

"Debian Edu / Skolelinux Lenny 5.0.4+edu1 Manual"

July 5, 2010

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Contents

1	Manual for Debian Edu 5.0.4+edu1 Codename "Lenny"	1
2	À propos de Debian Edu et Skolelinux	1
3	Architecture	1
3.1	Réseau	1
3.1.1	Main server (tjener)	2
3.1.2	Services exécutés sur le serveur principal	2
3.1.3	LTSP server(s) (Thin client server(s))	3
3.1.4	Clients légers	3
3.1.5	Stations de travail sans disque dur	4
3.1.6	Clients en réseau	4
3.2	Administration	4
3.3	Installation	4
3.4	Configuration de l'accès au système de fichiers	4
3.5	Notes diverses	5
4	Fonctionnalités	5
4.1	New features in the Debian Edu 5.0.4+edu0 Codename "Lenny" released 2010-02-08	5
4.2	New features in Debian 5.0.4 upon which Debian Edu 5.0.4+edu0 is based	6
4.3	Nouvelles fonctionnalités de la version « 3.0r1 Terra », publiée le 2007-12-05	7
4.4	Nouvelles fonctionnalités de la version « 3.0r0 Terra », publiée le 2007-07-22	7
4.5	Fonctionnalités de la version 2.0, publiée le 2006-03-14	7
4.6	Fonctionnalités de « 1.0 Venus », publiée le 20-06-2004	8
4.7	Davantage d'informations sur les versions précédentes	8
5	Besoins	8
5.1	Besoins matériels	8
5.2	Matériel compatible connu	9
6	Besoins pour une configuration du réseau	9
6.1	Default Setup	9
6.2	Routeur internet	9
7	Installation	9
7.1	Where to find additional information	9
7.2	Download the installation media for Debian Edu 5.0.4+edu0 Codename "Lenny"	10
7.2.1	DVDs pour i386, amd64 et powerpc	10
7.3	Demande d'un CD/DVD par courrier électronique	10
7.4	Installing Debian Edu	10
7.4.1	The installation process	10
7.4.2	Note concernant le partitionnement manuel	12
7.4.3	Note concernant les ordinateurs portables	12
7.4.4	Note concernant l'installation depuis un DVD	12
7.4.5	A note on CD installs	12
7.4.6	A note on some RAID controllers	13
7.4.7	A note on thin-client-server installations	13
7.4.8	CD/DVD personnalisés	13
7.4.9	Installation over the network (PXE) and booting diskless clients	13
7.4.9.1	Modifying PXE installations	14
7.5	Screenshot tour	14
8	Démarrage rapide	18
8.1	Minimum steps to get started	18

9	Services exécutés sur le serveur principal	19
9.1	Gestion par une interface web, à l'aide de lwat	19
9.2	Gestion des utilisateurs avec lwat	19
9.2.1	Ajouter des utilisateurs	20
9.2.2	Search and delete users	20
9.2.3	Set passwords	21
9.2.4	Advanced user management	22
9.3	Administration des groupes avec lwat	22
9.4	Group Management on the command line	22
9.4.1	Advanced group management	23
9.5	Gestion de machines avec lwat	23
9.5.1	Rechercher et supprimer des machines	23
9.5.2	Modification de machines existantes / gestion des groupes réseau	24
9.5.3	Davantage de documentation sur lwat	25
9.6	Gestion des imprimantes	25
9.7	Synchronisation de l'horloge	25
9.8	Extending full partitions	25
10	Maintenance	25
10.1	Mis-à-jour du logiciel	25
10.1.1	Keep yourself informed about security updates	25
10.2	Gestion des sauvegardes	26
10.3	Surveillance des serveurs	26
10.3.1	Munin	26
10.3.2	Nagios	26
10.3.3	Sitesummary	27
10.4	More information about Debian Edu customisations	27
11	Mises à jour	27
11.1	General notes on upgrading	27
12	Upgrades from Debian Edu etch	27
12.1	The basic upgrade operation	27
12.2	LDAP service needs to repaired	28
12.3	DHCP service needs to repaired	28
12.4	User logins from Windows machines needs to repaired	30
12.5	DNS service needs to repaired	31
12.5.1	Bind	31
12.5.2	powerdns	31
12.6	Nagios setup has changed	33
12.7	Recreating an LTSP chroot	33
13	Upgrades from older Debian Edu / Skolelinux installations (before etch)	33
14	Manuels (HowTo)	33
15	Manuels d'administration générale	33
15.1	Configuration history: tracking /etc/ using the svk version control system	33
15.1.1	Exemple pratiques	34
15.1.2	For those who upgraded from Etch	34
15.2	Resizing Partitions	34
15.2.1	Gestion d'un volume logique	35
15.3	Using ldapvi	35
15.4	Utilisation de volatile.debian.org	35
15.4.1	Qu'est-ce que debian-volatile ?	35
15.4.2	Comment utiliser « volatile »	35
15.5	Using backports.org to install newer software	35
15.6	Java	36
15.6.1	running standalone Java applications	36
15.6.2	running Java applications in the webbrowser	36

15.7	Creating folders in the home directories of all users	36
15.8	Easy access to USB drives and CDROMs/DVDs	37
15.8.1	A warning about removable media on LTSP servers	37
15.9	Automatic cleanup of left-over processes	37
15.10	Automatic shutdown of machines during the night	38
15.10.1	How to set up shutdown-at-night	38
15.11	Access to skolelinux server from outside a firewall	38
15.12	Installer des machines exécutant un seul service pour télécharger le serveur principal	39
15.13	Configuring the PXE menu	39
15.13.1	Configuring the PXE installation	39
15.14	Manuels de wiki.debian.org	39
16	Manuels pour le bureau	40
16.1	KDE Kiosk mode	40
16.2	Changing kioskmode on diskless workstations	40
16.2.1	Désactiver le mode kiosque de KDE	40
16.3	Modification de l'écran de connexion de kdm	40
16.4	Flash	41
16.4.1	Sound with Flash on thin clients	41
16.5	Lire des DVD	41
16.6	Utilisation du dépôt multimedia	41
16.7	Handwriting fonts	41
17	HowTos for networked clients	42
17.1	Introduction to Thin clients and Diskless workstations	42
17.1.1	Machine type selection based on the network	42
17.1.2	Changing the PXE menu on an LTSP server	42
17.1.3	Separate main- and LTSP servers	42
17.1.4	How to extend the range of static IP addresses	43
17.2	LTSP en détail	43
17.2.1	Its.conf	43
17.2.2	Load balancing LTSP servers	43
17.2.2.1	Part 1	43
17.2.2.2	Part 2	44
17.2.2.3	Part 3	44
17.2.3	Sound with LTSP clients	45
17.2.4	Upgrading the LTSP environment	45
17.2.4.1	Installing additional software in the LTSP environment	45
17.2.5	Slow login and security	45
17.3	Replacing LDM with KDM	45
17.4	Connexion de machines Windows au réseau / intégration de Windows	46
17.4.1	Rejoindre le domaine	46
17.4.1.1	Groupes utilisateurs dans Windows	47
17.4.2	XP home	47
17.4.3	Gérer les profils itinérants	47
17.4.3.1	Example smb.conf's for roaming profiles	48
17.4.3.2	Utilisation des stratégies machine	48
17.4.3.3	Utilisation de stratégies globales	48
17.4.3.4	Édition du registre Windows	48
17.4.4	Redirection de parties du profil	49
17.4.4.1	Utilisation des stratégies machine	49
17.4.4.2	Utilisation de stratégies globales	49
17.4.5	Éviter les profils itinérants	49
17.4.5.1	Utilisation d'une stratégie locale	49
17.4.5.2	Utilisation de stratégies globales	49
17.4.5.3	modifier la configuration de samba	49
17.5	Bureaux distants avec RDP, VNC, NX ou Citrix	50
17.6	Manuels de wiki.debian.org	50

18 Manuels pour enseigner et apprendre	50
18.1 Moodle	50
18.2 Surveillance des élèves	50
18.3 Restreindre l'accès des élèves au réseau	50
18.4 Installing swi-prolog	51
18.5 Manuels de wiki.debian.org	51
19 HowTos for users	51
19.1 Changing passwords	51
19.2 Changing the sound volume	51
19.3 Using email	51
19.3.1 Configuring KMail as a mail client	51
20 Contribuer	52
20.1 Faites-vous connaître auprès de nous.	52
20.2 Contribuer localement	52
20.3 Contribuer globalement	52
20.4 Auteurs de la documentation et traducteurs	52
21 Support	53
21.1 Support fourni par des bénévoles	53
21.1.1 en anglais	53
21.1.2 en norvégien	53
21.1.3 en allemand	53
21.1.4 en français	53
21.1.5 en espagnol	53
21.2 Support professionnel	53
22 Droits de reproduction et auteurs	53
23 Droits de reproduction et auteurs des traductions	54
24 Traductions de ce document	54
24.1 Comment traduire ce document	54
25 Annexe A - La Licence Publique GNU	55
25.1 Manual for Debian Edu 5.0r0+edu0 Codename "Lenny"	55
25.2 GNU GENERAL PUBLIC LICENSE	55
25.3 TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION	55
25.4 END OF TERMS AND CONDITIONS	58
26 Annexe B - À propos du live CD/DVD Debian Edu	58
26.1 Fonctionnalités de l'image autonome	58
26.2 Activation des traductions et du support géographique	58
26.3 Choses à savoir	58
26.4 Problèmes connus avec l'image	58
26.5 Téléchargement	58

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

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

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

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

Translations are part of the `debian-edu-doc` package, which can be **installed on a webserver**.

2 À propos de Debian Edu et Skolelinux

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

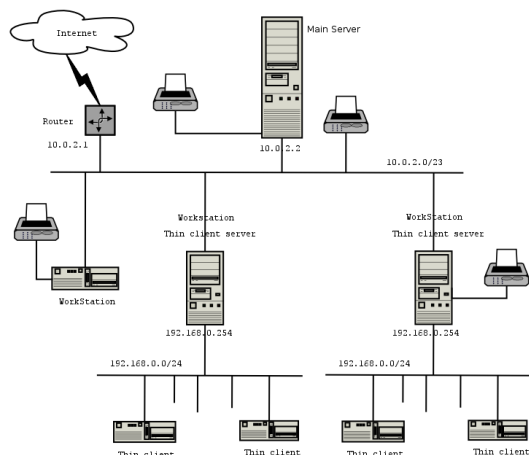
What this means for your school is that Skolelinux is a version of Debian providing an out-of-the box environment of a completely configured school-network.

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

3 Architecture

Cette section décrit l'architecture du réseau et les services fournis par Skolelinux.

3.1 Réseau



(Le paquet source `debian-edu-doc` contient cette image sous forme de fichier `dia`.)

Le diagramme est un schéma de la topologie supposée du réseau. La configuration par défaut d'un réseau Skolelinux suppose qu'il y a un (et un seul) serveur principal et permet l'accueil à la fois de stations de travail normales et de serveurs de clients légers (avec les clients légers associés). Le nombre de stations de travail peut être aussi grand ou petit que vous le souhaitez (d'aucune à beaucoup). De même pour les serveurs de clients légers, chacun étant sur un réseau distinct de sorte que le trafic entre les clients légers et leur serveur n'affecte pas le reste des services du réseau.

La raison pour laquelle il ne peut y avoir qu'un seul serveur principal dans un réseau d'école est que celui-ci fournit DHCP, et il ne peut y avoir qu'une seule machine fournissant ce service sur chaque réseau. Il est possible de déplacer un service depuis le serveur principal vers une autre machine en le configurant sur cette dernière puis en mettant à jour la configuration DNS, en faisant pointer l'alias DNS pour ce service vers l'ordinateur concerné.

Afin de simplifier les réglages de base de Skolelinux, la connexion à l'internet s'effectue via un routeur séparé. Il est possible de configurer Debian avec à la fois un modem et une connexion RNIS, cependant il n'est pas prévu de faire fonctionner ce type de configuration directement dans Skolelinux (les modifications nécessaires à la configuration par défaut devraient être documentées séparément).

