

THE COMPUTER INTRODUCTION BOOKLET

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

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

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1 General

1.1 About this booklet

This booklet is an 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 at those who want to learn about specifics of the computers of the Faculty of Computer Science.

This script uses following conventions:

italic

for new terms, file names and paths.

fixed width

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

in bold print

for especially important information.

key

for keystroke combinations.

1.2 Infrastructure

As computer science student you have access to various computer labs. These are generally called pools. It does not matter which one you use, but the *Haupstudiumspool* (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 AMD FX 6300+ processor and 16 GB RAM. Every PC has Linux installed. There also is a Scanner, the printer *duesentrieb* and the computer helpdesk.

Hauptstudiumspool (HS-Pool)

In the *Hauptstudiumspool* there are 48 PCs (PC names are *hspc01* .. *hspc48*) each equipped with a AMD FX4100 processor and 16 GB RAM. It also has a sheet feed scanner and the printer *zarquon*. The PCs are running Linux.

Services

Besides the pools you can use several services with your 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 (open mo-fr 10am to 3pm).

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, Softwaretechnick, Medieninformatik, Data Science, Wirtschaftsinformatik, Information Technology (IN-FOTECH), Technikpädagogik, Computerlinguistik, Maschinelle Sprachverarbeitung, Technikpädagogik Informatik and Simulation Technology.

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 has a private *home directory*, in which you can save your files. Everyone currently has 10 GB of disk space available (Quota). Apart from your own files there must remain enough free disk space for configuration, windows profile and temporary files (eg cache of your web browser).

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.zdi.uni-stuttgart.de/rechnerpools.html
```

Violating these rules will have consequences up to revocatino of your account. The Unviseity 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).
 This is important!
 See chapter 3.1
- 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://fius.informatik.uni-stuttgart.de/dienste/ pruefungsverleih/

No food and/ or drinks in the pool.

Not on the desk, not under the desk, no bottles, please keep it all locked in your bag.

This specifically means no snacks, no coffee cup, no bottle (no matter if open or closed), no nothing! Your accounts will be locked if caught!

- Please connect notebooks etc. only to free ac sockets on the desk. No unplugging of computers or displays, no use of the floor boxes.
- When searching for (note)paper, use the paper container next to the printer and not the printer trays.
- Please do not open any printer covers or trays. The printer have been damaged several times by attempts to fix printing problems. And tray 1 and 2 can use paper only from the left side.
- When talking to others, please talk quietly. Other users might want to work. No music.
- Orders of the helpdesk team are to be followed. The helpdeak team has the right to throw you out of the pool in case of, which normally includes disabling your accounts and network access.

2 First steps

2.1 In a nutshell ...

- Log on to linux using username and password from your account datasheet.
- Change your password using the command passwd.
- Your account includes an email address

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

- Set your mail password using the command mailpasswd
- Check for mails regularly or forward your mail to another (e.g. TIK) address, otherwise your account will be disabled after some time.
- Disk quota: 10 GB, mail quota: 512 MB
- Printers
 - duesentrieb (GS pool),
 - zarquon (HS pool)
- Print quota 300 pages per semester. Do not print lecture notes!
- WLAN

