Parallels® Virtual Automation 4.6.4

Installation Guide for Mac

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CHAPTER 1

Preface

Parallels Virtual Automation is a flexible and easy-to-use administration tool designed for managing physical servers with Parallels Virtuozzo Containers, Parallels Server for Mac, or Parallels Server Bare Metal software. With Parallels Virtual Automation, you can create groups of physical servers and perform both collective and individual administration operations on these groups. Moreover, you can also manage the virtual environments residing on the registered physical servers: their productivity and resources, system tasks and processes, configuration, and much more. To work with the registered physical servers and their virtual environments, you will need a standard Web browser running on any platform.

You can read more about Parallels Virtual Automation and its functionality in **Parallels® Virtual Automation Administrator's Guide**.

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About This Guide

This guide is aimed at a wide range of users who are new to Parallels Virtual Automation or just want to make sure they are doing everything right.

The present document is just as easy to use, as the product itself. However, we also provide complete information about the structure and peculiarities of the guide in the following topics.

Organization of This Guide

The structure of the present guide is quite transparent and consists of the following elements:

- The **Preface** chapter (p. 4) provides basic information about the product and this guide.
- The **PVA Overview** chapter (p. 9) describes the basics of the Parallels Virtual Automation infrastructure concept and explains the PVA components structure.
- The **PVA System Requirements** chapter provides information about the system requirements your physical servers should meet to ensure successful installation.
- The **Installing PVA Agent on Mac OS** chapter (p. 17) provides detailed installation instructions for PVA agent on Mac OS.
- The **Installing PVA Management Server on Mac OS** chapter (p. 22) provides detailed installation instructions for PVA Management Server on Mac OS.
- The **Removing PVA Components** chapter (p. 27) instructs you how to remove the product from a given computer.

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 Conventions	Type of information	Example
Special Bold	Items you must select, such as menu options, command buttons or items in a list.	Go to the **Resources** tab.
	Titles of chapters, sections and subsections.	Read the **Basic Administration** chapter.

Italics	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 *EZ templates*. To destroy a Container, type `vzctl destroy` *ctid*.
`Monospace`	The names of commands, files and directories.	Use `vzctl start` to start a Container.
`Preformatted`	On-screen computer output in your command line sessions; source code in XML, C++, or other programming languages.	`Saves parameters for Container 101`
`Monospace Bold`	What you type as contrasted with on-screen computer output.	**`# rpm -V virtuozzo-release`**
Key+Key	Key combinations for which the user should 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 turn, are subdivided into subsections. For example, **About This Guide** is a section, and **Documentation Conventions** is a subsection.

Feedback

If you spot a typo in this guide, or if you have thought of a way to make this guide better, we would love to hear from you!

The ideal place for your comments and suggestions is the Parallels documentation feedback page (http://www.parallels.com/en/support/usersdoc/).

Getting Help

Parallels Virtual Automation offers several options for accessing necessary information:

Parallels Virtual Automation documentation

- **Parallels Virtual Automation Administrator's Guide**. This document contains extensive information about the product, its usage and troubleshooting. To access the PDF version of the document, go to the **Support** link in the left pane and then click the **Downloads** pane. You can download any document of the Parallels Virtual Automation documentation bundle from the Parallels website.
- **Parallels Virtual Automation Installation Guides for Linux/Bare Metal, Windows, and Mac OS X**. These documents contain extensive information on system requirements for physical computers and instructions how to install Parallels Virtual Automation components on them.
- **Getting Started With Parallels Virtual Automation**. This document contains the basic information how to install, launch and manage Parallels Virtual Automation.
- **Parallels Power Panel User's Guide**. This document contains extensive information about the Power Panel application.
- **Parallels Virtual Automation Upgrade Guide**. This document contains instructions on how to upgrade from Parallels Infrastructure Manager 4.0 to Parallels Virtual Automation 4.6.
- **Parallels Virtual Automation 4.6 Agent XML API Reference**. This document is a complete reference on all Parallels Virtual Automation configuration files and physical server command-line utilities.
- **Parallels Virtual Automation Agent Programmer's Guide**. This is a task-oriented guide that provides information on all Parallels Virtual Automation configuration files and physical server command-line utilities.