3.1.1 Main server (tjener)

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

3.1.2 Services exécutés sur le serveur principal

À l'exception du contrôle des clients légers, tous les services sont initialement configurés sur un ordinateur central (le serveur principal). Pour des raisons de performances, le serveur de clients légers devrait être une machine séparée (bien qu'il soit possible d'installer à la fois les profils de serveur principal et de serveur de clients légers sur la même machine). Tous les services se voient attribuer un nom DNS et ne sont disponibles que sur IPv4. Le nom DNS attribué permet de déplacer facilement chaque service du serveur central vers une autre machine, simplement en l'arrêtant sur le serveur principal et en changeant la configuration DNS de sorte que l'alias pointe vers la nouvelle machine (sur laquelle il aura été préalablement installé, bien entendu).

Pour des raisons de sécurité, toutes les connexions véhiculant des mots de passe sur le réseau sont chiffrées, de sorte qu'aucun n'apparaît en clair sur le réseau.

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

- Gestion centralisée des journaux [syslog]
- DNS (PowerDNS) [domain]
- Configuration réseau automatique des machines (DHCP) [bootps]
- Synchronisation de l'horloge (NTP) [ntp]
- Répertoires personnels via un système de fichiers sur réseau (SMB/NFS) [homes]
- Courrier électronique [postoffice]
- Service de répertoire (OpenLDAP) [ldap]
- Gestion des utilisateurs [lwat]
- Serveur web (Apache/PHP) [www]
- Sauvegarde centralisée (sl-backup, slbackup-php) [backup]
- Cache web / mandataire (Squid) [webcache]
- Impression (CUPS) [ipp]
- Connexion à distance (OpenSSH) [ssh]
- Configuration automatique [cfengine]
- Serveur(s) de clients légers (LTSP) [ltspserver\#]
- Surveillance des machines et des services, avec rapport d'erreur, ainsi qu'état et historique sur le web. Rapport d'erreur par courrier électronique (munin, nagios, et site-summary)

Chaque utilisateur enregistre ses fichiers personnels dans son répertoire personnel, disponible sur le serveur. Les répertoires personnels sont accessibles depuis toutes les machines, donnant accès aux mêmes fichiers, quelle que soit la machine qu'ils utilisent. Le serveur ignore le système d'exploitation en permettant l'accès grâce à NFS pour les clients Unix et SMB pour les clients Windows et Macintosh.

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

Tous les services sont accessibles avec les mêmes nom d'utilisateur et mot de passe, grâce à la base de données d'utilisateurs centralisée gérant l'authentification et les autorisations.

Pour des raisons de performance sur des sites contactés fréquemment, un mandataire (Squid) met en cache local les fichiers correspondants. Associé au blocage du trafic web par le routeur, ceci permet aussi le contrôle de l'accès à l'internet sur chaque machine.

La configuration du réseau sur les clients est effectuée automatiquement à l'aide de DHCP. Les clients normaux reçoivent une adresse IP appartenant au sous-réseau privé 10.0.2.0/23, tandis que les clients légers sont connectés à leur serveur de client léger sur le sous-réseau 192.168.0.0/24 (ceci assure que le trafic réseau des clients légers n'interfère pas avec le reste des services du réseau).

Le système de journal centralisé est configuré de sorte que toutes les machines envoient leur journal système (syslog) au serveur. Seuls les messages provenant du réseau local sont acceptés.

Par défaut, le serveur DNS est configuré avec un domaine réservé à l'usage interne (*.intern), jusqu'à ce qu'un vrai domaine DNS (« externe ») puisse être configuré. Le serveur DNS est configuré en serveur DNS cache de sorte que toutes les machines du réseau puissent l'utiliser comme serveur DNS principal.

Les élèves et les enseignants ont la possibilité de publier des sites web. Le serveur web fournit les mécanismes d'authentification des utilisateurs et de limitation de l'accès aux pages individuelles et sous-répertoires à certains utilisateurs ou groupes. Les utilisateurs auront la possibilité de créer des pages web dynamiques, puisque le serveur web sera programmable.

Les informations concernant les utilisateurs et les machines peuvent être modifiées de manière centralisée et sont rendues accessibles automatiquement à tous les ordinateurs du réseau. Pour cela, un serveur de répertoire centralisé est mis en place. Le répertoire détiendra des informations sur les utilisateurs, les groupes, les machines et les groupes de machines. Afin de ne pas troubler les utilisateurs, il ne sera pas fait de distinction entre les groupes de fichiers, les listes de diffusion et les groupes réseau. Ceci implique que les groupes de machines qui devront constituer des groupes réseau aient le même espace de nommage que les groupes d'utilisateurs et les listes de diffusion.

L'administration des services et des utilisateurs se fera essentiellement par le web et respectera les standards établis, fonctionnant correctement avec les navigateurs web fournis dans Skolelinux. La délégation de certaines tâches à des utilisateurs individuels ou des groupes d'utilisateurs sera possible par les systèmes d'administration.

Afin d'éviter certains problèmes avec NFS ou de simplifier la résolution de problèmes, l'heure des différentes machines doit être synchronisée. Pour cela, le serveur Skolelinux est configuré en serveur local NTP (Network Time Protocol) et toutes les stations de travail ainsi que tous les clients sont configurés pour synchroniser leur horloge avec celle du serveur. Le serveur lui-même devrait synchroniser son horloge par NTP à partir de machines sur l'internet, assurant ainsi une heure correcte sur tout le réseau.

Les imprimantes sont connectées où cela est le plus pratique, soit directement au réseau, soit à un serveur, une station de travail ou un serveur de clients légers. L'accès aux imprimantes peut être contrôlé pour les utilisateurs en fonction des groupes auxquels ils appartiennent, ceci par l'utilisation de quota et de contrôle d'accès aux imprimantes.

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

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

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

3.1.4 Clients légers

La configuration en client léger permet à un PC ordinaire de fonctionner en terminal (ou terminal X). Ceci signifie que cette machine s'amorce depuis une disquette ou directement depuis le serveur à l'aide d'une PROM réseau (ou PXE) sans utiliser le disque dur local du client. La configuration de client léger utilisée est celle du projet Linux Terminal Server (LTSP).

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

for the encryption this can be set to the behaviour from former versions: use direct X connection via XDMCP.

3.1.5 Stations de travail sans disque dur

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

Une station sans disque exécute tous les logiciels sur le PC sans système d'exploitation installé en local. Ceci signifie que les machines clientes s'amorcent directement depuis le disque dur d'un serveur sans exécuter de logiciel installés sur le disque dur local.

Les stations de travail sans disque dur sont une excellente façon de ré-utiliser du matériel récent avec la même coût réduit de maintenance que les clients légers. Le logiciel est administré et maintenu sur le serveur sans besoin d'installer des logiciels localement sur le client. Les répertoires personnels et les réglages du système sont eux aussi enregistrés sur le serveur.

Les stations de travail sans disque sont apparues dans la version 5.0 du projet Linux Terminal Server (LTSP).

3.1.6 Clients en réseau

Le terme « clients en réseau » fait référence dans ce manuel à la fois aux clients légers et aux stations de travail sans disque, ainsi qu'aux ordinateurs exécutant MacOS ou Windows.

3.2 Administration

Toutes les machines Linux installées au moyen d'un CD ou DVD Skolelinux seront administrables depuis un ordinateur central, très probablement le serveur. Il sera possible de se connecter à toutes les machines par SSH et par la suite d'avoir un accès complet à celles-ci.

Nous utilisons cfengine pour éditer les fichiers de configuration. Ces fichiers sont mis à jour sur les clients depuis le serveur central. Pour changer la configuration d'un client, il suffit d'éditer la configuration sur le serveur et de laisser les changements se propager automatiquement.

Toutes les informations sur les utilisateurs sont conservées dans un répertoire LDAP. Les comptes des utilisateurs sont mis à jour à partir de cette base de données, qui est utilisée par les clients pour authentifier les utilisateurs.

3.3 Installation

L'installation est possible depuis un CD ou un DVD.

L'objectif est de pouvoir installer un serveur à partir d'un CD ou DVD, et d'installer des postes clients au travers du réseau en amorçant toutes les autres machines à partir de ce dernier. L'installation à partir du DVD fonctionne sans accès à l'internet.

L'installation ne devrait pas poser de questions, excepté la langue (par ex. Norvégien Bokmal, néo-norvégien, Sami) et le profil de la machine (serveur, station de travail, serveur de clients légers). Toute autre configuration sera effectuée automatiquement avec des valeurs raisonnables, modifiables de manière centralisée par l'administrateur système après la fin de l'installation.

3.4 Configuration de l'accès au système de fichiers

Une section du système de fichiers du serveur de fichiers est attribuée à chaque compte d'utilisateur Skolelinux. Cette section (répertoire personnel) contient les fichiers de configuration, les documents, courriers électroniques et pages web de l'utilisateur. Certains fichiers devraient être accessibles en lecture par les autres utilisateurs du système, certains devraient l'être par tous sur l'internet, et d'autres ne devraient l'être par personne d'autre que l'utilisateur.

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

Afin de permettre le contrôle d'accès aux fichiers partagés à l'aide des groupes de fichiers, chaque utilisateur doit être rattaché à un groupe primaire sans autre membre. Le nom de ce groupe privé devrait être identique au nom d'utilisateur. ([Davantage d'informations concernant les groupes privés](#) sont disponibles sur le site de Redhat.) Ceci permet que tous les nouveaux fichiers créés par l'utilisateur disposent d'un accès complet pour le groupe du fichier. Avec le bit set-gid appliqué aux répertoires et l'héritage des droits, ceci permet un partage de fichiers contrôlé entre les membres d'un groupe de fichier. Par conséquent, l'umask des utilisateurs devrait être 00X. (Si tous les utilisateurs doivent initialement être capables de lire les fichiers nouvellement créés, alors X=2. Si seul le groupe pertinent doit avoir initialement l'accès en lecture, alors X=7.)

L'attribution des droits d'accès initiaux pour les fichiers nouvellement créés est un problème de politique. L'accès en lecture peut être accordé à tous le monde, puis être retiré explicitement par l'utilisateur, ou il peut être initialement bloqué, puis être permis par l'utilisateur. La première approche encourage le partage des connaissances et rend le système plus transparent, tandis que la seconde méthode réduit le risque de divulgation involontaire d'informations sensibles. Le problème de la première solution est qu'il n'est pas évident pour les utilisateurs que ce qu'ils créent sera accessible à tous les autres. Ceci n'est tangible qu'en inspectant le contenu du répertoire des autres utilisateurs, permettant ainsi de constater que les fichiers sont lisibles. Le problème de la deuxième solution est que peu d'utilisateurs seront enclins à rendre leurs fichiers accessibles, même s'ils ne contiennent pas d'informations sensibles et même si leur contenu peut s'avérer utile aux utilisateurs curieux, désireux d'apprendre comment d'autres ont résolu des problèmes particuliers (typiquement des problèmes de configuration).

Suggestion : les fichiers sont initialement lisibles par tous, mais certains répertoires particuliers sont créés avec un contenu inaccessible. Décider si un fichier doit être rendu lisible ou non sera simple. Concrètement, l'umask doit être positionné à 002, et ~/ créé avec les privilèges 0775, ~/priv/ avec 0750, et ~/pub/ avec 0775. Les fichiers qui ne doivent pas être lisibles par d'autres seront placés dans ~/priv/, alors que les fichiers publics seront placés dans ~/pub/. Les autres fichiers seront initialement accessibles mais pourront être bloqués si besoin.

ssh requiert que le répertoire personnel ne puisse être accessible en écriture que par le propriétaire, ainsi le droit d'accès maximum pour ~/ est 755.

- - accès aux répertoires personnels (*~/.) ? - répertoires personnels - répertoires partagés ?

3.5 Notes diverses

Voici diverses notes concernant des sujets devant être présentés dans ce document.

- Base de données centralisée des utilisateurs avec regroupement et possibilité de contrôler les accès des groupes aux machines.
- Regroupement de machines et possibilité de contrôler l'accès aux services réseau pour ces groupes (blocage d'accès à l'internet à l'aide de squid)
- Envisager l'utilisation d'un nom de DNS selon la RFC 2306.

