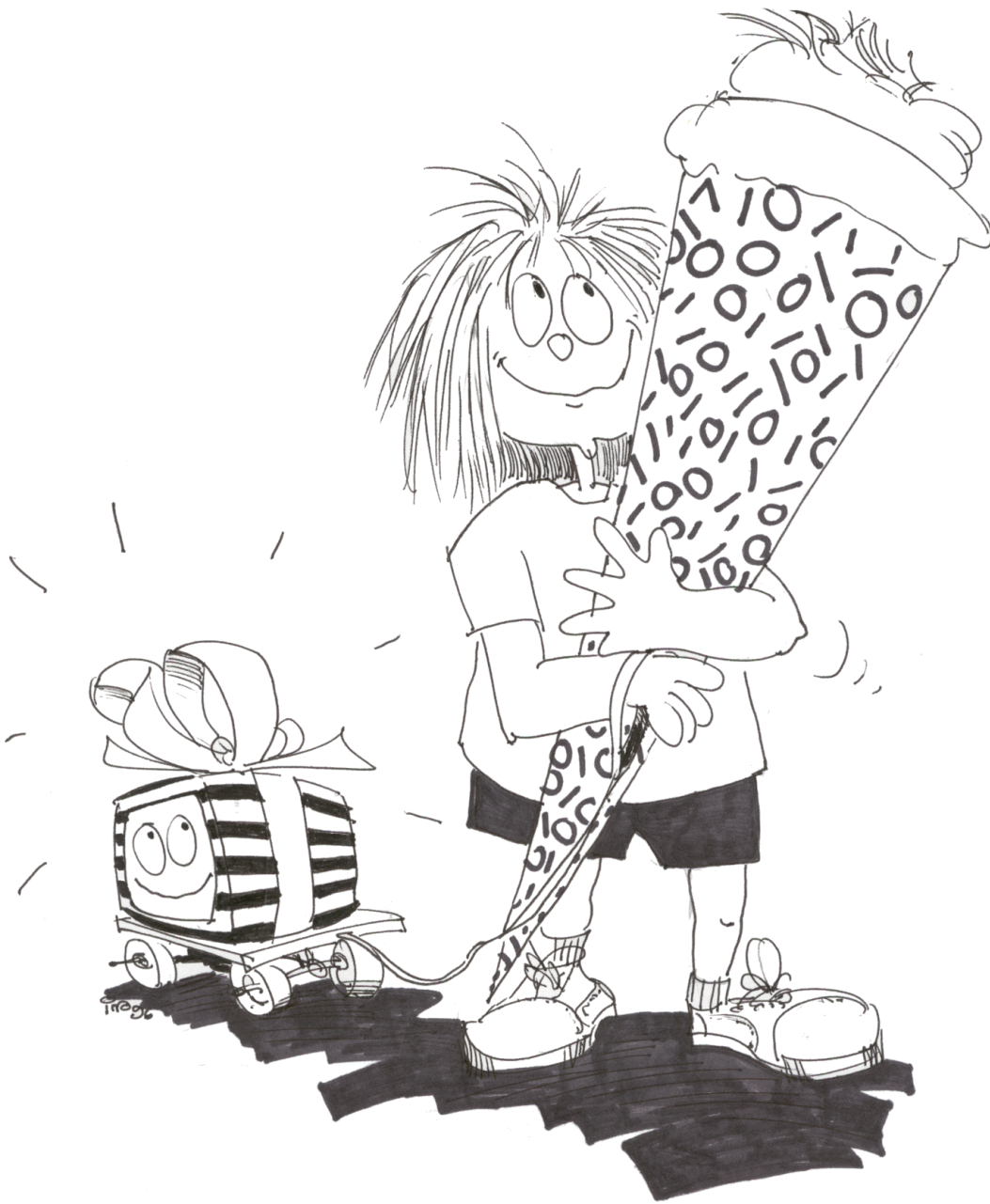




THE COMPUTER INTRODUCTION BOOKLET

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Imprint:

V.i.S.d.P:

Bastian Reitschuster

Authours:

Michael Trunner, Bastian Reitschuster,
Christina Zeeh, Alexander Dowertill,
Andrea Glaser, Dennis Scheck

Layout:

Michael Trunner, Stefan Bindel,
Christina Zeeh

L^AT_EX-Experts:

