

# Parallels Management Console

Getting Started Guide

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## CHAPTER 1

# Introduction

This guide provides information on how to start working in Parallels Management Console—a client application used to manage Parallels physical servers and virtual machines.

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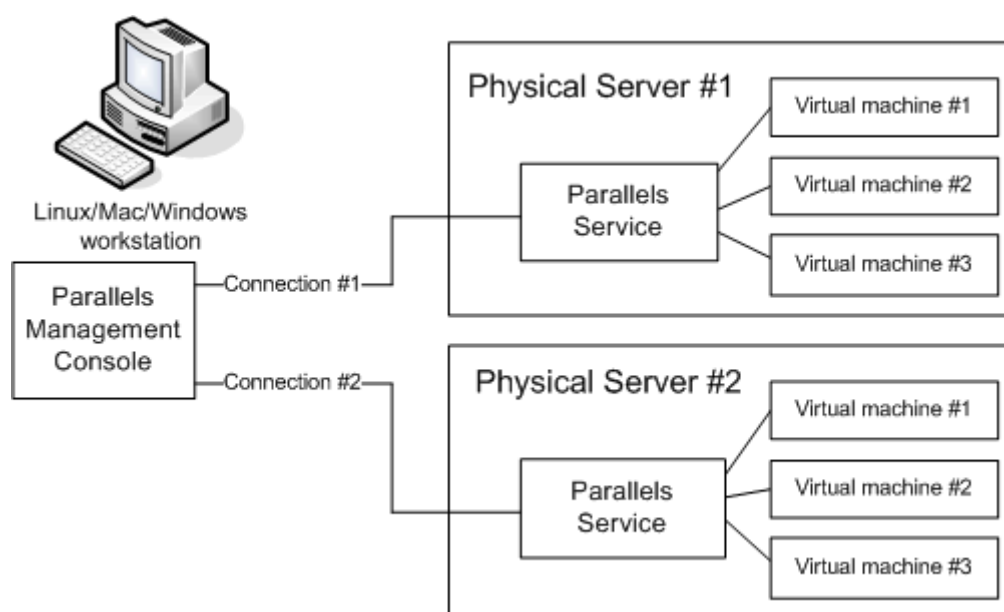
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## About Parallels Management Console

Parallels Management Console is a remote tool with a graphical user interface (GUI) for managing Parallels physical servers and virtual machines residing on them. This tool supports managing physical servers running the following Parallels products:

- Parallels Server for Mac
- Parallels Server Bare Metal
- Parallels Server for Mac Bare Metal Edition




Parallels Management Console uses a typical client-server architecture.



The client application with the graphical user interface is installed on a computer running one of the supported Linux, Mac, or Windows operating systems. For the full list of supported operating systems, see the **Checking System Requirements** subsection of the *Getting Started With Parallels Management Console* guide. Once the client application is up and running, it can connect to the Parallels Service software on a physical server. This software is automatically installed on the physical server when you install one of the aforementioned Parallels products. The client application can control multiple physical servers simultaneously (e.g. *Physical Server #1* and *Physical Server #2* as shown in the picture above). After the connection to the required physical server has been established, you can start managing this server and its virtual machines using the intuitive and comfortable GUI.

## Parallels Management Console Specifics

When working with Parallels Management Console, pay attention to the following:

- This guide uses the term *Parallels Server Bare Metal* to refer to both products: Parallels Server Bare Metal and Parallels Server for Mac Bare Metal Edition.
- Some features described in this guide are specific for particular products and product versions (for example, only for Parallels Server 5 Bare Metal) and may be not available in your product. If a feature is available for a specific product only, we add a note to the place where this feature is described.
- You can install the version of Parallels Management Console shipped with Parallels Server 5 Bare Metal only on computers running Linux and Windows operating systems. Installation on Mac computers is not supported.
- Some steps, option names, paths are different on Linux, Mac, and Windows computers. In this case, these differences are marked with the following icons:
  -  for Windows specifics
  -  for Linux specifics
  -  for Mac specifics

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## About This Guide

The *Getting Started With Parallels Management Console* guide provides information on installing and setting to work the Parallels Management Console application on your computer.

The guide is aimed at anyone planning to use Parallels Management Console for managing Parallels physical servers and virtual machines. To follow the instructions in this guide, no more than basic Linux, Mac, or Windows administration skills are required.

### Definitions

*Parallels physical server or host computer:* In this guide, these terms are used to refer to physical servers running Parallels Server for Mac, Parallels Server Bare Metal, or Parallels Server for Mac Bare Metal Edition.

*Client computer:* In this guide, this term is used to refer to a remote Windows, Linux, or Mac physical computer with Parallels Management Console installed.

*Virtual Machine.* In this guide, this term is used to refer to a virtualized PC environment in which an operating system can be installed and run just like in a physical computer.

*Guest operating system (guest OS):* The term is used to refer to an operating system that is installed in a virtual machine.

## Organization of This Guide

This guide is organized in the following way:

- Chapter 1, *Introduction*, gives an overview of Parallels Management Console and this guide.
- Chapter 2, *Setting Parallels Management Console to Work*, describes the requirements your computer must meet to successfully install Parallels Management Console on it. It also provides instructions on how to install this application and start working in it.
- Chapter 3, *Performing Basic Operations in Parallels Management Console*, familiarizes you with the way to perform the main operations on your virtual machines using Parallels Management Console.

## Documentation Conventions

Before you start using this guide, it is important to understand the documentation conventions used in it.

The table below presents the existing formatting conventions.

Formatting convention	Type of Information	Example
Special Bold	Items you must select, such as menu options, command buttons, or items in a list.	Go to the <b>Resources</b> tab.
	Titles of chapters, sections, and	Read the <b>Basic Administration</b> chapter.

	subsections.	
<i>Italics</i>	Used to emphasize the importance of a point, to introduce a term or to designate a command-line placeholder, which is to be replaced with a real name or value.	These are the so-called <i>EZ templates</i> . To destroy a Container, type <code>vzctl destroy ctid</code> .
Monospace	The names of commands, files, and directories.	Use <code>vzctl start</code> to start a Container.
Preformatted	On-screen computer output in your command-line sessions; source code in XML, C++, or other programming languages.	<code>Saved parameters for Container 101</code>
Monospace Bold	What you type, as contrasted with on-screen computer output.	<code># rpm -V virtuozzo-release</code>
Key+Key	Key combinations for which the user must press and hold down one key and then press another.	Ctrl+P, Alt+F4

Besides the formatting conventions, you should also know about the document organization convention applied to Parallels documents: chapters in all guides are divided into sections, which, in their turn, are subdivided into subsections. For example, **About This Guide** is a section, and **Documentation Conventions** is a subsection.

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## Getting Help

In addition to this guide, you can refer to the following resources to get more information on Parallels Management Console:

- *Parallels Management Console User's Guide*. This guide contains extensive information on configuring Parallels Management Console settings and using this application to manage Parallels physical servers and virtual machines hosted on them. To open the guide, choose **Parallels Management Console Help** from the Parallels Management Console **Help** menu.
- Context-sensitive help. When working in Parallels Management Console, you can open a help page for the currently active window by pressing F1 on your keyboard.
- Online documentation. All documentation for Parallels Management Console and other Parallels products, such as Parallels Server Bare Metal and Parallels Server for Mac, is also available online.
- Parallels website (<http://www.parallels.com/support/>). Visit the Parallels Support web page containing product help files and the FAQ section.
- Parallels Knowledge Base (<http://kb.parallels.com/>). This online resource comprises various articles about using Parallels Management Console and other Parallels products.

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## Feedback

If you spot a typo in this guide, or if you have an opinion about how to make this guide more helpful, you can share your comments and suggestions with us by completing the Documentation Feedback form on our website (<http://www.parallels.com/en/support/usersdoc/>).



## CHAPTER 2

# Setting Parallels Management Console to Work

This chapter describes the requirements your computer must meet to successfully install Parallels Management Console on it. It also provides instructions on how to install this application and start working in it.

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## Checking System Requirements

Parallels Management Console can be installed on any computer that meets the following requirements:

### Hardware Configuration

- Intel-powered Mac with Core™ Duo or Core™ Solo processor or a PC with 700+ MHz Intel-compatible x86 or x64 processor
- 1 GB of RAM
- 100 MB of hard disk space for Parallels Management Console installation files
- Ethernet or WiFi network adapter

### Compatible Operating Systems

Ubuntu 10.10 (x86, x64)	Windows 7 with and without Service Pack 1 (x86, x64)
Ubuntu 10.4 (x86, x64)	Windows Server 2003 R2 (x86, x64)
Red Hat Enterprise Linux 6 (x86, x64)	Windows Server 2003 Enterprise Edition with Service Pack 2 (x86, x64)
Red Hat Enterprise Linux 5.5 and 5.6 (x86, x64)	Windows Server 2008 R2 with Service Pack 1 (x64)
Red Hat Enterprise Linux 4.8 (x86, x64)	Windows XP with Service Pack 3 (x86, x64)
CentOS 4.8 (x86, x64)	Windows Vista with Service Pack 2 (x86, x64)
CentOS 5.5 and 5.6 (x86, x64)	Mac OS X v10.5 Leopard or Server Leopard
SUSE Linux Enterprise Server 10 with Service Pack 1 (x86, x64)	Mac OS X v10.6 Snow Leopard or Server Snow Leopard
SUSE 11 with Service Pack 1 (x86, x64)	

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**Note:** The version of Parallels Management Console shipped with Parallels Server 5 Bare Metal can be installed only on computers running Linux and Windows operating systems.