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

4 Fonctionnalités

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

- Everything that is new in Debian 5.0.4, see the [following paragraph](#) for details.
- More than 80 applications relevant for education are included based on user feedback and user statistics (through [Debian Edu popularity contest](#)). The full list of packages are listed in the [task overview page](#).
- Improved student desktop with educational software shortcuts to GCompris, Kalzium, KGeography, KPlot, KStars, Stopmotion and OpenOffice Write and Impress.

- Dynamic desktop icons and menu options that adjust based on user group.
- Gnome added as a supported desktop, see the [Installation chapter](#) to learn how to install with GNOME instead of KDE as desktop.
- Support for more than 50 languages.
- Improved system for user administration and machine identification.
- Improved diskless and thin client setup.
- New startup menu letting users choose diskless workstation, thin client or workstation.
- A diskless workstation option is installed but not activated by default on all servers with the thin-client-server profile.
- Main-server is set up as a PXE server for booting thin clients and diskless workstations and for installing to clients' hard or flash drives.
- The configuration for DNS and DHCP is stored in LDAP and can be edited using `lwat`. The DNS server has been switched from `bind9` to `power-dns`.
- LDAP server for directory services (NSS) are now located using a SRV record in DNS instead of hardcoding the 'ldap' DNS name. LDAP server for password checks (PAM) is still using the hardcoded 'ldap' DNS name.
- Multi arch (amd64/i386/powerpc) net installer CD.
 - (Most) Packages are downloaded from over the Internet.
- Multi arch (amd64/i386) installer DVD capable of installing without network.
- PulseAudio is provided in addition to ALSA and OSS for sound on workstations and diskless workstations machines.
- The *Barebone* profile has been renamed to *Minimal*, to better reflect what it is.
- The Nagios3 configuration is now automatically created by `sitesummary`.
- The per-user file `~/.xsession-errors` is now truncated automatically when the user logs in to avoid filling up the home directory partition with a log that grows indefinitely. The user can disable this by creating `~/.xsession-errors-enable`. The system administrator can configure the system to redirect the file to `/dev/null` by editing `/etc/X11/Xsession.d/05debian-ed-u-truncate-xerrorlog`.
- To ease installation of Debian Edu on hardware needing non-free firmware, the CD and DVD include the following firmware packages: `firmware-bnx2`, `firmware-bnx2x`, `firmware-ipw2x00`, `firmware-iwlwifi`, `firmware-qlogic` and `firmware-ralink`.

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

- New Linux kernel 2.6.26 supports more hardware
- With this release, Debian GNU/Linux updates from X.Org 7.1 to X.Org 7.3 (which includes support of newer hardware) and now includes the desktop environments KDE 3.5.10 and GNOME 2.22. Updates of other desktop applications include Iceweasel (version 3.0.6, which is the unbranded Firefox web browser), Icedove (version 2.0.0.19, which is the unbranded Thunderbird mail client) as well as upgrades to Evolution 2.22.3, [OpenOffice.org](#) 2.4.1, and Pidgin 2.4.3 (formerly known as Gaim).
- Installation from CD/DVD from within Windows
- Switched from `sysklogd` to `rsyslog` as the syslog collector.
- For more information see the page [New in Lenny](#) on wiki.debian.org

4.3 Nouvelles fonctionnalités de la version « 3.0r1 Terra », publiée le 2007-12-05

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

4.4 Nouvelles fonctionnalités de la version « 3.0r0 Terra », publiée le 2007-07-22

- Basée sur Debian 4.0 Etch, publiée le 2007-04-08.
- Installateur graphique avec support de la souris
- Écran d'amorce avec usplash
- Compatible LSB 3.1
- Noyau Linux version 2.6.18
 - Prise en charge des contrôleurs et disques SATA
- X.org version 7.1.
- Environnement de bureau KDE version 3.5.5
- OpenOffice.org version 2.0.
- LTSP5 (version 0.99debian12)
- Suivi automatique des machines installées grâce à Sitesummary.
- Configuration automatique de munin grâce à Sitesummary.
- Contrôle de version automatique des fichiers de configuration situés dans /etc/ à l'aide de svk.
- La taille d'un système de fichiers peut être augmentée alors que celui-ci est monté.
 - Prise en charge automatique de l'extension des systèmes de fichiers selon des règles prédéfinies.
- Prise en charge de périphériques locaux sur les clients légers.
- Nouvelles architectures de processeur : amd64 (prise en charge totale) et powerpc (prise en charge expérimentale, le support d'installation amorce seulement sur la sous-architecture newworld)
- DVD multi-architecture pour i386, amd64 et powerpc
- Régression : l'installation à partir du CD requiert un accès à l'internet. Les versions précédentes pouvaient être installées depuis un CD sans accès à l'internet.
- Regression: webmin is now removed from Debian because of problems supporting it. We've added a new web based user administration tool named lwat, which doesn't has the same functionality as wplus, the old user administration tool. But wplus requires webmin.
- Regression: swi-prolog is not part of etch, but was part of sarge. The [HowTo teach and learn](#) Chapter describes how to install swi-prolog on etch.

4.5 Fonctionnalités de la version 2.0, publiée le 2006-03-14

- Basée sur Debian 3.1 Sarge, publiée le 2005-06-06.
- Noyau Linux version 2.6.8.
- XFree86 version 4.3
- KDE version 3.3.
- OpenOffice.org 1.1.

4.6 Fonctionnalités de « 1.0 Venus », publiée le 20-06-2004

- Basée sur Debian 3.0 Woody, publiée le 19-07-2002.
- Noyau Linux version 2.4.26.
- XFree86 version 4.1.
- KDE version 2.2.

4.7 Davantage d'informations sur les versions précédentes

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

5 Besoins

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

5.1 Besoins matériels

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

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

5.2 Matériel compatible connu

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

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

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

6 Besoins pour une configuration du réseau

6.1 Default Setup

When using the default network architecture, these rules apply:

- you need exactly one main server, the tjener
- you can have up to 50 (diskless) workstations on the main network
- you can have up to 20 ltspservers on the main network
 - you can have hundreds of thin clients and/or diskless workstations on each ltspserver network
- you can have hundreds of other machines which will have dynamic IP addresses assigned
- for having access to the internet you need a router/gateway (see below)

6.2 Routeur internet

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

Le routeur ne doit pas exécuter de serveur DHCP, il peut exécuter un serveur DNS, bien qu'il ne soit pas nécessaire et ne sera pas utilisé. (Si le routeur exécute un serveur DHCP, vous devez désactiver celui du serveur principal et vous perdrez certaines fonctionnalités et certaines procédures documentées fonctionneront différemment. Il est donc conseillé de désactiver le serveur DHCP du routeur.)

Si vous recherchez une solution basée sur i386 (afin de réutiliser un vieux PC), nous vous recommandons [IPCop](#) ou [floppyfw](#).

Si vous avez des besoins concernant un routeur ou un point d'accès embarqué, nous vous recommandons d'utiliser [OpenWRT](#) , bien que vous puissiez bien sûr aussi utiliser le micro-code initial. L'utilisation du micro-code initial est plus simple, alors que celle de OpenWRT vous offre plus de choix et de contrôle sur le système. Consultez la liste du [matériel géré](#) sur les pages web de OpenWRT.

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

7 Installation

7.1 Where to find additional information

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

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

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

7.2.1 DVDs pour i386, amd64 et powerpc

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

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

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

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

Le portage powerpc n'a pas été autant testé que les autres architectures, il devrait cependant fonctionner correctement et les retours indiquent qu'il fonctionne correctement. Nous le considérons comme une version expérimentale de Debian Edu, que nous ne sommes pas en mesure de supporter comme les autres architectures.

The Sources are available via

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

7.3 Demande d'un CD/DVD par courrier électronique

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

7.4 Installing Debian Edu

7.4.1 The installation process

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

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

- * The powerpc installer does neither support the graphical installation nor the boot menu that i386 and amd64 have.
 - * On powerpc, enter `install debian-edu-expert` at the yaboot prompt to enter expert mode.
 - * If you want to boot the amd64 text mode with the multiarch DVD it would be `amd64--install`.
 - * Likewise you can choose `amd64-expertgui` to get the GUI version on amd64.
 - * If you want to boot the i386 mode with the multiarch DVD on an amd64 machine you need to manually select `install` (text mode) or `expertgui` (graphical mode).
 - * The multiarch DVD defaults to use `amd64-installgui` on x86 64-bits machines, and `installgui` on x86 32-bits machines.
 - * Si le profil serveur principal est déjà installé sur une machine, vous pouvez utiliser son service de proxy http pour accélérer les installations suivantes depuis le CD. Pour cela, ajoutez l'option d'amorçage `d-i mirror/http/proxy string http://10.0.2.-2:3128/`.
 - * to install the **GNOME** desktop instead of the **KDE** desktop, add `desktop=gnome` to the kernel boot params.
- Choisissez une langue (pour l'installation et le système installé)
 - Choisissez un zone géographique
 - Choisissez une disposition de clavier (généralement, le choix par défaut du pays convient)
 - Choose a **profile**:
 - Main-Server
 - * This is the main server (tjener) for your school providing the following services: file, print, intranet, proxy, DNS, DHCP, LDAP, backup, nagios, sitesummary, and munin. All services are pre-configured to work out of the box. You must only install one main server per school! This profile does not include a graphical user interface. If you want a graphical user interface, then select Workstation or Thin-Client-Server in addition to this one.
 - Workstation
 - * Un ordinateur s'amorçant depuis son disque dur local, exécutant tous les logiciels et exploitant tous ses périphériques comme un ordinateur ordinaire, mais la connexion de l'utilisateur est authentifiée par le serveur principal, où les fichiers de l'utilisateur et le profil de bureau sont enregistrés.
 - Thin-Client-Server
 - * Thin client (and diskless workstation) server, also called LTSP server. Clients without hard drives boot and run software from this server. This computer needs two network cards, a lot of memory, and ideally more than one processor or core. See the chapter about **networked clients** for more information on this subject. Chosing this profile also enables the workstation profile (even if it is not selected), a thin client server can always be used as a workstation, too.
 - Standalone
 - * Un ordinateur ordinaire qui peut fonctionner sans serveur principal, c-à-d qui n'a pas besoin d'être sur le réseau. Ceci inclut les ordinateurs portables.
 - Minimal
 - * Ce profil n'est disponible qu'en utilisant l'option d'amorce « `debian-edu-expert` ». Il installera les paquets de base et configurera la machine de sorte qu'elle s'intègre dans le réseau Debian Edu, mais sans aucun service ni application. Ceci est utile comme plateforme pour des services retirés manuellement du serveur principal.

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

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

7.4.2 Note concernant le partitionnement manuel

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

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

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

7.4.3 Note concernant les ordinateurs portables

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

Il est possible de reconfigurer les stations de travail afin qu'elles gardent en cache les informations d'authentification et effectuent une copie des répertoires personnels sur le disque local (et synchronisent ceux-ci lorsqu'elles ont accès au réseau) à l'aide d'unison, mais aucun manuel n'est disponible pour l'instant.

7.4.4 Note concernant l'installation depuis un DVD

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

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

7.4.5 A note on CD installs

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

- Main server: 8 pour 115 Mio téléchargés.

- Serveur principal et serveur de clients légers : 618 pour 1082 Mio téléchargés.
- Serveur principal et station de travail : 618 pour 1081 Mio téléchargés.
- Serveur de clients légers : 618 pour 1052 Mio téléchargés.
- Station de travail : 618 pour 1051 Mio téléchargés.
- Ordinateur autonome : 618 pour 1020 Mio téléchargés.
- Minimal: 12 of 83 MiB downloaded.

