



# Parallels Server Bare Metal 5.0

Installation via PXE Server

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## CHAPTER 1

# Introduction

This guide provides information on installing Parallels Server Bare Metal 5.0 over a network using a PXE (Preboot Execution Environment) server. You will also learn how to upgrade your existing system to Parallels Server Bare Metal 5.0 over a network.

You can install Parallels Server Bare Metal in a PXE environment using one of the following ways:

- **Manual installation.** When performing this kind of installation, you are asked questions by the Parallels Server Bare Metal installer and define the necessary installation and configuration settings. Manual installation is recommended if you plan to install the product on a small number of physical servers.
- **Unattended installation.** In this kind of installation, the Parallels Server Bare Metal installer uses a kickstart file to determine the necessary installation and configuration settings. Unattended installation assumes that no interaction is required on your part and is recommended if you plan to install the product on a multitude of physical servers.

To install Parallels Server Bare Metal 5.0 over a network, you need to complete the following steps:

- 1** Prepare for installation from a PXE server.
- 2** Create a kickstart file. This step is only required if you plan to automate the procedure of deploying Parallels Server Bare Metal on your servers.
- 3** Install Parallels Server Bare Metal.

All these steps are explained in the following sections in detail.

# Preparing for PXE Installation

First, you need to prepare your network environment for a PXE installation. This procedure includes the following steps:

- 1 Choosing servers for the PXE installation.
- 2 Installing the necessary software on the PXE server.
- 3 Configuring the TFTP server.
- 4 Setting up a DHCP server.
- 5 Setting up a HTTP server.
- 6 Configuring the Parallels server.

All these steps are described below in detail.

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## Choosing Servers

First, you should decide on the servers that will participate in the PXE installation. In general, you need these servers:

- **PXE server.** This server allows your Parallels servers to boot and install Parallels Server Bare Metal over the network. Any server capable of running a Linux operating system and having a network interface card (NIC) can play the role of a PXE server.
- **DHCP server.** This is a standard DHCP server providing computers on your network with the necessary network settings. You can use an existing DHCP server, if you have one, or set up a DHCP server from scratch. In the latter case, you can install it on the PXE server or use a dedicated server.
- **Parallels server.** This is the server where you will install Parallels Server Bare Metal. This server must meet the requirements described in the **Preparing for Installation** chapter of the *Parallels Server Bare Metal 5.0 Installation Guide*. In addition to the requirements listed in this chapter, the server must have a NIC with PXE support to be able to boot from the PXE server.
- **HTTP or FTP server.** This server will store the Parallels Server Bare Metal installation files. This guide assumes that you will store the installation files on an HTTP server and use HTTP as the installation protocol.

## Installing Software on the PXE Server

Next, you are supposed to install the necessary software on the PXE server. First of all, you need to install a Linux operating system on the server. There are no specific requirements for which operating system to use, so you can choose any (e.g., CentOS 5 or Fedora 12).

Once your system is up and running, install the following packages:

- `tftp-server`
- `httpd`
- `syslinux`
- `dhcp` (This package must be installed only if you plan to deploy the PXE and DHCP servers on the same physical server.)

Assuming that your PXE server is running an RHEL-like operating system, you can use the `yum` utility to install the packages:

```
# yum install tftp-server dhcp httpd syslinux
```

## Configuring the TFTP Server

In the next step, you need to configure the TFTP server that you installed in the previous step. To do this:

- 1 On the PXE server, open the `/etc/xinet.d/tftp` file, and edit it as follows:

```
service tftp
{
disable      = no
socket_type  = dgram
protocol     = udp
wait         = yes
user         = root
server       = /usr/sbin/in.tftpd
server_args  = -v -s /tftpboot
per_source   = 11
cps          = 100 2
flags        = IPv4
}
```

Once you are done, save the file.

- 2 Copy the following files to the `/tftpboot` directory (if this directory does not exist, create it under the root `/` directory):

- `vmlinuz`
- `initrd.img`
- `menu.c32`
- `pxelinux.0`

These files are necessary to start the Parallels Server Bare Metal installation. You can find the first two files in the `/isolinux` directory of the Parallels Server Bare Metal distribution. The `menu.c32` and `pxelinux.0` files are located in the `syslinux` installation directory on the PXE server (usually, this is the `/usr/share/syslinux` or `/usr/lib/syslinux` directory).

