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Parallels Software International, Inc.

# Parallels Image Tool

## User Guide



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# Introduction

Virtual machines use virtual hard disks that actually are hard disk image files. After using your virtual machine for some time, you may find that your virtual machine hard disk does not fit your needs anymore, and you want to increase its capacity or change its type and properties. Parallels has developed a special utility for increasing the virtual hard disk capacity and managing its properties - Parallels Image Tool.

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## About Parallels Image Tool

Parallels Image Tool is a special utility that enables you to increase the capacity, change the type and format of your virtual hard disks, or merge snapshots of virtual machines that use these virtual hard disks. This utility is a part of Parallels Desktop package, and is automatically installed during Parallels Desktop installation.

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## About This Guide

The present guide is aimed at a wide range of users who want to increase the capacity, change the type, or merge snapshots of hard disks used by their virtual machines with the help of Parallels Image Tool.

### Notation Conventions


The table below presents the conventions used in this Guide.

|             |                  |  |
|-------------|------------------|--|
| Fonts       | <b>This font</b> | Used for buttons, options, menus and menu commands, windows, and dialog boxes. |
|             | <i>This font</i> | Used for keys, paths, and folder names.  |
|             | <i>This font</i> | Used for glossary items.   |
| Type Styles | <b>Note.</b>     | Used to emphasize the message.   |
|             | <b>Warning.</b>  | Used to warn you about possible data loss.                                     |

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## Getting Help

Parallels Image Tool offers several options for accessing necessary information:

- **Parallels Image Tool User Guide.** This document contains extensive information about the product, its usage and troubleshooting. The Guide is located in the Parallels Desktop folder. Default location is `Applications/Parallels/`
- **Help buttons.** Click the  **Help** button at the bottom of the Image Tool window to open a corresponding help page.
- **Parallels web site** (<http://www.parallels.com>). Explore the Support web page that includes product help files and FAQ section.

# System Requirements

Parallels Image Tool is a part of Parallels Desktop package, and the system requirements for installing and using it are the same as for Parallels Desktop.

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## Hardware Requirements

The hardware requirements for Parallels Image Tool are based on those for Parallels Desktop:

|                      |   |
|----------------------|---|
| Computer             | Intel-powered Core™ Duo or Core™ Solo Mac® Mini, iMac®, MacBook™, MacBook Pro or Mac Pro.   |
| System Memory        | 768 MB of RAM minimum.<br>1 GB recommended.   |
| Free Hard Disk Space | 40.5 MB required for Parallels Desktop.<br>Enough space for storing enlarged virtual disks. |
| Optical Drive        | CD-ROM and/or DVD-ROM drive.  |
| Network Device       | Ethernet adapter.   |

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## Software Requirements

Parallels Desktop with Parallels Image Tool supports Mac OS X 10.4.6 or later.

To check your Mac OS X version number, choose **Apple -> About This Mac** from the menu bar.

# Getting Started

This chapter provides information on how to install and uninstall Parallels Image Tool.

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## Installing Parallels Image Tool

Parallels Image Tool is installed automatically during Parallels Desktop installation. For detailed installation instructions, see *Parallels Desktop for Mac User Guide*.

By default, Parallels Image Tool is installed in the following folder:  
`/Applications/Parallels`.

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## Uninstalling Parallels Image Tool

Parallels Image Tool is uninstalled automatically as you uninstall Parallels Desktop. For detailed instructions, see *Parallels Desktop for Mac User Guide*.

# Working with Parallels Image Tool

Using Parallels Image Tool you can increase the capacity, change properties or format of an existing virtual hard disk image that is not currently used by any running virtual machine. To learn more about virtual hard disks types and formats, refer to the Virtual Hard Disks Types topic (page 25).

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## Starting Parallels Image Tool

To start the Parallels Image Tool utility, do the following:

- 1 In the Finder, go to **Applications -> Parallels**.
- 2 In the Parallels folder double-click the Parallels Image Tool icon.

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## Increasing Virtual Hard Disk Capacity

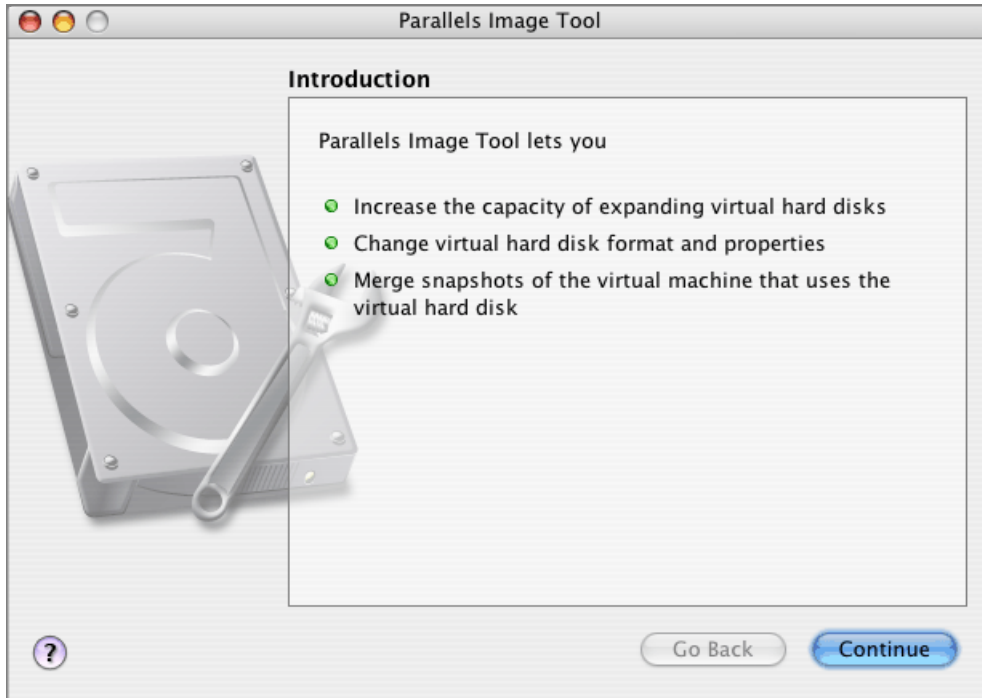
If you find that the capacity of your virtual machine hard disk doesn't fit your needs anymore, you can increase it using Parallels Image Tool.

**Warning.** Before modifying the image of a virtual hard disk, always back it up and make sure you have enough space on the hard disk of your Macintosh computer to allocate a temporary file of this virtual hard disk image.

To increase the capacity of virtual hard disk

- 1 Start Parallels Image Tool.

- 2 In the Introduction window, click Continue.



- 3 In the Source Virtual Disk Image File window, specify the hard disk image file to be increased and click Continue. You may type the path and file name or use the Choose button to locate the file.

