

Table of Contents

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Introduction

Machine List

Partitioning your Hard Disk

 Basic partitioning information

 Estimating space requirements

 Partitioning your disk(s)

 Repartitioning Existing Disks

 Partition Types and Names

 Drive Setup

 Apple HD SC Setup

 pdisk

Installing the Mac OS-side files

Once you are in the MkLinux Installer

Getting started with MkLinux

 Logging in as root

 Creating a user account

 Mounting the CD

 Installing a package

 Removing a package

Where to go next

 Books

 Online

Thanks

Last words

Introduction

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Welcome to MkLinux Developer Release 3! MkLinux, as you probably realize, is Apple Computer's Mach 3-based version of the GNU/Linux operating system. Versions of MkLinux run on the Intel, PA-RISC, and PowerPC architectures. This disc contains the version of MkLinux which runs on PowerPC-based Apple Power Macintosh and related systems.

With DR3, MkLinux binary executables are compatible with the other PowerPC Linux systems (e.g., LinuxPPC). In addition, MkLinux file systems are byte-order compatible with other (e.g., Intel-based) Linux file systems. Also, MkLinux DR3 supports dynamic shared libraries, for greatly reduced disk and RAM storage and faster program loading.

Developer Release 3 has been a long time (over a year!) in development. It supports many more machines since the last release (DR2.1) and offers much more flexibility in terms of installation options. As a result of this flexibility, the installation process has become rather more complex. We have tried to retain as much simplicity as possible, however!

If, after reading these notes carefully, you still have trouble getting

MkLinux to run, please make use of the wide variety of user-contributed support resources. Specifically, you should start with the "Frequently Asked Questions" (FAQ) on Apple's MkLinux web page (www.mklinux.apple.com).

If the FAQ does not help you, please use the MkLinux mailing lists. The "mklinux-setup" list is probably most appropriate for problems you might encounter while installing MkLinux DR3. Submit your question (in detailed form) to the mklinux-setup email list (the MkLinux web site has links to a sign-on form). The members on the setup list are very helpful and knowledgeable about a wide range of machines.

Please do not contact directly Apple Computer's MkLinux team or Prime Time Freeware for support on MkLinux. Put simply, neither organization has the resources to help you. You will get better results with the FAQ and mailing lists.

Machine List

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MkLinux DR3 will run on the following PowerPC-based Macintoshes:

Power Macintosh 6100	Power Macintosh 9500
Performa 61xx	Power Macintosh 9500/180MP
Workgroup Server 6150	Power Macintosh 9515
Power Macintosh 7100	Power Macintosh 9600
Power Macintosh 8100	Power Macintosh 9600/200MP
Power Macintosh 8115	Workgroup Server 9650
Workgroup Server 8150	
Workgroup Server 9150	
	Power Macintosh 4400
Power Macintosh 7200	Power Macintosh 5400
Power Macintosh 7215	Performa 54xx
Power Macintosh 7220	Power Macintosh 5500
Workgroup Server 7250	Performa 6360
Power Macintosh 7300	Power Macintosh 6400
Workgroup Server 7350	Performa 64xx
Power Macintosh 7500	Power Macintosh 6500
Power Macintosh 7600	20th Anniversary Macintosh
Power Macintosh 8200	
Power Macintosh 8500	PowerBook 3400
Power Macintosh 8515	Power Macintosh G3 Desktop
Workgroup Server 8550	Power Macintosh G3 Minitower
Power Macintosh 8600	PowerBook G3

Notes:

Some of the high-end Power Macintoshes and Workgroup Servers use a PCI-based SCSI adapter to access Fast-Wide or Ultra-Wide SCSI devices. At this time, MkLinux cannot access SCSI devices attached via PCI adapters. In order to use MkLinux DR3 on these machines, you will need to attach a separate SCSI disk to the Macintosh's onboard or external SCSI connector.

MkLinux has some difficulty accessing various IDE drives that have been shipped on some Macintosh systems. MkLinux will not recognize these drives; thus, the MkLinux installer will not report them in its drive list. As an alternative, you can install MkLinux DR3 onto an external SCSI drive. Check the Frequently Asked Questions on www.mklinux.apple.com for current information, patches, workarounds, etc.

MkLinux DR3 will run on many of the Macintosh clones. If you have one of these machines, your best bet is to try the installation process and see how things go. If you have problems, send a note to the mklinux-setup list.