- 3 Create the `/tftpboot/pxelinux.cfg` directory, and inside this directory, make the `default` file.
- 4 Open the `default` file for editing, and add the following strings to it:

```
default menu.c32
prompt 0
timeout 100
ontimeout PSBM
menu title Parallels Boot Menu

label PSBM
    menu label Install Parallels Server Bare Metal
    kernel vmlinuz
    append initrd=initrd.img noipv6 ksdevice=eth0
```

Pay attention to the `timeout` parameter. Its value, in units of 1/10 s, defines the time for displaying a boot dialog box. During this time, you will need to select the entry for Parallels Server Bare Metal and press Enter to start the installation. For example, if you use the example above, you will see for 10 seconds the `Parallels Boot Menu` dialog box that will display the entry `Install Parallels Server Bare Metal`. Selecting this entry and pressing Enter will start the Parallels Server Bare Metal installation.

For more information on parameters you can specify in the `/tftpboot/pxelinux.cfg/default` file and their configuration, see the documentation for `syslinux` and its man pages.

**5** Restart the `xinetd` service:

```
# /etc/init.d/xinetd restart
```

**6** Configure your firewall on the PXE server to allow access to the TFTP server.

## Setting Up a DHCP Server

Now you can proceed with configuring a DHCP server. If you already have a DHCP server in your network, you can use this server. Otherwise, install it using the standard installation procedure.

To configure the DHCP server for installation over the network, open the `dhcpd.conf` file (usually, it is located in the `/etc` or `/etc/dhcp` directory) for editing and add the following strings to this file:

```
next-server PXE_SERVER_IP_ADDRESS;  
filename "/pxelinux.0";
```

where `PXE_SERVER_IP_ADDRESS` is the IP address of your PXE server.

## Setting Up an HTTP Server

Now that you have set up the TFTP and DHCP servers, you need to make the Parallels Server Bare Metal distribution files available for installation over the network. To do this:

- 1 Set up an HTTP server. You can also use an existing HTTP server.
- 2 Copy the Parallels Server Bare Metal installation files to some directory on the HTTP server.
- 3 On the PXE server, open the `/tftpboot/pxelinux.cfg/default` file for editing, and specify the path to the Parallels Server Bare Metal installation files on the HTTP server.

Assuming that you have the installation files in the `/var/www/html/psbm` directory on the HTTP server with the IP address of 198.123.123.198 and the DocumentRoot directory is set to `/var/www/html`, you can add the following string to the `append` line of the `default` file to make the Parallels Server Bare Metal files accessible over HTTP:

```
method=http://198.123.123.198/psbm
```

So your `default` file should look similar to the following:

```
default menu.c32
prompt 0
timeout 100
ontimeout PSBM
menu title Parallels Boot Menu

label PSBM
    menu label Install Parallels Server Bare Metal
    kernel vmlinuz
    append initrd=initrd.img noipv6 ksdevice=eth0
method=http://198.123.123.198/psbm
```

## Configuring the Parallels Server

Before you can start the Parallels Server Bare Metal installation, you should also configure each server where you plan to install the product to boot from the network. To do this:

- 1 Switch on the server.
- 2 Enter the BIOS setup.
- 3 Enable the network boot.

## Installing Parallels Server Bare Metal 5.0

Now that you have prepared all the servers, you can start the Parallels Server Bare Metal installation. All you need to do is restart the Parallels server after configuring its BIOS settings to boot from the network.

**Note:** If you plan to perform an unattended installation of Parallels Server Bare Metal, you need to additionally create a kickstart file. Refer to **Creating a Kickstart File** (p. 20) for information on creating kickstart files and installing Parallels Server Bare Metal with these files.

Follow these guidelines to install Parallels Server Bare Metal:

- 1 Once the server boots, you see a dialog box asking you to select the system to install. For example, if you used the example in the **Configuring the TFTP Server** section (p. 7), you see the following dialog:



Select the entry for Parallels Server Bare Metal, and press Enter.

- 2 The installer may ask you to choose the language to use during the installation process, your keyboard type, and decide on TCP/IP settings. Specify the necessary information to continue with the installation.

- 3 Next, you see a dialog with the Parallels end user license agreement that you must accept to proceed with the installation. Click **Next**, and in the displayed window, click **Agree**.
- 4 Choose a hostname for your server. You can specify a hostname as a fully qualified domain name (*hostname.domainname*) or as a short hostname (*hostname*).



On this screen, you also need to configure your network settings. You have to configure at least one network card. To do this, click the **Configure Network** button, select the network card you want to configure, and click **Edit**.



You can do one of the following:

- Accept the network settings offered by the installer. View the default settings in the editing network card window, and if you are satisfied with them, click **Apply**; then click **Close**.
- Configure the network card settings. Click the necessary tabs in the editing network card window, and configure the settings to meet your demands. When you are done, click **Apply**; then click **Close**.

Click **Next** to continue with the installation.