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## Obtaining Parallels Management Console

There are various ways to obtain Parallels Management Console:

- If you install Parallels Server for Mac, Parallels Management Console will be also installed on the Mac. You will be able to launch it from the Applications folder right after the Parallels Server for Mac installation.
- If you need a separate Parallels Management Console installation file for Windows, Linux, or Mac, you can download it from the Parallels official website for free. Go to <http://www.parallels.com/download/> and click one of the following Parallels products: Parallels Server for Mac or Parallels Server Bare Metal. The Parallels Management Console download links will be available in the **Additional Downloads** section of the displayed window.
- If you installed Parallels Server Bare Metal on your physical server, follow these steps to obtain the Parallels Management Console installation file:
  - 1** Ensure that the Parallels server (i.e. the physical server running Parallels Server Bare Metal) can be accessed over the network.
  - 2** On a computer connected to the network, open your favorite browser, and type the IP address or hostname of the Parallels physical server. You will be presented with the following window.

# Parallels<sup>®</sup> Server

## Welcome to the Parallels Server 5 Bare Metal

### Download Parallels Management Console

To work with Parallels Server 5 Bare Metal, you need to install Parallels Management Console

[For Windows](#)

[For Linux](#)

[For Mac](#)

### Download Parallels Transporter

To migrate a physical computer to a virtual machine, install Parallels Transporter

[For Windows](#)

[For Linux](#)

### Download Parallels Transporter for Containers

To migrate a Parallels Virtuozzo Containers to a virtual machine, install Parallels Transporter for Containers

[For Windows](#)

[For Linux](#)

### Parallels Documentation

Click to visit the [documentation page](#) for Parallels Server 5 Bare Metal  
If you have questions or suggestions or are interested in other Parallels products, [visit our website](#)

### Software Development Kit

[View](#) the SDK documentation and download SDK tools for integration with Parallels Server 5 Bare Metal

- 3 Click the link corresponding to your system architecture:
  - **For Windows.** Click this link to download the Parallels Management Console installation file for installing on Windows computers.
  - **For Linux.** Click this link to download the Parallels Management Console installation file for installing on Linux computers.
  - **For Mac.** Click this link to download the Parallels Management Console installation file for installing on Mac computers.

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**Note:** The version of Parallels Management Console shipped with Parallels Server 5 Bare Metal can be installed only on computers running Linux and Windows operating systems.

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- 4 Download the file.
- 5 If you plan to install Parallels Management Console on another computer, transfer the file to that computer.

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# Installing Parallels Management Console

The process of installing Parallels Management Console differs depending on the operating system installed on your computer.

## Installing on Windows Computers

To install Parallels Management Console on a computer running a Windows operating system:

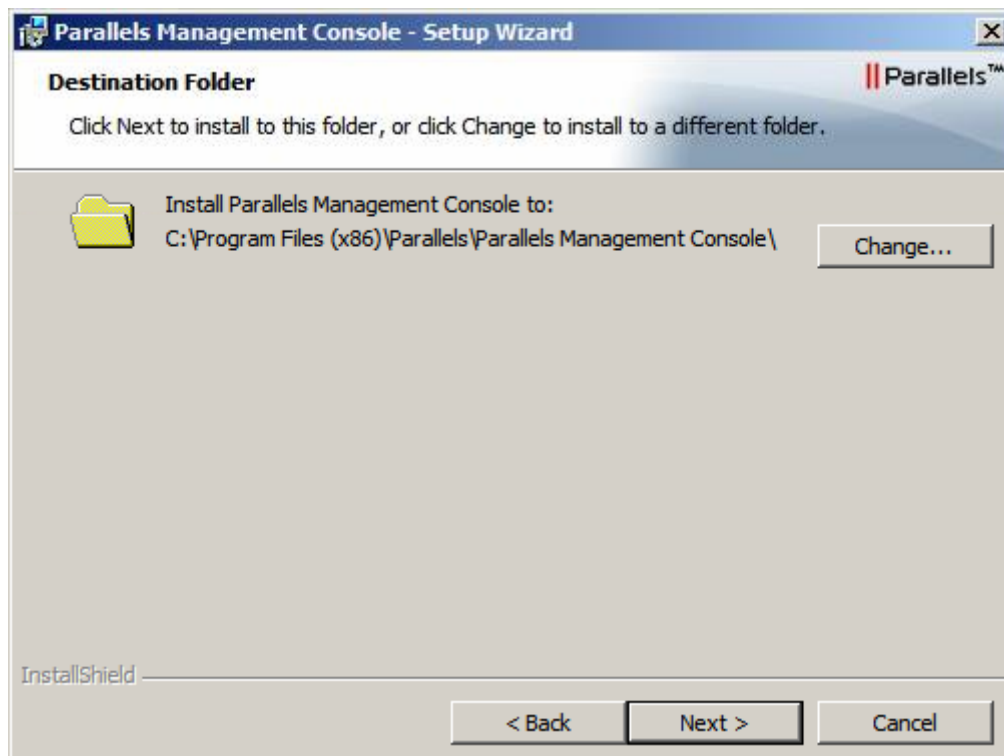
- 1 Locate the Parallels Management Console installation file, and double-click it to launch the Parallels Management Console Setup wizard.
- 2 In the Welcome window, click **Next**.
- 3 In the License Agreement window, carefully read the end user license agreement for Parallels products. To agree with the terms of the license agreement, select **I accept the terms in the license agreement**, and click **Next**. If you want to print the text of the license agreement for your records, click **Print**.

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**Note:** You must accept the license agreement to proceed with the installation.

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- 4 In the **Destination Folder** window, specify the folder where you want to install Parallels Management Console, and click **Next**. By default, Parallels Management Console is installed to `C:\Program Files\Parallels\Parallels Management Console`.



- 5 In the Ready to Install the Program window, click **Install** to start installing Parallels Management Console. You can view the installation progress in the **Installing Parallels Management Console** window.
- 6 Once the installation is complete, click **Finish** to exit the wizard.

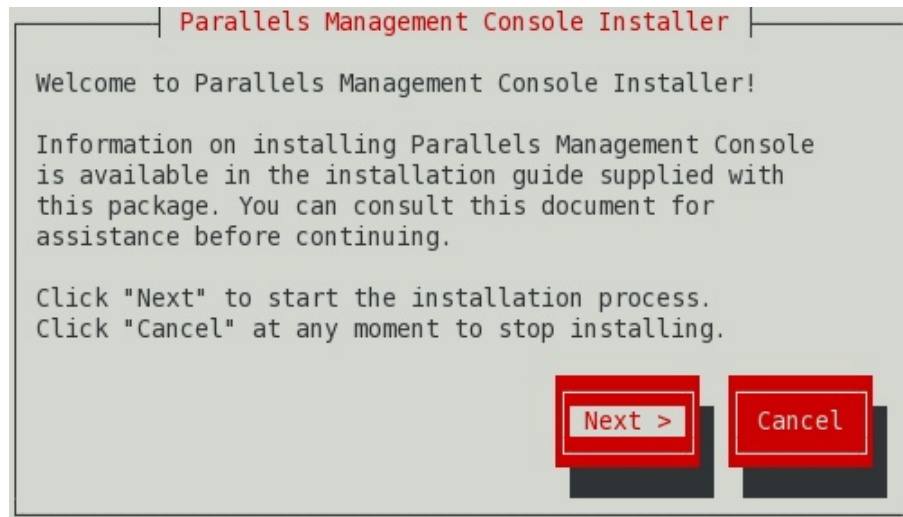
### Installing on Linux Computers

To install Parallels Management Console on a computer running a Linux operating system:

- 1 Locate the installation package, and execute the `parallels-management-console-5.0.XXXX.XXXXX.run` file to launch the Parallels Management Console installer. You can also open a terminal and run this file in the terminal.
- 2 Confirm your decision to install Parallels Management Console by clicking **Run** when prompted.

Wait until the process of uncompressing Parallels Management Console is complete and the installer launches.

- 3 In the **Welcome** window, select **Next**.



- 4 In the License Agreement window, carefully read the end user license agreement. To agree with the terms of the license agreement, select **I accept the terms in the license agreement**, and click **Next**. To print the text of the license agreement for your records, click **Print**.

---

**Note:** You must accept the license agreement to proceed with the installation.

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- 5 In the Installation Completed window, click **Exit** to quit the Installer.