Hans Malte Kern, Jan Grothkast,
Matthias Großmann, Cyrill Fabian Bopp

Correction:

Benjamin Geißelmeier, Steffen Reimann,
Benedikt Weber, Marcel Schaal,
Gregor Rothmaier, Dietmar Pfeffer

Title-page:

Ina Becker

A ZDI script. For errors, questions and suggestions please create a ticket at

<https://studiforge.informatik.uni-stuttgart.de/trac/RE-Skript>

The hardware and software names used in this script are used without guarantee of the free usability and are possibly protected by trademark law. The authors assume no liability for negative sequences, which could originate from the use of this script!

This document is also available as pdf for download on the computer pools web page

`http://www.informatik.uni-stuttgart.de/zd/rechnerpools.html`

There is also an extended version with two more chapters on using linux and windows. Unfortunately at the current point of time this document is only available in german language and needs to be translated. Any volunteers?

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1 General remarks

1.1 About this booklet

This booklet is the attempt to summarize everything important for computer science students at the University of Stuttgart. It is aimed at people who have no knowledge of computers, as well as those who want to learn about specifics of the computers of the Faculty of Computer Science.

This script uses following conventions:

italics

for new terms, file names and paths

`teletypefont`

for commands and their output, e-mail addresses and URLs.

bold

for especially important information.

Key

for keystroke combinations.

1.2 Infrastructure

You have access to various computer labs. These are generally called pools. It does not matter which one you use, but the Hauptstudiumspool (short: HS Pool) usually is more quiet. The pools are equipped as following:

Grundstudiumspool (GS Pool)

In the Grundstudiumspool there are 71 PCs (PC names are *gspc01* .. *gspc71*) each equipped with an AMD Athlon64 X2 5200+ Proccesor and 2 GB RAM. A few PCs are equipped with a DVD burner. Every PC has Linux (Arch Linux) and Windows XP installed. There is also a scanner, the printer *duesentrieb* and the computer helpdesk (open mo - fri, 10am to 3pm).

Hauptstudiumspool (HS Pool)

In the Hauptstudiumspool there are 48 PCs (PC names are *hspc01* .. *hspc48*) each equipped with an AMD FX4100 processor and 16 GB RAM. It also contains 18 desktops with additional monitors for notebook computers, a sheet feed scanner (Windows and Linux) and the printer *zarquon*. The PCs are running Archlinux and Windows 7 64bit.

Services

Besides the pools you can use several services with our account. For more information read chapter 3.

1.3 Account

In order to use the pools and other services (WLAN, VPN ...) you need an account. You can apply for one either at the introductory talk or later on at the helpdesk in the GS Pool.

If you are enrolled in one of the following courses of studies, you will receive an account, which is valid until the end of your studies: Informatik, Softwaretechnik, Wirtschaftsinformatik, Information Technology (INFOTECH), Technikpädagogik, Computerlinguistik, Maschinelle Sprachverarbeitung, Technikpädagogik Informatik und Simulation Technology. You have to extend its validity only when requested.

If that is not the case, you receive an account only if a professor or a research assistant confirms your need for one. You then have to extend its validity unrequested every semester.

Access to the provided pools and services is achieved with your user identification consisting of your user name and password. The username usually consists of the first six letters of your surname followed by the first and the last letter of your first name.

For example: Max Mustermann will have the username *mustermx*.

Every user belongs to a *primary group* (this usually is *erstXX*, where XX is the year (two-digit) you started your studies) and possibly other secondary groups. Groups are useful for working together on files without granting access to all users. If you are going to work on a project it might happen that you will be assigned to a special group.

Every user has a so called *home directory*, in which you can save your files. Everyone currently has 1 GB of disk space available (*Quota*) Apart from your own files there must remain enough free disk space for configuration and temporary files (eg cache of your web browser) etc. When your disk quota is exceeded, graphical logins will fail, but you can still use the linux console.

As owner of an account you can print up to 300 pages per semester on the printers in the computer pools. However, this *print quota* is calculated very generously. If all students seek to use it up, it cannot be financed anymore. That is why it is not allowed to print large scripts, lecture notes or slides and documents not relevant to your studies.

