Installing FS Linux 3

Ari Mujunen (Ari.Mujunen@hut.fi),
Ed Himwich (weh@vega.nsa.gov)
Paul Burgess (pb@jb.man.ac.uk)

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Contents

1 Introduction

"FS Linux 3" is a third-generation adaptation of the freely-available Linux operating system for VLBI Field System computers. It offers enhanced robustness, better hardware support, wider selection of preinstalled software, and improved network security when compared to FS Linux 1. FS Linux 3 is based on Debian/GNU/Linux version 2.0r5.

2 Prerequisites

FS Linux 3 is compatible with practically all hardware that has been used with FS Linux 1 and 2. However, its disk space requirements are substantially larger: you will need a pair of 1GB or larger disks.

2.1 CPU

All processors from 486DX-33 upwards are compatible and supported. This includes 486DX-33 and 486DX-50 processors used in "TAG" computers, Pentium 100–233MMX, and Pentium II 233–450 processors used in "SWT" computers, and also upcoming Pentium III processors as well as AMD K5 and K6 processors. Please note that a hardware math coprocessor unit is required by FS Linux 3 (which is based on Linux kernel 2.0.34). This means 486SX processors and 368 processors cannot be used without a coprocessor chip on motherboard.

FS Linux 3 doesn't run noticeably slower or faster on old 486DX CPUs than FS Linux 1 (or 2) did. However, when combined with only 16MB of memory the overall system response feels more sluggish. This effect is more prominent when using old 486DX CPUs because extra swapping activity is performed slower by a slow CPU.

2.2 Memory

FS Linux 3 has been tested running observation schedules with only 16MB of memory using a Pentium 100 CPU. The system performs running the FS as expected and expanding system memory from 16MB is not absolutely necessary.

However, running anything else in addition to the base operating system, X Window System, and the FS is *not* recommended on systems with only 16MB of memory. Starting up for instance Emacs or Netscape during observations may cause enough swapping that timely execution of schedules may be jeopardized.

For maximum operational comfort we recommend that your upgrade memory of your FS PC to 32MB or to 64MB. This will allow you to start up multiple memory-intensive applications at the same time while the FS is running.

2.3 Hard Disks

It quickly became clear that FS Linux 3 (nor 2) cannot be fitted on 200MB hard disks commonly found in "TAG" FS PC systems. A minimal Debian/GNU/Linux 2.0 system with X, C/Fortran development tools, and common utilities would have occupied well over 200MB.

> Owners of 200MB SCSI disks will need to upgrade them to a pair of 1GB or larger SCSI disks!

The details on how to upgrade are presented in section 4.1 on page 9. To leave room for future expansion we recommend that you reserve 1.5GB for FS Linux 3 if you have 2GB or larger disks. For 1GB disks we recommend reserving 750–800MB for FS Linux 3.

2.4 Network Settings (IP Numbers)

You will need a complete list of TCP/IP networking settings if you wish to enable LAN and/or Internet access using the Ethernet interface board in your FS computer. The local network administrator of your site will be able to furnish you:

1. The simple host name of your FS computer, for example "`eclipse`". You will need a computer name (host name) even if you are not connected to any network. In this case you can select any name you wish (alphanumerics, dashes, underscores allowed).
2. The network name (DNS domain name) of your local network, for example "`hut.fi`". (This implies that the complete Internet DNS name of your FS computer will be like "`eclipse.hut.fi`", i.e. the host name and the domain name concatenated with a dot in between.)
3. IP address, for example "`193.166.42.1`".
4. The subnet mask of your local area network. This defines which addresses are deemed "local", that is, which can be sent directly onto the local Ethernet. A common value is "`255.255.255.0`", a so-called "C class" Ethernet network.
5. The broadcast address used on your local area network. Usually this starts like the local IP addresses but the bits which are zero in the subnet mask are set to one, for example "`193.166.42.255`".

6. If you are connected to other networks (like the Internet) in addition to your physical local area network (local Ethernet) you will need to use a gateway. A gateway will have an IP address and if enabled in FS Linux, it will cause all non-local network traffic to be forwarded to the gateway.

7. Most networks (and especially if connected to the Internet) will have one or more DNS name servers available. If there are no name servers available you will have to resort to using the "`/etc/hosts`" file. You can set up using 1–5 name servers by entering their IP addresses in network configuration.

If you already have FS Linux 1 installed you can look up the settings in the following files:

/etc/rc.d/rc.inet1 Lists your IP number, subnet mask, broadcast address, and gateway IP number.

/etc/resolv.conf Lists name server IP numbers and your domain name.

/etc/HOSTNAME Lists the complete (long) host name with domain suffix.

If you already have FS Linux 2 installed in your FS computer you can look up the settings in the following files:

/etc/init.d/network Lists your IP number, subnet mask, broadcast address, and gateway IP number.

/etc/resolv.conf Lists name server IP numbers and your domain name.

/etc/hostname Lists the short host name (without domain suffix).

2.5 Installation Media

There are basically two options available to get access to FS Linux 3 files:

1. You can request a pair of CD-R disks to be sent to you by sending an email to "`Ari.Mujunen@hut.fi`".

2. You can access the file archive at GSFC over the Internet using anonymous read-only NFS access.

If you cannot use either of these options you can arrange for one of your SCSI hard disks in a CRU cartridge to be sent over to either GSFC or to Metsähovi for FS Linux 3 preloading. Also in special circumstances you may want to take advantage of locally-loaded Debian 2.0r5 installation. Notes for doing so can be found in 6.4.1 on page 31.

In both NFS and CD-R cases you will need a pair of FS Linux 3 boot floppies, called "`resc1440`" (called the "boot floppy" or "rescue floppy") and "`drv1440`" (called the "drivers floppy"). The CD-R disks are usually supplied with ready-made floppy disks but the image files needed to create the floppies are available on CD-Rs, via anonymous FTP, and via anonymous NFS in the same way as all other FS Linux 3 files.

2.5.1 NFS Access to GSFC over the Internet

If your Internet connection is relatively robust and fast you may want to access the most up-to-date file archive at

```
nfs://atri.gsfc.nasa.gov/home/ftp/pub
```

If your network routers allow (some sites decide to block all NFS traffic) you will be able to directly mount this directory for read-only access with the following command (using FS Linux 1 or 2):

```
mount -o ro atri.gsfc.nasa.gov:/home/ftp/pub /mnt
```

You should do this to before attempting a complete installation of FS Linux 3 to test that anonymous read-only NFS works reliably using your Internet connection. Use "`ls -l /mnt`" and other browsing commands to verify that the connection works fine.

The area at "`atri.gsfc.nasa.gov:/home/ftp/pub/fs-debian`" is a mirrored copy of the corresponding area at "`ftp://kurp-ftp.hut.fi/pub/fs-debian`". Unfortunately, this area cannot be accessed using anonymous NFS since HUT routers refuse to forward NFS network packets. This area is however accessible with anonymous FTP.

2.5.2 CD-R Disks

The CD-R disks are a snapshot of the anonymous FTP area mentioned above, "`ftp://kurp-ftp.hut.fi/pub/fs-debian`". Because this directory contains approximately 1.2GB of data it had to be splitted into two CD-R disks, each holding about 600MB.

Disk 1 holds the "main" part of standard Debian 2.0r5 package distribution, customarily deferred to with its pathname "`dists/stable/main`" (which is a symbolic link and the "real" files reside in "`hamm/hamm`" for historical reasons).

Disk 2 holds "contrib" contributed and "non-free" restrictively licensed free software distributions of standard Debian 2.0r5 ("`dists/stable/contrib`","`dists/stable/non-free`"), "local" additions such as Netscape ("`local`"), and most importantly, FS Linux 3 base files in "`dists/stable/main/disks-i386/2.0.10_1998-11-13-fs3`". To make access to these files easier, symbolic links for "`base2_0.tgz`", "`resc1440.bin`", and "`drv1440.bin`" have been created at top level of CD-R Disk 2.

Please verify with your existing FS Linux system that you are able to read both CD-R disks completely without *unrecoverable* error messages on screen or in "`/var/log/messages`":

```
cat /dev/cdrom >/dev/null
```

Change the second CD-R disk into your CD-ROM drive and repeat the command. It is quite normal to see a couple of messages originating from your CD-ROM drive like "`hdx: ATAPI timeout`" or "`hdx: ATAPI reset`". However, any messages with the text "`unrecoverable`" may mean that there are files on the CD-R disk which you cannot read with that particular CD-ROM drive.

The file "base2_0.tgz" is mandatory for the installation procedure to succeed. You can verify that file only with:

```
mount /cdrom
cat /cdrom/base2_0.tgz >/dev/null
umount /cdrom
```

If you get lots of recoverable errors you can try cleaning dust from your drive with an air nozzle or you can use a CD-ROM cleaning disk. Some 1994–1995 vintage 4–6x IDE CD-ROM drives have problems reading the weaker signal of CD-R disks (as opposed to mass-produced CD-ROMs)—this can be remedied only by swapping the drive to a newer model.

2.5.3 Making "`resc1440`" and "`drv1440`" Floppies

You can download floppy disk image files using anonymous FTP in binary mode in the following locations:

```
ftp://kurp-ftp.hut.fi/pub/fs-debian/resc1440.bin
ftp://atri.gsfc.nasa.gov/pub/fs-debian/resc1440.bin
```

(The previous are symbolic links; if you have trouble accessing them, the original files can be found at:)

```
ftp://kurp-ftp.hut.fi/pub/fs-debian/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3/resc1440.bin
ftp://atri.gsfc.nasa.gov/pub/fs-debian/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3/resc1440.bin
```

You can download using a Web browser (if you are sure your Web browser downloads the files "as is", in binary mode) or "plain old" FTP as follows:

```
cd /tmp
ftp kurp-ftp.hut.fi
login: ftp  (or anonymous)
Password: your_email@your_computer.net
binary  (is most probably on by default if you are using a Unix system)
cd /pub/fs-debian/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3
get resc1440.bin
get drv1440.bin
quit
```

Please make sure that the resulting file is exactly 1474560 bytes long, i.e. that the transfer occurred in binary mode and that the resulting file was not truncated in any way. You can copy the image files onto floppies as follows:

```
superformat /dev/fd0     (for FS Linux 1 use 'fdformat /dev/fd0H1440')
cat resc1440.bin >/dev/fd0
```

Formatting the floppy is important even though the floppies may have been formatted at factory. Formatting it again may reveal latent problems in your floppy drive and with that particular floppy media you have in hand. If these problems go undetected and you manage to create a floppy with r/w errors, the results will be unpredictable and the error messages you will receive during a boot attempt will be obscure.

Repeat the procedure for the file "`drv1440.bin`" using a second floppy. Write-protect the floppies by moving the tab in "open" position and label the floppies as follows:

FS Linux 3
"resc1440" Boot/Rescue Floppy
1 (2)

and

FS Linux 3
"drv1440" Drivers Floppy
2 (2)

3 Making a Backup of the Existing System

It is extremely important that you have a functional recent backup of your system which you can use if any unexpected difficulties arise during FS Linux 3 installation.

> Please make a backup according to instructions in FS documentation !
>
> Please make sure that the backup boots to a functional system running the FS!

Verifying that the backup works is even more important than just making it because during FS Linux 3 installation process you will most likely have to erase all data on your primary hard disk. Thus, until you have completed FS Linux 3 installation the backup disk may be your only way of running the FS, should a need arise.

> *Important:* If you have to repartition your hard disk (determined in section 4 below) you *absolutely* must have a current backup disk available. That is, you really have to make a fresh backup just before beginning the FS Linux 3 upgrade, otherwise you will not be able to restore your '`/usr2`' files.

We also recommend that you make a separate backup of your station-specific software as described in FS documentation. This further protects you against accidental loss of your existing "`/usr2`" data on your backup media. In this case you can recreate your "`/usr2`" from scratch, adding station-specific software from the separate backup, probably on a floppy disk. We would also appreciate if you would care to send a copy of your station backup to GSFC: we are keeping a repository of station software for reference and backup purposes. Email to "`weh@vega.gsfc.nasa.gov`" with a description where Ed can pick up your "`st-n.n.n.tar.gz`" backup file.

To create the backup (as prog):

```
cd /usr2/st
make backup
```

Archive the resulting "`/tmp/st-n.n.n.tar.gz`" file, possibly onto a floppy with "`mcopy /tmp/st-n.n.n.tar.gz a:`".

4 Planning Migration of "/usr2" Data

There are two choices:

1. No need to repartition: you have large (>=2GB) hard disks which already have a large root partition ("/dev/sda1"). You will be able to reformat only the root and swap partitions and leave "/dev/sda3" "/usr2" alone.
2. Need to repartition: your root partition is not large enough for FS Linux 3 and you need to repartition your primary hard disk, erasing all data on that disk.

What is "large enough" can be determined as follows:

- If your "/dev/sda1" partition is smaller than 600MB, it is not large enough. You will have to repartition.
- If "/dev/sda1" is 2000MB or larger, it is definitely large enough. There is no need to repartition.
- Anything between 600–2000MB may be large enough, depending on your judgement. We recommend repartitioning the disk to have a root partition of at least 2000MB, however, a 600–2000MB partition can be used directly for FS Linux 3. Users of 1GB disks will have to settle for less than 2000MB: we recommend making the root partition as large as possible, i.e. reserving as little as possible for "/usr2" (100–150MB) and swap (32–64MB) partitions.

Postponing repartitioning now with less than 2000MB for root partition may save time now but may necessitate repartitioning immediately with the next release of FS Linux. We envision that FS Linux 4 will fit on a 2000MB root partition. It is also quite likely that 1500MB will be sufficient, but as of 11-Aug-2000 the new recommended root partition size is 2000MB.

Repartitioning your primary hard disk is not in any way especially dangerous, it just adds one step you have to do after installing the base FS Linux 3 system: you have to carefully copy "/usr2" files from your backup hard disk as described in section 8 on page 59. By being careful in this step you will want to avoid accidentally destroying your only copy of your "/usr2" data.

4.1 Upgrading 200MB Hard Disks

You will need to copy "/usr2" files from your old 200MB hard disk also in the case you are upgrading your hard disks.

After making a 200MB-to-200MB disk backup dismount the primary SCSI disk (SCSI id 0) from its CRU enclosure. Make sure that your new 2–4GB disk drive is also set to SCSI id 0 and that it is jumpered to have internal SCSI termination disabled. Mount the drive into CRU enclosure. Usually there is no need to low-level format new SCSI disks. If the drives have been formatted before with a non-standard sector size (not 512 bytes), you can reformat them according to instructions which came along the SCSI controller board of your FS computer.

After completely installing FS Linux 3, the FS, and your station-specific software, and after verifying that these work properly you will want to dismount your backup SCSI disk (SCSI id 1) from its CRU enclosure and replace it with a new 2–4GB disk drive.

5 Booting with the "`resc1440`" Floppy

When you have made a verified backup of your primary hard disk (or when you have a new disk to work on) and you have all installation media accessible (boot floppies and CD-Rs/NFS access) you can start installing the system. Please reserve enough time for the operation: if you are using CD-Rs roughly two hours will enable you to complete the installation. If you are installing from the GSFC NFS server over the Internet the time required depends greatly on the speed of your Internet connection. You may want to leave the step "Install the Base System" (see section 10.5 on page 78) running overnight and continue the process next morning.

1. Insert only your primary hard disk into your FS PC.
2. Insert the "`resc1440`" floppy into drive "`A:`".
3. Apply power.

You will see a "LDLINUX" Linux floppy boot loader screen and a "`boot:`" prompt. Press "`Enter`" to start the installation system. Kernel device detection messages will appear and the installation system will be copied to a RAM disk. The system will start automatically and present the following screen:

```
                       Debian GNU/Linux System Installation







             +----------+ Select Color or Monochrome display. +-----------+
             |If your monitor displays color, please select "Color" here. |
             |Select "Next" when you are satisfied with the display.      |
             |                                                            |
             |      +----------------------------------------------+      |
             |      | Next      : Continue with the installation    #      |
             |      | Color     : Select color display              |      |
             |      | Monochrome: Select black-and-white display    |      |
             |      +----------------------------------------------+      |
             |                                                            |
             +------------------------------------------------------------+







                  <Up>/<Down> between elements   |  <Enter> selects
```

All FS PC systems have color displays, so you should select the highlighted option "Color" by pressing the "Enter" key. The selection will be updated to highlight "Next", so just pressing "Enter" a second time will lead you to the following screen display:

```
                       Debian GNU/Linux System Installation
     +------------------------------+ Release Notes +-------------------------------+
     |                     Software in the Public Interest                         #|
     |                                presents                                     ||
     |                      *** Debian GNU/Linux 2.0 ***                           ||
     |                                                                             ||
```

```
| This is the Debian Rescue floppy. Keep it once you have installed          ||
| your system, as you can boot from it to repair the system on your          ||
| hard disk if that ever becomes necessary.                                  ||
|                                                                            ||
| Release note: This floppy was built on October 22, 1998 by                 ||
|                                                                            ||
|                                                                            ||
| Please be sure to visit the Debian WWW site: http://www.debian.org/        ||
|                                                                            ||
| Debian's developers are unpaid volunteers from all around the world,       ||
| collaborating via the Internet. We have formed the non-profit              ||
| organization "Software in the Public Interest" to sponsor this             ||
| development. We'd like to thank the many businesses, universities, and     ||
| individuals who contributed the free software upon which Debian is         ||
|                                                                             |
|                                <Continue>                                   |
|-----------------------------------------------------------------------------+

             <Up>/<Down> between elements   |  <Enter> selects
```

This screen shows you information about the Dbian/GNU/Linux system on which FS Linux 3 is based on. You can scroll the display with "Page Down" and "Page Up" keys. When you have seen enough, press "Enter" to continue.

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| Your keyboard has not yet been configured. Please select "Next" from the   |
| menu to configure the keyboard.                                            |
|          +-----------------------------------------------------+          |
|          | Next      : Configure the Keyboard                  #          |
|          | Alternate : Partition a Hard Disk                   |          |
|          |                                                     |          |
|          | Configure the Keyboard                              |          |
|          | Partition a Hard Disk                               |          |
|          | Initialize and Activate a Swap Partition            |          |
|          | Activate a Previously-Initialized Swap Partition    |          |
|          | Do Without a Swap Partition                         |          |
|          | Initialize a Linux Partition                        |          |
|          | Mount a Previously-Initialized Partition            |          |
|          | Un-Mount a Partition                                |          |
|          | Install Operating System Kernel and Modules         |          |
|          | Install the Base System                             |          |
|          | Configure Device Driver Modules                     |          |
|          | Configure the Base System                           |          |
|          +-----------------------------------------------------+          |
+----------------------------------------------------------------------------+

             <Up>/<Down> between elements   |  <Enter> selects
```

This is the main menu list of the installation process. You will be returned here after completing any step you select from here. The installation system inspects the state of your installation and selects the most applicable action to be performed "Next" and defaults the selection highlight to this. The system may also suggest one or more "Alternate" actions which can also be done at that particular point in the installation course. In the descriptions of this document, usually you will perform the default "Next" action. Whenever an "Alternate" choice is needed, this is indicated in the instructions. The first action will be the default "Next", "Configure the Keyboard", so it is sufficient to just press "Enter" to select it.

```
                  Debian GNU/Linux System Installation
```

```
+---------------------+ Select a keyboard +----------------------+
| Please select a keyboard. If you don't find the exact right     |
| choice below, please choose something close.                    |
| You'll be able to configure more keyboard choices by running    |
| kbdconfig once you have installed the base system.              |
|                                                                 |
|    (*) us                  U.S. English (QWERTY)          #    |
|    ( ) azerty              AZERTY                         |    |
|    ( ) be-latin1           Belgium                        |    |
|    ( ) bg                  Bulgarian Cyrillic             |    |
|    ( ) cf                  French Canadian                |    |
|    ( ) cz-lat2             Czech                          |    |
|    ( ) de-latin1-nodeadkeys Germany                       |    |
|    ( ) dk-latin1           Danish                         |    |
|    ( ) dvorak              Dvorak                         |    |
|    ( ) es                  Spain                          |    |
|    ( ) fi-latin1           Finland                        |    |
|                                                                 |
|               <Ok>                    <Cancel>                 |
+-----------------------------------------------------------------+


    <Up>/<Down> between elements | <Space> toggle  selection | <Tab> next button
```

Most FS PCs have US keyboards attached, so it is sufficient to press "Tab" to highlight the "<Ok>" button and then press "Enter". If you have a different national layout in use you can highlight an applicable layout with "down arrow" and "up arrow" keys, press "Space" to select it (the asterisk moves to that "`( )`" location), and finally accept the selection with "Tab" and "Enter".

5.1 Partitioning your Hard Disk

Unless your root partition ("`/dev/sda1`") is already large enough as described in section 4 on page 9, you will have to create three partitions required by the FS.

The easiest way to look at the partition table is also to invoke the menu step "Partition a Hard Disk". If your hard disk is new the installation system will default the "Next" action to "Partition a Hard Disk". If the hard disk already contains partitions used by a previous version of FS Linux you will see the following screen:

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| There are "Linux native" and "Linux swap" partitions present on your       |
| system. The next step would be to initialize and activate a swap           |
| partition to provide virtual memory to your system. If you have not        |
| finished partitioning your disks or wish to change the partitions, please  |
| select "Previous" from the menu to partition them. If you are satisfied    |
| with your partitions, please select "Next" from the menu to initialize     |
| and activate your swap partition, or "Alternate" to activate a             |
| previously-initialized swap partition. If you absolutely insist on doing   |
| without a swap partition, select "Alternate1".                             |
|    +-------------------------------------------------------------+     |
|    | Next      : Initialize and Activate a Swap Partition          #     |
|    | Alternate : Activate a Previously-Initialized Swap Partition   |     |
|    | Alternate1: Do Without a Swap Partition                        |     |
|    | Previous  : Partition a Hard Disk                              |     |
|    |                                                                |     |
|    | Configure the Keyboard                                         |     |
|    | Partition a Hard Disk                                          |     |
|    | Initialize and Activate a Swap Partition                       |     |
|    +-------------------------------------------------------------+     |
+----------------------------------------------------------------------------+
```

```
            <Up>/<Down> between elements   |  <Enter> selects
```

Highlight the option "Partition a Hard Disk" by pressing "down arrow" three times and start partitioning by pressing "Enter". Choose the drive you wish to partition (you should only have one drive "`/dev/sda`" available; if you see "`/dev/sdb`" you have forgotten both your primary and backup disks in your FS computer):

```
+------------------------+ Select Disk Drive +------------------------+
    | Select the drive to partition. SCSI drives are listed in disk ID      |
    | number order. Only drives that were connected and operating when the  |
    | system was started will show up in this display. CD-ROM drives may be |
    | mis-identified as writable disk drives by this menu.                  |
    |                                                                       |
    |                        +----------+                                   |
    |                        | /dev/sda |                                   |
    |                        +----------+                                   |
    |                                                                       |
    |                        <Ok>        <Cancel>                           |
    +-----------------------------------------------------------------------+


            <Up>/<Down> between elements   |  <Enter> selects
```

If you are using a standard FS PC configuration and you followed the instructions not to put any other disks into the PC but your primary hard disk, you should not see any other drive names in the list above. The menu should list "`/dev/sda`" only. If the menu lists both "`/dev/sda`" and "`/dev/sdb`" this means that both of your hard disks are accessible and you are risking your backup copy. Please switch the power off and remove the backup disk and restart the procedure from the beginning (section 5 on page 10).

When you are certain that the disk is the correct one, continue with "Enter" to the disk partitioning program "`cfdisk`":

```
                                cfdisk 0.8j

                            Disk Drive: /dev/sda
            Heads: 99   Sectors per Track: 62   Cylinders: 1023

   Name        Flags      Part Type  FS Type          [Label]        Size (MB)
 ------------------------------------------------------------------------------
   /dev/sda1               Primary   Linux ext2                        1501.03
   /dev/sda2               Primary   Linux Swap                          62.94
   /dev/sda3               Primary   Linux ext2                        1502.05









    [Bootable]  [ Delete ]  [  Help  ]  [Maximize]  [ Print  ]
    [  Quit  ]  [  Type  ]  [ Units  ]  [ Write  ]

               Toggle bootable flag of the current partition
```

The screen above shows a suggested partitioning scheme for a 3GB drive. As long as the highlight is on top of an existing partition the options shown in the bottom part of the screen are available: you can delete an unnecessary partition or you can change the partition type with "t" "Type" from "Linux ext2" (a partition for files) to "Linux Swap" (virtual memory swap space) or vice versa.

The "down arrow" and "up arrow" keys move the highlight between partitions and "left arrow" and "right arrow" keys move the highlighted action. You can also select and action directly by pressing the initial letter of the action name. (An exception: to prevent you from accidentally writing the partition table onto the disk, the "Write" option must be selected with "left"/"right" arrow keys and activated with "Enter".)

5.1.1 Exiting "`cfdisk`" when Partition Sizes Are OK

If your root partition is large enough (as described in section 4 on page 9), you can quit "`cfdisk`" by pressing "q" or highlighting "Quit" and pressing "Enter". Proceed to section 5.2 on page 15.

5.1.2 Deleting Old Partitions

Move with "down arrow" key to the last partition ("`/dev/sda3`") and press "d" (or move the highlight with "right arrow" until "Delete" is highlighted and press "Enter"). The partition is consolidated into "Free Space". Move to ("`/dev/sda2`") with "up arrow" key and repeat the procedure for the second partition, and further on the first "`/dev/sda1`" partition. Now you have converted all old partitions into free space. These changes have not yet been written onto disk, however, and you can still back out by selecting "Quit" without writing the partition table onto the disk.

5.1.3 Creating New Partitions

With all disk space in the "Free Space" slot and the hightlight line on top of "Free Space", press "n" (or highlight "New" and press "Enter"). You will be given options:

```
[Primary] [Logical] [Cancel ]
```

Leave "Primary" highlighted and press "Enter". You will be asked for the size of a new partition:

```
Size (in MB): 269.72
```

The suggested size will be all of available free space, type "1500" over it and press "Enter" to create a 1500MB primary root partition "`/dev/sda1`". You will be asked:

```
[Beginning] [ End ] [ Cancel ]
```

Leave "Beginning" highlighted and press "Enter".