By default, Parallels Management Console is installed into `/usr/lib/parallels-management-console`. To launch Parallels Management Console, start a terminal, and execute `pmc-standalone`.

## Installing on Mac Computers

To install Parallels Management Console on a computer running a Mac OS X operating system:

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**Note:** The version of Parallels Management Console shipped with Parallels Server 5 Bare Metal can be installed only on computers running Linux and Windows operating systems.

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- 1 Open the Parallels Management Console DMG package, and double-click **Install**.
- 2 In the Welcome window, click **Continue**.



- 3 In the **Important Information** window, read the product Read Me file. Click **Print** to print the document or **Save** to save it for future reading. When finished, click **Continue**.
- 4 In the **Software License Agreement** window, carefully read the license agreement. You can use the **Print** button to print the license agreement text or click the **Save** button to save it on your computer. When you are ready, click **Continue**.
- 5 In the pop-up dialog, click **Agree** to agree with the terms and conditions of the license agreement.

---

**Note:** You must accept the license agreement to proceed with the installation.

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- 6 In the **Select a Destination** window, select the hard disk where to install Parallels Management Console.
- 7 Click **Install** to start the Parallels Management Console installation.
- 8 Enter your password, when prompted, and click **OK**. The installation progress is displayed in the **Installing Parallels Management Console** window.
- 9 Once the installation is complete, click **Close** to exit the installer.

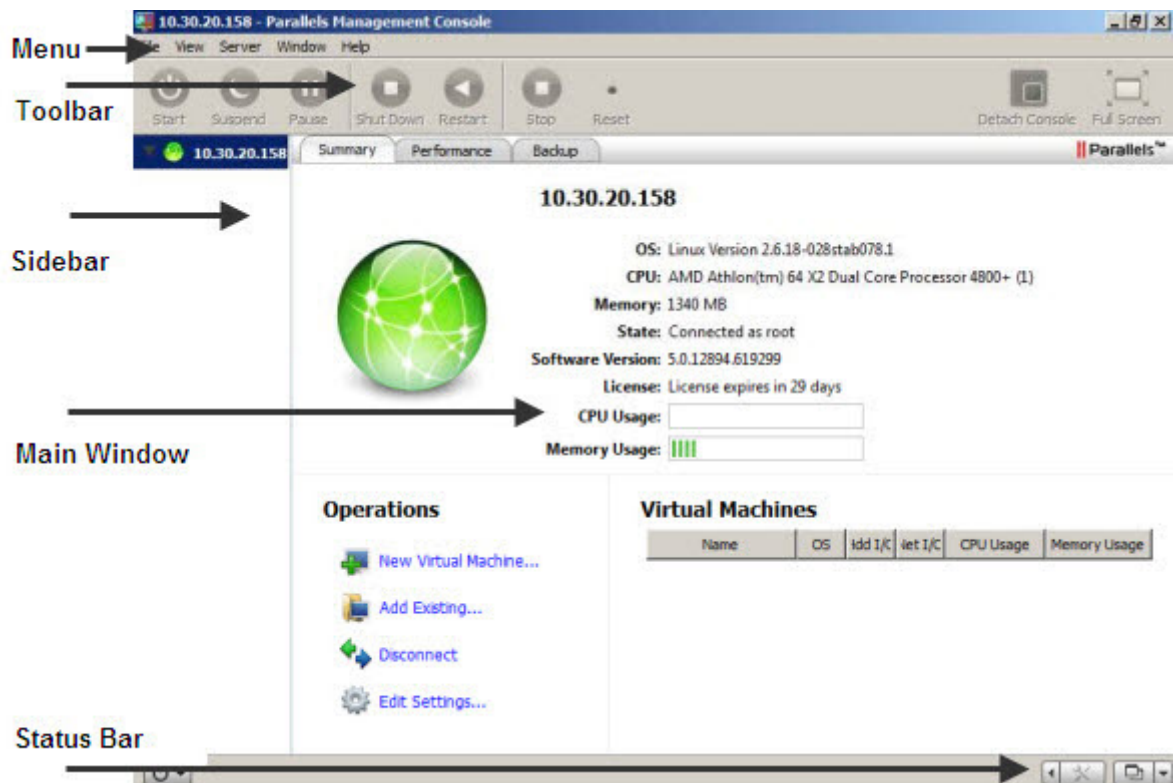
After the installation, you can launch Parallels Management Console from the **Applications** folder on your Mac.



## Exploring Parallels Management Console Interface




Parallels Management Console main window displays general information about the registered Parallels servers and their virtual machines.

The main window consists of the following parts: the toolbar, the sidebar, the summary pane, and the status bar.



## Toolbar




Parallels Management Console toolbar has buttons for most frequently used commands:

-  **Shut Down** button. Use this button to turn off the virtual machine.
-  **Suspend** button. Use this button to put your virtual machine into sleep mode. For example, if you need to restart the Parallels server, you can temporarily suspend your virtual machines and easily resume them after the restart.
-  **Pause** button. Use this button to pause the virtual machine. Use this button when you need to instantly release the server resources used by this virtual machine to another virtual machine.

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**Note:** If you stop a paused virtual machine, you will not be able to continue working with it from the moment it was paused. To be able to stop the virtual machine and to save all the data in it, you should suspend it using the **Suspend** button.

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-  **Start** button. Use this button to start the virtual machine if it is stopped, paused, or suspended.
-  **Detach Console (Attach Console)** button. Use this button to detach the virtual machine console to a new window or to attach it back to the main window. You may use this button to view the currently running virtual machines in separate windows.
-  **Server level** button. Use this button to quickly switch from the virtual machine summary pane to the summary pane of the server this virtual machine belongs to.

You can easily add additional buttons to the toolbar:

- 1 Right-click the toolbar, and choose **Customize Toolbar**.
- 2 Drag the items you need to the toolbar.
- 3 Click **Done**.

## Sidebar

The sidebar displays the registered Parallels physical servers and all virtual machines, and virtual machines templates hosted on them.

## Summary Pane

The summary pane displays the basic information about the server or the virtual machine currently selected in the sidebar.

When a server is selected, the summary pane has three tabs:

- **Summary.** Click this tab to view the general settings of the selected server, the list of virtual machines hosted on it, and the operations you can perform on the server.
- **Performance.** Click this tab to view the current resources consumptions on the server.
- **Backup.** Click this tab to view and manage the backups stored on the server.

When a virtual machine is selected, the summary pane has three tabs:

- **Summary.** Click this tab to view the general settings of the selected virtual machine, its configuration, and the list of actions you can perform on this virtual machine.
- **Console.** Click this tab to view the display of the virtual machine that is currently running. This tab is available only when the virtual machine is running.
- **Performance.** Click this tab to view how much of the server resources the selected virtual machine is using.
- **Backup.** Click this tab to view and manage the backups of the selected virtual machine.

### Status Bar

The status bar becomes active, when you start a virtual machine. It displays the virtual machine devices icons when you click the Console tab or switch the virtual machine console to detached mode. You can easily connect or disconnect the devices using the icons on this bar: right-click the device icon and choose the necessary option from the shortcut menu.



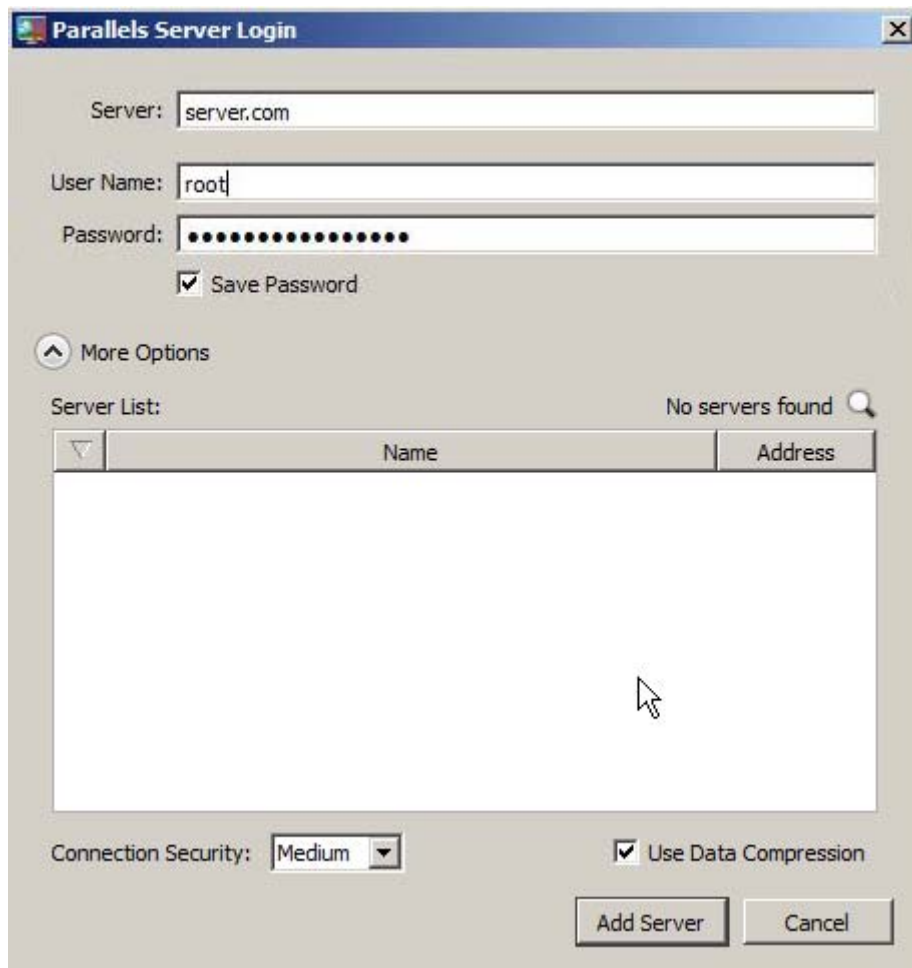
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## Connecting to a Server