The documentation is available for download from the Parallels official website http://www.parallels.com/products/pva46/resources/.

Context-sensitive help

You can open a help page for the current screen by clicking the **Help** link in the right upper corner.

Parallels Website

Parallels website http://www.parallels.com/products/pva/resources/. Explore the Support web page that includes product help files and the FAQ section.

Parallels Knowledge Base

Parallels Knowledge Base http://kb.parallels.com. This online resource comprises valuable articles about using the Parallels Virtual Automation, Parallels Virtuozzo Containers, Parallels Server Bare Metal, and Parallels Server for Mac products.

CHAPTER 2

PVA Overview

With Parallels Virtual Automation, you can easily deploy an effectively functioning virtual infrastructure that can help you significantly reduce your costs in terms of time and resources. While Parallels software virtualization products enable you to create complex formations of virtual environments, you may find it hard to manage these formations using different management tools. However, with Parallels Virtual Automation you can handle this challenging task with ease. Since Parallels Virtual Automation supports the whole set of the Parallels products, you can use it with any of its virtualization solutions, be it Parallels Virtuozzo Containers for Windows or Linux, Parallels Server Bare Metal or Parallels Server for Mac products.

Of course, if you work with only one software virtualization product, you can as well use the native management tool – Parallels Management Console (PMC) – designed to manage either Parallels Containers or Parallels virtual machines. However, if you build up your infrastructure with both software- and hardware-based virtualization, you need a more sophisticated tool for managing such infrastructure.

Why would you need to use both Parallels Containers and Parallels Server technologies? One of the primary reasons could be that you want to have virtual environments with guest OS different from the hosting physical server OS. With Parallels virtual machines, you can have a wide range of guest OSs installed on them.

At the same time, you can use Parallels Virtuozzo Containers software for creating Windows- and Linux-based virtual environments (depending on the physical server OS), as the resulting Containers are less resource consuming than virtual machines.

Parallels Virtual Automation enables you to manage complex groups of virtual environments, as well as particular Containers or virtual machines. Using Parallels Virtual Automation, you can form groups of physical servers and virtual environments, schedule physical server backups and other tasks; start, stop, and configure particular virtual environments, and much more. You can read more about Parallels Virtual Automation and its functionality in **Parallels® Virtual Automation Administrator's Guide**.

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PVA Components

Before you start installing Parallels Virtual Automation, you should learn about its components and their role in the management process. Parallels Virtual Automation consists of several components and an auxiliary tool. The main Parallels Virtual Automation components are:

Component	Where to Install	Description
PVA Management Server	On any clean physical server without any software virtualization technology, or on a Container.* The physical server with PVA Management Server component installed is called *Master Server*.	This component ensures the communication between the slave physical servers and their virtual environments. **PVA Control Center** It is a part of the PVA Management Server component and is always installed together with it. Thus, you are able to interact with the remote physical servers and have means to observe your virtual infrastructure. It is the PVA front-end that you see in the browser window after logging in to Parallels Virtual Automation. When talking about the Parallels Virtual Automation interface, we are actually talking about the Control Center interface.
PVA Agent for Parallels Server	On a dedicated physical server that has Parallels Server Bare Metal installed. Such server is also called a *Slave server*.	The component ensures the interaction between this physical server, the Master Server and your client computer. Without this component, a physical server cannot be registered in Master Server.
PVA Agent for Virtuozzo	On a dedicated physical server that has either of the following software installed: • Parallels Virtuozzo Containers for Linux, or • Parallels Virtuozzo Containers for Windows. Such server is also called a *Slave server*.	This component ensures the interaction between this physical server, the Master Server and your client physical computer. Without this component, a physical server cannot be registered in Master Server.
SNMP	On a dedicated physical server that has Parallels Virtuozzo Containers for Windows/Linux installed. Such server is also called a *Slave server*.	The PVA Agent for Virtuozzo on Windows physical servers includes the SNMP protocol distributive that is installed alongside with the Agent. On Linux physical servers, SNMP should be installed separately before the Agent component installation.