Partitioning your Hard Disk

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Partitioning your disk is probably the most difficult step in getting MkLinux installed onto your Macintosh. If you are already familiar with partitioning disks on Macintosh systems, you should at least skim this section and proceed with your own partitioning method.

Unfortunately, there is no simple partitioning recipe that will work for every situation. Practically every MkLinux installation is unique; each may require different tools and methods to accomplish. The best we can do is to provide you with information about partitioning tools and MkLinux's requirements, then let you determine which method best serves your needs.

If you are new to disk partitioning concepts, or partitioning disks on Macintoshes, then you will want to pay close attention to this section. Even if you are completely unfamiliar with disk partitioning concepts, we feel that if you read this section carefully, you will be able to get through the partitioning task. Don't give up, it's really not that difficult. Also, you may want to make use of the helpful people who read and post to the mklinux-setup mailing list.

Basic partitioning information

Most of the disk space that MkLinux needs in order to operate does not reside in regular Mac OS volumes. Instead, MkLinux has its own filesystems, which must reside in separate disk partitions.

MkLinux uses two distinct types of disk partitions. It uses "swap" space to store idle portions of the memory used by running programs. It uses "filesystem" space to store directories (i.e., folders) and files.

The amount of swap space MkLinux needs depends on what sorts of tasks the machine will be doing and how much physical RAM you have installed. The swap space is combined with the physical RAM in the system to produce the total amount of virtual memory available for all running programs. The minimum amount of swap space that the MkLinux DR3 install process will allow is 8 MB. Typically, 64 MB of swap space is just fine.

If you have very little RAM or expect to be running many users or programs at once, you may want to provide more swap space. Please keep in mind that the maximum usable size of a MkLinux swap partition is 128 MB. You are free, however, to have more than one swap partition.

The MkLinux filesystem has (like Mac OS) a hierarchical directory structure: files may exist at any level of the directory hierarchy. Unlike Mac OS, however, MkLinux can graft whole filesystem trees (residing in separate partitions) onto the main ("root") filesystem.

This grafting ability, modelled after UNIX, is called "mounting" a filesystem. The directory under which the mounted filesystem appears is called a "mount point". By carefully choosing the sizes of your filesystem partitions and

their mount points, you can create a unified filesystem tree with branches existing in separate partitions or even separate disk drives.

MkLinux filesystem partitions are limited, at present, to a maximum of two GB each. Therefore, if you want to have an overall MkLinux filesystem that will hold more than 2 GB, you'll need to use multiple partitions.

How you envision using your MkLinux system will help determine where you might consider mounting extra filesystems. For example, if you expect that you will be loading many extra programs (or packages) after your initial MkLinux install, you might want to dedicate a whole partition to the "/usr" portion of your filesystem. If you expect to have several users, you may want to let "/home" (and its subdirectories) reside in its own partition. If you expect a large amount of email or Usenet news to flow through the system, consider giving "/var" its own partition.

Finally, if you're not sure how your system will be used, or which areas of the filesystem might need their own partition, you can simply put the whole MkLinux filesystem into one partition. The 2 GB rule mentioned above still applies, but a single partition filesystem is all you need to get started.

Estimating space requirements

The MkLinux DR3 CD contains 420 packages that can be installed initially and 233 "extra" packages which can be installed later, as desired. The initial installation process provides quite a bit of flexibility in choosing which of the initial 420 packages to install. Follow-on installation is even more flexible, allowing any desired package(s) to be installed.

It would be ridiculous for us to list the disk space requirements of every combination allowed by the initial installation. So, we will provide the space requirements for three typical MkLinux installations.

The MkLinux installer has a page where you choose several broad categories of packages to be installed. The install configuration called "Absolute Minimum" unchecks (de-selects) every option on the selection page. "Default Selections" makes no changes on the selections page. "Everything" installs all 420 packages.

partition	"Absolute Minimum"	"Default Selections"	"Everything"
/	15	15	16
/opt	0	33	47
/usr	41	136	398
/var	2	4	10
/home	0	0	3
totals	58	188	474

All values are in Megabytes (where 1 Megabyte = 1024*1024 bytes).

