



# Rhapsody Developer Release

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*Installation manual for PC-compatible computers*

 Apple Computer, Inc.

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Apple Computer, Inc.  
1 Infinite Loop  
Cupertino, CA 95014-2084  
408-996-1010  
<http://www.apple.com>

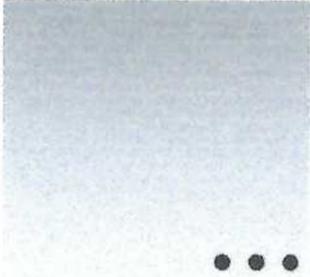
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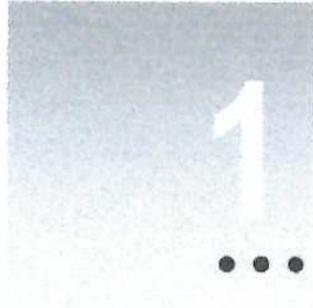
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# Contents

<b>1</b>	<b>Welcome to Rhapsody</b>	<b>1</b>
	System requirements	1
	Supported configurations	1
	Configuring your computer	2
	Partitioning your hard disk	4
	Arranging your SCSI devices	5
	Obtaining device drivers	5
<b>2</b>	<b>Installing Rhapsody</b>	<b>9</b>
	Loading basic device drivers	10
	Selecting a hard disk	11
	Partitioning the hard disk	11
	Installing the core OS	12
	Reinstalling additional device drivers	13
	Configuring Rhapsody	13
	Installing the Rhapsody packages	14
	Starting Rhapsody	14

<b>3</b>	<b>Getting Started With Rhapsody</b>	<b>15</b>
	Assigning passwords	15
	Using Rhapsody or another OS	16
	For more information	16
<b>4</b>	<b>Troubleshooting</b>	<b>17</b>
	<b>Acknowledgments</b>	<b>21</b>



## Welcome to Rhapsody

Welcome to the developer release of Apple's next-generation OS, code-named "Rhapsody." The developer release provides an early look at the technologies that will provide a strong and flexible computing environment for users in high-end markets.

### System requirements

To use this version of Rhapsody, your computer must have

- a 486, Pentium, or Pentium Pro microprocessor
- ISA, EISA, VL-Bus, or PCI expansion bus
- a 750 MB or larger hard disk
- at least 32 MB of RAM (48 MB is recommended)
- a supported graphics adapter (video display card)
- a supported IDE or SCSI adapter
- IDE or SCSI CD-ROM drive
- one 3.5-inch floppy disk drive

### Supported configurations

The following table shows which hardware and features are supported by the developer release of Rhapsody.

	Supported	Not supported
CD-ROM drive	√	–
Monitor <i>single monitor only</i>	√	–
Ethernet TCP/IP	√	–
SCSI or IDE hard disk	√	–
Printing <i>PS Ethernet only</i>	√	–
Mouse <i>serial and PS/2-style</i>	√	–
Removable storage	√	–
Floppy drive	√*	–
AppleTalk	–	√
Serial port	–	√
Driver Development Kit	–	√

\* In this version of Rhapsody, media formats, including floppy disks, are not compatible across hardware platforms, Mac OS, or OpenStep.

## Configuring your computer

Before you install Rhapsody, make sure your computer and other devices are correctly configured. This section has general guidelines for setting up some common devices. For the most current information, see the owner's guides for your computer and devices. For updates and late-breaking news, check the Apple Developer World Web site at <http://devworld.apple.com>.

### IDE hard disks

To install Rhapsody on an IDE hard disk, use your computer's setup program to make sure the IDE controller and hard disk are enabled. Also, set the SCSI ID of your CD-ROM drive to 2, 3, 4, 5, or 6 (some SCSI adapters don't work with CD-ROM drives that have SCSI IDs of 0 or 1).

