Debian Edu / Skolelinux Wheezy 7.1+edu0 utgivelsesmanual

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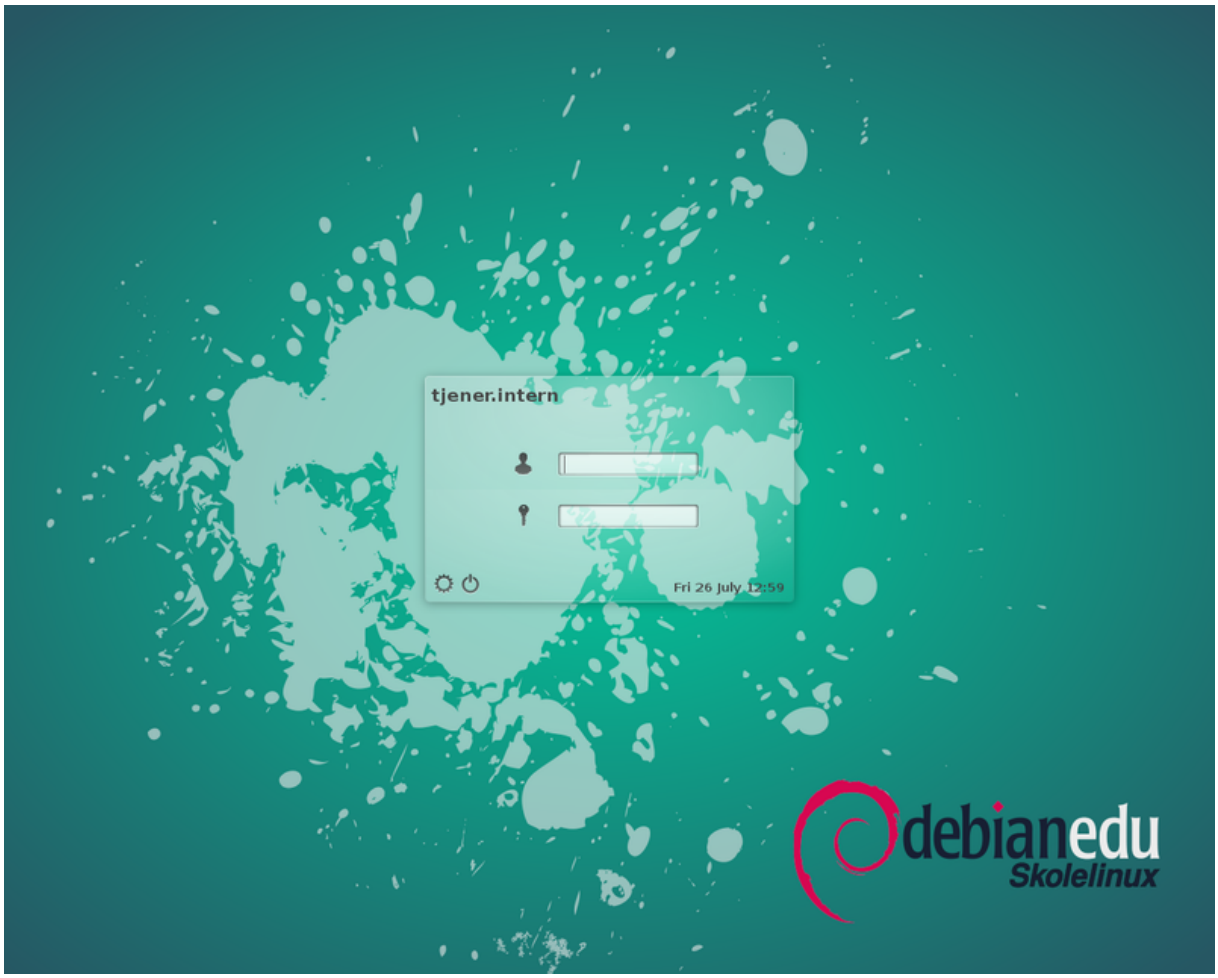
1 Utgivelsesmanual for Debian Edu 7.1+edu0 kodenavn Wheezy



Dette er utgivelsesmanualen for Debian Edu Wheezy versjon 7.1+edu0.

Versjonen på `http://wiki.debian.org/DebianEdu/Documentation/Wheezy`er en wikiside, og oppdateres ofte.

Oversettelser er en del av pakken `debian-edu-doc`, som kan installeres på en webtjener, og er tilgjengelig på online.

2 Om Debian Edu og Skolelinux

Skolelinux er en versjon av Debian GNU/Linux, og gir skolen din et IT-system ferdig oppsatt og tilpasset skoler.

Rett etter installasjonen vil skoletjeneren være satt opp til å kjøre alle tjenester som trengs i skolenettverket (se neste kapittel for detaljer omkring arkitektur og oppsett). Tjeneren vil vente på at brukere og maskiner blir lagt til via GOsa[2], og få et komfortabelt Web-brukergrensesnitt, eller foreta andre LDAP redigeringer. Et nettoppstartmiljø er utarbeidet ved hjelp av PXE slik at, etter første installasjon av hovedtjener fra en CD, Blue-ray-plate eller USB-minne, vil alle andre maskiner bli installert via nettverket. Dette gjelder også vandrende (mobile) arbeidsstasjoner som periodevis forlater det lokale skolenettverket. Dette kan være bærbare datamaskiner eller nettbrett, men også tradisjonelle tynne klienter som lagringsløse maskiner med PXE oppstart.

Flere pedagogiske programmer som celestia, drgeo, gcompris, kalzium, kgeography, solfege og scratch er inkludert i standardsoppsettet for skrivebordet, som enkelt kan utvides nesten uendelig fra Debian-utvalget.

2.1 Litt historie og hvorfor to navn

Skolelinux er en Linux distribusjon som er laget av prosjektet Debian Edu. Dette er enren Debian tilpas-

setdistribusjon og et offisielt Debian underprosjekt.

Skolelinux er en versjon av Debian GNU/Linux, og gir skolen din et IT-system ferdig oppsatt og tilpasset skoler.

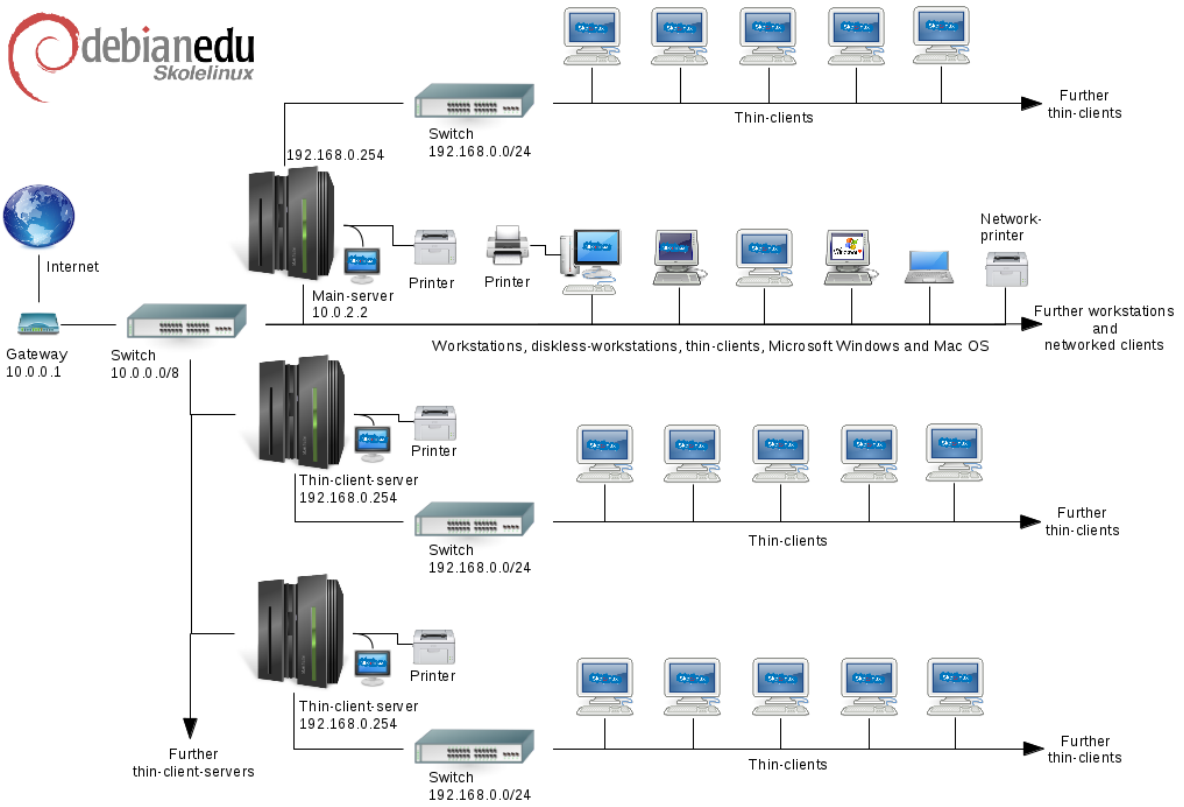
Skolelinux-prosjektet i Norge ble stiftet 2. juli 2001, omtrent på samme tid som Raphaël Hertzog startet Debian-Edu i Frankrike. Fra 2003 er begge prosjekter samlet, og begge navn videreført. "Skole" og (Debian-)"Education" er to godt forståtte begreper i de berørte regionene.

I Norge, hvor Skolelinux ble startet, er hovedmålgruppen skoler for elever i alderen 6-16 år. I dag er systemet i bruk i flere land rundt om i verden, men de fleste installasjonene er i Norge, Spania, Tyskland og Frankrike.

3 Arkitektur

Denne delen av dokumentet beskriver nettverksarkitekturen og tjenester som skolelinuxinstallasjonen tilbyr.

3.1 Nettverk



Figuren er en skisse over det forventede nettverksoppsettet (topologien). Standardoppsettet til et skolelinuxnettverk forventer at det er en (og bare en) hovedtjener, men det er tillatt å legge til både normale arbeidsstasjoner og tynnklienttjenere (med tilhørende tynnklienter og/eller lagringsløse arbeidsstasjoner). Antallet arbeidsstasjoner kan være stort eller lite alt etter behovet (fra null til veldig mange). Det samme gjelder for tynnklienttjenere. Hver enkel tynnklienttjener er på et adskilt nettverk slik at nettverkstrafikken mellom tynnklienter og tynnklienttjenere ikke forstyrrer resten av nettverkstjenestene.

Grunnen til at det bare kan være en hovedtjener i hvert skolenettverk er at hovedtjeneren tilbyr DHCP, og det kan bare være en maskin som gjør det i et nettverk. Det er mulig å flytte tjenester fra hovedtjeneren til andre maskiner ved å sette opp tjenesten på en annen maskin, og så oppdatere DNS-oppsettet slik at DNS-aliaset for den tjenesten peker til rett maskin.

For å forenkle standardoppsettet i Skolelinux, blir tilkoblingen til Internett kjørt over en egen ruter. Det er mulig å sette opp Debian til å koble til Internett både med modem og ISDN, men det er ikke gjort noe forsøk på å få et slikt oppsett til å fungere "ut av boksen" i Skolelinux (oppsettet som skal til for å tilpasse standardoppsettet til dette må dokumenteres separat).

3.1.1 Standard nettverksoppsett

DHCPD på Tjener betjener 10.0.0.0/8 nettverket, som gir en syslinux meny via PXE-boot hvor du kan velge om du vil installere en ny server/arbeidsstasjon, sette opp en ny klient eller en arbeidsstasjon uten disk, kjøre memtest, eller velge oppstart fra den lokale harddisken.

Denne er laget for å modifiseres - det vil si, du kan la NFS-root i syslinux peke til en av LTSP-serverne, eller endre valg av neste DHCP server (lagret i LDAP) til å la klienter starte opp direkte via PXE fra terminaltjeneren.

DHCPD på LTSP servere håndterer bare et angitt nettverk med et annet brukergrensesnitt (192.168.0.0/24 og 192.168.1.0/24 er forhåndskonfigurerte valg) og trenger skjelden å bli endret.

Oppsettet av alle undernett lagres i LDAP.

3.1.2 Hovedtjener

Et Skolelinuxnett trenger en hovedtjener (også kalt tjener), som har som standard IP-adresse 10.0.2.2. Hovedtjeneren installeres ved å velge hovedtjener-profilen under installasjon. Det er mulig (men ikke nødvendig) å installere tynnklientserver- og arbeidsstasjonprofiler sammen med hovedtjener.

3.1.3 Tjenester som kjører på hovedtjeneren

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

To ensure security all connections where passwords are transmitted over the network are encrypted, so no passwords are sent over the network as plain text.

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

Tabell over tjenester

Tjenestebeskrivelse	**Common name**	**DNS service name**
Sentralisert logging	rsyslog	syslog
Domain Name Service	DNS (BIND)	domain
Automatisk nettverksoppsett for maskiner	DHCP	bootps
Klokkesynkronisering	NTP	ntp
Home Directories via Network File System	SMB / NFS	homes
Elektronisk postkontor	IMAP (Dovecot)	postoffice
Katalogtjeneste	OpenLDAP	ldap
Brukeradministrasjon	GOsa[2]	---
Web Server	Apache/PHP	www
Sentral sikkerhetskopi	sl-backup, slbackup-php	backup
Web Cache	Proxy (Squid)	webcache

Utskrift	CUPS	ipp
Secure Remote Login	OpenSSH	ssh
Automatisk oppsett	Cfengine	cfengine
Tynnklienttjener(e)	LTSP	ltsp
Machine and Service Surveillance with Error Reporting, plus Status and History on the Web. Error Reporting by email	munin, nagios and site-summary	munin, nagios and site-summary

Personal files for each user are stored in their home directories, which are made available by the server. Home directories are accessible from all machines, giving users access to the same files regardless of which machine they are using. The server is operating system agnostic, offering access via NFS for Unix clients, SMB for Windows and Macintosh clients.

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. Mailing lists are set up based on the user database, giving each class their own mailing list. Clients are set up to deliver mail to the server (using 'smarthost'), and users can access their personal mail through IMAP.

All services are accessible using the same username and password, thanks to the central user database for authentication and authorisation.

For å øke ytelsen på sider som ofte blir besøkt blir det brukt en mellomtjener (proxy) som mellomlagrer filer lokalt (Squid). I tillegg til å kontrollere internettrafikk i ruteren gjør dette det også mulig å kontrollere internettilgang på individuelle maskiner.

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

Centralised logging is set up so that all machines send their syslog messages to the server. The syslog service is set up so that it only accepts incoming messages from the local network.

Som standard er DNS-tjeneren satt opp med et domene bare for internt bruk (*.intern) fram til et ekte («eksternt») DNS-domene kan settes opp. DNS-tjeneren er satt opp som en mellomlagrende DNS-tjener slik at alle maskiner på nettverket kan bruke den som hoved DNS-tjener.

Pupils and teachers have the ability to publish websites. The web server provides mechanisms for authenticating users, and for limiting access to individual pages and subdirectories to certain users and groups. Users will have the ability to create dynamic web pages, as the web server will be programmable on the server side.

Information on users and machines can be changed in one central location, and is made accessible to all computers on the network automatically. To achieve this a centralised directory server is set up. The directory will have information on users, user groups, machines, and groups of machines. To avoid user confusion there won't be any difference between file groups, mailing lists, and network groups. This implies that groups of machines which are to form network groups will use the same namespace as user groups and mailing lists.

Administration of services and users will mainly be via the web, and follow established standards, functioning well in the web browsers which are part of Skolelinux. The delegation of certain tasks to individual users or user groups will be made possible by the administration systems.

In order to avoid certain problems with NFS, and to make it simpler to debug problems, the different machines need synchronised clocks. To achieve this the Skolelinux server is set up as a local Network Time Protocol (NTP) server, and all workstations and clients are set up to synchronise with the server. The server itself should synchronise its clock via NTP against machines on the Internet, thus ensuring the whole network has the correct time.

Printers are connected where convenient, either directly onto the main network, or connected to a server, workstation or thin-client-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 tjenere (tynnklienttjener(e))

A Skolelinux network can have many LTSP servers (also called thin client servers), which are installed by selecting the Thin client server profile.

Tynnklienttjeneren er satt opp til å motta syslog fra de tynne klientene og videresende disse meldingene til den sentrale mottakeren for syslogmeldinger.

3.1.5 Tynnklienter

A thin client setup enables ordinary PCs to function as (X-)terminals. This means that the machine boots from a diskette or directly from the server using network-PROM (or PXE) without using the local client hard drive. The thin client setup used is that of the Linux Terminal Server Project (LTSP).

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

3.1.6 Arbeidsstasjoner uten harddisk

Abeidsstasjoner uten harddisk blir også omtalt som "tilstandsløse arbeidsstasjoner" eller "halvtykke klienter". I denne manualen benyttes begrepet "diskløse arbeidsstasjoenr"

A diskless workstation runs all software on the PC without a locally installed operating system. This means that client machines boot directly from the server's hard drive without running software installed on a local hard drive.

Diskless workstations are an excellent way of reusing newer 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.

Arbeidstasjoner uten harddisk ble introdusert som en del av Linux Terminal Server Project (LTSP) med versjon 5.0.

3.1.7 Nettverksklienter

The term "networked clients" is used in this manual to refer to both thin clients and diskless workstations, as well as computers running Mac OS or Windows.

3.2 Administrasjon

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.

We use cfengine to edit configuration files. These files are updated from the server to the clients. In order to change the client configuration, it suffices to edit the server configuration and let the automation distribute the changes.

All user information is kept in an LDAP directory. Updates of user accounts are made against this database, which is used by the clients for user authentication.

3.2.1 Installasjon

Currently there are two kinds of installation media images: netinstall (CD) and multi-arch USB flash drive. Both images can also be booted from USB sticks.

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

Only the netinstall image needs access to the Internet during installation.

The installation should not ask any questions, with the exception of desired language (e.g. Norwegian Bokmal, Nynorsk, Sami) and machine profile (server, workstation, thin client 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 Oppsett av tilgang til filsystem

Each Skolelinux user account is assigned a section of the file system on the file server. This section (home directory) contains the user's configuration files, documents, email and web pages. Some of the files should be set to have read access for other users on the system, some should be readable by everyone on the Internet, and some should not be accessible for reading by anyone but the user.

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

To enable shared access to files under the normal UNIX permissions system, users need to be in supplementary shared groups (such as "students") as well as the personal primary group that they're in by default. If users have an appropriate umask to make newly created items group-accessible (002 or 007), and if the directories they're working in are setgid to ensure the files inherit the correct group-ownership, the result is controlled file sharing between the members of a group.

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 Systemkrav

There are different ways of setting up a Skolelinux solution. It can be installed on just one standalone PC, or as a region-wide solution at many schools operated centrally. This flexibility makes a huge difference to the configuration of network components, servers and client machines.

4.1 Maskinvarekrav

The purpose of the different profiles is explained in the network architecture chapter.

- The computers running Debian Edu / Skolelinux must have either i386 or amd64 processors.
- Tynnklienttjenere trenger to nettverkskort ved bruk av standard nettverksarkitektur:
  - eth0 is connected to the main network (10.0.0.0/8),
  - eth1 is used for serving the thin-clients (192.168.0.0/24 or 192.168.1.0/24).
- Vurder å ha 2 GB RAM for 30 klienter og 4 GB RAM for 50-60 klienter.
- Disk space requirements depend on profiles used, but any disk larger than 25 GiB will be sufficient for a workstation or standalone installation, 30 Gib for a thin-client server and at least 40 GiB on the main server. As usual with disk space on a main-server, it's "the bigger the better".
- Tynnklienter kan kjøres på så lite som 64 MB RAM og en 133 MHz prosessor, men 128MB RAM og noe raskere prosessor anbefales.
  - for å kjøre Iceweasel/Firefox og LibreOffice, så anbefales det minimum 128 MB RAM.
- For workstations, diskless workstations and standalone PCs, 800 MHz, 320 MiB RAM are minimum requirements, though 512 or 1024 MiB RAM will perform considerably better. Just a faster CPU will speed things up.

  - Swapping over the network is automatically enabled; the swap size is 512 MiB, and if you need more you can tune this by editing /etc/ltsp/nbdswapd.conf on tjener to set the SIZE variable. Please *tune up the swap size* either locally on the PC or on the server.
    * If your diskless workstations have hard drives, it is recommended to use them for swap as it is a lot faster than network swapping.
  - On workstations with little RAM the spell checker can cause LibreOffice to hang if the swap space is too small. Then the system administrator has to disable the spell checker on LibreOffice or students have to kill LibreOffice, resulting in loss of work. Enabling at least 512 MiB swap on a 320 MiB RAM workstation solves this, and the spell checker runs smoothly.

- Laptops har samme systemkrav som vanlige arbeidsstasjoner, bare at de er flyttbare arbeidsstasjoner.

4.2 Maskinvare som er bekreftet å virke

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

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

An excellent database of hardware supported by Debian is online at http://kmuto.jp/debian/hcl/.

5 Requirements for network setup

5.1 Standard oppsett

Når man bruker standard oppsett for nettverksarkitekturen, så brukes disse reglene:

- You need exactly one main server, the tjener.
- You can have hundreds of workstations on the main network.
- You can have a lot of LTSP servers on the main network; two different subnets are preconfigured in LDAP.
- You can have hundreds of thin clients and/or diskless workstations on each LTSP server network.
- You can have hundreds of other machines which will have dynamic IP addresses assigned.
- For access to the Internet you need a router/gateway (see below).

5.2 Internett-ruter

A router/gateway, connected to the Internet on the external interface and running on the IP address 10.0.0.1 with netmask 255.0.0.0 on the internal interface, is needed to connect to the Internet.

The router should not run a DHCP server, it can run a DNS server, though this is not needed and will not be used.

If you are looking for a router firewall solution capable of running on an old PC, we recommend IPCop or floppyfw.

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

It is possible to use a different network setup (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 Installation and download options

6.1 Hvor finner man mer informasjon

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

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

Even more information about the Debian Wheezy release is available in its installation manual.

