



Rhapsody Developer Release 2

Installation manual for PC-compatible computers

 Apple Computer, Inc.

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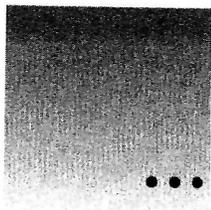
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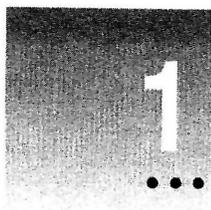


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Welcome to Rhapsody

Welcome to the second developer release of Rhapsody, Apple's new operating system. This developer release provides an early look at the technologies that will give users in high-end markets a strong and flexible computing environment.

System requirements

To use this version of Rhapsody, your computer must have the following:

- 100% Pentium-compatible microprocessor
- PCI expansion bus
- hard disk drive with at least 500 MB of available space
- at least 32 MB of RAM (48 MB is recommended for development)
- supported graphics adapter (video display card)
- supported IDE or SCSI adapter
- IDE or SCSI CD-ROM drive
- one 3.5-inch floppy disk drive

Supported configurations

These hardware and features are supported by this version of Rhapsody.

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

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 equipment. For the most current information, see the documentation for your computer and equipment. For updates and late-breaking news, check the Apple Developer World Web site at the following address:
<http://devworld.apple.com/>

Step 1. Select and prepare your hard disk

You should install Rhapsody on your startup disk. For this version of Rhapsody, it's strongly recommended that you dedicate an entire hard disk to Rhapsody.

IMPORTANT If your computer has both a SCSI hard disk and an EIDE/ATAPI CD-ROM drive installed, you cannot run this version of Rhapsody.

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 number 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 ID numbers of 0 or 1).

SCSI hard disks

To install Rhapsody on a SCSI hard disk, the disk should have the lowest SCSI ID number on the SCSI chain. For example, 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. You must do this step even if you do not 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. Make sure the last device on your SCSI chain has a terminator. (Some devices have internal terminators.)

SCSI adapters

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

Make sure your SCSI adapter is properly terminated.

Step 2. Disconnect extra floppy drives

Rhapsody works only with a single 3.5-inch floppy disk drive connected as Drive A or 0 (depending on your computer). Before installing, disconnect any other floppy disk drives, then use your computer's setup program to disable all floppy disk drives except A or 0.

Step 3. Configure other equipment

Monitor

If your computer has built-in display support and you want to use a different display 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.

Step 4. Partition your hard disk

To install Rhapsody, you need a 600 MB (minimum) hard disk or disk partition. It's recommended that you set aside an entire hard disk for Rhapsody.

If you want to install both Rhapsody and another OS on a single hard disk then you need to use a disk utility (such as fdisk) to partition the disk into at least two partitions. The Rhapsody partition must be at least 600 MB. The Rhapsody Installer reformats this partition. The other partitions are not changed.

When you partition the disk, note the number of the Rhapsody partition. You're asked to choose the correct partition during Rhapsody installation.

WARNING Do not install this version of Rhapsody on a partitioned NTFS (Windows NT) format hard disk. Doing so may result in data loss.

Step 5. Obtain device drivers

To use Rhapsody, you will need device drivers for your hard disk, CD-ROM drive, and other devices. Drivers for devices supported by this version of Rhapsody are included on the *Rhapsody Drivers* floppy disk or on the *Rhapsody for PC Compatibles* CD. Check the list of drivers in this chapter and check your hardware documentation to determine the appropriate drivers to use with your system.

If you are unable to locate compatible drivers, additional device drivers may be available at <http://devworld.apple.com/>

Sound drivers

Beep sound driver (drvBeepSound)

ES1x88 sound driver (drvES1x88Sound)

Microsoft Sound System–based sound driver (drvMicrosoftSound)

Sound Blaster® 8 sound driver (drvSB8Sound)

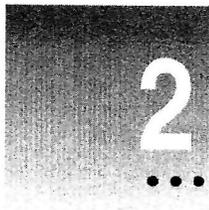
Sound Blaster 16 sound driver (drvSB16Sound)

Display drivers

ATI Rage-based display driver (drvATIRage)
Cirrus Logic GD5434-based display driver (drvCirrusLogicGD5434)
Diamond Stealth-based display driver (drvDiamondStealth)
IBM ThinkPad 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 EtherExpress16 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)



Installing Rhapsody

IMPORTANT Read and follow all the steps in Chapter 1 before continuing.

Step 1. Preparing to Install

- 1 Insert the CD into your computer's CD-ROM drive.
- 2 Shut down your computer.
- 3 Insert the *Rhapsody Installation* floppy disk into your computer's disk drive.
- 4 Turn on your computer.

Your computer displays a number of diagnostic messages and then starts up from the floppy disk.

After pausing a moment at the boot prompt, the computer begins loading the Rhapsody installation software from the floppy disk.

- 5 **When prompted, select English as the installation language.**
English is the only language available in this version.
- 6 **Enter 1 and press Return to confirm that you want to prepare to install Rhapsody.**

Step 2. 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 now eject the *Rhapsody Device Drivers* disk, insert your disk, and type the number indicated on the screen for loading an alternative driver disk.

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

Refer to Chapter 1 for more information about supported device drivers.