Now that you have installed Parallels Management Console, you can connect to the physical server where Parallels Server Bare Metal is installed. Do the following:

- 1 Launch Parallels Management Console:
  - On Mac OS X, open the `/Applications/Parallels` folder and launch the Parallels Management Console application.
  - On Windows, click **Start > All Programs > Parallels > Parallels Management Console > Parallels Management Console**.
  - On Linux, start a terminal and execute `pmc-standalone`.
- 2 In the Parallels Management Console main window, click **Connect to Parallels Server**.
- 3 In the **Parallels Server Login** dialog, specify the parameters to be used to log in to the physical server running Parallels Server Bare Metal:
  - In the **Server list**, type the IP address or hostname of the physical server.
  - In the **User Name** field, type `root`. You must use the root account to log in to the physical server.
  - In the **Password** field, type the password for the root user. Use the password you specified when installing Parallels Server Bare Metal on the physical server.

If you want Parallels Management Console to remember your login and password, select the **Save Password** option. With this option selected, you do not need to specify the root credentials each time you connect to the server.



- 4 Click **Add Server** to establish connection to the physical server.

After the server has been successfully registered in Parallels Management Console, it appears in the left menu of the Parallels Management Console main window. For further information on using Parallels Management Console to manage Parallels Server Bare Metal and virtual machines, refer to the *Parallels Management Console User's Guide*.

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# Uninstalling Parallels Management Console

Use these procedures to remove Parallels Management Console from your computer.

## From Windows computers

Parallels Management Console can be removed from a Windows computer like any other Windows application:

- 1 From the Start menu, choose Control Panel, and then double-click Add or Remove Programs.
- 2 Select Parallels Management Console, and click Remove.

## From Linux computers

Parallels Management Console can be removed from a Linux computer like any other Linux application:

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**Note:** To remove Parallels Management Console, you must have the `root` privileges.

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- 1 Locate the Parallels Management Console installation package and execute the `parallels-management-console-5.0.XXXX.XXXXX.run` file to run the Parallels Management Console installation program.
- 2 In the Welcome window, press `Enter`.
- 3 Select `Remove` and press `Enter`.

When Parallels Management Console is successfully uninstalled, press `Enter` to close the Parallels Management Console uninstaller.

## From Mac computers

Parallels Management Console can be removed from a Mac computer like any other Mac application:

- 1 Locate the Parallels Management Console icon.
- 2 Right-click the icon and choose `Move to Trash`.

## CHAPTER 3

# Performing Basic Operations in Parallels Management Console

This chapter outlines the basic day-to-day operations that you are likely to perform with Parallels virtual machines in Parallels Management Console.

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## Creating a Virtual Machine

Before you can start managing a virtual machine, you first need to create it. The process of creating a ready-to-use virtual machine includes these steps:

- 1 *Creating a virtual machine configuration.* In this step, you choose and configure the virtual hardware for the virtual machine (disk drives, CD/DVD-ROMs, network cards, and so on).
- 2 *Installing a guest operating system.* In this step, you choose and install the operating system (called the guest operating system or the guest OS) in the virtual machine:
  - To check the list of supported guest operating systems available for Parallels Server for Mac, see the *Parallels Server for Mac User's Guide*.
  - To check the list of supported guest operating systems available for Parallels Server Bare Metal, see the *Parallels Server Bare Metal User's Guide*.
  - To check the list of supported guest operating systems available for Parallels Server for Mac Bare Metal Edition, see the *Parallels Server for Mac Bare Metal Edition User's Guide*.
- 3 *Installing Parallels Tools.* You are also recommended to install Parallels Tools in your virtual machine. They will make your work with the virtual machine more comfortable. For more information on Parallels Tools, see *Installing Parallels Tools* (p. 26).

The following subsections describe all these steps in detail.

## Creating a Virtual Machine Configuration

Parallels Management Console allows you to create a virtual machine using one of the following modes:

- **Express.** In this mode, Parallels Management Console does the following:
  - a** Creates a virtual machine with the configuration typical for the guest operating system you select for installing in this virtual machine.
  - b** Installs the selected guest OS in the newly created virtual machine.

Using this mode, you can create virtual machines running Windows 7, Windows Vista, Windows XP, Windows Server 2003, Ubuntu, Fedora, Fedora Core 5, Red Hat Enterprise Linux.

- **Typical.** In this mode, Parallels Management Console creates a virtual machine with the configuration typical for the operating system you select for installing in this virtual machine. But unlike the Express mode, the selected guest OS is not automatically installed in the newly created virtual machine.
- **Custom.** In this mode, you control the whole process of creating the virtual machine:
  - First, you specify the parameters for creating the virtual machine configuration.
  - Second, you install the appropriate guest operating system in the virtual machine.

The example below shows you how to create a virtual machine using the Typical mode in Parallels Management Console that is installed on a Windows computer. For information on creating virtual machines using the Express and Custom modes, see the *Parallels Management Console User's Guide*.

To create a virtual machine in the Typical mode, do the following:

- 1** Launch Parallels Management Console.
- 2** If you have more than one physical server registered in Parallels Management Console, select the server where you want to host the new virtual machine.
- 3** Start the **New Virtual Machine** wizard by doing one of the following:
  - Choose **New Virtual Machine** from the **File** menu.
  - Click **New Virtual Machine** on the server **Summary** tab.
  - Right-click the server icon in the sidebar and choose **New Virtual Machine**.
- 4** In the **Select Operating System Type and Version** window, select the operating system you want to install in the virtual machine, and click **Next**.

If you cannot find the necessary operating system in the list, select **Other**.

- 5** In the **Virtual Machine Type** window, select **Typical**, and click **Next**.
- 6** In the **Name and Location** window, type an arbitrary name for the virtual machine and specify the folder for storing its files. By default, all virtual machine files are placed to the following folders:

- On Mac computers: `/Users/Shared/Parallels/<Virtual_Machine_Name>/.`
- On servers running Parallels Server Bare Metal: `/var/Parallels`.

When you are ready, click **Next**.



- 7 Once the virtual machine configuration is created, the **Install Operating System** window appears.



In this window you can do the following:

- Start installing the guest operating system in the newly created virtual machine:
  - a** Select the installation source in the **Placement** list. Choose **Physical Server** if your source installation files are located on the remote Parallels server; otherwise, choose **Client Computer**.
  - b** Specify the path to the source installation files. In the **Source** list, select a disc in the **Physical CD/DVD-ROM Drive** section if the operating system you plan to install is located on the disc inserted into the computer's CD/DVD drive. Click **Choose an image file**, and specify the path to a disc image if the operating system is located on a disc image.
  - c** Click **Start** to start the newly created virtual machine, and launch the guest operating system installation.
- Quit the wizard without installing the guest operating system in the newly created virtual machine. To do this, click **Done**.

## Installing a Guest Operating System

Before you can start using the newly created virtual machine, you need to install a guest operating system in it (unless you are creating the virtual machine in the Express mode where the guest operating system is installed automatically without your interaction). The guest operating system installation starts automatically if you do the following:

- Specify the path to the source installation files in the **Prepare to Install Operating System** window of the **New Virtual Machine** wizard, and click **Start**.
- Choose **Configure** from the **Virtual Machine** menu to open the **Virtual Machine Configuration** dialog. In this dialog, click the **Hardware** tab, select **CD/DVD 1** in the left pane, choose the installation source in the **Source** list, and click **OK**. After that, start the virtual machine.

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**Note:** You can install a guest operating system only from the **CD/DVD-ROM 1** drive.

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You can also install a guest operating system using a PXE server.

- 1 Make sure that the virtual machine is connected to the same network to which the PXE server belongs.
- 2 Click the name of the virtual machine in the left pane of Parallels Management Console.
- 3 Click **Configure** to open the **Virtual Machine Configuration** dialog.
- 4 On the **Hardware** tab, click **Boot Order**.
- 5 Move the **Network Adapter** item to the top of the boot sequence, and click **OK**.