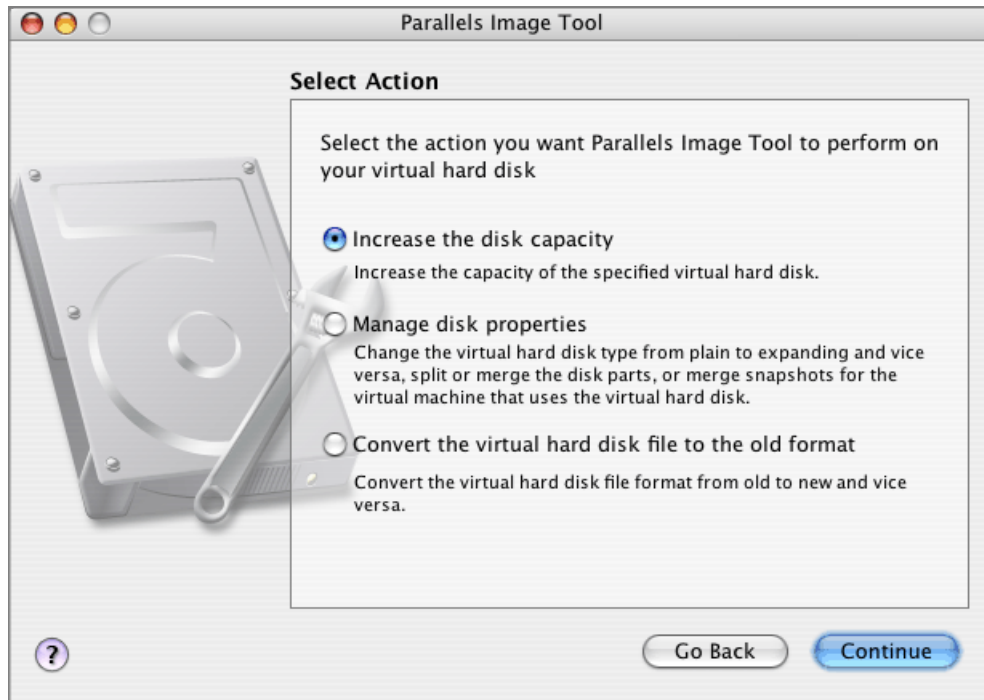


---

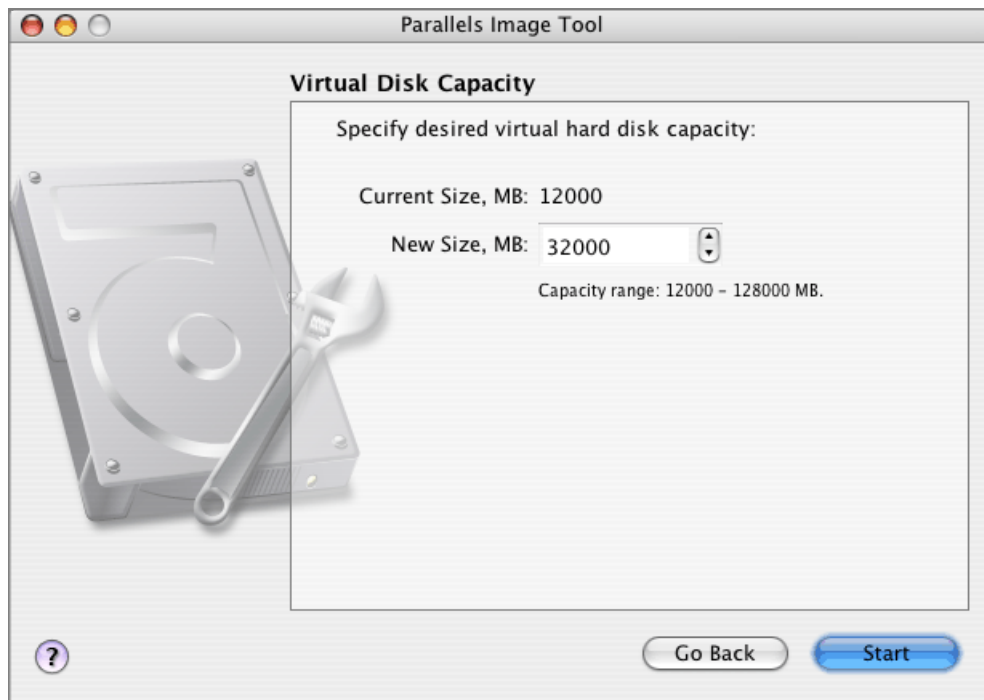
**Warning.** If you choose a hard disk used by virtual machine that has snapshots, all the snapshots, except the last one, will be deleted.

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- 4 In the Select Action window, choose Increase the disk capacity and click Continue.

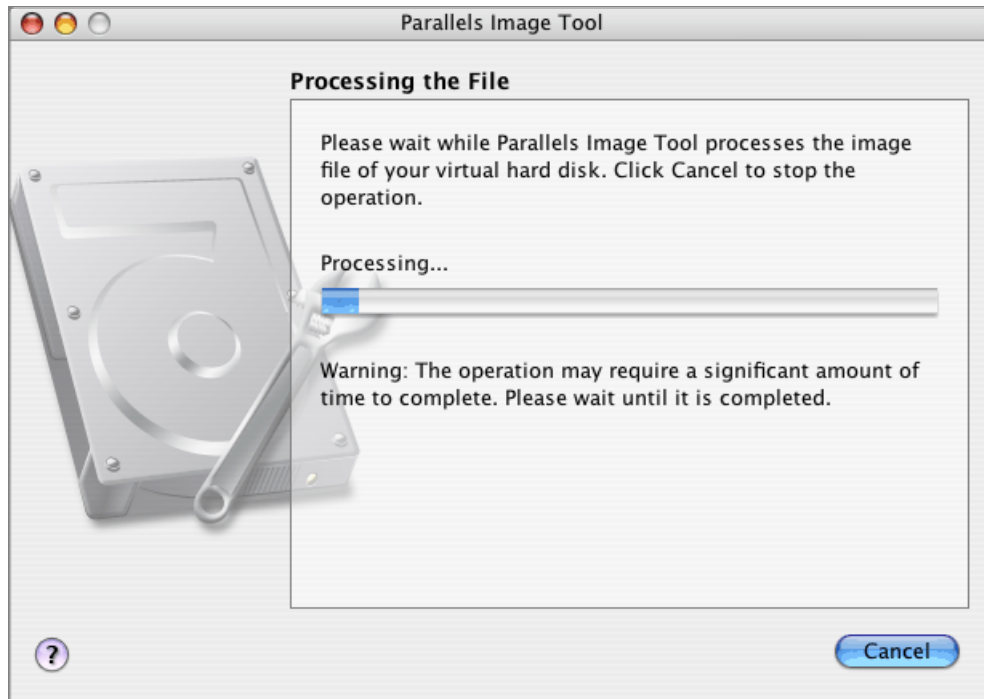


- 5 In the Virtual Disk Capacity window, specify the new capacity for the disk and click Start. Use arrow buttons to set the required capacity.

