



# Virtuozzo Automator 6.1

Installation Guide for Linux and Bare Metal

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## CHAPTER 1

# Introduction

Virtuozzo Automator is a flexible and easy-to-use administration tool designed for managing physical servers with Virtuozzo Containers, Server Bare Metal, and Virtuozzo. With Virtuozzo Automator, 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 Virtuozzo Automator and its functionality in the *Virtuozzo Automator Administrator's Guide*.

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## About This Guide

This guide is aimed at a wide range of users who are new to Virtuozzo Automator 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:

- **Preface** (p. 4) provides basic information about the product and this guide.
- **VA Overview** (p. 6) describes the basics of the Virtuozzo Automator infrastructure concept and explains the VA components structure.
- **VA System Requirements** (p. 12) provides information about the system requirements your physical servers should meet to ensure successful installation.
- **Installation methods** (p. 14) describes different installation methods.
- **Attended Installation** (p. 14) describes how to manually start and perform the installation.

- **Unattended Installation** (p. 17) describes how to automatically install Virtuozzo Automator.
- **Installing Virtuozzo Automator in Containers** (p. 19) instructs you how to install Virtuozzo Automator in Containers.
- **Uninstalling Virtuozzo Automator** (p. 20) instructs you how to uninstall the product or its components from a given computer.

## Getting Help

Virtuozzo Automator offers several options for accessing necessary information:

### Virtuozzo Automator Documentation

- *Virtuozzo Automator Administrator's Guide*. Contains extensive information about Virtuozzo Automator, 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 Virtuozzo Automator documentation bundle from the Virtuozzo website.
- *Virtuozzo Automator Installation Guides for Linux/Bare Metal and Windows*. Contain extensive information on system requirements for physical computers as well as instructions on how to install Virtuozzo Automator on such computers.
- *Getting Started With Virtuozzo Automator*. Contains the basic information how to install, launch, and manage Virtuozzo Automator.
- *Virtuozzo Power Panel User's Guide*. Contains extensive information about Virtuozzo Power Panel.
- *Virtuozzo Automator Agent XML API Reference*. A complete reference on all Virtuozzo Automator configuration files and physical server command-line utilities.

The documentation is available for download at <https://virtuozzo.com/>.

### Virtuozzo Knowledgebase

Visit <http://kb.virtuozzo.com/> for helpful articles on Virtuozzo Automator, Virtuozzo Containers, Server Bare Metal, and Virtuozzo.

# Virtuozzo Automator Overview

With Virtuozzo Automator, you can easily deploy an effectively functioning virtual infrastructure that can help you greatly reduce costs as well as save time and resources. While Virtuozzo software virtualization products enable you to create complex formations of virtual environments, you may find it difficult to manage such formations using different management tools. Being a universal management solution, Virtuozzo Automator can handle this challenging task with ease.

The VA Management Server component can be used to manage servers running Virtuozzo Containers for Linux 4.0, 4.6 and 4.7, Virtuozzo Containers for Windows 4.6, Containers for Windows 6.0, Server Bare Metal 5.0, and Virtuozzo 6.0.

Virtuozzo Automator enables you to manage complex groups of virtual environments, as well as single Containers and virtual machines. Using Virtuozzo Automator, you can organize physical servers and virtual environments into groups, schedule backups and other tasks, start, stop, and configure virtual environments, and much more. For more details about Virtuozzo Automator functionality, see the *Virtuozzo Automator Administrator's Guide*.

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# Virtuozzo Automator Components

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

Component	Where to Install	Description
<b>VA Management Server</b>	<p>On any clean physical server without any software virtualization technology, or on a Container.*</p> <p>The physical server with VA Management Server component installed is called <i>Master Server</i>.</p>	<p>This component ensures the communication between the slave physical servers and their virtual environments.</p> <p><b>VA Control Center</b></p> <p>It is a part of the VA 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.</p>