Parallels Power Panel	On a dedicated physical server together with the PVA Agent component (PVA Agent for Virtuozzo or for Parallels Server).	An auxiliary tool designed for managing a single virtual machine or a single Container. It can be installed only together with the PVA Agent component. **Note:** During the Parallels Power Panel installation, an auxiliary Service Container 1 is created. It ensures proper Parallels Power Panel functioning. **SOAP protocol** The Soap Agent part is installed alongside with the Power Panel component. Rejecting Power Panel installation, you will not be able to manage virtual environments via SOAP.

* The PVA Management Server component cannot be installed directly on a Parallels Server Bare Metal physical server due to the virtualization software already installed on this server. The workaround solution is to create a Container on the PSBM physical server and to launch the PVA installation there. A Container is free from any virtualization technologies, so you can easily install PVA Management Server on it. To ensure a successful installation, the Container should be created on the basis of the **ve-vswap.2048MB.conf-sample** template.

The PVA Management Server component cannot be as well installed on a dedicated Mac, Linux-, or Windows-based physical server. But creating a virtual environment on this physical server allows you to launch the PVA Management Server component installation inside it. Create a Container on Linux or Windows server, and a virtual machine with any OS on a Mac server.

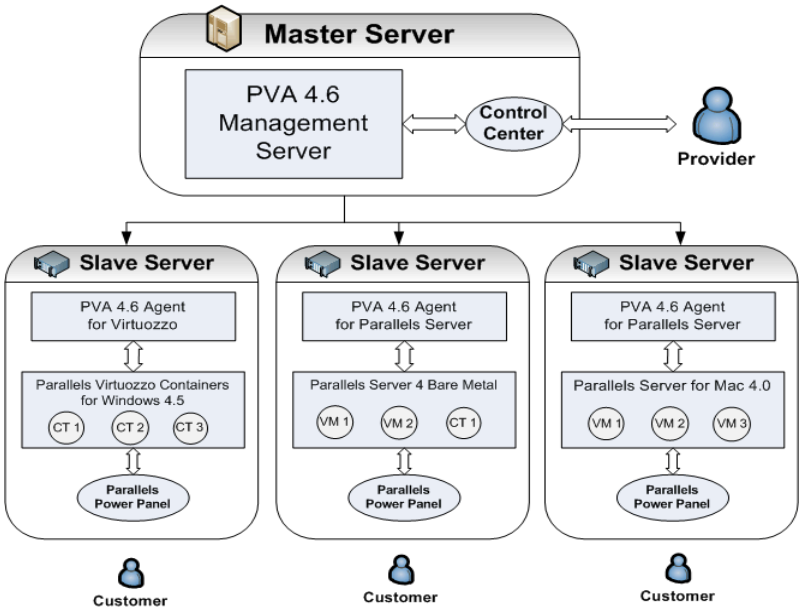
For the instructions on creating a Container, refer to the **Parallels® Virtuozzo Containers for Linux User Guide** or **Parallels® Virtuozzo Containers for Windows User Guide**.

For the instructions on creating a virtual machine, refer to the **Parallels® Server Bare Metal** documentation.

Planning Your PVA Management System

From the previous section, you know what components Parallels Virtual Automation consists of. Now you can pass on to creating your own management system.

Please pay attention to the following scheme. This is an example of a possible Parallels Virtual Automation management system. Of course, your management system may vary from the scheme below but nevertheless it will help you to understand the Parallels Virtual Automation basics more clearly.



So, let us analyze the Parallels Virtual Automation management system displayed on the scheme. It consists of:

Master Server

Master Server is a physical server where all other subordinate physical servers are registered. On this physical server, PVA Management Server component should be installed.