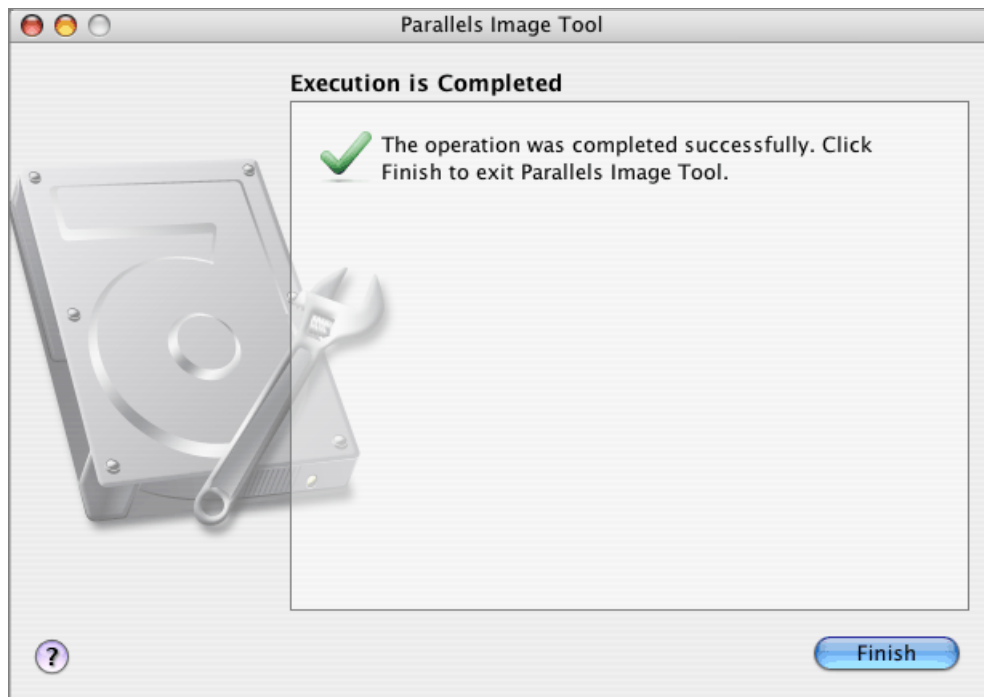


**Note.** If the virtual hard disk image file you specified has an *old* format, it will be automatically converted to the *new* format.

- 6 You can view the operation progress in the Processing the File window. Clicking Cancel terminates the operation.



- 7 After the disk image is modified, the Execution is Completed window appears. Click Finish to close the assistant.



If the modified disk was used by a virtual machine whose snapshots were merged during the operation, delete the `SnapshotS` folder in the virtual machine folder to save the disk space of your Mac. You can also delete this folder by deleting the snapshots in Snapshot Manager. For more information on using Snapshot Manager, refer to *Parallels Desktop for Mac User Guide*.

The added space appears as unallocated space in the guest operating system. You should allocate it to use it. For instructions on allocating the added space, see *Using the Added Space* topic (on page 22).

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## Changing Virtual Hard Disk Properties

With Parallels Image Tool you can manage the properties of your virtual hard disk. You can change the virtual hard disk type from plain to expanding one and vice versa, split or merge the disk parts, or merge snapshots of the virtual machine that uses this virtual hard disk.

To change the type of the virtual hard disk

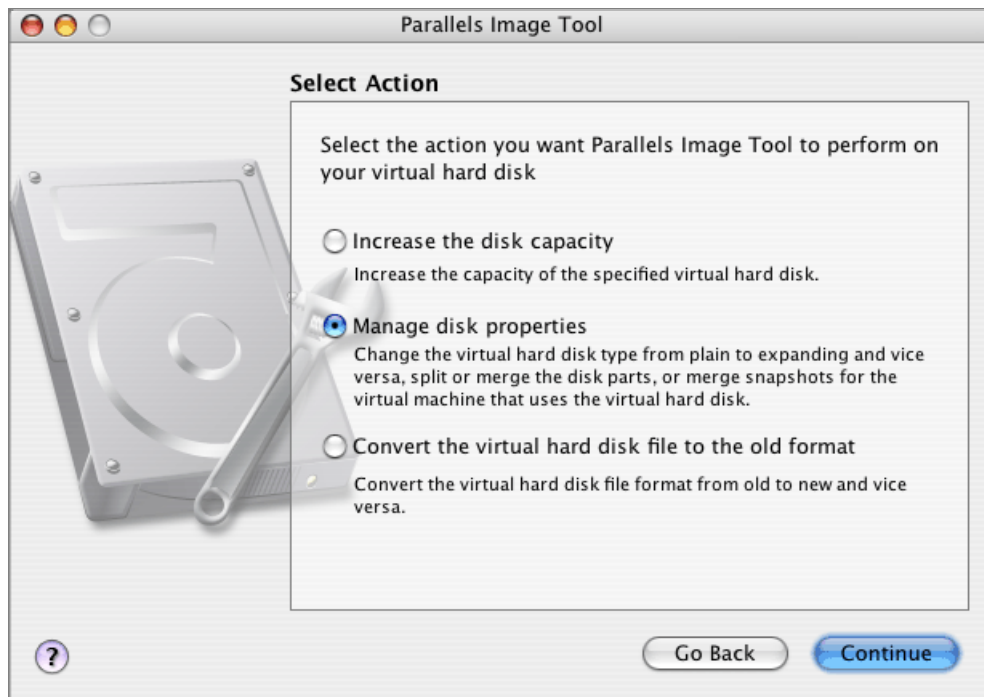
- 1 Start Parallels Image Tool.
- 2 In the Introduction window, click **Continue**.



- 3 In the **Source Virtual Disk Image File** window, specify the hard disk image file to be modified and click **Continue**. You may type the path and file name or use the **Choose** button to locate the file.

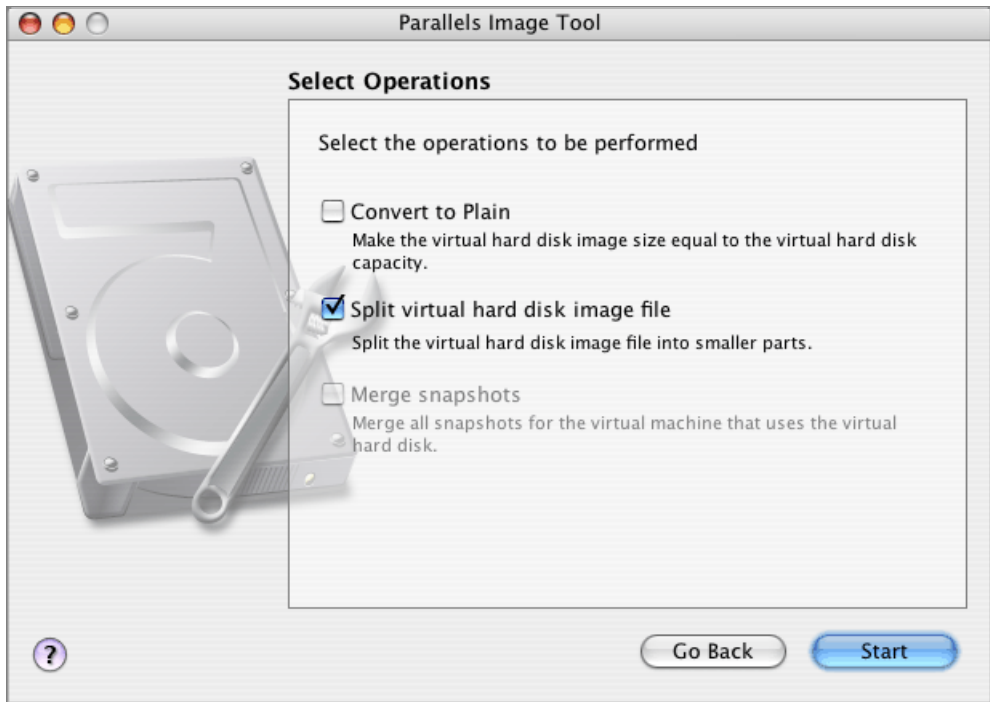


- 4 In the **Select Action** window, choose **Manage Disk Properties** and click **Continue**.