1.4 Lab Usage Policy

By signing your account request you oblige to follow certain rules. A few especially important rules are listed below. You can find the user guidelines as a whole at

<http://www.informatik.uni-stuttgart.de/zd/rechnerpools.html>

Violating these rules will have consequences up to revocation of your account. The University may take legal actions as well as enforce claims under civil law.

- No illegal activities such as download or distribution of illegal copies, (attempt of) hacking computer systems, that are not yours including those of the university, Denial of Service attacks, insulting etc.
- The pool and its related services may only be used for activities related to your studies. Resources (eg bandwidth, memory space, printing, workstations) have to be used responsibly and economically.
- **Check the email address belonging to your account regularly** (or set up automatic forwarding to another e-mail address you check periodically). See Chapter 3.1
- No food or drinks in the pool or on the desks, even if it was already there when you arrived. Please put bottles etc. in your backpack or in the lockers located near the entrances of the building and pay attention to the notices (on yellow paper) in the pools. Your account will be disabled without discussion when violating this rule.
- Do not print lecture notes or slides. They are available at the "Kopierlädle" (copy shop) located beneath the mensa or on the homepage of your lecturer. Master copies can sometimes be found in the key texts in the library. Information about the lecture notes available in the "Kopierlädle":

<http://fachschaft.informatik.uni-stuttgart.de/beratung/skripte-und-pruefungen/>

2 First steps

You have to follow the steps explained in this chapter before you can use your account. **This can only be done with Linux. You cannot use Windows yet.**

If you already have experience in using Linux, just follow these steps:

- Login under Linux
- Change your password with the command `passwd`. Currently only the first eight characters are regarded so choose a **good password** (eg use special characters, numbers etc.).
- Set an email password with the command `mailpasswd`.

Detailed instructions

Go to a free PC in the pool and check whether Linux is started and displays a login screen.



Figure 1: Login screen of Arch Linux

If the PC is running Windows, you have to press `Strg` - `Alt` - `Entf` and restart the PC. In the upcoming bootmenu choose **Linux**.

Do not use the reset button to restart or shutdown the PCs in the pool!

2.1 Logging in

Enter your username and password in the associated fields and press . A graphical user interface should now be started.

However, if you receive an error or the login screen is shown again, try again and make sure, that and are turned off. If that does not work, you should go to the help desk.

2.2 User interface

Linux supports - unlike Windows - several graphical user interfaces (GUI). You can change your GUI in the login screen in the lower left-hand corner. The default is XFCE.

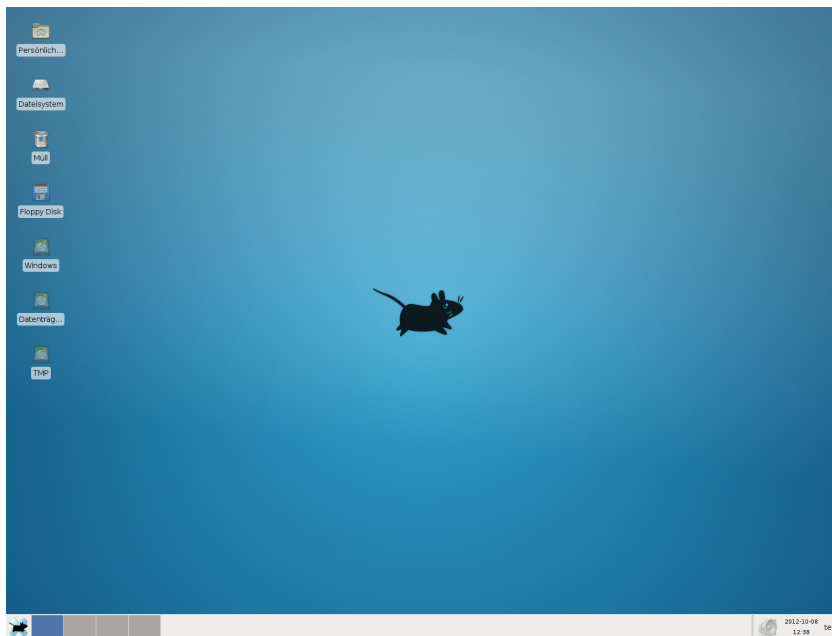


Figure 2: XFCE after your first login

In the lower area (in the latest revision of XFCE the panel is located by default at the top of) the screen you can find the *panel*. The panel contains the most important programs and functions.

