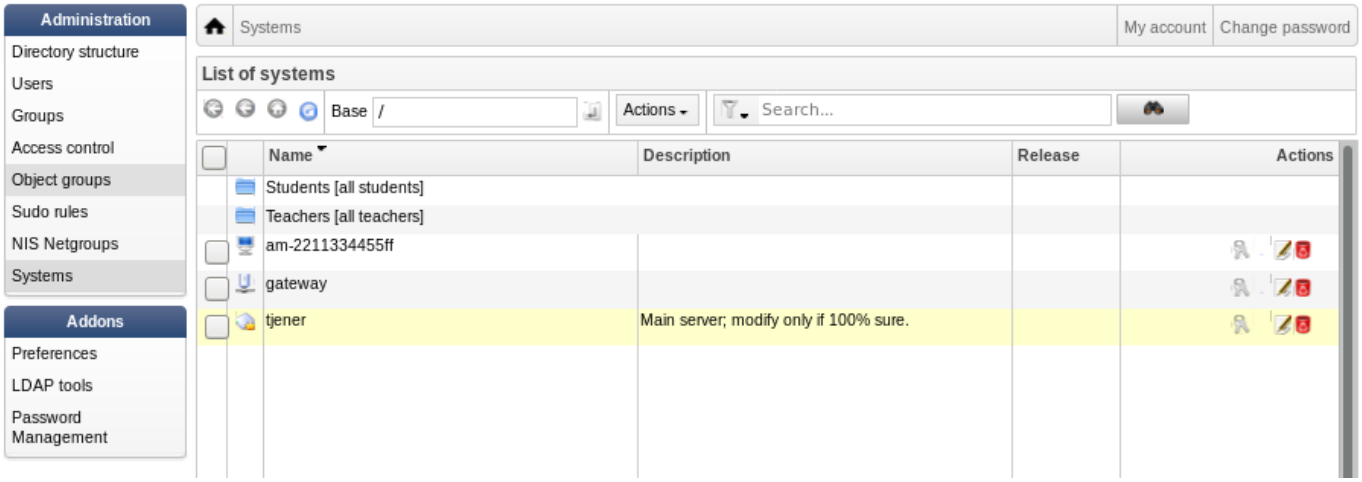
To assign a host with the MAC address 52:54:00:12:34:10 a static IP address in GOsa² you have to enter the MAC address, the hostname and the IP; alternatively you might click the `Propose ip` button which will show the first free fixed address in 10.0.0.0/8, most probably something like 10.0.0.2 if you 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.

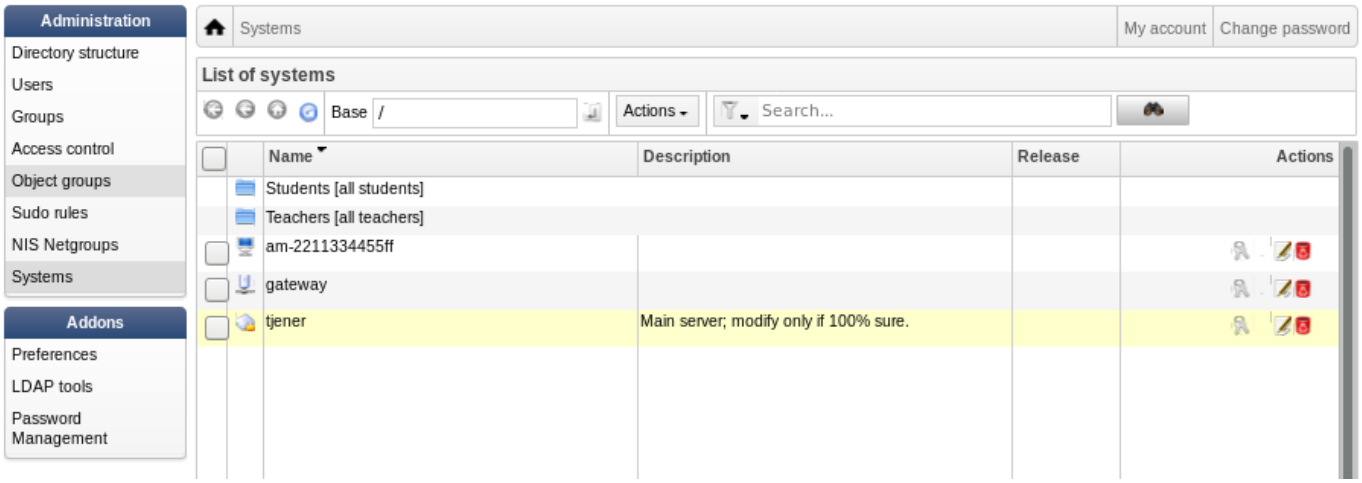
If the machines have booted as thin clients/diskless workstations or have been installed using any of the networked profiles, the `sitesummary2ldapdhcp` script can be used to automatically add machines to GOsa². For simple machines it will work out of the box, for machines with more than one mac address 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 to suit your network: rename each new system, activate DHCP and DNS, add it to netgroups (see screenshot below for recommended netgroups), reboot the system afterwards. The following screenshots show how this looks in practice:

```
root@tjener:~# sitesummary2ldapdhcp -a -i ether-22:11:33:44:55:ff
info: Create GOsa machine for am-2211334455ff.intern [10.0.16.21] id ether-22:11:33:44:55: ↩
    ff.

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: ********
root@tjener:~#
```