Note: PVA Management Server component is always installed together with the PVA Control Center component.

What physical server can be used as a Master Server?

- A clean physical server with Linux, Windows or Mac operating system. This server should have no Parallels virtualization software installed. PVA Management Server component is installed directly on the physical server.
- A Linux- or Windows-based physical server with Parallels Virtuozzo Containers software installed. As such physical server already has a software virtualization technology installed, you cannot install PVA Management Server component directly on it. First, you should create a Container by means of Parallels Virtuozzo Containers software and then install the PVA component inside the Container. In this case, the physical server can act as a Master Server and a Slave Server at the same time.
- A bare-metal physical server with Parallels Server Bare Metal software installed. This case is much alike the previous one. First, you should create a Container and then install the PVA Management Server component into it. The physical server also can act as a Master Server and a Slave Server at the same time.

Slave Server

A Slave Server is a dedicated physical server that has one of the Parallels software virtual technologies installed. On this physical server, PVA Agent for Parallels Server and/or PVA Agent for Virtuozzo should be installed depending on the software virtualization technology the server already has. For example, a bare metal computer with Parallels Server Bare Metal software allows you to install both PVA Agents, thus to have Containers and virtual machines on one and the same physical server.

A Slave Server should also have the Power Panel component installed. This ensures that a customer can manage the private virtual environment residing on the hosting physical server.

Note: PVA Agent component is installed by default together with the PVA Power Panel component.

What physical server can be used as a Slave Server?

- a Linux-based physical server running Parallels Virtuozzo Containers for Linux 4.7;
- a bare metal physical server running Parallels Server Bare Metal 5

Note: After you install all the necessary components on the physical servers, you should register your slave servers on Master Server. Registering a slave server is a management operation. You can learn about management operations from the **Parallels Virtual Automation Administration Guide**.

Customer's Computer

Any computer can serve as a customer's computer provided that it has a stable network connection and a Web browser supported by Parallels Virtual Automation. A customer's computer does not need any PVA components to be installed. The connection between the customer's computer and the PVA Slave Server's virtual environments is provided by the Parallels Power Panel installed on the Slave server.

Note: Parallels Power Panel allows working with a single private computer and does not provide access to the whole Slave Server or PVA management system.

Parallels Licensing Policy

Parallels team provides flexible and easy-to-use solutions, which also applies to its licensing policy.

As such, Parallels Virtual Automation doesn't have a license of its own, and you can download and install it without accepting a license agreement. Instead, Parallels sticks to the *per-server licensing policy*, which means that you can use Parallels Virtual Automation only if you have a valid license for the Parallels virtualization software installed on your computer.

CHAPTER 3

PVA System Requirements

This section focuses on the software and hardware requirements for the Mac-based physical computers where you are going to install the Parallels Virtual Automation components.

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Hardware Requirements

Parallels Virtual Automation can be installed on any 32- or 64-bit Intel Mac. There are no special requirements for the computers where you want to install Parallels Virtual Automation, however, you can use the following list of basic hardware requirements for reference:

- Intel-powered Mac;
- at least 1 GB of RAM;
- hard drive with at least 512 MB of free disk space;
- network card.

Parallels Virtual Automation itself demands compliance with very basic hardware requirements, while the virtual machines you will be managing using Parallels Virtual Automation will call for more complex hardware. The general considerations regarding the configuration of your physical servers could be as follows:

- CPUs. The more virtual machines you plan to run simultaneously, the more CPUs you need.
- Memory. The more memory you have, the more virtual machines you can run. The exact figure depends on the number and nature of applications you are planning to run in your virtual machines.
- Disk space. Each virtual machine occupies 40–150 MB of hard disk space for system files in addition to the user data inside the Virtual Server (for example, web site content). You should consider it when planning disk partitioning and the number of virtual machines to run.

For more information on the requirements for the Hardware Nodes you plan to manage, see **Parallels® Server for Mac Administration Guide**.