Given the five partitions shown above, the table shows the space usage in the partition after each of the three separate installations. It is not necessary for you to create all five of these MkLinux filesystem partitions. In fact, the "/opt" partition is not found on most Linux installations.

In general, you will want to have fewer partitions in your installation than the five shown above. As you eliminate partitions, incorporate their space

into that of the root partition (labelled "/" in the table).

To help you get started, we will walk through two common examples. An "Everything" installation, using the three partitions "/", "/usr", and "/home", will require at least 73 MB for "/", 398 MB for "/usr", and 3 MB for "/home". A "Default Selections" installation, with a single filesystem partition, will require at least 188 MB in that ("/") partition.

Of course, you will want to leave some extra space in your filesystems so that you can actually use your MkLinux system without running out of space on the first day! If you will be installing some of the 233 "extra" packages on the CD, then you should increase the amount available in "/usr", as most of those packages install files somewhere under the "/usr" directory.

If you want to add several user accounts to your system so that your friends can log in, you will want to have plenty of space available for "/home" to grow. "/home" is also the default location of any "anonymous FTP" space or web pages that you may want to host on your MkLinux system. If you expect your MkLinux system to be handling lots of email or Usenet news, ensure that the "/var" directory has plenty of room to grow.

Hopefully, you now have some idea of what partitions you will want for MkLinux. The next step is to actually make these MkLinux partitions.

Partitioning your disk(s)

There are three partitioning programs included on this CD. Each has its strengths and weaknesses when applied to the task of partitioning your disk for MkLinux. These differences are discussed below. However, before we begin, it is important that you understand some of the basic concepts of disk partitioning on Macintosh systems.

Whether you realize it or not, your system disk is already partitioned. Most of the space on your disk is probably allocated to one partition that contains a large Mac OS volume. There are several smaller partitions, however, which hold other bits of information:

- * There is exactly one "Partition Map" partition which holds the partitioning information itself.
- * There is probably at least one "Driver Partition" which enables Mac OS to access the Mac OS volumes on the disk.
- * There may be a "Patch Partition" which has been used to store patches to the Mac OS operating system.
- * Finally, any "free" space must be accounted for in other partitions.

Partitions are contiguous areas on your disk. Filesystems are data structures that exist inside partitions. Mac OS Standard (also known as HFS) and Mac OS Extended (also known as HFS+) volumes are two types of filesystems that may exist in partitions.

If you open a volume on your desktop and see something like "353.3 MB in disk 844.7 MB available", the 844.7 MB is unused space inside that Mac OS filesystem. The message does NOT refer to free partition space. To find out if you have free partition space on your disk, you will need to use a tool (such as a partitioner) that looks at the actual partition map.

Repartitioning Existing Disks

Although (for safety!) we recommend the use of a separate disk for MkLinux, this is not absolutely necessary. It is possible to repartition your existing disk, shrink the Mac OS portion, and install MkLinux in the remaining space.

In most instances, however, shrinking your existing Mac OS volume (and the surrounding partition) will require that the Mac OS volume be reinitialized, destroying everything you may have in the volume. Obviously, you would want to back up all your important files before destroying your existing volume!

It is possible to shrink a Mac OS volume (and the partition that contains it) while keeping the data intact. The tools supplied in this MkLinux distribution cannot perform this task. However, the task can be accomplished with at least one third-party disk partitioning program (FWB's Hard Disk Toolkit). If this is an approach you would like to take, you will need to obtain HDT and use it to make free partition space. You may use either HDT or the tools supplied on this CD to add the desired MkLinux partitions.

Partition Types and Names

Every Macintosh partition has a "type" and a "name". Both of these pieces of information are simple strings. Usually, the name of a partition can be anything you want. However, there are several important types that you should know about, including:

Apple_partition_map	partition map
Apple_Driver43	disk drivers
Apple_Patches	Mac OS patches
Apple_HFS	Mac OS volumes
Apple_UNIX_SVR2	MkLinux partitions

Both standard (HFS) and extended (HFS+) Mac OS volumes are usually contained in partitions with the "Apple_HFS" type. The name of an Apple_HFS partition may not be the same as the name of the Mac OS volume that it contains.

The names of the MkLinux filesystem partitions are ignored, so it's handy to name them for their intended purpose (e.g., root, home, usr, var, tmp, etc.). The MkLinux installer assigns partitions named "swap" for use as swap space.