### 5 Specify your time zone settings.



To set your time zone, you can either select the nearest city to your physical location on the drop-down menu or click on the interactive map to zoom in to the needed place. You can also select the **System clock uses UTC** check box to set your system to UTC (Universal Time Coordinated), which makes it automatically switch between normal and daylight savings time.

- 6 Enter the Parallels Server Bare Metal license. Every physical server must have its own license installed. Licenses are issued by Parallels and needed to start using Parallels Server Bare Metal on your server. Type the product key for Parallels Server Bare Metal in the field provided, and click **Next**.



You can also skip this step and install the license after the installation. However, in this case you will not be able to install Parallels Virtual Automation and its components along with Parallels Server Bare Metal. For more information on installing Parallels Virtual Automation, see the next step.

- 7 Specify a password for the root account.



The screenshot shows the Parallels Server Bare Metal 5.0 installation interface. At the top, the Parallels logo and "Parallels® Server Bare Metal 5" are displayed. Below this, a message with a red shield icon states: "The root account is used for administering the system. Enter a password for the root user." There are two input fields: "Root Password:" and "Confirm:". At the bottom, there are two buttons: "Back" and "Next".

You will need to log in to the physical server as `root` to be able to manage Parallels virtual machines and Containers. After providing the password and confirming it, click **Next**.

- 8 In the **Partitioning** window, you are supposed to choose the way of partitioning your server.



Do the following:

- Select the **Use All Space** radio button to create the default layout on the server, which includes creating the following partitions:

Partition	Description
/	The root partition containing all Parallels Server Bare Metal files.
/vz	The partition intended to host all Containers and virtual machines data.
swap	The paging partition for Parallels Server Bare Metal.

If you do not feel comfortable with partitioning your server, we recommend that you select this option and let the installer automatically partition your system.

- Select the **Create custom layout** radio button to manually partition your disk drive. Detailed information on how you can do it is given in **Creating Custom Layout**.

- 9 Choose the Parallels Virtual Automation components to install on your server. This screen is displayed only if you entered the license in the previous step and your license provides support for the Parallels Virtual Automation.

**Parallels**  
Parallels® Server Bare Metal 5

Do you want to install PVA after the restart?

PVA (Parallels Virtual Automation) is a web-based tool that enables you to manage both containers and virtual machines.  
If you are new to PVA, please install both the agent and the management node. If you already have a management node, you can install PVA Agent only.

Install PVA Agent for Parallels Server  
 Install PVA Management Node

IP Address:   
Hostname:

To access PVA, type `http://` followed by the management node IP address or hostname in your web browser, and log in with the user name and password you created during the installation of Parallels Server Bare Metal.

Do the following:

- Clear the **Install PVA Agent for Parallels Server** and **Install PVA Management Node** check boxes, and click **Next** if you do not want to use Parallels Virtual Automation for managing your server and virtual machines and Containers.
- Leave the **Install PVA Agent for Parallels Server** and **Install PVA Management Node** check boxes selected to set up the Parallels Virtual Automation application and its components on the server. Using Parallels Virtual Automation, you can connect to the Parallels server and manage your virtual machines and Containers with your favorite browser.

If you select the check boxes, you need to specify a valid IP address in the **IP Address** field for a special Management Node and can also set its hostname in the **Hostname** field. Once the installation is complete, you can log in to Parallels Virtual Automation by opening `http://IP_address_or_hostname` in the browser and using the `root` user name and the password you specified in the previous step.

When the check boxes are selected, the Parallels Server Bare Metal installer performs the following operations after restarting the server:

- a Downloads the installation packages for Parallels Virtual Automation from the Parallels web site to the server. Notice that the download process may take some time, depending on the speed of your Internet connection.

- b** Installs Parallels Virtual Automation and its components on the server and inside a specially created Container. The installation is automatically initiated once the installation packages are downloaded to the server and runs without your interaction.

When you are done, click **Next** to start installing Parallels Server Bare Metal.

**Notes:**

1. Your server must be connected to the Internet to download the Parallels Virtual Automation installation packages from the Parallels remote repository. Using alternative (local) repositories for downloading the Parallels Virtual Automation components is also supported but in kickstart files only. For more information, see the *Installation via PXE* document.
2. You can use Parallels Virtual Automation to manage Parallels servers only if your license allows you to do so. If the license does not support using Parallels Virtual Automation, the PVA components screen is not displayed. In this case, you must first upgrade your license and then install the Parallels Virtual Automation application manually. For more information, see **Installing Parallels Virtual Automation Manually**.
3. For more information on setting up and logging in to Parallels Virtual Automation, refer to **Using Parallels Virtual Automation**.