Move the partition highlight to "Free Space" with "down arrow" key and repeat the procedure for "`/dev/sda2`" (use 64–127MB for swap; only the first 127MB are used from larger partitions) and "`/dev/sda3`" (the rest of the disk, i.e. the suggested default "`Size (in MB): 269.72`"). Move highlight back to "`/dev/sda2`" and type "t" for type code and enter "82" to change type of "`/dev/sda2`" to "Linux Swap".

5.1.4 Writing the Partition Table to Disk and Quitting

Move the command highlight with "right arrow" key to "Write" and press "Enter". This will ask for confirmation, answer "yes" and press "Enter". Type "q" (or select "`Quit`") to exit from "`cfdisk`" and continue back to main install menu.

5.2 Initializing Partitions

The newly-created partitions must be initialized, i.e. formatted. Also even in the case you are retaining the contents of your "`/usr2`" partition (and thus you haven't created the partitions anew) you *must* format both the root partition and the swap partition. The installation system leads you through this automatically, you only need to separately select "Initialize a Linux Partition" for "`/dev/sda3`" alias "`/usr2`".

5.2.1 Initializing Swap Partition(s)

From the installation main menu, select the following (leave this default action highlighted and press "Enter"):

```
|    | Next      : Initialize and Activate a Swap Partition           #     |
```

Select (leave highlighted) your (only) swap partition in the dialog below and press "Enter":

```
+-----------------------+ Select Swap Partition +-----------------------
    |                        | /dev/sda2 |                             |
```

You will be asked if you want to read through all of the swap area to test it. This is always recommended as it won't take a long time and it gives you extra assurance that your hard disk is functioning properly.

```
+------------------+ Scan for Bad Blocks? +--------------------+
|                     <Yes>       <No>                         |
```

Ensure that "Yes" is highlighted (with "Tab" key) and press "Enter". You will get the following confirmation dialog:

```
+----------------------+ Are You Sure? +----------------------+
|                     <Yes>       <No>                         |
```

Ensure that "Yes" is highlighted (with "Tab" key) and confirm with "Enter". The screen will go black and checking and formatting the "/dev/sda2" swap partition will start with the following display:

```
Initializing swap partition...
1859
```

The numbers which run on the second line refer to 4kB blocks checked. A 127MB swap partition will be scanned until approximately 32500 is shown here.

5.2.2 Initializing the Root Partition

The primary root partition is initialized first. The installation menu system defaults to the following:

```
|        | Next      : Initialize a Linux Partition              #         |
```

Press "Enter" to activate "Initialize a Linux Partition" in the menu above and select "`/dev/sda1`" in the list that appears with "down arrow" and "up arrow" keys. (It is most probably highlighted by default.) Press "Enter":

```
+-------------------------+ Select Partition +--------------------------+
    |                        | /dev/sda1 |                             |
```

As always, we recommend checking for bad blocks, select "Yes".

```
+------------------+ Scan for Bad Blocks? +-------------------+
|                     <Yes>       <No>                         |
```

Confirm by selecting "Yes".

```
+----------------------+ Are You Sure? +----------------------+
|                     <Yes>       <No>                         |
```

The complete display output of the initialization command "`mke2fs`" is shown in section 10.1.2 on page 64. Below you can see the line where "progress counters" are updated on screen:

```
Checking for bad blocks (read-only test):      8032/  1025015
```

After the bad block check is complete the following is displayed:

```
Checking for bad blocks (read-only test): done
Writing inode tables: done
Writing superblocks and filesystem accounting information: done
```

Because you have initialized "`/dev/sda1`" to act as your primary root partition you will certainly want to answer "Yes" to the following question:

```
+--------------+ Mount as the Root Filesystem? +--------------+
|                     <Yes>       <No>                         |
```

5.2.3 Initializing the "`/usr2`" Partition

At this stage the installation menu system defaults to "Install Operating System Kernel and Modules". (You can see the complete menu screen in section 10.1.3 on page 66.)

If you haven't changed your partitions you can (and you should) retain the contents of your old "`/usr2`" partition by highlighting and selecting "Mount a Previously-Initialized Partition". It will ask you where you want to mount the partition, answer "`/usr2`" and proceed to section 5.3 on page 17 to install operating system kernel and modules.

If you have a new hard disk or if you have repartitioned your disk you should highlight the following option with "down arrow" key instead:

```
|      | Alternate : Initialize a Linux Partition                 |         |
```

Namely, you have the second Linux partition for "/usr2" still uninitialized. Select "/dev/sda3" in the list of partitions:

```
+-------------------------+ Select Partition +--------------------------+
    |                        | /dev/sda3 |                                |
```

As always, we recommend that you scan for bad blocks by selecting "Yes" in the dialog.

```
+------------------+ Scan for Bad Blocks? +-------------------+
|                     <Yes>       <No>                         |
```

A confirmation dialog appears.

```
+----------------------+ Are You Sure? +----------------------+
|                     <Yes>       <No>                         |
```

Start initializing by selecting "Yes" in the dialog. The screen turns black and you will see "mke2fs" output and on the last line the progress counter as follows:

```
Checking for bad blocks (read-only test):     12304/  2050092
```

When the initialization is complete you will be asked the directory name where this file system should be mounted. Answer "/usr2":

```
+-------------------+ Select Mount Point +--------------------+
| /usr2______________________________________________________ |
|                     <Ok>        <Cancel>                     |
```

The installation main menu reappears.

5.3 Installing the Kernel and Device Driver Modules

After all the partitions have been initialized the first items which will be installed onto the hard disk are the Linux operating system kernel and any loadable device driver modules you may need to complete the installation. The kernel resides on the "resc1440" floppy you used to boot the installation system and the loadable drivers are on the second "drv1440" floppy you also created before starting the installation process.

The main installation menu defaults to "Install Operating System Kernel and Modules", select it by pressing "Enter".

```
|      | Next      : Install Operating System Kernel and Modules    #        |
```

You will be shown all the Linux partitions you have mounted this far. You will always have "/" root partition mounted but you should also have "/usr2" mounted.

```
+----------------+ Verify Filesystem Choice? +----------------+
| /dev/sda3 on /usr2                                          |
| /dev/sda1 on /                                              |
|                     <Yes>       <No>                        |
```

If you see both "/" and "/usr2" in the dialog confirm it by selecting "<Yes>". If the dialog doesn't list both "/" and "/usr2" please cancel this step by highlighting "<No>" in the dialog with "Tab" key and pressing "Enter". Go back to section 5.2.3 on page 16 to initialize and mount "/usr2".

```
+------------+ Select Installation Medium +-------------+
|     | /dev/fd0  : First floppy drive            #    |
```

Install the kernel from floppies by accepting the default choice with "Enter".

```
+-------------------+ Please Insert disk +--------------------+
| Please place the Rescue Floppy in the first floppy drive    |
|                     <Continue>  <Cancel>                    |
```

Make sure the "resc1440" floppy disk is still in the "A:" drive (it should be still there since you booted with it). Press "Enter" to start reading the floppy disk in.

```
+----------------------+ Please Wait +-----------------------+
| Installing the Rescue Floppy ...                           |
```

After the kernel has been copied from the floppy to hard disk you will be prompted to change the floppy.

```
+-------------------+ Please Insert disk +--------------------+
| Please place the Drivers Floppy in the first floppy drive   |
|                     <Continue>  <Cancel>                    |
```

Take the "resc1440" floppy out and put the "drv1440" floppy in and press "Enter".

```
+----------------------+ Please Wait +-----------------------+
| Installing the Drivers Floppy ...                          |
```

When the driver modules have been copied onto hard disk the installation main menu reappears.

5.4 Configuring the Device Driver Modules

At this stage you will be able to load additional device drivers into the running kernel. You may need these drivers to access non-standard hard disks, Zip/Jaz drives etc. You *must* load a driver for your network board and this is shown below.

Select the default action in the installation main menu:

```
|          | Next      : Configure Device Driver Modules        #           |
```

From the "Category" menu which appears select the "net" category by using the "down arrow" and "up arrow" keys:

```
+--------------------------+ Select Category +---------------------------+
  |  net    Drivers for network interface cards and network protocols.      |
  |                  <Ok>                       <Cancel>                     |
```

Press “Enter” to see the list of supported network adapters:

```
+-------------------------+ Select net modules +--------------------------+
 |3c503         - 3Com 3C503 Etherlink II, 3C503/16 Etherlink II/16.       ||
 |3c509         - 3Com Etherlink III 3C509 ISA Ethernet Card.              ||
 |3c59x         - 3Com Vortex 3C59x.                                       ||
 |                   <Ok>                        <Cancel>                   |
```

If you have a SWT system you most likely have a variant of the 3Com “3c59x” board. Most TAG systems have “3c503” boards instead. Highlight the choice appropriate for your system and press “Enter”.

```
+---------------------+ Module 3c59x  - +----------------------+
| Install  Install the module in the kernel.                   |
|               <Ok>                   <Cancel>                |
```

In the “Module 3c59x” dialog highlight the “Install” option by pressing “down arrow” key and confirming with “Enter”. You will get a screen for entering parameters for the “3c59x.o” driver module:

```
+-----------------+ Enter Command-Line Arguments +-----------------+
     | Please enter any command-line arguments for the 3c59x module.      |
     |                                                                    |
     | _________________________________________________________________ |
     |                  <Ok>                         <Cancel>             |
```

No arguments are usually necessary so you just press “Enter”. (If you think you may need arguments, please see the complete menu screen in section 10.3 on page 70.)

```
Installing module 3c59x. If the device isn't there, or isn't configured
correctly, this could cause your system to pause for up to a minute.


Installation succeeded.

Please press ENTER when you are ready to continue.
```

As instructed, press “Enter”. You will be returned back to the list of network adapter device driver modules.

```
+-------------------------+ Select net modules +--------------------------+
 |Exit            Finished with these modules. Return to previous menu.     #|
 |                   <Ok>                        <Cancel>
```

Leave the default “Exit” option highlighted and press “Enter”. You will get back to the list of module categories.

```
+--------------------------+ Select Category +---------------------------+
  |  Exit    Finished with modules. Return to previous menu.                |
  |                  <Ok>                       <Cancel>                     |
```

Finish configuring modules by selecting the default “Exit” option with “Enter”. You will be returned back to the installation main menu.

5.5 Configuring TCP/IP Networking

To configure your Ethernet board correctly you will need TCP/IP information assigned to you by your network administrator. The items were enumerated in section 2.4 on page 4.

If you don't have any kind of Ethernet connection you will only need to come up with a host name for your FS PC and you can skip the rest of questions.

Start by pressing "Enter" to activate the default menu choice "Configure the Network".

```
|          | Next      : Configure the Network                   #           |
```

You will get explanatory screens for each network parameter you have to supply. These full-screen snapshots are available in section 10.4 on page 73. Below you will find abbreviated dialogs with only key fields present.

```
+------------------+ Choose the Host name +-------------------+
| Please enter your Host name                                 |
| debian_____________________________________________________ |
|                     <Ok>        <Cancel>                    |
```

Please replace the default "debian" with the host name assigned to you by your network administrator. If you down't have Ethernet at all you can invent a suitable name on your own. (Alphanumeric plus dashes and underscores allowed, less than 30 characters recommended.)

```
+------------------+ Choose the Host name +-------------------+
| Please enter your Host name                                 |
| eclipse____________________________________________________ |
|                     <Ok>        <Cancel>                    |
```

The name example "eclipse" above refers to the Metsähovi FS computer. You should enter a different name and press "Enter" when the name is correct.

```
+-------------------+ Network Connection +--------------------+
| Is your system connected to a network?                      |
|                     <Yes>       <No>                        |
```

If there is no Ethernet available you can highlight "No" using "Tab" key and proceed to section 10.5 on page 78. Otherwise leave "Yes" highlighted and press "Enter" to continue.

```
+-----------------+ Choose the Domain name +------------------+
| Please enter your Domain Name.                              |
| kurp.hut.fi________________________________________________ |
|                     <Ok>        <Cancel>                    |
```

Enter the DNS domain name as given by your network administrator. This is usually the "kurp.hut.fi" part of a complete host name like "eclipse.kurp.hut.fi", i.e. usually you will be able to generate your domain name by eliminating the leading part and the first dot from the complete long host name of your computer. A confirmation will be shown:

```
+------------------------+ Confirm +------------------------+
| The full name of your system is eclipse.kurp.hut.fi.      |
| Correct?                                                  |
|                     <Yes>       <No>                      |
```

If the long name shown matches to what you would expect, select “Yes”. selecting “No” (with “Tab”) allows you to enter the host and domain names again.

```
+-----------------+ Choose the IP Address +-----------------+
| What is the IP address of system eclipse?                 |
| 193.166.42.131__________________________________________ |
|                     <Ok>        <Cancel>                  |
```

Type in the IP address assigned to you and press “Enter”.

```
+-----------------+ What is your netmask? +-----------------+
| What is your netmask?                                     |
| 255.255.255.0___________________________________________ |
|                     <Ok>        <Cancel>                  |
```

Type in the subnet mask given to you by your network administrator and press “Enter”. (The most common mask is the “C class” network mask shown in the above but *please* check this with your network administrator.)

```
+----------------+ Choose Broadcast Address +-----------------+
         | What is your IP broadcast address?                       |
         |  | Last bits set to one           : 193.166.42.255      #    |
```

The installation system defaults to the broadcast address which is formed by taking your IP address and setting those bits to one which are zero in your net mask. This “Last bits set to one” is by far the most common convention used for broadcast addresses but it is possible that your LAN agrees to a different convention. Consult your network administrator and select this option accordingly.

```
+------------------+ Choose the Gateway +-------------------+
| Internet. Is there a gateway system on your network?      |
|                     <Yes>       <No>                      |
```

A gateway forwards network traffic to and from your local physical Ethernet to other networks, most notably to the Internet. If you only have a local Ethernet network on your site it is possible that you don’t need a gateway as all network traffic happens using the same physical network media (cables, repeaters).

In the usual (Internet-connected) case there is one IP address assigned to you by your network administrator where all computers in your LAN should “pour” network traffic destined to remote computers. Type this IP address in the dialog below:

```
+--------------+ Choose the Gateway Address +---------------+
| What is your IP gateway address?                          |
| 193.166.42.254__________________________________________ |
|                     <Ok>        <Cancel>                  |
```

There are three basic ways to supply name services (mapping of host names to IP numbers) to your FS computer. In principle you could run a copy of a name server on the FS computer but usually this is an overkill. We thus don't recommend using option 1.

In most cases there is another computer available which offers DNS name services to computers in your LAN. (The name server need not be on the same physical LAN as your FS computer, you can access name services via a gateway, the same gateway you most probably configured a moment ago.)

If you have a small local Ethernet only it may be applicable not to have and use a name server at all. In this case select option 3. You will have to manually create and edit a "`/etc/hosts`" file later.

```
+----------------------+ Choose the DNS +-----------------------+
         | Where is the DNS (Domain Name Service) server?
         |  +---------------------------------------------------------+
         |  | 1: System eclipse will be its own DNS server.           |
         |  | 2: Another system will be the DNS server for eclipse.   #
         |  | 3: There will be no DNS server.                         |
         |  +---------------------------------------------------------+
         +------------------------------------------------------------+
```

Use the "down arrow" key to highlight option 2 and press "Enter". You will get the dialog for specifying the IP addresses of name server(s).

```
+----------------+ Choose the DNS Addresses +-----------------+
| 193.166.42.250 193.166.42.251_______________________________ |
|                     <Ok>        <Cancel>                     |
```

Type in the name server IP addresses (1–5) separated by spaces. Press "Enter".

```
+---------------------+ Confirmation +-----------------------+
| IP Address:           193.166.42.131                       |
| Netmask:              255.255.255.0                        |
| Network Address:      193.166.42.0                         |
| Broadcast Address:    193.166.42.255                       |
| Gateway Address:      193.166.42.254                       |
| Nameserver Addresses: 193.166.42.250 193.166.42.251        |
|                                                            |
| Correct?                                                   |
|                     <Yes>       <No>                       |
+------------------------------------------------------------+
```

Please double-check the list shown on-screen against the list you got from your network administrator. If you notice mistakes, press "Tab" to highlight "No" and press "Enter" to return back to the IP address dialog. Otherwise select "Yes" to continue.

```
+-----------------+ Choose Network Interface +------------------+
         |  | Ethernet or Fast Ethernet              : eth0        #
```

As the final step in configuring the network you need to select which network device / interface type you will use. This defaults to the first Ethernet board you have installed—accept the default with "Enter".

5.6 Installing the Base System

Because you have now configured your network board you can choose to download rest of the files either from the Internet or from "FS Linux 3 CD-R Disk 2/2" using a CD-ROM drive. Select the default main menu option:

```
|          | Next      : Install the Base System                #          |
```

Select either "cdrom" or "nfs" in the list of possible installation media.

```
+------------+ Select Installation Medium +-------------+
| Please select the medium you will use to install the  |
| system.                                               |
|     +-----------------------------------------+     |
|     | /dev/fd0  : First floppy drive           #     |
|     | /dev/fd1  : Second floppy drive          |     |
|     | cdrom     : CD-ROM drive                 |     |
|     | harddisk  : filesystem on the hard disk  |     |
|     | mounted   : already mounted filesystem   |     |
|     | nfs       : NFS (network filesystem)     |     |
|     |                                          |     |
|     +-----------------------------------------+     |
|                      <Cancel>                         |
+-------------------------------------------------------+
```

5.6.1 Installing the Base System from CD-ROM

Put the "FS Linux 3 Disk 2/2" into your CD-ROM drive. (Yes, disk 2, not 1!) Select "cdrom":

```
+------------+ Select Installation Medium +-------------+
|     | cdrom     : CD-ROM drive                 |     |
```

You will be prompted for the name of your CD-ROM drive. Most SWT systems have shipped with CD-ROM drive being "`/dev/hda`". If you attach an external SCSI CD-ROM drive to your TAG (or SWT) system it will be called "`/dev/scd0`".

```
+---------------+ Choose Debian archive path +----------------+
| ._________________________________________________________ |
|                     <Ok>       <Cancel>                    |
```

The contents of the Debian archive directory "`/pub/fs-debian`" has been copied to the root directory of the CD-R disk. Thus you should replace the default "debian" with "`.`" (the main CD-ROM directory itself) when asked where the Debian archive is.

5.6.2 Installing the Base System Using NFS

Select "nfs":

```
+------------+ Select Installation Medium +-------------+
|     | nfs       : NFS (network filesystem)     |     |
```

Enter the NFS volume name for FS Linux 3 archive as follows:

```
+--------------+ Choose Debian NFS filesystem +---------------+
| atri.gsfc.nasa.gov:/home/ftp/pub___________________________ |
|                     <Ok>        <Cancel>
```

The volume name gives you read-only NFS access to the FS Linux 3 files which are also available using anonymous FTP to "`ftp://atri.gsfc.nasa.gov/pub`" or "`ftp://kurp-ftp.hut.fi/pub`".

```
+---------------+ Choose Debian archive path +----------------+
| /fs-debian_________________________________________________ |
|                     <Ok>        <Cancel>                    |
```

The Debian archives are in "`/pub/fs-debian`" in all servers. Because "`/pub`" is part of the NFS volume name you need only enter "`/fs-debian`" here.

5.6.3 Common Base System Questions for both NFS and CD-ROM

You get to choose which of the alternative base systems you wish to install onto your hard disk.

```
+-----------------------+ Select Archive path +------------------------+
    | Please select the directory containing a file base2_0.tgz that you   |
    | will use to install the Base System.                                 |
    |  +---------------------------------------------------------+     |
    |  | list     : Choose from a list of all Archive paths          |     |
    |  | manually : Enter the directory containing the Archive files |     |
    |  +---------------------------------------------------------+     |
    |                              <Cancel>                              |
    +----------------------------------------------------------------------+
```

Choosing "manually" speeds up the process, autodetecting with the "list" option takes a couple of minutes when using NFS servers. If you choose "manually" you will need to type in "`base2_0.tgz`" to access the default FS3 set of base files via the symbolic link on archive top level.

```
+-----------------------+ Select Archive path +------------------------+
    |  | list     : Choose from a list of all Archive paths          |     |
```

If you select "list" you will be shown alternative "`base2_0.tgz`" files available in the archive. (You may see one or more of them, depending on updates on the archive.) Use the arrow keys to highlight an archive with:

1. The string "`-fs3`" appended in its name.
2. Has the latest date stamp of the (possibly many) "`-fs3`" files available.

```
+--------------------+ Select Archive path +---------------------+
| Please select the directory that you will use to install the   |
| Base System.                                                   |
|                                                                |
|  +----------------------------------------------------+    |
|  | /instmnt/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3     #    |
|  +----------------------------------------------------+    |
|                           <Cancel>                             |
+----------------------------------------------------------------+
```

Press “Enter” to start extracting files from the archive onto your hard disk.

```
+---------------------+ Please Wait +----------------------+
| The Base System is being extracted from                  |
| /instmnt/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3/base2_ |
| .tgz...                                                  |
+----------------------------------------------------------+
```

This process takes about two hours using a CD-ROM drive and it may take several hours using NFS depending on the speed of your Internet connection to GSFC.

5.7 Configuring the Base System

After all files have been extracted from the “`base2_0.tgz`” archive you will need to configure them. Select the default action in the main menu:

```
|          | Next      : Configure the Base System              #          |
```

A list of timezones (and directories containing more time zone descriptions) is presented.

```
+----------------------+ Select Timezone +----------------------+
| Please select the appropriate location in the world in which   |
| you live.                                                      |
|                                                                |
|    Timezones:                      Directories:                |
|    +----------------+              +---------------+           |
|    | CET            #              | ..            #           |
|    | CST6CDT        |              | Africa        |           |
|    | Cuba           |              | America       |           |
|    | EET            |              | Antarctica    |           |
|    | EST            |              | Arctic        |           |
|    | EST5EDT        |              | Asia          |           |
|    | Egypt          |              | Atlantic      |           |
|    | Eire           |              | Australia     |           |
|    | Factory        |              | Brazil        |           |
|    +----------------+              | Canada        |           |
|                                    +---------------+           |
|                                                                |
|                              <Cancel>                          |
+----------------------------------------------------------------+
```

```
<Up>/<Down> between elements | <Enter> select zone or change dir | <Tab> next
```

(Use “Tab” to switch between the two lists if you accidentally move the highlight to the “Directories:“ list.) Use “down arrow” key to reach “UTC” in the list of “Timezones:“.

```
+----------------------+ Select Timezone +----------------------+
|    Timezones:                      Directories:                |
|    +----------------+              +---------------+           |
|    | UCT            |              | ..            #           |
|    | UTC            |              | Africa        |           |
|    | Universal      |              | America       |           |
```

When "UTC" is highlighted, press "Enter". (If you absolutely want you can run your FS computer using a local time zone. However, using "UTC" as your local time zone is strongly recommended.) A note about adjusting your computer CMOS clock to UTC is presented.

```
+-----------------+ Timezone Configuration. +-----------------+
| Unix system clocks are generally set to GMT (also known as  |
| ...                                                          |
|                          <Continue>                          |
+-------------------------------------------------------------+
```

Continue with "Enter". You *must* run your FS computer with its CMOS clock set to UTC and not local time.

```
+-----------------+ Timezone Configuration. +-----------------+
| To have your new Debian Linux system use GMT answer 'yes'   |
| and reset the clock after you have Debian Linux installed.  |
| Current system time is  Fri Feb 19 10:36:42 1999            |
| Is your time set to GMT?                                    |
|                       <Yes>       <No>                      |
```

You must select "Yes" here and set your computer clock to UTC in BIOS setup screens.

5.8 Making Linux Bootable

The installation system proceeds to install LILO, the Linux Loader onto your hard disk to make Linux boot automatically and directly from the hard disk. Select the default main menu option:

```
|      | Next      : Make Linux Bootable Directly From Hard Disk    #        |
```

Unfortunately this document does not have screen captures of installing LILO because the FS computer used to make these screens had an extraneous IDE hard disk. "`/etc/lilo.conf`" had to be hand-edited to get LILO install correctly.

```
+-------------------------+ Problem +-------------------------+
|                                                             |
| With your current configuration, LILO will try to boot from |
| your first SCSI disk, but your system has also a master IDE |
| disk at the primary IDE controller. It's possible that your |
| BIOS doesn't support that.                                  |
|                                                             |
| Do you want to install LILO anyway?                         |
|                                                             |
|                       <Yes>       <No>                      |
+-------------------------------------------------------------+
```

"No" was selected.

```
+-------------------------+ Problem +-------------------------+
|                                                             |
| Please boot the system using the rescue boot method and     |
| configure LILO manually.                                    |
|                                                             |
|                          <Continue>                         |
+-------------------------------------------------------------+
```

This screen tells you that you can use the "resc1440" floppy to boot your newly-installed hard disk system in the case installing LILO fails. See the section 6 on page 27 for a description how to do this.

5.9 Rebooting the System

The installation system will default to offering making a boot floppy. This is not really necessary since you can use the "resc1440" floppy to boot a system which refuses to boot from the hard disk. Press "down arrow" key to get to the option "Reboot the System".

```
   |       | Alternate1: Reboot the System                            |         |
```

Follow the instructions on screen to remove all floppies and CD-R disks from all drives and confirm the reboot by selecting "Yes".

```
+-------------------+ Reboot the system? +--------------------+
|                     <Yes>       <No>                        |
```

The screen will show shutdown messages and reset the computer. (If automatic reset doesn't bring you back to the standard BIOS start-up screens, press the "Reset" button in your computer.)

6 First Boot from the Hard Disk

After BIOS messages you should briefly see the "LILO" prompt text and after that the standard kernel device detection messages.

Should it happen that LILO does not boot your hard disk, do the following:

1. Put in the "resc1440" floppy and boot it.
2. When it presents the "`boot:`" prompt, enter "`rescue root=/dev/sda1`".

The kernel file is loaded from the floppy and started up, but the system continues to load device driver modules and initialization files from the hard disk root file system just prepared in "`/dev/sda1`".