Administration
Directory structure
Users
Groups
Access control
Object groups
Sudo rules
NIS Netgroups
Systems
Addons
Preferences
LDAP tools
Password Management
Systems
My account
Change password
List of systems
Base /
Actions
Search...
Name
Description
Release
Actions
Students [all students]
Teachers [all teachers]
am-2211334455ff
gateway
tjener
Main server; modify only if 100% sure.


Administration
Directory structure
Users
Groups
Access control
Object groups
Sudo rules
NIS Netgroups
Systems
Addons
Preferences
LDAP tools
Password Management
Systems
My account
Change password
List of systems
Base /
Actions
Search...
Name
Description
Release
Actions
Students [all students]
Teachers [all teachers]
am-2211334455ff
gateway
tjener
Main server; modify only if 100% sure.


Administration
Directory structure
Users
Groups
Access control
Object groups
Sudo rules
NIS Netgroups
Systems
Addons
Preferences
LDAP tools
Password Management
Systems
My account
Change password
List of systems
Base /
Actions
Search...
Name
Description
Release
Actions
Students [all students]
Teachers [all teachers]
am-2211334455ff
gateway
tjener
Main server; modify only if 100% sure.



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 GOsa[2], 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
- shutdown-at-night-wakeup-hosts-blacklist
- 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.

  ⚠ Remember to configure workstations and LTSP servers properly with GOsa², or your users won't be able to access their home directories. Diskless workstations and thin clients don't use NFS, so they don't need to be configured.

- 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 apagarán 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 be allowed to connect to machines only 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` and `printer-admins` (both with the first user as member), `teachers` and `jradmins` (no members after installation).

8.1. Use printers attached to workstations

The package *p910nd* is installed by default on a system with the *Workstation* profile.

- Edit `/etc/default/p910nd` like this (USB printer):
  - P910ND_OPTS="-f /dev/usb/lp0"
  - P910ND_START=1
- Configure the printer using the web interface `https://www.intern:631`; choose network printer type `AppSocket/HP JetDirect` (for all printers regardless of brand or model) and set `socket://<workstation ip>:9100` as connection URI.

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 dialip o ISDN y paga por minuto, es posible que desee cambiar esta configuración predeterminada.

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 full-upgrade`.

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

It is also a good idea to upgrade using the C locale to get English output which in cases of problems is more likely to produce results in search engines.

```
LC_ALL=C apt full-upgrade -y
cf-agent -D installation # On upgrades of debian-edu-config
```

After upgrading the `debian-edu-config` package, changed Cfengine configuration files might be available. Run `ls -ltr /etc/cfengine3/debian-edu/` to check if this is the case. To apply the changes, run `cf-agent -D installation`.

It is important to run `ltsp image /` after LTSP server upgrades to keep the SquashFS image for diskless clients in sync.

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

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 (main 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 diaría, 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.

The list of machines being monitored using Munin is generated automatically, based on the list of hosts reporting to sitesummary. All hosts with the package munin-node installed are registered for Munin monitoring. It will normally take one day from a machine being installed until Munin monitoring starts, because of the order the cron jobs are executed. To speed up the process, run sitesummary-update-munin as root on the sitesummary server (normally the main server). This will update the /etc/munin/munin.conf file.

The set of measurements being collected is automatically generated on each machine using the munin-node-configure program which probes the plugins available from /usr/share/munin/plugins/ and symlinks the relevant ones to /etc/munin/plugi

Information about Munin is available from http://munin-monitoring.org/.

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/sitesummar 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 %):

The partition (/usr/ in the example) is too full. There are in general two ways to handle this: (1) remove some files or (2) increase the size of the partition. If the partition is /var/, purging the APT cache by calling apt clean might remove some files. If there is more room available in the LVM volume group, running the program debian-edu-fsautoresize to extend the partitions might help. To run this program automatically every hour, the host in question can be added to the fsautoresize-hosts netgroup.

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 upgrade && apt full-upgrade' as root in a terminal or log in via ssh to do the same.

If you do not want to manually upgrade packages and trust Debian to do a good job with new versions, you can configure unattended-upgrades to automatically upgrade all new packages every night. This will not upgrade the LTSP chroots.