7.4.6 A note on some RAID controllers

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

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

7.4.7 A note on thin-client-server installations

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

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

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

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

7.4.8 CD/DVD personnalisés

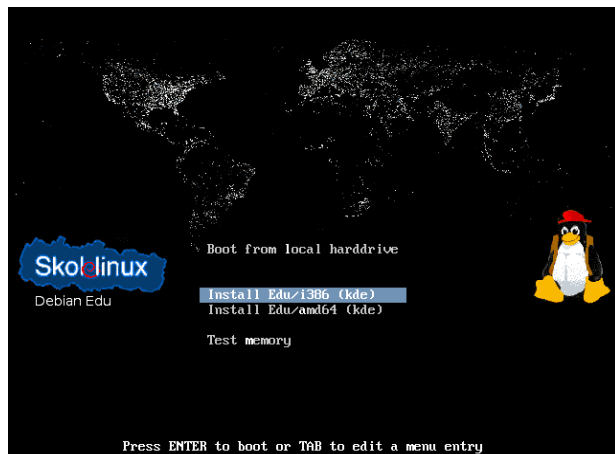
Creating custom CDs or DVDs is possibly quite easy since we use the [debian installer](#), which has a modular design and other nice features. [Preseeding](#) allows you to define answers to the questions normally asked.

Ainsi, vous n'avez qu'à créer un fichier de référence (preseeding) avec vos réponses (ce qui est décrit dans l'annexe du manuel de l'installateur Debian) et [re-crée le CD/DVD](#).

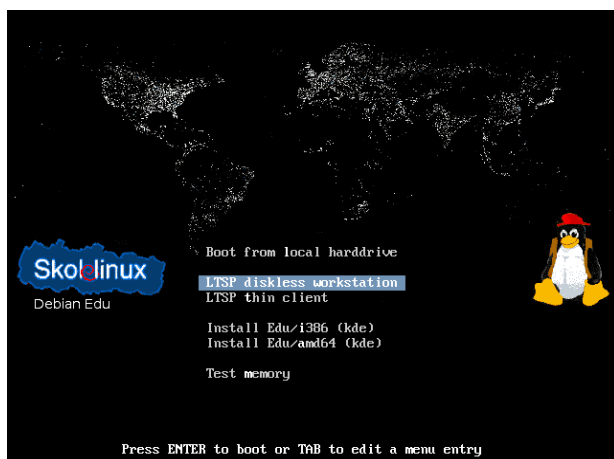
7.4.9 Installation over the network (PXE) and booting diskless clients

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

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



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



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

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

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

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

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

The PXE installation uses the files `/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, i.e. to avoid more questions when installing over the net. Another possibility to achieve the same is to provide extra settings in `/etc/debian-edu/pxeinstall.conf` and `/etc/debian-edu/www/debian-edu-install.dat.local` and to run `/usr/sbin/debian-edu-pxeinstall` to update the generated files.

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

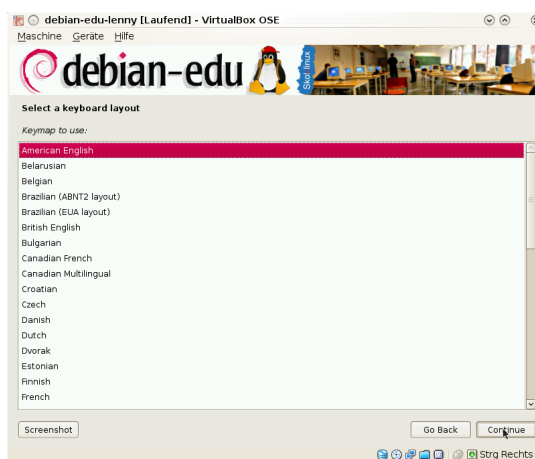
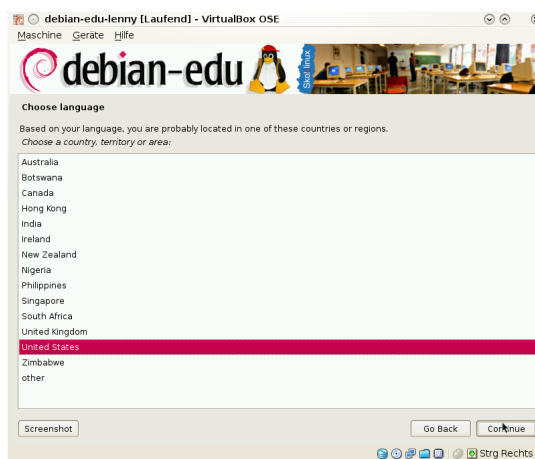
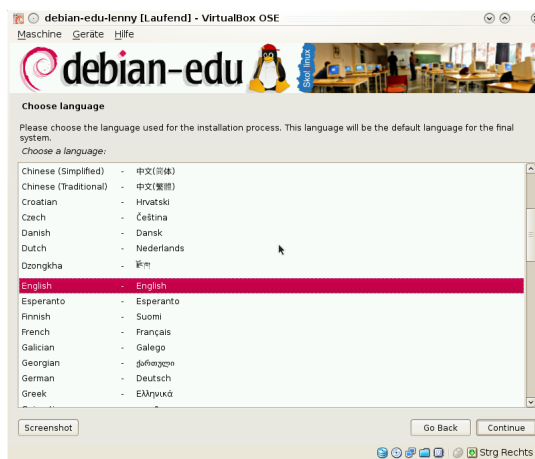
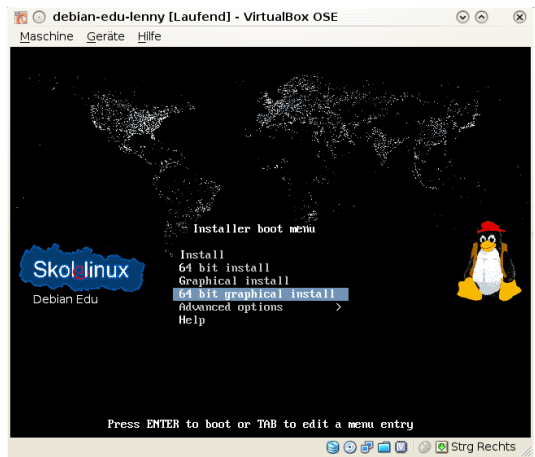
To disable or change the use of the proxy when installing via PXE, the lines containing `mirror/http/proxy`, `mirror/ftp/proxy` and `preseed/early_command` in `tjener:/etc/debian-edu/www/debian-edu-install.dat` need to be changed. To disable the use of a proxy when installing, put '#' in front of the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

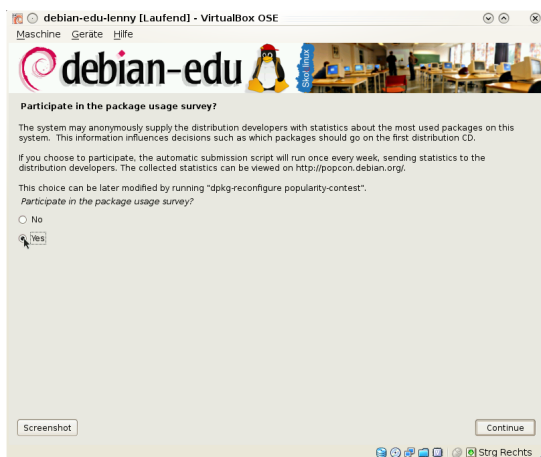
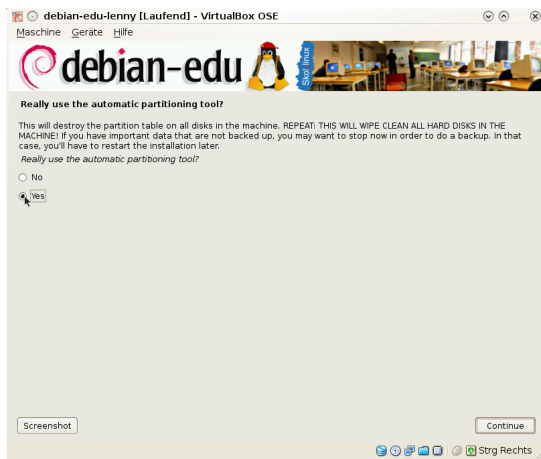
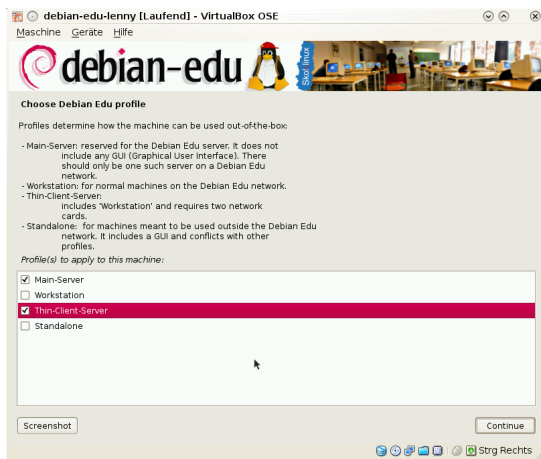
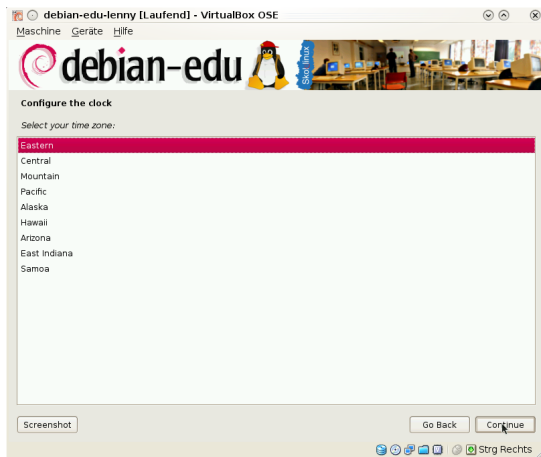
Some settings can not be preseeded because they are needed before the preseeding file is downloaded. These are configured in the pxelinux based boot arguments available from `/var/lib/tftpboot/debian-edu/install.cfg`. Language, keyboard layout and desktop are examples of such settings.

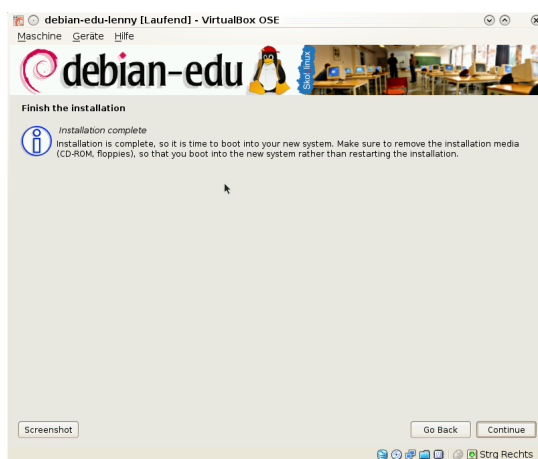
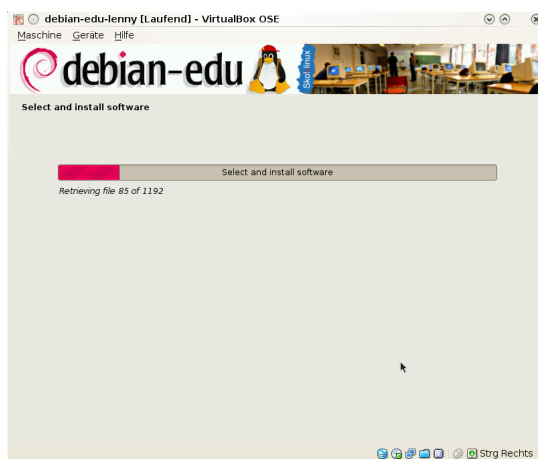
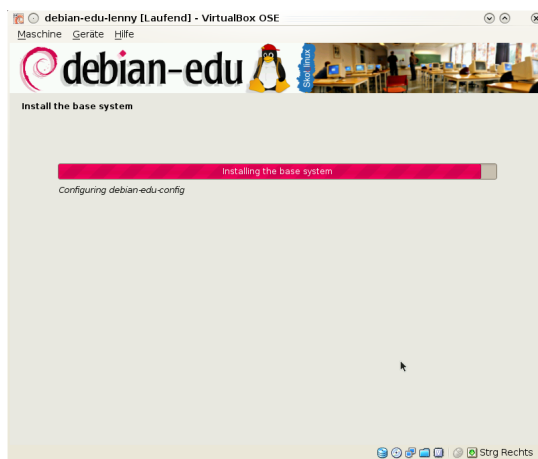
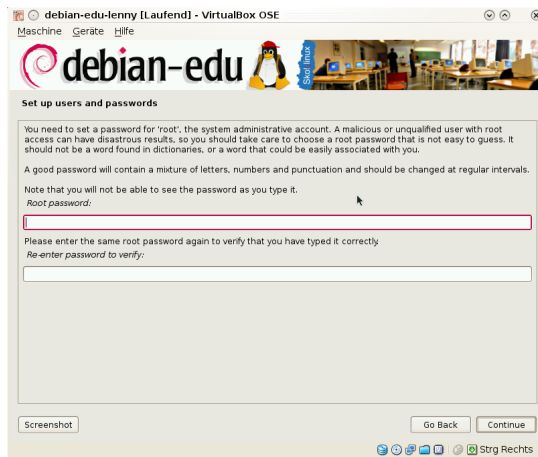
7.5 Screenshot tour