This panel contains the taskbar. You can use it to switch between applications. The large button on the left-hand side opens up the start menu from which you can start all programs. Next to that is the screen changer. On the right-hand side you have access to sound settings, time and date. You can change height, position and other settings of your taskbar and panel as you like.



Figure 3: lower panel

2.3 Choose a new password

It is important that you change the initial password immediately after your first login. That is the only way you can be sure no one besides you knows your password. Your new password should

- contain capital and small letters, numbers and special characters
- be written in a dictionary in any language (not even parts of the word)
- not be related to your name, hobbies, pets etc.
- be 7 - 8 characters long (longer passwords can potentially cause mysterious login problems)

The system administration regularly controls whether all passwords are safe enough and disables all those accounts which are not sufficiently protected. Remember, if a hacker gains access to your account you are liable for all bad things performed with it.

2.4 Changing your password

In order to change your password start the program `change password` in the *ZDI* menu which you can find below the *Anwendungen* menu in the panel the bottom of the screen. (*ZDI* → *change password*).

Experienced Unix users may of course just use the shell with the command `passwd`.

First you will be asked for your **old** password. (That is the one on the sheet with all your account credentials.) **While entering your password no characters are shown.**

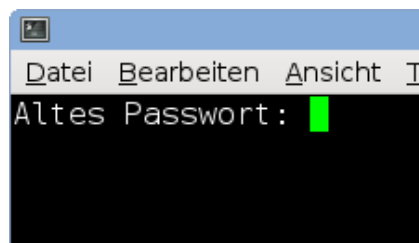


Figure 5: Entering your old password.

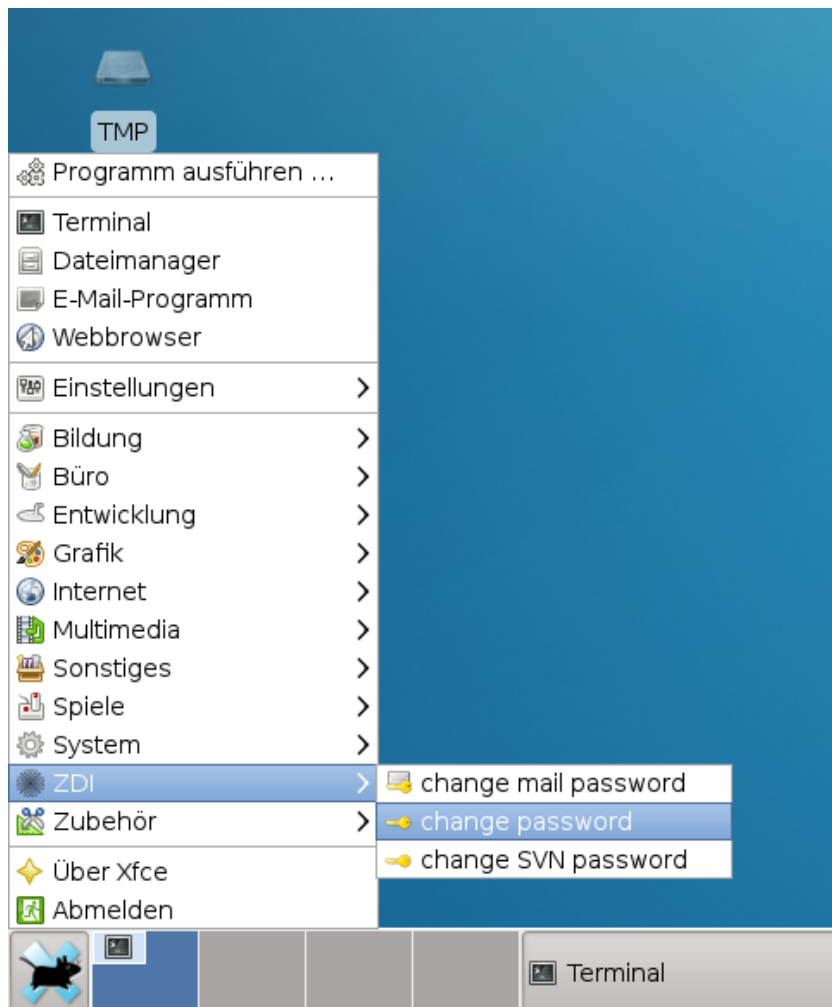


Figure 4: menu item to change your password

If you have made no typing error you will then be asked to enter your **new** password (see figure 6) .