		It is the VA front-end that you see in the browser window after logging in to Virtuozzo Automator. When talking about the Virtuozzo Automator interface, we are actually talking about the Control Center interface.
<b>VA Agent for Server Bare Metal</b>	On a dedicated physical server that has Server Bare Metal installed.  Such server is also called a <i>Slave Server</i> .	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.
<b>VA Agent for Virtuozzo</b>	On a dedicated physical server that has either of the following software installed: <ul style="list-style-type: none"> <li>• Virtuozzo Containers for Linux, or</li> <li>• Virtuozzo Containers for Windows.</li> </ul> Such server is also called a <i>Slave Server</i> .	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.
<b>SNMP</b>	On a dedicated physical server that has Virtuozzo Containers for Windows/Linux installed. Such server is also called a <i>Slave Server</i> .	The VA 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.
<b>Virtuozzo Power Panel</b>	On a dedicated physical server together with the VA Agent component (VA Agent for Virtuozzo).	<p>An auxiliary tool designed for managing a single virtual machine or a single Container. It can be installed only together with the VA Agent component.</p> <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p><b>Note:</b> During the Virtuozzo Power Panel installation, an auxiliary Service Container 1 is created. It ensures proper Virtuozzo Power Panel functioning.</p> </div> <p><b>SOAP</b></p> <p>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.</p>

\* The VA Management Server component cannot be installed directly on a 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 Server Bare Metal physical server and to launch the VA installation there. A Container is free from any virtualization technologies, so you can easily install VA 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 VA Management Server component cannot be as well installed on a dedicated Linux or Windows-based physical server. However, creating a virtual environment on this physical server

allows you to launch the VA Management Server component installation inside it. Create a Container on Linux or Windows server, and a virtual machine with any OS.

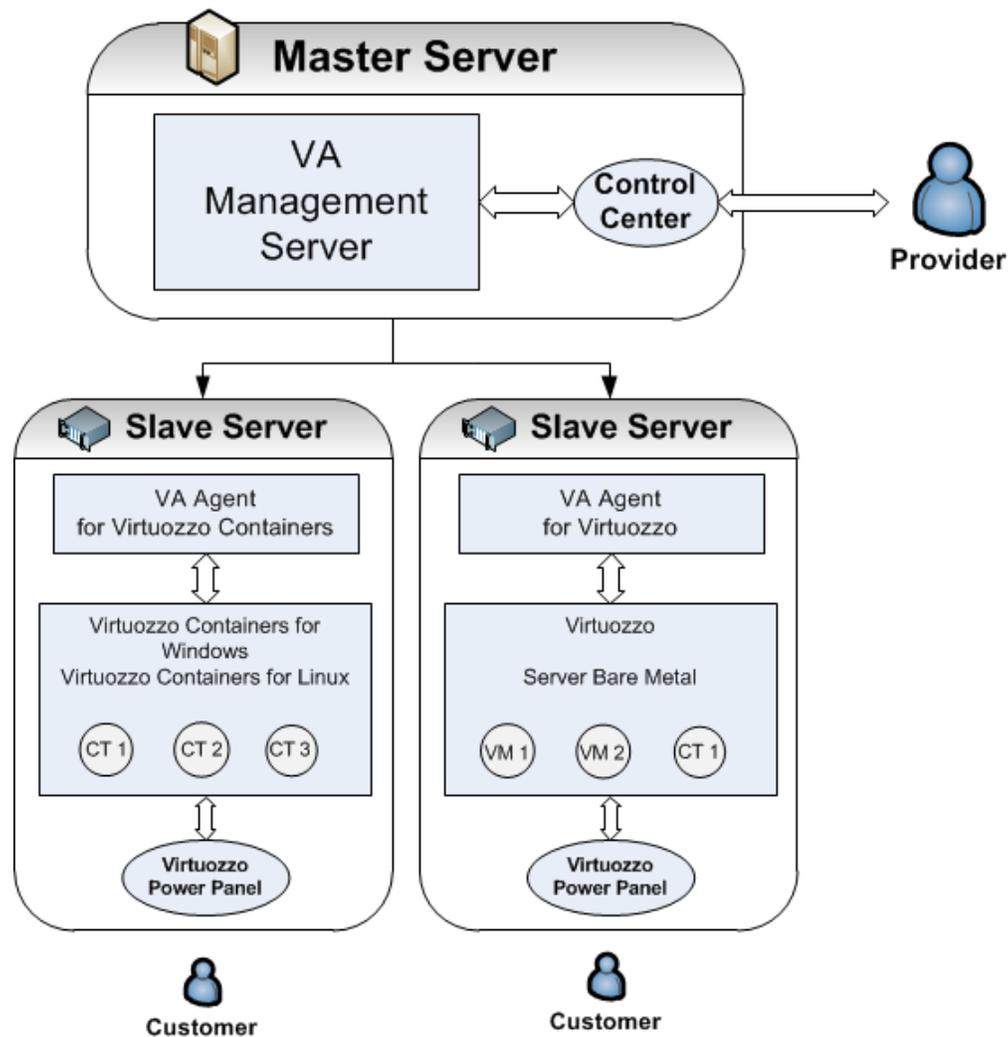
For instructions on creating Containers, refer to the *Virtuozzo Containers for Linux User Guide* or *Virtuozzo Containers for Windows User Guide*.