---

**Note:** The virtual machine will use the network adapter specified as **Network Adapter 1** in this virtual machine configuration.

---

- 6 Start the virtual machine.

Once the installation program is launched, follow the on-screen instructions to install your guest operating system in the virtual machine. This procedure does not differ from installing Windows, Linux, or Mac on a standalone computer.

## Installing Parallels Tools

Parallels Tools are a suite of special utilities that facilitate working with your virtual machines. With Parallels Tools, you can move the mouse seamlessly outside the guest OS window without pressing special key combinations, change the virtual machine's screen resolution by simply resizing its window, and synchronize your virtual machine's time and date settings with the time settings of the Parallels physical server.

The process of installing Parallels Tools differs depending on the guest operating system installed in your virtual machine. The subsections below describe the main steps for installing Parallels Tools in virtual machines running Windows, Linux, and Mac. For more information on Parallels Tools, see the *Parallels Management Console User's Guide*.

## Installing Parallels Tools in Mac OS X

To install Parallels Tools in a Mac guest OS X, do the following:

- 1 Start the virtual machine, and log in to the guest OS.
- 2 Choose the **Install Parallels Tools** option from the **Virtual Machine** menu. This will connect and mount the Parallels Tools ISO image file (`prl-tools-mac.iso`) to the first CD/DVD-ROM in the virtual machine configuration.

---

**Note:** If the **Install Parallels Tools** option is grayed out, make sure that Parallels Tools are supported by your guest operating system. For the full list of guest OSs that support Parallels Tools, refer to the *Parallels Management Console User's Guide*.

---

- 3 In the displayed window, read the brief information about Parallels Tools, and click **Continue**.
- 4 Open the mounted image, and double-click **Install** to start the installation.
- 5 When prompted, enter your administrator credentials.
- 6 In the **Welcome** window, click **Continue**.
- 7 In the **Select a Destination** window, specify the location for storing Parallels Tools files, and click **Continue**.

---

**Note:** If you have only one volume on your Mac, this step is omitted.

---

- 8 In the **Standard Install on "Macintosh HD"** window, click **Install** (when prompted, type your password).
- 9 Once the installation is complete, click **Restart** to exit the installer and restart the virtual machine.

## Troubleshooting

If the Parallels Tools ISO image file was not automatically connected to the virtual machine's CD/DVD-ROM drive, you can connect it manually:

- 1 Right-click the CD/DVD-ROM drive icon in the status bar (p. 17) of the virtual machine window, and select **Configure**. The **CD/DVD** pane of the **Virtual Machine Configuration** dialog opens.
- 2 In the **Source** menu, select **Choose an image file**.
- 3 In the displayed window, specify the Parallels Tools ISO image file location (by default, it is located in `/Library/Parallels/Tools` on your Mac or in `/usr/share/parallels-server/tools` on the server running Parallels Server Bare Metal or Parallels Server for Mac Bare Metal Edition) and click **Open**.
- 4 Make sure the **Connected** option is selected and click **OK**.
- 5 Go to Step 4 of the installation procedure described above and repeat the following steps.

## Installing Parallels Tools in Windows

To install Parallels Tools in a Windows guest operating system, do the following:

---

**Note:** If you create a virtual machine using the *Express Windows* mode, Parallels Tools are installed automatically after the Windows guest OS installation.

---

- 1 Start the virtual machine, and log in to the guest OS.
- 2 Choose the **Install Parallels Tools** option from the **Virtual Machine** menu. This will connect the Parallels Tools ISO image (`prl-tools-win.iso`) to the virtual machine's CD/DVD-ROM drive and start the Parallels Tools installer.

---

**Note:** If the **Install Parallels Tools** option is grayed out, make sure that Parallels Tools are supported by your guest operating system. For the full list of guest OSs that support Parallels Tools, refer to the *Parallels Management Console User's Guide*.

---

- 3 In the **Welcome** window, click **Install** to install Parallels Tools. The installation also starts automatically after several seconds even if you do not click the **Install** button.
- 4 When the installation is complete, click **Reboot** to exit the wizard and restart the virtual machine. If you do not click **Reboot**, the guest operating system will be rebooted automatically within a few seconds.

## Troubleshooting

If the installation of Parallels Tools does not start automatically after performing the steps above, start it manually. To do this:

- 1 Right-click the CD/DVD-ROM drive icon in the status bar of the virtual machine window and select **Configure**. The CD/DVD pane of the **Virtual Machine Configuration** dialog will open.
- 2 In the **Source** menu, select **Choose an image file**.
- 3 In the displayed window, specify the Parallels Tools ISO image file location (by default, it is located in `/Library/Parallels/Tools` on your Mac or in `/usr/share/parallels-server/tools` on the server running Parallels Server Bare Metal or Parallels Server for Mac Bare Metal Edition) and click **Open**.
- 4 Make sure the **Connected** option is selected and click **OK**.
- 5 In the guest operating system, open **My Computer**.
- 6 Open the CD/DVD-ROM drive with the Parallels Tools ISO image connected.
- 7 Locate the `setup.exe` file, and double-click it. The **Welcome** window will open.
- 8 Click **Install** to install Parallels Tools.
- 9 When the installation is complete, click **Restart** to exit the wizard and restart the virtual machine.

## Installing Parallels Tools in Linux

Before installing Parallels Tools in a Linux guest operating system, do the following:

- Close all applications in the guest OS.
- Disable the 3D-accelerated window manager, if you use any.
- Make sure that you have the `gcc` package and the appropriate `kernel-sources` package installed. If these packages are not installed, you will see a warning message when installing Parallels Tools. The name of the `kernel-sources` package differs depending on the Linux guest OS. It can be called `kernel-devel`, `kernel-headers`, or something like this.

### Installing Parallels Tools in Modern Linux Distributions

If your virtual machine is running one of the most recent versions of Linux OSs (e.g. Fedora 11), the Parallels Tools ISO image (`prl-tools-lin.iso`) will be automatically mounted after you connect the image to the CD/DVD-ROM drive. To install Parallels Tools, do the following:

- 1 Start the virtual machine and log in to the guest OS.
- 2 Choose **Install Parallels Tools** from the **Virtual Machine** menu. This will connect and mount the `prl-tools-lin.iso` image file to the virtual machine's CD/DVD-ROM drive.

---

**Note:** If the **Install Parallels Tools** option is grayed out, make sure that Parallels Tools are supported by your guest operating system. For the full list of guest OSs which support Parallels Tools, refer to the *Parallels Management Console User's Guide*.

---

- 3 Start a terminal, and run the following command to gain the `root` privileges:

```
su
```

---

**Note:** To install Parallels Tools in a virtual machine, you must have the `root` privileges.

---

- 4 Go to the CD/DVD-ROM directory:

```
cd /media/cdrom/
```

---

**Note:** In some Linux operating systems, the mount point for the virtual CD/DVD-ROM drive may appear as `/media/Parallels Tools`.

---

- 5 In the CD/DVD-ROM directory, execute the following command to launch Parallels Tools installation:

```
./install
```

- 6 Follow the instructions on the screen to complete the installation.
- 7 When the installation of Parallels Tools is complete, restart the virtual machine.

### Installing Parallels Tools in other versions of Linux guest OSs

To install Parallels Tools in older versions of Linux OSs, you have to mount the `prl-tools-lin.iso` image file manually:

- 1 Start the virtual machine.
- 2 When the guest OS boots up, click the **Virtual Machine** menu, and choose **Install Parallels Tools**.

---

**Note:** If the **Install Parallels Tools** option is grayed out, make sure that Parallels Tools are supported by your guest operating system. For the full list of guest OSs which support Parallels Tools, refer to the *Parallels Management Console User's Guide*.

---

The `pri-tools-lin.iso` image file will be connected to the virtual machine's CD/DVD-ROM drive.

- 3 Start a terminal in your Linux guest OS. Type the following command to gain the `root` privileges:

```
su
```

---

**Note:** To install Parallels Tools in a virtual machine, you must have the `root` privileges.

---

- 4 Ensure that the Parallels Tools CD image is mounted by running the following command:

```
mount | grep iso9660
```

- If this command does not produce any output, proceed to **Step 5**.
- If this command returns something like

```
/dev/cdrom on /media/cdrom type iso9660 (ro,exec,nosuid,nodev,uid=0),
```

skip **Step 5**, and proceed to **Step 6**.

- If this command returns something like

```
/dev/cdrom on /media/cdrom type iso9660 (ro,noexec,nosuid,nodev,uid=0)
```

with the `noexec` option present in parentheses, unmount the disc using the following command, and then proceed to **Step 5**:

```
umount /dev/cdrom
```

- 5 To mount the Parallels Tools installation disc image, run this command:

```
mount -o exec /dev/cdrom /media/cdrom
```

---

**Note:** `/dev/cdrom` is the virtual machine's CD/DVD-ROM drive and `/media/cdrom` is the mount point for this device. In some Linux operating systems, the virtual CD/DVD-ROM drive may appear as `/dev/hdb` and the mount point may be `/mnt/cdrom`. Some Linux OSs do not have the CD/DVD-ROM mount point. In this case, you should create a mount point manually.