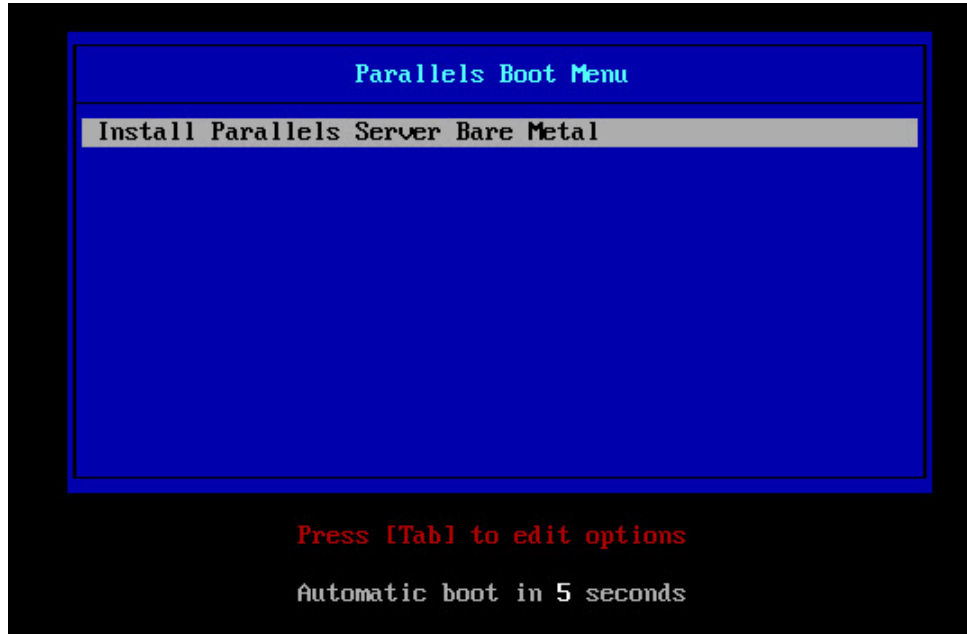
Once the installation is complete, the **Congratulations** window appears. Click **Reboot** to restart the server and boot into Parallels Server Bare Metal.

# Upgrading to Parallels Server Bare Metal 5.0

Along with performing a fresh installation of Parallels Server Bare Metal 5.0, you can also upgrade your existing system over a network. Follow these guidelines to upgrade your system to Parallels Server Bare Metal 5.0:

**Note:** If you plan to upgrade Parallels Server Bare Metal in unattended mode, you also need to create a kickstart file. Refer to **Creating a Kickstart File** (p. 20) for information on creating kickstart files.

- 1 Complete the steps described in **Preparing for PXE Installation** (p. 5).
- 2 Configure your system to boot from the network.
- 3 Once the server boots, you see a dialog box asking you to select the system to install. For example, if you used the example in **Configuring the TFTP Server** (p. 7), you see the following dialog:



Select the entry for Parallels Server Bare Metal, and press Enter.

- 4 The installer may ask you to choose the language to use during the installation process, your keyboard type, and decide on TCP/IP settings. Specify the necessary information to continue with the installation.

- 5 Next, you see a dialog with the Parallels end user license agreement that you must accept to proceed with the installation. Click **Next**, and in the displayed window, click **Agree**.
- 6 Next, the installation program checks for existing installations of Parallels Server Bare Metal. If it finds any, the following window appears.



Select the **Upgrade an existing installation** option, and click **Next**. If you have more than one installation of Parallels Server Bare Metal on your physical server, choose the necessary installation on the drop-down menu.

- 7 Follow the on-screen instructions to install Parallels Server Bare Metal.

## Creating a Kickstart File

If you plan to perform an unattended installation of Parallels Server Bare Metal, you can use a kickstart file. A kickstart file is a simple text file containing the information used by the Parallels Server Bare Metal installer to install and configure your physical server. The format of kickstart files used in Parallels Server Bare Metal installations is similar to that used to perform an unattended installation of Red Hat Enterprise Linux (RHEL). To create a kickstart file, you can use one of the following means:

- your favorite text editor
- the RHEL Kickstart Configurator application

The latter provides a special graphical user interface (GUI) facilitating the procedure of creating kickstart files.

There are two groups of options you can include in your Parallels Server Bare Metal kickstart file:

- The first group comprises the same options that you use when installing any RHEL-like distribution.
- The second group comprises the options specific to Parallels Server Bare Metal.

Both groups of options are described in the following sections in detail.

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## Standard Kickstart Options

Your kickstart file may include any of the standard Linux options used in kickstart files for installing Linux operating systems. For the full list of these options and their explanations, refer to the corresponding Linux documentation (e.g., to the *Red Hat Enterprise Linux Installation Guide*).