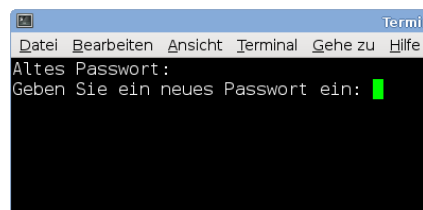


Figure 6: Entering your new password.

If your new password fits the requirements you will be asked to reenter your new

password to ensure you have made no typing error (see figure 7).

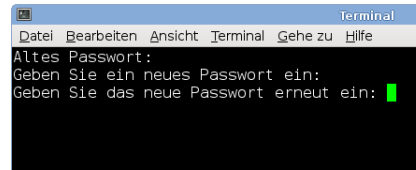


Figure 7: Reentering your new password.

When you receive a message that your password has been changed (see figure 8) you can use both operating systems – Linux and Windows – in the pools.

Changing your linux password also changes your windows password, but the reverse direction doesn't work.

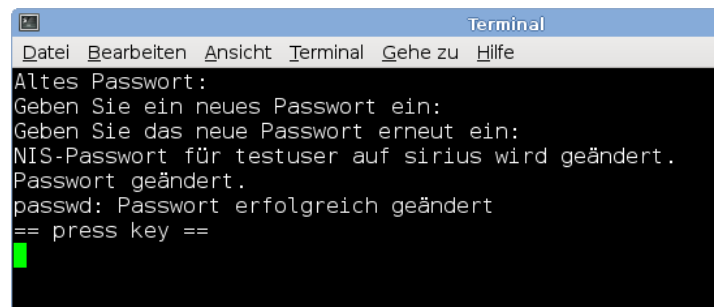


Figure 8: Message on successfully changing your password

2.5 Choose an email password

In order to use your e-mail account you need to set a password for it. This **must not** be the same as your pool account password. Start the program `change mail password` under `ZDI` → *change mail password* (see figure 9) or just enter the command `mailpasswd` in your terminal and follow the instructions on screen.

You have to enter your new password twice to avoid typing errors. Explanations on how to actually access your email account can be found in chapter 3.1.