6.2 Last ned et installasjonsmedium for Debian Edu 7.1+edu0 Kodenavn Wheezy

6.2.1 netinstall CD image for i386, amd64

The netinstall CD, which also can be used for installation from USB flash drives, is suited to install on i386 and amd64 machines. It's available via

- debian-edu-7.1+edu0-CD.iso

  debian-edu-7.1+edu0-CD.iso

  ```
  rsync ftp.skolelinux.org::skolelinux-cd/debian-edu-7.1+edu0-CD.iso|debian-edu-7.1+edu0-CD.iso
  ```

6.2.2 USB flash drive / Blue-ray disc ISO image for i386 and amd64

The multi-architecture ISO image is 5.2 GiB large and can be used for installation of amd64 and i386 machines. It behaves like the former DVD image which means it doesn't use internet access during installation. Like the others it can be downloaded over FTP, HTTP or rsync via:

- debian-edu-7.1+edu0-USB.iso

  debian-edu-7.1+edu0-USB.iso

  ```
  rsync ftp.skolelinux.org::skolelinux-cd/debian-edu-7.1+edu0-USB.iso|debian-edu-7.1+edu0-USB.iso
  ```

6.2.3 Source image

The source image is available via

- debian-edu-7.1+edu0-source-USB.iso

  debian-edu-7.1+edu0-source-USB.iso

  ```
  rsync ftp.skolelinux.org::skolelinux-cd/debian-edu-7.1+edu0-source-USB.iso debian-edu-7.1+edu0-source-USB.iso
  ```

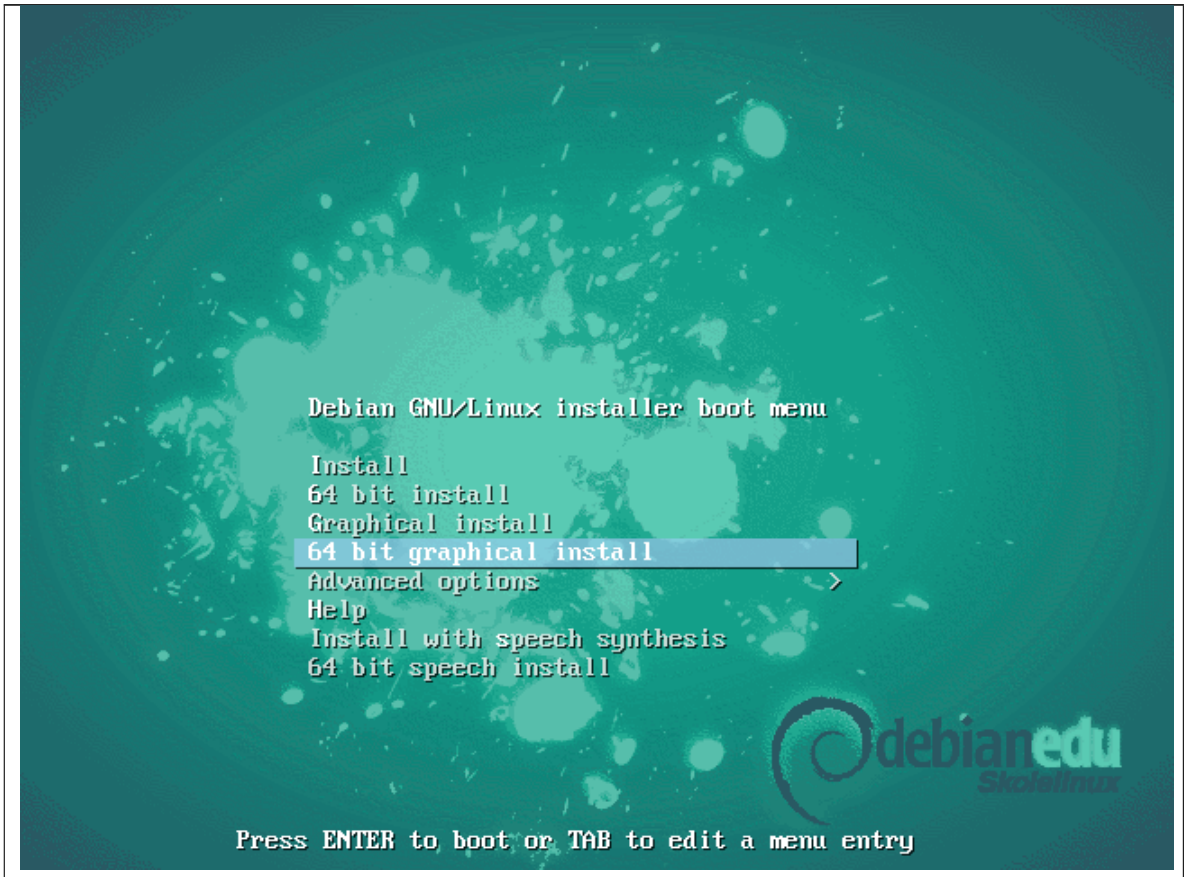
6.3 Request a CD / DVD by mail

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) Remember to include the address you want the CD or DVD to be sent to in the email.

6.4 Installasjon av DebianEdu

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 15,000 packages to choose from and a billion configuration options. For the majority of our users, our defaults should be fine.

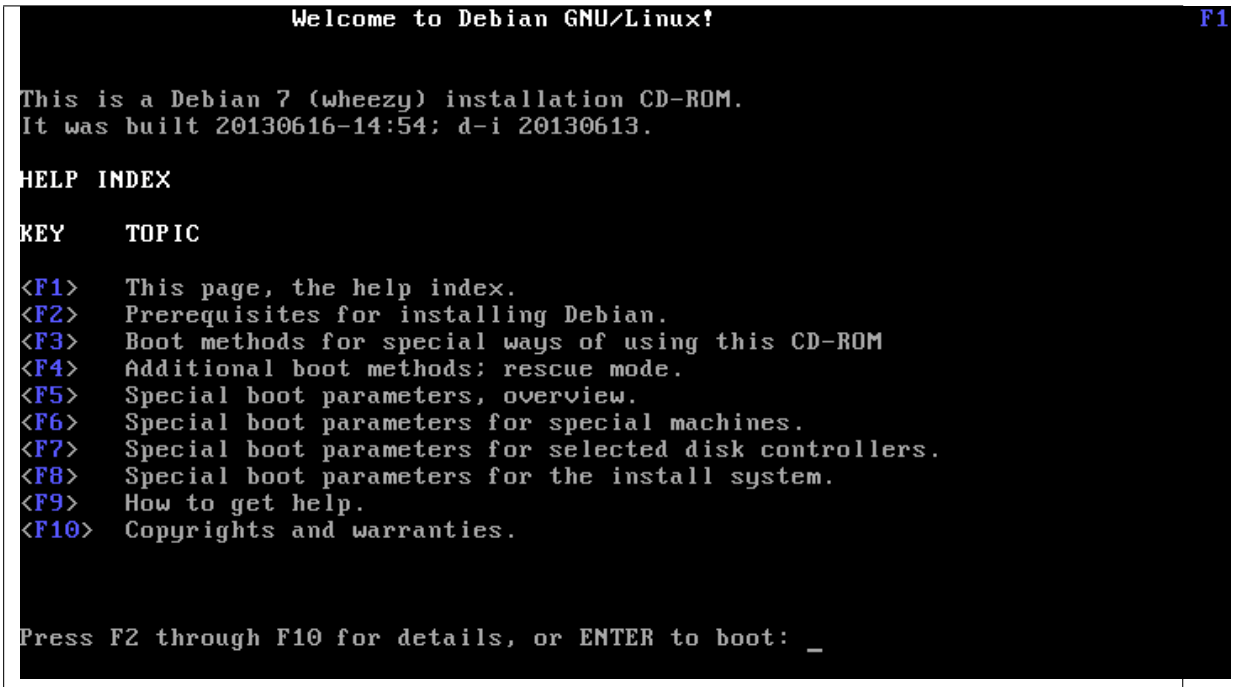
6.4.1 Velg type installasjon



Install is the default text mode installation on i386 and amd64.
64 bit install does an amd64 text-mode install.
Graphical install uses the GTK installer where you can use the mouse.
64 bit graphical install uses the amd64 GTK installer where you can use the mouse.
Advanced options > gives a sub menu with more detailed options to choose
Help gives some hints on using the installer

Back.. brings back to the main menu.
Expert install gives access to all available questions in text mode.
Rescue mode makes this install medium become a rescue disk for emergency tasks.
Automated install needs a preseed file.
64 bit expert install gives access to all available questions in text mode on amd64.
64 bit rescue mode makes this install medium become a rescue disk for emergency tasks on amd64.
64 bit automated install needs a preseed file.

Graphical expert install gives access to all available questions in graphical mode.
Graphical rescue mode makes this install medium become a rescue disk for emergency tasks with a graphical GTK look.
Graphical automated install needs a preseed file.
64 bit graphical expert install gives access to all available questions in graphical mode on amd64.
64 bit graphical rescue mode makes this install medium become a rescue disk for emergency tasks on amd64 with a graphical GTK look.
64 bit graphical automated install needs a preseed file.



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

6.4.1.1 Flere oppstartsparametre for installasjoner

On i386/amd64, boot options can be edited by pressing the TAB key in the boot menu.

- The multi-architecture USB flash drive / Blue-ray disc image defaults to using amd64-installgui on 64-bit x86 machines, and installgui on 32-bit x86 machines.
- If you want to boot the amd64 text mode with the multi-architecture image, that would be `amd64-install`.
- På samme måte kan du velge `amd64-expertgui` for å få GUI-versjonen på amd64.
- If you want to boot the i386 mode with the multi-arch image on an amd64 machine you need to manually select `install` (text mode) or `expertgui` (graphical mode).
- You can use an existing HTTP proxy service on the network to speed up the installation of the main server profile from CD. Add `mirror/http/proxy=http://10.0.2.2:3128/` as an additional boot parameter.
- If you have already installed the main server profile on a machine, further installations should be done via PXE, as this will automatically use the proxy of the main server.
- To install the **GNOME** desktop instead of the **KDE "Plasma"** desktop, add `desktop=gnome` to the kernel boot parameters.
- To install the **LXDE** desktop instead, add `desktop=lxde` to the kernel boot parameters.
- To install the **Xfce** desktop instead, add `desktop=xfce` to the kernel boot parameters.

6.4.2 The installation process

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

- Velg et språk (for installasjonen og det installerte systemet)
- Velg et sted som vanligvis er stedet du bor.

- Choose a keyboard keymap (the country's default is usually fine)
- Velg profil(er) fra denne listen:
  - **Main-Server**
    - This is the main server (tjener) for your school providing all services pre-configured to work out of the box. You must only install one main server per school! This profile does not include a graphical user interface. If you want a graphical user interface, then select Workstation or Thin-Client-Server in addition to this one.
  - **Workstation**
    - En maskin som starter opp fra sin egen harddisk, og som kjører all programvare og alle maskinvare-enheter lokalt som en vanlig maskin. Men brukeren logger inn og autentiseres av hovedtjeneren, der brukerens filer og skrivebordsoppsett er lagret.
  - **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.
  - **Thin-Client-Server**
    - A thin client (and diskless workstation) server, also called a LTSP server. Clients without hard drives boot and run software from this server. This computer needs two network cards, a lot of memory, and ideally more than one processor or core. See the chapter about networked clients for more information on this subject. Choosing this profile also enables the workstation profile (even if it is not selected) - a thin client server can always be used as a workstation, too.
  - **Standalone**
    - An ordinary computer that can function without a main server (that is, it doesn't need to be on the network). Includes laptops.
  - **Minimal**
    - This profile will install the base packages and configure the machine to integrate into the Debian Edu network, but without any services and applications. It is useful as a platform for single services manually moved out from the main-server.

  The **Main Server**, **Workstation** and **Thin Client 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 a thin client server and also be used as a workstation. This is the default choice, since we assume most people will install via PXE afterwards. Please note that you must have 2 network cards installed in a machine which is going to be installed as a combined main server or as a thin client server to become usefull after the installation.

The ordering of the network cards after installation might differ from the ordering during installation. The wanted ordering can be achieved by editing `/etc/udev/rules.d/70-persistent-net.rules`: Usually *if this happens*, you will want to replace eth0 with eth1 and eth1 with eth0; a reboot is needed for the changes to take effect.

- Say "yes" or "no" to automatic partitioning. Be aware that saying "yes" will destroy all data on the hard drives! Saying "no" on the other hand will require more work - you will need to make sure that the required partitions are created and are big enough.
- Please say "yes" to submitting information to `http://popcon.skolelinux.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 Thin-client-server then the installer will spend quite some time at the end, "Finishing the installation - Running debian-edu-profile-udeb..."

- Etter å ha satt root-passordet, blir du bedt om å lage en vanlig brukerkonto "for ikke-administrative oppgaver". For Debian Edu er denne kontoen svært viktig: denne skal du bruke til å administrere Skolelinux-nettverket.