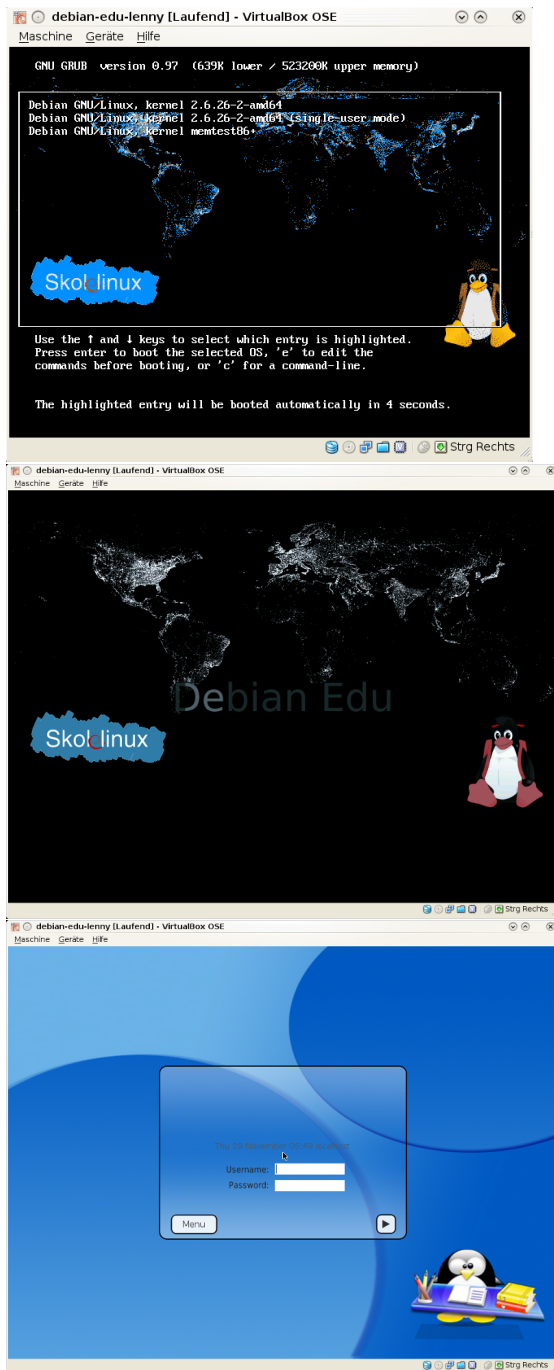
The text mode and the graphical installation are identical, only the appearance is different. The graphical mode offers you the opportunity to use a mouse. Of course the graphical mode looks much nicer and more modern. Unless the hardware has trouble with the graphical mode, there is no reason not to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

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









8 Démarrage rapide

8.1 Minimum steps to get started

Ce chapitre décrit les premières étapes par lesquelles vous devrez passer après l'installation. Le minimum à faire est :

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

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

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

9 Services exécutés sur le serveur principal

Plusieurs services sont exécutés sur le serveur principal et peuvent être contrôlés par une interface web. Nous décrirons ici chacun de ces services.

9.1 Gestion par une interface web, à l'aide de lwat

Lwat est un outil de gestion reposant sur une interface web qui vous aidera à contrôler certains réglages importants de Debian Edu. Vous pouvez contrôler les quatre groupes principaux suivants (ajout, modification, suppression) :

- Administration des utilisateurs
- Administration des groupes
- Automount Informations
- Administration des machines
- DNS Administration

To access lwat point your web browser to <https://www.lwat>.

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

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



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

9.2 Gestion des utilisateurs avec lwat

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

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

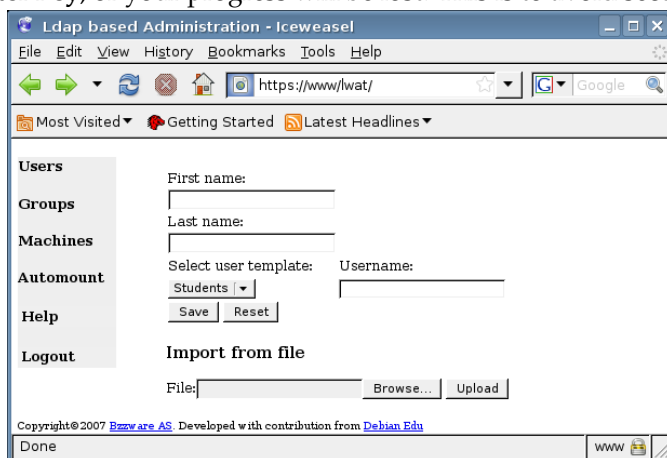
You can add users, group them in usergroups (for example to refer the members of a class more easily), update them and remove them again. By pointing the mouse onto the menu entries "Users" or "Groups" you can choose the action: Add any, or search for existing users or groups to modify or delete them.

9.2.1 Ajouter des utilisateurs

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

rôle	privileges accordés
Étudiants	Se connecter et utiliser le système
Professeurs	Identiques à ceux des étudiants
jrAdmins	Same as Teachers, but can also change other user's passwords (except for the Admins' ones)
Administrateurs	Les Admins ont les privilèges les plus avancés. Ils peuvent ajouter/modifier/supprimer des utilisateurs/groupes/machines/montages automatiques et permettre à des systèmes Windows de rejoindre le domaine Skolelinux.

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



Si tout s'est bien passé, un court message en fin de page vous rappelle les données ajoutées au répertoire LDAP (et le formulaire est ré-initialisé) :

```
Added user: Demo User
username: demuse
password: somethingsecret
```

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

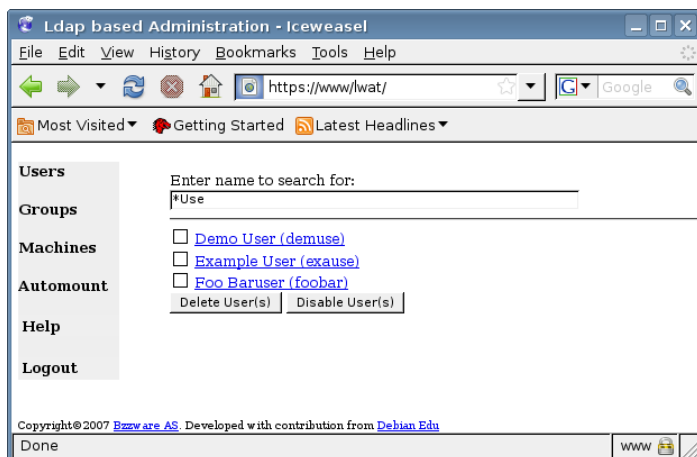
You may miss the option to set a password, that has been set automatically. The user can change its own password by clicking on the key icon on his desktop or directly browsing to `http://www.lwat-/chguserpw.php`.

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

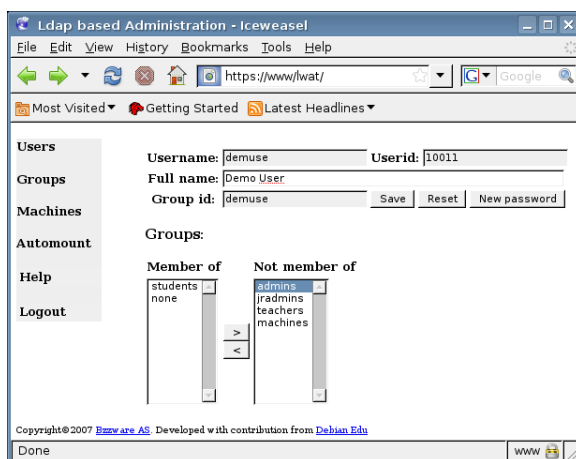
9.2.2 Search and delete users

To modify or delete a user you need to first find her using the search menu entry. You will find the form shown in the screenshot where you can enter either the real name or the user name of the user. The

results will show up below. On the left of every result line there is a checkbox you can use to delete or disable one or more users with the two buttons below. If you want to modify a user, just click on it, all names found are links to the modify page.



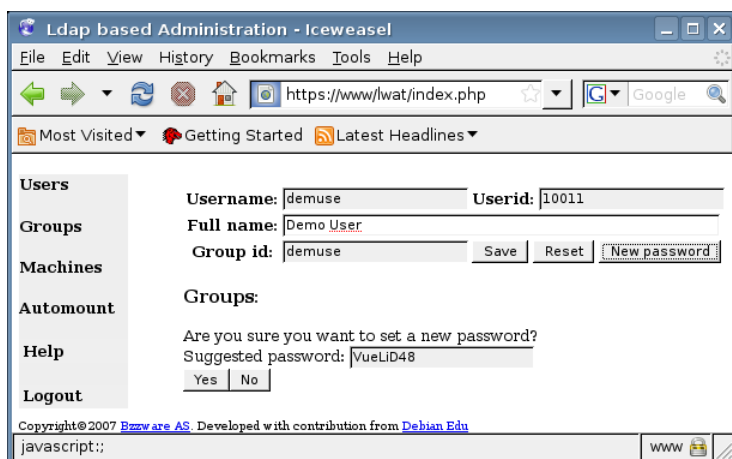
A new page will show up where you can modify information directly belonging to the user, change the password of the user and modify the list of groups the user belongs to.



9.2.3 Set passwords

To set a new password for a user

- search the user to be modified like explained above and click on the username once found.
- click on the button New password
- on the following page, you can set a new random generated password.
- note that by default it is not possible to set a self-chosen password, as the corresponding field is not writable



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

- Execute `nano /etc/lwat/config.php`
- Change `$allowPwSet = false ;` to `$allowPwSet = true ;`
- Press CTRL+X
- Press Y
- Press Enter

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

9.2.4 Advanced user management

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

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

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

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

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

9.3 Administration des groupes avec lwat

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

Les groupes créés par l'outil d'administration de groupes sont aussi des groupes Unix classiques, si bien que vous pouvez vous appuyer sur eux pour créer les permissions d'accès aux fichiers.

9.4 Group Management on the command line

Here's how:

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

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

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

9.4.1 Advanced group management

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

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

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

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

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

9.5 Gestion de machines avec lwat

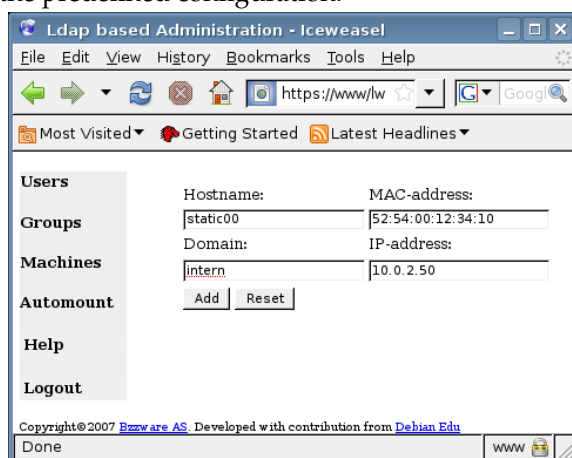
With the machine management you can basically manage all IP based devices in your Debian Edu network. Every machine added to the LDAP directory using lwat has a hostname, an IP-address, a MAC-address and a domain name which usually is "intern". For a more verbose description about the Debian Edu architecture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

Si vous ajoutez une machine, vous pouvez utiliser une adresse IP / un nom d'hôte de l'espace d'adresses pré-configuré. Les plages d'adresses IP suivantes sont pré-définies :

Première adresse	Dernière adresse	nom d'hôte
10.0.2.10	10.0.2.29	ltspservrxx
10.0.2.30	10.0.2.49	printerxx
10.0.2.50	10.0.2.99	staticxx

Les adresses situées entre 10.0.2.100 et 10.0.2.255 et entre 10.0.3.0 et 10.0.3.243 sont réservées à DHCP et sont assignées dynamiquement.