### **SCSI hard disks**

To install Rhapsody on a SCSI hard disk, set the disk's SCSI ID to 0 and the SCSI ID of the CD-ROM drive to 2, 3, 4, 5, or 6 (some SCSI adapters don't work with CD-ROM drives that have SCSI IDs of 0 or 1). Also, use your computer's setup program to disable IDE disks—whether or not you have an IDE drive connected to your computer. Otherwise, the computer may not be able to use the SCSI disk as the startup disk.

**WARNING** If your SCSI chain is not terminated, you may lose data—even if your SCSI devices seem to work correctly. You must terminate the last device on your SCSI chain.

For this version of Rhapsody, it's strongly recommended that you dedicate an entire external hard disk to Rhapsody, and that the disk have the lowest SCSI device number on the SCSI chain.

**IMPORTANT** Your computer cannot have both a SCSI hard disk and an EIDE/ATAPI CD-ROM drive installed.

### **SCSI adapters**

If your SCSI adapter has a separate floppy disk controller, you may need to disable the controller.

Make sure your SCSI adapter is properly terminated.

### **Floppy disk drives**

Rhapsody can work only with a single 3.5-inch floppy disk drive connected as Drive A or 0 (depending on your computer). Disconnect any other floppy disk drives. Then use your computer's setup program to disable all floppy disk drives except A.

### **Monitor**

If your computer has a built-in GA or other kind of display adapter, but you want to use a different adapter with Rhapsody, you may need to use your computer's setup program to disable the built-in adapter.

### **Serial ports**

Use your computer's setup program to make sure the serial ports are configured as follows:

- Set the first serial port to IRQ 4 and port 0x3F8.
- Set the second serial port to IRQ 3 and port 0x2F8.

### **Mouse**

If you have a serial mouse (or other serial pointing device), connect it to your computer's first serial port.

### **Power management**

To prevent the computer from going to sleep during installation, turn off any power management or energy saving features your computer may have.

### **Partitioning your hard disk**

To install Rhapsody, you need a 750 MB (minimum) hard disk. It's recommended that you set aside one entire hard disk for Rhapsody.

If you want to install both Rhapsody and another OS on one hard disk, which is not recommended, then you must use a disk utility (such as fdisk) to partition the disk into at least two partitions. One of the partitions must be at least 600 MB. That partition will be reformatted and used by the Rhapsody Installer. The other partitions will not be altered.

When you partition the disk, note the number of the partition you want to use for Rhapsody. The Installer might not display volume names, depending on the formatting utility you use, so writing down the partition number now will help you choose the right partition later.



## Arranging your SCSI devices

With this version of Rhapsody, adding or removing SCSI devices after installation can cause Rhapsody's device numbering system to change. If this happens, you will be asked to specify a device number when you start the computer.

To avoid this, it is strongly recommended that you do the following:

- Remove any "extra" devices that you don't need to use with this computer.
- Make sure that the disk where you're installing Rhapsody is the lowest-numbered device in your SCSI chain.
- Install Rhapsody on the computer's startup disk.

## Obtaining device drivers

To use Rhapsody you will need device drivers for your hard disk, CD-ROM drive, and other devices. Drivers for the supported devices are included on the *Rhapsody Drivers* floppy disk or on the *Rhapsody for PC Compatibles* CD.

If your computer has OpenStep installed, use the Configure application (located in /NextAdmin) to identify the OpenStep device drivers you are currently using. This information may help you choose the correct drivers when you install Rhapsody. Note, however, that this version of Rhapsody supports fewer drivers than OpenStep. Check the list below and your hardware documentation to determine the appropriate drivers to use with your system.

### Sound drivers

Beep sound driver (drvBeepSound)

ES1x88 sound driver (drvES1x88Sound)

Microsoft Sound System-based sound driver (drvMicrosoftSound)

Sound Blaster® 8 sound driver (drvSB8Sound)

Sound Blaster 16 sound driver (drvSB16Sound)