---

- 6 When the installation disc image is mounted, go to the CD/DVD-ROM directory:

```
cd /media/cdrom/
```

- 7 Execute the following command to launch the Parallels Tools installation:

```
./install
```

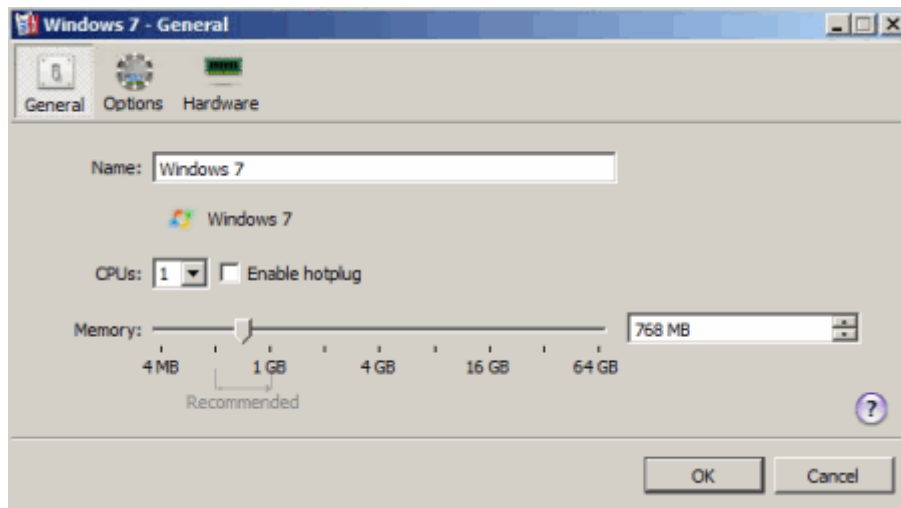
- 8 Follow the instructions on the screen to complete the installation.

- 9 When the installation of Parallels Tools is complete, restart the virtual machine.

---

## Configuring a Virtual Machine

To edit the settings of a virtual machine and the devices it uses, you can use the **Virtual Machine Configuration** dialog. To open this dialog, do one of the following, choose **Configure** from the **Virtual Machine** menu.



The **Virtual Machine Configuration** dialog contains three tabs:

- **General.** This tab allows you to configure the basic virtual machines settings: the virtual machine name, the number of processors to be available to the virtual machine, and the amount of memory that the virtual machine can use. You can also type any additional information about the virtual machine in the **Notes** text box.
- **Options.** This tab allows you to configure various settings related to the virtual machine operation. For example, you can adjust the virtual machine startup and shutdown settings, edit the **Parallels Tools** parameters, or configure access rights to the virtual machine.
- **Hardware.** This tab allows you to configure the current settings of the devices existing in the virtual machine: video cards, floppy disk and CD/DVD-ROM drives, hard disk drives, network adapters, and so on. You can also add new devices to the virtual machine and delete existing ones.

For detailed information on configuring the settings of a virtual machine, see the *Parallels Management Console User's Guide*.

---


## Managing Virtual Machines

This section provides information on the basic day-to-day operations you are likely to perform on your virtual machines:


- starting and stopping a virtual machine (p. 32)
- pausing and suspending a virtual machine (p. 33)
- switching view modes (p. 34)
- cloning a virtual machine (p. 36)
- adding an existing virtual machine to Parallels Management Console
- deleting a virtual machine (p. 38)

### Starting and Stopping a Virtual Machine

To start a virtual machine, do one of the following:

- Click the **Start**  button in the toolbar.
- Choose **Start** from the **Virtual Machine** menu.
- Right-click the virtual machine in the sidebar and choose **Start** from the shortcut menu.
- Click **Start** in the **Operations** section of the virtual machine **Summary** tab.

To stop a virtual machine, use the standard shut down procedure that is typical for its guest operating system. For example, you can click **Start > Turn Off Computer > Turn Off** to shut down a virtual machine running Windows XP. If you cannot shut down the guest OS from inside the virtual machine, use one of these ways:


- Click the **Stop**  button in the toolbar.
- Choose **Stop** from the **Virtual Machine** menu.
- Right-click the virtual machine in the sidebar, and choose **Stop** from the shortcut menu.




## Pausing and Suspending a Virtual Machine

If you do not want to spend much time on stopping your virtual machine, you can either pause or suspend it. Pausing a virtual machine can be useful if you need to instantly release resources the virtual machine uses. Suspending a virtual machine is convenient when you need to freeze and save the processes in the virtual machine for a long period of time.


To pause a virtual machine, do one of the following:

- click the **Pause** button  in the toolbar
- choose **Pause** from the **Virtual Machine** menu
- right-click the virtual machine in the sidebar and choose **Pause** from the shortcut menu
- click **Pause** in the **Operations** section of the virtual machine **Summary** tab

To suspend a virtual machine, do one of the following:

- click the **Suspend** button  in the toolbar
- choose **Suspend** from the **Virtual Machine** menu
- right-click the virtual machine icon in the sidebar and choose **Suspend** from the shortcut menu
- click **Suspend** in the **Operations** section of the virtual machine **Summary** tab

To resume a suspended or paused virtual machine, do one of the following:

- click the **Resume** button  in the toolbar
- choose **Resume** from the **Virtual Machine** menu
- right-click the virtual machine in the sidebar and choose **Resume** from the shortcut menu

## Switching View Modes

Parallels Management Console provides several view modes to make your work with virtual machines easier and more efficient.


- **Window.** This is the default view mode. Using this mode, you can see the virtual machine screen in the Parallels Management Console window or in a detached console window.
- **Full Screen.** Using this mode, you can expand the virtual machine screen up to the size of your computer screen.
- **Detached Console.** Using this mode, you can view the virtual machine screen in a separate window.

For switching between these modes, use the menu commands or toolbar buttons.

### Switching to the Full Screen mode

You can run a guest operating system in the full screen mode when the guest OS window occupies the whole screen of your computer and the Parallels Management Console controls are hidden.

To switch to the Full Screen mode, do one of the following:


- click the Full Screen button  in the toolbar
- choose Full Screen from the View menu
- use the hot key combination (Ctrl+Alt+Enter by default)

To exit the Full Screen mode and return to the Window mode, press the hot key combination that coincides with the key combination for switching to the Full Screen mode (Ctrl+Alt+Enter by default).


### Switching to the Detached Console mode

If you have a number of virtual machines, you can run each of them in its own window by detaching their windows from the main window of Parallels Management Console.

To detach the virtual machine window, do one of the following:

- click the Detach Console button  in the toolbar
- choose Detach Console from the View menu

To attach the virtual machine window back, do one of the following:

- close the detached window
- click the Attach Console button  in the toolbar
- choose Attach Console from the View menu

### Locking the guest OS screen resolution

The virtual machine screen resolution can be changed in the following situations:

- When you adjust the guest OS display settings.
- When you resize the virtual machine window (this feature works only when Parallels Tools are installed in your virtual machine).
- When you run an application that automatically changes the screen resolution of your guest OS.

This behavior of the virtual machine window can be irritating. To freeze the virtual machine screen resolution, use the **Lock Window** option available from the **View** menu. When the **Lock Window** option is enabled, the virtual machine screen resolution can be changed by adjusting the guest OS display settings only.

## Cloning a Virtual Machine

If you need to create an exact copy of a virtual machine, to back it up, or for some other purposes, use Clone Virtual Machine Assistant (or Clone Virtual Machine Wizard if Parallels Management Console is installed on a Windows- or Linux-based computer).

Using Clone Virtual Machine Assistant, you can clone a virtual machine, its virtual hard disks, and configuration file.

The cloned virtual machine has the same configuration as the original virtual machine. If a device in the original machine was connected to an external resource, this device in the cloned virtual machine will be connected to the same external resource.