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

After Rhapsody is installed, you can configure your computer for additional devices, if necessary.

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

Step 3. Selecting a hard disk

- 1 Read the information on the screen, then enter 1 and press Return to confirm that you want to install Rhapsody.
- 2 Enter 1 and press Return to install Rhapsody on the startup disk.

If you want select a disk other than the current startup disk, enter 2 and press Return. After the core OS is installed, you will need to make the disk you choose the startup disk before you can finish installing Rhapsody. Use your computer's setup program to specify the startup disk, or you can specify a root device at the boot prompt. (See Chapter 4 for more information about boot options.)

Step 4. 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.

You can choose to 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 text on screen 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, and any changes you've made are reflected in the available choices.

If you already have 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 Rhapsody Installer initializes the hard disk. This process takes a few minutes.

Step 5. Installing the core OS

After the hard disk is initialized, the Rhapsody Installer copies the files for the Rhapsody core OS to the disk. This process takes several minutes.

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

The boot prompt appears when you restart the computer. After a few seconds, Rhapsody will start up automatically.

Note: If you are not installing Rhapsody on 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 screen to be black-and-white.)

Step 6. 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 when you configure Rhapsody. Follow the onscreen instructions to reinstall the device drivers when you're asked to do so.



Step 7. Configuring Rhapsody

The Configure window lists the devices attached to the computer and their current configurations. Use Configure to specify devices and adjust their settings.

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

The first icon lists the current Rhapsody device settings.

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

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

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

You can change the settings again after you're finished installing Rhapsody. The Configure application is located in the /System/Administration folder.

Step 8. Installing the Rhapsody packages

After you configure Rhapsody, the Install Rhapsody dialog box appears. This may take several minutes. Do not restart or turn off your computer.

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

It's recommended that you install all the packages you may need. 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. If this happens, you'll need to repeat the entire installation process..

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

- 3 **Click Restart.**

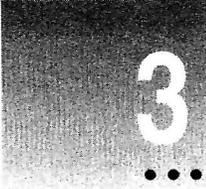
Step 9. Starting Rhapsody

When your computer restarts, wait for the boot prompt to go away (or press Return) to start Rhapsody. There may be a long delay before the Rhapsody welcome screen 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 nonnetwork mode. You will still be able to configure the computer for TCP/IP networking.

Using the Rhapsody Setup Assistant

After the installation is complete, the Rhapsody Setup Assistant appears. Follow the onscreen instructions to configure your computer.



3

Getting Started With Rhapsody

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Assigning passwords

Rhapsody is a multi-user operating system. Therefore, Rhapsody users must log in with a user name and password before they can access the computer. When you use the Rhapsody Setup Assistant, you specify the user name and password for one user. If you select the Automatic Login option, then you are automatically logged in using this account when you start the computer.

You can create additional Rhapsody accounts with the Network Manager application, located in the /System/Administration folder. You must know the Administrator, or “root,” password to add accounts. For help, double-click NetAdmin.help, located in the /System/Administration 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 and another OS

If you have Rhapsody and another operating system, such as DOS or Windows, installed on the startup disk, Rhapsody installs a loader that you can use to select an operating system when you turn on your computer.

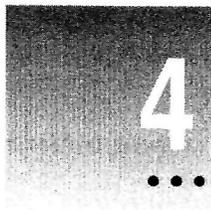
- To start Rhapsody, enter the letter indicated onscreen, or wait a few seconds and Rhapsody will start automatically.
- To start Windows or another OS stored in a DOS partition, enter `d`.

Finding more information about Rhapsody

- While using Rhapsody, switch to the Workspace Manager, then open the Help menu. Choose Workspace Manager Help to view information about Rhapsody.
- The NetAdmin.help file, available in the `/System/Administration` folder, has information about using Rhapsody networks.
- Developer documentation and sample applications are installed in the `/System/Documentation/Developer` folder.

Updates and news on the Internet

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



Troubleshooting



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

I can’t set the screen resolution.

Use the Configure application (located in the /System/Administration 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.

My monitor screen is 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.

My computer starts up in black-and-white mode.

This is normal. 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.

The Rhapsody 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 driver for your mouse.

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 `/System/Administration` folder) to set up the mouse to work with your hardware.

I used Configure, or 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.

I want to choose whether to start up with Windows or Rhapsody.

The Rhapsody loader allows you to start up your computer with Rhapsody or a DOS partition. 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 active. 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 administrator, then enter the following in the Terminal window:

```
/usr/sbin/disk -b /dev/rsd0h
```

If you have an IDE drive, substitute `rh0h` for `rsd0h`.

If you've uninstalled Rhapsody and want to remove the Rhapsody loader, enter the following command at the DOS prompt: `fdisk /mbr`.

I don't know what the computer's root device is.

If Rhapsody is not installed on the startup disk, you must specify a root device (the disk where startup files are stored) at the boot prompt by entering `rootdev=sdn`, 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 assigned to your Rhapsody hard disk, follow these steps:

1 List your external SCSI storage 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 devices that don't store files on disks.

2 Add to the list your internal SCSI disk drives in the order of their SCSI ID numbers.

Again, make sure the ID numbers are in ascending order and that only storage devices 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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