Software Requirements

If a Mac OS computer serves as a Master Server, it means that PVA Management Server component should be installed on a virtual machine. The virtual machine can have either a Windows or a Linux operating system. For the list of supported Windows and Linux operating systems for PVA Management Server, refer to the PVA installation Guide for Linux/Bare Metal and Windows, correspondingly.

If a Mac OS computer serves as a Slave Server where virtual machines will be stored and managed, then Parallels Virtual Automation will call for more complex requirements, as the creation and management of virtual machines demand more complex software resources. So, in choosing an appropriate Mac OS computer, you should be guided by the Parallels Server for Mac software and its software requirements.

If a computer serves as a Client Server (p. 12), it should have a supported Web-browser client:

- Internet Explorer 8.x and 9.x for Windows
- Mozilla Firefox 8.x for Windows, Linux, and Mac OS X
- Safari 5.x for Mac OS X
-

CHAPTER 4

Installing PVA Agent on Mac OS

To install Parallels Virtual Automation on your physical servers, you can download the Parallels Virtual Automation archive from the Parallels official web site, unpack the files on your local physical servers, and install Parallels Virtual Automation manually, step by step.

This subsection contains a detailed description on how to install Parallels Virtual Automation, using the installation archive, on various platforms. You can conduct the installation procedure using either graphical user interface (GUI) or command-line interface (CLI). These two ways are described in detail in the following subsections.

You can download Parallels Virtual Automation 4.6 distribution from the Parallels download page http://www.parallels.com/download/pva/.

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Using GUI

If you are more accustomed to using a GUI installer than to typing commands in Terminal, use the GUI wizard that will lead you through the installation process.

Note: To ensure a successful installation, see the system requirements list first.

To install the PVA Agent from GUI, perform the following actions:

1. Log in to the target Mac as a user with the `root` privileges.
2. Locate the `pva-setup.dmg` package and double-click it to mount the package on the computer.
3. In the displayed **ParallelsVirtualAutomation** window, launch the installer by double-clicking the `Install` file.
4. The installer warns you about the software check that is necessary for ensuring that your computer meets the Parallels Virtual Automation software requirements. Click **Continue** to perform the check.

   If the check completes successfully, the **Introduction** window appears.
5. In the **Introduction** window, click **Continue** to proceed to the next installation step.
6. In the **Read Me** window, view the product description and click **Continue**. You can print out the document (the **Print** button) or save it on your computer (the **Save** button).
7. In the **License** window, study the product license and click **Continue**. In the confirmation window, click **Agree**.
8. In the **Destination Select** window, specify the volume where you want to install the Parallels Virtual Automation agent.

   Click the icon of the required volume to select it and click **Continue**.

Figure 1: Installing From GUI - Selecting Destination

9 In the **Installation Type** window, you should select the PVA component(s) for the installation. In addition to the PVA Agent for Parallels Server component, you can also install Power Panel. Note that SOAP module is installed by default.

The **Installation** step shows you the installation progress.

10 When finished, the installer displays the **Summary** window. Click the **Close** button to quit the installer.

Unattended Installation

If you prefer to use the command-line interface to install Parallels Virtual Automation on your Mac, you have to specify a number of components after the `--install` command of `pva-setup.sh` and the program will use them to install the product.

Besides a number of components used with the `--install` command, `pva-setup.sh` also provides you with a set of its own options that you can specify to configure, for example, the on-line installation. The options of `pva-setup.sh` are described in the following table:

Option	Description
`--install [-c <list_of_components>]`	Installs the specified Parallels Virtual Automation components. Specifies the list of components to install. Component names should be separated by commas: `-c "PVA Agent for Parallels Server, PVA Power Panel"`
`--uninstall`	Removes Parallels Virtual Automation and all its components.
`--list`	Shows the list of available updates and components that can be installed.
`--nossl`	Switches off SSL protocol.
`-h, --help`	Shows the installer help.

