Skole linux installation howto

Skole linux for the impatient

Based on skolelinux 2.0

Gerben van Eck

Table of Contents

1: About

1.1: Skolelinux

The following has been copied from the ICT administration manual:

A voluntary communal effort was started in the summer of 2001 to make free software available for schools. This collaborative project has a twofold objective. On the one hand, the project aims at reducing the schools' software budgets. On the other, the project will offer software which meets the official requirements for electronic tools in Norwegian schools.

The project leader and pioneer for Skolelinux is Knut Yrvin. About 30 other computer savvy persons have, without compensation, used their spare time to develop free software in order to create a Skolelinux distribution. Things needing adjustment include language [1] , technical issues, and setup configuration to ensure the proper working of applications and services.

It should be obvious from the name â€œSkolelinuxâ€ (Linux for Schools) that the software is based on Linux, which is â€œopen sourceâ€ or free software. This makes it possible for users and developers to modify and re-publish the source code. Such open licenses also makes it possible to translate applications to any desired language, as well as tailor the distribution to the needs of schools.

The suite of programs consists of user software for workstations, services and server software. [2] The collection of applications and services will be put together according to what is needed in order to offer pupils the electronic tools they require, and what is needed to run a network in an efficient manner.

The Skolelinux project is not aimed at competing with other suppliers in the market, but will be a solid and cheap alternative to current systems. It achieves this in part because Linux will function on hardware old enough to not support other up-to-date systems. Linux is cost effective, both with regard to hardware requirements and the cost of software.

Computer software changes rapidly, and pupils should be able to handle the software they will encounter in school and at work for many years to come. Therefore, it is important for the pupils to become able to make use of electronic tools in general, not just learn â€œrecepiesâ€ for handling specific applications by heart.

Large sections of the IT industry now agrees that open software such as Linux will form a common foundation for the majority of the tools that are used. There's simply a limit to how many times one will agree to pay for the very same basic tools that one has been using for years. It thus seems fairly certain that pupils will reencounter free, recyclable software at later points in their lives.

The Skolelinux distribution also meets the requirements of the Norwegian â€œFiberskolenâ€ (fiber networks in schools) project, which aims to give all schools access to broadband networks.

1.2: This manual

This manual has been written because of one simple reason, I installed skolelinux today for the first time and I felt I missed one. I wanted to have everything installed as fast as possible and the administration manual is just to comprehensive for this purpose. So, in the spirit of open source, I wrote my own. Some parts will be based on the administration manual. My thanks goes out to finnarne from the #skolelinux channel on freenode who helped me during my installation. If you might think at some point “Doesn't everybode know that already”, you're probably right, but I'll document it anyway just to be sure.

2: Getting skolelinux

2.1: Downloading using http or ftp

Use this link to find the most current iso image

http://wiki.debian.org/DebianEdu/Download?action=show&redirect=DebianEdu%2FGetStarted%2FDownload

2.2: Updating the CD

If you already have a version of Skolelinux and want to download the newest version, you can and should use **rsync**. **rsync**' finds which chunks of the file that have been modified and downloads only those. It's faster and saves our bandwith. The following command updates your ISO-image, where filename.iso is the name of the existing file on your disk:

```
rsync ftp.skolelinux.no::skolelinux-cd/debian-edu20r0-i386.iso filename.iso
```

2.3: Burning the iso file

You can burn iso files using the “cdrecord” or K3B under linux or Nero and others under Windows. My experience is that cdrecord likes to have root rights for some caches, but it is not needed.

3: Preparing

3.1: Getting hardware

If you don't have a server system yet, it is wise to make sure your hardware is Linux compatible. Most x86 server hardware I came across actually is. I have some points you might look at:

Raid:	A lot of cheaper boards sold with “raid” are actually non-raid systems which can be optimized for using software raid. An example of this is Nvidia-raid. Though there is a kernel-module for this, you should avoid it to make things easier. Just choose hardware raid or no raid at all.
Motherboard:	Try common hardware if you can, I'm an Nforce addict myself, but most other big chipsets should work.
Processor arch:	At the moment of writing this there are only i386 32 bits binaries for skolelinux. It's base system Debian has binaries and kernels for athlon64, opteron and xeon systems, and some others if this might interest you. Check www.debian.org/ports
Harddisk:	Any pata,sata and scsi disk should work.