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 `https:/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 está guía de actualización, tenga en cuenta que las actualizaciones en su servidor en producción la hace bajo su propio riesgo.**Debian Edu/Skolelinux no tiene ABSOLUTAMENTE NINGUNA GARANTÍA más allá de las que indique la ley aplicable.**

Please read this chapter and the New features in Bullseye 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.

In general, upgrading the servers is more difficult than the workstations and the main-server is the most difficult to upgrade.

Si quiere asegurase 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.

Make sure to also read the information about the current Debian Stable release in its installation manual.

It may also be wise to wait a bit and keep running Oldstable for a few weeks longer, so that others can test the upgrade and document any problems they experience. The Oldstable release of Debian Edu will receive continued support for some time after the next Stable release, but when Debian ceases support for Oldstable, Debian Edu will necessarily do the same.

12.2. Upgrades from Debian Edu Buster

Be prepared: make sure you have tested the upgrade from Buster 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=xfce, profiles Main Server, Workstation, LTSP Server). (For a general overview concerning Buster to Bullseye upgrade, see: `https://www.debian.org/releases/bullseye/releasenotes`)

Don't use X, use a virtual console, log in as root.

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

12.2.1. Upgrading the main server

- Start by making sure the current system is up-to-date:

```
apt update
apt full-upgrade
```

- Cleanup the package cache:

```
apt clean
```

- Make sure you have enough disk space. On both */usr* and */var* about 5 GiB free space will be needed temporarily. See the related manual chapter for more information.
- Prepare and start the upgrade to Bullseye:

```
sed -i 's/buster/bullseye/g' /etc/apt/sources.list
export LC_ALL=C        # optional (to get English output)
apt update
apt full-upgrade
```

- apt-list-changes: be prepared for a lot of NEWS to read; press <return> to scroll down, <q> to leave the pager. All information will be mailed to root so that you can read it again (using *mailx* or *mutt*).
- Read all debconf information carefully, choose 'keep your currently-installed version' unless stated differently below; in most cases hitting return will be fine.
  - restart services: Choose yes.
- Apply and adjust configuration:

```
cf-agent -I -D installation
```

- Get the new Debian Edu Bullseye artwork:

```
apt install debian-edu-artwork-bullseye
```

- After reboot, do some more cleanup:

```
apt purge linux-image-4.19.0-*
apt purge linux-headers-4.19.0-*
apt --purge autoremove
```

- Check if the upgraded system works:

Reboot; log in as first user and test

- if the GOsa^2 gui is working,
- if one is able to connect LTSP clients and workstations,
- if one can add/remove a netgroup membership of a system,
- if one can send and receive internal email,
- if one can manage printers,
- and if other site specific things are working.

12.2.2. Upgrading a workstation

Do all the basic things like on the main-server and without doing the things not needed.

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

To upgrade from any older release, you will need to upgrade to the Buster based Debian Edu release first, before you can follow the instructions provided above. Instructions are given in the Manual for Debian Edu Buster about how to upgrade to Buster from the previous release, Stretch. Likewise the Stretch manual describes how to upgrade from Jessie.

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

Using `etckeeper`, all files in `/etc/` are tracked using Git as a version control system.

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. Usar ldapvi

ldapvi es una herramienta para editar la base de datos LDAP con un editor de texto en la linea 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.

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

14.4. Kerberized NFS

Using Kerberos for NFS to mount home directories is a security feature. As of Bullseye, LTSP clients won't work without Kerberos. The levels *krb5*, *krb5i* and *krb5p* are supported (*krb5* means Kerberos authentication, *i* stands for integrity check and *p* for privacy, i.e. encryption); the load on both server and workstation increases with the security level, *krb5i* is a good choice and has been chosen as default.

For new systems added with GOsa², Kerberos host keytab files are generated automatically.

To create one for a system already configured with GOsa², log in on the main server as root and run

```
/usr/share/debian-edu-config/tools/gosa-modify-host <hostname> <IP>
```

Please note: host keytab creation is possible for systems of type *workstations*, *servers* and *terminals* but not for those of type *netdevices*.

14.4.1. How to change the default

Main server

- login as root
- run `ldapvi -ZD '(cn=admin)'`, search for *sec=krb5i* and replace it with *sec=krb5* or *sec=krb5p*.
- edit `/etc/exports`: adjust these existing entries for /srv/* accordingly:

```
/srv/nfs4         gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
/srv/nfs4/home0   gss/krb5i(rw,sync,no_subtree_check)
```

- run `exportfs -r`

Workstation, esp. any separate or additional **LTSP server**

- login as root.
- run `/usr/share/debian-edu-config/tools/copy-host-keytab`

14.5. Standardskriver

This tool allows to set the default printer depending on location, machine, or group membership. For more information, see `/usr/share/doc/standardskriver/README.md`.

The configuration file `/etc/standardskriver.cfg` has to be provided by the admin, see `/usr/share/doc/standardskriver/ex` as an example.