## Display drivers

ATI Rage-based display driver (drvATIRage)  
Cirrus Logic GD5434-based display driver (drvCirrusLogicGD5434)  
Diamond Stealth-based display driver (drvDiamondStealth)  
IBM Think Pad 760 ED display driver (drvIBMThinkPad760EDDisplay)  
Matrox MGA2064W display driver (drvMatroxMGA2064W)  
Number9 Imagine 128 display driver (drvNumber9Imagine128)  
Number9 Imagine 128 series 2 display driver (drvNumber9Imagine128S2)  
Number9 Motion 331 display driver (drvNumber9Motion331)  
Number9 Motion 771 display driver (drvNumber9Motion771)  
QVision display driver (drvQVision)  
S3 Generic display driver (drvS3Generic)  
Weitek P9000 display driver (drvWeitekP9000)  
Weitek P9100 display driver (drvWeitekP9100)  
VGA display driver (drvVGA)

## Network drivers

DECchip21040-based network driver (drvDECchip21040)  
DECchip21140-based network driver (drvDECchip21140)  
DECchip21142-based network driver (drvDEC21040)  
Intel EtherExpress 16 network driver (drvEtherExpress)  
Intel82556-based network driver (drvIntel82556)  
Intel82557-based network driver (drvIntel82557)  
Intel82595-based network driver (drvIntel82595)  
Intel82596-based network driver (drvIntel82596)  
3Com EtherLink XL (drvEtherLinkXL)  
3Com EtherLink III (drvEtherLink3)  
SMC 16 network driver (drvSMC16)  
SMC Ultra network driver (drvSMCUltra)

### **SCSI drivers**

Adaptec 1542B SCSI driver (drvAdaptec1542B)  
Adaptec 2940 SCSI driver (drvAdaptec2940)  
Adaptec 6x60 SCSI driver (drvAdaptec6x60)  
Bus Logic SCSI driver (drvBusLogic)  
Bus Logic FP SCSI driver (drvBusLogicFP)  
DPT SCSI driver (drvDPT2000)  
Symbios Logic Sym53C8xx-based SCSI driver (drvSym53C8xx)

### **Other drivers**

EIDE disk driver (drvEIDE)  
Parallel Port driver (drvPCParallel)  
Floppy disk driver (drvFloppy)  
EISA Bus driver (drvEISABus)  
PCI Bus driver (drvPCIBus)  
PCMCIA Bus driver (drvPCMCIABus)  
PCIC driver (drvIntel82365PCMCIA)  
Bus Mouse driver (drvBusMouse)  
PS2 Keyboard driver (drvPS2Keyboard)  
PS2 Mouse driver (drvPS2Mouse)  
ISA Serial Port driver (drvISASerialPort)  
Serial Mouse driver (drvSerialPointingDevice)

Check the documentation that came with your hard disk and CD-ROM drive to determine which device drivers you should use. If you are unable to locate compatible drivers, additional device drivers may be available at the Apple Developer World Web site, located at the following address:  
<http://devworld.apple.com>





## Loading basic device drivers

When you're asked to, remove the *Rhapsody Installation* disk and insert the *Rhapsody Device Drivers* disk. This disk contains device drivers for the SCSI adapters and hard disk controllers that are compatible with this release of Rhapsody.

- 1 After you insert the disk, press Return.**

The computer reads the disk and loads a few basic device drivers.

- 2 Select the device driver for the SCSI adapter your CD-ROM drive is connected to.**

Refer to Chapter 1 for more information about supported device drivers. If you downloaded a driver and need to load it from another disk, you can eject the *Rhapsody Device Drivers* disk, insert your disk, and type the number indicated on the screen to load an alternative driver disk.

- 3 Select the device driver for the SCSI adapter or hard disk controller your hard disk is connected to.**

Again, refer to Chapter 1 for more information about supported device drivers.

- 4 Enter 1 and press Return to continue installation without loading additional drivers.**

Basic drivers for your keyboard, mouse, and monitor have already been loaded, so you probably won't need to load additional drivers to continue with the installation. After Rhapsody is installed, you can configure your computer for additional devices, if necessary.

Various diagnostic messages will appear on your screen during the installation process. Unless you encounter problems, you can ignore the diagnostic messages displayed throughout installation and startup.