3.2: Deciding on backups

There are several options you can use for backup, dependant on your budget.

Network hard disk:	At the moment I write this you can get 300 GB external network harddisks for 250 euro's. If the dutch copyright association get's what it wants this will probably become 300 euro's or so.
Network attached storage (NAS):	This is mostly the same as the network hard disk, but most people mean a specialised server using something like http://www.freenas.org .
Storage Area Network (SAN):	Expensive specialised storage system you attach mostly using serial attached scsi. Not needed for “smaller” networks. This “option” is only given for if you might have heard the word somewhere...

3.2: Unplug from the network, or go to a seperate (V) lan.

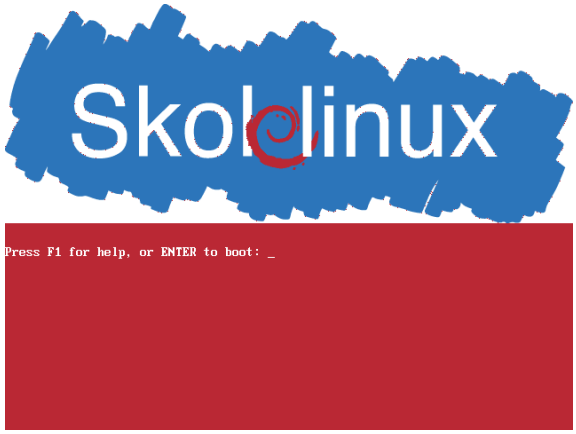
The installer wil install and start services such as DHCP and DNS, which might interfere with your existing network configuration, if you have one. All installation packages will be installed from CD so there is no need for a network connection. Next to this, if there are some guys with strange habbits you'd better not give 'm access to systems with default passwords configured.

4: Installing

4.1: Installing the base Debian system

Get your system booting from CD (refer to your system or motherboard manual if you don't know how), and be welcomed by the skolelinux setup splash image. Simply **press enter** unless you have some strange hardware. If the installer might stop at some later point for unknown reasons it is wise to check the options by pressing the F1-F8 keys.

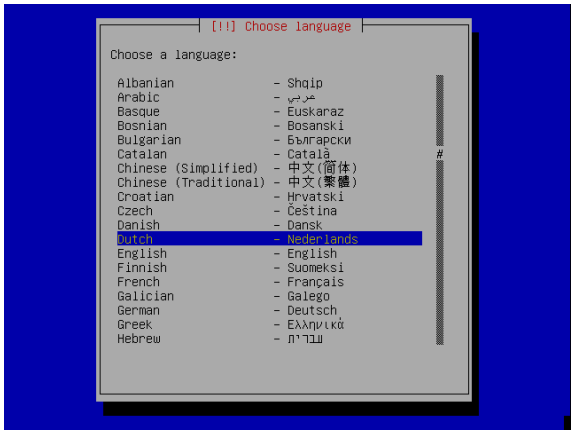
Choose a language.



The language you pick here will be used in (most parts of) the installer, and will be configured as the default locale in your new server system. After this step, some hardware recognition will be done.

Choose a skolelinux profile.

There a several options for the “role” this system should have in your network:

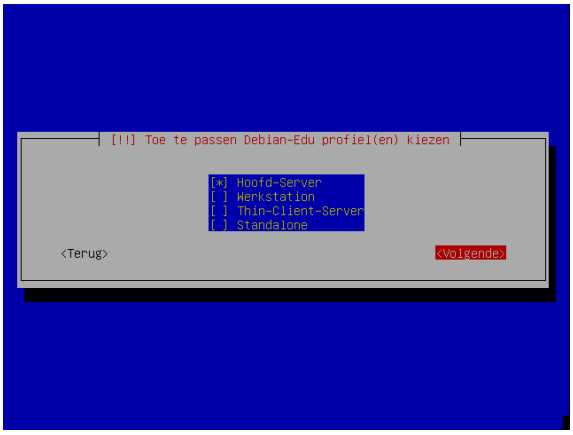


Main server:

> This server has the task of being an LDAP (user and machine accounts database software), Samba (file and printer sharing and user logon software for Windows and linux clients) server. This profile also installs network services such as DHCP and DNS.

Thin-client server:

> This profile configures your server as a thin client server using the Linux Terminal Server Project. Refer to http://en.wikipedia.org/wiki/Thin_client for more information about what a thin client is.