The following example demonstrates how to install Parallels Virtual Automation on your Mac via Terminal:

1 Log in to the Mac as a user with the `root` privileges and mount `pva-setup.dmg` by doing one of the following:

- Double-click `pva-setup.dmg`.
- Start Terminal, go to the directory where `pva-setup.dmg` is stored, and run the following command:

```
$ hdiutil attach pva-setup.dmg
```

2 In Terminal, view the contents of the mounted volume by running the following command:

```
$ ls /Volumes/ParallelsVirtualAutomation
```

3 Specify the necessary options and components after the `--install` command of `pva-setup.sh`:

- If you want to install the PVA Agent for Parallels Server component, execute the following command:

```
$ ./pva-setup.sh --install -c "PVA Agent for Parallels Server"
```

The specified components will be installed on the Mac.

Note: To be able to install Parallels Virtual Automation, you must be logged in with the `root` privileges.

CHAPTER 5

Installing PVA Management Server on Mac OS

PVA Management Server component cannot be installed directly on a Mac OS computer.

If you want to assign a Mac OS computer a PVA Master Server role, there is a way out. The PVA Management Server component should always be installed on a virtualization-free computer. A virtual machine ideally fits this requirement. You can create a virtual machine by means of Parallels Server for Mac, and install the PVA component inside. You can install PVA Management Server inside the virtual machine performing steps common for a standard installation on a physical server.

You can download Parallels Virtual Automation 4.6 distribution from the Parallels download page http://www.parallels.com/download/pva/.

Note: The virtual machine can have either a Windows or Linux operating system.

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Creating Virtual Machine on Mac OS

The Parallels Server for Mac solution offers you several virtual machine installation modes. Regardless of what mode you select, you will be able to change the configuration of the virtual machine later using the Virtual Machine Configuration dialog. In this guide, we offer instructions on the Express Windows/Linux installation mode.

The process of creating a virtual machine comprises the following steps:

- creating a virtual machine configuration;
- installing a guest operating system;

In the Express installation mode, New Virtual Machine Assistant not only creates a virtual machine configuration, but also automatically installs the corresponding guest OS in it. It is the easiest way to make a new virtual machine: you only need to insert an installation disc with the guest operating system or specify the path to its image file, and New Virtual Machine Assistant will do the rest (including the installation of Parallels Tools).

Note: To learn about other installation modes and to check the list of supported guest operating systems, refer to the **Parallels Management Console User's Guide**.

Express Windows Installation Mode

To create a new virtual machine, perform the following actions:

4 Start Parallels Management Console and launch New Virtual Machine Assistant by choosing **New** from the **File** menu.

5 In the **Select Operating System Type and Version** window, select the Windows 7, Windows Vista, Windows XP, or Windows Server 2003 guest OS and click **Continue**.

6 In the **Virtual Machine Type** window, select **Express Windows** and click **Continue**.

7 In the **Name and Location** window, define the name and location for your virtual machine:

- **Name**. Indicate an arbitrary name to be assigned to the virtual machine. By default, the virtual machine gets the same name as the operating system that will be installed inside this virtual machine. If a virtual machine with such a name already exists, you will be prompted to indicate another name. The name must not exceed 50 characters.
- **Location.** Use the **Choose** button if you want to change the default location of the virtual machine-related files.

Click **Continue.**

In the E**xpress Windows Installation** window, specify your user details and the Windows product key necessary for the Windows guest OS installation.

Note: If you do not enter the Windows product key in this step, you will have to provide it later when the Windows guest OS installation starts.

If you are installing a 64-bit version of the guest operating system, select **64-bit Windows version.**

If you click the **Advanced** button, you can set the number of CPUs and the amount of RAM to your future virtual machine.

Click **Create.**

1 When the virtual machine is created, in the **Prepare to Install Operating System** window, specify the source of installation files and click **Start.**

Select the installation source in the **Placement** list. Choose Physical Server if your source installation files are located on the Parallels server or choose Client Computer if the source installation files are located on the physical computer where Parallels Management Console is installed. If Parallels Management Console is installed on the Parallels server, in the **Placement** list, you will be able to choose only Physical Server.