- 5 Read the information on the screen, then enter 1 and press Return to confirm that you want to install Rhapsody.**

## Selecting a hard disk

- Enter 1 and press Return to install Rhapsody on the startup disk.
- If you want to install Rhapsody on another disk, enter 2 and press Return.

*Note:* If you select a disk that isn't the startup disk, you must make that disk the startup disk after you install the core OS in order to finish installing Rhapsody on it. You can do this by reconfiguring your computer so that the disk where you install the core OS becomes your startup disk, or by specifying a root device at the boot : prompt. (See Chapter 4 for more information about boot: options.) Or, you might need to reassign your disks' SCSI IDs, so the hard disk you want to install Rhapsody on has the lowest SCSI ID. It's recommended that you simply install Rhapsody on your computer's current startup disk.

## Partitioning the hard disk

You can use the entire hard disk for Rhapsody, use a portion of the hard disk for Rhapsody and create a new DOS partition, or install Rhapsody on an existing partition.

**WARNING** All files and information on the selected disk or partition will be erased during the installation process.

- Enter 1 and press Return to use the entire disk for Rhapsody.

*Note:* This is the recommended option.

If you choose, you can set aside a portion of the disk as a DOS partition so you can install DOS or another OS later. If you do so, you're prompted to enter the size of the DOS partition you want. Then the entire hard disk is erased before the two partitions are created.

*Note:* You may see onscreen text that refers to OpenStep partitions. These are actually Rhapsody partitions.

If you're familiar with creating DOS partitions, you can select the advanced options to run the Rhapsody version of fdisk to partition the hard disk to your specifications. When you quit fdisk, the previous menu appears with any changes you've made reflected in the available choices.

If you already have an OpenStep partition, you can choose to erase it and use it for Rhapsody. Files in other partitions are left untouched.

If you have one or more partitions on your hard disk with some disk space left over, you can choose to use the free space for Rhapsody. Files on other partitions are left untouched.

If you already have existing partitions on your hard disk, you may see additional selections in the menu. Partitions that are too small for Rhapsody installation don't appear in the list.

After you confirm your selections, the hard disk is initialized. This process takes a few minutes.

## Installing the core OS

After the hard disk is initialized, the files for the Rhapsody core OS are copied to the destination disk. This process takes several minutes.

- When prompted, remove the disk from the floppy disk drive, then press Return.

The `boot :` prompt appears when you restart the computer. Wait a few seconds; Rhapsody will start up automatically. If you are installing Rhapsody on a disk other than the startup disk, you need to specify a root device at the `boot :` prompt. See Chapter 4 for more information.

After a moment, the Rhapsody startup screen appears. (It is normal for this to be black-and-white.)

## Reinstalling additional device drivers

If you downloaded device drivers from the Apple Web site and used them when installing the core OS, you need to reinstall each driver two more times: once when the computer restarts, and once again to make the driver available when you configure Rhapsody. Follow the onscreen instructions to reinstall the device drivers when you're asked to do so.

## Configuring Rhapsody

The Configure window displays a summary of the devices attached to the computer and their current configuration. Use the controls in the Configure window to specify the types of devices installed in your computer and to adjust their settings.

- 1 Select the icon for the device you want to configure.**

The first icon displays a summary of the current Rhapsody device settings. Select the second icon to configure monitor settings.

- 2 Click Add to load a device driver for the selected device.**

After you load a driver, you may be able to adjust the settings for the device. If additional options are available for a device or driver, additional controls appear in the Configure window.

- 3 Repeat steps 1 and 2 for each device.**
- 4 When you're finished configuring Rhapsody for your computer, click Done, then click Save.**

You can use Configure to change the settings after you're finished installing Rhapsody. The Configure application is located in the /NextAdmin folder.

## Installing the Rhapsody packages

After you configure Rhapsody, the Install Rhapsody dialog box appears. It may take a few moments for this dialog box to appear. Do not restart or turn off your computer.

- 1 **Select all the packages you want to install.**

*Note:* It's recommended that you install all the packages. With this version of the Installer, you cannot reinstall additional packages later.