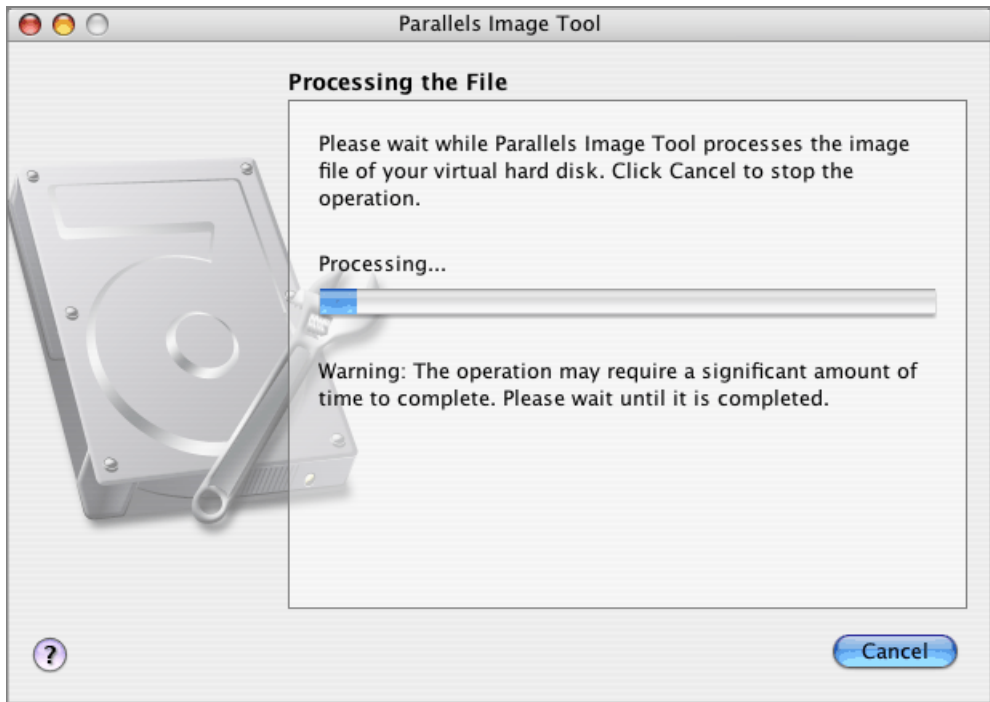
- 5 In the **Select Operations** window, select the operation you want to perform on the disk, and click **Start**. You can select several options.
- If the virtual hard disk image you specified is an *expanding* virtual hard disk, the **Split virtual hard disk image file** option is selected by default.
  - If it is a *plain* disk, the **Convert to Expanding** option is selected by default.

- If the hard disk image you selected has snapshots, the Merge Snapshots option is selected by default. You cannot clear this option.

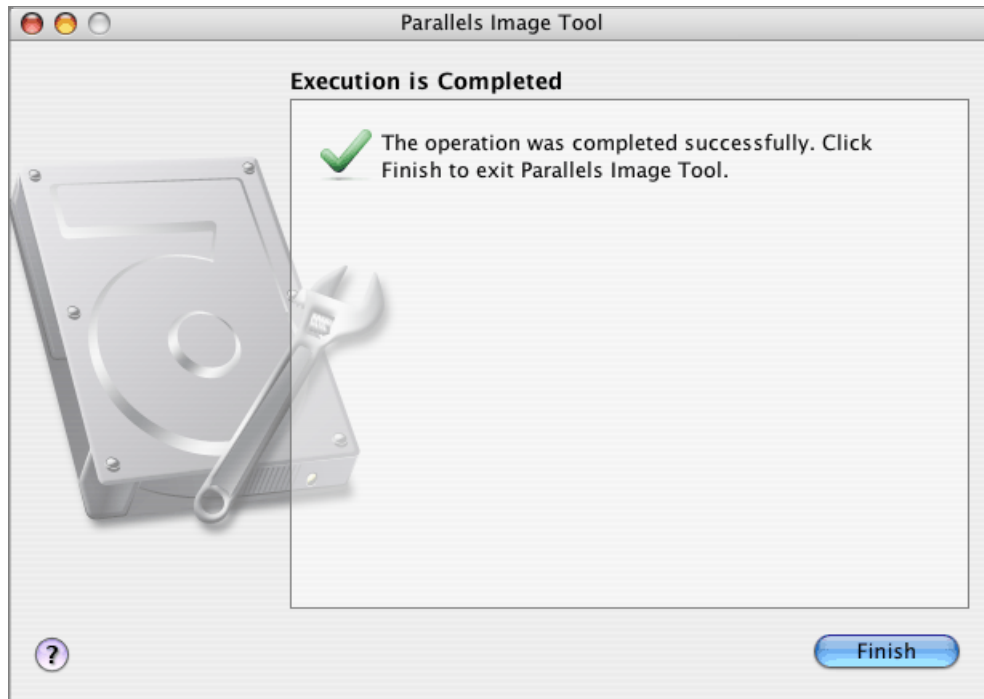


**Note.** If the virtual hard disk image file you specified has the *old* format, it will be automatically converted to the *new* format.

- 6 You can view the operation progress in the Processing the File window. Clicking Cancel terminates the operation.



- 7 After the disk image is modified, the Execution is Completed window appears. Click Finish to close the assistant.



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## Changing Virtual Hard Disk Format

If you want to use your virtual machine with an earlier version of Parallels Desktop, use Parallels Image Tool to convert its hard disk image file to the old format. Image Tool can be also used to convert virtual hard disk image files created with Parallels Desktop 2.5 or earlier to the new format, supported by Parallels Desktop 3.0 or later.

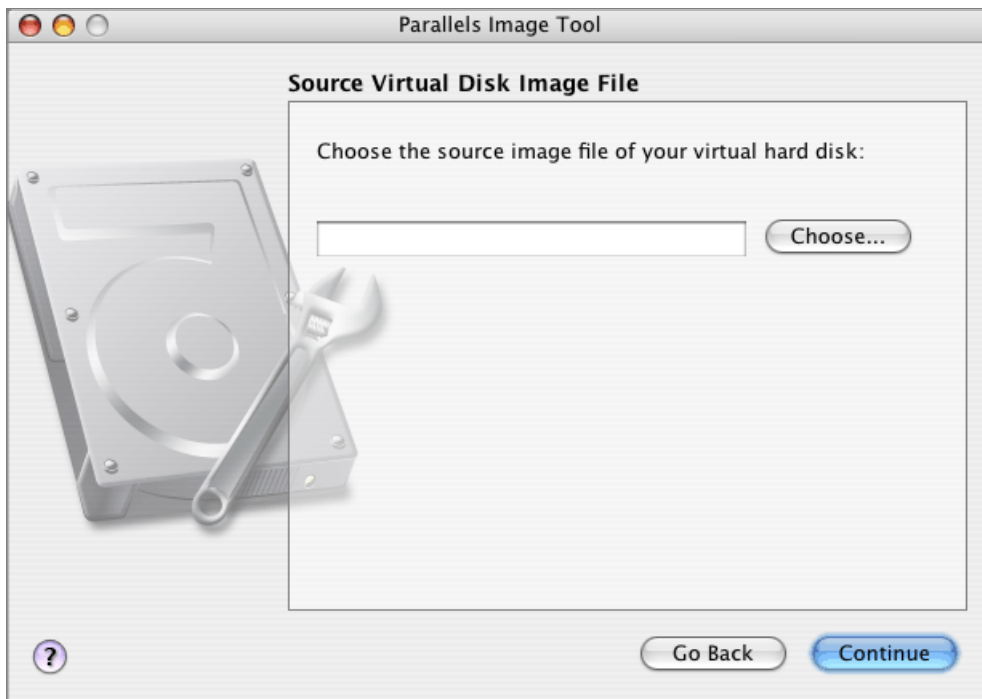
To change virtual hard disk image file format