14.6. 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
Security level: ssl + user + password
User dn: cn=admin,ou=ldap-access,dc=skole,dc=skolelinux,dc=no
```

14.7. 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.

14.8. 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.

14.9. Using backports 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://deb.debian.org/debian/ buster-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 install -t buster-backports tuxtype
```

Backports are automatically updated (if available) just like other packages. Like the normal archive, backports has three sections: main, contrib and non-free.

14.10. Actualizar con un CD o similar

If you want to upgrade from one version to another (for example from Bullseye 11.1 to 11.2) but you do not have Internet connectivity, only physical media, follow these steps:

Insert the CD / DVD / Blu-ray disc / USB flash drive and use the apt-cdrom command:

```
apt-cdrom add
```

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

- apt-cdrom is used to add a new CD-ROM to APTs list of available sources. apt-cdrom takes care of determining the structure of the disc as well as correcting for several possible mis-burns and verifying the index files.
- It is necessary to use apt-cdrom to add CDs to the APT system, it cannot be done by hand. Furthermore each disk in a multi-CD set must be inserted and scanned separately to account for possible mis-burns.

Luego ejecute estos dos comandos para actualizar el sistema:

```
apt update
apt full-upgrade
```

14.11. Automatic cleanup of leftover processes

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

14.12. Instalación automática de actualizaciones de seguridad

`unattended-upgrades` is a Debian package which will install security (and other) upgrades automatically. If installed, the package is preconfigured to install security upgrades. The logs are available in `/var/log/unattended-upgrades/`; also, there are always `/var/log/dpkg.log` and `/var/log/apt/`.

14.13. 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 `nvram-wakeup`; 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.

14.13.1. 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 `GOsa²` 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` 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
```

14.14. 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.

14.15. 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.

14.16. HowTos de wiki.debian.org

FIXME: The HowTos from https://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.)

- https://wiki.debian.org/DebianEdu/HowTo/AutoNetRespawn
- https://wiki.debian.org/DebianEdu/HowTo/BackupPC
- https://wiki.debian.org/DebianEdu/HowTo/ChangeIpSubnet
- https://wiki.debian.org/DebianEdu/HowTo/SiteSummary
- https://wiki.debian.org/DebianEdu/HowTo/Squid_LDAP_Authentication

15. Advanced administration howto

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.

(as root on the main server)

- Make the necessary year group directories

mkdir /skole/tjener/home0/2014

(as first user in 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 to have information ready for the new template.

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

Choose your new template when doing csv import; testing it with a few users is recommended.

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. Easy access to USB drives and CD-ROMs/DVDs

When users insert a USB drive or a DVD / CD-ROM 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 / CD-ROM into an X2Go thin client, the media is automatically mounted and it is possible to access it browsing the related folder on the Xfce desktop.

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.

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 GOsa[2], 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,wsize=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 point 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 thin 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 base 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 connecting his box to 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. Set up a multi-language desktop environment

To support multiple languages these commands need to be run:

- Run `dpkg-reconfigure locales` (as root) and choose the languages (UTF-8 variants).
- Run these commands as root to install the related packages:

```
apt update
/usr/share/debian-edu-config/tools/install-task-pkgs
/usr/share/debian-edu-config/tools/improve-desktop-l10n
```

Users will then be able to choose the language via the LightDM display manager before logging in; this applies to Xfce, LXDE and LXQt. GNOME and KDE both come with their own internal region and language configuration tools, use these. MATE uses the Arctica greeter on top of Lightdm whithout a language chooser. Run `apt purge arctica-greeter` to get the stock Lightdm greeter.

If LTSP diskless clients are used the above steps need to be done inside the LTSP chroot as well. LDM supports all desktop environments. First use *Preferences* to choose the language, then login.

16.2. Reproducir DVDs

libdvdcss is needed for playing most commercial DVDs. For legal reasons it's not included in Debian (Edu). If you are legally allowed to use it, you can build your own local packages using the `libdvd-pkg` Debian package; make sure `contrib` is enabled in `/etc/apt/sources.list`.

```
apt update
apt install libdvd-pkg
```

Answer the debconf questions, then run `dpkg-reconfigure libdvd-pkg`.

16.3. Handwriting fonts

The package `fonts-linex` (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

One generic term for both thin clients and diskless workstations is *LTSP client*.

Starting with Bullseye, LTSP is quite different from the previous versions. This concerns both setup amd maintenance. As a main difference, the SquashFS image for diskless workstations is now generated from the LTSP server filesystem. Also, thin clients are no longer supported by default.

See the LTSP homepage for details.

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 via 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, 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.

Unlike workstations diskless workstations run without any need to add them with GOsa[2].

LTSP client firmware

LTSP client boot will fail if the client's network interface 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 LTSP server's initrd.

In this case execute the following commands on the LTSP server.

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

# Decide which package has to be installed for the network interface(s).
# Most probably this will be firmware-linux-nonfree.
apt -y -q install <package name>

# copy the new initrd to the server's tftpboot directory and update the SqushFS image.
ltsp image /
```

17.1.1. LTSP client type selection

Each LTSP server has two ethernet interfaces: one configured in the main 10.0.0.0/8 subnet (which is shared with the main server), and another forming a local subnet (a separate subnet for each LTSP server).