- 2 **Click Install to begin the installation.**

**WARNING** Don't click Quit or Stop while installing Rhapsody, or you may leave your hard disk in an unusable state and have to repeat the entire installation process.

When the installation is finished, a message appears on the screen.

- 3 **Click Restart.**

## Starting Rhapsody

When your computer restarts, wait for the boot : prompt to go away (or press Return). After a moment, the Rhapsody welcome screen appears. There may be a long delay before the welcome screen first appears. Do not turn off or restart your computer.

- If you are not connected to a NetInfo (Rhapsody) network, enter Y to start up the computer in non-network mode. If your computer is connected to a NetInfo network, the computer automatically starts up in network mode.

You're asked to configure the language and keyboard options. (In this version, English is the only available language.)

- Select a keyboard layout, then click OK.

After a moment, the installation process is complete and the Rhapsody workspace appears.

# 3

## Getting Started With Rhapsody



Read this chapter to learn more about the software code-named “Rhapsody.”

### Assigning passwords

Rhapsody is a multi-user operating system. That is, Rhapsody users must log in with a user name and password before they can access the computer. Initially, you are logged in as the user “me,” and the File Manager window opens showing your home folder.

If you do not assign a password to the me account, Rhapsody automatically logs you in as “me” every time you start the computer. In order to display the Login dialog box at startup, so you can log in with a different account, you must assign a password to the me account.

You assign passwords using the Preferences application located in the /NextApps folder.

- 1 In the File Manager window, click the button to the right of the “home” button to move to the root folder.
- 2 Open the NextApps folder.
- 3 Double-click the Preferences.App icon.
- 4 Click the Password button, then enter a password.

The password you specify is for the account you’re currently using. In this example, you’re assigning a password to the me account.

To create additional Rhapsody accounts, follow the steps above to assign the me account a password, then log out and log back in with the account “root”.

There is no default password assigned to the root account. You should assign the root account a password, particularly if your computer is available for network access, because the root user is able to read, change, or delete all files on your computer. To assign a password, log in as “root,” then click the Password button in the Preferences application.

If you want to create other accounts, use the User Manager application located in the /NextAdmin folder. For help, refer to the NextAdmin documentation installed in the /NextLibrary folder.

**WARNING** This version of Rhapsody has not been security-qualified and is not recommended for deployment on the Internet or other public-access networks.

## Using Rhapsody or another OS

If you have Rhapsody and another OS, such as DOS or Windows<sup>®</sup>, installed on the startup disk, Rhapsody installs a loader that allows you to select which OS you want to use when you turn on your computer.

- To start Rhapsody, enter n, or wait a few seconds and Rhapsody will start automatically.
- To start Windows or another OS on a DOS partition, enter d.

## For more information

There is extensive documentation in the /NextLibrary folder of your Rhapsody hard disk. Developer documentation and sample applications are installed in the /NextDeveloper folder.

## Updates and news on the Internet

Updates to the documentation, additional documentation, tips, patches, and demo applications and code are available on the Apple Developer World Web site, at the following address: <http://devworld.apple.com/>

# 4

## Troubleshooting



If you encounter problems when installing or using the software code-named “Rhapsody,” read this chapter for solutions.

### **Why can't I set the screen resolution?**

Use the Configure application (located in the /NextAdmin folder) to select a display mode appropriate for your monitor and graphics adapter. If you select a mode that your hardware doesn't support, it may revert to a display mode that's not what you expected.

### **Why is my monitor screen black?**

Make sure the computer hasn't gone to sleep. You should disable power management to prevent this from happening while you're installing Rhapsody.

If you have an unsupported video card in your computer, you may need to remove it or disable it—even if no monitor is attached to the card.

### **Why does my computer start up in black-and-white mode?**

Rhapsody starts up with a black-and-white display, then changes to color later in the startup process.

### **My mouse stopped working after I installed Rhapsody.**

During installation you need to specify a device driver for your mouse. The Installer loads all the available mouse drivers to make sure you can use your mouse, but after installation is complete you need to specify the correct driver for the type of mouse you have.