6.1 Setting the "`root`" Password

After the first boot you will be directly dropped into an automatic "finish installation" script. (At this time your "`root`" account has no password. Please don't leave/forget the computer connected to the Internet in this state for a long period.)

```
  Before proceeding, you need to set a password for 'root', the system
administrative account.  (The root account is the account that you're
currently using).  The root password shouldn't be easy to guess, and
it shouldn't be a word found in the dictionary, or a word that could
be easily associated with you, like your middle name.  A good password
will contain a mixture of letters, numbers and punctuation and will be
changed at regular intervals.  The root password is changed by running
the 'passwd' program as root.
  Why such caution?  The root account doesn't have the restrictions that
normal user accounts have.  root can read, modify or erase any file on
the system, change the ownerships and permissions of any file, and run
programs that require special privileges (such as programs that format
the hard disk!).  A malicious or unqualified user with root access can
```

```
have disastrous results.
  For the same reason, it's a bad idea to use the root account for normal
day-to-day activities, such as the reading of electronic mail, because
even a small mistake can result in disaster.  As soon as you're logged
in as root, you should create a normal user account.  You should use the
normal user account whenever you're not maintaining the system.  (How to
do this will be described in a minute.)

Changing password for root
Enter the new password (minimum of 5, maximum of 8 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
```

Type a new password for the "root" account in your FS computer. Please select a secure password with lower and upper case letters, digits, and special punctuation characters of at least 6–8 characters. The "passwd" command (used in the above to do the change) will warn you about especially weak and short passwords but since you are running as "root" you can still force a bad choice here. Having a strong password is the first and foremost measure against intruders in Internet environment.

```
Re-enter new password:
```

Since the password is not echoed on screen you will be prompted to enter it a second time. The password is only accepted and changed if you enter it twice with the same characters in it. If you make a typo you will be asked again with the "New password:" prompt.

```
Password changed.

As mentioned above, it is a bad idea to use the root account except
in cases that you need special privileges (such as when you need to
mount a file system). Now you may create a normal user account.

Note that you may create it later (as well as any additional account)
by typing 'adduser <username>' as root, where <username> is an
(eight-character or less) user name, like 'imurdock' or 'rms'.

Shall I create a normal user account now? [Y/n] n
```

You need not create any "normal" user accounts now since both "oper" and "prog" have been pre-created in the "base2_0.tgz" file you used to install the bulk of the system. (Even if they were not there already, the "fsadapt" procedure described in section 7 on page 43 would take care of creating these user accounts.)

```
Configure shadow passwords

Shadow passwords make your system more secure because nobody is
able to view even encrypted passwords.  Passwords are stored in
a separate file that can only be read by special programs.  We
recommend the use of shadow passwords.  If you're going to use
NIS you could run into trouble.

Shall I install shadow passwords? [Y/n] n
```

Shadow passwords would make your system marginally more secure against cracking passwords from a "stealed" "/etc/passwd" file but they would prevent presupplied "oper" and "prog" user accounts from working. Also a few of the utilities in Linux still are not "shadow password aware".

```
It seems your system doesn't need PCMCIA. It was installed with the rest
of the kernel. I will remove it now.

Shall I remove the pcmcia packages? [Y/n] y
```

PCMCIA cards are commonly used in laptop computers. Unless you are installing FS Linux 3 on a laptop (obviously for non-FS purposes!) you can safely remove PCMCIA support from the system.

6.2 Selecting "FS3_Standard" or "FS3_Full" Software Set

The "`base2_0.tgz`" archive contains basically the "FS3_Standard" selection of Debian software packages which are definitely enough for running the FS and doing many other daily computer activities such as browsing the WWW, editing files, and so on. If you have a large hard disk you may want to upgrade to a full set of packages featuring "xephem" and IRAF, among others.

```
Now you may choose one of several selections of packages to be installed.
If you prefer to select one by one which packages to install on the system
you may skip this step, else you may skip the "Select" step later when I
run the 'dselect' program.

Do you want to skip this step? [y/N] n
```

In the "profile" menu select either "FS3_Full" or "FS3_Standard". (If you are not sure which one to select, highlight "FS3_Standard".)

```
Debian Installation

+--------------------------+ Please Select Profile +---------------------------+
| Please select the kind of installation you want:                             |
|                                                                              |
|Admin         Administrator box (network tools, Perl, ...) [~ 305M]           |
|Basic         standalone system without development tools [~ 25M]             |
|Devel_comp    Huge development environment (Perl, Python, C, ...) [~ 404M]    |
|Devel_std     Standard C development environment [~ 340M]                     |
|Dialup        Home machine (graphics, sound, X, ...) [~ 420M]                 |
|FS3_Full      A full FS/Debian/Linux 3 (hamm 2.0 r2) system [~ 600M]          |
|FS3_Standard  A standard FS/Debian/Linux 3 (hamm 2.0 r2) system [~ 400M]      |
|Server_comp   Server (add. Mailinglist, Backup, News, Samba, Squid) [~ 50M]   |
|Server_std    Std. Server (Ftp, Web, DNS, NIS, POP) [~ 40M]                   |
|Standard      Compiler, printing, emacs and networking [~ 89M]                |
|Work_sci      Scientific Workstation (Tex, math, plot, X, ...) [~ 500M]       |
|Work_std      Standard Workstation (TeX, graphics, Internet, X, ...) [~ 382M] |
|Custom        Select the tasks you will perform with this system.             |
|                                                                              |
|                                                                              |
|                     <Ok>                         <Cancel>                    |
|                                                                              |
+------------------------------------------------------------------------------+
```

Press "Enter" to continue.

6.3 Setting Passwords for "`oper`" and "`prog`"

At this stage there is the first opportunity to log in as "`root`" user in a second virtual console. Switch to it with "Ctrl-Alt-F2". You will see a normal login prompt "`login:`". Log in as "`root`" with the password you selected a moment ago in section 6.1 on page 27.

Now you have a perfect opportunity to check the results of bad block scans of your hard disk. Use the following commands:

```
dumpe2fs -b /dev/sda1
dumpe2fs -b /dev/sda3
```

If these commands output nothing your disks don't have any defects and you may safely continue doing "`dd`" disk-to-disk backups. If you get bad block numbers listed instead, please contact Ari ("`amn@kurp.hut.fi`") and Ed ("`weh@vega.gsfc.gov`") to assess what you should do.

After completing loading "`base2_0.tgz`" it is likely that the user accounts needed by the FS have been created but that there is no password set for them. Please use the following commands to set passwords so that you can log in as "`oper`" to complete FS installation.

```
eclipse:~/fsadapt# passwd oper
Enter new password:
Re-enter new password:
Password changed.
```

The behavior of the "`passwd`" command is explained in the beginning of section 6 on page 27. Repeat the command for "`prog`".

Switch back to the main installation screen with "Ctrl-Alt-F1". (Leave the session in "Ctrl-Alt-F2" virtual console open. You may want to switch back to it to check for disk space with "`df`", for example.)

If you selected "FS3_Standard" in the menu, continue in section 6.4 below. If you wish to expand to using the full "FS3_Full" software set, please see the longer transcript in section 10.9 on page 84. (It is most probably easier to follow the "FS3_Standard" instructions below for the full "FS3_Full" set, too. Only refer to section 10.9 when you face questions/prompts not covered by "FS3_Standard" instructions below.)

6.4 Updating Software in "FS3_Standard" Software Set Expanded from "`base2_0.tgz`"

Regardless of the software set selected in the previous step you will need to update a couple of software packages. The versions in "`base2_0.tgz`" have been superseded by late updates (for example a security fix for "wu-ftpd"). It is easiest in the long run to set up the Debian automatic update system "`dselect`" correctly at every site.

```
I'm now going to start the 'dselect' program.  'dselect' is used to select
which of the hundreds of packages included with Debian GNU/Linux to install
on the system.  (It is also used for general maintenance of the packages on
the system, but you'll be primarily interested in installation now.)

Because you have chosen already a preselected set of packages you should
skip the [S]elect step. Just use [A]ccess, [U]pdate and go directly to
[I]nstall afterwards.

Press <ENTER> to continue:
```

Follow the instructions given on the screen above, that is, in "`dselect`" go through the menu options "0) Access", "1) Update", and "3) Install".

6.4.1 Updating a Non-FS Debian 2.0r5 Installation

(If you have installed the standard comprehensive "FS3_Standard" "base2_0.tgz" archive you should skip this section.)

xxx

6.4.2 "dselect" —"1) Update"

The following is the main menu screen of Debian package management system "dselect".

```
Debian Linux 'dselect' package handling frontend.

 * 0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

Version 1.4.0.23.2 (i386 elf).  Copyright (C) 1994-1996 Ian Jackson.   This is
free software; see the GNU General Public Licence version 2 or later for
copying conditions.  There is NO warranty.  See dselect --licence for details.
```

Select "0) Access" to set the type and location of the Debian package archive to use for updates. We recommend that you always use the "ftp" access method, for both CD-ROM and "real" anonymous FTP access.

```
dselect - list of access methods
  Abbrev.        Description
  cdrom          Install from a CD-ROM.
  nfs            Install from an NFS server (not yet mounted).
  harddisk       Install from a hard disk partition (not yet mounted).
  mounted        Install from a filesystem which is already mounted.
  mountable      Install from a partition named in fstab
  floppy         Install from a pile of floppy disks.
* ftp            Install using ftp.
  http           Install using http:, ftp:, and file: URLs.



Access method 'ftp'.
ftp - Install using ftp.

Installation using ftp, you must know a ftp site and the correct directory
for a debian distribution.

[ Note: this is not part of the standard dpkg package and is more likely to
```

```
produce errors due to differences between the Packages files that are
downloaded during the Update phase and what the archive actually contains
during the Install phase.  This also means that the Update phase should be
run farily frequently to give a more accurate picture of the archive to
explanation of ftp  -- 83%, press d for more.
```

Press “Enter” to start configuring FTP access.

6.4.3 Using CD-ROM to Update

If you are using CD-R disks, please get back to “Ctrl-Alt-F2” “root” console session. Insert the “FS Linux 3 Disk 1/2” CD-R disk into your CD-ROM drive and mount it:

```
mount /cdrom
(if it fails: mount -o ro -t iso9660 /dev/cdrom /cdrom)
```

You have also already set passwords for “`oper`” and “`prog`”, yes? You will need the “`oper`” account to provide “local” FTP access to the “`/cdrom`” directory.

Supply the following to the FTP questions asked by “dselect”:

```
Enter ftp site [kurp-ftp.hut.fi]: localhost
Use passive mode [y]:

Enter username [ftp]: oper

If you are using anonymous ftp to retrieve files, enter your email
address for use as a password.  Otherwise enter your password,
or "?" if you want dpkg-ftp to prompt you each time.

Enter password [root@new-fs.kurp.hut.fi]: <oper's password>
Enter debian directory [/pub/test-debian]: /cdrom
Go through an authenticated FTP proxy [n]:

Note: order here is important.  Package files are scanned in order so
later distributions will override earlier ones.

So put stable before unstable.

Enter space seperated list of distributions to get
[dists/stable/main dists/stable/non-free dists/stable/contrib local]:
```

The default shown above is correct so just pressing “Enter” is usually enough. If the default differs from the list above please type in “dists/stable/main dists/stable/non-free dists/stable/contrib local”.

```
Enter directory to download binary package files to
(relative to /var/lib/dpkg/methods/ftp/)
[debian]:

Using FTP to check directories...(stop with ^C)

Connecting to kurp-ftp.hut.fi...
Login as ftp...
Setting transfer mode to binary...
Cd to '/pub/fs-debian'...
Checking dists/stable/main/binary-i386...
  Error...
Checking dists/stable/non-free/binary-i386...
```

```
  Error...
Checking dists/stable/contrib/binary-i386...
  Error...
Checking local/binary-i386...
  Error...
Closing ftp connection...
```

The error messages you see about missing files are normal. The “FS Linux 3 Disk 1/2” contains only “`dists/stable/main`”, not the others because they wouldn’t fit.

6.4.4 Updating using Anonymous FTP to “`kurp-ftp.hut.fi`”

You will see the following instructions from “`dselect`”.

```
...
in and place to download the binary package files to (relative to
/var/lib/dpkg/methods/ftp).

Supply "?" as a password to be asked each time you connect.

Eg:      ftp site: ftp.debian.org
          passive: y
         username: anonymous
         password: root@eclipse.kurp.hut.fi
          ftp dir: /debian
    distributions: dists/stable/main dists/stable/contrib
     download dir: debian

If you are using a non-us mirror, you may want to try something like
"../debian-non-US/hamm" or "dists/stable/non-us" in distributions.

You may have to use an authenticated FTP proxy in order to reach the
FTP site:

Eg:  use auth proxy: y
              proxy: proxy.isp.com
      proxy account: root
     proxy password: ?

Enter ftp site [kurp-ftp.hut.fi]:
```

Just pressing “Enter” will be sufficient since the default shown above is correct.

```
Use passive mode [y]:

Enter username [ftp]:

If you are using anonymous ftp to retrieve files, enter your email
address for use as a password.  Otherwise enter your password,
or "?" if you want dpkg-ftp to prompt you each time.

Enter password [root@new-fs.kurp.hut.fi]: root@eclipse.kurp.hut.fi
```

Please enter a valid email address of yours.

```
Enter debian directory [/pub/test-debian]: /pub/fs-debian
Go through an authenticated FTP proxy [n]:

Note: order here is important.  Package files are scanned in order so
later distributions will override earlier ones.
```

```
So put stable before unstable.

Enter space seperated list of distributions to get
[dists/stable/main dists/stable/non-free dists/stable/contrib local]:
```

The default shown above is correct so just pressing "Enter" is usually enough.

```
Enter directory to download binary package files to
(relative to /var/lib/dpkg/methods/ftp/)
[debian]:

Using FTP to check directories...(stop with ^C)

Connecting to kurp-ftp.hut.fi...
Login as ftp...
Setting transfer mode to binary...
Cd to '/pub/fs-debian'...
Checking dists/stable/main/binary-i386...
Checking dists/stable/non-free/binary-i386...
Checking dists/stable/contrib/binary-i386...
Checking local/binary-i386...
Closing ftp connection...
```

6.5 "dselect" —"1) Update"

Select "1) Update":

```
Debian Linux 'dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
 * 1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.
```

"dselect" will download complete package lists describing the latest state of the archive, i.e. what packages are available.

```
Getting Packages files...(stop with ^C)

Connecting to kurp-ftp.hut.fi...
Login as ftp...
Setting transfer mode to binary...
Cd to '/pub/fs-debian'...

Checking for Packages file... dists/stable/main/binary-i386/Packages.gz
 Already up-to-date; skipping.

Checking for Packages file... dists/stable/non-free/binary-i386/Packages.gz
 Already up-to-date; skipping.

Checking for Packages file... dists/stable/contrib/binary-i386/Packages.gz
 Already up-to-date; skipping.

Checking for Packages file... local/binary-i386/Packages.gz
 Getting Packages file from local/binary-i386...
```

```
It is a good idea to clear the available list of old packages.
However if you have only downloaded a Package files from non-main
distributions you might not want to do this.

Do you want to clear available list [y]: y
```

What exactly is being cleared from "`dselect`" internal list of packages? This option *never* clears information of packages which are currently installed on your system. It only deletes old package information of packages which *could* be installed with "`dselect`" but which are currently *not* installed. Answering "n" here is useful if you are "visiting" an FTP server which doesn't hold a complete Debian distribution to get additional packages.

```
Clearing...
Updating available packages info, using Packages.dists_stable_main.
Information about 1525 package(s) was updated.
Updating available packages info, using Packages.dists_stable_non-free.
Information about 228 package(s) was updated.
Updating available packages info, using Packages.dists_stable_contrib.
Information about 102 package(s) was updated.
Updating available packages info, using Packages.local.
Information about 6 package(s) was updated.
```

6.5.1 Updating List of Available Packages Using CD-ROM

If you are using CD-R disks there is an additional step in "1) Update". The update above only manages to update information from "Disk 1/2", that is, it results in:

```
Clearing...
Updating available packages info, using Packages.dists_stable_main.
Information about 1525 package(s) was updated.
Updating available packages info, using Packages.dists_stable_non-free.
  Error...
Updating available packages info, using Packages.dists_stable_contrib.
  Error...
Updating available packages info, using Packages.local.
  Error...
```

You need to again go to the second virtual screen with "Ctrl-ALt-F2" and change CD-R disks as follows:

```
umount /cdrom
eject
<remove Disk 1/2 and put in Disk 2/2>
mount /cdrom
```

Then invoke "1) Update" again from the main "`dselect`" menu. Only this time "accumulate" the information on Disk 2/2 by answering "n" to the following question:

```
Do you want to clear available list [y]: n
```

6.6 "`dselect`"—"2) Select"

Select "2) Select":

```
Debian Linux `dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
 * 2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.
```

You will see a help screen describing what you can do to add, remove, and update software pacakges.

```
Help: Introduction to package list
Welcome to the main package listing.  Please read the help that is available !

You will be presented with a list of packages which are installed or available
for installation.  You can navigate around the list using the cursor keys,
mark packages for installation (using `+') or deinstallation (using `-').

Packages can be marked either singly or in groups; initially you will see that
the line `All packages' is selected.  `+', `-' and so on will affect all the
packages described by the highlighted line.  Use `o' to change the order of the
list (this also changes which kinds of group selections are possible).

(Mainly for new installations:) Standard packages will be requested by default.
Use capital `D' or `R' key to override this - see the keybindings help screen.

Some of your choices will cause conflicts or dependency problems; you will be
given a sub-list of the relevant packages, so that you can solve the problems.

When you are satisfied with your choices you should press Return to confirm
your changes and leave the package listing.  A final check on conflicts and
dependencies will be done - here too you may see a sublist.

Press Space to leave help and enter the list; press `?' at any time for help.

? = help menu    Space = exit help    . = next help    or a help page key
```

Press “space” to get rid of the help screen above. You will be shown a list of packages, sorted in order “newly available”, “updated”, “installed”, and “available” packages.

```
dselect - main package listing (avail., priority)    mark:+/=/- verbose:v help:?
EIOM Pri Section  Package      Inst.ver    Avail.ver   Description
    - All packages -
    --- Newly available packages ---
    ----- New Unclassified packages -----
    ------- New Unclassified packages without a section -------
  n_ ?   ?        ssh-askpass  <none>      1.2.26-1.2  under X, asks user for a
    --- Updated packages (newer version is available) ---
    ----- Updated Standard packages -----
    ------- Updated Standard packages in section net -------
 *** Std net      lpr          5.9-29      5.9-29hamm3 BSD lpr/lpd line printer
 *** Std net      netstd       3.07-2hamm. 3.07-2hamm. Networking binaries and d
    ------- Updated Standard packages in section web -------
All packages
The line you have highlighted represents many packages; if you ask to
install, remove, hold, &c it you will affect all the packages which match
the criterion shown.
```

```
If you move the highlight to a line for a particular package you will see
information about that package displayed here. You can use 'o' and 'O' to
change the sort order and give yourself the opportunity to mark packages in
different kinds of groups.


description
```

Move the highlight with "down arrow" and "up arrow "keys. When on top of "ssh-askpass", add this package by pressing the "+" plus key. Search for a package called "junkbuster" by typing "/" (slash) and "`junkbuster`" and "Enter". You will see it highlighted. Remove the package (as it contains a potential network security problem) by pressing the "_" underscore key.

```
dselect - main package listing (avail., priority)    mark:+/=/- verbose:v help:?
EIOM Pri Section  Package      Inst.ver    Avail.ver   Description
    ------- Updated Optional packages in section web -------
 **_ Opt web      junkbuster   2.0-0.1     2.0-3.2     The Internet Junkbuster!
    ----- Updated Unclassified packages -----
    ------- Updated Unclassified packages without a section -------
 *** ?   ?        ssh          1.2.22-1    1.2.26-1.2  a secure replacement for
    --- Up to date installed packages ---
    ----- Up-to-date Required packages -----
    ------- Up-to-date Required packages in section base -------
 *** Req base     adduser      3.8         3.8         Add users and groups to t
 *** Req base     ae           962-21      962-21      Anthony's Editor -- a tin
 *** Req base     base-files   2.0         2.0         Debian Base System Miscel
adduser      installed;  install (was: install).  Required
adduser - Add users and groups to the system.

Adduser can create new users and groups and add existing users to existing
groups.

Adding users with adduser is much easier than adding them by hand. Adduser
will choose appropriate UID and GID values, create a home directory, copy
skeletal user configuration, allow you to set an initial password and
gecos, and optionally run a custom script.

description of adduser
```

Now that you have marked "ssh-askpass" for installation and "junkbuster" for deinstallation you are ready to continue. Accept all selections in the package "2) Select" listing shown by pressing "Enter". You will get a "dependency conflict" help screen:

```
Help: Introduction to conflict/dependency resolution sub-list
Dependency/conflict resolution - introduction.

One or more of your choices have raised a conflict or dependency problem -
some packages should only be installed in conjunction with certain others, and
some combinations of packages may not be installed together.

You will see a sub-list containing the packages involved.  The bottom half of
the display shows relevant conflicts and dependencies; use 'i' to cycle between
that, the package descriptions and the internal control information.

A set of 'suggested' packages has been calculated, and the initial markings in
this sub-list have been set to match those, so you can just hit Return to
accept the suggestions if you wish.  You may abort the change(s) which caused
the problem(s), and go back to the main list, by pressing capital 'X'.

You can also move around the list and change the markings so that they are more
```

```
like what you want, and you can 'reject' my suggestions by using the capital
'D' or 'R' keys (see the keybindings help screen).  You can use capital 'Q' to
force me to accept the situation currently displayed, in case you want to
override a recommendation or think that the program is mistaken.

Press Space to leave help and enter the sub-list; remember: press '?' for help.

? = help menu    Space = exit help    . = next help    or a help page key
```

Read the help to get an idea what can be done and press "Space" to get rid of the help screen. You will be shown a "narrowed" recursive package list which shows only the offending packages.

```
dselect - recursive package listing                 mark:+/=/- verbose:v help:?
EIOM Pri Section  Package      Description
 *** ?   ?        ssh          a secure replacement for rlogin, rsh, and rcp
  _* Xtr libs     gmp2         Multiprecision arithmetic library









ssh          installed;  install (was: install).  Unclassified
ssh depends on gmp2 (>= 2.0.2)










interrelationships affecting ssh
```

The screen above shows that "`ssh`" requires now a library package called "`gmp2`" which was not marked for installation. Now in the recursive listing "`dselect`" has automatically marked it (as if you had pressed "+" on top of its line). Accept this by pressing "Enter" to acknowledge the recursive list screen. (In the general case you can make changes in the recursive listing before accepting it with "Enter".) Since all conflicts have been resolved you will be returned to the "dselect" main menu.

```
Debian Linux 'dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
 * 3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.
```

Select "3) Install" to start downloading the updates using FTP (either to a remote server or to your local FTP server serving the "`/cdrom`" directory).

```
Processing status file...
```

```
Processing Package files...
 dists_stable_main...
 dists_stable_non-free...
 dists_stable_contrib...
 local...

Constructing list of files to get...
want: dists/stable/main/binary-i386/text/ghostview_1.5-19.deb (100k)
want: local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb (39k)
want: dists/stable/main/binary-i386/net/netstd_3.07-2hamm.5.deb (602k)
want: dists/stable/main/binary-i386/admin/pppconfig_1.1.deb (14k)
want: dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb (103k)
want: dists/stable/main/binary-i386/tex/bibtool_2.43-1.2.deb (251k)
want: dists/stable/main/binary-i386/web/lynx_2.8-2.3.deb (635k)
want: local/binary-i386/ssh_1.2.26-1.2_i386.deb (419k)
want: dists/stable/main/binary-i386/net/lpr_5.9-29hamm34.deb (74k)
want: dists/stable/main/binary-i386/net/wu-ftpd-academ_2.4.2.16-12.2.deb (123k)

Approximate total space required: 2360k
Available space in debian: 512588k
Do you want to select the files to get [n]:
```

Usually you will want to download all the files “dselect” has determined it needs to make your system up-to-date according to selections in “2) Select” package list. Press “Enter” to accept the default answer. If you answer “y” here you will have to acknowledge each file with “y” or “n”.

```
Do you want to download the required files [y]:
```

This is the last chance to regret before starting to download pacakge files from the FTP server. Press “Enter” to start downloading.

```
Downloading files... use ^C to stop
Connecting to kurp-ftp.hut.fi...
Login as ftp...
Setting transfer mode to binary...
Cd to '/pub/fs-debian'...
getting: dists/stable/main/binary-i386/net/lpr_5.9-29hamm34.deb (75726)
getting: local/binary-i386/ssh_1.2.26-1.2_i386.deb (428458)
getting: dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb (104798)
getting: dists/stable/main/binary-i386/net/netstd_3.07-2hamm.5.deb (615434)
getting: local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb (39848)
getting: dists/stable/main/binary-i386/net/wu-ftpd-academ_2.4.2.16-12.2.deb (125
786)
getting: dists/stable/main/binary-i386/admin/pppconfig_1.1.deb (13654)
getting: dists/stable/main/binary-i386/text/ghostview_1.5-19.deb (102066)
getting: dists/stable/main/binary-i386/web/lynx_2.8-2.3.deb (649606)
getting: dists/stable/main/binary-i386/tex/bibtool_2.43-1.2.deb (256536)

Processing downloaded files...(for corrupt/old/partial)
dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb
dists/stable/main/binary-i386/admin/pppconfig_1.1.deb
dists/stable/main/binary-i386/net/lpr_5.9-29hamm34.deb
dists/stable/main/binary-i386/net/netstd_3.07-2hamm.5.deb
dists/stable/main/binary-i386/net/wu-ftpd-academ_2.4.2.16-12.2.deb
dists/stable/main/binary-i386/text/ghostview_1.5-19.deb
dists/stable/main/binary-i386/tex/bibtool_2.43-1.2.deb
dists/stable/main/binary-i386/web/lynx_2.8-2.3.deb
local/binary-i386/ssh_1.2.26-1.2_i386.deb
local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb

Do you want to install the files fetched [y]:
```