---




### Notes:

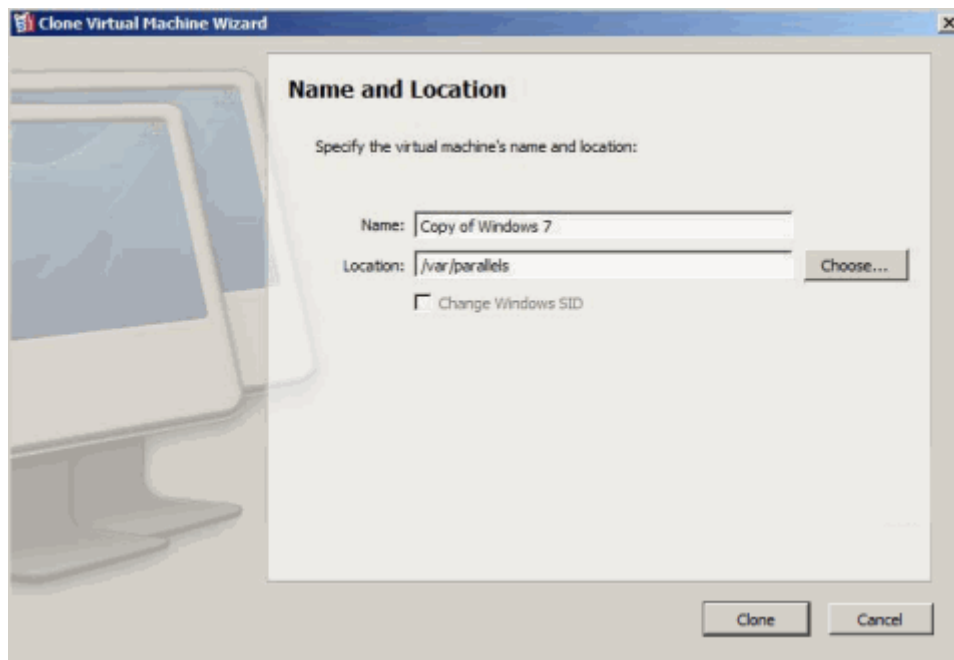
1. If the original virtual machine has a printer or serial port connected to an output file, the virtual machine clone will have empty output files.
  2. If a network adapter is enabled in the original configuration, a new MAC address will be generated for the virtual machine clone.
- 


To clone a virtual machine:

- 1 Make sure that the virtual machine you want to clone is not running.
- 2 Select the virtual machine in the Parallels Management Console sidebar.
- 3 Start Clone Virtual Machine Wizard by doing one of the following:
  - choosing **Clone** from the **Virtual Machine** menu
  - clicking **Clone** in the **Operations** section of the virtual machine **Summary** tab
- 4 In the **Name and Location** window, type the name of the virtual machine clone and specify the folder for storing its files. You can use the **Choose** button to locate the folder.

By default, the files of the virtual machine clone will be placed to the following folder:

-  on Mac OS X:  
/Users/Shared/Parallels/<Virtual\_Machine\_Name>/
-  on servers running Parallels Server Bare Metal:  
/var/parallels/<Virtual\_Machine\_Name>
-  on servers running Parallels Server for Mac Bare Metal Edition:  
/var/parallels/<Virtual\_Machine\_Name>



 To make the Windows security identifier (SID) of the cloned virtual machine different from that of the initial virtual machine, select **Change Windows SID**. It will help you to avoid possible security problems.

Click **Clone** to start cloning the virtual machine.

- 5** When the operation is complete, click **Done** in the **Cloning Finished** window.

The clone of the virtual machine will appear in the Parallels Management Console sidebar.

## Deleting a Virtual Machine

If you do not need some of your virtual machines anymore, you can either delete them or temporarily remove from the virtual machines list:

- Deleting a virtual machine means permanently erasing its files from the Parallels server.

---

**Note:** Make sure you transferred all the necessary data from the virtual machine before deleting it: this operation is irreversible. All the virtual machine data will be lost.

---

- Removing a virtual machine from the list displayed in the Parallels Management Console window means just removing the virtual machine from the list without removing the virtual machine files from the Parallels physical server.

You can delete a virtual machine using Delete Virtual Machine Assistant (or Delete Virtual Machine Wizard if Parallels Management Console is installed on a Windows- or Linux-based physical computer). By default, the assistant removes all the files stored in the virtual machine folder, including the configuration file, virtual hard disk files, floppy disk image files, and output files of serial and printer ports.

To delete a virtual machine or remove it from the list:

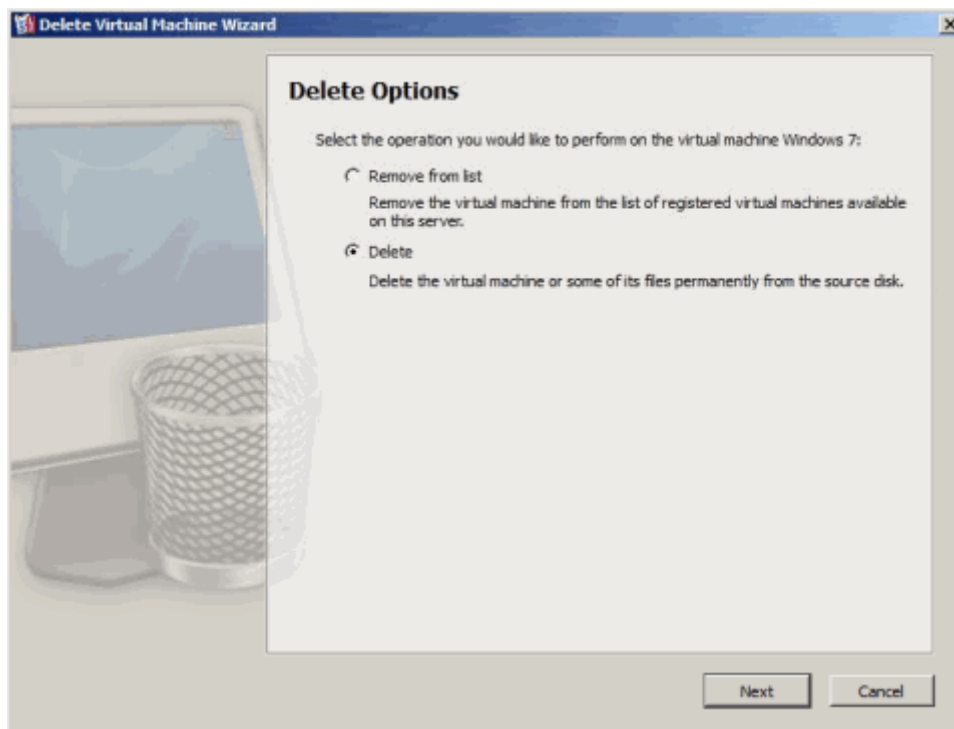
- 1 Launch Parallels Management Console.
- 2 In the sidebar, select the virtual machine you want to delete or remove from the list.
- 3 Start Delete Virtual Machine Assistant by doing one of the following:
  - choose **Remove from the File** menu
  - click **Remove** in the **Operations** section of the virtual machine **Summary** tab

---

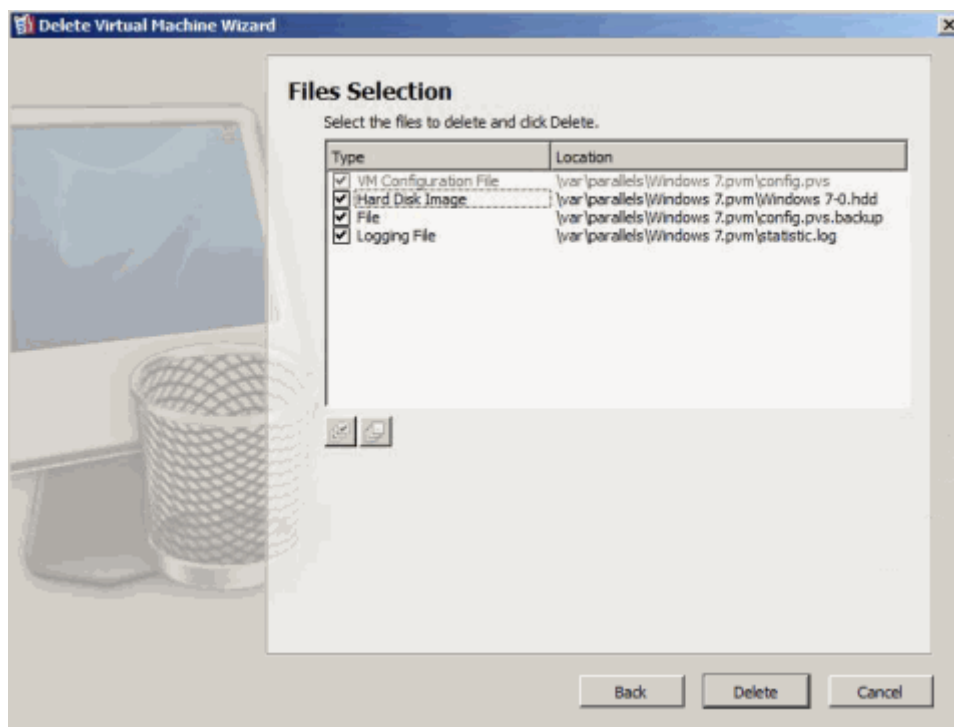
**Note:** Before deleting a virtual machine, make sure that the virtual machine is stopped.

---

- 4 In the **Delete Options** window, select the operation you want to perform on the virtual machine.
  - To delete the virtual machine, select **Delete**, and click **Next**.
  - To remove the virtual machine from the list, select **Remove from list** and click **Remove**.



- 5 If you chose to delete the virtual machine, you would be presented with the Files Selection window. This window displays all the files that belong to the virtual machine.