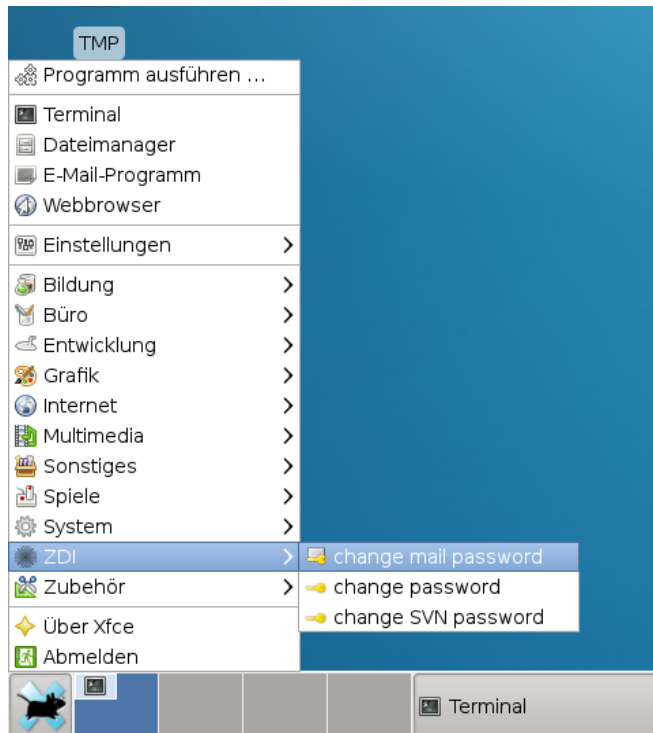


Figure 9: menu item to change your e-mail password

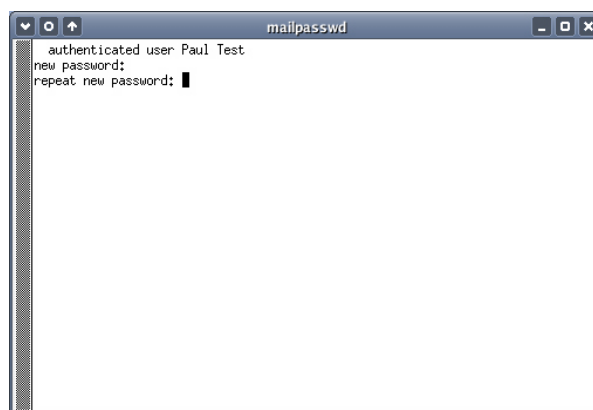


Figure 10: changing your e-mail password

2.6 Logging out

If you don't want to continue working on the computer you have to log out to avoid abuse. Click on the shutdown icon in the panel (or click on *Beenden ...* in the *System-Menu* menu. After that, click *Abmelden* in the *Logout* dialog. **Leave the computer only if you**

are sure that you are logged out. This is the case when you can see the login screen However, if you just want to leave for a short amount of time (less than 10 minutes), you can just lock your computer with the option *Bildschirm sperren* (lock symbol in the *logout* dialog).

2.7 Windows

Now you can also use windows with your new password (if you didn't change your password under linux before, the login will fail).

Always make sure that the 'connect to'- field on the login screen says INFORMATIK.

3 Additional Services

There are various additional services offered by the ZDI which you can (or should) use.

3.1 Email

With your computer account you also get an E-Mail-Account. Your email address looks like

```
username@studi.informatik.uni-stuttgart.de
```

This email address is used by default by system administration, staff and last but not least by the printing system (which is very helpful, when you print something and nothing happens).

You must regularly check your mail - by signing your account request you agreed to do this. If not, your mailbox will fill up and eventually your computer account will be disabled.

You can easily forward your studi mails to an external server. But please consider that you mails could contain personal information like passwords. Forwarding all your studi mails to services like GoogleMail might not be a good idea.

3.1.1 Thunderbird

In Linux, you can use *Thunderbird*. Just select *Studi E-Mail Account* in the *Create new Email Account* Dialog which is displayed when you first start the program (figure 11).

In Windows you can also use Thunderbird, but you have to configure it manually (see Chapter 3.1.3)

3.1.2 Web Interface

Just point your favorite webbrowser to

```
https://studimail.informatik.uni-stuttgart.de
```

Please note: the student mailserver has the name *studi*, the web interface runs on a different machine which is called *studimail*.

The web interface does not allow unencrypted connections. When you access it by http you will be redirected to the https-page. But still your mail password should be different from the account password.

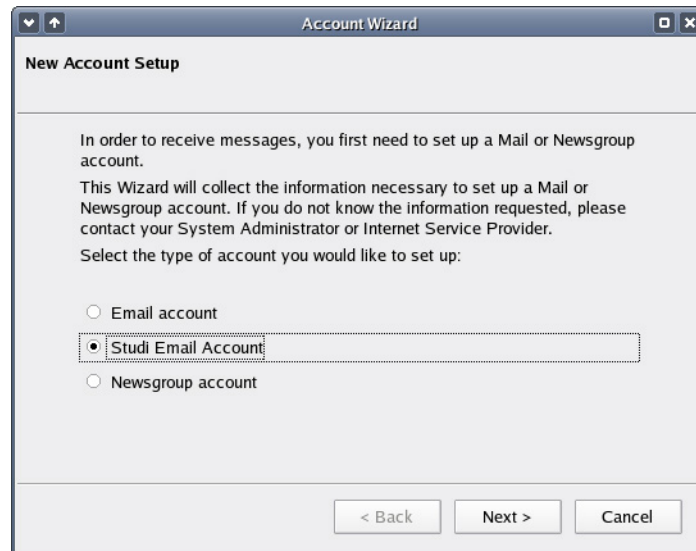


Figure 11: Create New Mail Account

3.1.3 Other email programs

You can use POP or IMAP, but unencrypted connections are only allowed within the university network. From outside, studi can only be used with secure protocols (POP3S, IMAPS) and your mail program needs to know SSL or TLS. The advantage of IMAP is that your mails remain on the server. But on the other hand you should then regularly clean up mails you do not need anymore.