Specify the path to the source installation files. If you want to use a disc inserted into the CD/DVD drive of the computer, choose this drive from the **Source** menu. If you want to use a CD/DVD disc image connected to the virtual machine's CD/DVD drive, click the **Source** menu and use **Choose an image file** to locate the file.

Note: Parallels Management Console does not provide users with OS ISO images or OS installation discs. You should purchase an OS installation disc or an OS ISO image if you do not have any.

1 After you click **Start**, New Virtual Machine Assistant will automatically start the new virtual machine and install the guest operating system in it. After the guest OS installation, Parallels Management Console will install Parallels Tools in the virtual machine.

During the unattended installation, Parallels Management Console creates an administrator account with a blank password. When the guest OS installation is complete, we recommend that you change the password in order to protect the safety of your data. For detailed information on changing the administrator's password, please refer to the documentation shipped with your Windows guest operating system.

Express Linux Installation Mode

To create a new virtual machine, perform the following actions:

1 Start Parallels Management Console and launch New Virtual Machine Assistant by choosing **New** from the **File** menu.

2 In the **Select Operating System Type and Version** window, select the Ubuntu Linux, Fedora Linux, or Red Hat Enterprise Linux guest OS and click **Continue**.

3 In the **Virtual Machine Type** window, select **Express Linux** and click **Continue.**

4 In the **Name and Location** window, define the name and location for your virtual machine:

- **Name.** Indicate an arbitrary name to be assigned to the virtual machine. By default, the virtual machine gets the same name as the operating system that will be installed inside this virtual machine. If a virtual machine with such a name already exists, you will be prompted to indicate another name. The name must not exceed 50 characters.
- **Location.** Use the **Choose** button if you want to change the default location of the virtual machine-related files.

Click **Continue.**

5 In the **Express Linux Installation** window, specify the information necessary for the Linux guest OS installation.

If you click the **Advanced** button, you can set the number of CPUs and the amount of RAM to your future virtual machine. Click **Create.**

6 When the virtual machine is created, in the **Prepare to Install Operating System** window, specify the source of installation files and click **Start.**

Select the installation source in the **Placement** list. Choose Physical Server if your source installation files are located on the Parallels server or choose Client Computer if the source installation files are located on the physical computer where Parallels Management Console is installed. If Parallels Management Console is installed on the Parallels server, in the **Placement** list, you will be able to choose only Physical Server.

Specify the path to the source installation files. If you want to use a disc inserted into the CD/DVD drive of the computer, choose this drive from the **Source** menu. If you want to use a CD/DVD disc image connected to the virtual machine's CD/DVD drive, click the **Source** menu and use **Choose an image file** to locate the file.

Note: Parallels Management Console does not provide users with OS ISO images or OS installation discs. You should purchase an OS installation disc or an OS ISO image if you do not have any.

1 After you click **Start**, New Virtual Machine Assistant will automatically start the new virtual machine and install the guest operating system in it. When the installation is complete, install Parallels Tools if they are available for the guest OS you just installed.

Installing PVA Management Server in Virtual Machine

A Parallels virtual machine acts as a physical computer. It is free from any virtualization technology, and you can work with it as with a real physical computer. This also concerns the installation of PVA Management Server component.

The PVA Management Server component can be installed via several ways:

- via autoinstaller;
- via installation archive (using GUI or command line);

If you install the PVA component into a Windows-based virtual machine, refer to the **Parallels Virtual Automation Installation Guide for Windows.**

If you install the PVA component into a Linux-based virtual machine, refer to the **Parallels Virtual Automation Installation Guide for Linux and Bare Metal**.

Both guides provide full installation instructions for working with autoinstaller and installation archive.

CHAPTER 6

Removing Parallels Virtual Automation

The section provides instructions on deleting Parallels Virtual Automation components.