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

- Vær glad

6.4.3 Notes on some characteristics

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

6.4.3.2 A note on multi-arch USB flash drive / Blue-ray disc image installs After you install from the multi-arch USB flash drive / Blue-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://ftp.debian.org/debian/ wheezy main
deb http://security.debian.org/ wheezy/updates main
deb http://ftp.skolelinux.org/skolelinux wheezy local
```

6.4.3.3 En kommenar om CD-installasjon A netinst installation (which is the type of installation our CD provides) will fetch some packages from the CD and the rest from the net. The amount of packages fetched from the net varies from profile to profile but stays below a gigabyte (unless you choose to install all possible desktops). Once you have installed the main-server (whether a pure main-server or combi-server does not matter), further installation will use its proxy to avoid downloading the same package several times from the net.

6.4.3.4 En kommentar om installasjon av tynnklienttjenere First of all, this profile name is confusing for historic reasons. Currently this profile actually installs an LTSP server environment for thin-clients and for workstations. Debian bug 588510 has been filed to change the name of the profile into a better suited one.

Providing the kernel boot parameter `edu-skip-ltsp-make-client` makes it possible to skip the step which converts the LTSP chroot from a thin-client chroot into a combined thin-client/diskless workstation chroot.

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

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

6.4.4 Installation using USB flash drives instead of CD / Blue-ray discs

Since the Squeeze release it is possible to directly copy the CD/DVD/BD `.iso` images to a USB flash drive (also known as "USB sticks") and boot from them. Simply execute a command like this, just adapting the file and device names to your needs:

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

Depending on which image you choose, the USB flash drive will behave just like a CD or Blue-ray disc.

6.4.5 Installasjon over nettverket (PXE) og booting av diskløse arbeidsstasjoner.

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

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

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

This setup also allows diskless workstations and thin clients to be booted on the main network. Unlike workstations, diskless workstations don't have to be added to LDAP with GOsa[2], but can be, for example if you want to force the hostname.

More information about network clients can be found in the Network clients HowTo chapter.

6.4.5.1 Modifisering av PXE installasjoner

The PXE installation uses a debian-installer preseed file, which can be modified to ask for more packages to install.

En linje slik som dette må legges til i `tjener:/etc/debian-edu/www/debian-edu-install.dat`

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

The PXE installation uses `/var/lib/tftpboot/debian-edu/install.cfg` and the preseeding file in `/etc/debian-edu/www/debian-edu-install.dat`. These files can be changed to adjust the preseeding used during installation, 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.

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

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

6.4.6 Custom images

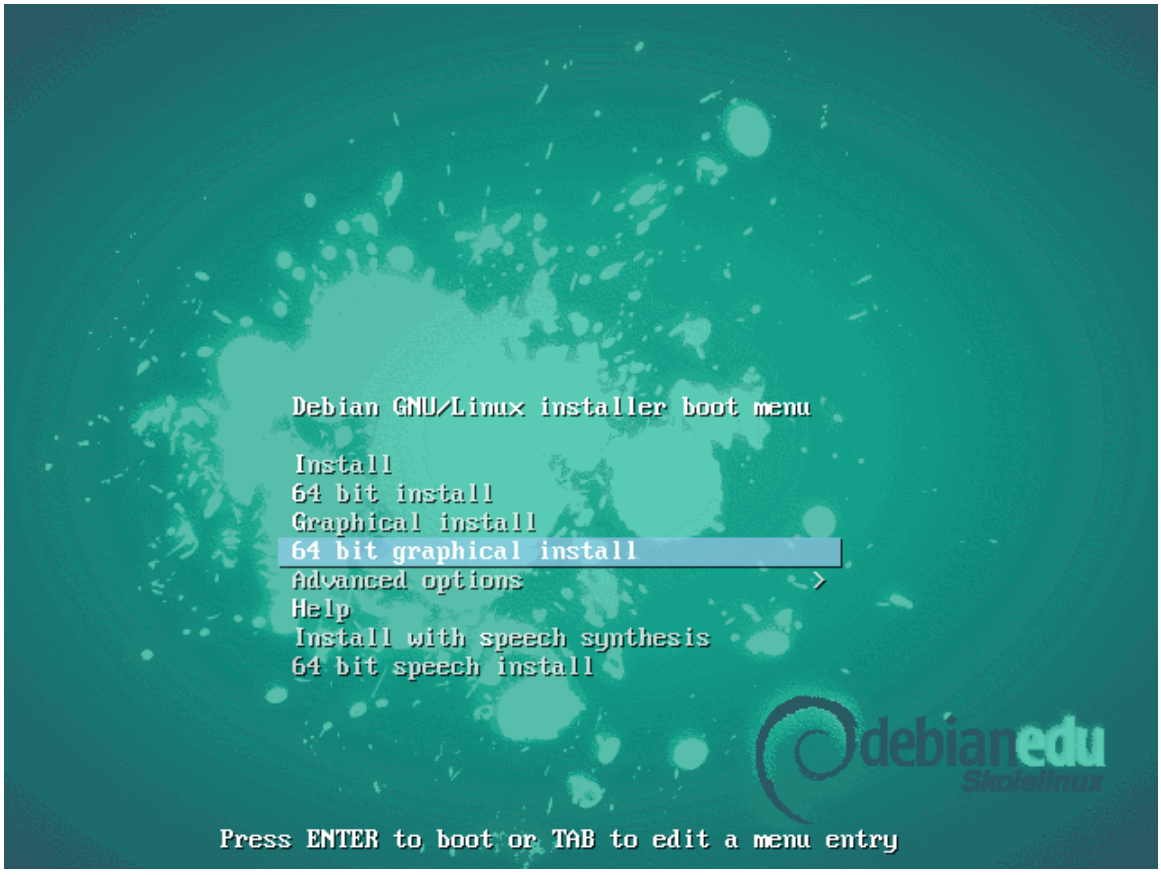
Creating custom CDs, DVDs or Blue-ray discs can be quite easy since we use the debian installer, which has a modular design and other nice features. Preseeding allows you to define answers to the questions normally asked.

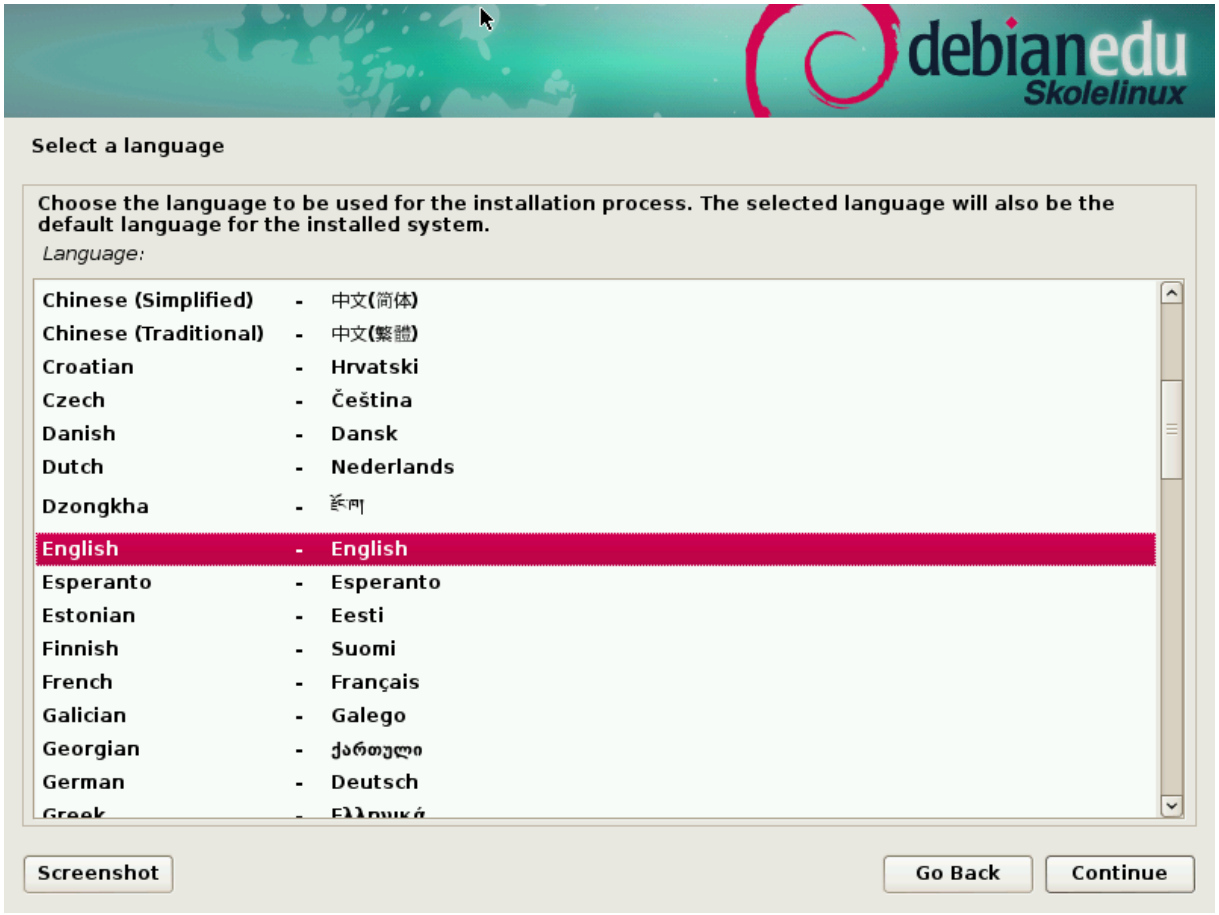
Så alt du behøver gjøre er å lage en preseedingfil med dine svar (dette er beskrevet i vedlegget til manualen for debian installer) og remaster CD/DVDen.

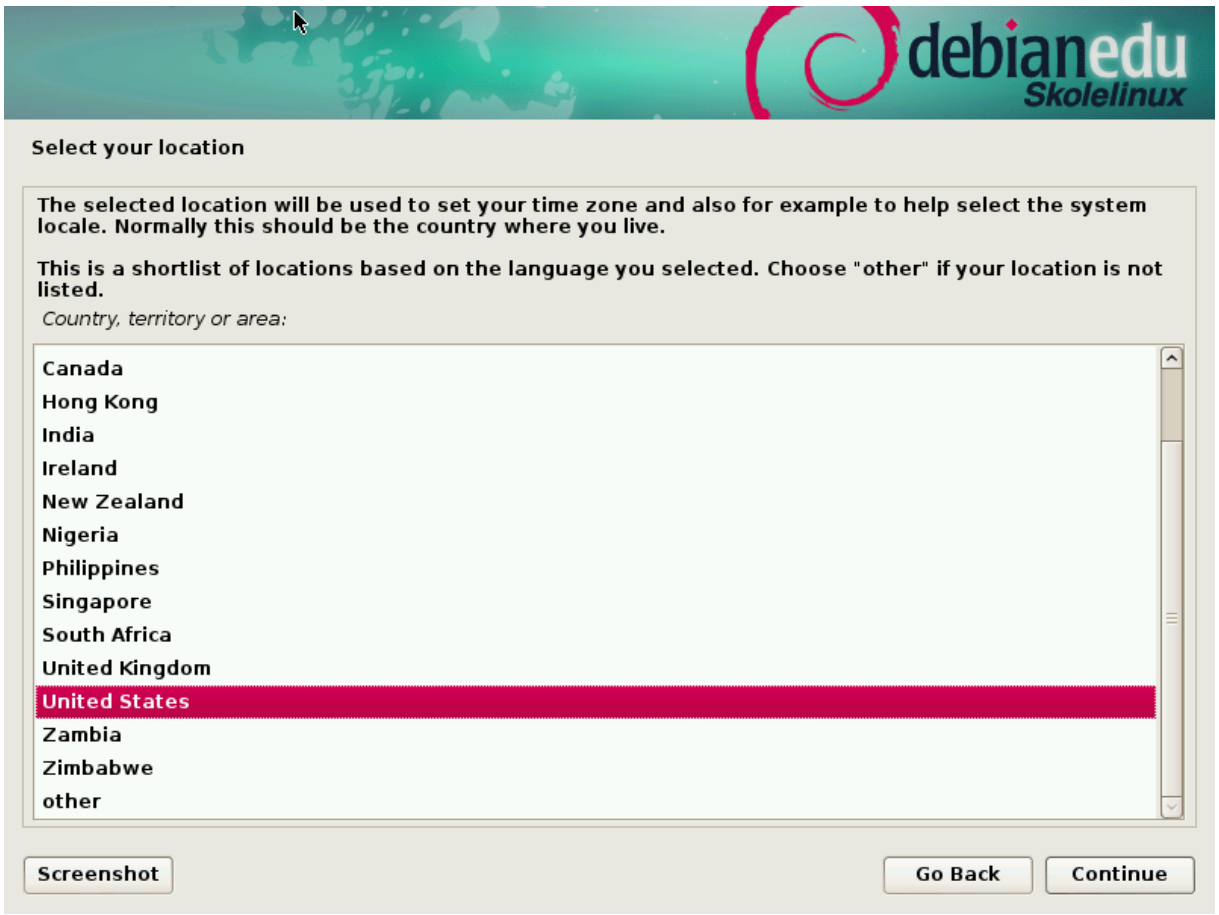
6.5 Skjermbilder av installasjonen

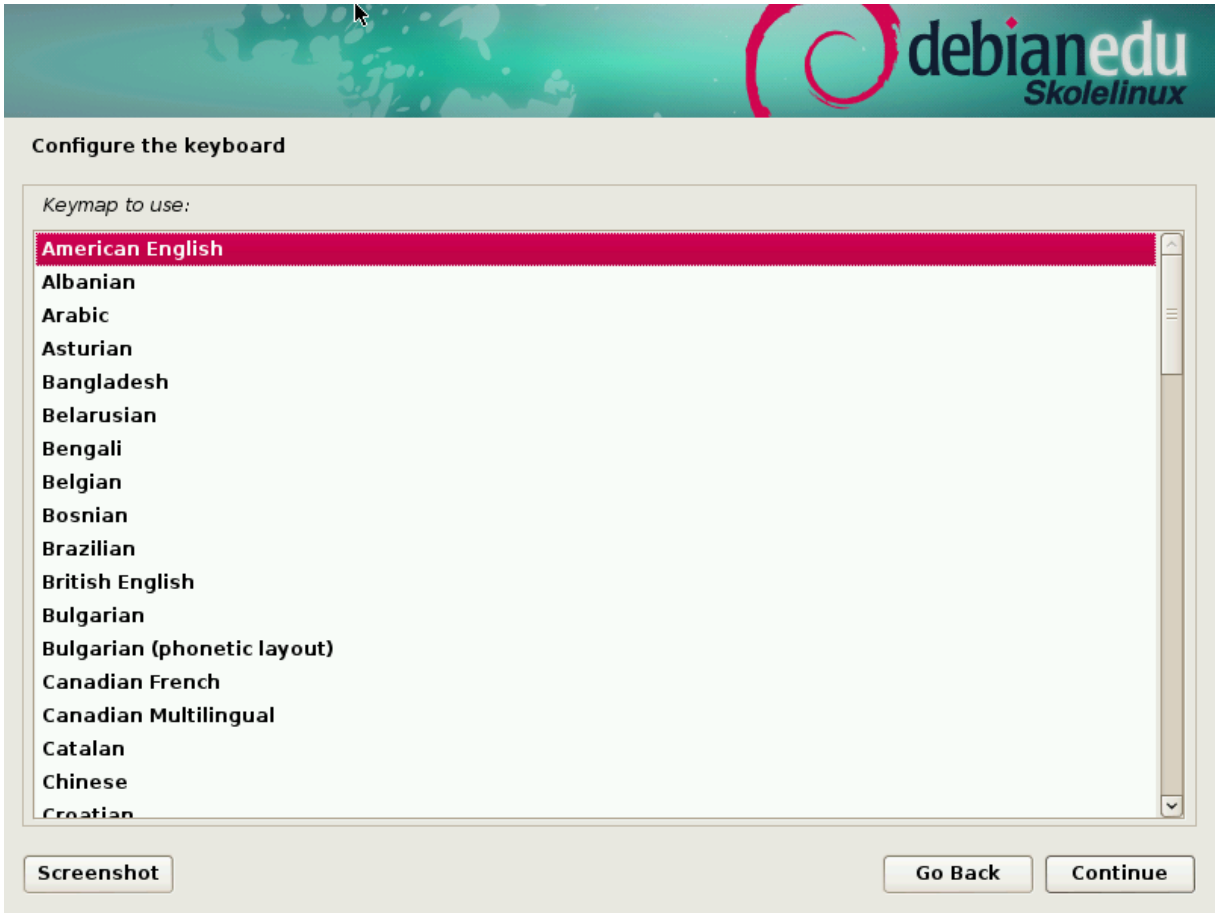
The text mode and the graphical installation are functionally identical - only the appearance is different. The graphical mode offers the opportunity to use a mouse, and of course looks much nicer and more modern. Unless the hardware has trouble with the graphical mode, there is no reason not to use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

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

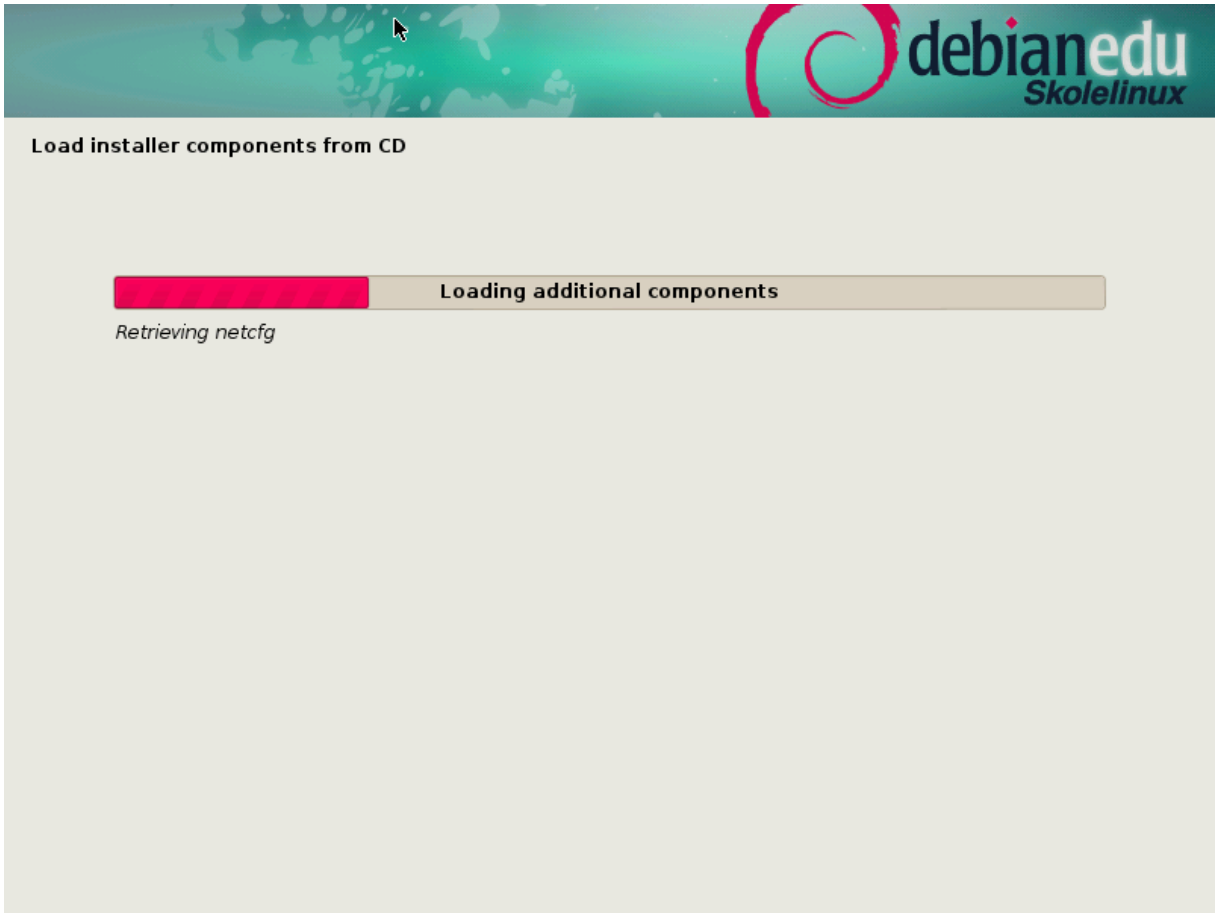



debianedu
Skolelinux
Select a language
Choose the language to be used for the installation process. The selected language will also be the default language for the installed system.
Language:
Chinese (Simplified) - 中文(简体)
Chinese (Traditional) - 中文(繁體)
Croatian - Hrvatski
Czech - Čeština
Danish - Dansk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

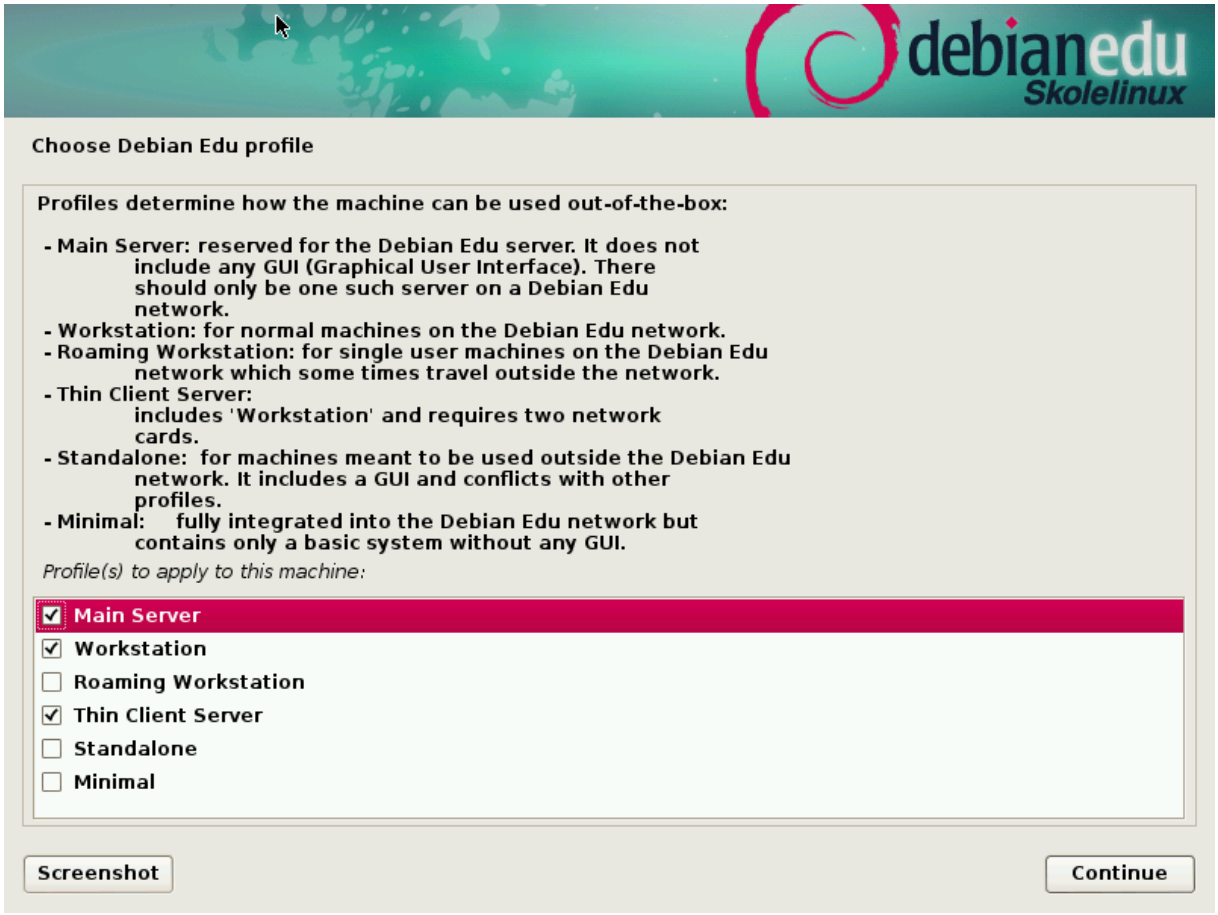

debianedu
Skolelinux
Select your location
The selected location will be used to set your time zone and also for example to help select the system locale. Normally this should be the country where you live.
This is a shortlist of locations based on the language you selected. Choose "other" if your location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

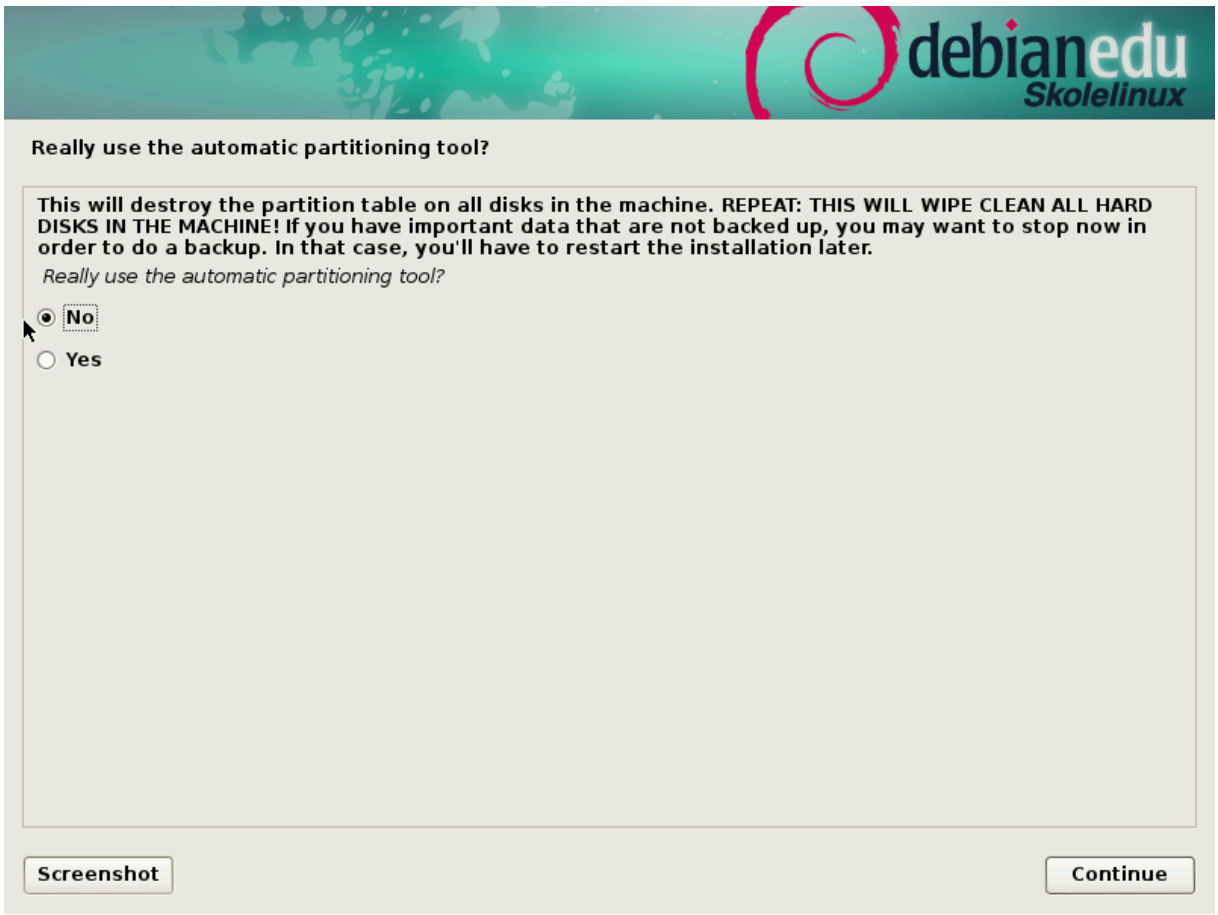

debianedu
Skolelinux
Configure the keyboard
Keymap to use:
American English
Albanian
Arabic
Asturian
Bangladesh
Belarusian
Bengali
Belgian
Bosnian
Brazilian
British English
Bulgarian
Bulgarian (phonetic layout)
Canadian French
Canadian Multilingual
Catalan
Chinese
Screenshot
Go Back
Continue

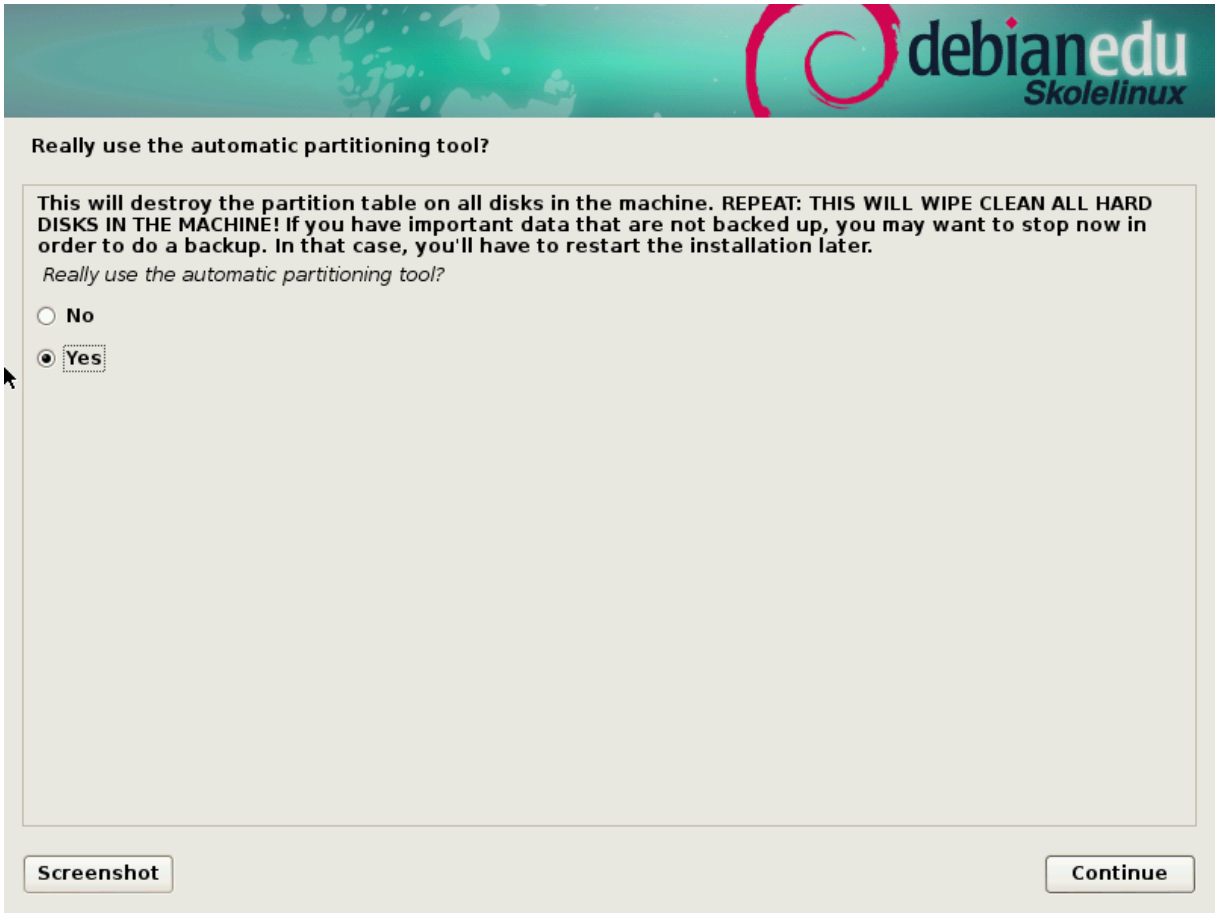
debianedu
Skolelinux
Detect and mount CD-ROM
Scanning CD-ROM
Scanning /cdrom/pool/main/libi...


debianedu
Skolelinux
Load installer components from CD
Loading additional components
Retrieving netcfg

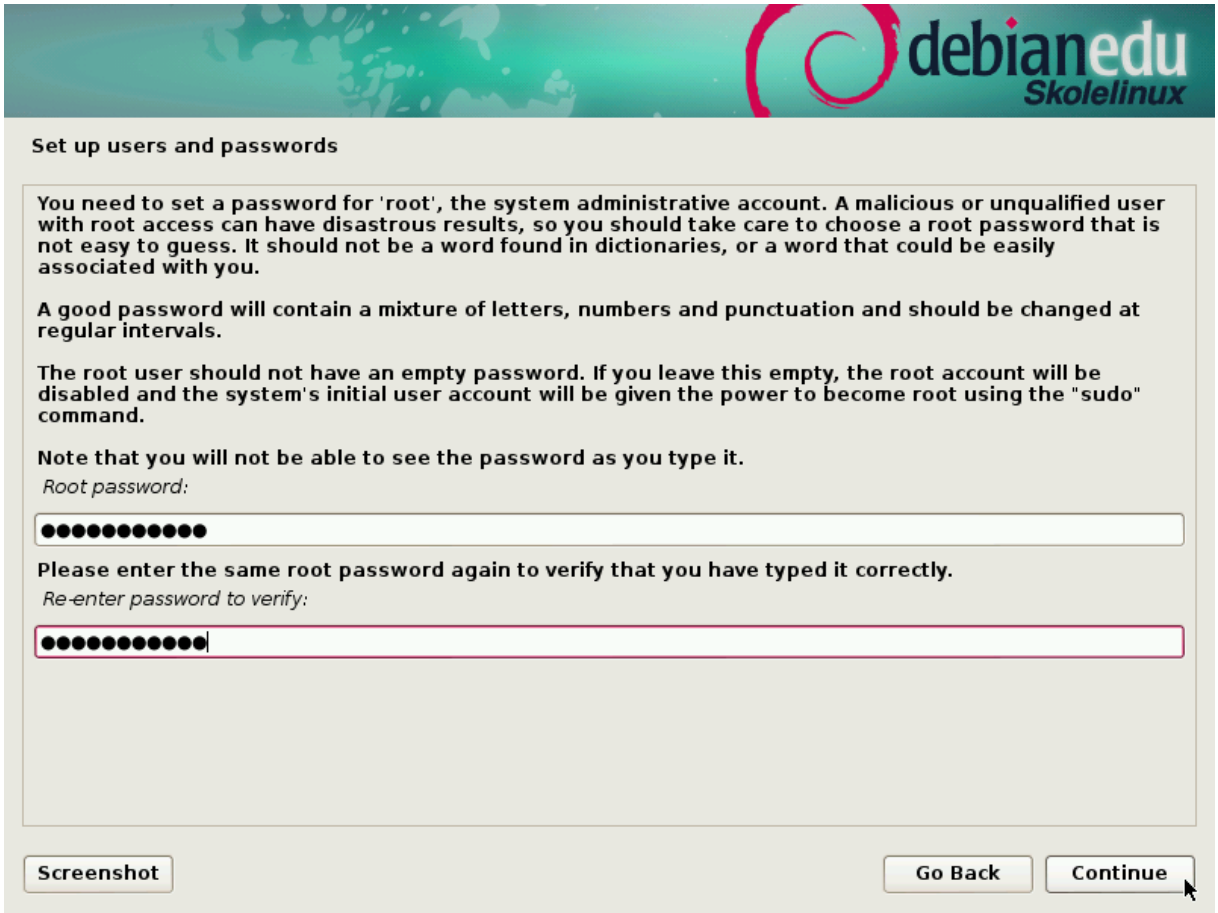
debianedu
Skolelinux
Configure the network
Attempting IPv6 autoconfiguration...
Cancel

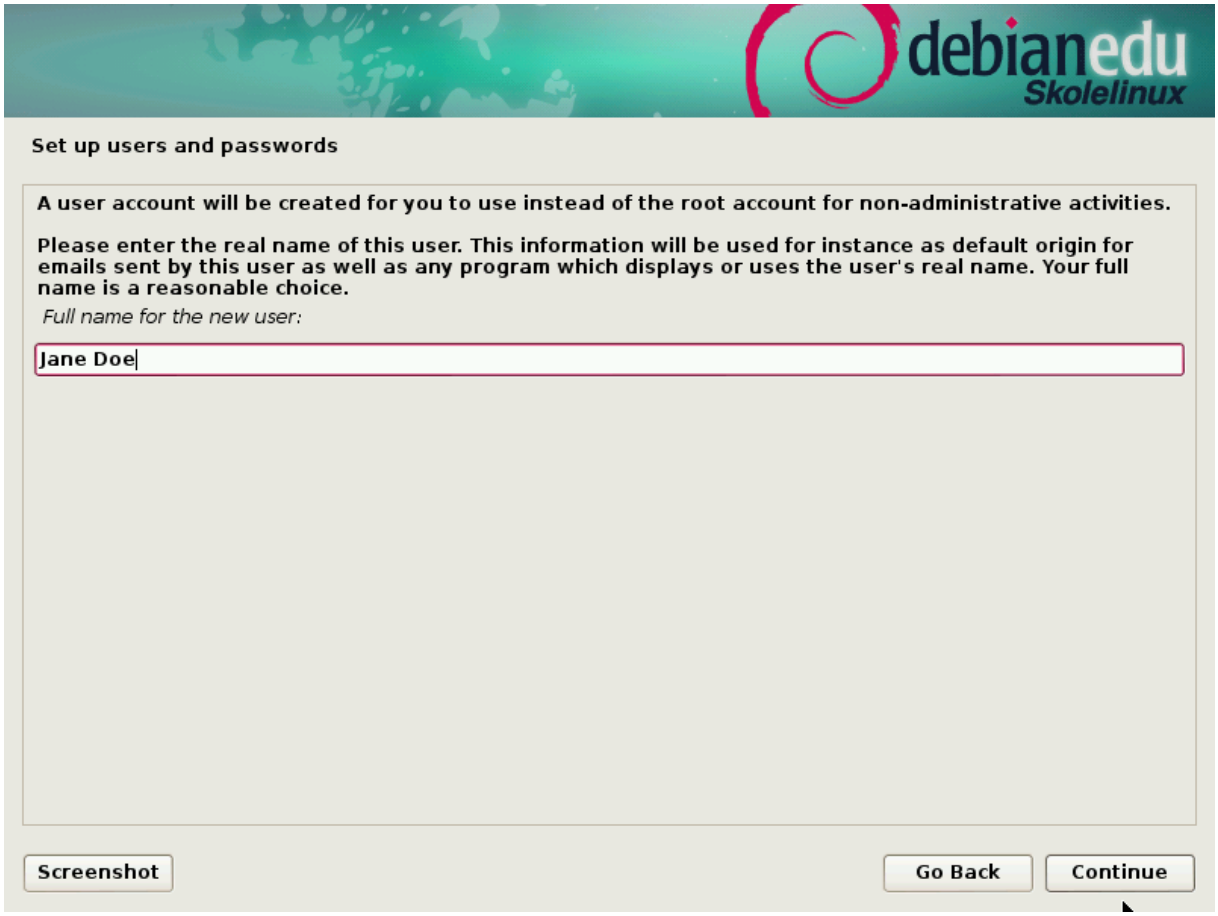

debianedu
Skolelinux
Choose Debian Edu profile
Profiles determine how the machine can be used out-of-the-box:
- Main Server: reserved for the Debian Edu server. It does not include any GUI (Graphical User Interface). There should only be one such server on a Debian Edu network.
- Workstation: for normal machines on the Debian Edu network.
- Roaming Workstation: for single user machines on the Debian Edu network which some times travel outside the network.
- Thin Client 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
Thin Client Server
Standalone
Minimal
Screenshot