Integrated main and thin-client server: (Just manually pick both)

> A combination of the first two.

Workstation:

> System on which your network users work.

Standalone:

> A system that will not operate in a skolelinux network, but for example at some teachers or students home.

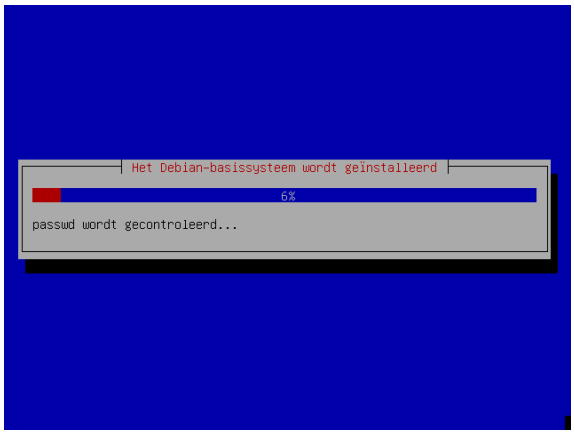
For the average network you'll most likely **pick the main server.** This assumes you have a 1000 student elementary school, with a maximum of 100 concurrent users. (I've actually never tested limits, being a beginning developer/administrator. But this should “at least” work.)

Partitioning

According to the official administration manual, you should get a question whether you want to have automatic partition or not. I didn't get this question, but this probably will be fixed. If you don't get this question and want manual partition, if you want to configure software raid for example, choose no on the “are you sure” question and choose “ok” for the following error. After doing this a few (3 orso) times you get a debian-installer menu, in this menu choose “manual partitioning”.

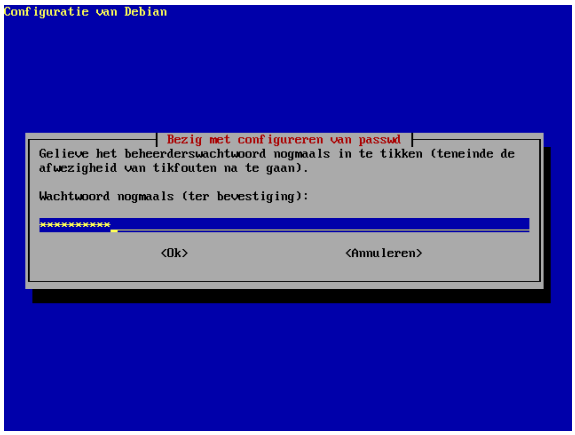
Data(home dirs etc) will be stored in /torsten . This might be interesting if you want a seperate partition for this.

Choose “yes” for accepting the partitioning and take a (very quick) cup of coffee while your system is being installed. If you have a door in front of your cd-player, be sure to open it, as the installer will eject the cd. (I have the cd player knocking on my case door now and then).



Rebooting and picking good passwords

Pick the CD out of the player (to prevent it from booting), which should be automatically opened by the installer after it was done copying files. Press enter to reboot, after you see your new system booting you can put the CD back in again.



The installer will now ask you to pick a password for the root account. This account is the main login for the linux system, and has the rights to do anything with the system, this is comparable to the “Administrator” account on MS Windows system. Make sure you pick a good password containing uppercase and lowercase letters, as well as numbers and special characters like @. Make sure it is at least 8 characters long.

Wait for the postinstall to complete

This step is most likely the easiest of them all. One in which you don't have anything to do, just wait watching your system install itself.

5: Configuring your new network server

5.1: Configuring some passwords

Network root user

For the root user to be able to log in and take advantage of it's rights on the server you have to enable it.

smbpasswd -a root

(enter the desired root password twice)

smbpasswd -e root

If everything is OK the last line should state “Enabled user root”.

Ldap admin and samba administrator account

To add and remove groups and users you have to configure these accounts with a decent(see the last step in the base installation) password.

/usr/share/debian-edu-config/tools/passwd admin

Nagios administrator

Nagios is configured with a default password, “skolelinux”. Make sure you change this ASAP using:

htpasswd -c -m /etc/nagios/htpasswd.users nagiosadmin

You are now able to login to nagios with the username nagiosadmin, and the password you just configured.

5.2: Watching everything work

Get a new DHCP lease

Pick your favorite client in the same network as your new skolelinux server, and make it get a new DHCP lease. It will be handy to pick a client with which you are willing to (software wise) experiment, so you can use it as a test client in your new network.