If you are installing using CD-R, *do not* install the files yet! Select "n" here and go again back to "Ctrl-Alt-F2" second "root" virtual console session and change disks as described in section 6.4.3 on page 32. Run "3) Install" again to "download" additional package files from the second CD-R and then continue to "install the files fetched" with answering "y".

```
...
em.
Updating ftpd.8.gz (/usr/man/man8/ftpd.8.gz) to point to /usr/man/man8/wu-ftpd-a
cadem.8.gz.
Updating xferstats (/usr/sbin/xferstats) to point to /usr/sbin/xferstats.wu-ftpd
-academ.
Updating ftpconversions.5.gz (/usr/man/man5/ftpconversions.5.gz) to point to /us
r/man/man5/ftpconversions.wu-ftpd-academ.5.gz.
Updating ftpwho.1.gz (/usr/man/man1/ftpwho.1.gz) to point to /usr/man/man1/ftpwh
o.wu-ftpd-academ.1.gz.
Updating ftpwho (/usr/bin/ftpwho) to point to /usr/bin/ftpwho.wu-ftpd-academ.
Updating xferlog.5.gz (/usr/man/man5/xferlog.5.gz) to point to /usr/man/man5/xfe
rlog.wu-ftpd-academ.5.gz.
Updating ftphosts.5.gz (/usr/man/man5/ftphosts.5.gz) to point to /usr/man/man5/f
tphosts.wu-ftpd-academ.5.gz.
Updating ftpshut (/usr/sbin/ftpshut) to point to /usr/sbin/ftpshut.wu-ftpd-acade
m.
Updating ftpaccess.5.gz (/usr/man/man5/ftpaccess.5.gz) to point to /usr/man/man5
/ftpaccess.wu-ftpd-academ.5.gz.
Getting wu-ftp options from inetd.conf...()
Determining if you had an ftp service enabled...yes.
Removing old wu.ftpd* (since we replace it).
Disabling other ftp services.
Adding /usr/sbin/ftpd as your ftp daemon.

Do you want to set up or update an anonymous FTP account now? [n]
```

We don't recommend allowing anonymous FTP access to FS computers unless you really have to do so.

```
You can add an anonymous FTP account later using /usr/sbin/addftpuser
(see  addftpuser --help  for more information).

Setting up ghostview (1.5-19) ...

Setting up bibtool (2.43-1.2) ...
Setting up lynx (2.8-2.3) ...


Setting up bibtool (2.43-1.2) ...
Setting up lynx (2.8-2.3) ...
- Added new action 'view' for MIME type 'text/html'

Setting up ssh (1.2.26-1.2) ...
Generating 1024 bit host key.
Initializing random number generator...
Generating p:  .++ (distance 4)
Generating q:  ..++ (distance 14)
Computing the keys...
Testing the keys...
Key generation complete.
Your identification has been saved in /etc/ssh/ssh_host_key.
Your public key is:
1024 37 1249531442641997312412321271441936801632805008523603825184059528917161 38
156864814154246382262263379789929106361890764951932321541522576196453315431546 22
579460830546018644379745460669582813583957614120450671152245360488418484139384 99
353086014804397069113636365715036954009307223015013028899361379129743982714 21 ro
ot@eclipse
```

```
Your public key has been saved in /etc/ssh/ssh_host_key.pub

You should read the documentation and then configure /etc/ssh/ssh_config
and /etc/ssh/sshd_config to your sites needs and preferences.
Starting Secure Shell server: sshd.

Setting up ssh-askpass (1.2.26-1.2) ...

Do you wish to delete the installed package (.deb) files? [y]:
```

After installing and configuring the package files are no longer needed and can be deleted from the temporary directory "/var/lib/dpkg/methods/ftp" which was selected in step "0) Access". Those packages which have not been yet successfully installed (for instance because other packages have to be installed first) will not be removed. When you repeat the "3) Install" step again the files left in "/var/lib/dpkg/methods/ftp" will not be downloaded again.

```
Removing installed files...
deleting: dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb
deleting: dists/stable/main/binary-i386/admin/pppconfig_1.1.deb
deleting: dists/stable/main/binary-i386/net/lpr_5.9-29hamm34.deb
deleting: dists/stable/main/binary-i386/net/netstd_3.07-2hamm.5.deb
deleting: dists/stable/main/binary-i386/net/wu-ftpd-academ_2.4.2.16-12.2.deb
deleting: dists/stable/main/binary-i386/text/ghostview_1.5-19.deb
deleting: dists/stable/main/binary-i386/tex/bibtool_2.43-1.2.deb
deleting: dists/stable/main/binary-i386/web/lynx_2.8-2.3.deb
deleting: local/binary-i386/ssh_1.2.26-1.2_i386.deb
deleting: local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb

Do you want to remove debian directory? [n]:
```

This question refers to the temporary directory "/var/lib/dpkg/methods/ftp" used to store downloaded Debian package files. Usually there is no need to remove it.

```
Debian Linux 'dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
 * 4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.
```

It is a good idea to make sure all packages have been configured, select "4) Config".

```
running dpkg --pending --configure ...
```

All of them were already configured, so you can proceed to remove packages marked for deletion in "2) Select". Select "5) Remove".

```
running dpkg --pending --remove ...
(Reading database ... 34954 files and directories currently installed.)
Removing junkbuster ...
Stopping filtering proxy server: junkbuster.
dpkg - warning: while removing junkbuster, directory '/etc/junkbuster' not empty
 so not removed.
Purging configuration files for junkbuster ...
```

The above are normal package removal messages. The configuration files in "`/etc/junkbuster`" will also be removed in step "Purging configuration files for junkbuster ..." so the warning message is slightly misleading.

```
Debian Linux 'dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
 * 6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.
```

Quite from "dselect" by selecting "6) Quit". The process of finishing up installation completes and prompts you to log in as "`root`".

```
You may now login as 'root' at the  login:  prompt.  To create a normal
user account, you should run 'adduser' as root with a user name as an
argument.  For example, to create a user called "imurdock", you would
type this at the shell prompt: "adduser imurdock".

You may also take advantage of the multi-tasking features of Debian
GNU/Linux by pressing <Left Alt><Fn> to switch to a new "virtual
console", where n is the number of the virtual console to switch to.
For example, to switch to virtual console #3, you would press <Left
Alt><F3>, and to return to this virtual console (virtual console #1),
you would press <Left Alt><F1>.

Have fun!

Debian GNU/Linux 2.0 eclipse tty1

eclipse login: root
Password:
Linux eclipse 2.0.34 #4 Wed Oct 14 09:52:46 EEST 1998 i586 unknown

Copyright (C) 1993-1998 Software in the Public Interest, and others

Most of the programs included with the Debian GNU/Linux system are
freely redistributable; the exact distribution terms for each program
are described in the individual files in /usr/doc/*/copyright

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Feb 24 11:44:58 on tty2.
You have new mail.
eclipse:~# mail
Mail version 8.1 6/6/93.  Type ? for help.
"/var/spool/mail/root": 1 message 1 new
>N  1 root                  Wed Feb 24 12:08  14/411   "Output of Anacron job"
& d
& q
eclipse:~# ls
fsadapt             fsadapt-3.6         fsadapt-3.6.tar.gz
eclipse:~#
```

You may want to get rid of an "cron" completion email message as shown above.

You may now continue adapting your FS Linux 3 with "`fsadapt`".

7 Running "fsadapt"

Start by logging in as "root".

```
Debian GNU/Linux 2.0 eclipse tty1

eclipse login: root
Password:
Linux eclipse 2.0.34 #4 Wed Oct 14 09:52:46 EEST 1998 i586 unknown

Copyright (C) 1993-1998 Software in the Public Interest, and others

Most of the programs included with the Debian GNU/Linux system are
freely redistributable; the exact distribution terms for each program
are described in the individual files in /usr/doc/*/copyright

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Thu Feb 25 11:53:16 on tty2.
No mail.
eclipse:~# cd fsadapt
eclipse:~/fsadapt# ./fsadapt
```

Invoke "fsadapt" as shown.

```
FS/Debian/Linux-fsadapt-3.6
------------------------------------------------------------------------------

 +------------- fsadapt: current root / swap / usr2 settings -------------+
 |                                                                         |
 | We are about to update a Debian 2.0 r2 + Linux 2.0.34                   |
 | installation to support running FS9.                                    |
 | Target directory                                                        |
 | i.e. where the new root file system is mounted now:  /                  |
 |                                                                         |
 | Target root file system device:    /dev/sda1                            |
 | Swap partition that will be used:  /dev/sda2                            |
 | Partition for '/usr2':             /dev/sda3                            |
 |                                                                         |
 | If these are correct, select 'Yes'.                                     |
 | Select 'No' to cancel this script (./fsadapt).                          |
 |                                                                         |
 +-------------------------------------------------------------------------+
 |                          < Yes >      <  No  >                          |
 +-------------------------------------------------------------------------+
```

xxx

7.1 Phase 1: One-Time Modifications

xxx

```
FS/Debian/Linux-fsadapt-3.6
+---------------------- FS Adaptation: Modifications ----------------------+--
| An 'X' indicates that this action can safely be performed now.           |
| (You may choose to uncheck a given action for specific reasons.)         |
|                                                                          |
| Missing 'X' indicates that this action has already been performed.      |
| Most of these can only be done _once_, so please don't put an 'X' on     |
| unless you are certain that you want and can to do that item again.      |
| +--------------------------------------------------------------------+ |
```

```
| | [ ] skip      Skip all steps below (regardless of [X] marks)        | |
| | [ ] verbose   Show names of files being processed in 'fsadapt'      | |
| | [ ] atgpib    Install NI AT-GPIB driver and library                 | |
| | [X] rcboot    Adjust 'rc.boot' to run FS-specific programs in boot  | |
| | [X] rtxgroup  Add 'rtx' group to '/etc/group'                       | |
| | [ ] stdaccts  Add 'oper' and 'prog' to '/etc/passwd'                | |
| | [ ] liloconf  Put a simple LILO configuration into '/etc/lilo.conf' | |
| | [X] fstab     Make sure that '/etc/fstab' includes '/usr2' etc      | |
| | [ ] fort77    Patch version 1.15 of fort77 command                  | |
| | [ ] noident   Remove host and op.sys info from login prompts        | |
| +-----v(+)------------------------------------------------------------+ |
+-------------------------------------------------------------------------+
|                          <  OK  >      <Cancel>                         |
+-------------------------------------------------------------------------+
```

xxx

7.2 Phase 2: Setup

xxx

```
FS/Debian/Linux-fsadapt-3.6
---------------------------------------------------------------------------
+-------------------------- FS Adaptation: Setup --------------------------+
| Which of the following you would like to do?                            |
|                                                                         |
| (Recommended options are shown with 'X';                                |
| all of these can be safely attempted again and again.)                  |
| +---------------------------------------------------------------------+ |
| |  [ ] skip          Skip all steps below (regardless of [X] marks)   | |
| |  [ ] oper_account  Create user account 'oper'                       | |
| |  [ ] prog_account  Create user account 'prog'                       | |
| |  [X] config_gpib   Configure 'linux-gpib' driver and library        | |
| |  [X] set_perms     Set device permissions (serial, digi, gpib)      | |
| |  [ ] config_kernel Configure Linux kernel (make config/dep/clean)   | |
| |  [ ] comp_kernel   Recompile Linux kernel (make-kpkg)               | |
| |  [X] comp_gpib     Recompile 'linux-gpib' driver and library        | |
| |  [ ] disk_space    Clean up '.o' files created by 'comp_*' above    | |
| |  [X] rcserial      Enable 'rc.serial' to be run for Boca/Vikom      | |
| +------v(+)-----------------------------------------------------------+ |
+-------------------------------------------------------------------------+
|                          <  OK  >      <Cancel>                         |
+-------------------------------------------------------------------------+
```

xxx

```
FS/Debian/Linux-fsadapt-3.6
---------------------------------------------------------------------------
+-------------------------- FS Adaptation: Setup --------------------------+
| Which of the following you would like to do?                            |
|                                                                         |
| (Recommended options are shown with 'X';                                |
| all of these can be safely attempted again and again.)                  |
| +------^(-)-----------------------------------------------------------+ |
| |  [ ] comp_kernel   Recompile Linux kernel (make-kpkg)               | |
| |  [X] comp_gpib     Recompile 'linux-gpib' driver and library        | |
| |  [ ] disk_space    Clean up '.o' files created by 'comp_*' above    | |
| |  [X] rcserial      Enable 'rc.serial' to be run for Boca/Vikom      | |
| |  [ ] netdiscard    Disable internal 'discard' net service           | |
| |  [ ] netdaytime    Disable internal 'daytime' net service           | |
| |  [ ] nettime       Disable internal 'time' net service              | |
| |  [ ] nettalk       Disable 'talk' net service                       | |
| |  [ ] netntalk      Disable 'ntalk' net service                      | |
```

```
| |  [ ] netfinger      Disable 'fingerd' net service                   | |
| +-------------------------------------------------------------------+ |
+-----------------------------------------------------------------------+
|                        <  OK  >      <Cancel>                         |
+-----------------------------------------------------------------------+
```

xxx

7.2.1 Linux GPIB Configuration

xxx

```
+--------------------- Linux-GPIB Configuration ---------------------+
   |                                                                   |
   |  Welcome to the Linux-GPIB Configuration and Setup Program        |
   |                                                                   |
   |       (c) 1995,1996 by C.Schroeter (clausi@chemie.fu-berlin.de)   |
   |                                                                   |
   | This Utility configures the Compile Time Options of the Package   |
   | And sets up the necessary things to run the software diagnostic   |
   | Program. If no /etc/gpib.conf exists one will be created.         |
   |                                                                   |
   |                                                                   |
   |                                                                   |
   | On initial Installation you should do a 'make clean' first        |
   |                                                                   |
   |                                                                   |
   |                                                                   |
   |                                                                   |
   +-------------------------------------------------------------------+
   |                             <  OK  >                              |
   +-------------------------------------------------------------------+
```

xxx

```
+-------------------- Release Notes, Please Read --------------------+
   |                                                                   |
   |                                                                   |
   |  Welcome To the new Linux GPIB Package Version                    |
   |  ---------------------------------------------------------------- |
   |                                                                   |
   |    - I added support for MODBUS-PCI                               |
   |                                                                   |
   |    - I applied some useful patches as                             |
   |                                                                   |
   |        * the atgpib timing bug fix                                |
   |        * some Makefile cosmetics contributed by tobias blomberg   |
   |        * some prototype cosmetics (not fully complete yet)        |
   |                                                                   |
   |                                                                   |
   |  ---------------------------------------------------------------- |
   |   cheers                                                          |
   +---------------------------------------------------------( 93%)--+
   |                             < EXIT >                              |
   +-------------------------------------------------------------------+
```

xxx

```
+---------------------- Board Type Selection ----------------------+
    |                  Please select Your GPIB Board                    |
    | +--------------------------------------------------------------+ |
    | |    atgpib      National Instruments AT GPIB Board (16bit)     | |
    | |    pcIIa       National Instruments PCIIa Board (8bit)        | |
    | |    pcII        National Instruments PCII  Board (8bit)        | |
    | |    hp82335     Hewlett Packard HP82335 and HP27209 boards     | |
    | |    ziatech     Ziatech ZT1444A or ZT1488A (untested alpha)    | |
    | |    cbi4882     ComputerBoards Inc CBI-GPIB CBI-GPIB/LC        | |
    | |    cbi_pci     ComputerBoards Inc CBI-GPIB PCI                | |
    | |    modbus_pci  Janz VMOD-GPIB on MODBUS PCI                   | |
    | |    cbi_pcmcia  ComputerBoards Inc CBI-PCMCIA                  | |
    | |                                                              | |
    | +--------------------------------------------------------------+ |
    +------------------------------------------------------------------+
    |                      <  OK  >      <Cancel>                       |
    +------------------------------------------------------------------+
```

XXX

```
+-----------------------------------------------+
|                                               |
|   Do you want to change the Default           |
|   Board characteristics                       |
|   as base address or IRQ ?                    |
|                                               |
|                                               |
+-----------------------------------------------+
|              < Yes >      <  No  >            |
+-----------------------------------------------+
```

XXX

```
+-----------------------------------------------------------------+
    |            Select Your Base Address Default is 0x2c0            |
    | +--------------------------------------------------------------+ |
    | |                 0x2c0  Default 2c0-2df                       | |
    | |                 0x100  100-11f                               | |
    | |                 0x120  120-13f                               | |
    | |                 0x140  140-15f                               | |
    | |                 0x160  160-17f                               | |
    | |                 0x180  180-19f                               | |
    | |                 0x1a0  1a0-1bf                               | |
    | |                 0x1c0  1c0-1df                               | |
    | |                 0x1e0  1e0-1ff                               | |
    | |                 0x200  200-21f                               | |
    | +-------------------v(+)--------------------------------------+ |
    +------------------------------------------------------------------+
    |                      <  OK  >      <Cancel>                       |
    +------------------------------------------------------------------+
```

XXX

```
+---------------------- Selecting IRQ-Level -----------------------+
    |                  Select Your Interrupt Setting                    |
    | +--------------------------------------------------------------+ |
    | |              2    (pcIIa,atgpib)                              | |
    | |              3    (pcIIa,atgpib,hp82335)                      | |
    | |              4    (pcIIa,atgpib,hp82335)                      | |
    | |              5    (pcIIa,atgpib,hp82335)                      | |
```

```
| |                 6    (pcIIa,atgpib,hp82335)                  | |
| |                 7    (pcIIa,atgpib,hp82335)                  | |
| |                 9    (atgpib only)                           | |
| |                 10   (atgpib only)                           | |
| |                 11   (atgpib only)                           | |
| |                 12   (atgpib only)                           | |
| +-----------------v(+)-----------------------------------------+ |
+------------------------------------------------------------------+
|                      <  OK  >      <Cancel>                      |
+------------------------------------------------------------------+
```

xxx

```
+---------------------- Selecting DMA channel -----------------------+
    |                    Select Your DMA Setting                         |
    | +--------------------------------------------------------------+ |
    | |                    5   (atgpib) Default                      | |
    | |                    6   (atgpib)                              | |
    | |                    7   (atgpib)                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | +--------------------------------------------------------------+ |
    +------------------------------------------------------------------+
    |                      <  OK  >      <Cancel>                      |
    +------------------------------------------------------------------+
```

xxx

```
+-------------------------- Driver Options --------------------------+
    |                  Select the following Options                      |
    | +--------------------------------------------------------------+ |
    | |    [X] USE_DMA        Use DMA Mode for Transfers             | |
    | |    [X] LINUX2_0       Compiling with Linux 2.0.x ?           | |
    | |    [X] BUILD_DEBUG    Build Driver With Debugging Code       | |
    | |    [X] DEFAULT_DEBUG  Set Default Debugging Mode to 'none'   | |
    | |    [ ] SWAP_UNL_LAD   Swap UNL/LAD Sequence (nec7210 only)   | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | |                                                              | |
    | +--------------------------------------------------------------+ |
    +------------------------------------------------------------------+
    |                      <  OK  >      <Cancel>                      |
    +------------------------------------------------------------------+
```

xxx

```
+------------------- Driver Major Number Settings -------------------+
    |  Please Select one of the following MAJOR Numbers                  |
    |                Or 'Custom' if you want to Specify Your Own Major |
    | +--------------------------------------------------------------+ |
    | |            31      Default Major for GPIB Driver             | |
    | |            29      Alternate Major for GPIB Driver           | |
    | |            19      Alternate Major for GPIB Driver           | |
```

```
| |           Custom  Specify Your Own Setting                  | |
| |                                                             | |
| +-------------------------------------------------------------+ |
|                                                                 |
|                                                                 |
|                                                                 |
|                                                                 |
+-----------------------------------------------------------------+
|                       <  OK  >      <Cancel>                     |
+-----------------------------------------------------------------+
```

xxx

```
+-----------------------------------------------------------+
|                                                           |
|       /etc/gpib.conf not found                            |
|                                                           |
|               Create?                                     |
+-----------------------------------------------------------+
|                   < Yes >      <  No  >                   |
+-----------------------------------------------------------+
```

xxx

```
+-----------------------------------------------------------+
|                                                           |
|                                                           |
|             Configuration Finished !                      |
|                                                           |
|       Now Type 'make' to start compilation                |
|                                                           |
+-----------------------------------------------------------+
|                          <  OK  >                         |
+-----------------------------------------------------------+
```

xxx

```
+-------------------- Output From ibchk Program ---------------------+
    | ---------------------------------------------------------------   |
    |                                                                   |
    | IBCHK Software Diagnostic Program Version 1.0 (c) C.Schroeter ..  |
    | -------------------------------------------------------------     |
    |                                                                   |
    | **First checking your config file....                OK           |
    | **Check Errlog...                                    OK           |
    | **Next Check The Driver.....                         OK           |
    | **Check if Board present....                         OK           |
    | **Checking some Bus Functions...                     OK           |
    |                                                                   |
    |                                                                   |
    |   Everything seems to be OK for me.(Found 30 Devices).            |
    |   It's now your turn to check out                                 |
    |   Some Device Commands with ibsh or with own Programs that uses GP |
    |   Good Luck.                                                      |
    +-------------------------------------------------------------(100%)--+
    |                              < EXIT >                             |
    +-------------------------------------------------------------------+
```

xxx

```
+------------------------------------------------------------+
|                                                            |
|                                                            |
|              Compilation Finished !                        |
|                                                            |
|        Now Type 'make install' to install                  |
|        Linux-GPIB on your system                           |
|                                                            |
|                                                            |
+------------------------------------------------------------+
|                         <  OK  >                           |
+------------------------------------------------------------+
```

xxx

7.2.2 Enabling 16550A-based Serial Ports

xxx

```
FS/Debian/Linux-fsadapt-3.6
-------------------------------------------------------------------------------
 +---------------- Really enable Boca BB2016 / Vikom Pro? ----------------+
 |                                                                        |
 | Although this script offers installing '/etc/rc.boot/0setserial'       |
 | to recognize Boca BB2016 or Vikom Pro multiport RS232 cards,           |
 | you should do this _only_ if you really have such a card               |
 | in your PC (or are planning to edit the installed file manually).      |
 |                                                                        |
 | If you have a Boca BB2016 or Vikom Pro, please select 'Yes'.           |
 |                                                                        |
 | If you don't have a Boca BB2016 nor Vikom Pro, please select 'No'.     |
 |                                                                        |
 | +--------------------------------------------------------------------+ |
 | |Yes    Yes, I want '/etc/rc.boot/0setserial' to run for Boca BB2016 | |
 | |No     No, I don't need it                                          | |
 | |Defer  I'm not sure yet, ask again in a later run of 'fsadapt'      | |
 | +--------------------------------------------------------------------+ |
 +------------------------------------------------------------------------+
 |                         <  OK  >      <Cancel>                         |
 +------------------------------------------------------------------------+
```

xxx

7.3 Phase 3: Settings

xxx

```
FS/Debian/Linux-fsadapt-3.6
-------------------------------------------------------------------------------
+------------------------- FS Adaptation: Settings -------------------------+
| Which of the following you would like to do?                              |
|                                                                           |
| (Recommended options are shown with 'X';                                  |
| all of these can be safely attempted again and again.)                    |
| +-----------------------------------------------------------------------+ |
| |    [X] drivers      Select loadable drivers (incl. network)           | |
| |    [X] netconfig    Alter TCP/IP configuration (IP numbers)           | |
| |    [X] lilo         Make sure LILO is properly installed              | |
| |    [X] gpmconfig    Select virtual console gpm mouse type             | |
| |    [X] setup_x      Select X Window System server/configuration       | |
| |    [X] printer      Setup your printer for 'lpr' use                  | |
```

```
| |    [X] set_cdrom    Select your CD-ROM type                         | |
| |    [ ] smailconfig  Change configuration of 'smail' email system    | |
| |                                                                     | |
| |                                                                     | |
| +---------------------------------------------------------------------+ |
+-------------------------------------------------------------------------+
|                          <  OK  >      <Cancel>                         |
+-------------------------------------------------------------------------+
```

xxx

7.3.1 "drivers": Selecting Loadable Device Drivers

xxx

```
FS/Debian/Linux-fsadapt-3.6
---------------------------------------------------------------------------


 +----------------- Selecting loadable device drivers ------------------+
 |                                                                       |
 | You should ensure that a network device driver                        |
 | which corresponds to your network interface card is loaded            |
 | and that the 'gpib0.o' NI ATGPIB driver is loaded                     |
 | (if you have a NI ATGPIB board installed).                            |
 |                                                                       |
 | An interactive command 'modconf' will be invoked                      |
 | after you select 'Ok'.  It updates the module list                    |
 | of modules to load during boot in '/etc/modules' for you.             |
 |                                                                       |
 |                                                                       |
 +-----------------------------------------------------------------------+
 |                              <  OK  >                                 |
 +-----------------------------------------------------------------------+
```

xxx

```
+--------------------------+ Select Category +---------------------------+
 | Modules are loadable device drivers. Please go through the menus        |
 | for each category and look for devices, network protocols, filesystems, |
 | etc. that you would like to have supported by your system. You should   |
 | not install modules for devices that aren't installed in your system,   |
 | as they will sometimes cause the system to pause for a long time while  |
 | it is searching for the device. Also, drivers for devices that you      |
 | don't have use memory that you could put to better use.                 |
 |                                                                         |
 | Please select the category of modules.                                  |
 |                                                                         |
 |Exit     Finished with modules. Return to previous menu.               # |
 |                                                                       | |
 |block   Disks and disk-like devices.                                   | |
 |fs      Drivers that allow many different filesystems to be accessed.  | |
 |ipv4    Internet Protocol drivers.                                     | |
 |misc    Drivers that don't fit in the other categories.                | |
 |net     Drivers for network interface cards and network protocols.     | |
 |pcmcia  PCMCIA cards.                                                  | |
 |                                                                         |
 |                                                                         |
 |                  <Ok>                       <Cancel>                    |
 |                                                                         |
 +-------------------------------------------------------------------------+
```