Continue

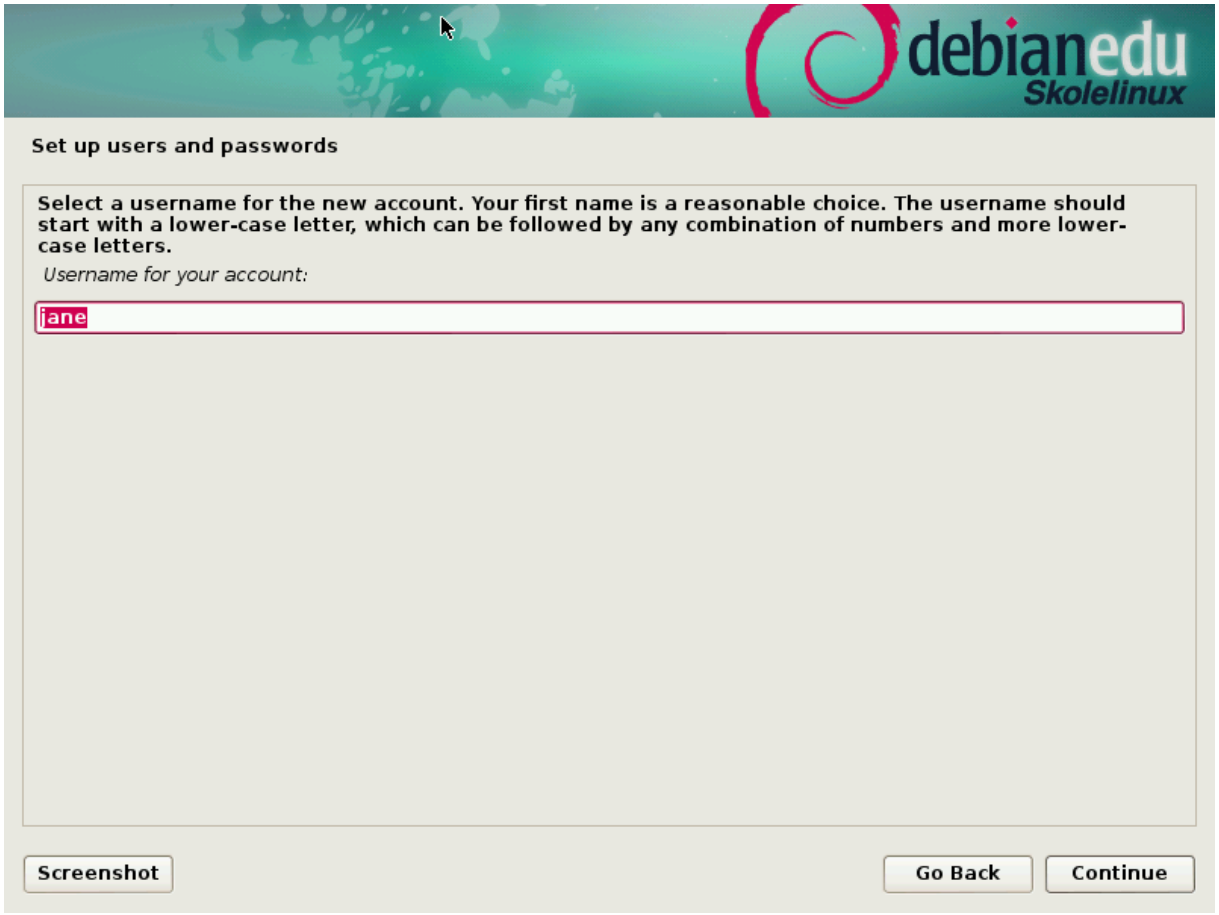

debianedu
Skolelinux
Really use the automatic partitioning tool?
This will destroy the partition table on all disks in the machine. REPEAT: THIS WILL WIPE CLEAN ALL HARD DISKS IN THE MACHINE! If you have important data that are not backed up, you may want to stop now in order to do a backup. In that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

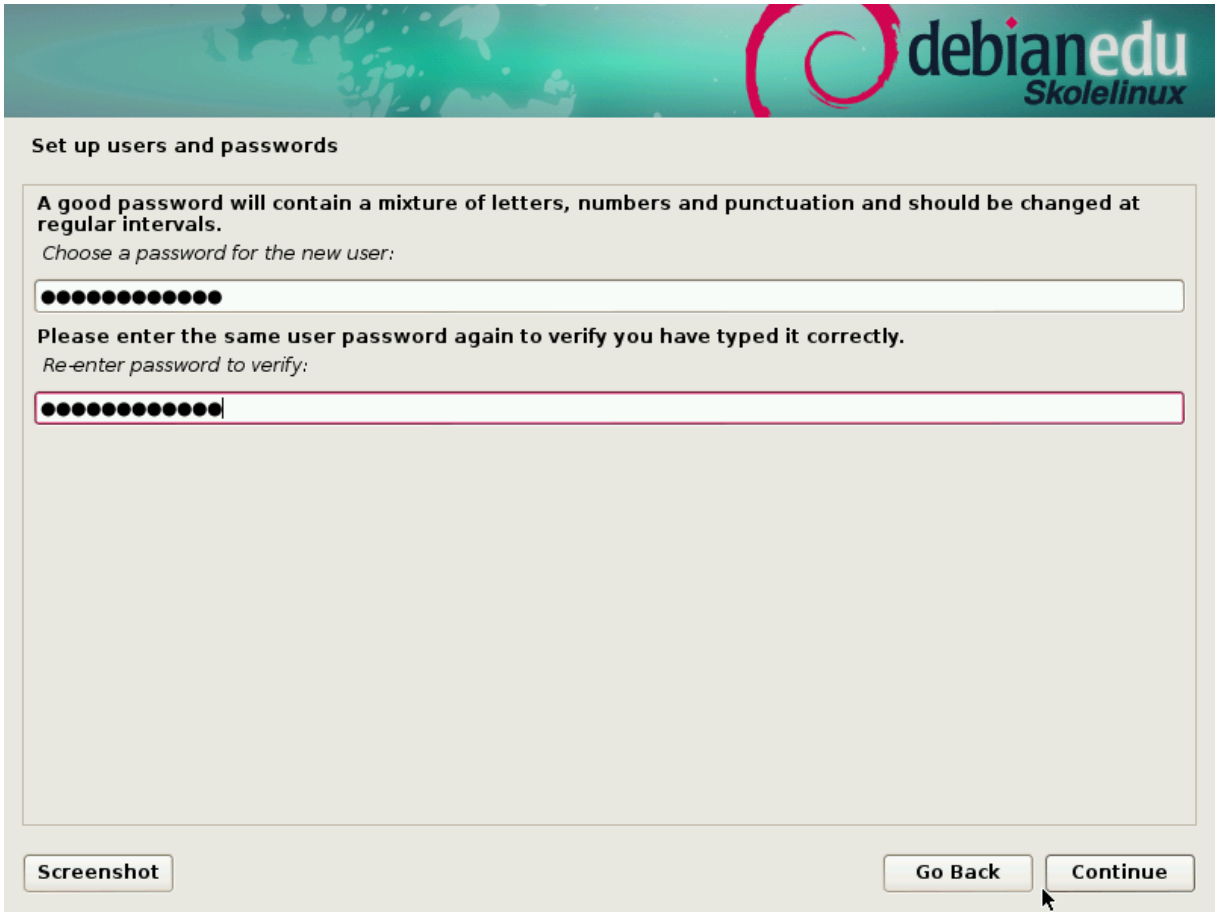

debianedu
Skolelinux
Really use the automatic partitioning tool?
This will destroy the partition table on all disks in the machine. REPEAT: THIS WILL WIPE CLEAN ALL HARD DISKS IN THE MACHINE! If you have important data that are not backed up, you may want to stop now in order to do a backup. In that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

debianedu
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
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:
Please enter the same root password again to verify that you have typed it correctly.
Re-enter password to verify:
Screenshot
Go Back
Continue

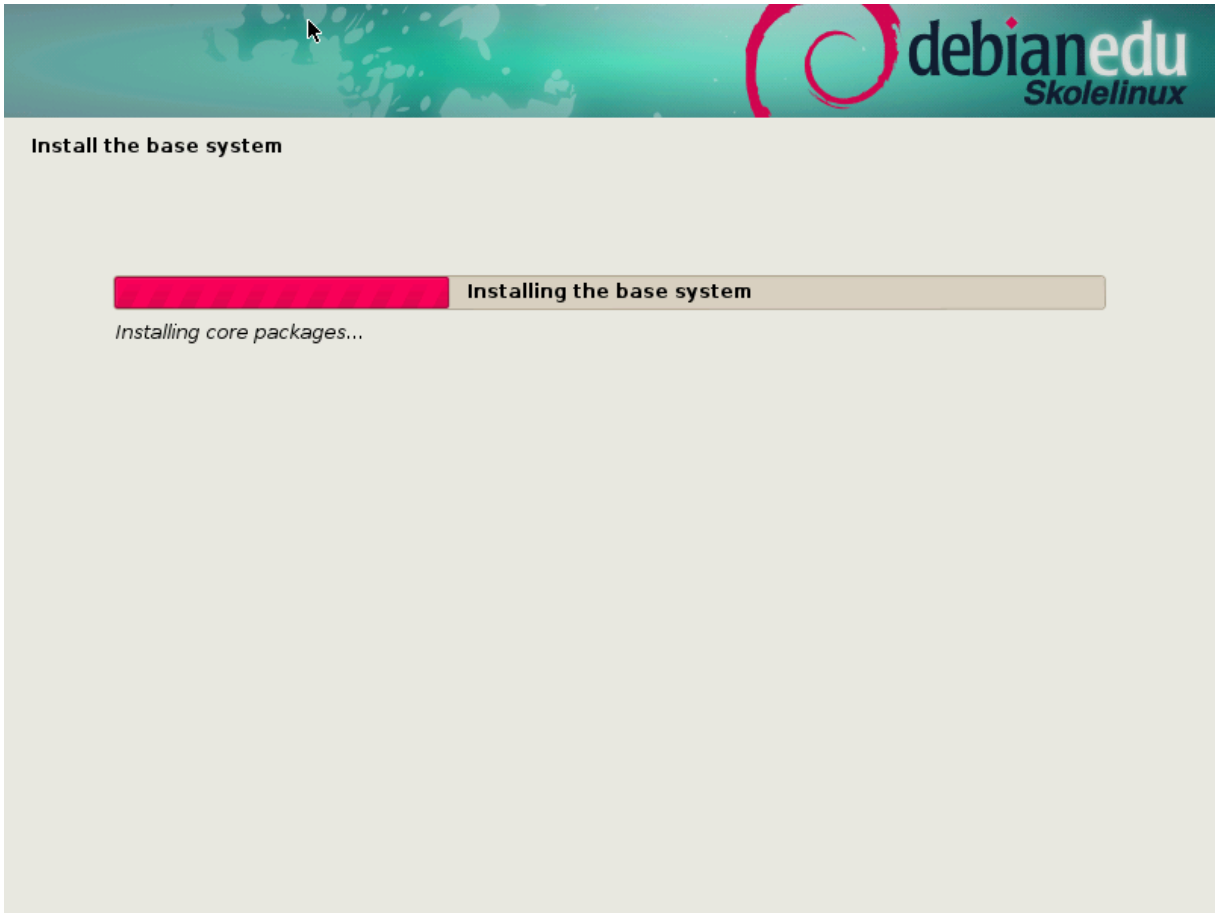

debianedu
Skolelinux
Set up users and passwords
A user account will be created for you to use instead of the root account for non-administrative activities.
Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.
Full name for the new user:
Jane Doe
Screenshot
Go Back
Continue

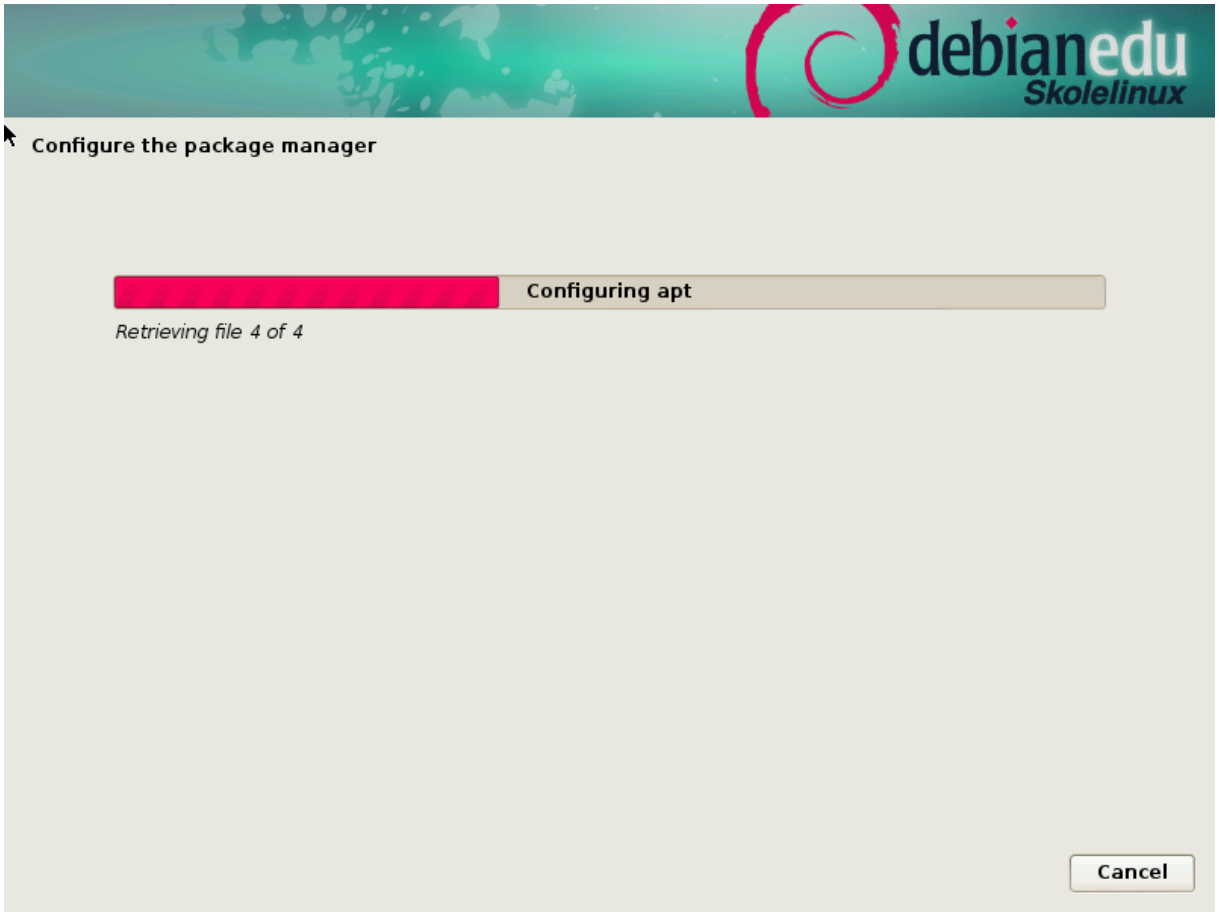

debianedu
Skolelinux
Set up users and passwords
Select a username for the new account. Your first name is a reasonable choice. The username should start with a lower-case letter, which can be followed by any combination of numbers and more lower-case letters.
Username for your account:
jane
Screenshot
Go Back
Continue

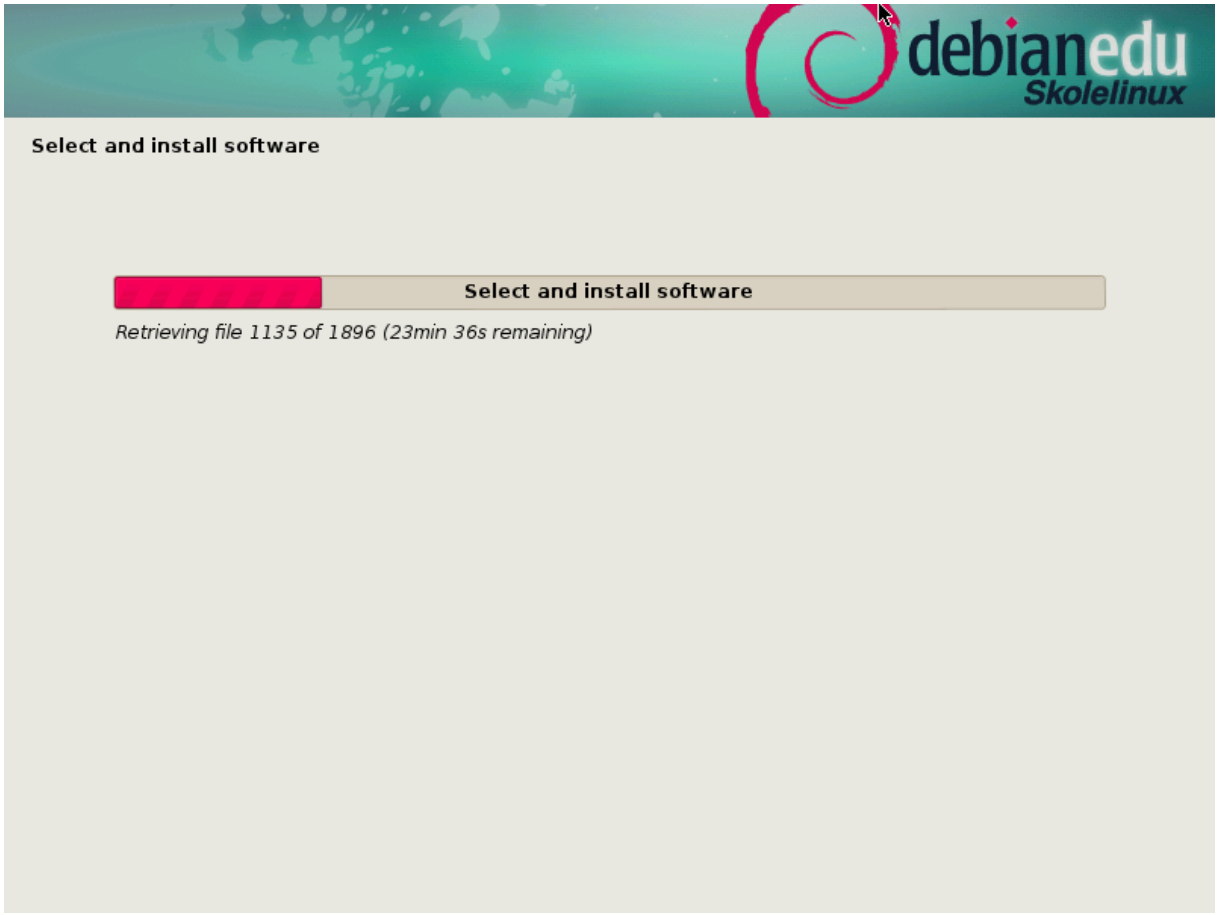

debianedu
Skolelinux
Set up users and passwords
A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.
Choose a password for the new user:
Please enter the same user password again to verify you have typed it correctly.
Re-enter password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

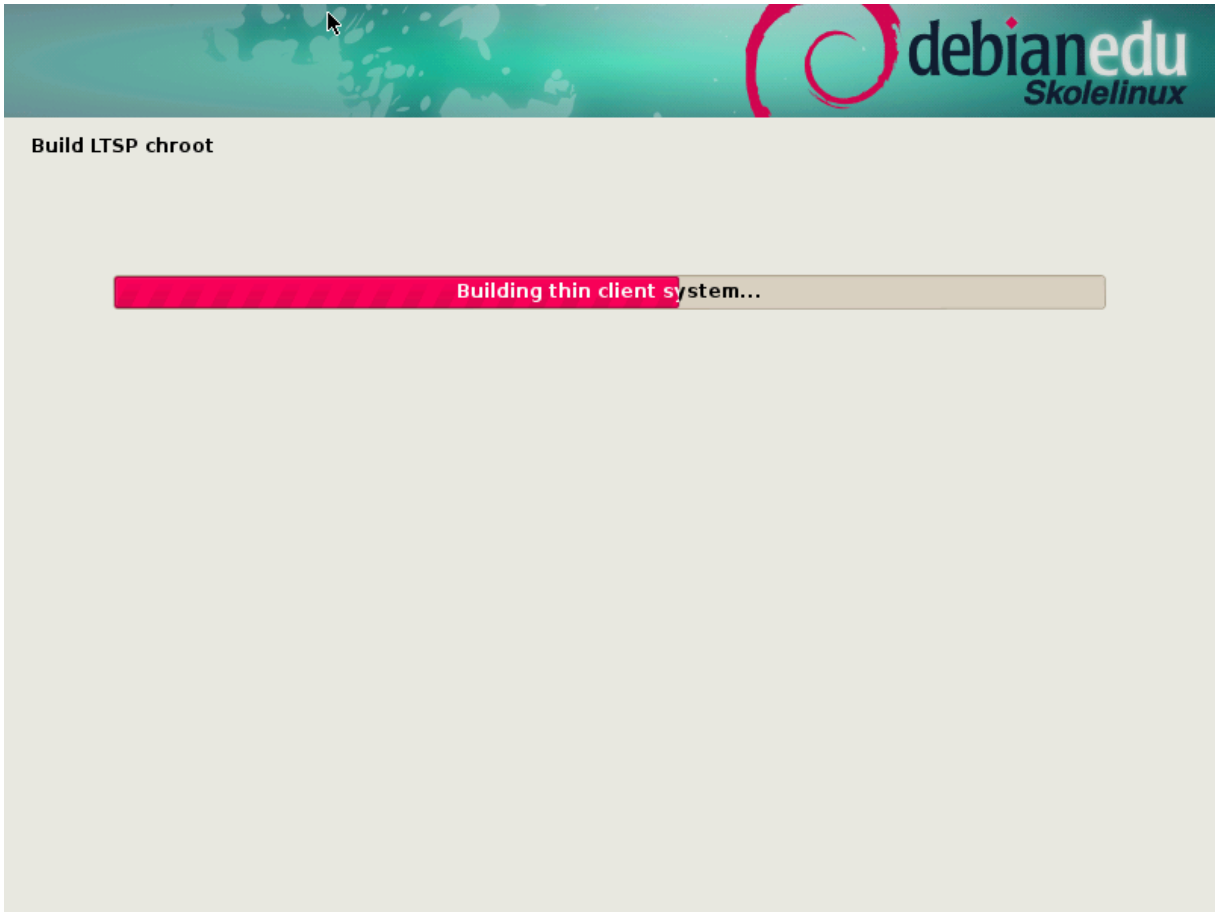
debianedu
Skolelinux
Partition disks
Starting up the partitioner
Please wait...

debianedu
Skolelinux
Partition disks
Partitions formatting
Creating ext4 file system for /debianedufreespace in partition #1 of LVM VG vg_system, LV debianedufree

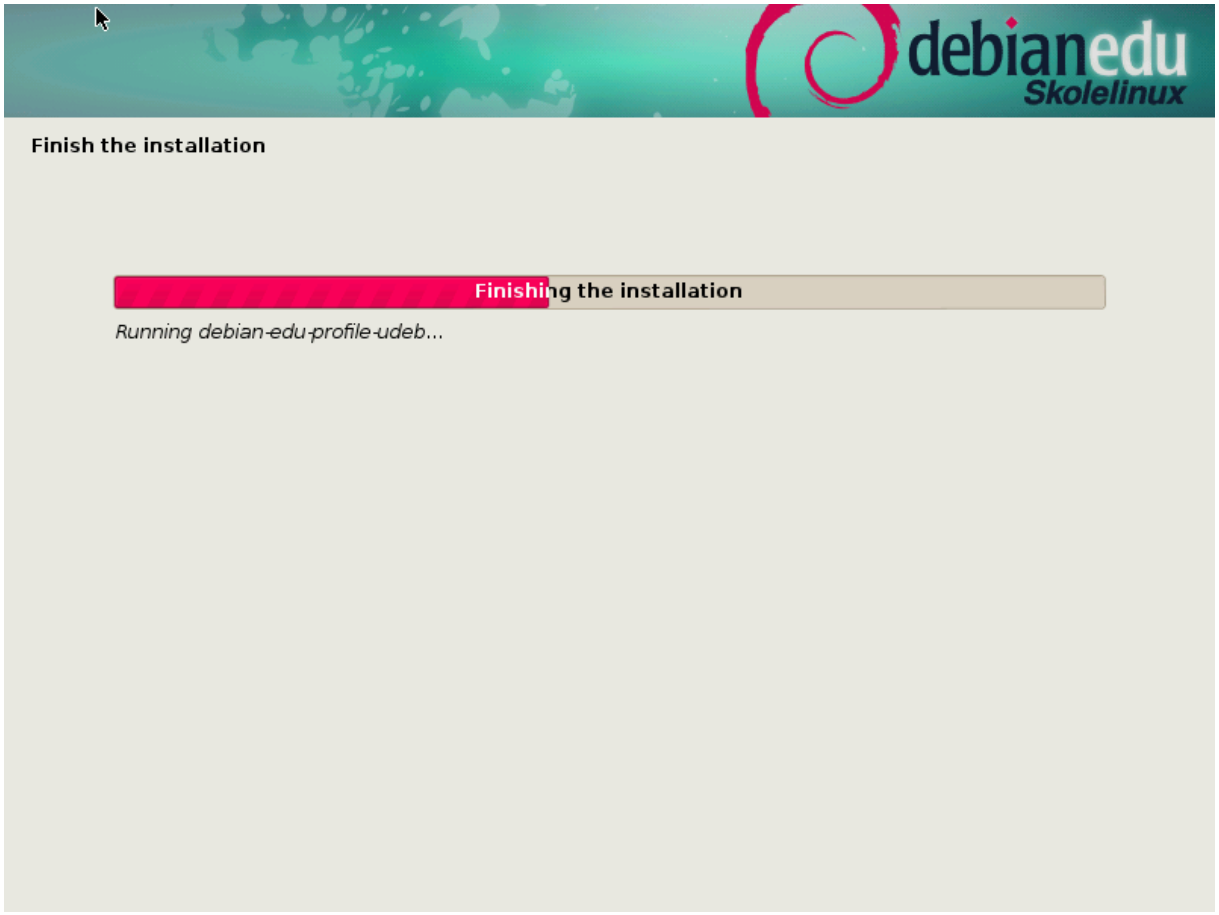

debianedu
Skolelinux
Install the base system
Installing the base system
Installing core packages...


debianedu
Skolelinux
Configure the package manager
Configuring apt
Retrieving file 4 of 4
Cancel


debianedu
Skolelinux
Select and install software
Select and install software
Retrieving file 1135 of 1896 (23min 36s remaining)


debianedu
Skolelinux
Build LTSP chroot
Building thin client system...

debianedu
Skolelinux
Install the GRUB boot loader on a hard disk
Installing GRUB boot loader
Running "update-grub"...

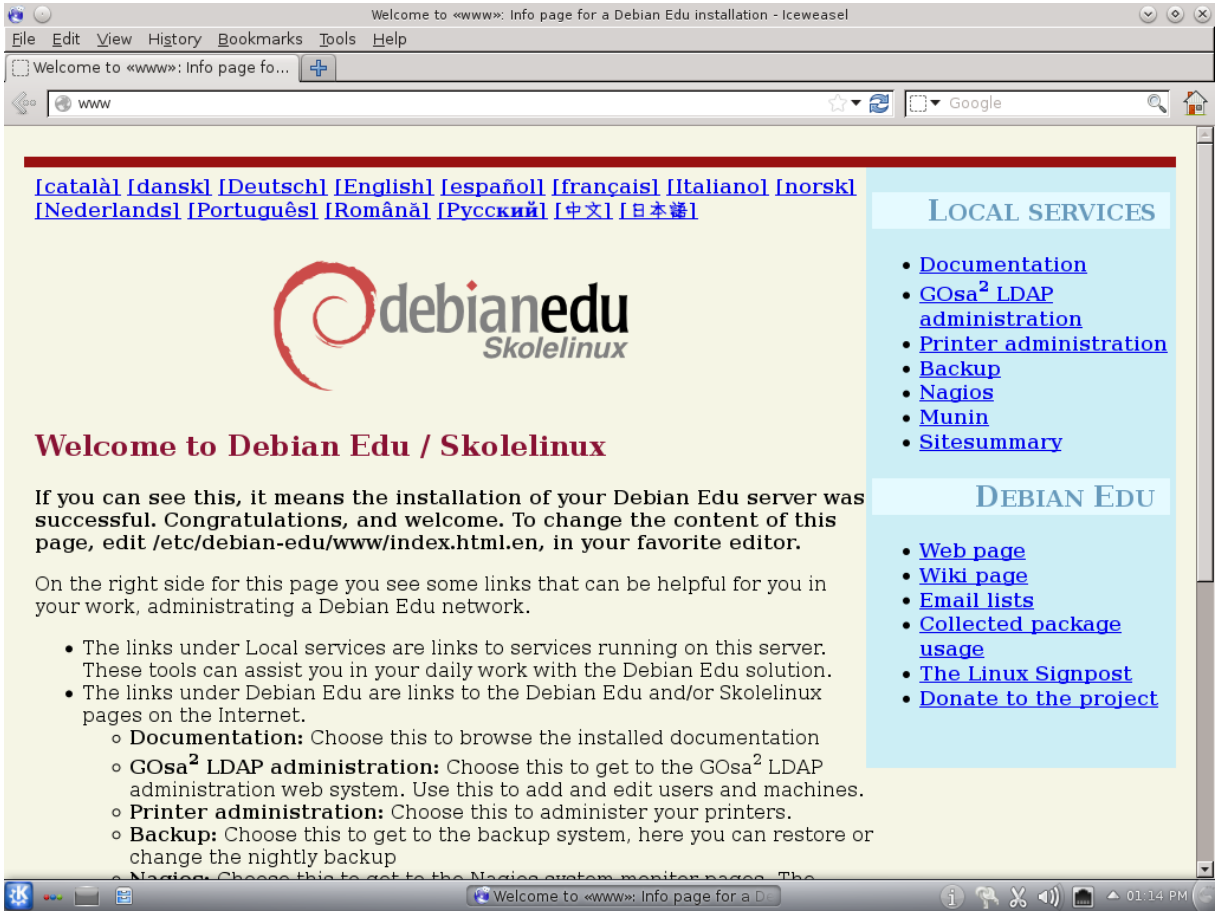

debianedu
Skolelinux
Finish the installation
Finishing the installation
Running debian-edu-profile-udeb...

debianedu
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 (CD-ROM, floppies), so that you boot into the new system rather than restarting the installation.
Screenshot
Go Back
Continue

GNU GRUB version 1.99-27+deb7u1
Debian GNU/Linux, with Linux 3.2.0-4-amd64
Debian GNU/Linux, with Linux 3.2.0-4-amd64 (recovery mode)
Memory test (memtest86+)
Memory test (memtest86+, serial console 115200)
Memory test (memtest86+, experimental multiboot)
Memory test (memtest86+, serial console 115200, experimental multiboo→
Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the commands
before booting or 'c' for a command-line.
The highlighted entry will be executed automatically in 4s.
debianedu
Skolelinux

tjener.intern
Fri 26 July 12:59
debianedu
Skolelinux

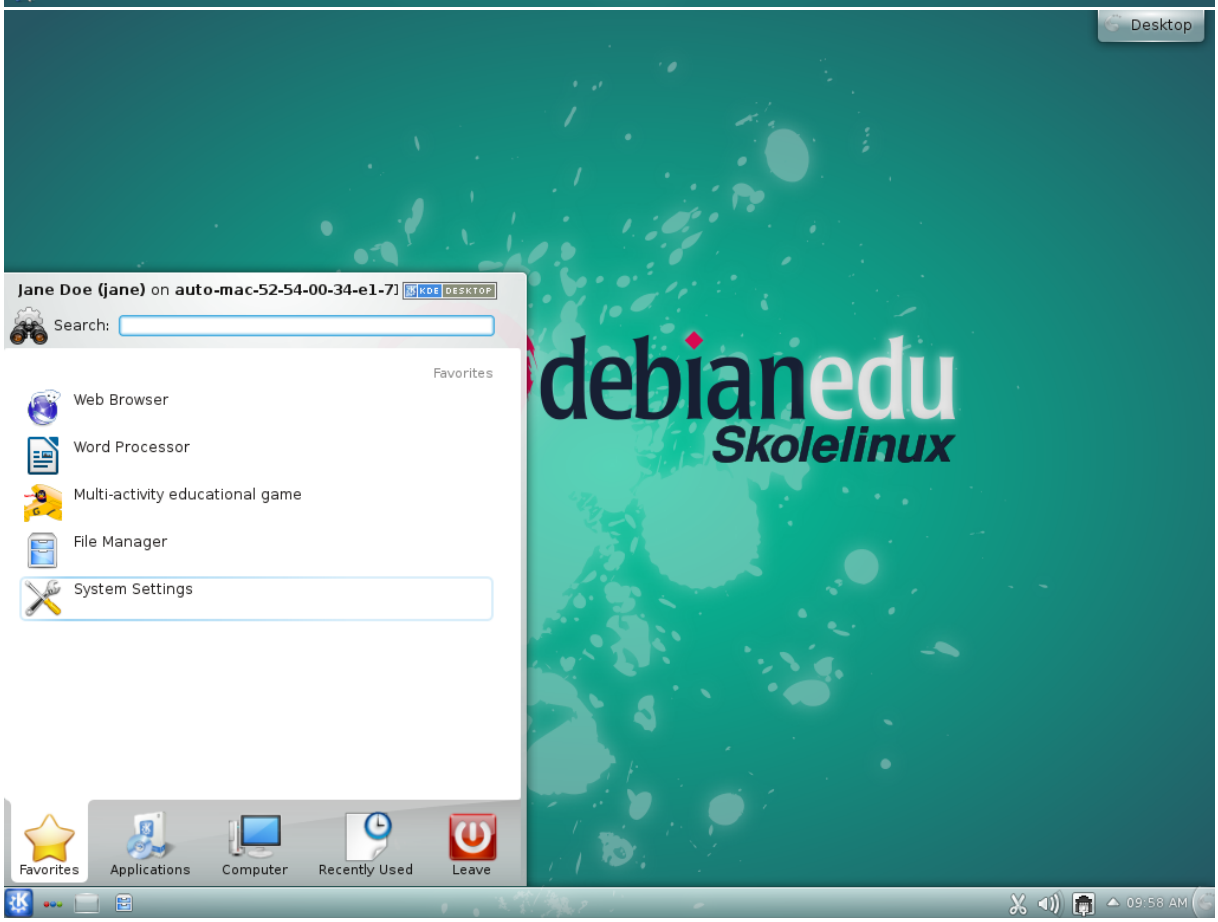
debianedu
Skolelinux


Welcome to «www»: Info page for a Debian Edu installation - Iceweasel
File Edit View History Bookmarks Tools Help
Welcome to «www»: Info page fo...
www
Google
[català] [dansk] [Deutsch] [English] [español] [français] [Italiano] [norsk] [Nederlands] [Português] [Română] [Русский] [中文] [日本語]
debianedu
Skolelinux
Welcome to Debian Edu / Skolelinux
If you can see this, it means the installation of your Debian Edu server was successful. Congratulations, and welcome. To change the content of this page, edit /etc/debian-edu/www/index.html.en, in your favorite editor.
On the right side for this page you see some links that can be helpful for you in your work, administrating a Debian Edu network.
The links under Local services are links to services running on this server. These tools can assist you in your daily work with the Debian Edu solution.
The links under Debian Edu are links to the Debian Edu and/or Skolelinux pages on the Internet.
Documentation: Choose this to browse the installed documentation
GOsa² LDAP administration: Choose this to get to the GOsa² LDAP administration web system. Use this to add and edit users and machines.
Printer administration: Choose this to administer your printers.
Backup: Choose this to get to the backup system, here you can restore or change the nightly backup
LOCAL SERVICES
Documentation
GOsa² LDAP administration
Printer administration
Backup
Nagios
Munin
Sitesummary
DEBIAN EDU
Web page
Wiki page
Email lists
Collected package usage
The Linux Signpost
Donate to the project
Welcome to «www»: Info page for a D...
01:14 PM

Desktop
debianedu
Skolelinux
09:57 AM

Boot from local harddrive
LTSP diskless workstation
LTSP thin client
Install Edu/i386 (kde)
Install Edu/amd64 (kde)
Test memory
Press ENTER to boot or TAB to edit a menu entry
debianedu
Skolelinux

LTSP Client Login
Username
debianedu
Skolelinux
Preferences
auto-mac-00-04-75-d3-42-8a.intern (10.0.16.20) // 13:33


Desktop
Jane Doe (jane) on auto-mac-52-54-00-34-e1-7f
KDE DESKTOP
Search:
Favorites
Web Browser
Word Processor
Multi-activity educational game
File Manager
System Settings
debianedu
Skolelinux
Favorites
Applications
Computer
Recently Used
Leave
09:58 AM

7 Komme i gang

7.1 Minimumssteg for å komme i gang

During installation of the main server a first user account was created. In the following text this account will be referenced as "first user". This account is special, as there's no Samba account (can be added via GOsa^2), the home directory permission is set to 700 (so `chmod o+x ~` is needed to make personal web pages accessible), and the first user can use `sudo` to become root.

Etter installasjonen, de første tingene du trenger å gjøre som den første brukeren er:

1. Logg inn på tjeneren - med rot-kontoen kan du ikke bruke grafisk innlogging.
2. Add users with GOsa^2
3. Add workstations with GOsa^2 - thin-client and diskless workstation can be used directly without this step.

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

⚠ 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.

The HowTo chapter covers more tips and tricks and some frequently asked questions.

7.1.1 Tjenester som kjører på hovedtjeneren

There are several services running on the main server which can be managed via a web management interface. We'll describe each service below.

7.2 Introduksjon til GOsa²

GOsa² is a web based management tool that helps to manage some important parts of your Debian Edu setup. With GOsa² you can manage (add, modify, or delete) these main groups:

- Brukeradministrasjon
- Gruppeadministrasjon
- NIS Netgroup Administrator
- Maskinadministrasjon
- DNS Administrasjon
- DHCP Administration

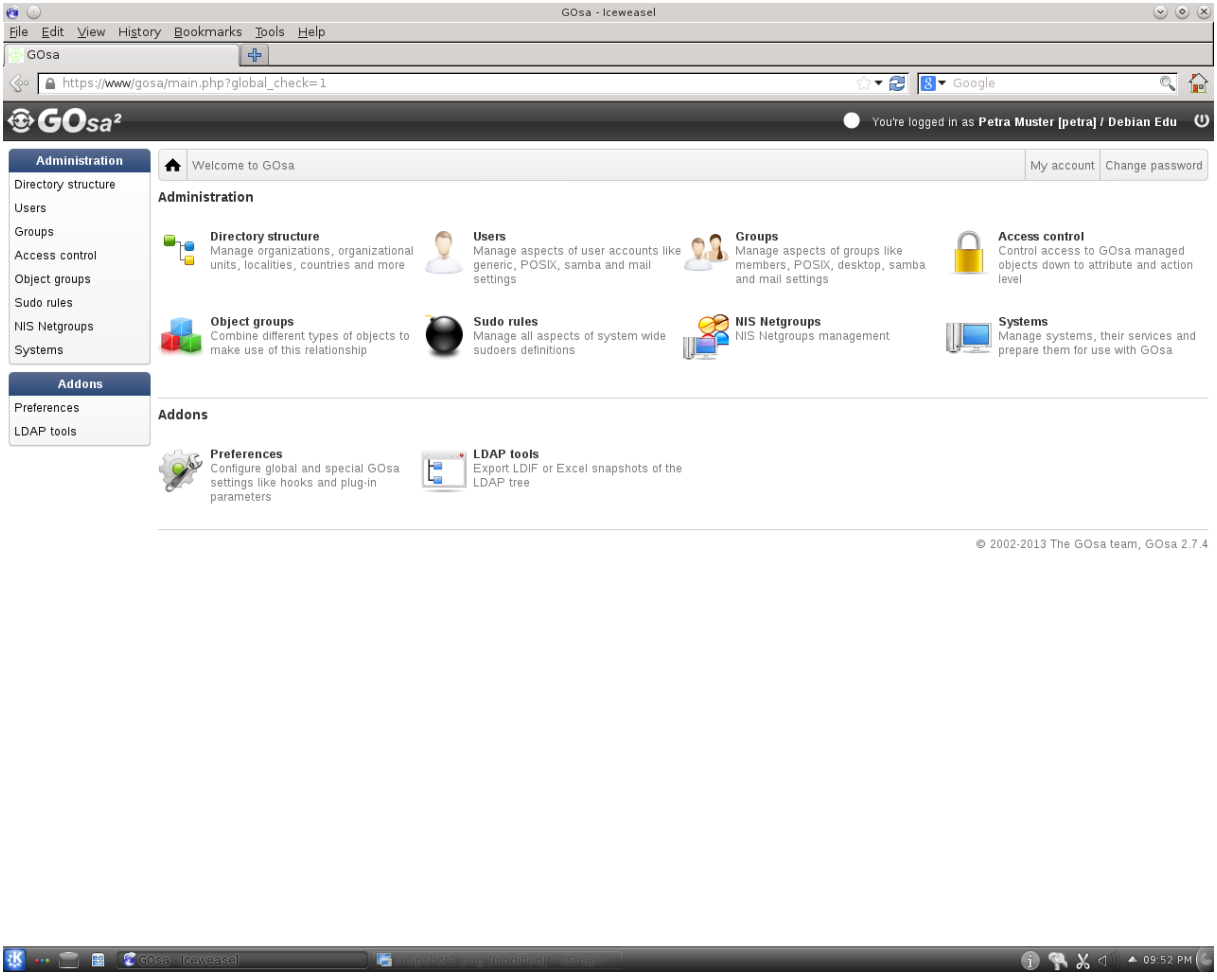
For GOsa² access you need the Skolelinux main server and a (client) system with a web browser installed which can be the main server itself if it was installed as a so called combined server (main server + thin client server + workstation). If all of the mentioned before is not available, see: Installing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

From a web browser use the URL `https://www/gosa` for GOsa² access, and log in as the first user.

- If you are using a new Debian Edu Wheezy machine, the site certificate will be known by the browser.
- Otherwise, you will get an error message about the SSL certificate being wrong. If you know you are alone on your network, just tell the browser to accept it and ignore that.

For general information on GOsa² have a look at: `https://oss.gonicus.de/labs/gosa/wiki/documentation`.

7.2.1 GOsa² Login plus Overview



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

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

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

GOsa² is an administration tool that uses LDAP to store its information and provide a hierarchical department structure. To each "department" you can add user accounts, groups, systems, netgroups, etc. Depending on the structure of your institution, you can use the department structure in GOsa²/LDAP to transfer your organisational structure into the LDAP data tree of the Debian Edu main server.

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.)

Depending on the task that you want to work on (manage users, manage groups, manage systems, etc.) GOsa² presents you with a different view on the selected department (or the base level).

7.3 User Management with 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 Super-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 Legge til brukere

Next to that tree navigation item you can see the "Actions" menu. Move your mouse over this item and a submenu appears on screen; choose "Create" here, and then "User". You will be guided by the user creation wizard.

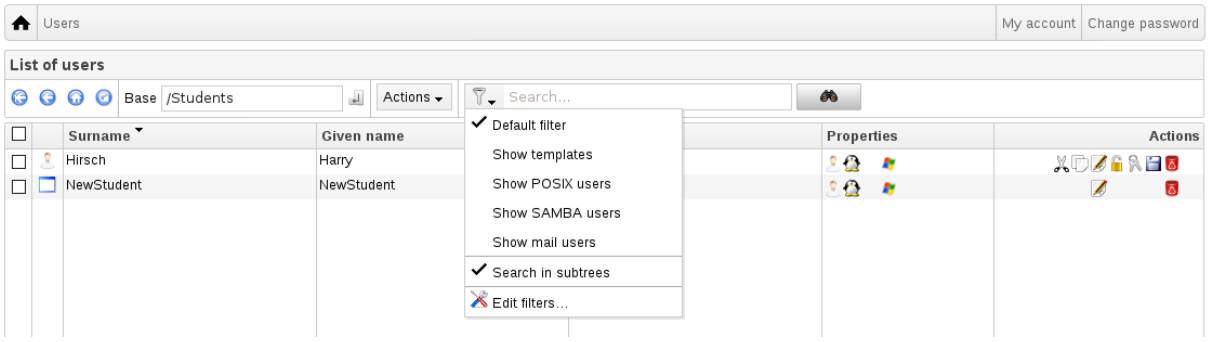
- The most important thing to add is the template (newstudent or newteacher) and the full name of your user (see image).
- As you follow the wizard, you will see that GOsa² generates a username automatically based on the real name. It automatically chooses a username that doesn't exist yet, so multiple 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.

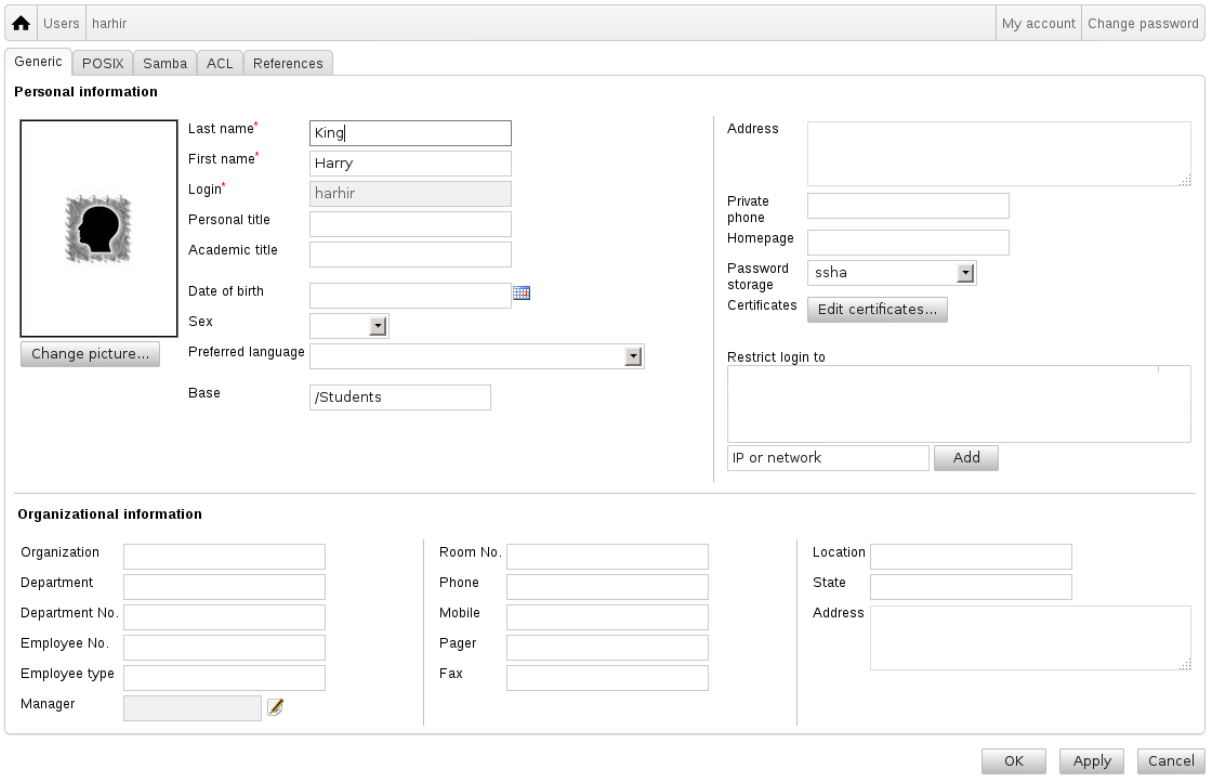
7.3.2 Search, modify and delete users



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

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

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



7.3.3 Sett passord

The students can change their own passwords by logging into GOsa² with their own usernames. To ease the access of GOsa², an entry called Gosa is provided in the desktop's System (or System settings) menu. A logged-in student will be presented with a very minimal version of GOsa² that only allows access to the student's own account data sheet and to the set-password dialog.

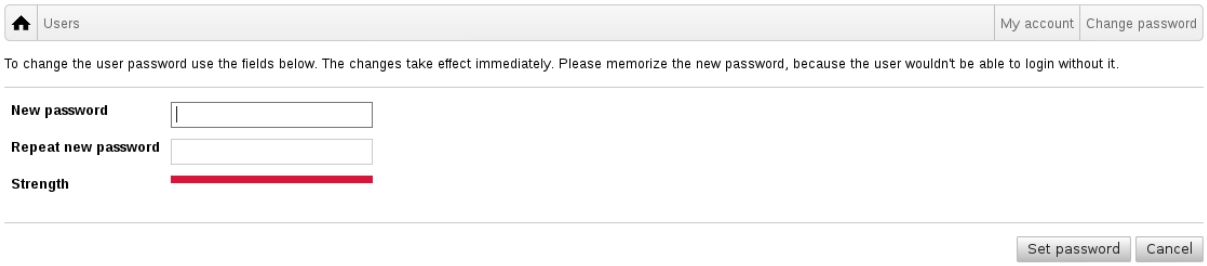
Teachers logged in under their own usernames have special privileges in GOsa². They are shown a more privileged view of GOsa², and can change the passwords for all student accounts. This may be very handy during class.

To administratively set a new password for a user

1. search for the user to be modified, as explained above

2. click on the key symbol at the end of the line that the username is shown in

3. on the page subsequently presented you can set a new password chosen by yourself



Beware of security implications due to easy to guess passwords!

7.3.4 Avansert brukerhåndtering

It is possible to mass-create users with GOsa² by using a CSV file, which can be created with any good spreadsheet software (for example `localc`). At least, entries for the following fields have to be provided: uid, last name (sn), first name (givenName) and password. Make sure that there are no duplicate entries in the uid field. Please note that the check for duplicates must include already existing uid entries in LDAP (which could be obtained by executing `getent passwd | grep tjener/home | cut -d":" -f1` on the command line).

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

- Use "," as field separator
- Do not use quotes
- The CSV file **must not** contain a header line (of the sort that normally contains the column names)
- The order of the fields is not relevant, and can be defined in GOsa² during the mass import

The mass import steps are:

1. click the "LDAP Manager" link in the navigation menu on the left

2. click the "Import" tab in the screen on the right

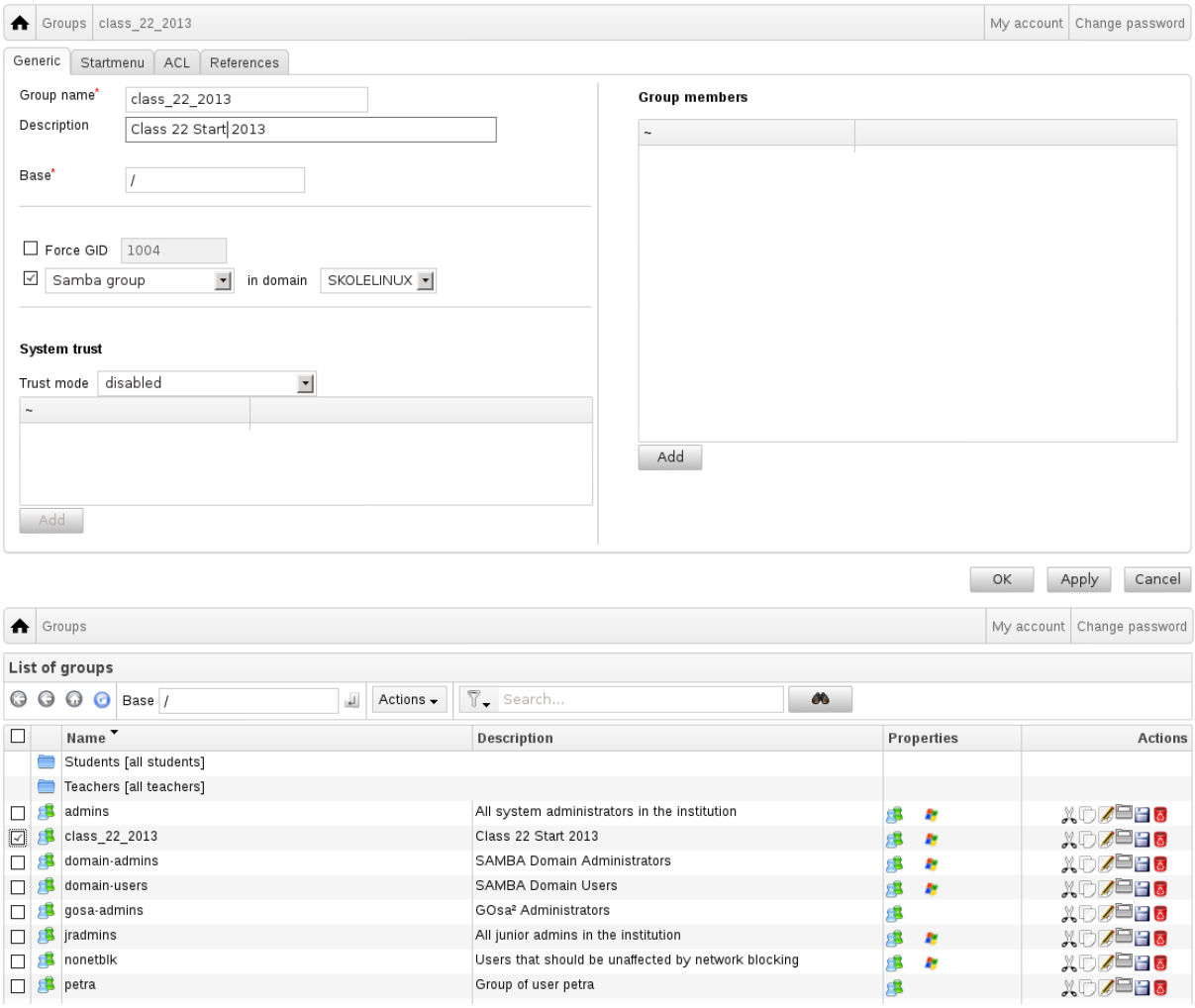
3. browse your local disk and select a CSV file with the list of users to be imported

4. choose an available user template that should be applied during mass import (such as NewTeacher or NewStudent)

5. click the "Import" button in the bottom-right corner

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

7.4 Group Management with GOsa²



The management of groups is very similar to the management of users.

You can enter a name and a description per group. Make sure that you choose the right level in the LDAP tree when creating a new group.

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.

Gruppene du legger til i gruppehåndteringen er også vanlige unix-grupper, så du kan bruke dem til filrettigheter også.

7.4.1 Gruppehåndtering med kommandolinjen