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

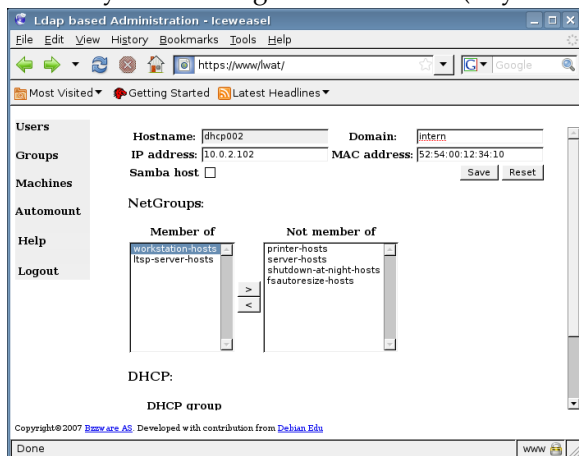


9.5.1 Recherche et supprimer des machines

La recherche et la suppression de machines sont assez semblables à celles d'un utilisateur, par conséquent ceci ne sera pas développé ici.

9.5.2 Modification de machines existantes / gestion des groupes réseau

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



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

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

The default installation provides the NetGroups

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

Currently the NetGroup functionality is used for

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

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

9.5.3 Davantage de documentation sur lwat

La documentation complète de lwat est disponible sous `/usr/share/doc/lwat/` sur le serveur principal ou [en ligne](#).

9.6 Gestion des imprimantes

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

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

9.7 Synchronisation de l'horloge

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

Pour permettre la synchronisation avec une horloge externe, le fichier `/etc/ntp.conf` sur le serveur principal doit être modifié. Les commentaires en regard des entrées du serveur doivent être supprimés. Après cela, le serveur NTP doit être redémarré en exécutant `/etc/init.d/ntp restart` en tant que root. Pour tester si le serveur utilise les sources d'horloges externes, exécutez `ntpq -c lpeer`.

9.8 Extending full partitions

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

10 Maintenance

10.1 Mis-à-jour du logiciel

Cette section explique comment utiliser `aptitude upgrade` et `kde-update-notifier`.

Utiliser `aptitude` est vraiment simple. Pour mettre à jour un système, vous devez exécuter deux commandes en tant que root : `aptitude update` (met à jour les listes de paquets disponibles) et `aptitude upgrade` (met à jour les paquets pour lesquels une mise à jour est disponible).

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

Par ailleurs, il est judicieux d'installer `cron-apt` et `apt-listchanges` et de les configurer pour envoyer des courriels à une adresse que vous consulterez.

`cron-apt` vous signalera une fois par jour par courriel quels paquets ont besoin d'une mise à jour. Ce mécanisme n'installe pas les mises à jour mais les télécharge (généralement la nuit), de sorte que vous n'aurez pas besoin d'attendre la fin du téléchargement quand vous lancerez `aptitude upgrade`.

`apt-listchanges` peut vous envoyer les entrées de changelog.

10.1.1 Keep yourself informed about security updates

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

10.2 Gestion des sauvegardes

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

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

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

Si vous souhaitez sauvegarder vos données sur un serveur externe, un lecteur de bande magnétique ou un autre disque dur, vous devrez légèrement modifier la configuration actuelle.

If you want to restore a complete folder, your best option is to use the command-line:

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

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

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

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

10.3 Surveillance des serveurs

10.3.1 Munin

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

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

Information about the munin system is available from <http://munin.projects.linpro.no/>.

10.3.2 Nagios

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

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

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

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

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

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

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

10.3.3 Sitesummary

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

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

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

10.4 More information about Debian Edu customisations

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

11 Mises à jour

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

Please read this chapter completely before attempting to upgrade.

11.1 General notes on upgrading

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

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

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

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

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

12 Upgrades from Debian Edu etch

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

12.1 The basic upgrade operation

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

12.2 LDAP service needs to repaired

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

1. `slapd` wouldn't start.

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

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

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

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

```
tjener slapd[8894]: could not stat config file "/etc/ldap/schema/dnsdo-
main2.schema": No such file or directory (2)
```

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

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

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

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

12.3 DHCP service needs to repaired

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

If starting `dhcp3-server` gives:

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

```

^
/etc/dhcp3/dhcpd.conf line 6: semicolon expected.
ldap-method dynamic;
^
Configuration file errors encountered -- exiting
invoke-rc.d: initscript dhcp3-server, action "start" failed.

```

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

```

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

```

If starting `dhcp3-server` gives:

```

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

```

Then DHCP configuration needs loading into LDAP. Two ways to do it are:

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

```

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

```

```

Creating LDAP Configuration with the following options:
Base DN: dc=skole,dc=skolelinux,dc=no
DHCP DN: cn=DHCP Config,dc=skole,dc=skolelinux,dc=no
Server DN: cn=dhcp, dc=skole,dc=skolelinux,dc=no

```

```

Done.
tjener:/usr/share/doc/dhcp3-server-ldap#
tjener:/usr/share/doc/dhcp3-server-ldap# cd /etc/ldap/
tjener:/etc/ldap#
tjener:/etc/ldap#
tjener:/etc/ldap# # At this point it's recommended to view migrate-dhcp ↵
.ldif side by side
tjener:/etc/ldap# # with dhcp.ldif and make some manual adjustments, ↵
before running:
tjener:/etc/ldap#
tjener:/etc/ldap# ldapadd -xZWD 'cn=admin,ou=People,dc=skole,dc= ↵
skolelinux,dc=no' \
> -f /etc/ldap/migrate-dhcp.ldif
Enter LDAP Password:
adding new entry "cn=dhcp, dc=skole,dc=skolelinux,dc=no"
....
tjener:/etc/ldap#
tjener:/etc/ldap# invoke-rc.d dhcp3-server start
* Starting DHCP server dhcpc3 ↵
[ ok ]
tjener:/etc/ldap#

```

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

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

2. Squid wouldn't start.

If starting Squid gives:

```

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

```

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

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

```

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

```

- To have the default Debian Edu configuration run `cfengine-debian-edu`
- Any customized settings in the old configuration should be copied from the old file (dropping lines `acl schoolnet*`, `acl ltspnet*`, `http_access allow schoolnet` and `http_access allow ltspnet` these were replaced by the `acl localnet*` and `*access allow localnet` lines).

12.4 User logins from Windows machines needs to repaired

1. Users can't login from Windows machines.

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

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

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

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

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

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

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

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

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

See also [SambaLDAP](#).

12.5 DNS service needs to repaired

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

12.5.1 Bind

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

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

12.5.2 powerdns

To switch to powerdns:

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

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

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

1. Uncomment the line include /etc/ldap/schema/dnsdomain2.schema, if it was commented-out earlier (1.1).

2. It's recommended to index associatedDomain, at the indices area add the lines:

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

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

- a. To use the default Debian Edu configuration:

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

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

- b. To migrate Bind's configuration:

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

To use the one from Etch:

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

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

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

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

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

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

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

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

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

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

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

12.6 Nagios setup has changed

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

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

12.7 Recreating an LTSP chroot

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

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

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

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

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

[Category](#)[Permalink](#)

14 Manuels (HowTo)

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

15 Manuels d'administration générale

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

15.1 Configuration history: tracking /etc/ using the svk version control system

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

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

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

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

Liste de commandes utiles

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

15.1.1 Exemple pratiques

Sur un système récemment installé, lancez cette commande pour rechercher tous les changements effectués depuis l'installation.

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

Pour visualiser la liste des changements effectués dans `/etc/`, utilisez la commande :

```
etcinsvk log | less
```

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

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

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

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

Pour annuler un changement, utilisez la commande `diff` et éditez le fichier, ou utilisez un autre outil pour le faire automatiquement.

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

Pour livrer un fichier, parce que vous ne souhaitez pas attendre jusqu'à une heure :

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

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

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

15.1.2 For those who upgraded from Etch

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

15.2 Resizing Partitions

La plupart des partitions dans Debian Edu sont des volumes logiques LVM. Seule la partition `/boot/` n'en est pas un. Avec la version Debian/Etch de Debian Edu, il est possible d'étendre les partitions alors qu'elles sont montées. Cette fonctionnalité est disponible depuis la version 2.6.10 du noyau Linux. La réduction d'une partition doit toujours être effectuée lorsque celle-ci est démontée.

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

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

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

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

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

15.2.1 Gestion d'un volume logique

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

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

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

15.3 Using ldapvi

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

The following needs to be executed:

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

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

Alternatively, to save key-strokes try:

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

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

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

15.4 Utilisation de volatile.debian.org

15.4.1 Qu'est-ce que debian-volatile ?

Citation de la page web

- Certains paquets ont pour objet des cibles très mouvantes comme le filtrage de pourriels et la détection de virus, et même lorsque les données utilisées sont à jour, ils ne fonctionnent pas vraiment durant l'intégralité de la vie d'une version stable. L'objectif principal de « volatile » est de permettre aux administrateurs système de mettre à jour leurs systèmes d'une façon agréable et cohérente sans avoir les inconvénients liés à l'utilisation de la distribution instable, même pour les paquets sélectionnés. `debian-volatile` ne contiendra donc que des changements à des programmes stables qui sont nécessaires pour garantir leur fonctionnement.

15.4.2 Comment utiliser « volatile »

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

15.5 Using backports.org to install newer software

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

Backports are recompiled packages from Debian testing (mostly) and Debian unstable (in a few cases only, e.g. security updates), so they will run without new libraries (wherever this is possible) on a stable

Debian distribution like Debian Edu. **We recommend you to pick out single backports which fits your needs, and not to use all backports available there.** Please follow the instructions on <http://www.backports.org> to use these backports.

Vous aurez besoin d'ajouter la clé d'archive de backports.org au trousseau de clés gpg de root, afin que apt puisse utiliser ce dépôt **de manière sécurisée**. Pour cela, lancez les commandes suivantes en tant que root :

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

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

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

15.6 Java

15.6.1 running standalone Java applications

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

15.6.2 running Java applications in the webbrowser

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

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

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

Then do:

```
# apt-get update
```

Now you are ready to run this command:

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

15.7 Creating folders in the home directories of all users

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

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

```

home_path="/skole/tjener/home0";
shared_folder="assignments";
permissions="2770";
created_dir=0;
  for home in $(ls $home_path);do
    . if [ ! -d "$home_path/$home/$shared_folder" ]; then
      . mkdir $home_path/$home/$shared_folder
      chmod $permissions $home_path/$home/$shared_folder
    . #set the right owner and group
      #"username" = "group name" = "folder name"
      user=$home
      group=teachers
      chown $user:$group $home_path/$home/$shared_folder
      ((created_dir+=1))
    else
      . echo -e "the folder $home_path/$home/$shared_folder already exists.\n"
    . fi
  done
echo "$created_dir folders has been created"

```

15.8 Easy access to USB drives and CDROMs/DVDs

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

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

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

```

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

```

15.8.1 A warning about removable media on LTSP servers

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

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

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

15.9 Automatic cleanup of left-over processes

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

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

To install it run the following command as root:

```
apt-get install killer
```

15.10 Automatic shutdown of machines during the night

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

There are some considerations to make when doing this:

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

15.10.1 How to set up shutdown-at-night

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

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

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

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

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

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

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

15.11 Access to skolelinux server from outside a firewall

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

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

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

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

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

15.12 Installer des machines exécutant un seul service pour télécharger le serveur principal

FIXME: this is so generic its almost useless

- install the *minimal* profile using the *debian-edu-expert* boot-option
- installer les paquets requis pour le service
- configurer le service
- désactiver le service sur le serveur principal
- update DNS on main-server

15.13 Configuring the PXE menu

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

15.13.1 Configuring the PXE installation

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

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

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

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

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

15.14 Manuels de wiki.debian.org

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

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

16 Manuels pour le bureau

16.1 KDE Kiosk mode

Two default profiles are included:

debian_edu_pupils (enabled for members of the students file group)

- customized set of icons appears on student desktops
- makes sure that the programs behind the desktop icons also show up in the kde panel
- adept is not started
- makes sure that students cannot start another kde session
- disables possibility to gain root access for students

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

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

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

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

16.2 Changing kioskmode on diskless workstations

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

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

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

Sinon, remplacez `i386` par `amd64` ou `powerpc`.