En la subred principal tendrá el menú PXE completo; la sured 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.

17.1.2. Configurar el menú PXE

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

17.1.3. 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/tftpboot/menupassword.cfg` can be created with content similar to this:

```
MENU PASSWD $4$NDk0OTUzNTQ1NTQ5$7d6KvAlVCJKRKcijtVSPfveuWPM$
```

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.

17.1.4. 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`

17.1.5. 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.

17.1.6. Add LTSP chroot to support 32-bit-PC clients

FIXME add information for thin client chroot

17.2. 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.

17.3. LTSP en detalle

17.3.1. LTSP client configuration

Run `man ltsp.conf` to have a look at available configuration options. Or read it online: https://ltsp.org/man/ltsp.conf/

17.3.2. Desktop autoloader

This tool preloads the default Desktop environment (and programs of your choice). It is only useful for diskless clients. The setup is site specific, also some technical skills are required.

- Read about it: run `ltsp-chroot cat /usr/share/doc/desktop-autoloader/README.Debian`

At least two files need to be edited. Available <editor> choices are: vi, nano, mcedit.

- run `ltsp-chroot <editor> /etc/cron.d/desktop-autoloader`
- run `ltsp-chroot <editor> /etc/default/desktop-autoloader`

If the setup is complete, update the NBD image running `ltsp-update-image` and test it.

17.3.3. Sonido con clientes LTSP

LTSP thin clients use networked audio to pass audio from the server to the clients.

LTSP diskless workstations handle audio locally.

17.3.4. Use printers attached to LTSP clients

- Attach the printer to the LTSP client machine (both USB and parallel port are supported).
- Configure the LTSP client to use a fixed IP, see `man ltsp.conf`.
- Configure the printer using the web interface `https://www:631` on the main server; 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.

17.3.5. Connecting Windows machines to the network

For Windows clients the Windows domain "SKOLELINUX" is available to be joined. A special service called Samba, installed on the main server, 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 Bullseye 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 the main server instead) and save files into the H: volume rather than under "My Documents".

17.4. Remote Desktop

Choosing the LTSP server profile or the combined server profile also installs the *xrdp* and *x2goserver* packages.

17.4.1. Xrdp

Xrdp 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.

Xrdp comes without sound support; to compile the required modules this script could be used.

```
#!/bin/bash
# Script to compile / recompile xrdp PulseAudio modules.
# The caller needs to be root or a member of the sudo group.
# Also, /etc/apt/sources.list must contain a valid deb-src line.
set -e
 if [[ $UID -ne 0 ]] ; then
    if ! groups | egrep -q sudo ; then
        echo "ERROR: You need to be root or a sudo group member."
        exit 1
    fi
fi
if ! egrep -q  ^deb-src /etc/apt/sources.list ; then
    echo "ERROR: Make sure /etc/apt/sources.list contains a deb-src line."
    exit 1
fi
TMP=$(mktemp -d)
PULSE_UPSTREAM_VERSION="$(dpkg-query -W -f='${source:Upstream-Version}' pulseaudio)"
XRDP_UPSTREAM_VERSION="$(dpkg-query -W -f='${source:Upstream-Version}' xrdp)"
sudo apt -q update
# Get sources and build dependencies:
sudo apt -q install dpkg-dev
cd $TMP
apt -q source pulseaudio xrdp
sudo apt -q build-dep pulseaudio xrdp
# For pulseaudio 'configure' is all what is needed:
cd pulseaudio-$PULSE_UPSTREAM_VERSION/
./configure
# Adjust pulseaudio modules Makefile (needs absolute path)
# and build the pulseaudio modules.
cd $TMP/xrdp-$XRDP_UPSTREAM_VERSION/sesman/chansrv/pulse/
sed -i 's/^PULSE/#PULSE/' Makefile
sed -i "/#PULSE_DIR/a \
PULSE_DIR = $TMP/pulseaudio-$PULSE_UPSTREAM_VERSION" Makefile
make
# Copy modules to Pulseaudio modules directory, adjust rights.
sudo cp *.so /usr/lib/pulse-$PULSE_UPSTREAM_VERSION/modules/
sudo chmod 644 /usr/lib/pulse-$PULSE_UPSTREAM_VERSION/modules/module-xrdp*
# Restart xrdp, now with sound enabled.
sudo service xrdp restart
```

17.4.2. X2Go

X2Go enables you to access a graphical desktop on the LTSP server over both low bandwidth and high bandwidth connections from a PC running Linux, Windows or macOS. Additional software is needed on the client side, see the X2Go wiki for more information.