```
# List eksisterende groupeoverføring mellom UNIX og Windows grupper.
net groupmap list

# Legg til ny eller eventuelt manglende grupper:
net groupmap add unixgroup=NEW_GROUP type=domain ntgroup="NEW_GROUP"\
comment="DESCRIPTION OF NEW GROUP"
```

This is explained in more detail in the HowTo/NetworkClients chapter of this manual.

7.5 Machine Management with 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.

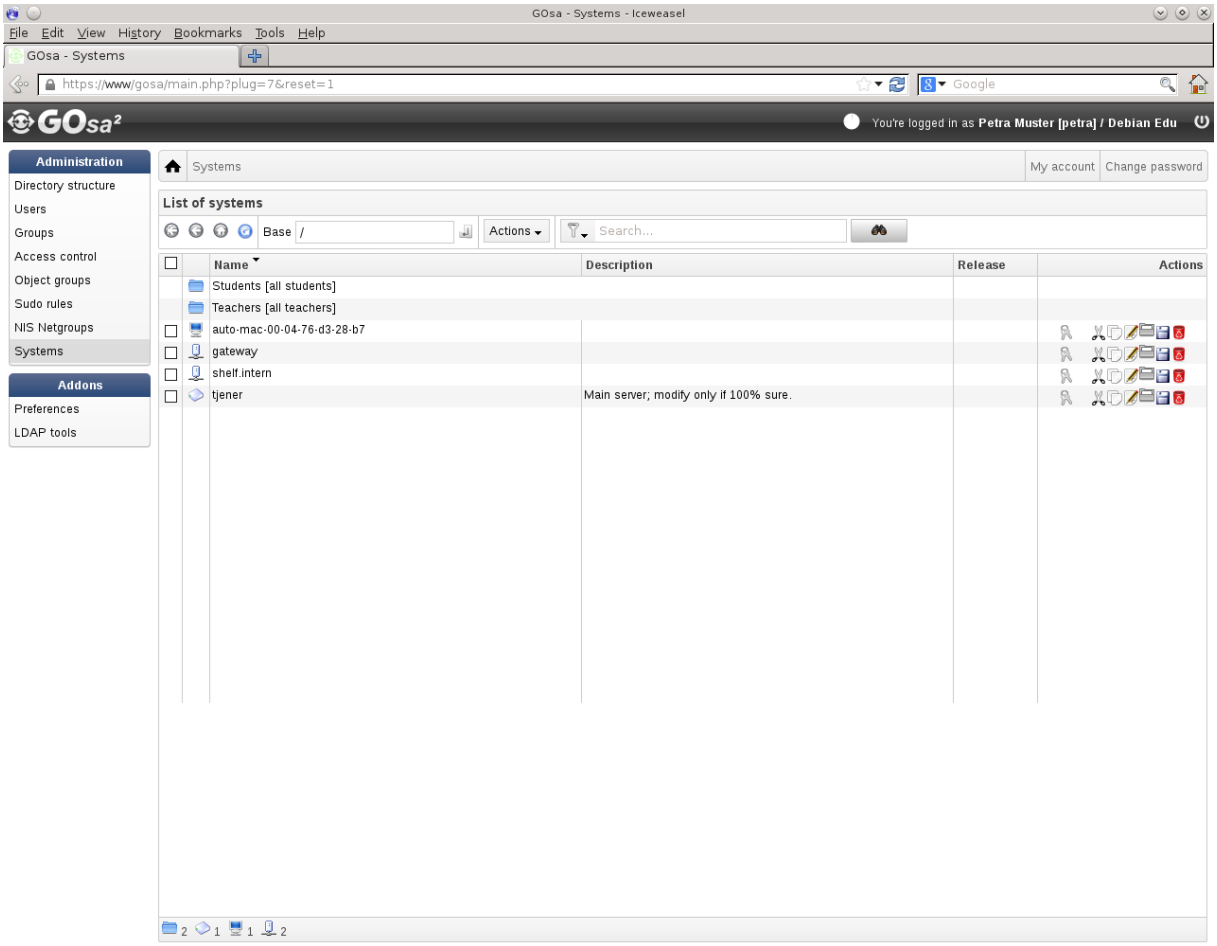
To assign a host with the MAC address 52:54:00:12:34:10 a static IP address in GOsa² you have to enter the MAC address, the hostname and the IP; alternatively you might click the `Propose ip` button which will show the first free fixed address in 10.0.0.0/8, most probably something like 10.0.0.2 if you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

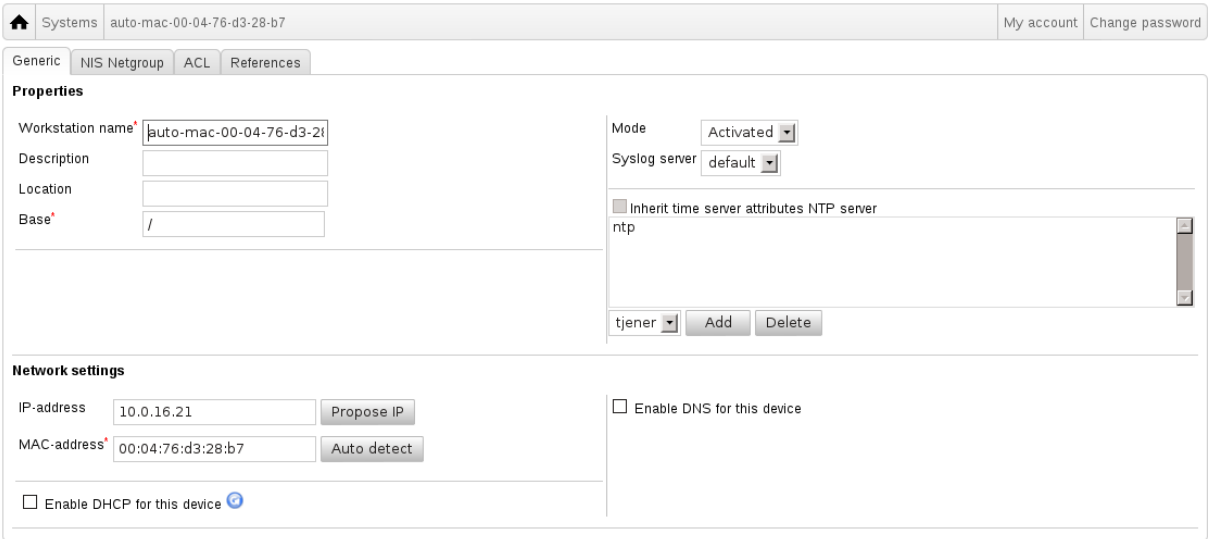
If the machines have booted as thin clients/diskless workstations or have been installed using any of the networked profiles, the `sitesummary2ldapdhcp` script can be used to automatically add machines to GOsa², `sitesummary2ldapdhcp -h` shows usage information. Please note, that the IP addresses shown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

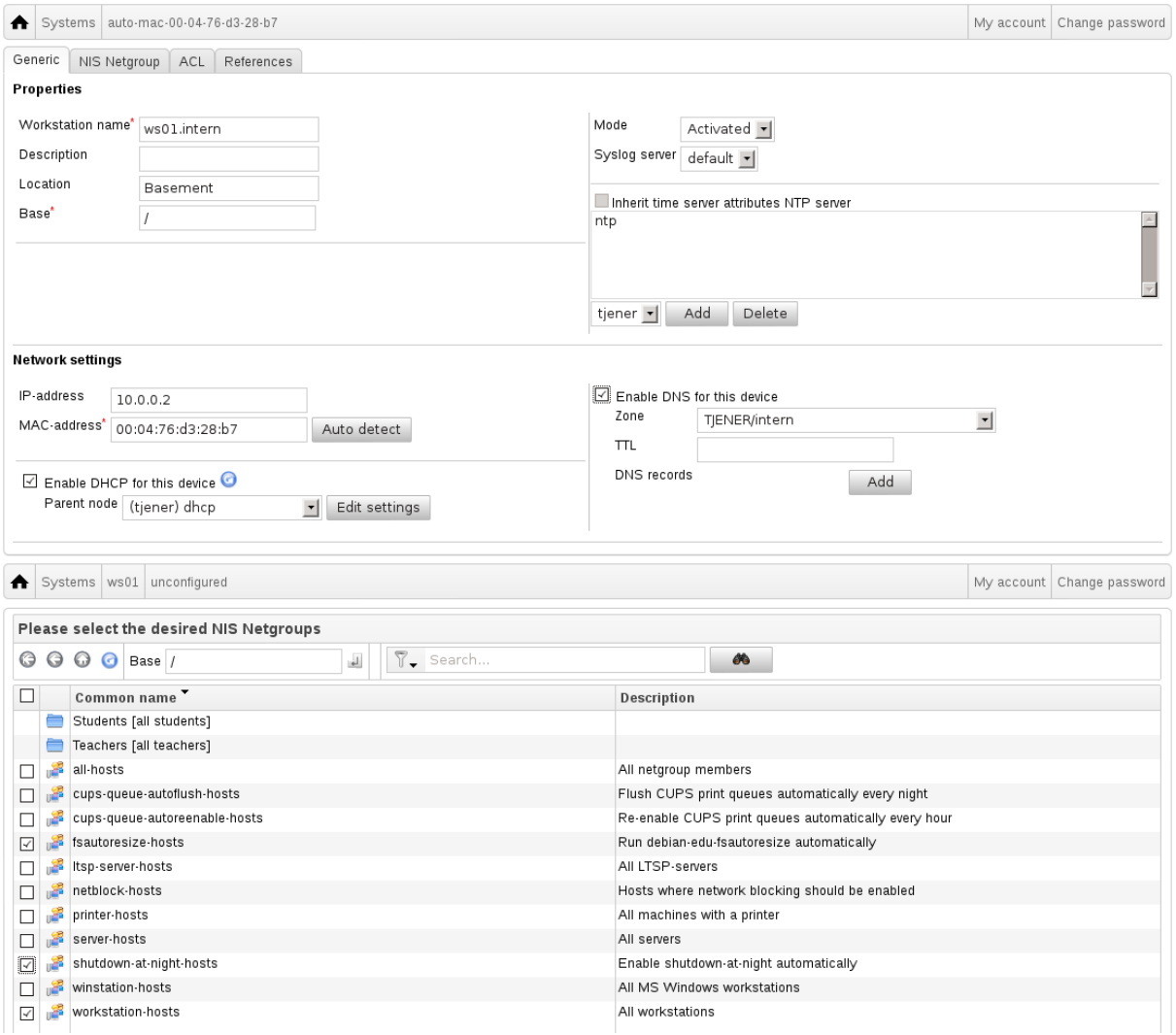
```
root@tjener:~# sitesummary2ldapdhcp -a -i ether-00:04:76:d3:28:b7 -t workstations
info: Create GOsa machine for auto-mac-00-04-76-d3-28-b7.intern [10.0.16.21] id ↩
    ether-00:04:76:d3:28:b7.

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

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


GOsa - Systems - Iceweasel
File Edit View History Bookmarks Tools Help
GOsa - Systems
https://www/gosa/main.php?plug=7&reset=1
Google
GOsa²
You're logged in as Petra Muster [petra] / Debian Edu
Administration
Directory structure
Users
Groups
Access control
Object groups
Sudo rules
NIS Netgroups
Systems
Addons
Preferences
LDAP tools
Systems
My account
Change password
List of systems
Base /
Actions
Search...
Name
Description
Release
Actions
Students [all students]
Teachers [all teachers]
auto-mac-00-04-76-d3-28-b7
gateway
shelf.intern
tjener
Main server; modify only if 100% sure.


Systems
auto-mac-00-04-76-d3-28-b7
My account
Change password
Generic
NIS Netgroup
ACL
References
Properties
Workstation name*
auto-mac-00-04-76-d3-2
Description
Location
Base*
/
Mode
Activated
Syslog server
default
Inherit time server attributes NTP server
ntp
tjener
Add
Delete
Network settings
IP-address
10.0.16.21
Propose IP
MAC-address*
00:04:76:d3:28:b7
Auto detect
Enable DHCP for this device
Enable DNS for this device



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

7.5.1 Søk og slett maskiner

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

7.5.2 Endre eksisterende maskiner / nettgruppehåndtering

After adding a machine to the LDAP tree using GOsa², you can modify its properties using the search functionality and clicking on the machine name (as you would with users).

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

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

The default installation provides the `NetGroups`

- cups-queue-autoflush-hosts
- cups-queue-autoreenable-hosts
- fsautoresize-hosts
- ltsp-server-hosts
- netblock-hosts

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

Currently the `NetGroup` functionality is used for

- NFS.
  - The home directories are exported by the main-server to be mounted by the workstations and the LTSP servers. 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 GOsa^2 and to configure them to use static IP addresses from LDAP.

    Remember to configure workstations and ltsp-servers properly with GOsa^2, 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
  - Debian Edu machines in this group will automatically resize LVM partitions that run out of space.
- nattestenging
  - Maskiner med Skolelinux/DebianEdu i denne gruppen vil automatisk slå seg av om natten for å spare energi.
- CUPS (cups-queue-autoflush-hosts og cups-queue-autoreenable-hosts)
  - maskiner med Skolelinux/DebianEdu i denne gruppen vil automatisk slå seg av om natten for å spare energi.
- netblock-hosts
  - Debian Edu machines in this group will only be allowed to connect to machines on the local network. Combined with web proxy restrictions this might be used during exams.

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

8 Skriverhåndtering

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. Changes that require a root login need SSL encryption.

9 Clock synchronisation

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.

If you use dialup or ISDN and pay per minute, you want to change this default setting.

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 Utvide hele partisjoner

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 Oppdatere programvaren

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

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

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

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

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

Det er også en god idé å installere `cron-apt` og `apt-listchanges` og sette de opp til å sende e-post til en adresse du leser.

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

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

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

11.1.1 Hold deg oppdatert vedrørende sikkerhetsoppdateringer.

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 Håndtering av sikkerhetskopier

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.

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.

⚠ Be aware that this backup scheme doesn't protect you from failing hard drives.

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.

Hvis du ønsker å gjenopprette en komplett folder anbefales det å bruke kommandolinja:

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

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

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

If you want to get rid of older backups, choose "Maintenance" in the menu on the backup page and select the oldest snapshot to keep:

11.3 Tjeneroverv˚akning

11.3.1 Munin

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

The list of machines being monitored using Munin is generated automatically, based on the list of hosts reporting to sitesummary. All hosts with the package munin-node installed 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/plugins/.

Information about Munin is available from http://munin.projects.linpro.no/ .