xxx

```
+---------------------------+ Select fs modules +---------------------------+
 | The modules that are currently installed on your system have             |
 | a "+" character to the right of their name. Modules that aren't          |
 | installed have a "-" to the right of their name. You can read a          |
 | page about the purpose of any module and then you can enable             |
 | or disable it. To do so, use the up and down arrow keys to move          |
 | the cursor to the line for the module, and then press ENTER.             |
 |                                                                          |
 |Exit             Finished with these modules. Return to previous menu.   #|
 |                                                                         ||
 |binfmt_aout    + Run old-style Linux A.OUT programs.                     ||
 |hpfs           - Microsoft High Performance File System.                 ||
 |ncpfs          - NCP Remote Filesystem for mounting Novell file servers. ||
 |nfs            + Network File System.                                    ||
 |nls_cp437      - .                                                       ||
 |nls_cp737      - .                                                       ||
 |nls_cp775      - .                                                       ||
 |nls_cp850      - .                                                       ||
 |nls_cp852      - .                                                       ||
 |                                                                          |
 |                                                                          |
 |                  <Ok>                       <Cancel>                     |
 |                                                                          |
 +--------------------------------------------------------------------------+
```

xxx

```
+---------------------------+ Select fs modules +---------------------------+
 | The modules that are currently installed on your system have             |
 | a "+" character to the right of their name. Modules that aren't          |
 | installed have a "-" to the right of their name. You can read a          |
 | page about the purpose of any module and then you can enable             |
 | or disable it. To do so, use the up and down arrow keys to move          |
 | the cursor to the line for the module, and then press ENTER.             |
 |                                                                          |
 |nls_iso8859_   - .                                                       ||
 |nls_iso8859_   - .                                                       ||
 |nls_iso8859_   - .                                                       ||
 |nls_iso8859_   - .                                                       ||
 |nls_iso8859_   - .                                                       ||
 |nls_koi8_r     - .                                                       ||
 |smbfs          - Microsoft SMB, LANMAN, WFW, Windows 95 disk sharing.    ||
 |sysv           - System V / Coherent filesystems.                        ||
 |ufs            - UFS filesystem used on Sun/BSD/NeXT, some SysV.         ||
 |umsdos         - Unix filesystem features on top of MS-DOS filesystems.  ||
 |vfat           + Windows 95 long file names on an MS-DOS filesystem.     #|
 |                                                                          |
 |                                                                          |
 |                  <Ok>                       <Cancel>                     |
 |                                                                          |
 +--------------------------------------------------------------------------+
```

xxx

```
+------------------------+ Select misc modules +------------------------+
   | The modules that are currently installed on your system have         |
   | a "+" character to the right of their name. Modules that aren't      |
   | installed have a "-" to the right of their name. You can read a      |
   | page about the purpose of any module and then you can enable         |
```

```
| or disable it. To do so, use the up and down arrow keys to move       |
| the cursor to the line for the module, and then press ENTER.          |
|                                                                       |
|Exit           Finished with these modules. Return to previous menu.  #|
|                                                                      ||
|atixlmouse   - ATI XL Bus Mouse.                                     ||
|busmouse     - Logitech Bus Mouse.                                   ||
|cyclades     - Cyclades Cyclom-Y multi-port serial cards.            ||
|ftape        - QIC-80 and Travan tape drives.                        ||
|gpib0        + .                                                     ||
|lp           + Parallel Printer Ports.                               ||
|msbusmouse   - Microsoft Bus Mouse.                                  ||
|pcwd         - PC Watchdog Timer Card.                               ||
|psaux        + PS/2 Mouse driver.                                    ||
|                                                                       |
|                                                                       |
|                 <Ok>                      <Cancel>                    |
|                                                                       |
+-----------------------------------------------------------------------+
```

xxx

```
+------------------------+ Select misc modules +------------------------+
| The modules that are currently installed on your system have          |
| a "+" character to the right of their name. Modules that aren't       |
| installed have a "-" to the right of their name. You can read a       |
| page about the purpose of any module and then you can enable          |
| or disable it. To do so, use the up and down arrow keys to move       |
| the cursor to the line for the module, and then press ENTER.          |
|                                                                       |
|ftape        - QIC-80 and Travan tape drives.                        ||
|gpib0        + .                                                     ||
|lp           + Parallel Printer Ports.                               ||
|msbusmouse   - Microsoft Bus Mouse.                                  ||
|pcwd         - PC Watchdog Timer Card.                               ||
|psaux        + PS/2 Mouse driver.                                    ||
|riscom8      - RISCom/8 multi-port serial controller.                ||
|serial       + Serial ports based on 8250, 16450, 16550.             ||
|softdog      - A Software Watchdog Device (driver/char/softdog.c).   ||
|specialix    - .                                                     ||
|wdt          - Software Watchdog Timer.                              #|
|                                                                       |
|                                                                       |
|                 <Ok>                      <Cancel>                    |
|                                                                       |
+-----------------------------------------------------------------------+
```

xxx

```
+-------------------------+ Select net modules +--------------------------+
| The modules that are currently installed on your system have            |
| a "+" character to the right of their name. Modules that aren't         |
| installed have a "-" to the right of their name. You can read a         |
| page about the purpose of any module and then you can enable            |
| or disable it. To do so, use the up and down arrow keys to move         |
| the cursor to the line for the module, and then press ENTER.            |
|                                                                         |
|Exit            Finished with these modules. Return to previous menu.   #|
|                                                                        ||
|3c501         - 3Com Etherlink 3C501 ISA Ethernet card.                 ||
|3c503         + 3Com 3C503 Etherlink II, 3C503/16 Etherlink II/16.      ||
|3c509         + 3Com Etherlink III 3C509 ISA Ethernet Card.             ||
|3c515         - .                                                       ||
```

```
|3c59x         + 3Com Vortex 3C59x.                                     ||
|8390          - 8390-based Ethernet cards. Will be loaded automatically.  ||
|appletalk     - Appletalk networking protocols.                        ||
|at1700        - Allied Telesys AT1700 Ethernet card.                   ||
|atp           - .                                                      ||
|                                                                        |
|                                                                        |
|                    <Ok>                        <Cancel>                |
|                                                                        |
+------------------------------------------------------------------------+
```

xxx

```
+--------------------------+ Select Category +---------------------------+
  | Modules are loadable device drivers. Please go through the menus       |
  | for each category and look for devices, network protocols, filesystems, |
  | etc. that you would like to have supported by your system. You should  |
  | not install modules for devices that aren't installed in your system,  |
  | as they will sometimes cause the system to pause for a long time while |
  | it is searching for the device. Also, drivers for devices that you     |
  | don't have use memory that you could put to better use.                |
  |                                                                        |
  | Please select the category of modules.                                 |
  |                                                                        |
  |Exit     Finished with modules. Return to previous menu.             # |
  |                                                                     | |
  |block   Disks and disk-like devices.                                 | |
  |fs      Drivers that allow many different filesystems to be accessed.  | |
  |ipv4    Internet Protocol drivers.                                   | |
  |misc    Drivers that don't fit in the other categories.              | |
  |net     Drivers for network interface cards and network protocols.   | |
  |pcmcia  PCMCIA cards.                                                | |
  |                                                                        |
  |                                                                        |
  |                  <Ok>                        <Cancel>                  |
  |                                                                        |
  +------------------------------------------------------------------------+
```

xxx

7.3.2 "gpm": Configuring Mouse

xxx

```
|fs      Drivers that allow many different filesystems to be accessed.   | |
  |ipv4    Internet Protocol drivers.                                   | |
  |misc    Drivers that don't fit in the other categories.              | |
  |net     Drivers for network interface cards and network protocols.   | |
  |pcmcia  PCMCIA cards.                                                | |
  |                                                                        |
  |                                                                        |
  |                  <Ok>                        <Cancel>                  |
  |                                                                        |
  +------------------------------------------------------------------------+
Added FS3Linux *
Added FS2Linux
Added FS1Linux
Configuring gpm (mouse event server):

Current configuration: -m /dev/ttyS0 -t ms -l "a-zA-Z0-9_.:~/\300-\326\330-\366\
370-\377"
```

```
Do you want to change anything (Y/n)? y

gpm has an experimental mouse test program which may help you determine
your mouse's type and which device it's attatched to.

You *must* not run any other software which needs the mouse, e.g. X,
selection or gpm, while running this program.
Do you want to run gpm's mouse-test program (Y/n)? n
...
         misunderstood as middle-button events. If this is happens to
         you, use the bare mouse type.
 bare  - For Microsoft Mice (2 button).  Bare is the Microsoft
         protocol, without any extension; it only reports two
         buttons.
 bm    - For some busmice, including those produced by Logitech.
 logi  - For old serial Logitech mice
 logim - Used to turn Logitech mice into Mouse-Systems-Compatible.
         Obviously, it only works with some of the Logitech mice.
 ligim - For Logitech mice behaving like MouseSystems.
 mm    - for MMSeries mice.
 msc   - for MouseSystems mice.  This is the standard protocol for
         three button serial mice
 mman  - The MouseMan protocol used by new Logitech mice.
 ms3   - for the new serial IntelliMouse devices, the ones with three
         buttons and a protocol incompatible with older ones.
 ncr   - for pointing pens found on some laptops.
 pnp   - for the new mice produced by Microsoft, and maybe with the
         old ones as well.
 ps2   - if the mouse's connector is round with 6 metal pins.
 sun   - for Sparc mice.
 wacom - for Wacom tablets.
Default for i386 is ms
What type is your mouse (or help) [ms]?
> mman
Set the responsiveness (normally not needed) []?
>
Do you want to add any additional arguments [-l "a-zA-Z0-9_.:~/\300-\326\330-\36
6\370-\377"]?
>
Do you want to test this configuration (y/N)? y
cat: /var/run/gpmpid: No such file or directory
gpm -m /dev/ttyS0 -t mman -l "a-zA-Z0-9_.:~/\300-\326\330-\366\370-\377"
Finish testing by typing Ctrl-D

Current configuration: -m /dev/ttyS0 -t mman -l "a-zA-Z0-9_.:~/\300-\326\330-\36
6\370-\377"
Do you want to change anything (Y/n)? n
```

xxx

7.3.3 "setup_x": Selecting X Window System Configuration (XF86Config)

xxx

```
FS/Debian/Linux-fsadapt-3.6
-----------------------------------------------------------------------------

+------------------------ Setup X Window System --------------------------+
|                  Select your SVGA card / monitor type:                  |
| +-------------------------------------------------------------------+ |
| |No_X                     Leave X setup undetermined, will choose later| |
| |xf86config               Run 'xf86config' to build the conf          | |
| |mach64/1024x768-15-17in  mach64/1024x768-15-17in                     | |
| |mach64/1280x1024-17in    mach64/1280x1024-17in                       | |
```

```
| |mach64/1600x1200-21in    mach64/1600x1200-21in                       | |
| |mach8/1024x768-15in      mach8/1024x768-15in                         | |
| |s3/1024x768-15-17in      s3/1024x768-15-17in                         | |
| |s3/1280x1024-17in        s3/1280x1024-17in                           | |
| |s3/1600x1200-21in-ti     s3/1600x1200-21in-ti                        | |
| |                                                                     | |
| +---------------------------------------------------------------------+ |
+-------------------------------------------------------------------------+
|                         <  OK  >      <Cancel>                          |
+-------------------------------------------------------------------------+
```

XXX

```
No default X server previously set, or previous default has been removed.
Do you want to make the S3 X server the default? (y/n) [y] y

The S3 X server is now the default.
Do you want to test the configuration? (y/n) [y] y

The X server will start in 10 seconds. If the configuration
file is correct, you should see a grey patterned screen
with an X shaped cursor in the middle. The mouse should
move the cursor.

If the virtual screen resolution is higher than the default
one, you may not be able to see the cursor immediately.
It should become visible when you move the mouse.

This display should disappear after another 10 seconds; you
will then be asked whether the test worked.

Waiting 10 seconds before starting X server...

(--) S3: Mode "480x300" needs vert refresh rate of 62.99 Hz. Deleted.
(**) FontPath set to "/usr/X11R6/lib/X11/fonts/misc/,/usr/X11R6/lib/X11/fonts/75
dpi/:unscaled,/usr/X11R6/lib/X11/fonts/100dpi/:unscaled,/usr/X11R6/lib/X11/fonts
/Type1/,/usr/X11R6/lib/X11/fonts/Speedo/,/usr/X11R6/lib/X11/fonts/75dpi/,/usr/X1
1R6/lib/X11/fonts/100dpi/"
(--) S3: PCI: Trio32/64 rev 40, Linear FB @ 0xf4000000
(--) S3: chipset:   Trio64V+ rev. 41
(--) S3: chipset driver: newmmio
(--) S3: card type: PCI
(--) S3: videoram:  2048k
(--) S3: Ramdac type: s3_trio64
(--) S3: Ramdac speed: 135 MHz
(--) S3: Using Trio32/64 programmable clock (MCLK 40.026 MHz)
(--) S3: Maximum allowed dot-clock: 135.000 MHz
(**) S3: Mode "1024x768": mode clock =  85.000
(**) S3: Mode "800x600": mode clock =  69.650
(**) S3: Mode "640x480": mode clock =  45.800
(--) S3: Operating RAMDAC in pixel multiplex mode
(--) S3: Using 6 bits per RGB value
(--) S3: Virtual resolution set to 1024x768
(--) S3: Local bus LAW is 0xF4000000
(--) S3: Using a banksize of 2048k, line width of 1024
(--) S3: Using a single 64x64 area at (960,769) for expanding pixmaps
(--) S3: Using 8 planes of 1024x1215 at (0,833) aligned 8 as font cache
Did the X server work properly? (y/n) [n] y
```

XXX

7.3.4 “printer”: Configuring “lpr” Printers

XXX

```
FS/Debian/Linux-fsadapt-3.6
----------------------------------------------------------------------------


   +------------------ Printer Configuration Overview ------------------+
   | Configuring printers includes the following three steps:           |
   |                                                                    |
   | 1) Selecting the default paper size (a4, letter)                   |
   |    with 'paperconfig'.                                             |
   | 2) Creating local printer queues with 'magicifilterconfig'.        |
   |    You should create local queues for remote printers, too,        |
   |    but use '/dev/null' as printer port (instead of '/dev/lp1').    |
   | 3) Creating remote "feeder" queues for local '/dev/null'           |
   |    printers created in step 2 above.                               |
   |                                                                    |
   | These steps will now be invoked automatically in a row.            |
   |                                                                    |
   +--------------------------------------------------------------------+
   |                             <  OK  >                               |
   +--------------------------------------------------------------------+
```

XXX

```
The default (also known as system) paper can be chosen from many known
papers that are currently recognized by programs using the libpaper
library (with libpaper, paper names are case insensitive; if you use
programs that use the system paper size but do not rely on the libpaper
library, this may not be true and some of the papers listed below may
not be known by these programs):

    a3 a4 letter note legal executive halfletter halfexecutive 11x17
    statement folio quarto 10x14 ledger tabloid a0 a1 a2 a5 a6 a7 a8 a9
    a10 b0 b1 b2 b3 b4 b5 c5 DL Comm10 Monarch archE archD archC archB
    archA flsa flse csheet dsheet esheet

Default paper name? [letter] a4
...
 - the device where the printer is attached    (/dev/lp1)
 - and the input filter you want to use        (ljet4m)

Printer #1:
------------
Full name, `done' when done             [HP Laserjet 4L      ]: HP LaserJet 4M
Short name, name of the spool directory [hplj4l              ]: loukku
Alias                                   [lj                  ]:
Device (without leading /dev/)          [lp1                 ]: null

The following filters are available:

bj10e bj200 bj600 bj600_draft cps300 cps400 cps600 cpsonly300
cpsonly400 cpsonly600 deskjet dj500 dj500c dj550c epson9 epson9c epsonlq
epsonlqc ibmpro jetp3852 la50 la75 laserjet laserjetlo lbp8 lj250 ljet2p
ljet2plo ljet3 ljet4 ljet4l ljet4m ljet4ml ljetplus ljetpluslo ln03 m8510
necp6 oki182 pj pjxl pjxl300 ps300 ps400 ps600 psonly300 psonly400
psonly600 r4081 stylus800 stylus_color_360dpi
stylus_color_720dpi tek4693 tek4696

The input filter to be used             [ljet4m              ]: ljet4m

Printer #2:
------------
Full name, `done' when done             [HP Laserjet 4L      ]: done

                       Printer configuration

Default printer (alias `lp') is marked with an asterisk.
```

```
Printer name  Short name Alias Spool dir           Device   Input filter
------------------------------------------------------------------------------
HP Laserjet   loukku     lj    /var/spool/lpd/loukk /dev/nul ljet4m         *

Is this ok? (y/n) [y]: y

Papersize is a4, page length is 72 lines.
Stopping printer spooler: lpd.
Spool directory doesn't exist; create /var/spool/lpd/loukku (y/n) [y]: y
```

XXX

```
+--------------------- Filter name ----------------------+
| Please enter the name of the filter program you selected |
| when you configured this printer ('loukku')              |
| to use '/dev/null' in 'magicfilterconfig'.               |
|                                                          |
| (Use the short name without trailing '-filter'.)         |
| +------------------------------------------------------+ |
| |ljet4m                                                | |
| +------------------------------------------------------+ |
|                                                          |
+----------------------------------------------------------+
|                 <  OK  >      <Cancel>                   |
+----------------------------------------------------------+
```

XXX

```
+------------------ Remote computer name ------------------+
| Please enter the TCP/IP name of the computer to which    |
| the remote printer is connected.                         |
| +------------------------------------------------------+ |
| |print.kurp.hut.fi                                     | |
| +------------------------------------------------------+ |
|                                                          |
|                                                          |
|                                                          |
+----------------------------------------------------------+
|                 <  OK  >      <Cancel>                   |
+----------------------------------------------------------+
```

XXX

```
+------------------ Remote printer name -------------------+
| Please enter the printer queue name on print.kurp.hut.fi |
| you wish to use as ruikku on this computer. (This        |
| printer must accept binary/'raw' data.) Please remember  |
| to enable remote access in print.kurp.hut.fi's           |
| '/etc/hosts.lpd' (or equivalent).                        |
| +------------------------------------------------------+ |
| |loukku                                                | |
| +------------------------------------------------------+ |
+----------------------------------------------------------+
|                 <  OK  >      <Cancel>                   |
+----------------------------------------------------------+
```

XXX

```
+--------------- Need to manually edit /etc/printcap ----------------+
    | You still need to manually edit your '/etc/printcap' file         |
```

```
| to enable the remote printer 'ruikku'.                            |
|                                                                   |
| Locate the 'if=/etc/magicfilter/ljet4m-filter' entry that correspond
s to printer 'ruikku' and change it to read:                        |
| 'if=/etc/magicfilter/ljet4m-filter-to-ruikkuqueue'.               |
|                                                                   |
| (You can do this now in another virtual console,                  |
|  use 'Alt-Fn' keys to switch consoles.)                           |
|                                                                   |
|                                                                   |
+-------------------------------------------------------------------+
|                              <  OK  >                             |
+-------------------------------------------------------------------+
```

XXX

```
lp|lj|loukku|HP Laserjet 4L:\
        :lp=/dev/null:sd=/var/spool/lpd/loukku:\
        :sh:pw#80:pl#72:px#1440:mx#0:\
        :if=/etc/magicfilter/ljet4m-filter-to-loukkuqueue:\
        :af=/var/log/lp-acct:lf=/var/log/lp-errs:
loukkuqueue:\
        :lp=:mx#0:rm=print.kurp.hut.fi:rp=loukku:\
        :sd=/var/spool/lpd/loukkuqueue:\
        :lf=/var/log/lpd/lp-errs:
```

XXX

```
+------------ Local name for a remote printer -------------+
| Please enter a local name of a remote printer            |
| (a printer you just configured to use /dev/null          |
| as its printing port device) for which you will want to  |
| supply remote host and printer queue information now.    |
|                                                          |
| Just press Enter if you have no remote printers.         |
| +------------------------------------------------------+ |
| |                                                      | |
| +------------------------------------------------------+ |
+----------------------------------------------------------+
|                 <  OK  >      <Cancel>                   |
+----------------------------------------------------------+
```

XXX

7.3.5 “cdrom”: Configuring CD-ROM Drive

XXX

```
FS/Debian/Linux-fsadapt-3.6
------------------------------------------------------------------------------


 +--------------- Configuring CD-ROM link (/dev/cdrom) ----------------+
 |                                                                     |
 | What type of CD-ROM drive do you have?                              |
 |                                                                     |
 | +-----------------------------------------------------------------+ |
 | |     none  No CD-ROM drive installed                             | |
 | |     scd0  Any SCSI CD-ROM drive                                 | |
 | |     hda   IDE, as master on primary interface (SWT default)     | |
 | |     hdb   IDE, as slave on primary interface                    | |
```

```
| |     hdc   IDE, as master on secondary interface               | |
| |     hdd   IDE, as slave on secondary interface                | |
| +-------------------------------------------------------------+ |
+-----------------------------------------------------------------+
|                     <  OK  >      <Cancel>                      |
+-----------------------------------------------------------------+



eclipse:~/fsadapt#
```

xxx

8 Restoring "/usr2" Partition Data

If you had to repartition your primary hard disk in the beginning of FS Linux 3 installation now is the time to restore the contents of your existing '`/usr2`' partition from your backup disk.

1. Powerdown and insert both your newly-installed primary disk and your backup disk into your FS PC. *Please* make sure that the SCSI ID jumpers are set correctly so that the primary disk becomes '`/dev/sda`' and the backup disk '`/dev/sdb`'.

2. Make the '`/usr2`' files of your backup disk available in read-only mode (as root):

   ```
   mount -o ro /dev/sdb3 /mnt
   ```

3. Make a tar-based copy of the files:

   ```
   cd /mnt (the temporary location of all old '/usr2' files)
   tar cf - . | (cd /usr2; tar xvpf -)
   ```

   You should see a listing of all file names copied. Check that the result is what you expect:

   ```
   cd /usr2 ls -l
   ```

   and that the files and directories match what you expect.

4. Remove your backup disk and powerdown the FS PC:

   ```
   cd umount /mnt
   shutdown -h now
   ```

   With power off, take the backup disk out of your FS PC.

5. Proceed to completely recompile the Field System so that you get the new version of FS shared memory initialization program. Reboot so that the init program will be run. Proceed with standard FS functionality checks.