You can use the following information for configuration

POP3, encrypted	Server: studi.informatik.uni-stuttgart.de Port: 995
IMAP, encrypted	Server: studi.informatik.uni-stuttgart.de Port: 993

Within the university network you can use studi for sending mails using the following configuration:

SMTP-Server: studi.informatik.uni-stuttgart.de
Port: 25

From outside the university you cannot use studi directly, only by means of a ssh tunnel or VPN.

3.1.4 Mailquota

Your mailbox on studi has a maximum size of 100MB. When full, messages will be rejected and after some days your account will be disabled.

3.1.5 Forwarding emails

Forwarding or sorting mail is done on studi. The filters can be configured by the SmartSieve webinterface on studimail or by other ManageSieve compatible clients like the Sieve-plugin for firefox.

3.2 Printing

There are big laser printers in both pools:

- Grundstudiumspool (GS): **duesentrieb**
- Hauptstudiumspool (HS): **zarquon**

For every physical printer there are 3 different logical printers visible in linux. Looking at duesentrieb (the same applies to zarquon):

duesentrieb Default printer, prints both sided by default.

Please note: both sided is just a preset which can be overruled by the application you use to print. If you select 'single sided' in the printer dialog, duesentrieb will print single-sided.

duesentrieb-einseitig Prints single sided by default

duesentrieb-win Do not use, will not work if you use it, internal queue for printing in Windows

Please check the printer settings in the printing dialog. Printer, paper format should be A4, and do not use the multi purpose tray as paper source.

The number of pages you can print (both sided = 2 pages) is limited to 300 pages every semester. You should not use it to print out lecture notes. You have been warned.

For every print job, an additional header page is printed on colored paper which also shows you how many pages you have left to print.

It might take some time until your job is printed. The print jobs are queued on a server. Maybe other print jobs are ahead of yours, maybe one of them is really large and you have to wait (therefore normally a print job should not be larger than about 30 pages). And sometimes there are hardware problems like paper jams and printing stops until the problem is fixed.

Therefore the printing system sends an email to your studi mail account when your job has been processed and sent to the printer. Sometimes, your job will not be printed, when you do not have enough pages left or the printing system does not understand the data you sent. So please, if you print something and nothing happens, first check your email. Sending your print job again will most probably not work again.

Sometimes there are hardware problems, mostly paper jams or some bad postscript causes the printer to hang. Please, do not try to fix it yourself. Consult the helpdesk in the GS-Pool. If there is nobody, write a mail to

`zdiprint@informatik.uni-stuttgart.de`

The print server does not forget jobs. When the problem is fixed, the printer continues from where it stoppped. If you sent your print job multiple times, it will be printed multiple times which eats up your print quota. And no, you do not get these pages back.

You should always fetch your printouts and header pages. After one week your printout will be removed and your computer account will be disabled.

3.3 Scanners

There is a scanner in the GS Pool connected to gspc46.

In the HS Pool on the single desk near the printer you find the network scanner `poolscan`. You can use the software `iscan` from every computer in both pools. But you still have to move your feet to the scanner to insert your documents.

3.4 News Server

There is also a news server available.

Using thunderbird create a new account - Newsgroups - enter name and email address - newsgroup server `news.informatik.uni-stuttgart.de` - give your account a name - check your input - done.

Then you need to subscribe to newsgroups. Newsgroups - manage newsgroup subscriptions - select newsgroups (there are MANY).

You can access the news server only from within the university.

Some interesting local newsgroups

`inf.general`

`inf.news`

`inf.pool`

`inf.pool.bugzilla`

`inf.pool.infra`

3.5 Jabber - Instant Messaging

Jabber is an instant messaging service like ICQ offering file transfer, MOTD and chatrooms. The easiest to use client software is Gajim, which only supports Jabber. Pidgin also supports ICQ.

You can be contacted by your JID (Jabber ID), which is created from your username and the name of the server which runs jabber (the service runs on studi).

mustermx@studi.informatik.uni-stuttgart.de

Jabber uses the password from your computer account.

3.6 Laptops

3.6.1 WLAN

WLAN is available all over the Informatik building. Authentication is possible by VPN (Cisco Client or OpenVPN, SSID *infvpn*) or an EAP certificate (SSID *infepn*). The certificate usually does not require additional software to be installed.