11.3.2 Nagios

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

The username is nagiosadmin and the 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/nagios3/htpasswd.users nagiosadmin
```

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

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

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

Information about Nagios is available from http://www.nagios.org/ or in the `nagios3-doc` package.

11.3.2.1 Common Nagios warnings and how to handle them

Her er instruksjoner om hvordan du skal håndtere de mest vanlige Nagios advarsler.

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-get 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-get upgrade && apt-get dist-upgrade' as root in a terminal or log in via ssh to do the same. On thin client servers, remember to also update the LTSP chroot using `ltsp-chroot apt-get update && ltsp-chroot apt-get upgrade`.

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

To upgrade the LTSP chroot, one can use `ltsp-chroot apt-get update && ltsp-chroot apt-get upgrade`. On 64-bit servers, one will have to add `-a i386` as an argument to ltsp-chroot. It is a good idea to update the chroot when updating the host system.

11.3.2.1.3 WARNING - Reboot required : running kernel = 2.6.32-37.81.0, installed kernel = 2.6.32-38.83.0

The running kernel is older than the newest installed kernel, and a reboot is required to activate the newest installed kernel. This is normally fairly urgent, as new kernels normally show up in Debian Edu to fix security issues.

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 brukes til å samle informasjon fra alle datamaskiner i nettverket, og sender dette til en sentral server. Informasjonen som er samlet er tilgjengelig i `/var/lib/sitesummary/entries/` Scripts som finnes i `/usr/lib/sitesummary/` muliggjør generering av ulike rapporter.

En enkel rapport fra sitesummary er tilgjenglig fra https://www/sitesummary/.

Noe dokumentasjon for sitesummary er tilgjengelig fra http://wiki.debian.org/DebianEdu/HowTo/SiteSummary.

11.4 Mer informasjon om ulike måter å tilpasse DebianEdu/Skolelinux på.

More information about Debian Edu customisations useful for system administrators can be found in the Administration Howto chapter and in the Advanced administration Howto chapter

12 Oppgraderinger

⚠ Before reading this upgrade guide, please note that live updates to your production servers are carried out at your own risk. **Debian Edu/Skolelinux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.**

Please read this chapter completely before attempting to upgrade.

12.1 Generelle betraktninger om oppgradering

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

I hovedsak: Oppgradering av servere er mer vanskelig enn arbeidsstasjonene, og hovedserveren er den vanskeligste å oppgradere. De diskløse maskinene er enkle, da deres chroot miljø kan bli slettet og gjenopprettet hvis du ikke har modifisert dem. Hvis du har, er chroot egentlig en workstation chroot uansett, og er releativt enkel å oppgradere.

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

Make sure to also read the information about the 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 Squeeze

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

12.2.1 Standard upgraderings metode

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

12.2.2 LDAP service needs to be reconfigured

The LDAP setup has changed slightly from Squeeze to Wheezy. Nevertheless, LDAP has to be rebuild from scratch. There's a script `ldap-debian-edu-install` (in /usr/bin) that could be used to achieve this. Read the comment at the beginning of that script carefully before doing anything.

12.2.3 Gjenoppretter LTSP chroot

On the LTSP server(s) the LTSP chroot should be recreated. The new chroot will still support both thinclients and diskless workstations.

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

Gjenopprett chroot ved å kjøre `debian-edu-ltsp` som root.

Of course you can also upgrade the chroot as usual.

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

To upgrade from any older release, you will need to upgrade to the Squeeze based Debian Edu release first, before you can follow the instructions provided above. Instructions are given in the Manual for Debian Edu Squeeze about how to upgrade to Squeeze from the previous release, Lenny, and the Lenny manual covers the one before that! (Etch was it's name.)

13 Veiledning

- HowTos for general administration
- HowTos for advanced administration
- HowTos for the desktop
- HowTos for networked clients
- HowTos for Samba
- HowTos for teaching and learning
- HowTos for users

14 Veiledninger for generell administrasjon

The Getting Started and Maintenance chapters describe how to get started with Debian Edu and how to do the basic maintenance work. The howtos in this chapter have some more "advanced" tips and tricks.

14.1 Configuration history: tracking /etc/ using the git version control system

With the introduction of `etckeeper` in Debian Edu Squeeze (previous versions used `etcinsvk` which was removed from Debian), all files in `/etc/` are tracked using git as a version control system.

This makes it possible to see when a file is added, changed and removed, as well as what was changed if the file is a text file. The git repository is stored in `/etc/.git/`.

Every hour, any changes are automatically recorded, allowing configuration history to be extracted and reviewed.

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

See the output of `man etckeeper` for more information.

Liste over nyttige kommandoer:

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

14.1.1 Eksempel på bruk

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

```
etckeeper vcs log
```

See which files are currently not tracked and which are not up-to-date:

```
etckeeper vcs status
```

For å melde inn en fil manuelt, fordi du ikke vil vente en time:

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

14.2 Endre størrelse på partisjoner

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 Logical Volume Management

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 30GB 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 30G, you insert a '+' (-L+30G)

14.3 Installing a graphical environment on the main-server to use GOsa[2]

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

```
$ sudo apt-get update
$ sudo apt-get install gnome-session gnome-terminal iceweasel xorg
# after installation, start a graphical session for the first user
$ startx
```

14.4 Using ldapvi

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

The following needs to be executed:

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

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

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

Warning: `ldapvi` is a very powerful tool. Be careful and don't mess up the LDAP database, same warning applies for JXplorer.

14.5 JXplorer, en LDAP GUI

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

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

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

14.6 ldap-createuser-krb, a command-line tool

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

14.7 Using stable-updates (formerly known as volatile)

Since the Squeeze release, Debian has included packages formerly maintained in volatile.debian.org in the 2011 created stable-updates suite.

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

14.8 Using backports.debian.org to install newer software

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

Backports are recompiled packages from Debian testing (mostly) and Debian unstable (in a few cases only, e.g. security updates), so they will run without new libraries (wherever this is possible) on a stable Debian distribution like Debian Edu. **We recommend you to pick out individual backports which fit your needs, and not to use all backports available there.**

Using backports is simple:

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

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

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

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

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

14.9 Upgrading with a CD or similar image

If you want to upgrade from one version to another (for example from Wheezy 7.1+edu0 to 7.3+edu1) but you do not have Internet connectivity, only physical media, follow these steps:

Sett inn en CD / DVD / Blue-ray plate/USB minnepenn, monter den og bruk apt-cdrom kommandoen:

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

To quote the apt-cdrom(8) man page:

- apt-cdrom is used to add a new CDROM 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.

Then run these two commands to upgrade the system:

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

14.10 Automatisk opprydding av prosesser som er til overs

`killer` er et perl-script som fjerner bakgrunns-prosesser. Dette er prosesser som hører til brukere som ikke lenger er logget inn på en maskin. Killer kjøres av Cron en gang i timen.

For å installere, kjør følgende som root:

```
apt-get install killer
```

14.11 Automatic installation of security upgrades

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

To install these packages run the following command as root:

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

14.12 Automatisk nedstengning av maskiner for natten

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.

14.12.1 Slik setter du opp 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 `GOsa`[2] web tool. The clients might need to have wake-on-lan configured in the BIOS. It is also important that the switches and routers used between the wake-on-lan server and the clients will pass the WOL packets to the clients even if the

clients are turned off. Some switches fail to pass on packets to clients that are missing in the ARP table on the switch, and this blocks the WOL packets.

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

Her er et eksempel på`/etc/shutdown-at-night/clients-generator` for bruk sammen med sitesummary:

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

Et alternativ hvis nettgruppen er brukt for å aktivere shutdon-at-night på klienter, er dette skriptet som bruker nettgruppeverktøyet fra `ng-utils` pakken:

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

14.13 Access Debian-Edu servers located behind a firewall

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

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

In the default installation, all services are running on the main-server, tjener. To simplify moving some to another machine, there is a *minimal* installation profile available. Installing with this profile will lead to a machine, which is part of the Debian Edu network, but which doesn't have any services running (yet).

These are the required steps to setup a machine dedicated to some services:

- installer *minimal* profilen ved å bruke *debian-edu-expert* oppstartsvalget
- installer pakkene for tjenesten
- sette opp tjenesten
- slå av tjenesten på hovedtjeneren
- update DNS (via LDAP/GOsa[2]) on main-server

14.15 Veiledninger fra wiki.debian.org

Veiledninger fra `http://wiki.debian.org/DebianEdu/HowTo/` er enten bruker- eller utviklerorientert. La oss flytte de brukerorienterte veiledningene hit (og slette dem derfra)! (Men først må vi spørre forfatterne (se historien til disse sidene for å finne dem) om dem synes det er greit å flytte veiledningen og utgi dem under GPL.)

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

15 Advanced administration

In this chapter advanced administration tasks are described.

15.1 User Customisations with GOsa[2]

15.1.1 Create Users in Year Groups

I dette eksemplet vil vi lage brukere i årsgrupper, med felles hjemmemapper for hver gruppe (home0/2014, home0/2015, etc.). Vi vil lage brukere ved å importere csv-er.
(as root on Tjener)

- Make the necessary year group directories

mkdir /skole/tjener/home0/2014
(as superuser in Gosa)

- Department

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.

- Group

Choose 'Groups' from the main menu; 'Actions'/Create/Group. Enter group name (leave 'Base' as is, should be /Students/2014) and click the check box left of 'Samba group'. 'Ok' to save it.

- Template

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

- Import users

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

15.2 Other User Customisations

15.2.1 Oppretter en mappe på alle brukeres hjemmeområde

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

I eksemplet nedenfor med gruppe=teachers (gruppe-lærere) og tillatelser=2770, kan en bruker levere inn en oppgave ved å lagre fila i mappa «oppgaver» («assignments») der lærerne har fått skrivetilgang slik at de kan legge til kommentarer.

```
#!/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 Enkel tilgang til USB-enheter og CD-ROM(er)/DVD(er)

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

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

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

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

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

15.2.2.1 En liten advarsel om flyttbare medier på LTSP-tjenere.

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.

Dette holdes rede på som Debian Edu bug #1376.

15.3 Use a dedicated storage server

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

- Add a new system of type server using GOsa[2] as outlined in the Getting started chapter of this manual.
  - This example uses 'nas-server.intern' as the server name. Once 'nas-server.intern' ist 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 directories using `mkdir`, edit '/etc/fstab' as adequate and run `mount -a` to mount the new resources.

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

16 Veiledninger for skrivebordet

16.1 Modifying the KDM login screen

Customisations to the KDM login screen are made by adding a file in `/etc/default/kdm.d/` specifying variables to override the default.

Her er et eksempel som aktiverer temaet i `desktop-base`-pakken:

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

Se på koden i `/etc/init.d/kdm` for å få informasjon om hvordan disse variablene blir brukt.

16.2 Using KDE "Plasma", GNOME and LXDE together

If you want to use GNOME or LXDE instead of KDE "Plasma", follow the installation instructions.

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

```
apt-get install gnome lxde
```

Users will then be able to choose the desktop environment via the login manager before logging in. The usage of LXDE as default on thin clients can be forced; see networked clients for details.

16.3 Flash

The free software flash-player `gnash` is installed by default, but switching to Adobe Flash is an option. To install the (non-free) Adobe Flash Player web browser plugin, install the `flashplugin-nonfree` Debian package from `contrib`. This requires `contrib` enabled in `/etc/apt/sources.list`.

16.4 Avspilling av DVD

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

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

16.5 Etter å ha lagt til multimediaarkivet:

For å bruke www.deb-multimedia.org så kan du besøke hjemmesiden og finne et nettarkiv, eller du kan legge til

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

16.6 Håndskrevne fonter

Pakken `ttf-linex`, (som er innstallert som standard), innstallerer fonten "Abecedario" som er en fin håndskriftfont for barn. Denne fonten har flere varianter som kan bli brukt av barn: prikket, og med linjer.

17 Veiledninger for nettverksklienter

17.1 Introduction to thin clients and diskless workstations

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

Tynnklient

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

Diskløs arbeidsstasjon:

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

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

LTSP defines 320MB as the default minimum amount of RAM for diskless workstations. If the amount of RAM is less, the machine will boot as thin client. Unlike workstations, diskless workstations run without any need to add them with GOsa^2, cause LDM is used to login and connect to the LTSP server. The home directory is by default mounted using sshfs, and not automount and NFS. This causes shared directories available via NFS to not be available on diskless workstations.

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

- Add `DEFAULT_DISPLAY_MANAGER=/path/to/dm` to lts.conf (or set this in LDAP). Make sure, that the display manager is installed in the LTSP chroot.
- Add the diskless workstations to LDAP with GOsa^2.

LTSP client firmware

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

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

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

# Decide which package has to be installed for the network card(s).
# Most probably this will be firmware-linux-nonfree
# Things have to take effect in the LTSP chroot for architecture i386
ltsp-chroot -a i386 apt-get update
ltsp-chroot -a i386 mkdir /tmp/user 2> /dev/null
ltsp-chroot -a i386 mkdir /tmp/user/0 2> /dev/null
ltsp-chroot -d -a i386 apt-get -y -q install <package name>

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

As a shorter alternative -- installing all available firmware and updating the tftpboot directory -- you could execute:

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

LTSP client kernel

In order to support older hardware the package `linux-image-486` is installed by default. If all LTSP client machines support the 686 processor architecture the `linux-image-686` package could be installed in the chroot. Make sure to execute `ltsp-update-kernels` after installation.

17.1.1 LTSP client type selection

Each LTSP server has two ethernet cards: one configured in the main 10.0.0.0/8 subnet (which is shared with the main server), and another forming a local 192.168.0.0/24 subnet (a separate subnet for each LTSP server).

On the main subnet the complete PXE menu is provided; the separate subnet for each LTSP server allows only diskless and thin LTSP client selection.

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

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

17.2 Konfigurering av PXE-menyen

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

17.2.1 Modifisering av PXE installasjonen

PXE-innstallsjonsmuligheten er som standard tilgjengelig for alle som kan PXE-starte en maskin. For å passordbeskytte PXE-innstallasjonsvalgene, en fil `/var/lib/tftpboot/menupassword.cfg` kan bli laget med innhold lignende dette:

```
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.

17.2.2 Adding a custom repository for PXE installations

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
```

and then run `/usr/sbin/debian-edu-pxeinstall` once.

17.2.3 Changing the PXE menu on a combined (main and LTSP) server

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

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

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

If all clients should boot as thin clients instead, change the symlink like this:

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

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

17.2.4 Adskilte hoved- og LTSP-tjenere

Både for ytelse og av sikkerhetshensyn kan det være behov for å sette opp en separat hovedserver, som ikke opererer som en LTSP-server.

For å la ltspserver00 betjene diskløse arbeidsstasjoner på hovednettverket (10.0.0.0 /8), når tjener ikke er en kombinert server, gjør du følgende:

- copy the `ltsp` directory from `/var/lib/tftpboot` on ltspserver00 to the same directory on tjener.
- copy `/var/lib/tftpboot/debian-edu/default-diskless.cfg` to the same directory on tjener.
- edit `/var/lib/tftpboot/debian-edu/default-diskless.cfg` to use the IP address of ltspserver00; the following example uses 10.0.2.10 for the IP address of ltspserver00 on the main network:

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

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

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

17.3 Endre nettverksoppsett

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. 192.168.1.0/24 is already set up as the thin client network. Changing to this subnet will require manual editing of configuration files to remove duplicate entries.

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

17.4 LTSP i detalj

17.4.1 LTSP client configuration in LDAP (and lts.conf)

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

⚠ We recommend to configure clients in LDAP (and not edit `lts.conf` directly--however, configuration webforms for LTSP are currently not available in GOsa[2], you have to use a plain LDAP browser/explorer or `ldapvi`), as this makes it possible to add and/or replace LTSP servers without loosing (or having to redo) configuration.

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

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

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

Example: To make the thin client ltsp010 use 1280x1024 resolution, add something like this:

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

et sted nedenfor standardinnstillingene.

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

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

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

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

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

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

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

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

17.4.3 Load-balancing LTSP servers

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

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

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

Now you have to move your clients from the 192.168.1.0 network to the 10.0.0.0 network; attach them to the backbone network instead of the network attached to the LTSP server's second network card. This is because when you use load-balancing, the clients need direct access to the server chosen by LDM. If you leave your clients on the 192.168.1.0 network, all of the clients' traffic will go through that server before it reaches the chosen LDM server.

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

Rediger "/opt/ltsp/i386/etc/lts.conf" og legg til noe som dette:

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

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

```
#!/bin/bash
# Randomise the server list contained in MY_SERVER_LIST parameter
TMP_LIST=""
```

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

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

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

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

Your clients should now be load-balanced!

17.4.4 Lyd med LTSP-klienter

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

LTSP diskløse arbeidsstasjoner takler lyd lokalt, og har ikke behov for spesial-oppsett for nettverks-lyd.

17.4.5 Oppgradere LTSP-miljøet

Det er nyttig å oppgradere LTSP-miljøet med nye pakker ganske ofte for å være sikker på at sikkerhets-oppdateringer og forbedringer gjøres tilgjengelig. For å oppgradere kjøres disse kommandoene som bruker root på hver LTSP-tjener:

```
ltsp-chroot -a i386  # this does "chroot /opt/ltsp/i386" and more, ie it also  ↩
    prevents daemons from being started
aptitude update
aptitude upgrade
aptitude dist-upgrade
exit
```

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

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

17.4.6 Vis innlogging og sikkerhet

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

```
LDM_DIRECTX=True
```

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

Note: Since such ten-year-old thin clients may also have trouble running never versions of LibreOffice and Firefox/Iceweasel due to pixmap caching issues, you may consider running thin clients with at least 128 MB RAM, or upgrade the hardware, which will also give you the benefit of being able to use them as diskless workstations.

17.5 Erstatte LDM med KDM

Since version 3.0 Skolelinux has been running LDM as its login manager, which uses a secure SSH tunnel to log in. Switching to KDM also requires a switch to XDMCP, which uses lower CPU resources on the clients and on the server.

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

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

For å sjekke om XDMCP kjører, kjør denne kommandoen fra en arbeidsstasjon:

```
X -query ltspserverXX
```

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

```
X -query 192.168.0.254
```

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

If XDMCP is not accessible on your server which runs KDM, add the following to `/etc/kde4/kdm/Xaccess`:

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

The star before the comment '#' is important; the rest is a comment, of course

Then turn on XDMCP in KDM with the command:

```
sudo update-ini-file /etc/kde4/kdm/kdmrc Xdmcp Enable true
```

Finally, restart KDM by running:

```
sudo service kdm restart
```

17.6 Koble Windows-maskiner til nettverket / Windows integrasjon

17.6.1 Joining a domain

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

Joining a domain with a Windows client requires the steps described in the Debian Edu Wheezy Samba Howto.

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

17.6.1.1 Brukergrupper i Windows Groupmaps must also be added for any other user group you add through GOsa². If you want your user groups to be available in Windows, e.g. for netlogon scripts or other group dependant actions, you can add them using variations of the following command. Samba will function without these groupmaps, but Windows machines won't be group-aware.

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

FIXME: it would be even better to first/also explain user groups for Windows with GOsa² (and then show an example for the command line)

Hvis du ønsker å sjekke brukergrupper i Windows må du laste ned verktøyet `IFMEMBER.EXE` fra Microsoft. Deretter kan du benytte dette i for eksempel et påloggingsscript som ligger på tjener i `/etc/samba/netlogon/LOGON.BAT`.

17.6.2 XP Home

Users bringing in their XP laptops from home can still connect to tjener using their skolelinux credentials, provided the workgroup is set to SKOLELINUX. However, they may need to disable the Windows firewall before tjener will appear in Network Neighbourhood (or whatever it's called now).

17.6.3 Håndtere roaming-profiler

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

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

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

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

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

17.6.3.2 Machine policies for roaming profiles Du kan redigere retningslinjer for maskiner, og kopiere de til alle andre maskiner.

1. Pick a freshly installed Windows computer, and run `gpedit.msc`
2. Under the selection "User Configuration" -> "Administrative Templates" -> "System" -> "User Profiles" -> "Exclude directories in roaming profile", you can enter a semicolon-separated list of directories to exclude from the profile. The directories are internationalised and must be written in your own language the way they are in the profile. Examples of directories to exclude are:
   - logg
   - Lokale innstillinger
   - Midlertidige Internettfiler

- Mine Dokumenter
- Applikasjonsdata
- Midlertidige Internettfiler

3. Lagre endringer, og forlat editoren.
4. Copy `c:\windows\system32\GroupPolicy` to all other Windows machines.
   - It's a good idea to copy it to your Windows OS deployment system to have it included at install time.

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

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

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

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

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

If you understand German, http://gruppenrichtlinien.de is a very good web site on this topic.

17.6.3.4 Redigere windowsregisteret Du kan redigere registeret på den lokale maskinen, og kopiere denne registernøkkelen til andre maskiner.

1. Start registereditoren
2. Naviger til `HKEY_CURRENT_USER\Software\Microsoft\Windows NT\CurrentVersion\Winlogon`
3. Use the menu "Edit menu" -> "New" -> "String Value".
4. Kall den `ExcludeProfileDirs`
5. Enter a semicolon-separated list of paths to exclude (in the same way as for a machine policy)
6. Now you can choose to export this registry key as a .reg file. Mark a selection, right-click, and select "Export".
7. Save the file and you can double click it, or add it to a script to spread it to other machines.

Kilder:

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

17.6.4 Redirecting profile directories

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

17.6.4.1 Redirecting using machine policies

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

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

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

17.6.4.2 Redirecting using global policies

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

17.6.5 Unngå roaming-profiler

17.6.5.1 Disabling roaming using a local policy

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

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

17.6.5.2 Disabling roaming using global policies

FIXME: Hva er nøkkelen for roaming profile for den globale policyeditoren

17.6.5.3 Disabling roaming in smb.conf

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

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

17.7 Remote Desktop

17.7.1 Remote Desktop Service

Fra og med denne utgivelsen, enten tynnklient-tjener-profil eller den kombinerte tjenerprofilen velges, installeres xrdp, en pakke som bruker Remote Desktop Protocol for å presentere en grafisk innlogging for en ekstern klient. Microsoft Windows-brukere kan koble seg til tynnklient-tjener som kjører xrdp uten å installere ekstra programvare - de starter bare en Remote Desktop Connection på sin Windows-maskin og kobler til.

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

Noen kommuner tilbyr skrivebordstilkopling over nettverket slik at studenter og lærere kan få tilgang til Skolelinux hjemmefra på hjemme-PC som kjører Windows, Mac eller Linux.

17.7.2 Available Remote Desktop clients

- `freerdp-x11` er installert som standard og håndterer RDP og VNC.
  - RDP - the easiest way to access Windows terminal server. An alternative client package is `rdesktop`.
  - VNC client (Virtual Network Computer) gives access to Skolelinux remotely. An alternative client package is `xvncviewer`.
- NX graphical client gives students and teachers access to Skolelinux remotely on Windows, Mac or Linux PC. One municipality in Norway has provided NX support to all students since 2005. They report that the solution is stable.
- Veiledning for Citrix ICA-klient å kople til Windows terminaltjenere fra Skolelinux.

17.8 Veiledninger fra wiki.debian.org

Veiledninger fra http://wiki.debian.org/DebianEdu/HowTo/ er enten bruker- eller utviklerorientert. La oss flytte de brukerorienterte veiledningene hit (og slette dem derfra)! (Men først må vi spørre forfatterne (se historien til disse sidene for å finne dem) om dem synes det er greit å flytte veiledningen og utgi dem under GPL.)

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

18 Samba in Debian Edu

Samba (v3) in Debian Edu Wheezy has been fully prepared for use as an NT4-style domain controller with Windows XP, Windows Vista and Windows 7 as clients. After a machine has joined the domain, this machine can be fully managed with GOsa[2].

18.1 Komme i gang

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

After installation of the Debian Edu main server the Samba host \\TJENER should be visible in your Windows Network Neighbourhood. Debian Edu's Windows domain is SKOLELINUX. Use a Windows machine (or a Linux system with smbclient) to browse your Windows/Samba network environment.

1. START -> Run command
2. enter \\TJENER and press return
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 Accessing files via Samba

Student and teacher user accounts that have been configured via GOsa[2] should be able to authenticate against \\TJENER\HOMES or \\TJENER\<username> and access their home directories with Windows machines **not** joined to the Windows SKOLELINUX domain.

1. START -> Run command
2. enter \\TJENER\HOMES or \\TJENER\<username> and press return
3. enter your login credentials (username, password) in the authentication dialog window that appears
4. -> a Windows Explorer window should open and show files and folders in your Debian Edu home directory.

By default only the [homes] and the [netlogon] shares are exported; further share examples for students and teachers can be found in `/etc/samba/smb-debian-edu.conf` on your Debian Edu main server.

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).

18.2.2 Joining the SKOLELINUX Domain with Windows XP

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

NOTE: Windows XP Home does not support domain membership; Windows XP Professional is required here.

1. log on to the Windows XP machine as Administrator (or any other account with Administrator privileges)
2. click on "Start" then right-click on "Computer" and click on "Properties"
3. select tab "Computer Name" and click on "Change..."
4. under "Member of", select the radio button beside "Domain:", type SKOLELINUX and then click "OK"
5. a pop up box will request to enter credentials of an account with rights to join the domain. Type username SKOLELINUX\Administrator and the root password, click "OK"
6. a confirmation pop up box will welcome you to the SKOLELINUX domain. Clicking on "OK", will result in having another message informing that a reboot for the machine is required to apply the changes. Click on "OK"

After the reboot, when you login the first time, click on the "Options >>" button and select the domain SKOLELINUX instead of the local domain ("this computer")

If joining the domain has been successful you should then be able to view the host details within GOsa^2 (under the menu section "Systems").

18.2.3 Joining the SKOLELINUX Domain with Windows Vista/7

Joining Windows Vista/7 machines to the SKOLELINUX domain requires the installation of a registry patch on the Windows Vista/7 client. This patch is provided at this location:

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

For further information please consult the included README_Win7-Domain-Membership.txt in the same folder. Make sure you apply this patch as a local Administrator of the Windows system.

After applying the above patch and rebooting the client system you should be able to join the SKOLELINUX domain:

1. click on "Start" then right-click on "Computer" and click on "Properties"
2. the basic system information page will open. Under "Computer name, domain, and workgroup settings", click on "Change Settings"
3. on the System Properties page, click on "Change..."