9 Installing the Field System

xxx

```
Debian GNU/Linux 2.0 eclipse tty1

eclipse login: root
Password:
Linux eclipse 2.0.34 #4 Wed Oct 14 09:52:46 EEST 1998 i586 unknown

Copyright (C) 1993-1998 Software in the Public Interest, and others

Most of the programs included with the Debian GNU/Linux system are
freely redistributable; the exact distribution terms for each program
are described in the individual files in /usr/doc/*/copyright

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Thu Feb 25 12:12:27 on tty2.
No mail.
eclipse:~# cd /tmp
eclipse:/tmp# ftp kurp-ftp.hut.fi
Connected to kurp-ftp.hut.fi.
220 kurp FTP server (Version wu-2.4(14) Wed Jan 8 21:17:19 MET 1997) ready.
Name (kurp-ftp.hut.fi:root): fsxyz
331 A password is required.
Password:
230-Welcome, archive user root@eclipse.kurp.hut.fi !
230-
230-The local time is: Thu, 25 Feb 1999 14:19:40 EET
230-
230-This is an experimental FTP server.  If have any unusual problems,
230-please report them via e-mail to <root@kurp.hut.fi>.
230-
230-If you do have problems, please try using a dash (-) as the first
230-character of your password -- this will turn off the continuation
230-messages that may be confusing your ftp client.
230-
230 Guest login ok, access restrictions apply.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> cd /fs
250 CWD command successful.
ftp> cd dist
250-Welcome to FS9 software distribution directory!
250-
250-Please see the file README for further instructions.
250-
250-We would like to remind you that Field System is provided to
250-institutions cooperating with NASA to support VLBI observing.  FS9 is
250-a joint project of NASA and JIVE.  We would appreciate an email
250-message to 'weh@vega.gsfc.nasa.gov' indicating that you are using
250-material in this directory.  All transfers will be logged.
250-
250-
250-Please read the file README
250-  it was last modified on Thu Dec 31 13:44:00 1998 - 56 days ago
250 CWD command successful.
ftp> dir
...
-r--r--r--   1 1004     1004       194571 Dec 31 11:41 fs9325tg.ab
-r--r--r--   1 1004     1004         2006 Sep  4  1995 fsa-tagfiles-1.7.tar.gz
-r--r--r--   1 1004     1004      6333868 May 23  1996 fsadapt-1.13.tar.gz
-r--r--r--   1 1004     1004         2030 Sep  4  1995 fsb-tagfiles-1.7.tar.gz
-r--r--r--   1 1004     1004       604469 Nov 30  1995 patch-fsadapt-1.10-to-1.1
1.tar.gz
```

```
-r--r--r--   1 1004     1004        16795 Mar  4  1996 patch-fsadapt-1.11-to-1.1
2.tar.gz
-r--r--r--   1 1004     1004        26099 May 23  1996 patch-fsadapt-1.12-to-1.1
3.tar.gz
-r--r--r--   1 1004     1004        72028 Nov  7  1995 patch-fsadapt-1.9-to-1.10
.tar.gz
-r--r--r--   1 1004     1004     70976812 Sep  4  1995 root-full-1.7.tar.gz
-r--r--r--   1 1004     1004     45585027 Sep  4  1995 root-small-1.7.tar.gz
drwxr-xr-x   2 1004     1004         1024 Nov  1  1997 z-special-boot-root
226 Transfer complete.
ftp> get fs-9.4.xx.tar.gz
local: fs-9.4.xx.tar.gz remote: fs-9.4.xx.tar.gz
200 PORT command successful.
150 Opening BINARY mode data connection for fs-9.4.xx.tar.gz (162xxxx bytes).
226 Transfer complete.
1628171 bytes received in 5.29 secs (3e+02 Kbytes/sec)
ftp> quit
221 Goodbye.
eclipse:/tmp# cd /
eclipse:/# tar xvzpf /tmp/fs-9.3.25.tar.gz
usr2/fs-9.3.25/skdrut/getstfld.f
usr2/fs-9.3.25/skdrut/i2long.f
usr2/fs-9.3.25/skdrut/igtky.f
usr2/fs-9.3.25/skdrut/knewt.f
usr2/fs-9.3.25/skdrut/searl.f
usr2/fs-9.3.25/skdrut/selev.f
usr2/fs-9.3.25/skdrut/stape.f
usr2/fs-9.3.25/skdrut/trun.f
usr2/fs-9.3.25/skdrut/temp
usr2/fs-9.3.25/skdrut/fc_gwinsz.c
usr2/fs-9.3.25/skdrut/fc_gwinw.c
usr2/fs-9.3.25/skdrut/Makefile.hpux
usr2/fs-9.3.25/pdplt/
usr2/fs-9.3.25/pdplt/Makefile
usr2/fs-9.3.25/pdplt/pdplt
usr2/fs-9.3.25/lognm/
usr2/fs-9.3.25/lognm/lognm.c
usr2/fs-9.3.25/lognm/Makefile
usr2/fs-9.3.25/logpl/
usr2/fs-9.3.25/logpl/logpl
usr2/fs-9.3.25/logpl/Makefile
usr2/fs-9.3.25/fserr.ctl
...
eclipse:/#
eclipse:/# cd /usr2/fs-9.4.xx/
eclipse:/usr2/fs-9.4.xx# make install
sh misc/fsinstall
*******************************************************************
*  This is the INSTALLATION script for Field System version 9.4.xx *
*  This script must be excuted by root to work correctly.         *
*  Refer to instructions in the Update Notice.                    *
*******************************************************************

CAUTION: This script will automatically modify some of your directories.

On /usr2 each of the following directories will be created and filled
with their default contents, unless they already exist: oper, prog,
control, sched, proc, log, and st. If the /usr2/oper directory is created,
the /home/oper directory will be copied to /home/oper.FSCOPY (unless it
exists already), and /home/oper will be made a link to /usr2/oper. A
parallel operation will occur for /usr2/prog. The link /usr2/fs will
be deleted and made to point to this version of the Field System. A
similar link structure will be used for /usr2/st. The permissions and
ownerships of the files will be set (including for /etc/gpib.conf).

This is a fairly benign operation on most systems and always safe on a
standard system. To get the default versions of any already existing
```

```
directories, you will need to delete them before continuing with this
script.

Do you wish to continue with the INSTALLATION? (y=yes, n=no) : y
O.K. Continuing with install ...
Creating /usr2/fs directory link ...
Setting /usr2/fs permissions ...
Creating /usr2/st default directory structure...
5 blocks
Setting up /usr2/oper ...
76 blocks
Setting up /usr2/prog ...
69 blocks
Setting up /usr2/control ...
36 blocks
Setting up /usr2/proc ...
152 blocks
Setting up /usr2/sched ...
23 blocks
Setting up /usr2/log ...
Setting permissions for /etc/gpib.conf ...
Done.
eclipse:/usr2/fs-9.4.xx# exit
logout

Debian GNU/Linux 2.0 eclipse tty1

eclipse login: prog
Password:
Linux eclipse 2.0.34 #4 Wed Oct 14 09:52:46 EEST 1998 i586 unknown

Copyright (C) 1993-1998 Software in the Public Interest, and others

Most of the programs included with the Debian GNU/Linux system are
freely redistributable; the exact distribution terms for each program
are described in the individual files in /usr/doc/*/copyright

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
No mail.
eclipse:/usr2/prog/:> cd /usr2/fs
eclipse:/usr2/fs-9.4.xx/:> make all
```

xxx

10 Detailed Screen Captures

In the document above most of the screen shots have been abbreviated to show only the critical parts to which you need to answer with default answers. This section includes the full screen shots for reference.

10.1 Initializing Partitions

The newly-created partitions must be initialized, i.e. formatted. The installation system leads you through this automatically, you only need to separately select "Initialize a Linux Partition" for "/dev/sda3" alias "/usr2".

10.1.1 Initializing Swap Partition(s)

The rest of the installation system may need more memory than what it physically available. Therefore swap space is initialized and activated early in the installation process.

```
                   Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| There are "Linux native" and "Linux swap" partitions present on your       |
| system. The next step would be to initialize and activate a swap           |
| partition to provide virtual memory to your system. If you have not        |
| finished partitioning your disks or wish to change the partitions, please  |
| select "Previous" from the menu to partition them. If you are satisfied    |
| with your partitions, please select "Next" from the menu to initialize     |
| and activate your swap partition, or "Alternate" to activate a             |
| previously-initialized swap partition. If you absolutely insist on doing   |
| without a swap partition, select "Alternate1".                             |
|    +-----------------------------------------------------------------+     |
|    | Next      : Initialize and Activate a Swap Partition            #     |
|    | Alternate : Activate a Previously-Initialized Swap Partition    |     |
|    | Alternate1: Do Without a Swap Partition                         |     |
|    | Previous  : Partition a Hard Disk                               |     |
|    |                                                                 |     |
|    | Configure the Keyboard                                          |     |
|    | Partition a Hard Disk                                           |     |
|    | Initialize and Activate a Swap Partition                        |     |
|    +-----------------------------------------------------------------+     |
+----------------------------------------------------------------------------+


              <Up>/<Down> between elements   |  <Enter> selects
```

Press “Enter” to start initializing. Select your (only) swap partition in the dialog below:

```
+-----------------------+ Select Swap Partition +-----------------------+
    |                                                                      |
    | Please select the partition to initialize as a swap device.          |
    |                                                                      |
    |                         +-----------+                                |
    |                         | /dev/sda2 |                                |
    |                         +-----------+                                |
    +----------------------------------------------------------------------+


              <Up>/<Down> between elements   |  <Enter> selects
```

“Scanning for bad blocks” means reading through all of the swap area. This is always recommended as it won’t take a long time and it gives you extra assurance that your hard disk is functioning properly.

```
+------------------+ Scan for Bad Blocks? +-------------------+
|                                                             |
| The system can scan the entire partition for un-readable    |
| disk blocks and will mark any such bad blocks it finds so   |
| that they will not be used. This requires that every block  |
| be read, and thus could take a long time, but may save you  |
| trouble later.                                              |
|                                                             |
|  Should the bad-block scan be performed on /dev/sda2 ?      |
|                                                             |
```

```
|                    <Yes>       <No>                       |
+-----------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

Ensure that "Yes" is highlighted (with "Tab" key) and press "Enter". You will get the following confirmation dialog:

```
+----------------------+ Are You Sure? +----------------------+
|                                                           |
| You have chosen to initialize /dev/sda2 as a swap device.   |
| This will permanently erase any data on this partition. Are |
| you sure you want to do this?                               |
|                                                           |
|                    <Yes>       <No>                       |
+-----------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

Confirm with "Enter". The screen will go black and checking and formatting the "/dev/sda2" swap partition will start with the following display:

```
Initializing swap partition...
1859
```

The numbers which run on the second line refer to 4kB blocks checked. A 127MB swap partition will be scanned until approximately 32500 is shown here.

10.1.2 Initializing the Root Partition

The primary root partition is initialized first.

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| There are "Linux native" partitions present on your system but none are    |
| mounted. You must mount a root filesystem, and you may mount other         |
| filesystems, before installing the system. If you have just created the    |
| partitions, you must initialize them before you can mount them. Please     |
| select "Next" to initialize and mount a Linux partition, or "Alternate"    |
| to mount a previously-initialized partition.                               |
|        +-----------------------------------------------------+         |
|        | Next      : Initialize a Linux Partition             #         |
|        | Alternate : Mount a Previously-Initialized Partition    |         |
|        |                                                     |         |
|        | Configure the Keyboard                              |         |
|        | Partition a Hard Disk                               |         |
|        | Initialize and Activate a Swap Partition            |         |
|        | Activate a Previously-Initialized Swap Partition    |         |
|        | Do Without a Swap Partition                         |         |
|        | Initialize a Linux Partition                        |         |
|        | Mount a Previously-Initialized Partition            |         |
|        | Un-Mount a Partition                                |         |
|        +-----------------------------------------------------+         |
+----------------------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

Press “Enter” to activate “Initialize a Linux Partition” in the menu above and select “`/dev/sda1`” in the list that appears with “down arrow” and “up arrow” keys.

```
+-------------------------+ Select Partition +--------------------------+
    |                                                                      |
    | Please select the partition to initialize as a Linux "ext2"          |
    | filesystem.                                                          |
    |                                                                      |
    |                       +-----------+                                  |
    |                       | /dev/sda1 |                                  |
    |                       | /dev/sda3 |                                  |
    |                       +-----------+                                  |
    +----------------------------------------------------------------------+


              <Up>/<Down> between elements   |  <Enter> selects
```

As always, we recommend checking for bad blocks, select “Yes”.

```
+------------------+ Scan for Bad Blocks? +-------------------+
|                                                             |
| The system can scan the entire partition for un-readable    |
| disk blocks and will mark any such bad blocks it finds so   |
| that they will not be used. This requires that every block  |
| be read, and thus could take a long time, but may save you  |
| trouble later.                                              |
|                                                             |
|  Should the bad-block scan be performed on /dev/sda1 ?      |
|                                                             |
|                   <Yes>      <No>                          |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

Confirm by selecting “Yes”.

```
+----------------------+ Are You Sure? +----------------------+
|                                                             |
| You have chosen to initialize /dev/sda1 as a Linux "ext2"   |
| filesystem. This will permanently erase any data on this    |
| partition. Are you sure you want to do this?                |
|                                                             |
|                   <Yes>      <No>                          |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

The display output of the initialization command “`mke2fs`” is shown below:

```
257040 inodes, 1025015 blocks
51250 blocks (5.00%) reserved for the super user
First data block=1
Block size=1024 (log=0)
Fragment size=1024 (log=0)
126 block groups
8192 blocks per group, 8192 fragments per group
2040 inodes per group
Superblock backups stored on blocks:
        8193, 16385, 24577, 32769, 40961, 49153, 57345, 65537, 73729,
```

```
          81921, 90113, 98305, 106497, 114689, 122881, 131073, 139265, 147457,
          155649, 163841, 172033, 180225, 188417, 196609, 204801, 212993, 221185,
          229377, 237569, 245761, 253953, 262145, 270337, 278529, 286721, 294913,
          303105, 311297, 319489, 327681, 335873, 344065, 352257, 360449, 368641,
          376833, 385025, 393217, 401409, 409601, 417793, 425985, 434177, 442369,
          450561, 458753, 466945, 475137, 483329, 491521, 499713, 507905, 516097,
          524289, 532481, 540673, 548865, 557057, 565249, 573441, 581633, 589825,
          598017, 606209, 614401, 622593, 630785, 638977, 647169, 655361, 663553,
          671745, 679937, 688129, 696321, 704513, 712705, 720897, 729089, 737281,
          745473, 753665, 761857, 770049, 778241, 786433, 794625, 802817, 811009,
          819201, 827393, 835585, 843777, 851969, 860161, 868353, 876545, 884737,
          892929, 901121, 909313, 917505, 925697, 933889, 942081, 950273, 958465,
          966657, 974849, 983041, 991233, 999425, 1007617, 1015809, 1024001

Checking for bad blocks (read-only test):      8032/  1025015
```

After the bad block check is complete the following is displayed:

```
Checking for bad blocks (read-only test): done
Writing inode tables: done
Writing superblocks and filesystem accounting information: done
```

Because you have initialized "/dev/sda1" to act as your primary root partition you will certainly want to answer "Yes" to the following question:

```
          +--------------+ Mount as the Root Filesystem? +--------------+
          |                                                             |
          | You must mount your root filesystem ("/") before you can    |
          | mount any other filesystems. Would you like to mount        |
          | /dev/sda1 as the root filesystem?                           |
          |                                                             |
          |                     <Yes>       <No>                        |
          +-------------------------------------------------------------+


               <Up>/<Down> between elements   |  <Enter> selects
```

10.1.3 Initializing the "/usr2" Partition

xxx

```
                     Debian GNU/Linux System Installation
 +----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
 | You've mounted your root filesystem. You may initialize and mount          |
 | additional filesystems, or you may go on to install the operating system   |
 | kernel and the modules.                                                    |
 |      +----------------------------------------------------------+          |
 |      | Next      : Install Operating System Kernel and Modules    #        |
 |      | Alternate : Initialize a Linux Partition                   |        |
 |      | Alternate1: Mount a Previously-Initialized Partition       |        |
 |      |                                                          |          |
 |      | Configure the Keyboard                                   |          |
 |      | Partition a Hard Disk                                    |          |
 |      | Initialize and Activate a Swap Partition                 |          |
 |      | Activate a Previously-Initialized Swap Partition         |          |
 |      | Do Without a Swap Partition                              |          |
 |      | Initialize a Linux Partition                             |          |
 |      | Mount a Previously-Initialized Partition                 |          |
 |      | Un-Mount a Partition                                     |          |
 |      | Install Operating System Kernel and Modules              |          |
 |      | Install the Base System                                  |          |
 |      +----------------------------------------------------------+          |
```

```
 +------------------------------------------------------------------------+

            <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+-------------------------+ Select Partition +--------------------------+
    |                                                                    |
    | Please select the partition to initialize as a Linux "ext2"        |
    | filesystem.                                                        |
    |                                                                    |
    |                       +-----------+                                |
    |                       | /dev/sda3 |                                |
    |                       +-----------+                                |
    +--------------------------------------------------------------------+

            <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
        +------------------+ Scan for Bad Blocks? +-------------------+
        |                                                             |
        | The system can scan the entire partition for un-readable    |
        | disk blocks and will mark any such bad blocks it finds so   |
        | that they will not be used. This requires that every block  |
        | be read, and thus could take a long time, but may save you  |
        | trouble later.                                              |
        |                                                             |
        |  Should the bad-block scan be performed on /dev/sda3 ?      |
        |                                                             |
        |                    <Yes>       <No>                         |
        +-------------------------------------------------------------+

            <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
        +----------------------+ Are You Sure? +----------------------+
        |                                                             |
        | You have chosen to initialize /dev/sda3 as a Linux "ext2"   |
        | filesystem. This will permanently erase any data on this    |
        | partition. Are you sure you want to do this?                |
        |                                                             |
        |                    <Yes>       <No>                         |
        +-------------------------------------------------------------+

            <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
1187841, 1196033, 1204225, 1212417, 1220609, 1228801, 1236993, 1245185,
1253377,
        1261569, 1269761, 1277953, 1286145, 1294337, 1302529, 1310721, 1318913,
1327105,
        1335297, 1343489, 1351681, 1359873, 1368065, 1376257, 1384449, 1392641,
1400833,
```

```
        1409025, 1417217, 1425409, 1433601, 1441793, 1449985, 1458177, 1466369,
1474561,
        1482753, 1490945, 1499137, 1507329, 1515521, 1523713, 1531905, 1540097,
1548289,
        1556481, 1564673, 1572865, 1581057, 1589249, 1597441, 1605633, 1613825,
1622017,
        1630209, 1638401, 1646593, 1654785, 1662977, 1671169, 1679361, 1687553,
1695745,
        1703937, 1712129, 1720321, 1728513, 1736705, 1744897, 1753089, 1761281,
1769473,
        1777665, 1785857, 1794049, 1802241, 1810433, 1818625, 1826817, 1835009,
1843201,
        1851393, 1859585, 1867777, 1875969, 1884161, 1892353, 1900545, 1908737,
1916929,
        1925121, 1933313, 1941505, 1949697, 1957889, 1966081, 1974273, 1982465,
1990657,
        1998849, 2007041, 2015233, 2023425, 2031617, 2039809, 2048001

Checking for bad blocks (read-only test):     12304/  2050092
```

xxx

```
          +-------------------+ Select Mount Point +--------------------+
          |                                                             |
          | Select the mount point for /dev/sda3                        |
          |                                                             |
          | /usr2______________________________________________________ |
          |                                                             |
          |                    <Ok>        <Cancel>                     |
          +-------------------------------------------------------------+


               <Up>/<Down> between elements   |  <Enter> selects
```

xxx

10.2 Installing the Kernel and Device Driver Modules

xxx

```
                   Debian GNU/Linux System Installation
 +----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
 | You've mounted your root filesystem. You may initialize and mount          |
 | additional filesystems, or you may go on to install the operating system   |
 | kernel and the modules.                                                    |
 |      +---------------------------------------------------------+          |
 |      | Next      : Install Operating System Kernel and Modules    #          |
 |      | Alternate : Initialize a Linux Partition                   |          |
 |      | Alternate1: Mount a Previously-Initialized Partition       |          |
 |      |                                                            |          |
 |      | Configure the Keyboard                                     |          |
 |      | Partition a Hard Disk                                      |          |
 |      | Initialize and Activate a Swap Partition                   |          |
 |      | Activate a Previously-Initialized Swap Partition           |          |
 |      | Do Without a Swap Partition                                |          |
 |      | Initialize a Linux Partition                               |          |
 |      | Mount a Previously-Initialized Partition                    |          |
 |      | Un-Mount a Partition                                       |          |
 |      | Install Operating System Kernel and Modules                |          |
 |      | Install the Base System                                    |          |
 |      +---------------------------------------------------------+          |
 +----------------------------------------------------------------------------+


               <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+----------------+ Verify Filesystem Choice? +----------------+
|                                                              |
| The following filesystems are mounted, and will have the    |
| kernel, the modules and the base system installed to them:  |
| /dev/sda3 on /usr2                                           |
| /dev/sda1 on /                                               |
|                                                              |
|                     <Yes>       <No>                         |
+--------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+------------+ Select Installation Medium +-------------+
| Please select the medium you will use to install the  |
| system.                                               |
|     +-------------------------------------------+     |
|     | /dev/fd0  : First floppy drive            #     |
|     | /dev/fd1  : Second floppy drive           |     |
|     | cdrom     : CD-ROM drive                  |     |
|     | harddisk  : filesystem on the hard disk   |     |
|     | mounted   : already mounted filesystem    |     |
|     |                                           |     |
|     |                                           |     |
|     +-------------------------------------------+     |
|                       <Cancel>                        |
+-------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+-------------------+ Please Insert disk +--------------------+
|                                                              |
| Please place the Rescue Floppy in the first floppy drive    |
|                                                              |
|                     <Continue>  <Cancel>                     |
+--------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+----------------------+ Please Wait +-----------------------+
|                                                             |
| Installing the Rescue Floppy ...                            |
|                                                             |
|                                                             |
|                                                             |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+-------------------+ Please Insert disk +--------------------+
|                                                             |
| Please place the Drivers Floppy in the first floppy drive   |
|                                                             |
|                     <Continue>  <Cancel>                    |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+----------------------+ Please Wait +-----------------------+
|                                                            |
| Installing the Drivers Floppy ...                          |
|                                                            |
|                                                            |
|                                                            |
+------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

10.3 Configuring the Device Driver Modules

XXX

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| You've installed the operating system kernel and the modules. Please       |
| select "Next" to configure the device driver modules, or "Alternate" if    |
| you have to configure any PCMCIA devices.                                  |
|          +---------------------------------------------------+             |
|          | Next      : Configure Device Driver Modules        #             |
|          | Alternate : Configure PCMCIA Support               |             |
|          |                                                   |             |
|          | Configure the Keyboard                            |             |
|          | Partition a Hard Disk                             |             |
|          | Initialize and Activate a Swap Partition          |             |
|          | Activate a Previously-Initialized Swap Partition   |             |
|          | Do Without a Swap Partition                       |             |
|          | Initialize a Linux Partition                      |             |
|          | Mount a Previously-Initialized Partition          |             |
|          | Un-Mount a Partition                              |             |
|          | Install Operating System Kernel and Modules       |             |
|          | Install the Base System                            |             |
|          | Configure Device Driver Modules                   |             |
|          +---------------------------------------------------+             |
+----------------------------------------------------------------------------+


            <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+---------------------------+ Select Category +----------------------------+
  | Modules are loadable device drivers. Please go through the menus        |
  | for each category and look for devices, network protocols, filesystems,  |
```

```
| etc. that you would like to have supported by your system. You should   |
| not install modules for devices that aren't installed in your system,   |
| as they will sometimes cause the system to pause for a long time while  |
| it is searching for the device. Also, drivers for devices that you      |
| don't have use memory that you could put to better use.                 |
|                                                                          |
| Please select the category of modules.                                  |
|                                                                          |
|  Exit    Finished with modules. Return to previous menu.                |
|                                                                          |
|  block  Disks and disk-like devices.                                     |
|  fs     Drivers that allow many different filesystems to be accessed.    |
|  ipv4   Internet Protocol drivers.                                       |
|  misc   Drivers that don't fit in the other categories.                  |
|  net    Drivers for network interface cards and network protocols.       |
|  scsi   Drivers for SCSI controller cards and classes of SCSI devices.   |
|                                                                          |
|                                                                          |
|                  <Ok>                          <Cancel>                  |
|                                                                          |
+--------------------------------------------------------------------------+
```

XXX

```
+--------------------------+ Select net modules +---------------------------+
 | The modules that are currently installed on your system have              |
 | a "+" character to the right of their name. Modules that aren't           |
 | installed have a "-" to the right of their name. You can read a           |
 | page about the purpose of any module and then you can enable              |
 | or disable it. To do so, use the up and down arrow keys to move           |
 | the cursor to the line for the module, and then press ENTER.              |
 |                                                                            |
 |Exit            Finished with these modules. Return to previous menu.     #|
 |                                                                           ||
 |3c501         - 3Com Etherlink 3C501 ISA Ethernet card.                   ||
 |3c503         - 3Com 3C503 Etherlink II, 3C503/16 Etherlink II/16.        ||
 |3c509         - 3Com Etherlink III 3C509 ISA Ethernet Card.               ||
 |3c515         - .                                                          ||
 |3c59x         - 3Com Vortex 3C59x.                                         ||
 |8390          - 8390-based Ethernet cards. Will be loaded automatically.  ||
 |appletalk     - Appletalk networking protocols.                            ||
 |at1700        - Allied Telesys AT1700 Ethernet card.                       ||
 |atp           - .                                                          ||
 |                                                                            |
 |                                                                            |
 |                    <Ok>                           <Cancel>                 |
 |                                                                            |
 +----------------------------------------------------------------------------+
```

XXX

```
+---------------------+ Module 3c59x  - +----------------------+
| 3Com Vortex 3C59x.                                            |
| The 3c59x module is not currently installed.                  |
|                                                                |
| Exit     Finished with this module. Return to previous menu  |
| Install  Install the module in the kernel.                     |
|                                                                |
|                                                                |
|              <Ok>                  <Cancel>                   |
|                                                                |
+----------------------------------------------------------------+
```

XXX

```
+------------------+ Enter Command-Line Arguments +------------------+
     |  3c59x debug=1 options=0,,12                                     |
     |                                                                  |
     |     This sets the debug message level to minimal messages,       |
     |     sets the first card to the 10baseT transceiver, the second   |
     |     to the EEPROM-set transceiver, and the third card to operate |
     |     in full-duplex mode using its 100baseTx transceiver.         |
     |     (Note: card ordering is set by the PCI BIOS.)                |
     |     Possible media type settings:                                |
     |       0  10baseT         1  10Mbs AUI    2  undefined            |
     |       3  10base2 (BNC)   4  100base-TX   5  100base-FX           |
     |       6       MII (not yet available)    7  <Use default setting> |
     |       8       Full-duplex bit                                    |
     |       16      Bus-master enable bit (experimental use only!)     |
     |     For details see the top of the source file.                  |
     |                                                                  |
     | Please enter any command-line arguments for the 3c59x module.    |
     |                                                                  |
     | ---------------------------------------------------------------- |
     |                                                                  |
     |               <Ok>                    <Cancel>                   |
     |                                                                  |
     +------------------------------------------------------------------+
```

XXX

```
Installing module 3c59x. If the device isn't there, or isn't configured
correctly, this could cause your system to pause for up to a minute.


Installation succeeded.

Please press ENTER when you are ready to continue.
```

XXX

```
+-------------------------+ Select net modules +--------------------------+
 | The modules that are currently installed on your system have            |
 | a "+" character to the right of their name. Modules that aren't         |
 | installed have a "-" to the right of their name. You can read a         |
 | page about the purpose of any module and then you can enable            |
 | or disable it. To do so, use the up and down arrow keys to move         |
 | the cursor to the line for the module, and then press ENTER.            |
 |                                                                         |
 |Exit            Finished with these modules. Return to previous menu.   #|
 |                                                                        ||
 |3c501         - 3Com Etherlink 3C501 ISA Ethernet card.                 ||
 |3c503         - 3Com 3C503 Etherlink II, 3C503/16 Etherlink II/16.      ||
 |3c509         - 3Com Etherlink III 3C509 ISA Ethernet Card.             ||
 |3c515         - .                                                       ||
 |3c59x         + 3Com Vortex 3C59x.                                      ||
 |8390          - 8390-based Ethernet cards. Will be loaded automatically. ||
 |appletalk     - Appletalk networking protocols.                         ||
 |at1700        - Allied Telesys AT1700 Ethernet card.                    ||
 |atp           - .                                                       ||
 |                                                                         |
 |                                                                         |
 |                    <Ok>                        <Cancel>                 |
 |                                                                         |
 +-------------------------------------------------------------------------+
```