16.2.1 Désactiver le mode kiosque de KDE

Si vous ne souhaitez pas utiliser le mode kiosque, supprimez simplement le fichier `/etc/kderc`, ou, si vous souhaitez seulement le désactiver temporairement, mettez en commentaire toutes les entrées de ce fichier.

16.3 Modification de l'écran de connexion de kdm

Dans Debian/Etch, la manière de personnaliser l'écran de connexion de `kdm` a changé. Maintenant, ceci se fait en ajoutant dans `/etc/default/kdm.d/` un fichier qui spécifie les variables surchargeant les valeurs par défaut.

Voici un exemple utilisé pour activer le thème du paquet `desktop-base` :

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

Consulter le code de `/etc/init.d/kdm` pour des informations concernant l'utilisation de ces variables.

16.4 Flash

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

Ceci impose trois conditions :

- add `backports.org` to `/etc/apt/sources.list` as decribed in the [general adminstration howtos](#)
- ajouter les lignes suivantes à `/etc/apt/preferences` (ce fichier n'existe peut-être pas, vous devez alors le créer) :

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

- comme le paquet `flashplugin-nonfree` n'est qu'un installateur (et ne contient pas le greffon lui-même, pour des raisons légales), il a besoin d'une connexion opérationnelle à l'internet afin de télécharger le fichier binaire pré-compilé du site web d'Adobe.

16.4.1 Sound with Flash on thin clients

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

16.5 Lire des 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 debian-multimedia.org. Add the multimedia repository (as described just below this paragraph) and install multimedia and dvd libraries:

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

16.6 Utilisation du dépôt multimedia

Pour utiliser www.debian-multimedia.org, effectuez les opérations suivantes :

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

16.7 Handwriting fonts

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

17 HowTos for networked clients

17.1 Introduction to Thin clients and Diskless workstations

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

Thin client

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

Diskless workstation

A diskless workstation runs all software locally. The client machines boot directly from the LTSP server without a local hard drive. Software is administered and maintained on the LTSP server, but it runs on the diskless workstation. Home directories and system settings are stored on the server too. Diskless workstations are an excellent way of reusing newer hardware with the same low maintenance cost as with thin clients.

17.1.1 Machine type selection based on the network

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

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

17.1.2 Changing the PXE menu on an LTSP server

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

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

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

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

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

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

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

17.1.3 Separate main- and LTSP servers

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

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

- copy the `ltsp` directory from `/var/lib/tftpboot` from `ltspserver00` to the same directory on `tjener`.
- copy `/var/lib/tftpboot/debian-edu/default-diskless.cfg` to the same directory on `tjener`.

- edit `/var/lib/tftpbboot/debian-edu/default-diskless.cfg` to use the IP address of `ltspserver00`, the following example uses 10.0.2.10 (which is the default):

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

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

17.1.4 How to extend the range of static IP addresses

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

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

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

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

17.2 LTSP en détail

17.2.1 Its.conf

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

Les valeurs par défaut sont définies sous `[default]`, pour configurer un client, spécifiez son adresse MAC ou son adresse IP de cette manière `[192.168.0.10]`.

Exemple : pour régler la résolution du client léger `ltsp010` sur 1280x1024, ajoutez quelque chose comme :

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

quelque part sous les réglages par défaut.

Selon les modifications effectuées, il peut être nécessaire de redémarrer X sur le client (en pressant `alt+ctrl+backspace`) ou de redémarrer le client.

Pour utiliser les adresses IP de `lts.conf`, vous devrez ajouter l'adresse MAC du client à votre serveur DHCP. Sinon, vous devrez utiliser l'adresse MAC du client directement dans le fichier `lts.conf`.

17.2.2 Load balancing LTSP servers

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

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

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

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

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

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

you have to add this under "range":

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

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

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

Edit "/opt/ltsp/i386/etc/lts.conf" and add something like this:

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

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

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

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

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

There is some obvious weaknesses with this setup. All clients get their image from the same server, this causes high loads on the server if many clients are booted at the same time. Also the clients require

that server to always be available, without it they cannot boot or get a LDM server. Therefore this setup is very dependent on one server, which isn't very good.

Your clients should now be loadbalanced!

17.2.3 Sound with LTSP clients

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

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

17.2.4 Upgrading the LTSP environment

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

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

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

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

17.2.5 Slow login and security

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

```
LDM_DIRECTX=True
```

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

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

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

17.3 Replacing LDM with KDM

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

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

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

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

```
X -query ltspserverXX
```

Si vous êtes sur le réseau de clients légers, veuillez lancer la commande suivante :

```
X -query 192.168.0.254
```

L'objectif est de permettre à votre client léger « réel » de contacter le serveur xdmcp sur le réseau 192.168.0.254 (dans le cas d'une configuration standard de Skolelinux).

Si pour une raison quelconque, xdmcp est accessible depuis le serveur qui exécute KDM, veuillez ajouter ceci à `/etc/kde3/kdm/Xaccess`

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

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

Ensuite, lancez xdmcp dans kdm grâce à la commande :

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

À la fin, veuillez redémarrer kdm en lançant :

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

(in courtesy of Finn-Arne Johansen)

17.4 Connexion de machines Windows au réseau / intégration de Windows

17.4.1 Rejoindre le domaine

Les clients Windows peuvent rejoindre le domaine Windows « SKOLELINUX ». Un service spécial, nommé Samba, installé sur le serveur principal tjener, permet aux clients Windows d'enregistrer des profils et des données utilisateurs et authentifie les utilisateurs durant la phase de connexion.

Afin d'ajouter des clients Windows au domaine, quelques étapes sont nécessaires :

1. Créez un utilisateur appartenant au groupe « admins » (s'il n'en existe pas déjà un)

- Afin d'être capable de rejoindre le domaine « SKOLELINUX », un membre du groupe admins doit autoriser le processus. S'il n'en existe encore aucun, un tel utilisateur doit être ajouté (pour plus d'informations, consulter <lien vers la documentation de lwat>). L'utilisateur « root » ne fonctionnera **pas**, car root n'a pas de mot de passe sous Samba.

2. Configurez les clients Windows en hôtes statiques

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

3. Sur les clients Windows : assurez-vous que le réseau et la configuration du système correspondent aux données enregistrées sur tjener (nom d'hôte et configuration IP).

- Il est vraiment important que les hôtes Windows aient les mêmes données, sinon Samba ne trouvera pas l'hôte ajouté à l'étape 2.

4. Rejoignez le domaine comme d'habitude en utilisant l'utilisateur ajouté à l'étape 1.

- Selon la version et la langue de votre installation Windows, vous trouverez la configuration du domaine ou du groupe de travail de votre système quelque part dans les propriétés du système. Un système Windows récemment installé devrait appartenir à un groupe de travail par défaut. Vous pouvez rejoindre le domaine en sélectionnant « Domaine » à la place de « Groupe de Travail » et en entrant le nouveau nom de domaine SKOLELINUX. À l'appui sur la touche Entrée, une nouvelle fenêtre s'ouvrira, où les données de connexion de l'utilisateur créé à l'étape 1. peuvent être saisies. Après quelque temps, le client Windows ouvrira une fenêtre surgissante affichant un message d'accueil. Après un redémarrage obligatoire, l'écran de connexion offrira la possibilité de se connecter au domaine.

Windows synchronisera le profil des utilisateurs du domaine à chaque connexion et déconnexion. Selon la quantité de données enregistrées dans le profil, ceci pourra prendre un peu de temps. Afin de réduire le temps nécessaire à cette opération, il est conseillé de désactiver certaines fonctionnalités, comme le cache local des navigateurs (à la place, vous pouvez utiliser le cache du mandataire squid installé sur tjener) et sauvegarder les fichiers dans le volume H: à la place de « Own files ».

17.4.1.1 Groupes utilisateurs dans Windows Les groupes Samba (groupmaps) doivent aussi être ajoutés pour chaque groupes d'utilisateurs que vous ajoutez à l'aide de `lwat`. Si vous voulez que vos groupes utilisateurs soient disponibles sous Windows, par ex. pour des scripts `netlogon` ou d'autres actions relatives à des groupes, vous pouvez les ajouter par des commandes telles que ci-dessous. Samba fonctionnera sans ces groupes Samba, mais les machines Windows n'auront pas connaissances des groupes.

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

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

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

17.4.2 XP home

Les utilisateurs dont le portable est sous XP home peuvent toujours se connecter à tjener en utilisant leur compte Skolelinux, à condition que le groupe de travail soit SKOLELINUX. Cependant, ils devront peut-être désactiver le pare-feu de Windows pour que tjener apparaisse dans le voisinage réseau (ou quel que soit son nom).

17.4.3 Gérer les profils itinérants

Les profils itinérants contiennent des données de l'environnement de travail des utilisateurs, ce qui comprend les données et la configuration du bureau. Des exemples de ces données d'environnement sont les fichiers personnels, les icônes et menus du bureau, les couleurs de l'écran, les réglages de la souris, la taille et la position des fenêtres, la configuration des applications et les connexions aux réseaux et aux imprimantes. Les profils itinérants sont disponibles quel que soit l'endroit d'où l'utilisateur se connecte, à condition que le serveur soit accessible.

Puisque le profil est copié depuis le serveur sur la machine durant la connexion, et copié de nouveau vers le serveur lors de la déconnexion, un profil volumineux peut rendre les connexions/déconnexions de Windows très lentes. Un profil peut être volumineux pour diverses raisons mais les problèmes les plus courants sont dus au fait que les utilisateurs sauvegardent leurs fichiers sur le bureau de Windows ou dans le répertoire « Mes Documents » et non dans leur répertoire personnel. Par ailleurs, certains programmes mal conçus utilisent le profil comme espace de travail temporaire ou pour enregistrer d'autres données.

L'approche éducative : une manière de gérer les profils volumineux consiste à expliquer la situation aux utilisateurs. Dites-leur de ne pas enregistrer de fichiers volumineux sur le bureau et s'ils ne vous écoutent pas, ils seront responsables du temps nécessaire à la connexion.

Ajustement du profil : une manière différente de gérer le problème consiste à supprimer des parties du profil, et de rediriger d'autres parties vers des modes courants de sauvegarde de fichiers. Ceci

déplace la charge de travail des utilisateurs vers l'administrateur, en augmentant la complexité de l'installation. Il y a au moins trois manières de modifier les parties qui sont supprimées du profil itinérant.

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

17.4.3.2 Utilisation des stratégies machine Les stratégies machine peuvent être modifiées et copiées sur tous les autres ordinateurs.