This disc contains three partitioning programs, with varying capabilities:

Drive Setup	standard Mac OS utility; partitions Apple drives (both IDE and SCSI); doesn't make A/UX (MkLinux) partitions
Apple HD SC Setup	older Mac OS utility; partitions any SCSI drive; makes A/UX partitions
pdisk	Mac OS/Mklinux utility; makes A/UX partitions

Drive Setup

Drive Setup is the standard partitioning utility that is shipped with Mac OS. It can create multiple MacOS partitions on your drive, leave free partition

space (e.g., for use by pdisk), deposit the latest Apple disk drivers onto the disk, and create actual Mac OS standard and extended volumes in created partitions. It can partition (Apple-branded) SCSI and IDE drives.

Drive Setup cannot create the A/UX-style partitions used by MkLinux. One common method is to use Drive Setup to create free partition space on your drive, then use pdisk to create MkLinux partitions in the free space. An alternative is to have Drive Setup create extra Mac OS partitions, then use pdisk to change them to MkLinux partitions before use.

Apple HD SC Setup

Apple HD SC Setup is an older partitioner from Apple that still comes in handy occasionally. HD SC Setup originated in an era when Apple used SCSI drives exclusively. Therefore it will not recognize your IDE drives. It can, however, make A/UX partitions, as used by MkLinux.

By default, HD SC Setup will work on Apple drives only, but it can be patched (AT YOUR OWN RISK) to accept other drives:

Copy Apple HD SC Setup 7.3.5 from the CD to a writable Mac OS drive.
Change the one byte in the "wfwr" ID 67 resource from "00" to "FF".

For more information, see www.euronet.nl/users/ernstoud/patch.html

pdisk

The pdisk partitioner was adapted from a Linux partitioner. Pdisk can do practically anything to your partition table. It runs on Apple-sanctioned as well as non-Apple drives. Pdisk can even modify the partition table of the disk that you're currently running from. However, pdisk has some problems.

The main problem is that pdisk is not a typical Mac OS application. It has a command-line interface that can be intimidating to many. Another disadvantage is that it does not do anything to areas of the disk other than the partition map. Consequently it cannot install a driver onto your disk, nor can it create HFS or HFS+ volumes. (However, it is important to note that it is not necessary to have a driver partition on a disk that doesn't have an HFS partition.)

Pdisk has two variants. One is a program that runs under Mac OS. The other is a MkLinux program that is available to you when the MkLinux installer is running. The Mac OS version uses Mac OS facilities to access the disks; the MkLinux version uses MkLinux's facilities. However, the "engine" in pdisk is the same between the two versions. So, once you learn to use one, you will know how to use the other.

Even though it can be intimidating at first, we recommend that you learn enough of pdisk to at least display the partition table on a disk. A good reference on how to use pdisk is located in the "pdisk.html" file in the "MacOS Utilities" folder on this disc. Just point your favorite browser to the pdisk.html file. Of all the partitioners mentioned, pdisk is the best one to show your disk's true partition layout.

Installing the Mac OS-side files

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There are five files in the "Mac Files" folder. Copy the two files "MkLinux Booter" and "Mach Kernel" to your Extensions folder. Copy the control panel "MkLinux" to your Control Panels folder. Copy the two files "lilo.conf" and "MkLinux.prefs" to your Preferences folder.

The initial boot of MkLinux just runs the installer. Currently, things are set to install from a SCSI CD-ROM drive. If your machine has a SCSI CD-ROM drive, you will not need to change anything. Skip ahead a few paragraphs to where you "Restart your Macintosh".

If your machine has an ATAPI CD-ROM, then you will need to change a setting. If you have one of the following machines, you probably have an ATAPI CD-ROM drive:

- Power Macintosh 4400
- Any "Tanzania" based clone
- PowerBook 3400
- PowerBook G3
- Power Macintosh G3

To determine whether your machine has an ATAPI CD-ROM drive, insert a disc into your drive, click once on the disc's desktop icon, and run "Get Info" (from the File menu). If the "Where:" line ends in "(ATAPI ..)", you have an ATAPI CD-ROM drive and you will need to change the rootdev setting.

To change MkLinux so that it will retrieve the installer from an ATAPI CD-ROM drive, launch the "MkLinux" control panel and select "Custom...". SimpleText will be launched to edit your "lilo.conf" file. Change your rootdev according to the instructions in the lilo.conf file. (Basically, you will change a line so that it reads: "rootdev=/dev/hdc").