For instructions on creating virtual machines, refer to the *Server Bare Metal* documentation.

## Planning Your Virtuozzo Automator Management System

From the previous section, you know what components Virtuozzo Automator 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 Virtuozzo Automator management system. Of course, your management system may vary from the scheme below but nevertheless it will help you to understand the Virtuozzo Automator basics more clearly.



So, let us analyze the Virtuozzo Automator 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, VA Management Server component should be installed.

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

What physical server can be used as a Master Server?

- A clean physical server with Linux or Windows operating system. This server should have no Virtuozzo virtualization software installed. VA Management Server component is installed directly on the physical server.

- A Linux or Windows-based physical server running Virtuozzo Containers or a Windows-based server running Containers for Windows. As such physical server already has a software virtualization technology installed, you cannot install VA Management Server component directly on it. First, you should create a Container by means of Virtuozzo Containers software and then install the VA 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 Server Bare Metal or Virtuozzo installed. This case is much alike the previous one. First, you should create a Container and then install the VA 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 Virtuozzo software virtual technologies installed. On this physical server, VA Agent for Server Bare Metal and/or VA Agent for Virtuozzo should be installed depending on the software virtualization technology the server already has. For example, a bare metal computer with Server Bare Metal allows you to install both VA 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:** VA Agent component is installed by default together with the VA Power Panel component.

What physical servers can be used as a Slave Server?

- Linux-based physical servers running Virtuozzo Containers for Linux 4.7.
- Windows-based physical servers running Virtuozzo Containers for Windows 4.6 or Containers for Windows 6.0.
- Bare-metal physical servers running Server Bare Metal 5.0 or Virtuozzo 6.0.

**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 *Virtuozzo Automator 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 Virtuozzo Automator. A customer's computer does not need any VA components to be installed. The connection between the customer's computer and the VA Slave Server's virtual environments is provided by the Virtuozzo Power Panel installed on the Slave server.

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

## Virtuozzo Licensing Policy

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

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

# Virtuozzo Automator System Requirements

This chapter describes hardware and software requirements for physical servers forming the Virtuozzo Automator infrastructure.

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## Hardware Requirements

The basic hardware requirements for both Master and Slave servers are as follows:

- an Intel Celeron or AMD Athlon CPU or better,
- at least 1 GB of RAM,
- at least 15 GB of free hard disk space,
- a network card.

## Software Requirements

### Master Server Requirements

A Master Server must have the **VA Management Server** component installed in an environment free of software virtualization products. You can use Linux servers with or without Virtuozzo Containers and servers with Server Bare Metal or Virtuozzo.

A Linux server:

- 1 Must be running the 32-bit or 64-bit version of CentOS 5.x or 6.x, or Red Hat Enterprise Linux 5.x or 6.x.
- 2 Must have **VA Management Server** installed.

A Linux server with Virtuozzo Containers:

- 1 Must be running the 32-bit or 64-bit version of CentOS 5.x or 6.x, or Red Hat Enterprise Linux 5.x or 6.x.

- 2 Must have **VA Management Server** installed in a Container based on the **ve-vswap.2048MB.conf-sample** EZ template.

A server with Server Bare Metal or Virtuozzo must have **VA Management Server** installed in a Container based on the **ve-vswap.2048MB.conf-sample** EZ template.

**Note:** For instructions on how to create Containers, refer to the *Server Bare Metal User's Guide* or *Virtuozzo User's Guide*.

## Slave Server Requirements

A Slave Server must have a VA Agent installed. You can use Linux servers with Virtuozzo Containers and servers with Server Bare Metal or Virtuozzo.

- On a Linux server with Virtuozzo Containers, install **VA Agent for Virtuozzo**.
- On a server with Server Bare Metal or Virtuozzo, install
  - **VA Agent for Virtuozzo** for managing Containers,
  - **VA Agent for Server Bare Metal** for managing virtual machines.

**Note:** You can install either or both.

## Client Requirements

A Client computer must have a supported Web browser installed:

- Internet Explorer 9.x, 10.x, 11.x,
- Firefox 26.x or newer,
- Safari 5.x or newer,
- Chrome 31.x and newer.

**Note:** Other browsers will likely work as well. However, only those listed above have been tested for compatibility with Virtuozzo Automator.