There is a web page in the intranet with detailed information on how to get the client software and the EAP-certificate and how to configure it.

<http://www.informatik.uni-stuttgart.de/wlan.html>

You can also use EDUROAM, either with an account from TIK or your Informatik account.

3.6.2 Network by cable

There are several places in the Informatik building where you can connect your laptop

- in both student working rooms
- in the (former) library
- in front of the GS-Pool

To use it, you need

- a laptop with with an ethernet network interface (RJ-45 connector)
- your Informatik computer account
- a ssl enabled web browser

First configure your laptop to use DHCP. Then connect the network cable and restart your computer. Point your web browser to the following address.

`https://gwlaptop.informatik.uni-stuttgart.de/`

and enter your username and password (pool account). Done.

Of course when your laptop is connected to the university network, the same legal rules apply as in the pools. You are not allowed to connect your laptop to other network ports or use the network cable from a desktop computer in the pool - this is regarded as serious offense and your computer account and network access could be permanently disabled if you try.

3.6.3 Using laptops in the computer pools

In both pools there are work areas for laptops (desks without desktop computers). In the HS-Pool some are equipped with TFT monitors.

Please use only the power strips on the desks and not those below. And do not unplug desktop computers or displays. You might get into deep trouble if you do.

3.7 Marvin

With your computer account you can also use *marvin*, a server, running 24/7, day and night, which has the same linux software installed as the desktop computers in the pools. *marvin* allows direct connections from internal and external hosts by ssh.

If you plan to run cpu and memory intensive programs on marvin, you should tell the admins

`gspooladm@informatik.uni-stuttgart.de`

else you risk your processes being killed without questions. You can use the tool *nice* to give your processes a lower priority. And please, do not run complete graphical interfaces like Gnome or KDE. Single X11 programs like firefox are no problem.

3.8 Web Pages on w3studi

You can publish web pages which can be accessed worldwide using the following URL:

```
http://w3studi.informatik.uni-stuttgart.de/~username
```

Follow these steps:

- create a subdirectory *public_html* in your home directory

```
mkdir public_html
```

All your web pages reside in this subdirectory.
- allow read only access for everyone

```
chmod a+x .  
chmod a+x public_html
```
- create your start web page which must be called *index.html* in your *public_html* subdirectory.
- all files in *public_html* must be readable by everyone to be published

```
chmod a+r <file>
```

You can also use CGI scripts. See

```
http://w3studi.informatik.uni-stuttgart.de
```

Of course the usage policy also applies to the content of your web pages.

3.9 Remote Access

3.9.1 VPN

You can use VPN (*Virtual Private Network*) which allows a secure connection to the university network from an external internet provider. Your computer then becomes a logical part of the university network. This is very helpful, because many servers are not accessible from hosts outside the university network for security reasons.¹

The client software for the Informatik VPN can be downloaded from

```
http://www.informatik.uni-stuttgart.de/vpn.html2
```

Please note: although you use an external provider, with VPN your computer becomes a part of the university network and you need to observe the rules on the back of your account request.

¹ You could also use ssh tunnels and *marvin*. Many howtos can be found in the internet.

² only from the intranet

3.9.2 SSH-Tunnel

With SSH you can locally set up a proxy, which then allows access to the university network via *marvin*.

```
ssh -D 5050 marvin.informatik.uni-stuttgart.de
```

Launches a proxy on your computer with the port 5050 which allows a connection to the university net. In combination with the Firefox Addon FoxyProxy rules can be created very comfortably for example to retrieve all pages of the faculty of computer science through this tunnel.

4 Links

Pool Homepage

<http://www.informatik.uni-stuttgart.de/zd/rechnerpools.html>

There you can download the pdf version of this document.

WLAN

<http://www.informatik.uni-stuttgart.de/wlan.html>

VPN

<http://www.informatik.uni-stuttgart.de/vpn.html>

Web interface studimail

<https://studimail.informatik.uni-stuttgart.de>

Webserver w3studi

<http://w3studi.informatik.uni-stuttgart.de>

Newsserver

<news.informatik.uni-stuttgart.de>

Fachschaft Informatik & Softwaretechnik

<http://fachschaft.informatik.uni-stuttgart.de>

Arch Linux

<http://www.archlinux.org>

Jabber

<http://www.jabber.org>