Restart your Macintosh. Upon reboot, you should see the MkLinux "splash screen". It is set to default boot into Mac OS. Click on the "MkLinux" button, and the MkLinux installer should run.

Once you are in the MkLinux Installer

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The MkLinux installer is adapted from the well-known "Red Hat Linux" installer, originally written by Red Hat Software. The installer was ported to MkLinux with the intent of making as few changes as possible. Therefore, you will probably notice that there are still many references to "Red Hat Linux". Also, there are some concepts presented that are appropriate for other Linux installations, but inappropriate for MkLinux. Don't worry; with some basic instruction, you will be able to use the installer to get your MkLinux system installed with the desired collection of packages.

When you get to the first page of the installer, you should see a blue background and a white text window with black characters. If you don't get these colors, you may want to reboot into Mac OS and use the "Monitors and Sound" control panel to choose a 256-color scheme.

The following keys will help you navigate while using the installer:

- | | |
|---------------|---------------------------------------|
| Tab | Move to the next field |
| Return | Select the current highlighted choice |
| Up/Down Arrow | Move up/down in a list of items |

Space Check or Uncheck the selected list item

Below is a step-by-step description of the various installation screens.

"Welcome to MkLinux" Screen

Simply press Return to continue to the next screen.

"Keyboard Type" Screen

Select a keyboard type. This controls the keyboard mapping. Not all the listed keyboard mappings work properly. If you find this is the case for your selection, start over and select "us" as your keyboard type. You should be able to continue through the installation.

"Installation Method" Screen

Since the packages to be installed reside on the CD, choose "Local CD-ROM".

"Installation Path" Screen

Choose "Install". The other option, "Upgrade", is intended to add packages to an already installed Red Hat system, and is not supported in this release.

"Partition Disks" Screen

The installer will show you a list of disks on your system that MkLinux has recognized. If you select one and choose "Edit", you will be able to view and optionally change that disk's partition map using the MkLinux version of `pdisk`. When you have finished viewing/editing the partition maps on various disks, choose "Done".

(Don't confuse this screen with the upcoming "Partition Disk" screen.)

"Select Root Partition" Screen

The installer will list every partition that is appropriate for an MkLinux filesystem. Pick one to use for your "root" partition.

Only partitions of type "Apple_UNIX_SVR2" are shown. Also, any partitions you designated as swap partitions (by putting the word "swap" in the name) will not be shown.

"Partition Disk" Screen

This page will list the other partitions that are available to be mounted. Use the arrow keys to highlight a particular partition, then press Return. A follow-on dialog will tell the installer where you would like to have the filesystem in that partition mounted. You may also use this page to mount your Mac OS Standard (HFS) volumes. Please note, however, that the HFS volumes will be mounted read-only.

Any MkLinux partitions you designated as swap partitions (by putting the word "swap" in the name) will not be shown.

(Don't confuse this screen with the previous "Partition Disks" screen.)

"Active Swap Space" Screen

The installer will give you a list of every partition that is suitable to be a MkLinux swap partition. Remember, use the Space bar to set/unset which partitions you want to use for swap.

"Find installation files" Screen

This isn't a real screen. However, you may notice a significant pause here. Be patient; if you have a relatively slow CD-ROM drive, you may need to wait a few minutes.

"Format Partitions" Screen

The installer will give you a list of partitions. You will need to use the arrow keys and space bar to select which partitions to format. If you have never used MkLinux in these partitions, you must reformat all of them. If you have used MkLinux DR2.1 (or an earlier version), we suggest that you reformat all your MkLinux partitions. If you have used MkLinux "pre-DR3", we suggest that you format at least the system partitions, such as / (the root partition), /usr, or /var.

"Components to Install" Screen

At this point, the installer will present you with a list of selected collections of packages. Use the Space bar to select the ones that seem appropriate for your installation.

At the very end of the list, there is an item labelled "Everything". Selecting "Everything" will install every package (all 420 of them!) available in the main package set, even those not represented in the other groups.

There is also a box that you can check labelled "Select individual packages". If this box is checked when you leave this screen, you will go to a set of screens where you can select the packages individually.