```
https://www.zdi.uni-stuttgart.de/wlan.html
```

VPN access

```
https://www.zdi.uni-stuttgart.de/vpn.html
```

2.2 Detailed instructions

Go to a free PC in the pool and check if Linux is started and displays a login screen similar to the one in figure 1.

If the PC is running Windows, you have to press strg - Att - Entf and restart the PC. In the upcoming boot menu choose **Linux**.

Do not simply power off or restart the PC by pressing the reset button!



Figure 1: Login screen of Linux

2.2.1 Logging in

On the login screen you first enter your user name in the field labelled *Benutzername*: and your password in the field *Passwort*: and confirm with Return. 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 Caps-Lock and Num-Lock are turned off. If you still can't log in, you should ask the helpdesk.

2.2.2 User Interface

The default GUI that is installed in the pools is called XFCE. Linux supports - unlike Windows - several graphical user interfaces (GUI). You can change your GUI in the login screen at any time as you like, for example to mate that is also slick, fast and intuitive.

In the lower area of the screen you can find the *panel* (see figure 3). You will find there symbols and menus as well as little programs called *applets* with which you can start the most relevant programs and functions with a simple mouse click.

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.

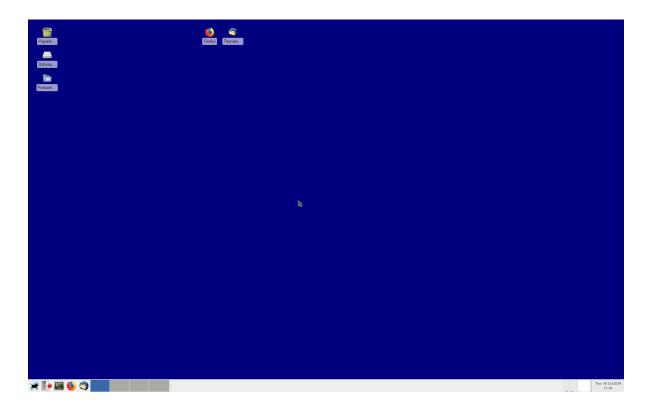


Figure 2: XFCE after your first login



Figure 3: lower panel

2.2.3 Choose a new password

It is required that you change the initial password immediatly 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
- not be found in a dictionary of any language (not even parts of the word)
- not be related to you name, hobbies, pets, star trek etc.
- be at least 8 characters long

BTW star ship names from Star Trek and *abcd1234* are absolutely ill-suited passwords. The system administrator regularly controls whether all passwords are safe enough and disables all those accounts which are not sufficiently secure. Remember, if a hacker gains control of your account you are liable for all actions made with your account.

2.2.4 Changing your password

In order to change your password start the program change password in the ZDI menu which you can find in the Anwendungen menu in the panel at the bottom of the screen ($ZDI \rightarrow change\ password$, see figure 4).

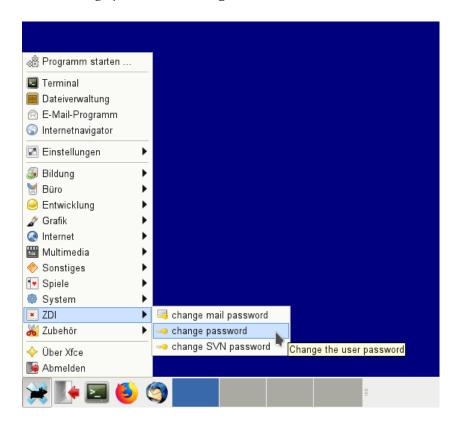


Figure 4: Menu entry to change the login password

Experienced UNIX users may of course just use the shell and change their password 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.

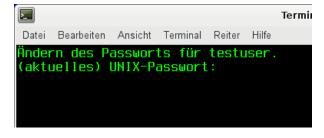


Figure 5: Entering your old password

If you have not mistyped your old password you will then be asked to enter your **new** password (see figure 6).



Figure 6: Entering your new password

If your new password conforms to the requirements you will be asked to reenter your new password to ensure you have made no typing error (see figure 7).