Listed below are the mandatory options and commands that you must include in each kickstart file:

Option	Brief Description
<code>auth</code>	Specifies authentication options for the Parallels physical server.
<code>bootloader</code>	Specifies the way of installing the bootloader.
<code>install</code>	Tells the system to install Parallels Server Bare Metal either from <code>nfs</code> or <code>url</code> (for FTP and HTTP installations).  Specify this option to perform a clean installation of Parallels Server Bare Metal.
<code>keyboard</code>	Sets the system keyboard type.
<code>lang</code>	Sets the language to use during installation and the default language to use on the installed system.
<code>part</code>	Creates partitions on the server.
<code>rootpw</code>	Sets the system's root password.
<code>timezone</code>	Sets the system time zone.

### Kickstart options for upgrading to Parallels Server Bare Metal 5.0

When creating a kickstart file to use for upgrading existing installations of Parallels Server Bare Metal to Parallels Server Bare Metal 5.0, use the following options:

- `bootloader`
- `keyboard`
- `lang`
- `timezone`

Besides, you must specify the `upgrade` option instead of `install` to tell the installer to upgrade the system rather than perform a fresh installation of Parallels Server Bare Metal 5.0.

## Parallels Server Bare Metal Kickstart Options

Along with standard Linux options, Parallels Server Bare Metal provides a number of specific parameters and keywords that you need to add to your kickstart file.

The table below lists all available parameters and keywords.

Parameter	Description
<code>key</code>	Mandatory. The Parallels Server Bare Metal product key.
<code>cep</code>	<p>Mandatory. Specify if you want to participate in the Parallels Customer Experience Program.</p> <ul style="list-style-type: none"> <li><code>--agree</code>. Join the program. In this case, Parallels will periodically collect the information about the configuration of your physical server and virtual machines and Containers and use it to make the product better fit your needs. No private information like your name, e-mail address, phone number, and keyboard input will be collected.</li> <li><code>--disagree</code>. Do not join the program.</li> </ul>
<code>up2date</code>	<p>Optional. Invokes the <code>vzup2date</code> utility with the specified options. This parameter accepts all options that you can normally pass to <code>vzup2date</code>.</p> <p>For detailed information on the <code>vzup2date</code> options, refer to the <b>vzup2date</b> section in the <i>Parallels Server Bare Metal 5.0 Command-Line Reference Guide</i>.</p>
<code>vznetcfg</code>	<p>Optional. Invokes the <code>vznetcfg</code> utility with the specified options. This parameter accepts all options that you can normally pass to <code>vznetcfg</code>. The options and their values should be separated by an equals sign (for example, <code>vznetcfg --net=virt_network1:eth0</code>).</p> <p>For detailed information on the <code>vznetcfg</code> options, refer to the <b>vznetcfg</b> section in the <i>Parallels Server Bare Metal 5.0 Command-Line Reference Guide</i>.</p>
<code>vziptables</code>	<p>Optional. The names of <code>iptables</code> modules you want to have loaded inside Containers that will be hosted on the Parallels server.</p> <p>To specify several modules, separate them by space.</p>

vztturlmap

Optional. The URL of the repository and repository mirrors to be used for handling EZ OS and application templates.

By default, Parallels Server Bare Metal uses the following URLs:

- <http://fedora.redhat.com> for handling Fedora-related templates.
- <http://mirror.centos.org> for handling CentOS-related templates.
- <http://archive.ubuntu.com> for handling Ubuntu-related templates.
- <http://download.opensuse.org> for handling openSUSE-related templates.
- <ftp://ftp.suse.com> for handling SUSE-related templates.
- <ftp://ftp.de.debian.org> for handling Debian-related templates.
- <http://vzdownload.swsoft.com> for obtaining specific software packages for the aforementioned Linux distributions. These packages are necessary for the correct operation of your OS templates.

To use your own URL, you first need to specify the name of the respective Linux distribution, followed by = and the desired URL (e.g., `$FC_SERVER=http://myrepository.com` to redefine the default repository for Fedora). To use several URLs, separate them by space.

**Note:** Some Linux distributions (e.g., Red Hat Enterprise Linux and SUSE Linux Enterprise Server) do not have official repositories. So you should manually create software repositories before starting to use OS templates for such distributions. Refer to the *Parallels Server Bare Metal 5.0 Templates Management Guide* to learn how you can do it.

nosfxtemplate

Optional. Skip installing the pre-created and pre-cached EZ templates on the server. The current version of Parallels Server Bare Metal is shipped with only one pre-created and pre-cached OS EZ template - `centos-6-x86_64`.