"Install log" Screen

This is just an informative message explaining that an installation log will be saved and will be viewable after the installation in the file `"/tmp/install.log"`.

"Install System" Screens

At this point, the installer will proceed to create the filesystems in your MkLinux partitions, then install the packages that you selected. A progress bar will be displayed, along with estimates of how much time it will take to complete installing the packages.

There are a few packages that write to the installer screen, making the display somewhat messy. You may safely ignore these messages.

"Configure Mouse" Screen

Choose ADB Mouse. Note: the "emulate three buttons" option is not applicable in MkLinux at this time.

"Network Configuration" Screen

If your MkLinux system is connected to a TCP/IP-based Local Area Network, and you want to configure your system to operate on this network at this time, choose "Yes".

The installer will bring up two screens, the first is the "Configure TCP/IP" screen. You will need to know an IP address for your system, the Net Mask, a Default Gateway address, and a DNS nameserver address. If you don't know these values, you should ask your Network Administrator.

Checking "Configure device with bootp" (with the Space bar) indicates that you want to query the network for a set of values appropriate for your machine.

The "Configure Network" screen allows you to enter your domain name and host name. Also, if you have any alternate nameservers, you should enter them here.

"Configure Timezones" Screen

This is the place to set your local timezone. Use the up and down arrow keys to select the correct timezone from the list.

You should always check the "Hardware clock set to GMT" box if you want MkLinux to read your Mac OS clock correctly. Don't worry; this will not affect your Mac OS clock in any way.

"Services" Screen

The installer will present a list of the services that can be started automatically when your MkLinux system boots. If you are not familiar with which services you want and which ones you don't want, it is safe to simply leave the checkboxes unchanged.

"Configure Printer" Screen

If you choose "Yes" on this screen, the installer will present you with a few more screens asking fairly straight-forward questions about your printer. Please note that, at this time, you cannot set up an AppleTalk printer using this mechanism.

"Root Password" Screen

You must pick a password for the "root" account. Remember this password, because the "root" account will be the first thing you need once the MkLinux installation is complete. Note that when you type the password, the characters do not appear.

"Info" Screen

Be sure to remember or write down the "rootdev" value that the installer tells you on this screen. You will need it in a few steps.

"Done" Screen

When you press ok, the system will reboot. You will need to go into Mac OS at least one more time to change the rootdev setting (mentioned in the previous screen).

When the system reboots, the MkLinux "Splash Screen" will appear again. Select "Mac OS". Once Mac OS has booted, invoke the MkLinux Control Panel. Press the "Custom..." button in the control panel. The SimpleText editor will be launched and you will be editing the "lilo.conf" file. Change the line that contains "rootdev=/dev/XXXX" to the value that the installer gave you. Save the file and quit.

This is a good time to choose your "Startup Selection". Click the button next to either Mac OS or MkLinux. (This sets the default choice at the MkLinux Splash Screen. At the splash screen, you can always override the default choice.)

Close the MkLinux Control Panel and restart your Macintosh. Choose MkLinux. (If MkLinux is the default OS, you may simply choose to wait 10 seconds.) MkLinux should now boot, placing you at the "login prompt".

Getting started with MkLinux

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Now that you have MkLinux installed, you'll want to start using it to do useful and fun things. It is not possible for us to describe here everything that you can do with MkLinux. For more assistance with using MkLinux (or practically any Linux system), please see the references below. For now, here are a few simple things that you can do with MkLinux to get started.

Logging in as root

At the "login:" prompt, type "root" then return and enter root's password at the password prompt. (Root's password is the one you chose during the installation process.)

In general, you should use the root account to do system administration only. For instance, you would want to use the root account to add packages, remove packages, configure your networking, and in some cases shut the system down. For day-to-day operation of your MkLinux system, you should create and use a user account for yourself.

Creating a user account

Log in as root and use the "adduser" command. For instance, if you want to create an account for Joe, you would issue the command:

```
adduser joe
```

This will create an account for joe, along with an associated home directory "/home/joe".

Joe's account will need to have an initial password. Still as root, issue the following command:

```
passwd joe
```

You will be prompted to enter an initial password for Joe's account.

Mounting the CD

If you want to add some packages or access files from the MkLinux DR3 CD, you will first need to "mount" the CD. While logged in as root, issue the following command:

```
mount -r -t iso9660 /dev/cdrom /mnt/cdrom
```

The CD is now mounted and accessible in your filesystem directory tree under /mnt/cdrom. If you issue the commands:

```
cd /mnt/cdrom
ls
```

You will see the contents of the top directory on the CD.