Restart your computer and enter `config=default` at the `boot:` prompt to load all the available mouse drivers. After the computer starts up, use the Configure application (located in the `/NextAdmin` folder) to configure the mouse to work with your hardware setup.

### **I used Configure and now I'm having problems with Rhapsody.**

### **I removed a device from my computer, and now I'm having problems with Rhapsody.**

Restart the computer and enter `config=default` at the `boot:` prompt. This will load the general set of drivers used during installation. After Rhapsody starts up, open the Configure application and adjust the settings so they are appropriate for your hardware.

### **Why can't I choose whether to start up with Windows or Rhapsody?**

The Rhapsody loader allows you to start up your computer with Rhapsody or an OS on a DOS partition. In order for the loader to run, the Rhapsody partition must be active. Use the Terminal application to run the `fdisk` utility to make the Rhapsody partition the active partition. If you have MS-DOS 5.0 or later, you can also use its version of `fdisk` to do this.

If the Rhapsody loader has been replaced with a DOS loader, you can restore the Rhapsody loader. To do so, log in as `root`, then enter `/usr/etc/disk -b /dev/rsd0h` in the Terminal window. (If you have an IDE drive, substitute `rd0h` for `rsd0h`.)

If you want to remove the Rhapsody loader and replace it with the DOS loader, enter the following command at the DOS prompt: `fdisk /mbr`.

See "Using Rhapsody or Another OS" in Chapter 3 for information on using the Rhapsody loader program.

### **How do I force quit an application in Rhapsody?**

Switch to the File Manager, then choose Processes from the Tools menu. Select the program you want to stop and click the Kill button.

### **How do I restart Rhapsody?**

Switch to the File Manager, then choose Log Out from the File menu. Click Restart.

You can also hold down the Alt key, then press the Num Lock key on the numeric keypad. Then press H to stop Rhapsody, R to restart, or C to cancel and continue working.

### **How do I transfer my files from Prelude to Rhapsody or OpenStep?**

In this version of Rhapsody, the media format, including floppy disks, is not compatible between hardware platforms, Mac OS, or OpenStep. To transfer files from other systems, use the “tar” utility to archive the files together, then transfer the archive file to your Rhapsody computer using FTP. Or, copy the tar archive file to an external HFS-formatted disk and move the disk to the other computer. For information on using “tar,” open the Terminal application and enter `man tar`.

### **How do I view diagnostic messages during startup?**

Enter `-v` at the `boot :` prompt to start up the computer in “verbose” mode.

### **How do I set a root device?**

If Rhapsody is not installed on a hard disk with the lowest SCSI ID number, you must specify a “root device” at the `boot :` prompt by entering `rootdev=n`, where *n* is the Rhapsody device number of the hard disk where Rhapsody is installed.

The Rhapsody device number is dynamically assigned during startup. The correct number for your system depends on how your SCSI chain is configured.

To determine the device number that will be assigned to your Rhapsody hard disk, follow these steps:

**1 List your external SCSI devices in the order of their SCSI ID numbers.**

Write down the ID numbers in ascending order, from 0 to 6. Include all disks and CD-ROM drives. Be sure to include removable media disks. Omit tape drives, scanners, or other non-disk devices.

**2 Add to the list your internal SCSI devices in the order of their SCSI ID numbers.**

Again, make sure the ID numbers are in ascending order and that only disks and CD-ROM drives are included in the list.

**3 Starting at the top of the list, number the first device 0.**

Number the next device 1, the next 2, and so on.

**4 Note the number you wrote next to the hard disk where Rhapsody is installed.**

Use this number in the `rootdev` argument you enter at the `boot:` prompt. For example, if you installed Rhapsody on the fifth device in your list, you'd enter `rootdev=sd4`.

If the Rhapsody drive has more than one partition, you must also specify a boot partition. Partitions are lettered, with the first partition a, the next b, and so on. For example, if Rhapsody is installed on the third partition of this drive, enter `rootdev=sd4c`.

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**Ian F. Darwin**

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Apple Computer, Inc.

1 Infinite Loop

Cupertino, California 95014-2084

408-996-1010

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