4. under "Member of", select the radio button beside "Domain:", type SKOLELINUX and then click "OK"
5. a pop up box will request to enter credentials of an account with rights to join the domain. Type username SKOLELINUX\Administrator and the root password, click "OK"
6. a confirmation pop up box will welcome you to the SKOLELINUX domain. Clicking on "OK", will result in having another message informing that a reboot for the machine is required to apply the changes. Click on "OK"

After the reboot, when you login the first time, click on the "Options >>" button and select the domain SKOLELINUX instead of the local domain ("this computer")

If joining the domain has been successful you should then be able to view the host details within GOsa[2] (under the menu section "Systems").

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 Veiledninger for undervisning og læring

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

19.1 moodle

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

Det er Moodle nettsteder over hele verden, men mest konsentrert i Europa og Nord Amerika. Se på et nettsted for en institusjon nær deg for å få et eksempel på hva Moodle er. Mer informasjon er tilgjengelig på prosjektsiden for moodle, inkludert dokumentasjon og støttesider.

19.2 Teaching Prolog

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

19.3 Overvåkning av elever

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

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

19.4 Restricting pupils' network access

Some schools use Squidguard or Dansguardian to restrict Internet access.

19.5 Smart-Board integration

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

19.5.1 Providing the repository on tjener

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

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

19.5.2 Add the needed packages to the PXE installation image

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

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

Update the preseed file:

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

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

19.5.3 Adding the SmartBoard software manually after installation

The following instructions are for updating LTSP chroots.

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

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

Start the editor like this:

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

Add the repository key and install the software:

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

19.6 Veiledninger fra wiki.debian.org

The HowTos from http://wiki.debian.org/DebianEdu/HowTo/ are either user- or developer-specific. Let's move the user-specific HowTos over here (and delete them over there)! (But first ask the authors if they are happy with moving them and putting them under the GPL - see the page histories to find them.)

- http://wiki.debian.org/DebianEdu/HowTo/TeacherFirstStep -uferdig men interessant

20 Veiledninger for brukere

20.1 Endre passord

Every user should change her or his password by using GOsa^2. To do so, just use a browser and go to `https://www/gosa/`.

Using GOsa^2 to change the password ensures that Kerberos (krbPrincipalKey), LDAP (userPassword) and Samba (sambaNTPassword and sambaLMPassword) passwords are the same.

Changing passwords using PAM is working (ie at the KDM/GDM login prompt), but this will only update the Kerberos password, and not the Samba and GOsa^2 (LDAP) password. So after you changed your password at the login prompt, you really should also change it using GOsa^2.

20.2 Java

20.2.1 kjører frittstående Java applikasjoner

Frittstående Java-applikasjoner er støttet rett ut av boksen med pakken OpenJDK Java runtime.

20.2.2 Running Java applications in the web browser

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

20.3 Using email

All users can send and receive mails within the internal network. To allow mail outside the internal network, the adminstrator needs to configure the mailserver `exim4` to suit the local situation, starting with `dpkg-reconfigure exim4-config`.

Every user who wants to use KMail needs to configure it as follows.

Start KMail, click "Next" in the Account Wizard, select `IMAP` as account type, click "Next". Enter real name and e-mail address `username@postoffice.intern`, click "Next". Check if the username is correct, don't enter the password, click "Next". (Kerberos provides single sign on concerning SMTP and IMAP, so you don't have to enter your password.) Enter `postoffice.intern` twice as server name, click "Finish". Close the tip of the day. Click "Settings" in the KMail menu, select "Configure KMail...", then click on "Accounts". Click "Modify...", then "Continue" to accept the certificate problem and "Forever", "OK", "Apply" and once more "OK". That's it!

Now send a test email to yourself. (This will create the IMAP folders on the server.) Wait a little bit, then click "Check Mail" in the KMail menu. There should be your recently sent email in the inbox below of "intern".

20.3.1 Obtaining a Kerberos ticket to read email on diskless workstations

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

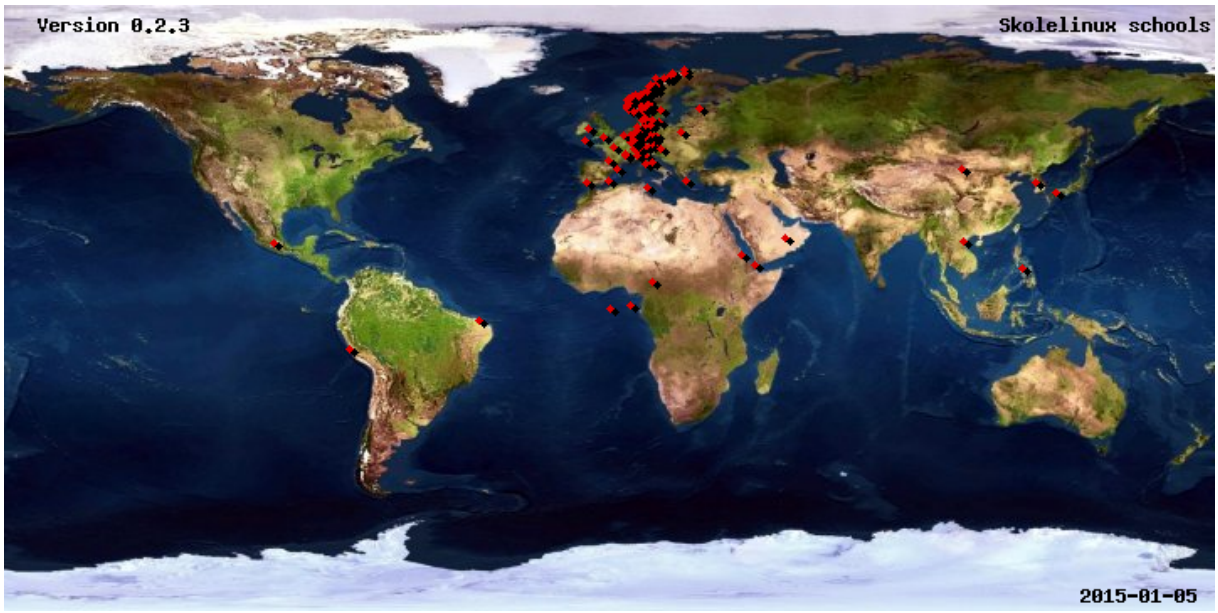
20.4 Volume control

On thin clients, `pavucontrol` or `alsamixer` (but not `kmix`) can be used to change audio volume.

On other machines (workstations, LTSP servers, and diskless workstations), `kmix` or `alsamixer` can be used.

21 Bidra

21.1 La oss vite at du er der



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

Debian Edu-prosjektet har en database over skoler og brukere av systemet for å hjelpe brukere til å finne hverandre, og også til å ha en idé om hvor brukerne av distribusjonen er lokalisert. Det er fint om vi får vite om din installasjon, ved å registrere den i databasen. For å registrere skolen din, bruk dette skjemaet.

21.2 Bidra lokalt

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

The support chapter has explanations and links to localised resources, as *contribute* and *support* are two sides of the same coin.

21.3 Bidra globalt

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 `http://wiki.debian.org/DebianEdu/ArchivePolicy`.

En fin måte å få med seg hva som foregår i utviklingen av Debian Edu er å melde seg på e-postlisten for innmeldinger av bidrag.

21.4 Dokumentasjons-forfattere og oversettere

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

The source of the text is a wiki and can be edited with a simple webbrowser. Just go to `http://wiki.debian.org/DebianEdu/Documentation/Wheezy/` 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 Støtte

22.1 Frivillighetsbasert støtte

22.1.1 På engelsk

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

22.1.2 På norsk

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

22.1.3 På tysk

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

22.1.4 På fransk

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

22.1.5 På spansk

- http://www.skolelinux.es - Spanish portal

22.2 Profesjonell support

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

23 New features in Debian Edu Wheezy

23.1 New features for Debian Edu 7.1+edu0 Codename Wheezy released 2013-09-28

23.1.1 User visible changes

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

23.1.2 Installation changes

- New version of debian-installer from Debian Wheezy, see installation manual for more details.
- DVD-avtrykket ble droppet, i stedet har vi lagt til en USB minnepinne / Blue-ray plate, som oppfører seg som et DVD-avtrykk, men er for stort til å få plass på en DVD.

23.1.3 Software updates

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

23.1.4 Documentation and translation updates

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

23.1.5 LDAP related changes

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

23.1.6 Other changes

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

23.1.7 Known issues

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

24 Opphavsrett og forfattere

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26 Oversettelser av dette dokumentet

Versions of this document fully translated into German, Italian, French and Danish are available. Incomplete translations exist for Norwegian Bokmål and Spanish. This is an online overview of all languages.

26.1 Hvordan oversette dette dokumentet

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-wheezy-manual-translations`. The Git repository (see below) contains this file too. Take a look there and at the language specific conventions if you want to help translating this document.

To commit your translations you need to be a member of the Alioth project `debian-edu`. If your Alioth username differs from your local one, create or edit `~/.ssh/config`. There should be an entry like:

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

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

If you only want to translate, you just need to check out some files from from Git (which can be done anonymously) and create patches. Please file a bug against the debian-edu-doc package and attach the PO file to the bugreport. You can find some instructions on how to submit bugs here.

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

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

Then edit the file `documentation/debian-edu-wheezy/debian-edu-wheezy-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.

For å oppdatere din lokale kopi av arkivet, kan du bruke denne kommandoen inne i mappen `debian-edu-doc`:

- `git pull`

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

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

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

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

Meld fra om eventuelle problemer.

27 Appendix A - The GNU General Public License

```
Merknad til oversettere: Det er ingen grunn til å oversette GPL lisensteksten.
```

27.1 Utgivelsesmanual for Debian Edu 7.1+edu0 kodenavn Wheezy

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END OF TERMS AND CONDITIONS

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

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

28.1 Egenskaper for avtrykket for Frittstående-profilen

- Nesten alle pakker fra Frittstående-profilen
- Alle pakker fra pakkesamlingen for bærbare
- KDE skrivebordsprofilen for studenter/elever.

28.2 Aktiverer oversettelser og regional støtte

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. More information on this feature is available from the live CD build script documentation. Here is a list of commonly used locale codes:

Spåk (Region)	Lokalkode	Tastaturutforming
Norsk bokmål	nb_NO.UTF-8	no
Norsk nynorsk	nn_NO.UTF-8	no
Tysk	de_DE.UTF-8	de
Fransk (Frankrike)	fr_FR.UTF-8	fr

Gresk (Hellas)	el_GR.UTF-8	el
Japansk	ja_JP.UTF-8	jp
Nordsamisk (Norge)	se_NO	no(smi)

En fullstendig liste over lokale koder er tilgjengelig i `/usr/share/i18n/SUPPORTED`, men liveCD/DVD-er støtter bare UTF-8 lokalkoder. Ikke alle lokaler har oversettelser installert, men navn på tastaturutformminger finner man i /usr/share/keymaps/i386/.

28.3 Ting man må vite

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

28.4 Kjente problemer med avtrykket

- ⚠ There are no wheezy images yet 😕

28.5 Last ned

The image is 1.2 GiB and would be (but currently isn't) available via FTP, HTTP or rsync from `ftp.skolelinux.org` under `cd-wheezy-live/`.

29 Appendix C - Features in older releases

29.1 Changes for Debian Edu 6.0.7+r1 Codename "Squeeze" released 2013-03-03

- Debian Edu 6.0.7+r1 Codename "Squeeze" is an incremental update to Debian Edu 6.0.4+r0, containing all the changes between Debian 6.0.4 and 6.0.7 as well as the following changes:
- sitesummary was updated from 0.1.3 to 0.1.8
  - Make Nagios configuration more robust and efficient
  - Comply with 3.X kernel
- debian-edu-doc from 1.4~20120310~6.0.4+r0 to 1.4~20130228~6.0.7+r1
  - Minor updates from the wiki
  - Danish translation now complete
- debian-edu-config from 1.453 to 1.455
  - Fix /etc/hosts for LTSP diskless workstations. Closes: #699880
  - Make ltsp_local_mount script work for multiple devices.
  - Correct Kerberos user policy: don't expire password after 2 days. Closes: #664596
  - Handle '#' characters in the root or first users password. Closes: #664976
  - Fixes for gosa-sync:
    - Don't fail if password contains "
    - Don't disclose new password string in syslog
  - Fixes for gosa-create:
    - Invalidate libnss cache before applying changes
    - Flere feil i løpet av masseimport av brukere i
  - innstikkmodul gosa-netgroups: ikke slett attributtoppføringer av type «memberNisNetgroup». Lukker: #687256

  - First user now uses the same Kerberos policy as all other users
  - Add Danish web page

- debian-edu-install fra 1.528 til 1.530
  - Forbedre tidligere støtte og dokumentasjon

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

29.2.1 User visible changes

- Updated artwork and new Debian Edu / Skolelinux logo, visible during installation, in the login screen and as desktop wallpaper.
- Replace LWAT with GOsa^2 as the LDAP administration interface. See below and the Getting started chapter of the manual for more information on GOsa^2.
- See below for a list of updated software.
- Show welcome page to users when they first log in. This default start page for Iceweasel is fetched from LDAP at installation and boot time for networked profiles. Set to `http://www.skolelinux.org/` for Standalone installations.
- New LXDE desktop option, in addition to KDE (default) and GNOME. As the GNOME option, the LXDE desktop option is only supported by the CD installation method.
- Speed up LTSP client boot.
- Provide a KDE menu entry for changing the password in GOsa^2.
  - For more information on how to change passwords (including expired passwords at the KDM/GDM login prompt), please see the HowTos for users chapter of the manual.
- Add link to `http://linuxsignpost.org/` on the start page shown to new users.
- All LTSP servers are also RDP servers by default.
- Improve handing of removable media on thin clients. Show desktop notification longer when inserting new media and provide an option to start dolphin when such media is inserted.

29.2.2 Installation changes

- New version of debian-installer from Debian Squeeze, see installation manual for more details.
- Since root logins are no longer allowed when using gdm/kdm, a user in LDAP is set up during installation of the Main Server. This user is up as GOsa^2 administrator and is also granted sudo access. The Debian Edu menu reordering has been enabled as well, by adding the user also to the `teachers` group.
- The `.iso` images can directly be copied onto USB flash drives, for example by using `dd` or even `cat`..
- New roaming workstation profile for laptops.
- Device access for all users is handled by PolicyKit, and no extra group memberships are needed to get access to devices.
- A warning will be issued when installing on too small disks for the selected profile.
- Simplify partitioning for Standalone installs to only have a separate /home/ but no seperate /usr anymore.
- More tests in the test suite, and correct some of the tests that failed earlier.
- Make sure to report an error and abort the installation when trying to use the netinst images without a working Internet connection, instead of silently installing a broken system.

29.2.3 Software updates

- Everything which is new in Debian Squeeze:
  - compatibility with the FHS v2.3 and software developed for version 3.2 of the LSB.
  - Linux kernel 2.6.32
  - Desktop environments KDE "Plasma" 4.4 and GNOME 2.30
  - Web browser Iceweasel 3.5
  - OpenOffice.org 3.2.1
  - Educational toolbox GCompris 9.3
  - Music creator Rosegarden 10.04.2
  - Image editor Gimp 2.6.10
  - Virtual universe Celestia 1.6.0
  - Virtual stargazer Stellarium 0.10.4
  - Debian Squeeze includes over 10,000 new packages available for installation, including the browser Chromium
  - More information about Debian Squeeze 6.0 is provided in the release notes and the installation manual.

29.2.4 Infrastructural changes

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

29.2.5 Documentation and translation updates

- Translation updates for the templates used in the installer. These templates are now available in 28 languages.
- The Debian Edu Squeeze Manual has generally been cleaned up and improved. A proof-read with corrections was done by a native English linguist.
- The Debian Edu Squeeze Manual is fully translated to German, French and Italian. Partly translated versions exist for Danish (new), Norwegian Bokmal and Spanish.
- Improvements to many language tasks, especially French and Danish.
- Improvements to the welcome web page shown at first logins.
  - Add new Japanese, Portuguese and Catalan translations of the welcome web page.

29.2.6 Regressions

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

29.2.7 New administration tool: GOsa^2

- gosa (2.6.11-3+squeeze1~edu+1) from the upcoming 6.0.5 Debian point release, with:
  - Fix DHCP host removal. Closes: #650258
  - Backport user generator unicode character transliteration. Closes: #657086
- Customized GOsa^2 configuration to better suit the Debian Edu network architecture.
  - GOsa^2 updates DNS and NFS exports immediately when a system is updated in LDAP, making diskless workstations work right after they are added to the required netgroup.
- Provide script sitesummary2ldapdhcp to update or populate GOsa^2 with system objects using information gathered by sitesummary, to make it easier to add new computers to the network.

29.2.8 More software changes

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

- Drop libnss-mdns from stationary profiles, to make sure DNS is the authoritive source of host names.
- `freerdp-x11` is installed by default as RDP and VNC client. (Previously `rdesktop` was installed instead.)

29.2.9 Other LDAP related changes

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

29.2.10 Other changes

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

29.3 New in Debian Edu 5.0.6+edu1 Codename "Lenny" released 2010-10-05

- Everything that is new in Debian 5.0.5 and 5.0.6, which includes support for some new hardware. 5.0.5 and 5.0.6 are maintenance releases and generally don't add new features
- Several bugfixes, including fixes for Skolelinux bugs #1436, #1427, #1441, #1413, #1450 and Debian bugs #585966, #585772, #585968, #586035 and #585966 plus several which were not filed
- Merge new web pages from Squeeze - the text is the same, but it provides a new translation for `zh`, compete translations for all included languages (`de`, `es`, `fr`, `it`, `nb`, `nl`, `ru`, `zh`), and a rename of the `.no` page to `.nb` to reflect the language used
- Debian-edu-install: Slovak translation added, updates to German, Basque, Italian, Bokmal, Vietnamese and Chinese translations.

- Debian-edu-doc: improvements to Italian, Bokmal and German translations as well as overall content and layout
- Sitesummary: various improvements; most notably, several Nagios checks were added to monitor system health
- Shutdown-at-night: fix #1435 (did not work with the LDAP host groups populated by lwat).

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

- Everything that is new in Debian 5.0.4; see the following paragraph for details.
- More than 80 applications relevant for education are included based on user feedback and user statistics (through Debian Edu popularity contest). The full list of packages is given in the task overview page.
- Skrivebordet er forbedret, og har som standard snarveier til GCompris, Kalzium, KGeography, KMplot, KStars, Stopmotion og OpenOffice writer + Impress.
- Dynamiske skrivebordsikoner og menyer som justerer seg basert på brukergruppe.
- GNOME added as a supported desktop; see the Installation chapter to learn how to install with GNOME instead of KDE as desktop.
- Støtte for over 50 ulike språk.
- Forbedret system for brukeradministrasjon og maskingjenkjenning.
- Forbedret oppsett av diskløse arbeidsstasjoner og tynnklienter.
- Ny oppstartsmeny som lar brukerne velge mellom diskløs arbeidsstasjon, tynnklient eller arbeidsstasjon.
- Mulighet for diskløse arbeidsstasjoner er installert, men ikke aktivert på alle tjenere med LTSP -profil.
- Main-server is set up as a PXE server for booting thin clients and diskless workstations, and for installing to clients' hard or flash drives.
- The configuration for DNS and DHCP is stored in LDAP and can be edited using `lwat`. The DNS server has been switched from `bind9` to `powerdns`.
- LDAP server for directory services (NSS) is located using a SRV record in DNS instead of hardcoding the 'ldap' DNS name. LDAP server for password checks (PAM) is still using the hardcoded 'ldap' DNS name.
- Multi-architecture (amd64/i386/powerpc) net installer CD.
- (Most) Packages are downloaded over the Internet.
- Multi-architecture (amd64/i386) installer DVD capable of installing without network.
- PulseAudio is provided in addition to ALSA and OSS for sound on workstations and diskless workstation machines.
- Profilen *Barebone* er døpt om til *Minimal*, for bedre å illustrere hva den innebærer.
- Konfigurasjon av Nagios3 er nå automatisk satt opp av Sitesummary
- per-bruker filen `~/.xsession-errors` er nå avkortet/trunket automatisk når bruker logger inn, for å unngå å fylle opp hjemme- mappenes partrisjon med logger som vokser uendelig. Brukeren kan slå av dette ved å lage `~/.xsession-errors-enable`. Systemets administrator kan konfigurere systemet til å omdirigere filen til /dev/null ved å endre `/etc/X11/Xsession.d/05debian-edu-truncate-xerrorlog`.
- For å forenkle installasjonen av Skolelinux/DebianEdu på maskinvare som trenger ufrie drivere, så inneholder CD og DVD følgende drivere: firmware-bnx2, firmware-bnx2x, firmware-ipw2x00, firmware-iwlwifi, firmware-qlogic og firmware-ralink.

29.5 Nye egenskaper i Debian 5.0.4 som Skolelinux/Debian Edu 5.0.4+edu0 er basert på

- Ny Linuxkjerne 2.6.26 har støtte for mer maskinvare
- With this release, Debian GNU/Linux updates from X.Org 7.1 to X.Org 7.3 (which includes support of newer hardware) and now includes the desktop environments KDE 3.5.10 and GNOME 2.22. Updates of other desktop applications include Iceweasel (version 3.0.6, which is the unbranded Firefox web browser) and Icedove (version 2.0.0.19, which is the unbranded Thunderbird mail client) as well as upgrades to Evolution 2.22.3, OpenOffice.org 2.4.1, and Pidgin 2.4.3 (formerly known as Gaim). SWI-prolog is back.
- Installasjon fra CD/DVD fra Windows
- Byttet fra sysklogd til rsyslog for innhenting av syslog.
- For mer informasjon kan du se på siden «New in Lenny» på wiki.debian.org

29.6 Nye egenskaper i «3.0r1 Terra»-utgaven 2007-12-05

- Forbedret dokumentasjon med oppdaterte oversettelser til tysk, norsk bokmål og italiensk.
- Includes more than 40 bug fixes, improvements and security updates that came to our attention after the 3.0r0 release

29.7 Nye egenskaper i «3.0r0 Terra»-utgaven 2007-07-22

- Basert på Debian 4.0 Etch, gitt ut 2007-04-08
- Grafisk installasjonsprogram med mus-støtte
- Oppstartsbilde med usplash
- LSB 3.1-kompatibel
- Linux kjerneversjon 2.6.18
  - Støtte for SATA-kontrollere og harddisker
- X.org versjon 7.1.
- KDE skrivebordsmiljø versjon 3.5.5
- OpenOffice.org versjon 2.0.
- LTSP5 (versjon 0.99debian12)
- Automatisk sporing av installerte maskiner ved hjelp av Sitesummary.
- Automatisk oppsett av munin med hjelp fra Sitesummary.
- Automatisk versjonskontroll av oppsettsfiler i /etc/ ved hjelp av svk.
- File systems can be extended while the file system is mounted.
  - Support for automatically extending file systems based on predefined rules.
- Støtte for lokale enheter på tynnklienter.
- Nye prosessorarkitekturer: amd64 (fullt støttet) og powerpc (eksperimentell støtte, installasjonsmedia starter bare opp på underarkitekturen newworld)
- Flerarkitektur-DVD for i386, amd64 og powerpc
- Tilbakeskritt: CD-installasjonen krever internettilgang under installasjon. Tidligere versjoner kunne installeres fra en CD uten internettilgang.

- Regresjon: `webmin` er nå fjernet fra Debian på grunn av problemer med å støtte det. Vi har lagt til et nytt nettbasert brukeradministrasjonsverktøy som heter `lwat`. Det har ikke har den samme funksjonalitet som `wlus`, det gamle brukeradministrasjonsverktøyet. Men `wlus` krever `webmin`.
- Regression: swi-prolog is not part of Etch, but was part of Sarge. The HowTo teach and learn Chapter describes how to install swi-prolog on Etch.

29.8 Fremtrukne egenskaper i 2.0 utgaven 2006-03-14

- Basert på Debian 3.1 Sarge, gitt ut 2005-06-06
- Linux kjerneversjon 2.6.8
- XFree86 versjon 4.3.
- KDE versjon 3.3.
- OpenOffice.org 1.1.

29.9 Egenskaper i «1.0 Venus»-utgaven 2004-06-20

- Basert på Debian 3.0 Woody, gitt ut 2002-07-19.
- Linux kjerneversjon 2.4.26
- XFree86 versjon 4.1.
- KDE versjon 2.2.

29.10 More information on even older releases

More information on even older releases can be found at `http://developer.skolelinux.no/info/cdbygging/news.html`.