Once you have finished accessing the files on the CD, you will need to "unmount" the CD before you can remove it from the CD-ROM drive. Issue the following commands (as root):

```
cd # Change directory to be outside /mnt/cdrom
umount /mnt/cdrom
```

Installing a package

There are two separate directories on the MkLinux DR3 CD that contain packages that you can install. Assuming that you mounted the CD under /mnt/cdrom, the main packages directory will be here:

```
/mnt/cdrom/RedHat/RPMS
```

The extra packages will be here:

```
/mnt/cdrom/extra/RPMS
```

For example, if you want to install the "zsh" package, you should issue the following commands (as root):

```
cd /mnt/cdrom/RedHat/RPMS # change directory to the packages dir
rpm -ihv zsh-3.0.5-1b.ppc.rpm # install the zsh package
```

A complete listing and description of the main packages is in the file:

```
/mnt/cdrom/RedHat/rpmcontents.gz
```

Similarly, there is a listing of the extra packages:

```
/mnt/cdrom/extras/rpmcontents.gz
```

These rpmcontents files are compressed text files. To view them, issue a command such as this:

```
zless /mnt/cdrom/RedHat/rpmcontents.gz
```

Removing a package

You can remove packages easily. For instance, if you had installed the "inn" package (The Internet News System) during the initial installation, and now you realize that you do not intend to run Usenet news service on your MkLinux system, then you might want to remove the inn package. As root, issue the command:

```
rpm -e inn
```

Starting the X Window System:

You may start X, the graphics system popular with practically every Unix system, by issuing the command:

```
startx
```

Typically, you would run X from your regular user account.

Where to go next

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Books

MkLinux - Microkernel Linux for the Power Macintosh

Prime Time Freeware (www.ptf.com) publishes book/CD collections of Open Source software. At the request of Apple Computer, PTF created a Reference Release for MkLinux. The release contains information on installing, using, and modifying the MkLinux system.

Running Linux

O'Reilly and Associates (www.oreilly.com) is a leading publisher of books on Unix-related topics. "Running Linux", although written with standard Linux in mind, is a very useful supplement for the MkLinux Reference Release.

Online

www.mklinux.apple.com

www.linux.org

Thanks

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This release of MkLinux would not have been possible without the efforts of many people. We are grateful to everyone who has used, tested, reported bugs, made suggestions, or even submitted fixes to earlier versions of MkLinux. There are so many people involved, it would be impossible to list them all. However, there are a few individuals who have made significant contributions recently that have been extremely beneficial in the production of MkLinux Developer Release 3:

Mark Hatle (Mankato State University) ported the Red Hat Installer for use with MkLinux. In doing so, he had to fix portions of MkLinux so that the

Installer would operate correctly. Mark has also assisted with the DR3 RPM package set.

Jack Howarth (University of Cincinnati College of Medicine) helped tremendously with the DR3 RPM package set. From the earliest "pre-DR3" snapshot, hundreds of RPMs had to be updated, adjusted, or simply rebuilt. Jack's diligence in this area has made for an excellent package set.

Brad Midgley (Pacific HiTech, Inc.) ported some HFS code to work properly in the Mach Bootstrap task. This is a key piece to getting the Red Hat installer running as the initial MkLinux installation is booted from an HFS filesystem.

James Pearson (University College London) modified mkisofs, yielding the utility "mkhybrid". mkhybrid can create a CD-ROM image that has both ISO-9660 and Apple HFS filesystem structures. The MkLinux DR3 CD image was created with "mkhybrid".

Gary Thomas (The Open Group, Research Institute) has contributed far too many things to list that are directly applicable to MkLinux DR3.

And finally, we would like to thank the entire Linux/PPC team for their efforts in porting so many software packages. In most cases these packages run unmodified on both Linux/PPC and MkLinux systems.

Last words

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Be sure to check the MkLinux website:

<http://www.mklinux.apple.com/>

for further information on current and future developments with MkLinux.

On behalf of everyone involved in making MkLinux Developer Release 3 a reality, we hope you find that MkLinux is both fun and useful.

The MkLinux Team
Apple Computer
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