- 1 Start Parallels Image Tool.

- 2 In the Introduction window, click Continue.



- 3 In the Source Virtual Disk Image File window, specify the hard disk image file you want to convert and click Continue. You may type the path and file name or use the Choose button to locate the file.

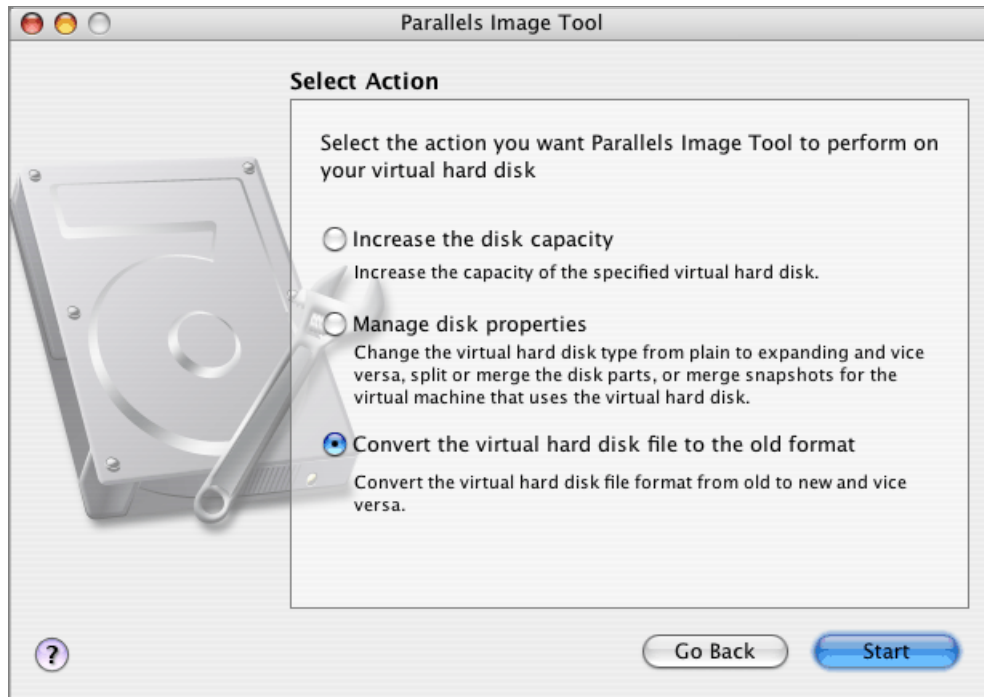


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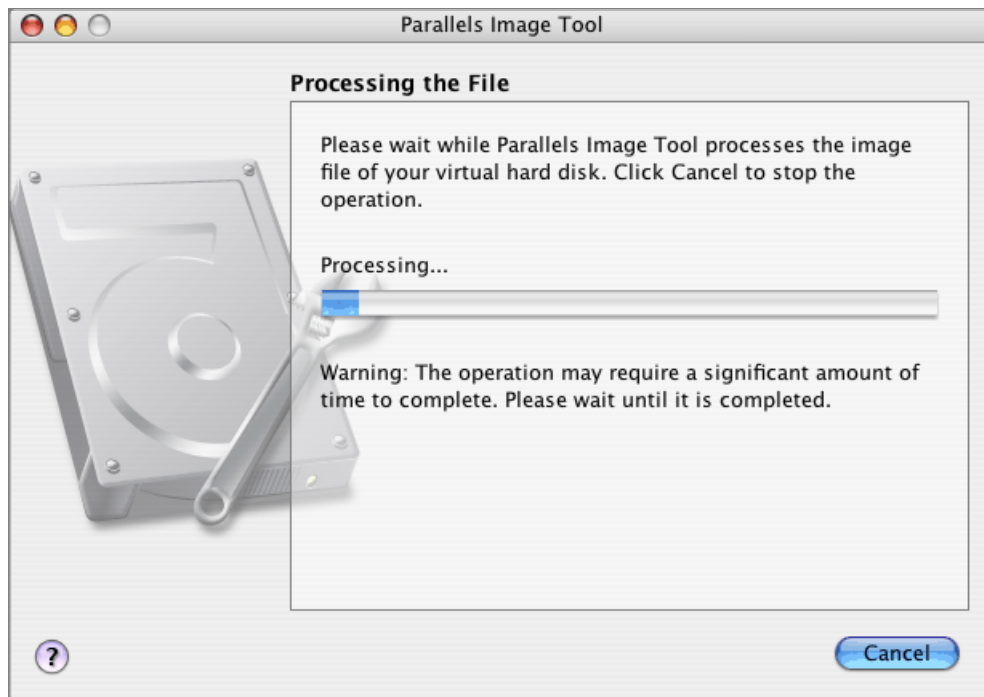
**Warning.** If you choose a hard disk used by virtual machine that has snapshots, all the snapshots, except the last one, will be deleted.

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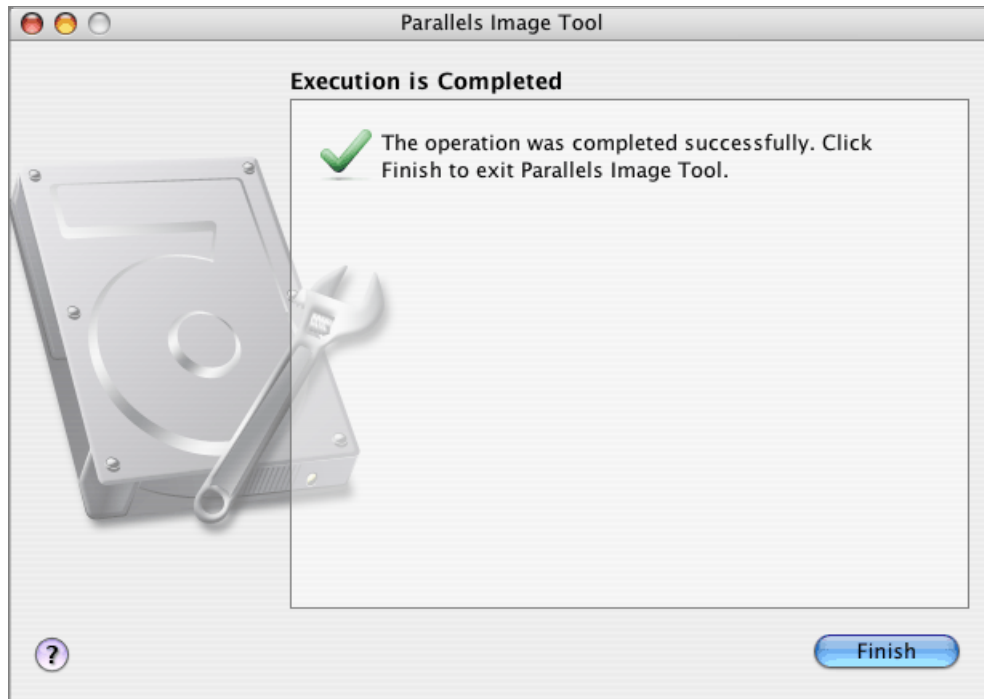
- 4 In the Select Action window, choose Convert the virtual hard disk to the old format or Convert the virtual hard disk to the new format. Click Continue.