```
Terminal

Datei Bearbeiten Ansicht Terminal Reiter Hilfe
Ändern des Passworts für testuser.
(aktuelles) UNIX-Passwort:
Geben Sie ein neues UNIX-Passwort ein:
Geben Sie das neue UNIX-Passwort erneut ein:
```

Figure 7: Reentering your new password

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

```
Datei Bearbeiten Ansicht Terminal Reiter Hilfe

Ändern des Passworts für testuser.
(aktuelles) UNIX-Passwort:
Geben Sie ein neues UNIX-Passwort ein:
Geben Sie das neue UNIX-Passwort erneut ein:
passwd: Passwort erfolgreich geändert
== press key ==
```

Figure 8: Message after successfully changing your password

2.2.5 Choose an email password

In order to use your e-mail account you need to set another password for it. This **must not** be the same as your pool account password. You don't need to know your old mail

password in order to change it. Start the programm change mail password under $ZDI \rightarrow change\ mail\ password$ (see figure 9) or just enter the command mailpasswd in your terminal and follow the instructions on the screen.

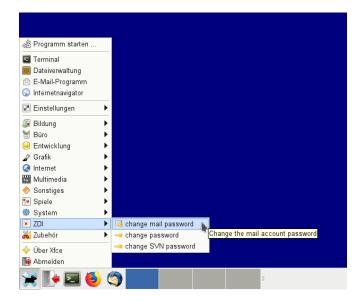


Figure 9: Menu entry to change the mail system password

You have to enter your new mail password twice (figure 10) to avoid spelling errors. Explanations on how to actually access your email account is explained later in this booklet.

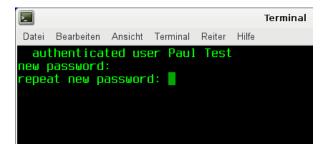


Figure 10: chainging your mail password

2.2.6 Logging out

If you dont't want to continue working with the computer you have to log out so nobody else can use and abuse your account (and name). 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 moment (less than 10 minutes), you can just lock your computer with the option *Bildschirm sperren* (lock symbol in the *Logout* dialog).

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 email account on the mail server *studi*. Your email address will be

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

This email address is used as the default for print system notifications, by the system administrators, employees and *Fachgruppe* (FIUS). Requests for certificates are also only possible with a studi mail address.

You should 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.

No, not again an email address, I already have so many! Yes, but you can easily forward your studi mails to an external server. But please consider that you mails could contain personal information like passwords or matriculation numbers. Forwarding all your studi mails to services like GoogleMail is surely not a wise idea.

3.1.1 Web Interface

Simplest is to access your emails with the web interface (see figure 11). Just point your favorite web browser to:

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

Please note: the student mail server 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.

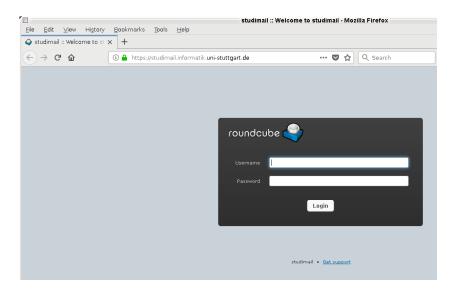


Figure 11: Web interface login screen

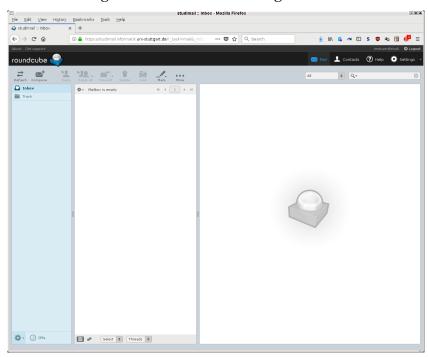


Figure 12: Main view of the web interface

3.1.2 Email with Thunderbird

In Linux the default mail program is *Thunderbird*. The configuration is started automatically upon the first launch. You need to enter your first and last name into the first text field. The email address you have to enter is <username>@studi.informatik.uni-stuttgart.de, and then your mail password in the password field (see figure 13). If you then click *Weiter* (Continue) the remaining settings will be done by the

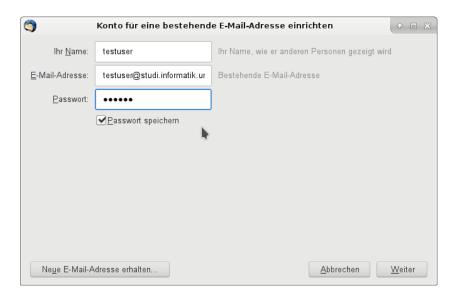


Figure 13: Email setup (I)

system automatically (figure 14). The setup is done with the last click on *Fertig* (Done) and you can use your email account.