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Removing From Mac OS Computer

To remove Parallels Virtual Automation from a Mac OS computer, do the following:

1. Locate and open the `pva-setup.dmg` package.
2. Double-click the **Uninstall** icon. The Terminal window opens.

   The window informs you about the uninstall progress and shows the components that have been removed: PVA Power Panel, PVA Agent, PVA files. If prompted, type your *root* or *Administrator* password and press `Enter`.
3. The installer will inform you when the process completes with the `[Process completed]` line.
4. Close the window. The uninstallation is completed.

Note: PVA components (PVA Agent and Management Server components) can also be removed during the Parallels Server for Mac uninstallation procedure. For reference, see *Parallels Server for Mac Installation Guide*.

Glossary

Application template is a template used to install a set of applications on virtual environments. See also **Template**.

Container is a virtual private server, which is functionally identical to an isolated standalone server, with its own IP addresses, processes, files, its own users database, its own configuration files, applications, system libraries, and so on. Containers on one and the same **physical server** (or **Hardware node**) share one OS kernel. However, they are isolated from each other.

EZ template is built up from separate chunks of code that are uploaded from the web every time you pick an EZ template to install in the Container. This means, that an EZ template is not an independent package but rather a unit containing all the necessary information about repositories from where the necessary packages will be uploaded to the physical server.

Hardware Node is a **physical server** where the Parallels software is installed for hosting virtual environments. The **Hardware Node** term is used in the product interface, while in technical documentation, you will find the term **physical server**.

Hardware Virtualization, or hypervisor, virtualizes at the hardware level creating a duplicate of all system resources such as operating system, CPU, memory and configuration files.

Host Operating System (or **Host OS**) is an operating system installed on the **physical server**.

Master Server is a physical server where the Parallels Virtual Automation Management Server component is installed.

OS template (or **Operating System template**) is used to create new virtual environments with a preinstalled operating system. See also **Template**.

Parallels Virtual Automation is a tool designed for managing **physical server** and all virtual environments residing on them with the help of a standard Web browser on any platform.

Parallels Power Panel is an easy-to-use web-based tool designed for administering single personal virtual environment. With Power Panel, a user with administrative access to a virtual environment can easily perform many critical management tasks, while not requiring access rights to the physical server:

Parallels Virtuozzo Containers (or **Parallels Containers**) is a complete server automation and software virtualization solution allowing you to create multiple isolated **Containers** on a single physical server to share hardware, licenses, and management effort with maximum efficiency.

Software Virtualization, in Parallels Virtual Automation documentation, stands for the Parallels software virtualization products, such as Parallels Virtuozzo Containers for Linux and Windows, Parallels Server Bare Metal, etc.

SSH stands for Secure Shell. It is a protocol for logging into a remote physical server or virtual environment and executing commands.

Standard template is a solid bundle of all the necessary template files together with the Virtuozzo virtual environments software. If newer versions of any of these packages appear, a standard template can be correspondingly updated.

TCP (**TCP/IP**) stands for Transmission Control Protocol/Internet Protocol. This suite of communications protocols is used to connect hosting physical servers on the Internet.

Template (or **package set**) is a set of original application files (packages) repackaged for mounting over Parallels File System. There are two types of templates. OS Templates are used to create new virtual environments with a preinstalled operating system. Application templates are used to install an application or a set of applications on virtual environments.

Parallels Containers and **Parallels Server license** is a special license that you should install on the **Hardware Node** to be able to start using the virtual environments software. Every **Hardware Node** shall have its own unique Server license.

Virtual Machine is an emulation of a physical computer by means of Parallels Server virtualization technology. It is functionally identical to an isolated standalone server. A virtual machine has its own virtual hardware and requires an operating system to control its hardware. The installed operating system and its applications are isolated inside the virtual machine and share physical hardware resources of the physical server where the virtual machine resides.

Virtual Environment is a generic name for virtual machines and Containers.

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