Choose the virtual machine files you want to delete, and click **Delete**.

- 6 Once the operation is complete, click **DONE** to exit the assistant.

---

## Managing Virtual Machine Templates

If you need to create several virtual machines with a similar configuration, you can create a virtual machine template and use it as the basis for creating new virtual machines.

You can use one of the following ways to create a virtual machine template:

- Convert an existing virtual machine into a virtual machine template. In this case, the virtual machine will be moved from the virtual machines list to the templates list once the conversion is complete. It means that the virtual machine will be available as a template only (i.e. you will not be able to run it).
- Clone an existing virtual machine to a virtual machine template. By cloning a virtual machine, you make its exact copy and can use it to create virtual machines with the same configuration.



## Creating a Virtual Machine Template

To convert an existing virtual machine into a template:

- 1 Choose the virtual machine you want to convert into a template by clicking its icon in the sidebar.
- 2 Choose **Convert to Template** from the **Virtual Machine** menu or right-click the virtual machine icon in the sidebar, and choose **Convert to Template** from the shortcut menu.

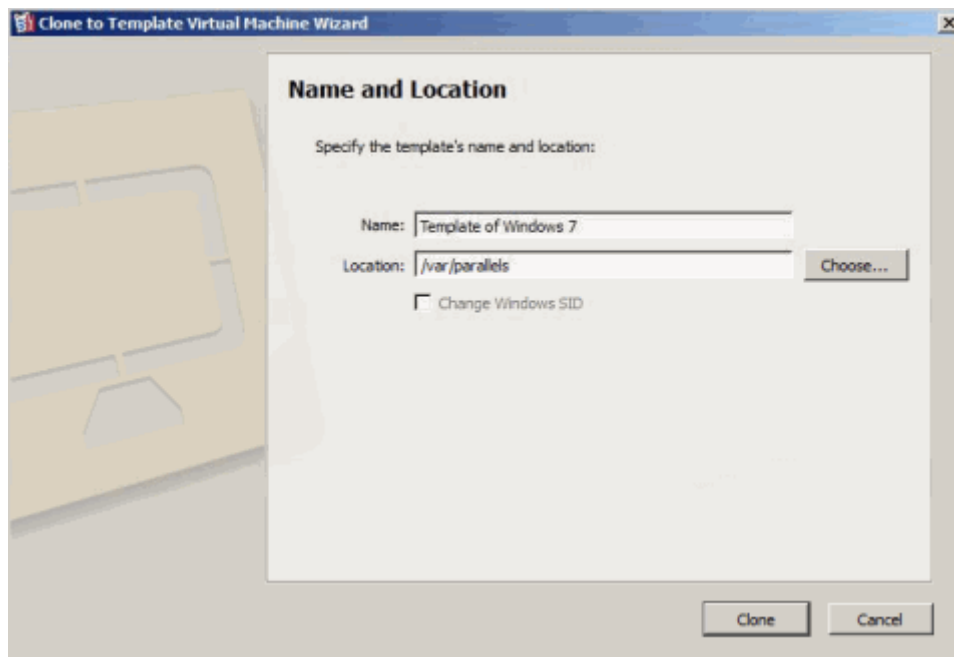
Once the conversion is complete, the virtual machine is moved to the Templates list.

To clone a virtual machine to a template:

- 1 Launch Parallels Management Console.
- 2 In the sidebar, select the virtual machine you want to clone.
- 3 Start **Create Virtual Machine Template Wizard** by doing one of the following:
  - Choosing **Clone to Template** from the **Virtual Machine** menu.
  - Right-clicking the virtual machine in the sidebar, and choosing **Clone to Template** from the shortcut menu.
- 4 In the **Create Virtual Machine Template Wizard Introduction** window, click **Next**. To skip this window next time you start the wizard, select **Always skip introduction**.
- 5 In the **Name and Location** window, specify the name and location for the virtual machine template, and click **Clone**. You can use the **Choose** button to change the location.

By default, the virtual machine template files are placed to the following folders:

- On Mac OS X:  
`/Users/Shared/Parallels/<Virtual_Machine_Template_Name>`
- On servers running Parallels Server Bare Metal:  
`/var/parallels/<Virtual_Machine_Template_Name>`
- On servers running Parallels Server for Mac Bare Metal Edition:  
`/var/parallels/<Virtual_Machine_Template_Name>`



- 6 In the Creation Finished window, click Done to quit the wizard.

## Deploying a Virtual Machine Template

The virtual machine template cannot be run as a virtual machine. To be able to run it as a virtual machine, you should create a virtual machine that will have the same configuration the template does.

There are two ways of creating a virtual machine from a template:

- convert the template to a virtual machine
- deploy the template to a new virtual machine

If you convert a virtual machine template into a virtual machine, the template is moved from the **Templates** list to the virtual machines list.

If you deploy a virtual machine template to a virtual machine, **Deploy Virtual Machine Template Assistant** (or **Deploy Virtual Machine Template Wizard** if Parallels Management Console is installed on a Windows- or Linux-based physical computer) creates a new virtual machine, but the template is not removed from the **Templates** list.

To convert a virtual machine template into a virtual machine, select this template in the sidebar and do one of the following:



- choose **Convert to Virtual Machine** from the **File** menu
- right-click the template's icon and choose **Convert to Virtual Machine** from the context menu
- click **Convert to Virtual Machine** in the **Operations** section of the template's **Summary** tab


The virtual machine template will be moved from the **Templates** list to the virtual machines list.

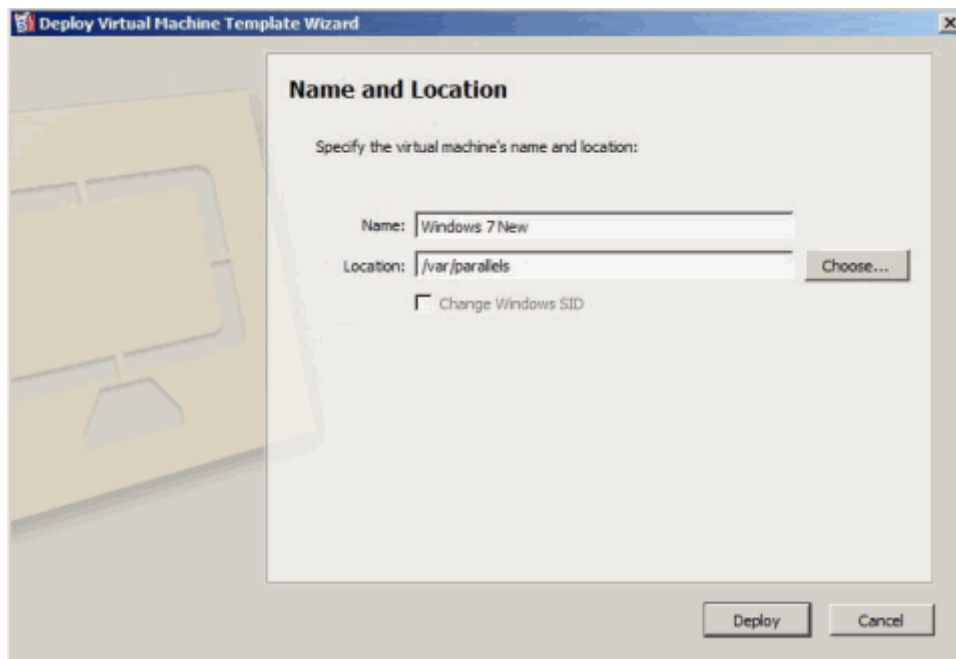
To deploy a virtual machine template to a new virtual machine:


- 1 In the sidebar, select the virtual machine template you want to be deployed to a new virtual machine.
- 2 Start **Deploy Virtual Machine Template Assistant** (or **Deploy Virtual Machine Template Wizard** if Parallels Management Console is installed on a Windows- or Linux-based physical computer) by doing one of the following:
  - choosing **Deploy to Virtual Machine** from the **File** menu
  - right-clicking the template's icon and choose **Deploy to Virtual Machine** from the context menu
  - clicking **Deploy to Virtual Machine** in the **Operations** section of the template's **Summary** tab
- 3 In the **Name and Location** window, specify the name and location for the virtual machine. You can use the **Choose** button to change the location.

By default, the virtual machine files are placed to the following folder:

-  On Mac OS X:  
/Users/Shared/Parallels/<Virtual\_Machine\_Template\_Name>
-  On servers running Parallels Server Bare Metal:  
/var/parallels/<Virtual\_Machine\_Template\_Name>

-  On servers running Parallels Server for Mac Bare Metal Edition:  
`/var/parallels/<Virtual_Machine_Template_Name>`



-  To make the virtual machine Windows security identifier (SID) different from that of the virtual machine on which the template is based, select **Change Windows SID**. It will help you to avoid possible security problems.

Click **Deploy** to start deploying the template to a new virtual machine.

- 4 In the **Deployment Finished** window, click **Done** to close the wizard.

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