- 5 You can view the operation progress in the Processing the File window. Clicking Cancel terminates the operation.



- 6 After the disk image file is modified, the Execution is Completed window appears. Click **Finish** to close the assistant.



If the modified disk was used by a virtual machine whose snapshots were merged during the operation, delete the `Snapshots` folder in the virtual machine folder to save the disk space of your Mac. You can also delete this folder by deleting the snapshots in Snapshot Manager.

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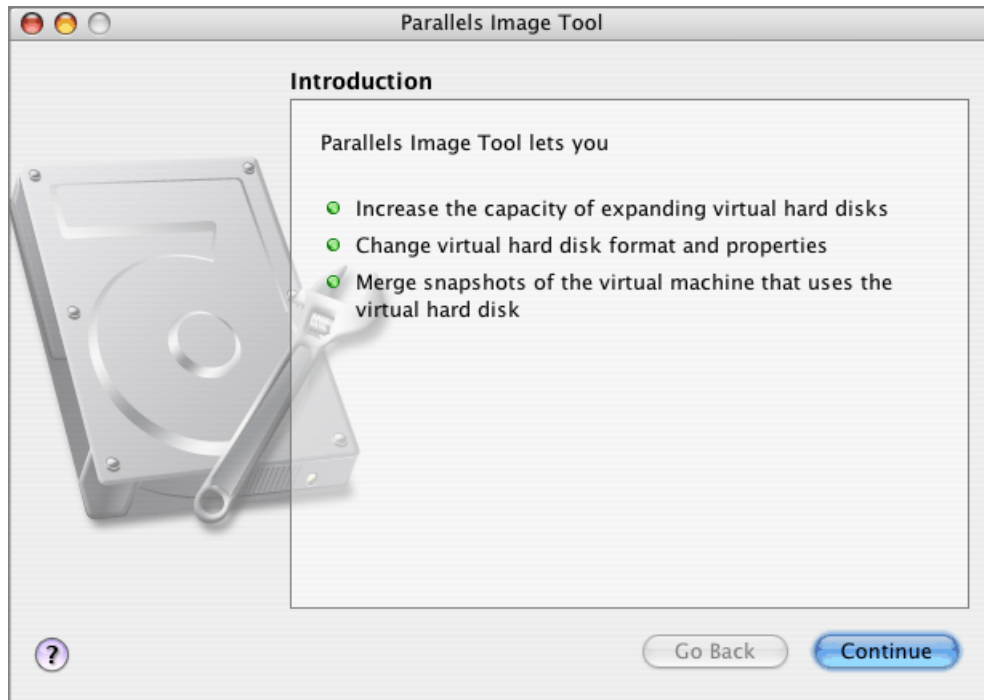
## Merging Snapshots

If your virtual machine has several snapshots, and you want to delete all except the last one, Parallels Image Tool provides the simplest way to merge them.

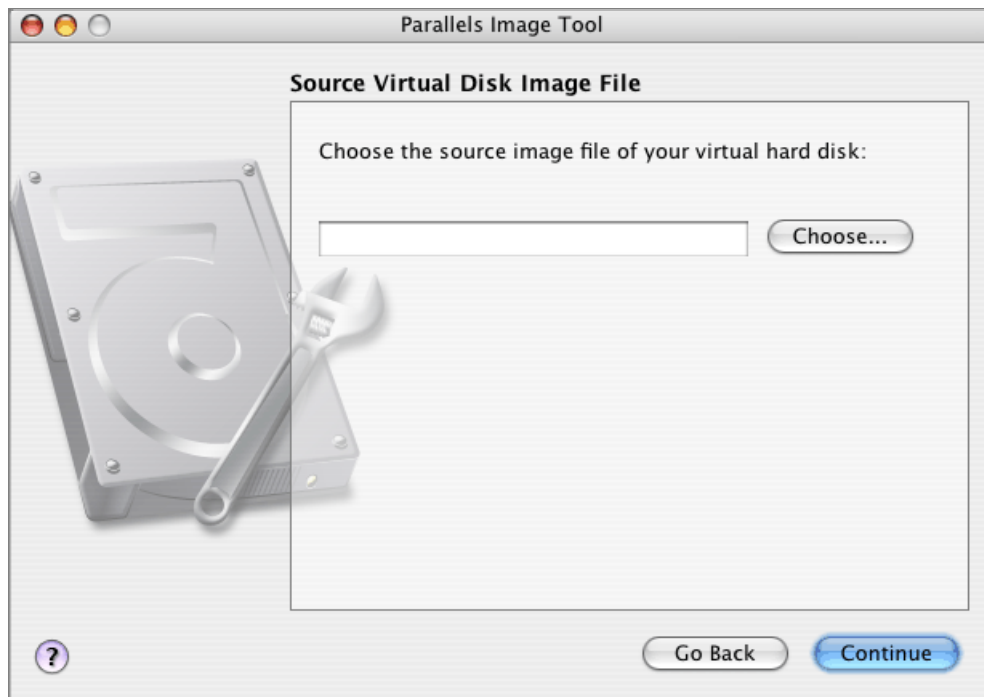
To merge snapshots of a virtual machine

- 1 Start Parallels Image Tool.