Please note that the `killer` package should best be removed on the LTSP server if X2Go is used, see 890517.

17.4.3. 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`.
- `x2goclient` is a graphical client for the X2Go system (not installed by default). You can use it to connect to running sessions and start new ones.
- Citrix ICA client HowTo to access Windows terminal server from Skolelinux.

18. Samba en Debian Edu

⚠ Please read the information provided on the Samba wiki about supported Windows versions, needed registry patches and other procedures before proceeding.

https://wiki.samba.org/index.php/Joining_a_Windows_Client_or_Server_to_a_Domain

https://wiki.samba.org/index.php/Required_Settings_for_Samba_NT4_Domains

Samba has been fully prepared for use as an NT4-style domain controller. 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 also a Debian Edu workstation. We presume that you have already created some users that can login and use the Debian Edu workstation. We also presume that you have a Windows 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. Esriba \\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

Student and teacher user accounts that have been configured via GOsa² should be able to authenticate against \\TJENER\HOMES or \\TJENER\<username> and access their home directories even with Windows machines **not** joined to the Windows SKOLELINUX domain.

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 GOsa[2] and cannot be changed there (without breaking the domain membership for this machine).

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 Debian packages mentioned in this section can be installed by running `apt install <package>` (as root).

19.1. Teaching Programming

stable/education-development is a meta package depending on a lot of programming tools. Please note that almost 2 GiB of disk space is needed if this package is installed. For more details (maybe to install only a few packages), see the Debian Edu Development packages page.

19.2. Monitoring pupils

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

Some schools use control tools like Epoptes or Veyon to supervise their students. See also: Epoptes Homepage and Veyon Homepage.

To get full Epoptes support, these steps are required.

```
# Run on a combi server (and on each additional LTSP server):
apt update
apt install epoptes
ltsp image /
```

19.3. Restricting pupils' network access

Some schools use Squidguard or Dansguardian to restrict Internet access.

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 passwords for Kerberos (krbPrincipalKey), LDAP (userPassword) and Samba (sambaNTPassword and sambaLMPassword) 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. Running standalone Java applications

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

20.3. Using email

All users can send and receive mails within the internal network; certificates are provided to allow TLS secured connections. To allow mail outside the internal network, the administrator needs to configure the mailserver `exim4` to suit the local situation, starting with `dpkg-reconfigure exim4-config`.

Every user who wants to use Thunderbird needs to configure it as follows. For a user with username jdoe the internal email address is jdoe@postoffice.intern.

20.4. Thunderbird

- Start Thunderbird
- Click 'Skip this and use my existing email'
- Enter your email address
- Don't enter your password as Kerberos single sign on will be used

- Click 'Continue'
- For both IMAP and SMTP the settings should be 'STARTTLS' and 'Kerberos/GSSAPI'; adjust if not detected automatically
- Click 'Done'

20.5. 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.

21. Contribuir

21.1. Contribute locally

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

El capítulo de soporte contiene explicaciones y enlaces a recursos localizados, ya que *contruibuir* y *apoyar* son dos lados de la misma moneda.

21.2. Contribuye a nivel global

Internationally we are organised into various teams working on different subjects.

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 https://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.

21.3. Documentación para editores y traductores

¡Este documento necesita de su ayuda! No está finalizado todavía: si lo lee, notará varias lineas que dicen POR CORREGIR. Si usted saber 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 https://wiki.debian.org/DebianEdu/Documentation/Bullseye/ 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

- https://wiki.debian.org/DebianEdu
- https://lists.skolelinux.org/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://lists.skolelinux.org/listinfo/bruker - support mailing list
- https://lists.skolelinux.org/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

- https://lists.debian.org/debian-edu-german - support mailing list
- https://www.skolelinux.de - official German representation
- #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

22.2. Soporte profesional

Lists of companies providing professional support are available from https://wiki.debian.org/DebianEdu/Help/Professional

23. New features in Debian Edu Bullseye

23.1. New features for Debian Edu 11 Codename Bullseye

23.1.1. Installation changes

- New version of debian-installer from Debian Bullseye, see its installation manual for more details.

FIXME artwork theme * New artwork based on the futurePrototype theme, the default artwork for Debian 11 Bullseye.

- The debian-installer doesn't support LTSP chroot setup anymore.

23.1.2. Actualizaciones de software

FIXME check/update version numbers for next entries

- Everything which is new in Debian 11 Bullseye, eg:
  - Linux kernel 5.4
  - Desktop environments KDE Plasma Workspace 5.17, GNOME 3.30, Xfce 4.14, LXDE 0.99.2, MATE 1.22
  - Firefox-ESR 68 and Chromium 79
  - LibreOffice 6.4
  - Educational toolbox GCompris 0.97
  - Music creator Rosegarden 19.12
  - GOsa 2.74
  - LTSP 21
  - Debian Bullseye includes more than 57000 packages available for installation.
  - More information about Debian 11 Bullseye is provided in the release notes and the installation manual.