`%eztemplates`

Optional. The list of EZ templates to install on the server. All available templates are listed in the `/Packages` directory of the Parallels Server Bare Metal distribution. You can easily identify them by the `-ez-number.swsoft.noarch.rpm` ending (e.g., `centos-6-x86-ez-3.0.0-14.swsoft.noarch.rpm`).

The names of the templates must be specified without the ending and separated by the new-line character, for example:

```
%eztemplates
centos-6-x86
devel-centos-6-x86
```

When using this parameter, keep in mind the following:

- If you specify the empty list, no templates will be installed on the server.
- If you skip this parameter, all templates included in the Parallels Server Bare Metal distribution will be installed on the server.
- You can indicate the `--cache` argument next to a respective OS template to cache it after installation. To cache all specified OS templates, specify `--cache` after `%eztemplates`.

**Note:** To cache OS templates for some Linux distributions (e.g. Red Hat Enterprise Linux and SUSE Linux Enterprise Server), you should first create special repositories storing the necessary software packages for these OS templates. Refer to the *Parallels Server Bare Metal 5.0 Templates Management Guide* to learn how you can do it.

- This option must be specified as the first one after the keys.

`pvaagent`

Optional. Download and install the PVA Agent for Parallels Server and Parallels Power Panel components on the server. After doing so, you can register the server with the Parallels Virtual Automation application and to use this application to manage virtual machines and Containers residing on it via a standard web browser.

By default, the PVA Agent for Parallels Server and Parallels Power Panel components are downloaded from the Parallels repository. However, you can specify an alternative repository using the `pvaur1` option.

`pvamn`

Optional. Create a special Container on the server and install the PVA Management Server and Control Center components in the Container. Once the Container is created and the components are installed, the Container starts acting as the Master Server, ensuring the communication between the server and Parallels Virtual Automation.

The `pvamn` option is used with the following parameters:

- `--ip` (mandatory): the IP address to log in to Parallels Virtual Automation.
- `--hostname` (optional): the hostname to log in to Parallels Virtual Automation.
- `--passwd` (mandatory for upgrade): the password to log in to the PVA Management Node. You must use this option when you upgrade your system and want to reinstall the Management Node; otherwise, skip this parameter.

If you use several parameters, separate them by spaces (for example, `pvamn --ip 10.10.10.10 --hostname hostname.com`).

Once the installation is complete, you can log in to Parallels Virtual Automation by opening `http://IP_address_or_hostname` in the browser and using the `root` user name and the password you set as the value of the `rootpw` option (see **Standard Kickstart Options** (p. 21)). If you upgrade the system, use the `root` user name and the password you specify after the `--passwd` parameter.

By default, the PVA Management Node and Control Center components are downloaded from the Parallels repository. However, you can specify an alternative repository using the `pvaurl` option.

**Note:** For more information on using Parallels Virtual Automation for managing servers with Parallels Server Bare Metal, refer to the *Parallels Virtual Automation User's Guide* available at <http://www.parallels.com>.

`pvaurl`

Optional. Download the PVA Agent for Parallels Server, Parallels Power Panel, PVA Management Server, and Control Center components from the local repository. By default, all components are downloaded from the Parallels remote repository.

The path to the local repository must be specified in the following format: `http://server_hostname_or_IP/path_to_PVA_directory/pva-setup-deploy.x86_64`. Assuming that your server hostname is `server.com` and the full path to the Parallels Virtual Automation directory on this server is `/pva`, you need to add the following line to the kickstart file:

```
pvaurl http://server.com/pva
```

For more information on creating a local repository for Parallels Virtual Automation components, see **Create a Local Repository for Parallels Virtual Automation Components** (p. 27).

`ipscope --start  
IP_Address --end  
IP_Address`

Optional. Define the range of IP addresses the Parallels DHCP server will be able to allocate to virtual machines in host-only networks.

By default, the IP address range for host-only networks includes IP addresses from 10.37.130.1 to 10.37.130.254.

<code>%packages</code>	<p>Specifies the packages or package groups to install on the server. For installing Parallels Server Bare Metal, you must indicate the following packages and package groups:</p> <ul style="list-style-type: none"><li>• <code>@base</code> and <code>@core</code> (mandatory)—Installs the packages required for the correct operation of your system.</li><li>• <code>@vz</code> (mandatory)—Installs the packages specific for the OS virtualization part of Parallels Server Bare Metal.</li><li>• <code>@ps</code> (mandatory)—Installs the packages specific for the hardware virtualization part of Parallels Server Bare Metal.</li><li>• <code>@clustering</code> (optional)—Installs the packages required for creating clusters from Parallels Server Bare Metal systems.</li><li>• <code>@templates</code> (optional)—Installs all templates included in the Parallels Server Bare Metal distribution. If you want to install specific templates only, use the <code>%eztemplates</code> option.</li><li>• <code>@optional</code> (optional)—Installs additional packages that are not installed with Parallels Server Bare Metal by default.</li></ul>
------------------------	---