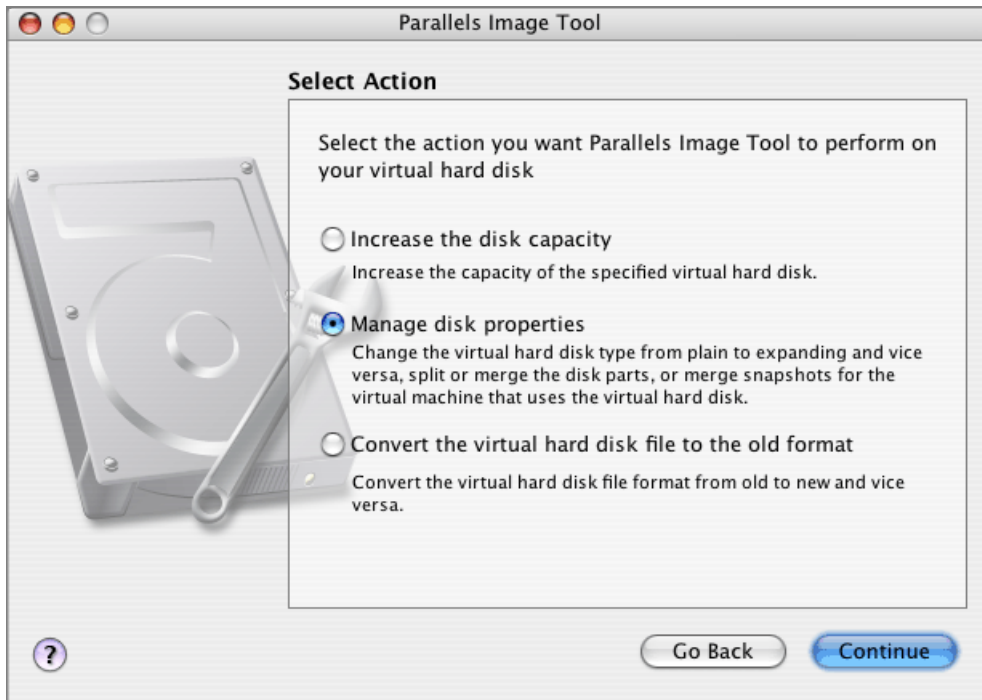
- 2 In the Introduction window, click Continue.



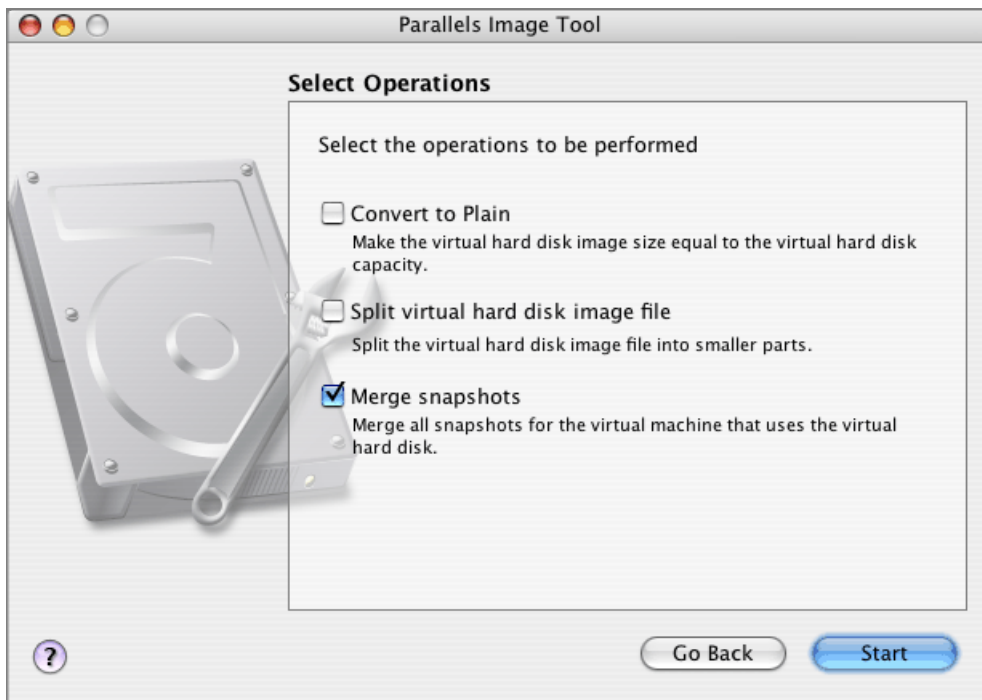
- 3 In the Source Virtual Disk Image File window, specify the hard disk image file used by the virtual machine whose snapshots you want to merge, and click Continue. You may type the path and file name or use the Choose button to locate the file.



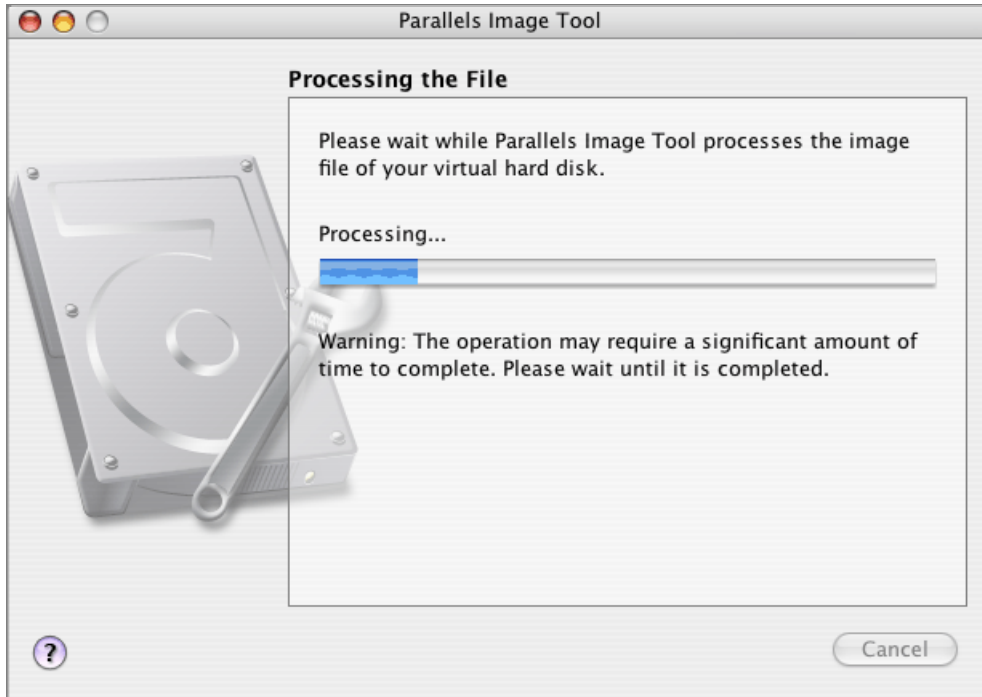
- 4 In the Select Action window, choose **Manage disk properties**, and click **Continue**.