1. Sur un ordinateur disposant d'un Windows récemment installé, lancez gpedit.msc
2. Sous la sélection Configuration utilisateur -> Modèles d'administration -> Système -> Profils utilisateur -> Exclure des répertoires dans les profils itinérants, vous pouvez entrer une suite de répertoires à exclure du profil séparés par des points-virgules ; les répertoires sont internationalisés et doivent être écrits dans votre propre langue, tels qu'ils le sont dans le profil. Exemples de répertoires à exclure :
 - log
 - Local settings
 - Temporary Internet Files
 - Mes Documents
 - Application Data
 - Temporary Internet Files
3. Sauvegardez vos modifications et fermez l'éditeur.
4. Copiez `c:\windows\system32\GroupPolicy` sur toutes les autres machines Windows.
 - Copier ce profil sur votre système de déploiement de Windows est une bonne idée afin d'en disposer au moment de l'installation.

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

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

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

To make sensible use of `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 website on this topic.

17.4.3.4 Édition du registre Windows Vous pouvez éditer le registre de l'ordinateur local et copier cette clé de registre sur les autres ordinateurs

1. Lancez l'éditeur de registre.
2. Déplacez vous jusqu'à `HKEY_CURRENT_USER\Software\Microsoft\Windows NT\CurrentVersion\Winlogon`

3. Utilisez le menu Édition->Nouveau->Valeur chaîne.
4. Nommez le ExcludeProfileDirs
5. Entrez une suite de chemins à exclure séparés par des points-virgules (de manière identique à la stratégie machine)

Maintenant, vous pouvez choisir d'exporter cette clé de registre sous la forme d'un fichier .reg. Sélectionnez-la, cliquez sur le bouton droit de la souris et sélectionnez exporter. Sauvegarder le fichier et vous pouvez double-cliquer dessus ou l'ajouter à un script pour le diffuser sur les autres machines.

Sources :

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

17.4.4 Redirection de parties du profil

Parfois, simplement supprimer le répertoire du profil n'est pas suffisant. Vous pouvez rencontrer le cas où des utilisateurs perdent des fichiers parce qu'ils enregistrent des données dans Mes Documents, alors que ce répertoire n'est pas sauvegardé dans les profils. Par ailleurs, vous pouvez souhaiter rediriger les répertoires d'applications mal programmées vers des répertoires partagés sur le réseau.

17.4.4.1 Utilisation des stratégies machine Tout ce qui a été dit dans « Utilisation des stratégies machine » ci-dessus s'applique. Éditez en utilisant gpedit.msc et copiez la stratégie sur toutes les machines. La redirection devrait être disponible sous Configuration utilisateur -> Paramètres Windows -> Redirection de répertoires. Il peut être intéressant de rediriger Bureau et Mes Documents.

Rappelez-vous que si vous activez la redirection de répertoires, ceux-ci sont automatiquement ajoutés à la liste des répertoires synchronisés. Si vous ne le souhaitez pas, désactivez ce comportement dans

- Configuration utilisateur -> Modèles d'administration -> Réseau -> Fichiers hors connexion
- Configuration ordinateur -> Modèles d'administration -> Réseau -> Fichiers hors connexion

17.4.4.2 Utilisation de stratégies globales FIXME explain how to use profiles from global policies for windows machines in the skolelinux network

17.4.5 Éviter les profils itinérants

17.4.5.1 Utilisation d'une stratégie locale À l'aide des stratégies locales, vous pouvez désactiver le profil itinérant sur des machines individuelles. Ceci est souvent souhaité sur des machines spéciales, par exemple, sur des machines dédiées ou des machines dont la bande passante est faible.

Vous pouvez utiliser la méthode de la stratégie machine décrite plus haut, la clé se situe dans

- Modèles d'administration -> Système -> Profils utilisateur -> Autoriser seulement les profils locaux

17.4.5.2 Utilisation de stratégies globales FIXME: describe roaming profile key for the global policy editor here

17.4.5.3 modifier la configuration de samba En éditant le fichier de configuration de samba, vous pouvez désactiver les profils d'itinérance pour l'ensemble du réseau. Peut-être tout le monde a-t-il sa machine dédié et personne n'a-t-il le droit d'y toucher ? Pour désactiver les profils d'itinérance pour tout le réseau, vous pouvez modifier le fichier smb.conf sur tjner, supprimer les variables de chemin de connexion et de répertoire personnel, et redémarrer samba.

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

17.5 Bureaux distants avec RDP, VNC, NX ou Citrix

Certaines municipalités fournissent une solution de bureau à distance afin que les étudiants et les professeurs puissent avoir accès à Skolelinux depuis leur ordinateur domestique fonctionnant sous Windows, Mac ou Linux.

- RDP - la manière la plus simple d'accéder à un serveur de terminal Windows. Installer simplement le paquet `rdesktop`.
- Les clients VNC (Virtual Network Computer) donnent accès à Skolelinux à distance. Installez simplement le paquet `xvncviewer`
- Le client graphique NX permet aux étudiants et professeurs d'accéder à Skolelinux à distance depuis des PC sous Windows, Mac ou Linux. Une municipalité de Norvège fournit un support NX à tous ses étudiants depuis 2005. Elle rapporte que cette solution est stable.
- **Manuel du client Citrix ICA** pour accéder à un serveur de terminal Windows depuis Skolelinux.

17.6 Manuels de wiki.debian.org

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

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

18 Manuels pour enseigner et apprendre

18.1 Moodle

Lancez `aptitude install moodle` en tant que root pour installer moodle.

Moodle est une plate-forme d'apprentissage en ligne (Course Management System, CMS) - un ensemble de logiciels libres conçus selon des principes pédagogiques, afin d'aider les éducateurs à créer des communautés d'apprentissage en ligne efficaces. Vous pouvez le télécharger et l'utiliser sur tous les ordinateurs à votre disposition (y compris un hôte web), il peut être utilisé sur un simple site géré par un professeur comme par une université de 200000 étudiants. Certains établissements français utilisent Moodle pour gérer les étudiants.

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

18.2 Surveillance des élèves

Certaines écoles utilisent des outils de contrôle comme Controlaula ou Italc pour superviser leurs étudiants.

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

FIXME: explain how to install and use italc - [511387](#) explains this quite well actually.

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

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

18.3 Restreindre l'accès des élèves au réseau

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

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

18.4 Installing swi-prolog

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

18.5 Manuels de wiki.debian.org

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

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

19 HowTos for users

19.1 Changing passwords

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

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

19.2 Changing the sound volume

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

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

19.3 Using email

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

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

19.3.1 Configuring KMail as a mail client

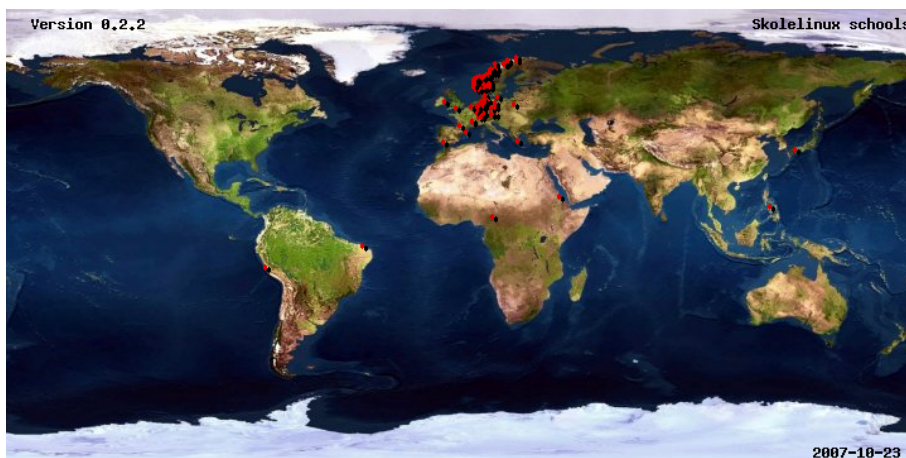
This needs to be done once by every user who wants to use email.

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

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

20 Contribuer

20.1 Faites-vous connaître auprès de nous.



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. :-)

Le projet Debian Edu fournit une base de données des écoles et des utilisateurs du système afin d'aider ces derniers à s'identifier et d'avoir une idée de la localisation géographique de ceux-ci. Veuillez faire connaître votre installation en vous enregistrant dans cette base de données. Pour enregistrer votre école, [utilisez ce formulaire web](#).

20.2 Contribuer localement

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

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

20.3 Contribuer globalement

Au niveau international, nous sommes organisés en [différentes équipes](#) travaillant sur différents sujets.

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

Une bonne façon d'apprendre ce qui se passe dans le développement de Debian Edu consiste à s'inscrire à la [liste de diffusion des livraisons](#).

20.4 Auteurs de la documentation et traducteurs

Ce document a besoin de votre aide ! Tout d'abord, il n'est pas encore terminé : si vous le lisez, vous remarquerez divers **FIXME** dans le texte. Si jamais vous connaissez (un peu) ce dont il est question, s'il-vous-plait, pensez à nous faire partager vos connaissances.

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

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

21 Support

21.1 Support fourni par des bénévoles

21.1.1 en anglais

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

21.1.2 en norvégien

- <https://init.linpro.no/mailman/skolelinux.no/listinfo/bruker> - support mailing list
- <https://init.linpro.no/mailman/skolelinux.no/listinfo/linuxiskolen> - mailinglist for the development member organisation in Norway (FRISK)
- #skolelinux sur irc.debian.org - canal IRC pour le support des utilisateurs norvégiens

21.1.3 en allemand

- <http://www.skolelinux.de/mailman/listinfo/user> - support mailing list
- <http://wiki.skolelinux.de> - wiki with lots of HowTos etc.
- #skolelinux.de sur irc.debian.org - canal IRC pour le support des utilisateurs allemands

21.1.4 en français

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

21.1.5 en espagnol

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

21.2 Support professionnel

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

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24 Traductions de ce document

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

24.1 Comment traduire ce document

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

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

Vous pouvez télécharger le source du paquet `debian-edu-doc` anonymement à l'aide de la commande suivante (vous devez avoir installé le paquet `subversion` pour cela) :

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

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

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

Pour mettre à jour votre copie locale du dépôt, utilisez la commande suivante dans le répertoire `debian-edu-doc` :

- `svn up`

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

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

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

Veuillez signaler tout problème.

25 Annexe A - La Licence Publique GNU

Note aux traducteurs : il n'est pas nécessaire de traduire le texte de la licence ↔ GPL.

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

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Version 2, June 1991

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25.4 END OF TERMS AND CONDITIONS

26 Annexe B - À propos du live CD/DVD Debian Edu

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

26.1 Fonctionnalités de l'image autonome

- Presque tous les paquets du profil Autonome
- Tous les paquets de la tâche portable
- Le profil de bureau KDE pour étudiants/élèves.

26.2 Activation des traductions et du support géographique

Pour activer une traduction spécifique, amorcez en utilisant l'option `locale=ll_CC.UTF-8`, où `ll_CC.UTF-8` est le code des paramètres régionaux souhaités. Pour activer une disposition de clavier spécifique, utilisez l'option `keyb=KB`, où `KB` est la disposition souhaitée. Davantage d'informations sur cette fonctionnalité **sont disponibles dans la documentation du script de construction du live CD**. Voici une liste de codes de paramètres régionaux couramment utilisés :

Langue (Région)	Code de paramètres régionaux	Disposition de clavier
Bokmal	nb_NO.UTF-8	no
Néo-norvégien	nn_NO.UTF-8	no
Allemand	de_DE.UTF-8	de
Français (France)	fr_FR.UTF-8	fr
Grec (Grèce)	el_GR.UTF-8	el
Japonais	ja_JP.UTF-8	jp
Sami (Norvège)	se_NO	no(smi)

Une liste complète des codes de paramètres régionaux est disponible dans `/usr/share/i18n/SUPPORTED`, mais seuls les paramètres régionaux UTF-8 sont supportés par les images live. Cependant, tous les paramètres régionaux ne disposent pas de traductions. Les noms de dispositions de clavier peuvent être trouvés dans `/usr/share/keymaps/i386/`.

26.3 Choses à savoir

- Le mot de passe pour l'utilisateur est « user », root n'a pas de mot de passe défini.

26.4 Problèmes connus avec l'image

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

26.5 Téléchargement

The image is 1.2 GiB and currently NOT available using **FTP**, **HTTP** or rsync from `ftp.skolelinux.org` at `cd-lenny-live/`.