### Kickstart options for upgrading to Parallels Server Bare Metal 5.0

You do not need to use any options specific to Parallels Server Bare Metal in kickstart files to upgrade your system to Parallels Server Bare Metal 5.0. You can, however, specify any of the options listed in the table above, if necessary. In this case, the specified options will redefine the ones in the original installation. For example, you can use the `--key` option to install a new license for Parallels Server Bare Metal 5.0 on the server or the `--cep` option to cancel your participation in the Parallels Customer Experience Program.

## Creating a Local Repository for Parallels Virtual Automation Components

By default, if you choose to set up Parallels Virtual Automation, the Parallels Server Bare Metal installer downloads all the necessary components from the Parallels remote repository. You can also create a local repository that will host the Parallels Virtual Automation components and have the installer download the setup files from this repository. For example, this may be necessary if your server where you plan to install Parallels Server Bare Metal is not connected to the Internet.

To create a local repository for Parallels Virtual Automation components, do the following:

- 1 Set up a web server in your local network, if you do not have any.
- 2 On the web server, create the `pva` directory in the DocumentRoot directory (e.g., `/var/www/html/pva`).
- 3 Download the `pva-setup-deploy.x86_64` file from [http://download.pa.parallels.com/pva/4.6.3/pva-setup-deploy.x86\\_64](http://download.pa.parallels.com/pva/4.6.3/pva-setup-deploy.x86_64), and copy it to the `pva` directory.
- 4 Download the `pva4.6.3.repo.tar.gz` archive from <http://download.pa.parallels.com/pva/4.6.3/pva4.6.3.repo.tar.gz>, copy it to the `pva` directory, and extract the archive. As a result, you should have the `/pva/repo` directory containing a number of subdirectories and files.

Once you create a local repository, you need to tell the Parallels Server Bare Metal installer to download the Parallels Virtual Automation components from this repository. To do this, add the following line to the kickstart file:

```
pvaurl http://server_hostname_or_IP/path_to_PVA_directory
```

Assuming that your web server hostname is `server.com` and the full path to the Parallels Virtual Automation directory on this server is `/pva`, you can add the following line to the kickstart file to make the installer download the setup files from your local repository:

```
pvaurl http://server.com/pva
```

**Note:** Specifying an alternative repository for downloading Parallels Virtual Automation components is supported in kickstart files only.

## Kickstart File Example

Below is an example of a kickstart file that you can use to install and configure Parallels Server Bare Metal in unattended mode. The explanation of a particular option or command is preceded by the # symbol. You can use this file as the basis for creating your own kickstart files.

```
# Install Parallels Server Bare Metal
install
# Use the path of http://server.com/psbm to get the installation files.
url --url http://server.com/psbm
# Use English as the language during the installation and as the default system
language.
lang en_US.UTF-8
# Use the English keyboard type.
keyboard us
# The following 4 commands are used to remove all partitions from your hard drive and
create these partitions: /, /vz, and swap.
# clearpart --all --drives=
part / --fstype ext4 --size=10096
part /vz --fstype ext4 --size=30768 --grow
part swap --size=2000
# Use a DHCP server to obtain network configuration.
network --bootproto dhcp
# Set the root password for the server.
rootpw xxxxxxxxxx
# Use md5 encryption for user passwords and enable shadow passwords.
authconfig --enablesshadow --enablemd5
# Set the system time zone to America/New York and the hardware clock to UTC.
timezone --utc America/New_York
# Set sda as the first drive in the BIOS boot order and write the boot record to mbr.
bootloader --location=mbr
# Tell the Parallels Server Bare Metal installer to reboot the system after
installation.
reboot
# Install the Parallels Server Bare Metal license on the server.
key XXXXXX-XXXXXX-XXXXXX-XXXXXX-XXXXXX
# Search for available Parallels Server Bare Metal updates and install them on the
server.
up2date
# Create the virt_network1 Virtual Network on the server and associate it with the
network adapter eth0.
vznetcfg --net=virt_network1:eth0
# Load the ip_tables ipt_REJECT ipt_tos ipt_limit modules on the server.
vziptables ip_tables ipt_REJECT ipt_tos ipt_limit
# Use the http://myrepository.com to handle Fedora OS and application templates.
vztturlmap $FC_SERVER http://myrepository.com
# Install the following EZ templates on the server: fedora-core-14-x86_64, fedora-core-
14-x86, mailman-fedora-core-14-x86_64, mailman-fedora-core-14-x86. Cache the OS
templates after installation.
# Skip the installation of the pre-created templates.
nosfxtemplate
%eztemplates --cache
fedora-core-14-x86_64
fedora-core-14-x86
mailman-fedora-core-14-x86_64
mailman-fedora-core-14-x86
# Install the packages for Parallels Server Bare Metal on the server.
```

```
%packages
@base
@core
@vz
@ps
```