## CHAPTER 4

# Installation/Update Methods

You can install/update Virtuozzo Automator in either the attended or unattended mode using autoinstaller or installation archive.

- The autoinstaller is a lightweight executable file that downloads necessary components of Virtuozzo Automator from a remote repository based on the environment it is run in. Parallel's public repository is used by default.
- The installation archive contains all Virtuozzo Automator components, but you still need to download different archives for Master and Slave server roles.

## Attended Installation/Update

To install/update Virtuozzo Automator on Server Bare Metal or Virtuozzo, do the following:

- 1 Download the appropriate autoinstaller or installation archive version to the target physical server:

```
# wget http://updates.virtuozzo.com/pva/pva-setup-deploy.x86_64
```

**Note:** If you are installing a 32-bit version of Virtuozzo Automator, replace `x86_64` with `i386` where applicable.

- 2 Set execute permissions to the downloaded file:

```
# chmod a+x pva-setup-deploy.x86_64
```

- 3 If you are installing Virtuozzo Automator from the archive, unpack it:

```
# mkdir /root/pva_install
# ./pva-setup-deploy.x86_64 -d /root/pva_install --extract
# cd /root/pva_install
```

- 4 If you are updating Virtuozzo Automator, uninstall the old version:

```
# ./pva-setup --uninstall
```

- 5 Launch the autoinstaller or the installer binary from the installation archive (e.g., `pva-setup`):

```
# ./pva-setup -r http://updates.virtuozzo.com/pva/repo/agent
```

In the welcome window, you will see the current installation settings, including the default repository address.

- 6 If you need to install Virtuozzo Automator from a different repository or use a proxy server, select **Configure**, type in the necessary information, and click **OK**. Click **Next** to proceed.
- 7 In the **Choose installation type** window, choose the installation type.

By default, the following components are selected for installation:

- For Server Bare Metal or Virtuozzo: VA Power Panel, VA Agent for Server Bare Metal, VA Agent for Virtuozzo.
- For Linux with Virtuozzo Containers installed: **VA Power Panel, VA Agent for Virtuozzo.**

If you are satisfied with the default selection, click **Next** to begin the installation. If not, choose **Custom installation**, mark the necessary checkboxes in the **Choose components to install** window, and click **Next** to begin the installation.

### Installing Virtuozzo Automator on Servers with Limited Internet Access

**Note:** If you are installing a 32-bit version of Virtuozzo Automator, replace `x86_64` with `i386` where applicable.

- 1 Set a HTTP proxy URL if needed and download the full VA Agent distribution:

```
# export HTTP_PROXY=http://your.http.proxy
# wget http://updates.virtuozzo.com/pva/downloads/linux/x86_64/pva_agent-linux-x86_64-
latest.tar.gz
```

**2** Unpack the distribution archive:

```
# mkdir /root/pva_install
# tar -xvzf pva_agent-linux-x86_64-latest.tar.gz -C /root/pva_install
# cd /root/pva_install/pva_agent
```

**3** If you are updating Virtuozzo Automator, uninstall the old version:

```
# ./pva-setup --uninstall
```

**4** Launch the installation:

```
# ./pva-setup -r local
```

## Unattended Installation/Update

You can install/update Virtuozzo Automator in the unattended mode using either autoinstaller or installation archive. To do that, you will need to specify components to install as described below.

**Note:** To install Virtuozzo Automator in the unattended mode, you must be logged in as a user with root privileges.

For Slave Servers, use the following commands:

- 1 Download the appropriate autoinstaller or installation archive version to the target physical server:

```
# wget http://updates.virtuozzo.com/pva/pva-setup-deploy.x86_64
```

**Note:** If you are installing a 32-bit version of Virtuozzo Automator, replace `x86_64` with `i386` where applicable.

- 2 Set execute permissions to the downloaded file:

```
# chmod a+x pva-setup-deploy.x86_64
```

- 3 If you are installing Virtuozzo Automator from the archive, unpack it:

```
# mkdir /root/pva_install
# ./pva-setup-deploy.x86_64 -d /root/pva_install --extract
# cd /root/pva_install
```

- 4 If you are updating Virtuozzo Automator, uninstall the old version:

```
# ./pva-setup --uninstall
```

- 5 Launch the autoinstaller or the installer binary from the installation archive (e.g., `pva-setup`), according to your needs:

- For Server Bare Metal or Virtuozzo:

```
# ./pva-setup -r http://updates.virtuozzo.com/pva/repo/agent --install -c "PVA Agent for Parallels Server, PVA Agent for Virtuozzo, PVA Power Panel"
```