XXX

```
+--------------------------+ Select Category +---------------------------+
  | Modules are loadable device drivers. Please go through the menus       |
  | for each category and look for devices, network protocols, filesystems, |
  | etc. that you would like to have supported by your system. You should   |
  | not install modules for devices that aren't installed in your system,   |
  | as they will sometimes cause the system to pause for a long time while  |
  | it is searching for the device. Also, drivers for devices that you      |
  | don't have use memory that you could put to better use.                |
  |                                                                          |
  | Please select the category of modules.                                  |
  |                                                                          |
  |  Exit    Finished with modules. Return to previous menu.                |
  |                                                                          |
  |  block  Disks and disk-like devices.                                    |
  |  fs     Drivers that allow many different filesystems to be accessed.   |
  |  ipv4   Internet Protocol drivers.                                      |
  |  misc   Drivers that don't fit in the other categories.                 |
  |  net    Drivers for network interface cards and network protocols.      |
  |  scsi   Drivers for SCSI controller cards and classes of SCSI devices.  |
  |                                                                          |
  |                                                                          |
  |                <Ok>                      <Cancel>                       |
  |                                                                          |
  +--------------------------------------------------------------------------+
```

xxx

10.4 Configuring TCP/IP Networking

xxx

```
                  Debian GNU/Linux System Installation
+---------------+ Debian GNU/Linux Installation Main Menu +----------------+
| You've configured the device drivers but not the network. Please select    |
| "Next" to configure the network.                                           |
|          +-----------------------------------------------------+          |
|          | Next      : Configure the Network                    #          |
|          |                                                     |          |
|          | Configure the Keyboard                              |          |
|          | Partition a Hard Disk                               |          |
|          | Initialize and Activate a Swap Partition            |          |
|          | Activate a Previously-Initialized Swap Partition    |          |
|          | Do Without a Swap Partition                         |          |
|          | Initialize a Linux Partition                        |          |
|          | Mount a Previously-Initialized Partition            |          |
|          | Un-Mount a Partition                                |          |
|          | Install Operating System Kernel and Modules         |          |
|          | Install the Base System                             |          |
|          | Configure Device Driver Modules                     |          |
|          | Configure the Base System                           |          |
|          | Configure the Network                               |          |
|          +-----------------------------------------------------+          |
+----------------------------------------------------------------------------+

            <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
                  Debian GNU/Linux System Installation
        +-----------------+ Choose the Host name +------------------+
        |                                                            |
```

```
| Every Debian system has a name - even if it is not on a     |
| network. This name is called its "hostname". You should now |
| specify a hostname for your new system.                     |
|                                                             |
| If your system is going to be on a network, you should talk |
| to the administrator of the network before you choose a     |
| hostname. If not, you may choose any name you like.         |
|                                                             |
| The hostname must not contain dots, and you must not append |
| the domain name here.                                       |
|                                                             |
| If you can't think of a hostname for your new system, you   |
| may press <ENTER> to use the default hostname of "debian".  |
| Please enter your Host name                                 |
|                                                             |
| new-fs_____________________________________________________ |
|                                                             |
|                    <Ok>        <Cancel>                     |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
           Debian GNU/Linux System Installation
+------------------+ Choose the Host name +-------------------+
|                                                             |
| Every Debian system has a name - even if it is not on a     |
| network. This name is called its "hostname". You should now |
| specify a hostname for your new system.                     |
|                                                             |
| If your system is going to be on a network, you should talk |
| to the administrator of the network before you choose a     |
| hostname. If not, you may choose any name you like.         |
|                                                             |
| The hostname must not contain dots, and you must not append |
| the domain name here.                                       |
|                                                             |
| If you can't think of a hostname for your new system, you   |
| may press <ENTER> to use the default hostname of "debian".  |
| Please enter your Host name                                 |
|                                                             |
| eclipse____________________________________________________ |
|                                                             |
|                    <Ok>        <Cancel>                     |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+-------------------+ Network Connection +--------------------+
|                                                             |
| Is your system connected to a network?                      |
| If you decide to use a network you must ask your network    |
| administrator for an IP address and the network parameters !|
| If you plan to use a PPP connection to an ISP, say "No"     |
| here.                                                       |
|                                                             |
|                    <Yes>       <No>                         |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+----------------+ Choose the Domain name +-----------------+
|                                                          |
| As with individual systems, every network has a name. This |
| name is called the domain name.                          |
| Please enter your Domain Name.                           |
|                                                          |
| kurp.hut.fi______________________________________________ |
|                                                          |
|                    <Ok>        <Cancel>                  |
+----------------------------------------------------------+


    <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+------------------------+ Confirm +------------------------+
|                                                          |
| The full name of your system is eclipse.kurp.hut.fi.     |
| Correct?                                                 |
|                                                          |
|                    <Yes>       <No>                      |
+----------------------------------------------------------+


    <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+-----------------+ Choose the IP Address +-----------------+
|                                                          |
| What is the IP address of system eclipse?                |
|                                                          |
| 193.166.42.131___________________________________________ |
|                                                          |
|                    <Ok>        <Cancel>                  |
+----------------------------------------------------------+


    <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+-----------------+ What is your netmask? +-----------------+
|                                                          |
| What is your netmask?                                    |
|                                                          |
| 255.255.255.0____________________________________________ |
|                                                          |
|                    <Ok>        <Cancel>                  |
+----------------------------------------------------------+


    <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+----------------+ Choose Broadcast Address +-----------------+
```

```
|                                                              |
| What is your IP broadcast address?                           |
|  Unless your network has very specific needs choose the      |
| first option                                                 |
|                                                              |
|                                                              |
|  +-------------------------------------------------------+   |
|  | Last bits set to one           : 193.166.42.255       #   |
|  | Last bits set to zero          : 193.166.42.0         |   |
|  | Choose another broadcast address: another             |   |
|  +-------------------------------------------------------+   |
|                                                              |
+--------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+-------------------+ Choose the Gateway +--------------------+
|                                                             |
| A gateway system is one that connects your network to other |
| networks such as your company wide-area net or the          |
| Internet. Is there a gateway system on your network?        |
|                                                             |
|                    <Yes>       <No>                         |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+---------------+ Choose the Gateway Address +----------------+
|                                                             |
| What is your IP gateway address?                            |
|                                                             |
| 193.166.42.254_____________________________________________ |
|                                                             |
|                    <Ok>        <Cancel>                     |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+----------------------+ Choose the DNS +----------------------+
|                                                              |
| Where is the DNS (Domain Name Service) server?
|
|
|
|
|  +----------------------------------------------------------+
|  | 1: System eclipse will be its own DNS server.            |
|  | 2: Another system will be the DNS server for eclipse.    #
|  | 3: There will be no DNS server.                          |
|  +----------------------------------------------------------+
|                                                              |
+--------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+----------------+ Choose the DNS Addresses +-----------------+
|                                                             |
| Please enter the IP addresses (not host names) of up to 5   |
| name servers, separated by spaces. Do not use commas. The   |
| input line will scroll to allow you to enter a long line.   |
| The servers will be queried in the order in which you enter |
| them.                                                       |
|                                                             |
| 193.166.42.250 193.166.42.251______________________________ |
|                                                             |
|                     <Ok>        <Cancel>                    |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+----------------------+ Confirmation +-----------------------+
|                                                             |
| IP Address:           193.166.42.131                        |
| Netmask:              255.255.255.0                         |
| Network Address:      193.166.42.0                          |
| Broadcast Address:    193.166.42.255                        |
| Gateway Address:      193.166.42.254                        |
| Nameserver Addresses: 193.166.42.250 193.166.42.251         |
|                                                             |
| Correct?                                                    |
|                                                             |
|                     <Yes>       <No>                        |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+-----------------+ Choose Network Interface +------------------+
         |                                                               |
         | Choose the type of your primary network interface. If you     |
         | have more than one network interface, choose the one that     |
         | you will need for installing Debian (via NFS or FTP)          |
         |                                                               |
         |  +-----------------------------------------------------+      |
         |  | Ethernet or Fast Ethernet             : eth0       #      |
         |  | Token Ring                            : tr0        |      |
         |  | Point-To-Point Protocol               : ppp        |      |
         |  | Serial-line IP                        : slip       |      |
         |  +-----------------------------------------------------+      |
         |                                                               |
         |                                                               |
         +---------------------------------------------------------------+


              <Up>/<Down> between elements   |  <Enter> selects
```

XXX

10.5 Installing the Base System

xxx

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| You've configured the device driver modules. Please select "Next" to       |
| install the base system.                                                   |
|          +--------------------------------------------------+              |
|          | Next      : Install the Base System              #              |
|          |                                                  |              |
|          | Configure the Keyboard                           |              |
|          | Partition a Hard Disk                            |              |
|          | Initialize and Activate a Swap Partition         |              |
|          | Activate a Previously-Initialized Swap Partition |              |
|          | Do Without a Swap Partition                      |              |
|          | Initialize a Linux Partition                     |              |
|          | Mount a Previously-Initialized Partition         |              |
|          | Un-Mount a Partition                             |              |
|          | Install Operating System Kernel and Modules      |              |
|          | Install the Base System                          |              |
|          | Configure Device Driver Modules                  |              |
|          | Configure the Base System                        |              |
|          | Configure the Network                            |              |
|          +--------------------------------------------------+              |
+----------------------------------------------------------------------------+


            <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+------------+ Select Installation Medium +-------------+
| Please select the medium you will use to install the  |
| system.                                               |
|     +------------------------------------------+     |
|     | /dev/fd0  : First floppy drive           #     |
|     | /dev/fd1  : Second floppy drive          |     |
|     | cdrom     : CD-ROM drive                 |     |
|     | harddisk  : filesystem on the hard disk  |     |
|     | mounted   : already mounted filesystem   |     |
|     | nfs       : NFS (network filesystem)     |     |
|     |                                          |     |
|     +------------------------------------------+     |
|                      <Cancel>                         |
+-------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+------------+ Select Installation Medium +-------------+
| Please select the medium you will use to install the  |
| system.                                               |
|     +------------------------------------------+     |
|     | /dev/fd0  : First floppy drive           |     |
|     | /dev/fd1  : Second floppy drive          |     |
|     | cdrom     : CD-ROM drive                 |     |
|     | harddisk  : filesystem on the hard disk  |     |
|     | mounted   : already mounted filesystem   |     |
|     | nfs       : NFS (network filesystem)     |     |
|     |                                          #     |
|     +------------------------------------------+     |
```

```
            |                       <Cancel>                        |
            +-------------------------------------------------------+


                 <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
            +--------------+ Choose Debian NFS filesystem +---------------+
            |                                                             |
            | Please choose the NFS server and the mount path of the NFS  |
            | filesystem that contains the Debian archive.                |
            | Enter them in this way:  server:/ftp/debian                 |
            |                                                             |
            | atri.gsfc.nasa.gov:/home/ftp/pub___________________________ |
            |                                                             |
            |                     <Ok>        <Cancel>                    |
            +-------------------------------------------------------------+


                 <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
            +---------------+ Choose Debian archive path +----------------+
            |                                                             |
            | Please choose the path inside the mounted NFS filesystem    |
            | where the Debian archive resides.                           |
            |                                                             |
            | /fs-debian_________________________________________________ |
            |                                                             |
            |                     <Ok>        <Cancel>                    |
            +-------------------------------------------------------------+


                 <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
      +-----------------------+ Select Archive path +------------------------+
          | Please select the directory containing a file base2_0.tgz that you   |
          | will use to install the Base System.                                 |
          |                                                                      |
          |  +---------------------------------------------------------+     |
          |  | list     : Choose from a list of all Archive paths         |     |
          |  | manually : Enter the directory containing the Archive files |     |
          |  +---------------------------------------------------------+     |
          |                              <Cancel>                               |
          +----------------------------------------------------------------------+


                 <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
      +-----------------------+ Select Archive path +------------------------+
          | Please select the directory containing a file base2_0.tgz that you   |
          | will use to install the Base System.                                 |
          |                                                                      |
          |  +---------------------------------------------------------+     |
```

```
|  | list     : Choose from a list of all Archive paths         |     |
|  | manually : Enter the directory containing the Archive files |     |
|  +-----------------------------------------------------------+     |
|                             <Cancel>                              |
+--------------------------------------------------------------------+


          <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+-------------------+ Select Archive path +--------------------+
| Please select the directory that you will use to install the  |
| Base System.                                                  |
|                                                               |
|  +------------------------------------------------------+    |
|  | /instmnt/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3    #    |
|  +------------------------------------------------------+    |
|                          <Cancel>                             |
+--------------------------------------------------------------+


      <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
+---------------------+ Please Wait +----------------------+
|                                                          |
| The Base System is being extracted from                  |
| /instmnt/hamm/hamm/disks-i386/2.0.10_1998-11-13-fs3/base2_ |
| .tgz...                                                  |
|                                                          |
+----------------------------------------------------------+


    <Up>/<Down> between elements   |  <Enter> selects
```

XXX

10.6 Configuring the Base System

XXX

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| You've installed the base system and the operating system kernel.          |
| Please select "Next" to configure the base system.                         |
|          +--------------------------------------------------+              |
|          | Next      : Configure the Base System             #              |
|          |                                                  |              |
|          | Configure the Keyboard                           |              |
|          | Partition a Hard Disk                            |              |
|          | Initialize and Activate a Swap Partition         |              |
|          | Activate a Previously-Initialized Swap Partition  |              |
|          | Do Without a Swap Partition                      |              |
|          | Initialize a Linux Partition                     |              |
|          | Mount a Previously-Initialized Partition         |              |
|          | Un-Mount a Partition                             |              |
|          | Install Operating System Kernel and Modules      |              |
|          | Install the Base System                          |              |
|          | Configure Device Driver Modules                  |              |
```

```
|          | Configure the Base System                          |          |
|          | Configure the Network                              |          |
|          +----------------------------------------------------+          |
+-------------------------------------------------------------------------+

              <Up>/<Down> between elements   |  <Enter> selects
```

XXX

```
                 Debian GNU/Linux System Installation
      +-----------------------+ Select Timezone +-----------------------+
      | Please select the appropriate location in the world in which    |
      | you live.                                                       |
      |                                                                 |
      |    Timezones:                      Directories:                 |
      |    +----------------+              +---------------+            |
      |    | CET            #              | ..            #            |
      |    | CST6CDT        |              | Africa        |            |
      |    | Cuba           |              | America       |            |
      |    | EET            |              | Antarctica    |            |
      |    | EST            |              | Arctic        |            |
      |    | EST5EDT        |              | Asia          |            |
      |    | Egypt          |              | Atlantic      |            |
      |    | Eire           |              | Australia     |            |
      |    | Factory        |              | Brazil        |            |
      |    +----------------+              | Canada        |            |
      |                                    +---------------+            |
      |                                                                 |
      |                              <Cancel>                           |
      +-----------------------------------------------------------------+


<Up>/<Down> between elements | <Enter> select zone or change dir | <Tab> next
```

XXX

```
                 Debian GNU/Linux System Installation
      +-----------------------+ Select Timezone +-----------------------+
      | Please select the appropriate location in the world in which    |
      | you live.                                                       |
      |                                                                 |
      |    Timezones:                      Directories:                 |
      |    +----------------+              +---------------+            |
      |    | UCT            |              | ..            #            |
      |    | UTC            |              | Africa        |            |
      |    | Universal      |              | America       |            |
      |    | W-SU           |              | Antarctica    |            |
      |    | WET            |              | Arctic        |            |
      |    | Zulu           |              | Asia          |            |
      |    | iso3166.tab    #              | Atlantic      |            |
      |    | posixrules     |              | Australia     |            |
      |    | zone.tab       |              | Brazil        |            |
      |    +----------------+              | Canada        |            |
      |                                    +---------------+            |
      |                                                                 |
      |                              <Cancel>                           |
      +-----------------------------------------------------------------+


<Up>/<Down> between elements | <Enter> select zone or change dir | <Tab> next
```

XXX

```
+-----------------+ Timezone Configuration. +-----------------+
|                                                             |
| Unix system clocks are generally set to GMT (also known as  |
| Universal Time) and use time zone files to convert this     |
| value into local time.                                      |
| If you want your new Debian Linux system to use GMT rather  |
| than local time, you should answer 'yes' to the following   |
| question.  If you want the clock to continue to run on      |
| local time, answer 'no'.                                    |
|                                                             |
| NOTE: If this system previously ran MS-DOS, the clock is    |
| probably set to local time.                                 |
|                                                             |
|                       <Continue>                            |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+-----------------+ Timezone Configuration. +-----------------+
|                                                             |
| To have your new Debian Linux system use GMT answer 'yes'   |
| and reset the clock after you have Debian Linux installed.  |
| Current system time is  Fri Feb 19 10:36:42 1999            |
| Is your time set to GMT?                                    |
|                                                             |
|                    <Yes>       <No>                         |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

10.7 Making Linux Bootable

xxx

```
                   Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| You will either boot Linux from a floppy disk, or you will have it         |
| boot from the hard disk when your system is turned on.                     |
| Please select "Next" to make Linux bootable the hard disk, select          |
| "Alternate" to make a boot floppy, or select "Alternate1" to               |
| reboot the system.                                                         |
|      +---------------------------------------------------------+           |
|      | Next      : Make Linux Bootable Directly From Hard Disk    #         |
|      | Alternate : Make a Boot Floppy                            |         |
|      | Alternate1: Reboot the System                             |         |
|      |                                                           |         |
|      | Configure the Keyboard                                    |         |
|      | Partition a Hard Disk                                     |         |
|      | Initialize and Activate a Swap Partition                  |         |
|      | Activate a Previously-Initialized Swap Partition          |         |
|      | Do Without a Swap Partition                               |         |
|      | Initialize a Linux Partition                              |         |
|      | Mount a Previously-Initialized Partition                  |         |
|      | Un-Mount a Partition                                      |         |
|      +---------------------------------------------------------+           |
+----------------------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+------------------------+ Problem +------------------------+
|                                                           |
| With your current configuration, LILO will try to boot from |
| your first SCSI disk, but your system has also a master IDE |
| disk at the primary IDE controller. It's possible that your |
| BIOS doesn't support that.                                |
|                                                           |
| Do you want to install LILO anyway?                       |
|                                                           |
|                    <Yes>       <No>                       |
+-----------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+------------------------+ Problem +------------------------+
|                                                           |
| Please boot the system using the rescue boot method and   |
| configure LILO manually.                                  |
|                                                           |
|                       <Continue>                          |
+-----------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

10.8 Rebooting the System

xxx Making a boot floppy is not really necessary since you can use the "`resc1440`" floppy to boot a system which refuses to boot from the hard disk.

```
                  Debian GNU/Linux System Installation
+----------------+ Debian GNU/Linux Installation Main Menu +-----------------+
| You will either boot Linux from a floppy disk, or you will have it         |
| boot from the hard disk when your system is turned on.                     |
| Please select "Next" to make Linux bootable the hard disk, select          |
| "Alternate" to make a boot floppy, or select "Alternate1" to               |
| reboot the system.                                                         |
|      +---------------------------------------------------------+          |
|      | Next      : Make Linux Bootable Directly From Hard Disk  |          |
|      | Alternate : Make a Boot Floppy                          #          |
|      | Alternate1: Reboot the System                           |          |
|      |                                                         |          |
|      | Configure the Keyboard                                  |          |
|      | Partition a Hard Disk                                   |          |
|      | Initialize and Activate a Swap Partition                |          |
|      | Activate a Previously-Initialized Swap Partition        |          |
|      | Do Without a Swap Partition                             |          |
|      | Initialize a Linux Partition                            |          |
|      | Mount a Previously-Initialized Partition                |          |
|      | Un-Mount a Partition                                    |          |
|      +---------------------------------------------------------+          |
+----------------------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

```
+-------------------+ Reboot the system? +--------------------+
|                                                             |
| If you are ready to reboot the system, you should have the  |
| boot floppy (if you created one) in the first floppy drive, |
| or no floppy in the first floppy drive if you want to boot  |
| directly from the hard disk, or the Debian Rescue floppy if |
| you want to reboot the installation system.                 |
| Please take care of that before you answer "yes" to the     |
| following question.                                         |
|                                                             |
| Reboot the system?                                          |
|                                                             |
|                     <Yes>       <No>                        |
+-------------------------------------------------------------+


     <Up>/<Down> between elements   |  <Enter> selects
```

xxx

10.9 Additional Questions Asked by "FS3_Full" Software Set

```
Now you may choose one of several selections of packages to be installed.
If you prefer to select one by one which packages to install on the system
you may skip this step, else you may skip the "Select" step later when I
run the 'dselect' program.

Do you want to skip this step? [y/N] n
```

xxx

```
Debian Installation

+--------------------------+ Please Select Profile +---------------------------+
| Please select the kind of installation you want:                             |
|                                                                              |
|Admin         Administrator box (network tools, Perl, ...) [~ 305M]           |
|Basic         standalone system without development tools [~ 25M]             |
|Devel_comp    Huge development environment (Perl, Python, C, ...) [~ 404M]    |
|Devel_std     Standard C development environment [~ 340M]                     |
|Dialup        Home machine (graphics, sound, X, ...) [~ 420M]                 |
|FS3_Full      A full FS/Debian/Linux 3 (hamm 2.0 r2) system [~ 600M]          |
|FS3_Standard  A standard FS/Debian/Linux 3 (hamm 2.0 r2) system [~ 400M]      |
|Server_comp   Server (add. Mailinglist, Backup, News, Samba, Squid) [~ 50M]   |
|Server_std    Std. Server (Ftp, Web, DNS, NIS, POP) [~ 40M]                   |
|Standard      Compiler, printing, emacs and networking [~ 89M]                |
|Work_sci      Scientific Workstation (Tex, math, plot, X, ...) [~ 500M]       |
|Work_std      Standard Workstation (TeX, graphics, Internet, X, ...) [~ 382M] |
|Custom        Select the tasks you will perform with this system.             |
|                                                                              |
|                                                                              |
|                   <Ok>                          <Cancel>                     |
|                                                                              |
+------------------------------------------------------------------------------+
```

xxx

```
I'm now going to start the `dselect' program.  `dselect' is used to select
```

```
which of the hundreds of packages included with Debian GNU/Linux to install
on the system.  (It is also used for general maintenance of the packages on
the system, but you'll be primarily interested in installation now.)

Because you have chosen already a preselected set of packages you should
skip the [S]elect step. Just use [A]ccess, [U]pdate and go directly to
[I]nstall afterwards.

Press <ENTER> to continue:
```

XXX

```
Debian Linux `dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
 * 3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

Version 1.4.0.23.2 (i386 elf).  Copyright (C) 1994-1996 Ian Jackson.   This is
free software; see the GNU General Public Licence version 2 or later for
copying conditions.  There is NO warranty.  See dselect --licence for details.
```

XXX

```
want: dists/stable/main/binary-i386/admin/dotfile-tcsh_1.3-3.deb (60k)
want: dists/stable/non-free/binary-i386/graphics/gimp-nonfree_1.0.0-1.deb (26k)
want: dists/stable/contrib/binary-i386/math/xldlas_0.85-2.deb (116k)
want: dists/stable/main/binary-i386/graphics/gimp_1.0.0-1.deb (2695k)
want: local/binary-i386/ssh_1.2.26-1.2_i386.deb (419k)
want: dists/stable/main/binary-i386/x11/xfntcyr_3.3.2.3-2.deb (378k)
want: dists/stable/main/binary-i386/math/netcdfg3_3.3.1-6.deb (65k)
want: dists/stable/main/binary-i386/devel/lapack-doc_2.0.1-3.1.deb (1398k)
want: dists/stable/main/binary-i386/math/oleo_1.6-11.deb (247k)
want: dists/stable/main/binary-i386/x11/swisswatch_0.6-3.deb (17k)
want: dists/stable/contrib/binary-i386/misc/iraf-ibin_2.11.1-1.deb (12006k)
want: dists/stable/main/binary-i386/devel/c2man_2.41-9.deb (63k)
```

```
want: dists/stable/contrib/binary-i386/mail/mailcrypt_3.4-4.deb (83k)
want: dists/stable/contrib/binary-i386/misc/iraf-noaobin_2.11.1-1.deb (13369k)
want: dists/stable/main/binary-i386/doc/developers-reference_2.4.1.2.deb (36k)
want: dists/stable/contrib/binary-i386/misc/iraf-common_2.11.1-1.deb (16244k)
want: dists/stable/main/binary-i386/devel/lapack-dev_2.0.1-2.1.deb (1614k)
want: dists/stable/non-free/binary-i386/math/xgobi_19980302-1.deb (518k)
want: dists/stable/main/binary-i386/mail/xmailtool_3.1.2b-1.3.deb (68k)
want: dists/stable/main/binary-i386/text/debiandoc-sgml_1.0.18.deb (37k)
want: dists/stable/main/binary-i386/x11/xdaliclock_2.11-2.deb (29k)

Approximate total space required: 107518k
Available space in debian: 511021k
Do you want to select the files to get [n]:

Do you want to download the required files [y]:
Downloading files... use ^C to stop
Connecting to kurp-ftp.hut.fi...
Login as ftp...
Setting transfer mode to binary...
Cd to '/pub/fs-debian'...
getting: dists/stable/contrib/binary-i386/mail/mailcrypt_3.4-4.deb (84764)
getting: dists/stable/contrib/binary-i386/misc/iraf_2.11.1-2.deb (109550)
getting: dists/stable/main/binary-i386/math/apcalc-dev_2.10.3t5.45-2.deb (358050
)
getting: dists/stable/non-free/binary-i386/doc/hwb_1.3-2.deb (492302)
getting: dists/stable/main/binary-i386/doc/developers-reference_2.4.1.2.deb (360
14)
...
dists/stable/main/binary-i386/web/amaya_1.2-1.deb
dists/stable/main/binary-i386/editors/addressbook_0.7-8.deb
dists/stable/main/binary-i386/editors/xemacs19_19.16-2.deb
dists/stable/main/binary-i386/editors/xcoral_3.14-2.deb
dists/stable/main/binary-i386/editors/xemacs19-support_19.16-2.deb
dists/stable/main/binary-i386/doc/developers-reference_2.4.1.2.deb
dists/stable/main/binary-i386/doc/packaging-manual_2.4.1.1.deb
dists/stable/main/binary-i386/doc/doc-rfc_1998.03-1.deb
dists/stable/main/binary-i386/math/apcalc-dev_2.10.3t5.45-2.deb
dists/stable/main/binary-i386/math/apcalc_2.10.3t5.45-2.deb
dists/stable/main/binary-i386/math/xmgr_4.1.1-1.deb
dists/stable/main/binary-i386/math/oleo_1.6-11.deb
dists/stable/main/binary-i386/math/netcdfg3_3.3.1-6.deb
dists/stable/main/binary-i386/otherosfs/hfsutils_3.1-3.deb
dists/stable/main/binary-i386/otherosfs/hfsutils-tcltk_3.1-3.deb
dists/stable/main/binary-i386/graphics/gimp_1.0.0-1.deb
dists/stable/main/binary-i386/graphics/gimp-data-extras_0.99a-1.deb
dists/stable/main/binary-i386/games/xbill_2.0-7.deb
dists/stable/main/binary-i386/mail/vm_6.47-2.deb
dists/stable/main/binary-i386/mail/xmailtool_3.1.2b-1.3.deb
dists/stable/main/binary-i386/text/debiandoc-sgml_1.0.18.deb
local/binary-i386/pgp-i_2.6.3a-1.deb
local/binary-i386/ssh_1.2.26-1.2_i386.deb