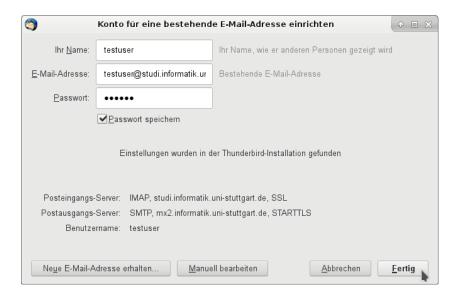


Figure 14: Email setup (II)

3.1.3 Other email programs

You can access your email account with any standard email client on any of your devices even outside the university. This is similar to the example with Thunderbird above. 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.

You can use the following information for the configuration of your email client:

POP3, encrypted Server: studi.informatik.uni-stuttgart.de

Port: 995

Server: studi.informatik.uni-stuttgart.de

Port: 993

3.1.4 Mail quota

Your mailboxes on studi are limited to a total size of 512 MB. If the quota is exceeded the mail server rejects all incoming mails and returns them to the sender with a notice. Should that happen repeatedly the administration assumes that you are not reading your emails regularly, although you have accepted the terms when signing for your account, and will eventually lock all your accounts!

3.1.5 Sending emails

Within the university network you can use *studi* for sending mails (outgoing mail server) using the following configuration:

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

Port: 25

From outside the university network you cannot use *studi* directly for sending mails, only by means of a SSH tunnel or via VPN. More information can be found in section 3.9 on page 24. You can also use the SMTP server of your internet provider.

3.1.6 Forwarding emails

You can forward your emails from *studi* to another address or filter your incoming mails according to specific rules. This is managed within the web interface (figure 15). To forward your mails, select *Settings* from the menu bar, then *Filters* on the left panel, and then press the plus symbol in the Filters panel. Then you can create the forwarding rule as shown in the figure.

Besides from the web interface the filters can also be configured by other ManageSieve compatible clients like the Sieve plugin for Thunderbird.

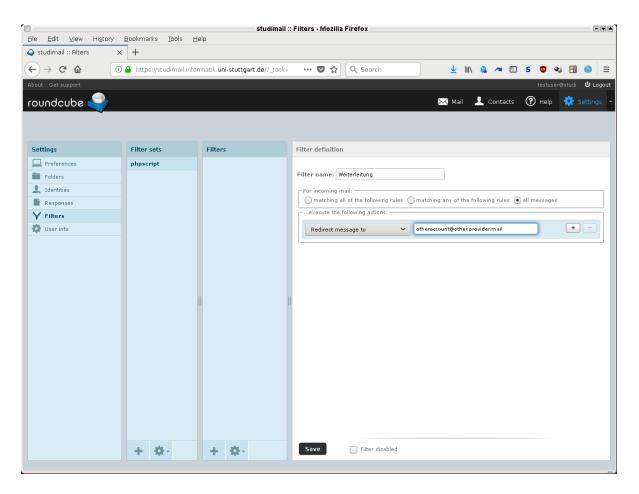


Figure 15: Creating a forwarding rule

3.2 Printing

There are big laser printers in both pools:

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

For every physical printer there are two 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-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. And sometimes there are hardware problems like paper jams.

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. And opening all trays and covers of the printer does not help either.

If you print something, you always should get your printings. Always. And always take your header page, you can throw it in the trash next to the printer, if you don't need it.

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

3.2.1 Printing issues

Important: At first look for the error cause. Repeating the print job does not help and is expensive.

So check your studi-Mail and read the status message of the print system. Frequent problems are, that the print jobs were sent to wrong printer or the printer declined the job because of an undefinied format or it was declined because you don't have enough printquota. This can be read in this status message.

Otherwise: If a printer don't accept any job it will be stored by the print server. Once the issue has been fixed all saved jobs will be printed. If you started the job multiple times, it will be printed multiple times and every job will decrease your print quota.

Only the members at the helpdesk are permitted to fix issues at the printers. So if something is wrong, ask them and don't try to fix it on your own!

If there is noone at the helpdesk you should write an email to:

```
zdiprint@informatik.uni-stuttgart.de
```

Paper jam: Do not try to fix an issue on your own, especially not with force. That lead multiple times into a expensive repair of the printer.

3.3 Scanners

There is a scanner in the GS Pool connected to gspc54.

In the HS Pool on the single desk near the printer you find the network scanner poolscan. You can use the software iscan (figure 16) from every computer in both pools. But you still have to move your feet to the scanner to insert your documents.

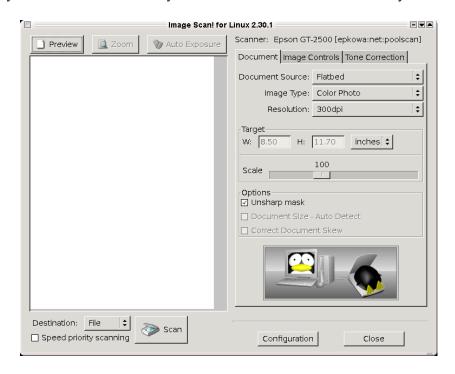


Figure 16: Programm "iscan" zum Scannen

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).

```
<username>@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. Authentification is possible by VPN (Cisco Client or OpenVPN, SSID *infvpn*) or an EAP certificate (SSID *infeap*). 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-certicate and how to configure it.

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

You can also use EDUROAM, either with an account from RUS oder your Informatik account.

3.6.2 Network by cable

There are serveral 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 eventually restart your computer. Point your web browser to the followig address:

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

and enter your username and password. 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.

3.7 marvin

With your computer account you can also use *marvin*, a server, running 24/7, day und 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 processe beeing 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 worlwide 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 FoxyProxy rules can be created very comfortably for example to retrieve all pages of the University of Stuttgart through this tunnel.

4 FAQ

4.1 Email web frontend

Check all emails of your Studi account from everywhere via webinterface

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

4.2 VPN server

- Cisco AnyConnect: vpn.informatik.uni-stuttgart.de
- OpenVPN: openvpn.informatik.uni-stuttgart.de

4.3 Certificate for infeap

Send a mail from your Studi account with your name, username and your matriculation number to

```
netadm@informatik.uni-stuttgart.de
```

4.4 Login problems under Linux

- If the computername in the lower right corner shows localhost the computer might not be connected with the network. Try to reboot the computer and if the problem occurs again go and ask at the helpdesk.
- Login with the commandline (STRG ALT F2). There will be a proper information if your account is disabled
- Otherwise maybe your disk-quota could be full (currently 10 GB), then you have to delete files or the configuration of your desktop-environment is damaged (occurs if you don't logout properbly). ⇒ go to the helpdesk.

4.5 I can't login to studimail

The command passwd only changes the login password, not the mail password.

Login password \neq Mail password!

To access your mails you must have set your mail password. This can be accomplished for example in a shell with the command mailpasswd.

5 Links

Pool Homepage

http://www.zdi.uni-stuttgart.de/rechnerpools.html

There you can download the PDF version of this document.

WLAN

http://www.zdi.uni-stuttgart.de/wlan.html

VPN

http://www.zdi.uni-stuttgart.de/vpn.html

Web interface studimail

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

Web server w3studi

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

News server (NNTP)

news.informatik.uni-stuttgart.de
news.uni-stuttgart.de

Fachgruppe Informatik (FIUS)

https://fius.informatik.uni-stuttgart.de

Debian Linux

http://www.debian.org

Jabber

http://www.jabber.org