23.1.3. Actualizaciones en documentación y traducciones

- The profile choice page is available in 29 languages, of which 19 are fully translated.
- The Debian Edu Bullseye Manual is fully translated to French, German, Italian, Danish, Dutch, Norwegian Bokmål and Japanese.
  - Partly translated versions exist for Polish, Spanish, Simplified Chinese and Traditional Chinese.

23.1.4. Other changes compared to the previous release

- Improved TLS/SSL support on the internal network. On clients, the root certificate for the Debian Edu-CA is located inside the certificate bundle for the whole system.
- New LTSP, re-written from scratch, dropping thin client support. Thin clients are now supported using X2Go.

23.1.5. Known issues

- see the Debian Edu Bullseye status page.

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26. Traducciones de este documento

Versions of this document translated into German, Italian, French, Danish, Dutch, Norwegian Bokmål and Japanese are available. Incomplete translations exist for Spanish, Polish and Simplified Chinese. There is an online overview of shipped translations.

26.1. HowTo translate this document

26.1.1. Translate using PO files

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-buster-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 Salsa project `debian-edu`.

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

If you only want to translate, you need to check out only a few files from Git (which can be done anonymously). Please file a bug against the debian-edu-doc package and attach the PO file to the bugreport. See instructions on how to submit bugs for more information.

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 https://salsa.debian.org/debian-edu/debian-edu-doc.git`

Then edit the file `documentation/debian-edu-buster/debian-edu-buster-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-buster-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 Salsa (the host where our Git repository is located) and Git is available at https://wiki.debian.org/Salsa.

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.

26.1.2. Translate online using a web browser

Some language teams have decided to translate via Weblate. See https://hosted.weblate.org/projects/debian-edu-docume debian-edu-buster/ for more information.

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 11 Codename Bullseye

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END OF TERMS AND CONDITIONS

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

Debian Edu Live CD/DVDs for Bullseye are not available at the moment.

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)

A complete list of locale codes is available in /usr/share/i18n/SUPPORTED, but only the UTF-8 locales are supported by the live images. Not all locales have translations installed, though. The keyboard layout names can be found in /usr/share/keymaps/amd64/.

28.4. Cosas para saber

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

28.5. Problemas conocidos con la imágen

- There are no images yet

29. Apéndice C - Características de publicaciones anteriores

29.1. New features for Debian Edu 10+edu0 Codename Buster released 2019-07-06

29.1.1. Installation changes

- This is the first time Debian Edu installation images are available at https://cdimage.debian.org, thus these are official Debian images.
- New version of debian-installer from Debian Buster, see its installation manual for more details.
- New artwork based on the futurePrototype theme, the default artwork for Debian 10 Buster.
- New default desktop environment Xfce (replacing KDE).
- New CFEngine configuration management (replacing unmaintained package cfengine2 with cfengine3); this is a major change, for details see the official CFEngine documentation.
- The architecture of the LTSP chroot now defaults to the server one.

29.1.2. Actualizaciones de software

- Everything which is new in Debian 10 Buster, eg:
  - Linux kernel 4.19
  - Desktop environments KDE Plasma Workspace 5.14, GNOME 3.30, Xfce 4.12, LXDE 0.99.2, MATE 1.20
  - Firefox 60.7 ESR and Chromium 73.0
  - LibreOffice 6.1
  - Educational toolbox GCompris 0.95
  - Music creator Rosegarden 18.12
  - GOsa 2.74
  - LTSP 5.18
  - Debian Buster includes more than 57000 packages available for installation.
  - More information about Debian 10 Buster 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 76 languages, of which 31 are fully translated. The profile choice page is available in 29 languages, of which 19 are fully translated.
- The Debian Edu Buster Manual is fully translated to French, German, Italian, Danish, Dutch, Norwegian Bokmål and Japanese.
  - Partly translated versions exist for Polish, Spanish, Simplified Chinese and Traditional Chinese.