Windows:

start->run: *cmd*

ipconfig /renew

Most debian based systems:

dhclient

Other linux systems

dh <tab><tab> (most DHCP client apps will have a name that starts with dh)

Walk around in the webinterface

Go to http://tjener.intern using your browser:

(optional step for those who like to watch some nice stuff after configuring a new server some time)

Choose “nagios” under “Local services” in the menu on the right. Login using the username/password you configured in the previous step. Click around in this system, everything should say your system is perfectly OK, and you should be able to get some nice graphics out of it.

Now pick “munin” under “Local services”. This tool doesn't require a login, it gives you some additional graphics and stats about the system.

5.3: Adding some users and groups

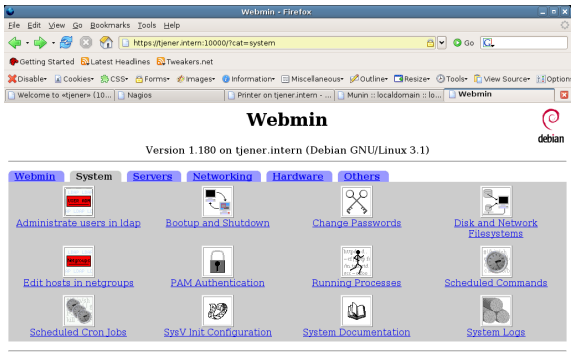
A quick explanation of the skolelinux groups and role system

Skolelinux has preconfigured the system with a few user “roles” you can assign to users. “Admin”, “jradmin”,”student” and “teacher”. An admin has full control over the network, a junior admin has control over users and groups, a teacher can control student accounts, and students can't do anything.

Next to this there are also “Authority groups”, with which you can give certain rights such as printing to special groups.

Login to webmin

From the “Local Services” menu, now pick “webmin”. In the following login screen, login using the linux root account. Click the “system” tab and then click “Administrate users in LDAP”.

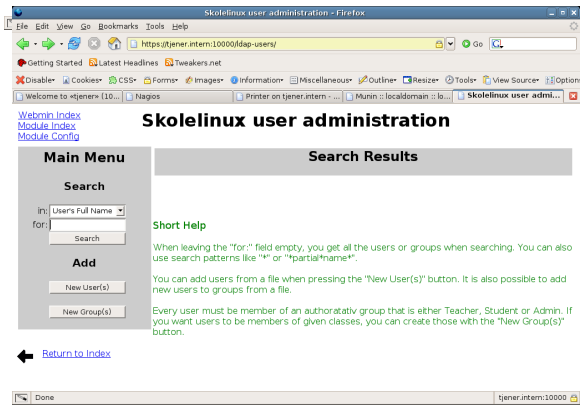


Add a group

You can pick a group you want to configure here. It doesn't really matter what kind you want to configure first. It isn't even needed to do this, as you can also assign a new users to one of the preconfigured groups.

Add some users

Type in a first and last name, choose the class (as in “school class”), and choose a role. Enter a decent(reed the last step from the base installation) password, enter the ldap admin password(you should have configured this in “5.1: Configuring some passwords”) in the “Admin Password” field and click “Create Users”.



5.4: Add a Windows client to the network

Unfortunately, most skolelinux networks will be configured with Windows clients...

Start -> Right click “This Computer” -> “Properties”

Click “Computer name” and now click “Change”.

*Enter “skolelinux” in the **Domain** field and press “OK”.*

In the username field enter “root”, and in the password field the samba root user you configured using “smbpasswd -a” in step 5.1.

6: Resources

6.1: Web

Official skolelinux site:

http://www.skolelinux.org

Skolelinux administration manual:

http://developer.skolelinux.no/dokumentasjon/IKT-bok.en.html

Official debian-edu site:

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

Official debian site:

http://www.debian.org

Debian installation manual:

http://www.debian.org/releases/stable/i386/

6.2: Your system's manuals

Skolelinux has kindly pre-installed man2html for you, you can find the manuals at:

http://tjener.intern/cgi-bin/man/man2html

Manuals you might be interested in:

samba

slapd

webmin

apache

6.3: IRC

Server: irc.debian.org

Channel: #skolelinux

You can connect to an IRC server using Xchat under Linux, or Mirc under the Windows OS.