- For Linux with Virtuozzo Containers installed:

```
# ./pva-setup -r http://updates.virtuozzo.com/pva/repo/agent --install -c "PVA Agent for Virtuozzo, PVA Power Panel"
```

- For Master Servers, use the following command:

```
# ./pva-setup -r http://updates.virtuozzo.com/pva/repo/agent --install -c "PVA Management Server"
```

### Installing Virtuozzo Automator on Servers with Limited Internet Access

**Note:** If you are installing a 32-bit version of Virtuozzo Automator, replace `x86_64` with `i386` where applicable.

- 1 Set a HTTP proxy URL if needed and download the full VA Agent distribution:

```
# export HTTP_PROXY=http://your.http.proxy
# wget http://updates.virtuozzo.com/pva/downloads/linux/x86_64/pva_agent-linux-x86_64-latest.tar.gz
```

2 Unpack the distribution archive:

```
# mkdir /root/pva_install
# tar -xvzf pva_agent-linux-x86_64-latest.tar.gz -C /root/pva_install
# cd /root/pva_install/pva_agent
```

3 If you are updating Virtuozzo Automator, uninstall the old version:

```
# ./pva-setup --uninstall
```

4 Launch the installation:

```
# ./pva-setup -r local --install
```

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## Installer Options

The installer has a set of options you can use to tailor installation to your needs. All available options are provided in the table below.

Option	Description
<code>-r, --repository &lt;repo_address   local&gt;</code>	Specifies the remote repository to download the required files from. Use <code>local</code> , if you have already downloaded the installation files.
<code>-d, --downloaddir &lt;dir&gt;</code>	Specifies the local directory, to which the installation files will be downloaded during installation.
<code>-l, --logdir &lt;dir&gt;</code>	Specifies the path to the local folder where the installation logs will be stored.
<code>--os_distributive_path &lt;path&gt;</code>	Specifies the path to the distribution set of your operating system.
<code>--install [-c &lt;components&gt;] [-u &lt;version&gt;]</code>	Installs (-c) the specified Virtuozzo Automator components or updates (-u) Virtuozzo Automator to the specified version.
<code>&lt;components&gt;</code>	A quoted, comma-separated list of components to install or update.
<code>&lt;version&gt;</code>	The version to which to update Virtuozzo Automator.  <b>Note:</b> The update mechanism is still in development.
<code>--list</code>	Prints a list of updates and components you can install on the given computer.
<code>--uninstall</code>	Uninstalls Virtuozzo Automator and all its components.
<code>-h, --help</code>	Shows installer help.
<code>-v, --verbose</code>	Prints verbose output.

# Installing/Updating Virtuozzo Automator in Containers

You will need to install VA on a Container in the following situation: you have a physical server with a software virtualization technology installed (a Server Bare Metal or Virtuozzo physical server or a Windows/Linux-based physical server with Virtuozzo Containers software installed). It means that the physical server already has a software virtualization technology, and you cannot convert this server into a Master Server. But you can create a Container, that has no software virtualization technology, and use this Container to install the **Management Server** component of VA, thus you convert the whole physical server into a Master Server.

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## Creating Containers

On Server Bare Metal, Virtuozzo, or a Linux physical server, you can install VA in Containers based on the **ve-vs wap.2048MB.conf-sample** template. On Windows physical servers, you can install VA in Containers based on any template.

**Note:** The Container that VA Management Server will be installed in must have a hostname set prior to the installation.

For instructions on how to create a Container, refer to the Server Bare Metal or Virtuozzo user's guides.

## Running Virtuozzo Automator Autoinstaller in Containers

After you have created a Container, you can launch the VA Autoinstaller in it. The procedure is the same as if you were running it on a real physical server with a Linux operating system. For detailed instructions, refer to **Installing on Linux**.

## Uninstalling Virtuozzo Automator

You can uninstall any of the Virtuozzo Automator components from a given computer using either the TUI wizard, or command-line options.

To uninstall Virtuozzo Automator with the TUI wizard, do the following:

- 1 Log in as a user with root privileges.
- 2 Go down to the installation files directory and run `pva-setup`.
- 3 The first window provides information about the current configuration settings. To change the configuration, click **Configure**.
- 4 In the next window, select the **Uninstall** option and click **Next**.

To uninstall Virtuozzo Automator using command line, do the following:

- 1 Log in as a user with root privileges.
- 2 Go down to the installation files directory and enter the following:

```
# ./pva-setup --uninstall--nodeps
```

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