29.1.4. Other changes compared to the previous release

- The BD ISO image can be used for offline installations again.
- New school level related meta-packages *education-preschool*, *education-primaryschool*, *education-secondaryschool* and *education-highschool* are available. None of them is installed by default.
- Some packages rather belonging to preschool or primaryschool level (like *gcompris-qt*, *childsplay*, *tuxpaint* or *tuxmath*) are no longer installed by default.
- Site specific modular installation. It is now possible to install only those educational packages that are actually wanted. See the installation chapter for more information.
- Site specific multi-language support. See the Desktop chapter for more information.
- LXQt 0.14 is offered as a new choice for the desktop environment.
- New GOsa²-Plugin *Password Management*.
- Unusable options have been removed from the GOsa² web interface.
- New netgroup available to exclude systems belonging to the *shut-down-at-night-hosts* netgroup from being woken up.
- New tool Standardskriver (Default printer). See the Administration chapter for more information.
- New tool Desktop-autoloader. It allows performance improvements for LTSP diskless clients. See the NetworkClients chapter for more information.
- Improved TLS/SSL support inside the internal network. A RootCA certificate is used to sign server certificates and user home directories are configured to accept it at account creation time; besides Firefox ESR, also Chromium and Konqueror can now use HTTPS without the need to allow insecure connections.
- Kerberized *ssh*. A password isn't needed anymore for connections inside the internal network; root needs to run `kinit` first to enable it.
- Kerberized NFS. It is now possible to use more secure home directory access, see the Administration chapter for more information.
- Added configuration file `/etc/debian-edu/pxeinstall.conf` with examples to make site specific changes easier.
- Added configuration file `/etc/ltsp/ltsp-build-client.conf` with examples to make site specific changes easier.
- New tool `/usr/share/debian-edu-config/tools/edu-ldap-from-scratch`. It allows to re-generate the LDAP database just like it has been right after the main server installation. The tool might also be useful to make site specific changes easier.
- With *X2Go server* now available in Debian, the related packages are now installed on all systems with Profile *LTSP-Server*.
- Support for running Java applets in the Firefox ESR browser has been dropped upstream.
- Support for nonfree flash has been dropped from the Firefox ESR browser.
- Like it has been before Stretch, Debian 10 doesn't install the `unattended-upgrades` package by default, see the Maintenance chapter for more information about security upgrades.

29.2. New features for Debian Edu 9+edu0 Codename Stretch released 2017-06-17

29.2.1. 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.

29.2.2. Actualizaciones de software

- Everything which was new in Debian 9 Stretch, eg:
  - Linux kernel 4.9
  - Desktop environments KDE Plasma Workspace 5.8, GNOME 3.22, Xfce 4.12, LXDE 0.99.2, MATE 1.16
    - KDE Plasma Workspace is installed by default; to choose one of the others see this manual.
  - Firefox 45.9 ESR and Chromium 59
    - Iceweasel has been re-renamed to Firefox!
  - Icedove has been re-renamed to Thunderbird and is now installed by default.
  - LibreOffice 5.2.6
  - Educational toolbox GCompris 15.10
  - Music creator Rosegarden 16.06
  - GOsa 2.7.4
  - LTSP 5.5.9
  - 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.

29.2.3. 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, Norwegian Bokmål and Japanese. The Japanese translation was newly added for Stretch.
  - Partly translated versions exist for Spanish, Polish and Simplified Chinese.

29.2.4. Other changes compared to the previous release

- Icinga replaces Nagios as monitoring tool.
- kde-spectacle replaces ksnapshot as screenshot tool.
- The free flash player gnash is back again.
- Plymouth is installed and activated by default, except for the 'Main Server' and 'Minimal' profiles; pressing ESC allows to view boot and shutdown messages.
- Upon upgrade from Jessie the LDAP data base has to be adjusted. The sudoHost value 'tjener' has to be replaced with 'tjener.intern' using GOsa^2 or an LDAP editor.
- The 32-bit PC support (known as the Debian architecture i386) now no longer covers a plain i586 processor. The new baseline is the i686, although some i586 processors (e.g. the "AMD Geode") will remain supported.

- Debian 9 enables unattended upgrades (for security updates) by default for new installations. This might cause a delay of about 15 minutes if a system with a low uptime value is powered off.
- LTSP now uses NBD instead of NFS for the root filesystem. After each single change to an LTSP chroot, the related NBD image must be regenerated (`ltsp-update-image`) for the changes to take effect.
- Concurrent logins of the same user on LTSP server and LTSP thin client are no longer allowed.

29.3. Historic information about older releases

The following Debian Edu releases were made further in the past:

- Debian Edu 8+edu0 Codename Jessie released 2016-07-02.
- Debian Edu 7.1+edu0 Codename Wheezy released 2013-09-28.
- Debian Edu 6.0.7+r1 Codename "Squeeze", released 2013-03-03.
- Debian Edu 6.0.7+r1 Codename "Squeeze", released 2013-03-03.
- Debian Edu 6.0.4+r0 Codename "Squeeze", released 2012-03-11.
- Debian Edu 5.0.6+edu1 Codename "Lenny", released 2010-10-05.
- Debian Edu 5.0.4+edu0 Codename "Lenny", released 2010-02-08.
- Debian Edu "3.0r1 Terra", released 2007-12-05.
- Debian Edu "3.0r0 Terra" released 2007-07-22. Based on Debian 4.0 Etch released 2007-04-08.
- Debian Edu 2.0, released 2006-03-14. Based on Debian 3.1 Sarge released 2005-06-06.
- Debian Edu "1.0 Venus" release 2004-06-20. Based on Debian 3.0 Woody released 2002-07-19.

A complete and detailed overview about older releases is contained in Appendix C of the Jessie manual; or see the related release manuals on the release manuals page.