## Kickstart file example for upgrading to Parallels Server Bare Metal 5.0

Below is an example of a kickstart file you can use to upgrade your system to Parallels Server Bare Metal 5.0.

```
# Upgrade Parallels Server Bare Metal rather than perform a fresh installation.
upgrade
# Use the path of http://server.com/psbm to get the installation files.
url --url http://server.com/psbm
# Use English as the language during the upgrade and as the default system language.
lang en_US.UTF-8
# Use the English keyboard type.
keyboard us
# Set the system time zone to America/New_York and the hardware clock to UTC.
timezone --utc America/New_York
# Upgrade the bootloader configuration.
bootloader --upgrade
```

## Copying the Kickstart File

To install Parallels Server Bare Metal using a kickstart file, you first need to make the kickstart file accessible over the network. To do this:

- 1 Copy the kickstart file to the same directory on the HTTP server where the Parallels Server Bare Metal installation files are stored (e.g., to `/var/www/html/psbm`).
- 2 Add the following string to the `/tftpboot/pxelinux.cfg/default` file on the PXE server:

```
ks=HTTP_SERVER_ADDRESS/PATH_TO_KICKSTART_FILE
```

Assuming that the HTTP server has the IP address of 198.123.123.198, the full path to your kickstart file on this server is `/var/www/html/psbm/ks.cfg`, and the DocumentRoot directory is set to `/var/www/html`, your `default` file may look like the following:

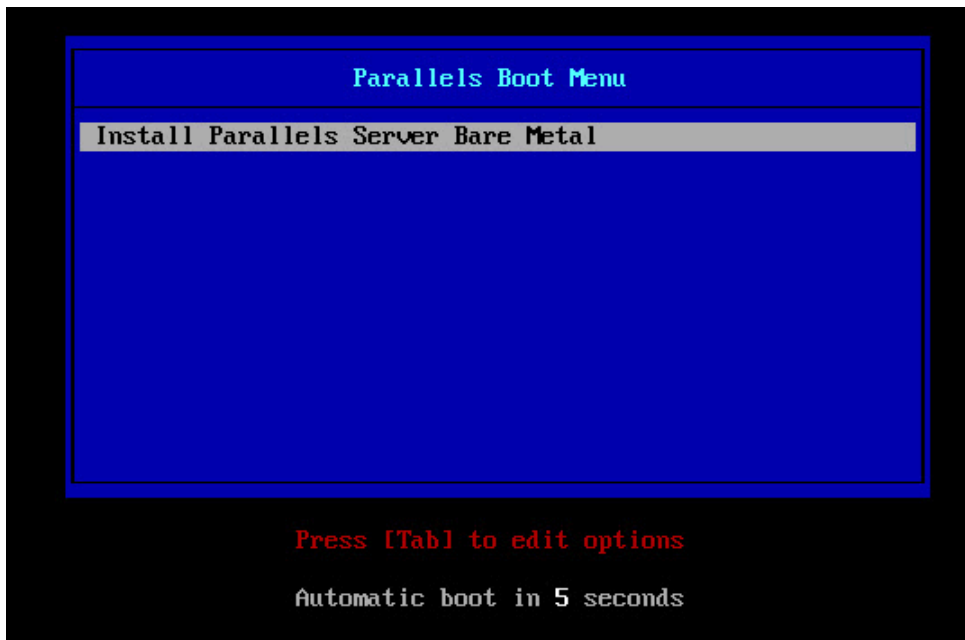
```
default menu.c32
prompt 0
timeout 100
ontimeout PSBM
menu title Parallels Boot Menu

label PSBM
    menu label Install Parallels Server Bare Metal
        kernel vmlinuz
        append initrd=initrd.img noipv6 ks=http://198.123.123.198/psbm/ks.cfg
method=http://198.123.123.198/psbm ksdevice=eth0
```

## Starting Installation

Now you can start installing Parallels Server Bare Metal. To do this:

- 1 Restart the Parallels server (see **Configuring the Parallels Server** (p. 9)).
- 2 After the server boots, a dialog box is displayed asking you to select the system to install. For example, if you used the example in the **Configuring the TFTP Server** section (p. 7), the following dialog window appears:



Select the entry for Parallels Server Bare Metal, and press Enter. The installation is launched automatically and proceeds without your interaction.

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