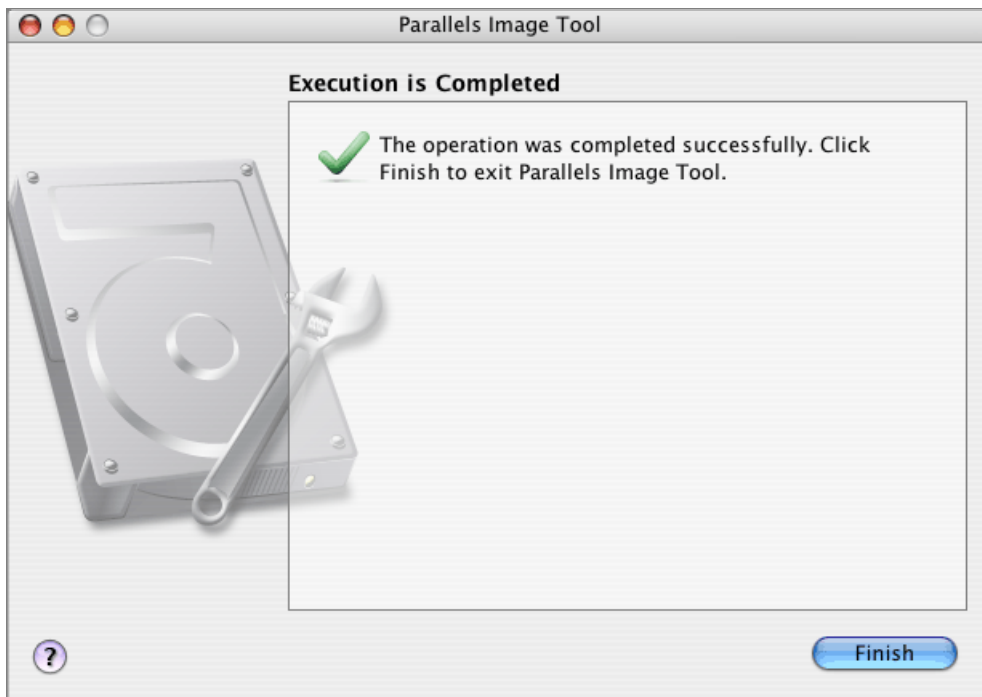
- 5 In the **Select Operations** window, select **Merge snapshots** and click **Start**. You can select other options as well.



- 6 You can view the operation progress in the Processing the File window. The operation cannot be cancelled.



- 7 After the snapshots are merged, the Execution is Completed window appears. Click Finish to close the assistant.



After merging the snapshots of the virtual machine, delete the remaining snapshots, if any, in Snapshot Manager.

# Using Added Space

As you increase the capacity of your virtual hard disk, the added space appears in the guest operating system as an unallocated space. To use this additional unallocated space, you can either create a new partition on this unallocated space, or expand one of the partitions you already have. The way of allocating the partitions is different for Windows and Linux guest operating systems.

This chapter provides some general guidelines on creating a new partition in Windows and Linux guest operating systems.

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## Creating New Partition in Windows

To create a new partition on the unallocated space of your virtual hard disk, you can use a Windows build-in utility called Disk Management. In the procedure below the steps are given for Windows XP. In other Windows operating systems the procedure will be very similar to this one.

To create a new partition on Windows XP

- 1 Start the virtual machine that uses the enlarged virtual disk.
- 2 To start the Disk Management utility, choose **Start -> Control Panel**. Double-click **Administrative Tools**, and open **Computer Management**. In the **Storage** section, select **Disk Management**.  
or  
Choose **Start -> Run**, and type:  
`diskmgmt.msc`  
Click **OK**.
- 3 In the **Disk Management** window, right-click the **Unallocated Capacity** and choose **New Partition** from the shortcut menu.
- 4 In the **New Partition** wizard introduction window click **Next**.
- 5 In the **Select Partition Type** window select **Primary partition** and click **Next**.
- 6 Specify the partition size and click **Next**.
- 7 Assign a drive letter to the new partition and click **Next**.

- 8 In the **Format partition** window select **Format partition with the following settings**. Set the **File system** to **NTFS** and the **Allocation unit size** to **Default**. Type the volume name in the **Volume label** field and click **Next**.
- 9 Carefully review the settings and click **Finish** to start formatting.

When the operation is complete, the new volume appears in the **Computer Management** window and in **My Computer**.

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## Creating New Partition in Linux

In most Linux systems, you can use the `fdisk` tool to create a new partition and to do other disk management operations.

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**Note.** To be able to execute the commands necessary to create a new partition on Linux, you must have `root` privileges.

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As a tool with a text interface, `fdisk` requires typing the commands on the `fdisk` command line. The following `fdisk` commands may be helpful:

| Options | Description   |
|---------|---|
| m       | Displays the available commands.  |
| p       | Displays the list of existing partitions on your <code>hda</code> drive. Unpartitioned space is not listed. |
| n       | Creates a new partition.  |
| q       | Exits <code>fdisk</code> without saving your changes.   |
| l       | Lists partition types.  |
| w       | Writes changes to partition table.  |

To create a new partition on Linux

- 1 Start terminal.
- 2 Start `fdisk` using the following command:

```
/sbin/fdisk /dev/hda
```

where `/dev/hda` stands for the hard drive that you want to partition.

- 3 In `fdisk`, to create a new partition type the following command:

```
n
```

- When prompted to specify the **Partition type**, type `p` to create a primary partition or `e` to create an extended one. There may be up to four primary partitions. If you want to create more than four partitions, make the last partition extended, and it will be a container for other logical partitions.
- When prompted for the **Number**, in most cases, type `3` because a *typical* Linux virtual machine has two partitions by default.
- When prompted for the **Start cylinder**, type a starting cylinder number or press `Return` to use the first cylinder available.

- When prompted for the **Last cylinder**, press **Return** to allocate all the available space or specify the size of a new partition in cylinders if you do not want to use all the available space.

By default, `fdisk` creates a partition with a **System ID** of 83. If you're unsure of the partition's **System ID**, use the

```
1
```

command to check it.

```
4
```

Use the

```
w
```

command to write the changes to the partition table.

```
5
```

Restart the virtual machine by entering

```
reboot
```

command.

**6** When restarted, create a file system on the new partition. We recommend that you use the same file system as on the other partitions. In most cases it will be either `Ext3` or `ReiserFS` file system. For example, to create an `Ext3` file system, enter the following command:

```
/sbin/mkfs -t ext3 /dev/hda3
```

**7** Create a directory that will be a mount point for the new partition. For example, to name it `data`, enter:

```
mkdir /data
```

**8** Mount the new partition to the directory you just created by using the following command:

```
mount /dev/hda3 /data
```

**9** Make changes in your static file system information by editing the `/etc/fstab` file in any of the available text editors. For example, add the following string to this file:

```
/dev/hda3 /data ext3 defaults 0 0
```

In this string `/dev/hda3` is the partition you've just created, `/data` is a mount point for the new partition, `Ext3` is the file type of the new partition. For the exact meaning of other items of the string, consult the Linux documentation for the `mount` and `fstab` commands.

**10** Save the `/etc/fstab` file.

# Virtual Hard Disks Types

This chapter provides basic information on the types of virtual hard disks used in Parallels virtual machines.

## Plain Disks

The file that stores an image of a *plain* virtual disk resides in Mac OS X and has constant size from the moment it is created. This reserves space on virtual disk even when there is no free space on the real hard disk. It also allows the guest OS to operate a little bit faster. You can create a *plain* disk when creating a virtual machine in Custom mode.

## Expanding Disks

An *expanding* disk is small initially and grows as you add applications and data to the virtual hard disk in the guest OS. The size specified when the disk was created is the maximum size of the disk. Using disks in this format saves space on the hard disk of your Mac.

## Split disks

Both *plain* and *expanding* virtual hard disks can be single-piece disks or **split** disks. By default, a split disk is cut into 2 GB pieces, but is stored as a single HDD file. *Split* disks allow the user to transfer the data stored on a split disk piece by piece using a USB drive or other media that has limited space and cannot store a large image file.

## Disks in Old Format

Disks in *old* format are created and used in versions of Parallels Desktop prior to 3.0.

## Disks in New format

Disks in *new* format are created and used in Parallels Desktop 3.0 and later.



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