Do you want to install the files fetched [y]: y
Installing files...
(Reading database ...
dpkg: serious warning: files list file for package 'ssh' missing, assuming packa
ge has no files currently installed.
34882 files and directories currently installed.)
Unpacking tgif (from .../graphics/tgif_3.0-p17-5.deb) ...
Unpacking gimp-nonfree (from .../gimp-nonfree_1.0.0-1.deb) ...
Unpacking hwb (from .../binary-i386/doc/hwb_1.3-2.deb) ...
Unpacking dmalloc (from .../devel/dmalloc_3.3.1-3.deb) ...
Unpacking xgobi (from .../math/xgobi_19980302-1.deb) ...
Unpacking xarchie (from .../x11/xarchie_2.0.10-9.deb) ...
Unpacking xldlas (from .../math/xldlas_0.85-2.deb) ...
Unpacking mailcrypt (from .../mail/mailcrypt_3.4-4.deb) ...
Unpacking auto-pgp (from .../mail/auto-pgp_1.04-1.deb) ...
```

```
Unpacking iraf (from .../misc/iraf_2.11.1-2.deb) ...
Unpacking iraf-common (from .../misc/iraf-common_2.11.1-1.deb) ...
Unpacking iraf-ibin (from .../misc/iraf-ibin_2.11.1-1.deb) ...
Unpacking iraf-noaobin (from .../misc/iraf-noaobin_2.11.1-1.deb) ...
Unpacking lapack (from .../libs/lapack_2.0.1-2.1.deb) ...
Unpacking tix41 (from .../libs/tix41_4.1.0.6-3.deb) ...
Unpacking tkcvs (from .../devel/tkcvs_6.0-9.deb) ...
Unpacking checker (from .../devel/checker_0.8-21.deb) ...
...
Filesystem         1024-blocks  Used Available Capacity Mounted on
/dev/sda1             992002  696633   244119     74%   /
/dev/hda5             565887  479281    57376     89%   /a
...
Unpacking doc-rfc (from .../doc/doc-rfc_1998.03-1.deb) ...
Unpacking apcalc-dev (from .../apcalc-dev_2.10.3t5.45-2.deb) ...
Unpacking apcalc (from .../math/apcalc_2.10.3t5.45-2.deb) ...
Unpacking xmgr (from .../math/xmgr_4.1.1-1.deb) ...
Unpacking oleo (from .../math/oleo_1.6-11.deb) ...
Unpacking netcdfg3 (from .../math/netcdfg3_3.3.1-6.deb) ...
Unpacking hfsutils (from .../otherosfs/hfsutils_3.1-3.deb) ...
Unpacking hfsutils-tcltk (from .../hfsutils-tcltk_3.1-3.deb) ...
Unpacking gimp (from .../graphics/gimp_1.0.0-1.deb) ...
Unpacking gimp-data-extras (from .../gimp-data-extras_0.99a-1.deb) ...
Unpacking xbill (from .../games/xbill_2.0-7.deb) ...
Unpacking vm (from .../binary-i386/mail/vm_6.47-2.deb) ...
Unpacking xmailtool (from .../mail/xmailtool_3.1.2b-1.3.deb) ...
Unpacking debiandoc-sgml (from .../text/debiandoc-sgml_1.0.18.deb) ...
Unpacking pgp-i (from .../binary-i386/pgp-i_2.6.3a-1.deb) ...
Preparing to replace ssh 1.2.22-1 (using .../ssh_1.2.26-1.2_i386.deb) ...
Unpacking replacement ssh ...
Setting up tgif (3.0-p17-5) ...
checking for /etc/papersize ... exists ... Update-menus: waiting for dpkg to fin
ish (forking to background)
Update-menus: (checking /var/lib/dpkg/lock)
is OK: US Letter.
Which grid system do you want to use by default?
You may choose "Metric" or "English".
[English]:
Setting up hwb (1.3-2) ...

Setting up dmalloc (3.3.1-3) ...

Setting up xgobi (19980302-1) ...

Setting up xarchie (2.0.10-9) ...

Here is a list of the archie servers known to me:

   archie.sura.net(1526) USA (MD)      |         archie.sura.net USA (MD)
          archie.ans.net USA (NY)      |      archie.rutgers.edu USA (NJ)
          archie.unl.edu USA (NE)      |     archie.internic.net USA (NJ)
               archie.au Australia     |   archie.uni-linz.ac.at Austria
     archie.univie.ac.at Austria       |     archie.cs.mcgill.ca Canada
          archie.uqam.ca Canada        |        archie.funet.fi Finland
  archie.univ-rennes1.fr France        |  archie.th-darmstadt.de Germany
            archie.ac.il Israel        |         archie.unipi.it Italy
       archie.wide.ad.jp Japan         |       archie.hana.nm.kr Korea
     archie.sogang.ac.kr Korea         |       archie.uninett.no Norway
       archie.rediris.es Spain         |          archie.luth.se Sweden
        archie.switch.ch Switzerland   |        archie.twnic.net Taiwan
       archie.ncu.edu.tw Taiwan        |     archie.doc.ic.ac.uk United Kingdom

Please enter the name of your default archie server: archie.funet.fi

Setting up checker (0.8-21) ...

Setting up c2man (2.41-9) ...
```

```
Setting up lapack-doc (2.0.1-3.1) ...
Setting up lapack-dev (2.0.1-2.1) ...
Setting up xfntbig (3.3.2.3-2) ...
Adjusting font index in /usr/X11R6/lib/X11/fonts/misc...

Setting up xbooks (3.3.2.3-2) ...
Setting up xmanpages (3.3.2.3-2) ...
Setting up xfntil2 (2.0.4) ...
Making font directory /usr/X11R6/lib/X11/fonts/75dpi-il2...
Making font directory /usr/X11R6/lib/X11/fonts/100dpi-il2...
Making font directory /usr/X11R6/lib/X11/fonts/misc-il2...

Setting up xdaliclock (2.11-2) ...
Setting up xfntcyr (3.3.2.3-2) ...
Adjusting font index in /usr/X11R6/lib/X11/fonts/cyrillic...

Setting up swisswatch (0.6-3) ...
Setting up dotfile (2.2-1) ...
Setting up dotfile-tcsh (1.3-3) ...
 Byte compiling modules makes them run significantly faster
Do you want to bytecompile this module now? (Y/n) ? y
Setting up xbooks (3.3.2.3-2) ...
Setting up xmanpages (3.3.2.3-2) ...
Setting up xfntil2 (2.0.4) ...
Making font directory /usr/X11R6/lib/X11/fonts/75dpi-il2...
Making font directory /usr/X11R6/lib/X11/fonts/100dpi-il2...
Making font directory /usr/X11R6/lib/X11/fonts/misc-il2...

Setting up xdaliclock (2.11-2) ...
Setting up xfntcyr (3.3.2.3-2) ...
Adjusting font index in /usr/X11R6/lib/X11/fonts/cyrillic...

Setting up swisswatch (0.6-3) ...
Setting up dotfile (2.2-1) ...
Setting up dotfile-tcsh (1.3-3) ...
 Byte compiling modules makes them run significantly faster
Do you want to bytecompile this module now? (Y/n) ? y
Loading Information...Please wait
....................
Byte compiling the tcsh module
Please wait
...........

Setting up dotfile-emacs (1.2-3) ...
 Byte compiling modules makes them run significantly faster
Do you want to bytecompile this module now? (Y/n) ? y
Setting up gimp (1.0.0-1) ...

Setting up gimp-data-extras (0.99a-1) ...
Setting up xbill (2.0-7) ...

Setting up vm (6.47-2) ...
install/vm: Ignoring emacsen flavor emacs.
install/vm: Byte-compiling for emacs19...Wrote /usr/share/emacs/site-lisp/vm/vm-
autoload.elc
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-delete.elc
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-digest.elc
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-easymenu.elc
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-edit.elc
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-folder.elc
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-license.elc
```

```
Done
Wrote /usr/share/emacs/site-lisp/vm/vm-mark.elc
Done


Setting up xmailtool (3.1.2b-1.3) ...
Setting up debiandoc-sgml (1.0.18) ...
Updating SGML catalog entry for package debiandoc-sgml...

Setting up pgp-i (2.6.3a-1) ...
Checking available versions of pgp, updating links in /etc/alternatives ...
(You may modify the symlinks there yourself if desired - see `man ln'.)
Updating pgp (/usr/bin/pgp) to point to /usr/bin/pgp-i.
Updating pgp-doc (/usr/doc/pgp) to point to /usr/doc/pgp-i.
Updating pgp.1.gz (/usr/man/man1/pgp.1.gz) to point to /usr/man/man1/pgp-i.1.gz.

IMPORTANT: Please read the documentation in /usr/doc/pgp before
attempting to use PGP for anything, or you will probably lose
any security advantage you might have gained by using PGP.


dpkg: dependency problems prevent configuration of ssh:
 ssh depends on gmp2 (>= 2.0.2); however:
  Package gmp2 is not installed.
dpkg: error processing ssh (--install):
 dependency problems - leaving unconfigured
Setting up mailcrypt (3.4-4) ...
install/mailcrypt: Ignoring emacsen flavor emacs.
install/mailcrypt: Byte-compiling for emacs19...
Setting up mailcrypt (3.4-4) ...
install/mailcrypt: Ignoring emacsen flavor emacs.
install/mailcrypt: Byte-compiling for emacs19...done.
install/mailcrypt: Ignoring emacsen flavor xemacs19.

Setting up auto-pgp (1.04-1) ...
install/auto-pgp: Ignoring emacsen flavour emacs
install/auto-pgp: Byte-compiling for emacsen flavour emacs19
install/auto-pgp: Byte-compiling for emacsen flavour xemacs19

Setting up iraf (2.11.1-2) ...
mgroup =
groups =
iraf not found.
Creating user iraf with gid 65534.
adduser: Warning: The home dir you specified already exists.
Adding system user iraf...
Adding new user iraf (100) with group nogroup.
Home directory /iraf/iraf/local already exists.

Now preparing to run the IRAF setup script.
You will be asked to enter the IRAF root directory.
Be sure to use /iraf/iraf unless you REALLY know what you're doing.

new iraf root directory (): /iraf/iraf
default root image storage directory (/tmp):
install iraf for machine type linux
old iraf root = /iraf/iraf, old imdir = /d0/iraf
installing iraf at /iraf/iraf, imdir=/tmp, lbindir=/usr/bin
proceed with installation? (yes):
symbolic link rmfiles is ok
symbolic link rtar is ok
symbolic link sgidispatch is ok
symbolic link wtar is ok
symbolic link rpp is ok
symbolic link xpp is ok
symbolic link xyacc is ok
symbolic link xc is ok
```

```
touch hlib$utime
make device entry /dev/imt1i for imtool
make device entry /dev/imt1o for imtool
make device entry /dev/imt1 for imtool
/bin/ls: imtoolrc: No such file or directory
make symbolic link imtoolrc -> /iraf/iraf/dev/imtoolrc
termcap file is ok (contains xgterm entry)
graphcap file is ok (contains xgterm, imtool entries)

Base install complete.
Each user who wishes to use IRAF must run the mkiraf script from the
home directory before IRAF can be run.


Setting up dotfile-procmail (1.0b1-3) ...
 Byte compiling modules makes them run significantly faster
Do you want to bytecompile this module now? (Y/n) ? y
---------------WARNING------------------------
This module is still beta! Please be aware that if you use this
mail may get lost!
Loading Information...Please wait
...
Byte compiling the procmail module
Please wait
............

Setting up dotfile-fvwm2 (1.0b6-5) ...
To bytecompile this module, run  'dotfile fvwm2 bytecompile' as root in X

Setting up dotfile-bash (1.02-3) ...
 Byte compiling modules makes them run significantly faster
Do you want to bytecompile this module now? (Y/n) ? y
Loading Information...Please wait
..................
Byte compiling the Bash module
Please wait
............

Setting up xmgr (4.1.1-1) ...

Errors were encountered while processing:
 ssh
DPKG ERROR

Do you wish to delete the installed package (.deb) files? [y]:
Removing installed files...
In file "/usr/lib/menu/xemacs19" at line 4:
  section=Apps/Editors  title="XEmacs19-tty"  command="/usr/bin/xemacs19"
                                                                         ^
Unexpected end of line
In file "/usr/lib/menu/xemacs19" at line 4:
  section=Apps/Editors  title="XEmacs19-tty"  command="/usr/bin/xemacs19"
                                                                         ^
Unexpected end of line
Update-menus: Cannot remove lockfile /var/run/update-menus.pid
deleting: dists/stable/non-free/binary-i386/graphics/tgif_3.0-p17-5.deb
deleting: dists/stable/non-free/binary-i386/graphics/gimp-nonfree_1.0.0-1.deb
deleting: dists/stable/non-free/binary-i386/doc/hwb_1.3-2.deb
deleting: dists/stable/non-free/binary-i386/devel/dmalloc_3.3.1-3.deb
deleting: dists/stable/non-free/binary-i386/math/xgobi_19980302-1.deb
deleting: dists/stable/non-free/binary-i386/x11/xarchie_2.0.10-9.deb
deleting: dists/stable/contrib/binary-i386/math/xldlas_0.85-2.deb
deleting: dists/stable/contrib/binary-i386/mail/mailcrypt_3.4-4.deb
deleting: dists/stable/contrib/binary-i386/mail/auto-pgp_1.04-1.deb
deleting: dists/stable/contrib/binary-i386/misc/iraf_2.11.1-2.deb
...
deleting: dists/stable/main/binary-i386/web/amaya_1.2-1.deb
```

```
deleting: dists/stable/main/binary-i386/editors/addressbook_0.7-8.deb
deleting: dists/stable/main/binary-i386/editors/xemacs19_19.16-2.deb
deleting: dists/stable/main/binary-i386/editors/xcoral_3.14-2.deb
deleting: dists/stable/main/binary-i386/editors/xemacs19-support_19.16-2.deb
deleting: dists/stable/main/binary-i386/doc/developers-reference_2.4.1.2.deb
deleting: dists/stable/main/binary-i386/doc/packaging-manual_2.4.1.1.deb
deleting: dists/stable/main/binary-i386/doc/doc-rfc_1998.03-1.deb
deleting: dists/stable/main/binary-i386/math/apcalc-dev_2.10.3t5.45-2.deb
deleting: dists/stable/main/binary-i386/math/apcalc_2.10.3t5.45-2.deb
deleting: dists/stable/main/binary-i386/math/xmgr_4.1.1-1.deb
deleting: dists/stable/main/binary-i386/math/oleo_1.6-11.deb
deleting: dists/stable/main/binary-i386/math/netcdfg3_3.3.1-6.deb
deleting: dists/stable/main/binary-i386/otherosfs/hfsutils_3.1-3.deb
deleting: dists/stable/main/binary-i386/otherosfs/hfsutils-tcltk_3.1-3.deb
deleting: dists/stable/main/binary-i386/graphics/gimp_1.0.0-1.deb
deleting: dists/stable/main/binary-i386/graphics/gimp-data-extras_0.99a-1.deb
deleting: dists/stable/main/binary-i386/games/xbill_2.0-7.deb
deleting: dists/stable/main/binary-i386/mail/vm_6.47-2.deb
deleting: dists/stable/main/binary-i386/mail/xmailtool_3.1.2b-1.3.deb
deleting: dists/stable/main/binary-i386/text/debiandoc-sgml_1.0.18.deb
deleting: local/binary-i386/pgp-i_2.6.3a-1.deb
deleting: local/binary-i386/ssh_1.2.26-1.2_i386.deb

Do you want to remove debian directory? [n]:

installation script returned error exit status 1.
Press RETURN to continue.
```

XXX

```
Debian Linux ‘dselect’ package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
 * 4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

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free software; see the GNU General Public Licence version 2 or later for
copying conditions.  There is NO warranty.  See dselect --licence for details.
```

xxx

```
running dpkg --pending --configure ...
dpkg: dependency problems prevent configuration of ssh:
 ssh depends on gmp2 (>= 2.0.2); however:
  Package gmp2 is not installed.
dpkg: error processing ssh (--configure):
 dependency problems - leaving unconfigured
Errors were encountered while processing:
 ssh

dpkg --configure returned error exit status 1.
Press RETURN to continue.
```

xxx

```
Debian Linux `dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
 * 2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

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copying conditions.  There is NO warranty.  See dselect --licence for details.
```

xxx

```
Help: Introduction to package list
Welcome to the main package listing.  Please read the help that is available !

You will be presented with a list of packages which are installed or available
for installation.  You can navigate around the list using the cursor keys,
mark packages for installation (using `+') or deinstallation (using `-').

Packages can be marked either singly or in groups; initially you will see that
the line `All packages' is selected.  `+', `-' and so on will affect all the
packages described by the highlighted line.  Use `o' to change the order of the
list (this also changes which kinds of group selections are possible).

(Mainly for new installations:) Standard packages will be requested by default.
Use capital `D' or `R' key to override this - see the keybindings help screen.

Some of your choices will cause conflicts or dependency problems; you will be
```

```
given a sub-list of the relevant packages, so that you can solve the problems.

When you are satisfied with your choices you should press Return to confirm
your changes and leave the package listing.  A final check on conflicts and
dependencies will be done - here too you may see a sublist.

Press Space to leave help and enter the list; press '?' at any time for help.

? = help menu    Space = exit help    . = next help    or a help page key
```

XXX

```
dselect - main package listing (avail., priority)    mark:+/=/- verbose:v help:?
EIOM Pri Section  Package      Inst.ver    Avail.ver   Description
    - All packages -
    --- Brokenly installed packages ---
    ----- Broken Unclassified packages -----
    ------- Broken Unclassified packages without a section -------
 U** ?   ?        ssh          1.2.26-1.2  1.2.26-1.2  a secure replacement for
    --- Newly available packages ---
  n_ ?   ?        ssh-askpass  <none>      1.2.26-1.2  under X, asks user for a
    --- Up to date installed packages ---
    ----- Up-to-date Required packages -----
    ------- Up-to-date Required packages in section base -------
 *** Req base     adduser      3.8         3.8         Add users and groups to t
All packages
The line you have highlighted represents many packages; if you ask to
install, remove, hold, &c it you will affect all the packages which match
the criterion shown.

If you move the highlight to a line for a particular package you will see
information about that package displayed here. You can use 'o' and 'O' to
change the sort order and give yourself the opportunity to mark packages in
different kinds of groups.


description
```

XXX

```
dselect - main package listing (avail., priority)    mark:+/=/- verbose:v help:?
EIOM Pri Section  Package      Inst.ver    Avail.ver   Description
    --- Brokenly installed packages ---
    ----- Broken Unclassified packages -----
    ------- Broken Unclassified packages without a section -------
 U** ?   ?        ssh          1.2.26-1.2  1.2.26-1.2  a secure replacement for
    --- Newly available packages ---
  n* ?   ?        ssh-askpass  <none>      1.2.26-1.2  under X, asks user for a
    --- Up to date installed packages ---
    ----- Up-to-date Required packages -----
    ------- Up-to-date Required packages in section base -------
 *** Req base     adduser      3.8         3.8         Add users and groups to t
 *** Req base     ae           962-21      962-21      Anthony's Editor -- a tin
Up to date installed packages
The line you have highlighted represents many packages; if you ask to
install, remove, hold, &c it you will affect all the packages which match
the criterion shown.

If you move the highlight to a line for a particular package you will see
information about that package displayed here. You can use 'o' and 'O' to
change the sort order and give yourself the opportunity to mark packages in
different kinds of groups.


description
```

XXX

```
Help: Introduction to conflict/dependency resolution sub-list
Dependency/conflict resolution - introduction.

One or more of your choices have raised a conflict or dependency problem -
some packages should only be installed in conjunction with certain others, and
some combinations of packages may not be installed together.

You will see a sub-list containing the packages involved.  The bottom half of
the display shows relevant conflicts and dependencies; use `i' to cycle between
that, the package descriptions and the internal control information.

A set of `suggested' packages has been calculated, and the initial markings in
this sub-list have been set to match those, so you can just hit Return to
accept the suggestions if you wish.  You may abort the change(s) which caused
the problem(s), and go back to the main list, by pressing capital `X'.

You can also move around the list and change the markings so that they are more
like what you want, and you can `reject' my suggestions by using the capital
`D' or `R' keys (see the keybindings help screen).  You can use capital `Q' to
force me to accept the situation currently displayed, in case you want to
override a recommendation or think that the program is mistaken.

Press Space to leave help and enter the sub-list; remember: press `?' for help.

? = help menu    Space = exit help    . = next help    or a help page key
```

XXX

```
dselect - recursive package listing                 mark:+/=/- verbose:v help:?
EIOM Pri Section  Package      Description
 U** ?   ?        ssh          a secure replacement for rlogin, rsh, and rcp
  _* Xtr libs     gmp2         Multiprecision arithmetic library









ssh          unpacked (not set up);  install (was: install).  Unclassified
ssh depends on gmp2 (>= 2.0.2)









interrelationships affecting ssh
```

XXX

```
Debian Linux `dselect' package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
```

```
 * 3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

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```

xxx

```
Processing status file...

Processing Package files...
 dists_stable_main...
 dists_stable_non-free...
 dists_stable_contrib...
 local...

Constructing list of files to get...
want: local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb (39k)
want: dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb (103k)

Approximate total space required: 142k
Available space in debian: 235769k
Do you want to select the files to get [n]:

Do you want to download the required files [y]:
Downloading files... use ^C to stop
Connecting to kurp-ftp.hut.fi...
Login as ftp...
Setting transfer mode to binary...
Cd to '/pub/fs-debian'...
getting: dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb (104798)
getting: local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb (39848)

Processing downloaded files...(for corrupt/old/partial)
dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb
local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb

Do you want to install the files fetched [y]:
Installing files...
(Reading database ... 57746 files and directories currently installed.)
Unpacking gmp2 (from .../libs/gmp2_2.0.2-6.deb) ...
```

```
Unpacking ssh-askpass (from debian/local/binary-i386/ssh-askpass_1.2.26-1.2_i386
.deb) ...
Setting up gmp2 (2.0.2-6) ...

dpkg: dependency problems prevent configuration of ssh-askpass:
 ssh-askpass depends on ssh (= 1.2.26-1.2); however:
  Package ssh is not configured yet.
dpkg: error processing ssh-askpass (--install):
 dependency problems - leaving unconfigured
Errors were encountered while processing:
 ssh-askpass
DPKG ERROR

Do you wish to delete the installed package (.deb) files? [y]:
Removing installed files...
deleting: dists/stable/main/binary-i386/libs/gmp2_2.0.2-6.deb
deleting: local/binary-i386/ssh-askpass_1.2.26-1.2_i386.deb

Do you want to remove debian directory? [n]:

installation script returned error exit status 1.
Press RETURN to continue.
```

XXX

```
Debian Linux ‘dselect’ package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
 * 4. [C]onfig      Configure any packages that are unconfigured.
   5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

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```

XXX

```
running dpkg --pending --configure ...
Setting up ssh (1.2.26-1.2) ...
Generating 1024 bit host key.
Initializing random number generator...
Generating p:  ..++ (distance 8)
Generating q:  ............................++ (distance 522)
Computing the keys...
Testing the keys...
Key generation complete.
Your identification has been saved in /etc/ssh/ssh_host_key.
Your public key is:
```

```
1024 37 154299795378909125403465308756202788667472816807830982867888549396410889
96729066682003651414148491660145460126017627612507244659987068820371959749091725
82905010943639615415964255712768745372180470143323328356388967443362436269453482
28448770164089444022687684500533686415862335959841043346264605522485387865513 ro
ot@eclipse
Your public key has been saved in /etc/ssh/ssh_host_key.pub

You should read the documentation and then configure /etc/ssh/ssh_config
and /etc/ssh/sshd_config to your sites needs and preferences.
Starting Secure Shell server: sshd.

Setting up ssh-askpass (1.2.26-1.2) ...
```

XXX

```
Debian Linux ‘dselect’ package handling frontend.

   0. [A]ccess      Choose the access method to use.
   1. [U]pdate      Update list of available packages, if possible.
   2. [S]elect      Request which packages you want on your system.
   3. [I]nstall     Install and upgrade wanted packages.
   4. [C]onfig      Configure any packages that are unconfigured.
 * 5. [R]emove      Remove unwanted software.
   6. [Q]uit        Quit dselect.

Use ^P and ^N, cursor keys, initial letters, or digits to select;
Press ENTER to confirm selection.   ^L to redraw screen.

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copying conditions.  There is NO warranty.  See dselect --licence for details.
```

XXX

```
You may now login as 'root' at the  login:  prompt.  To create a normal
user account, you should run 'adduser' as root with a user name as an
argument.  For example, to create a user called "imurdock", you would
type this at the shell prompt: "adduser imurdock".

You may also take advantage of the multi-tasking features of Debian
GNU/Linux by pressing <Left Alt><Fn> to switch to a new "virtual
console", where n is the number of the virtual console to switch to.
For example, to switch to virtual console #3, you would press <Left
Alt><F3>, and to return to this virtual console (virtual console #1),
you would press <Left Alt><F1>.

Have fun!
```

```
Debian GNU/Linux 2.0 eclipse tty1

eclipse login:
```

XXX