

^zVirtuozzo

Virtuozzo Linux 8

Quick Start Guide

November 19, 2021

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CHAPTER 1

About Virtuozzo Linux

Virtuozzo Linux 8 is a 1:1 clone of Redhat Enterprise Linux (RHEL) 8. It is free to download, use, and distribute.

The purpose of Virtuozzo Linux is to assist organizations and their clients with an easy path to upgrade or move the existing estate from CentOS, which has been announced to have a reduced lifecycle.

Note: Compared to CentOS 8, Virtuozzo Linux 8 uses iptables instead of nftables by default, even though both sets of tools are provided.

CHAPTER 2

Installing Virtuozzo Linux

This chapter lists the system requirements of Virtuozzo Linux 8 and explains how to install it in various modes.

2.1 System Requirements

Virtuozzo Linux has the following hardware requirements:

- RAM: 1.5 GiB minimum, 1.5 GiB per logical CPU recommended, 4 GiB recommended for installation via PXE
- Disk: 10 GiB minimum, 20 GiB recommended

For more information, consult [Red Hat Enterprise Linux technology capabilities and limits](#).

2.2 Obtaining the Distribution

You can download Virtuozzo Linux distribution ISO images from <http://repo.virtuozzo.com/vzlinux/8/iso/>.

The package repository is at http://repo.virtuozzo.com/vzlinux/8/x86_64/os/.

2.3 Starting Installation

Virtuozzo Linux can be installed from:

- USB drives

- PXE servers
- IPMI virtual drives
- DVD discs

To start the installation:

1. Prepare the installation source, e.g., mount a distribution ISO or plug in a bootable USB drive.
2. Configure the server to boot from the installation source.
3. Boot the server and wait for the welcome screen.

2.3.1 Choosing the Installation Type

You can install Virtuozzo Linux in one of the following modes:

- Graphics (default, recommended), see *Installing in the Graphics Mode* on page 3.
- Basic graphics (in case of issues with video card drivers), see *Installing in the Basic Graphics Mode* on page 6.
- Graphics via VNC, see *Installing via VNC* on page 6.
- Text, see *Installing in the Text Mode* on page 6.

Installation steps differ depending on the chosen mode. They are described in the corresponding sections of this guide.

2.4 Installing in the Graphics Mode

To install Virtuozzo Linux in the graphics mode, choose **Install Virtuozzo Linux** on the welcome screen. After the installation program loads, choose the language to use during the installation and click **Continue**. You will be taken to the **Installation Summary** screen. On it, you specify the parameters required to install Virtuozzo Linux.

INSTALLATION SUMMARY

VIRTUOZZO LINUX 8 INSTALLATION

 us

LOCALIZATION

-  **Keyboard**
English (US)
-  **Language Support**
English (United States)
-  **Time & Date**
Europe/Moscow timezone

SOFTWARE

-  **Installation Source**
Local media
-  **Software Selection**
Minimal Install

SYSTEM

-  **Installation Destination**
Automatic partitioning selected
-  **KDUMP**
Kdump is enabled
-  **Network & Host Name**
Wired (enp0s3) connected

We won't touch your disks until you click 'Begin Installation'.

 Please complete items marked with this icon before continuing to the next step.

In the **LOCALIZATION** section:

- In **Keyboard**, optionally add keyboard layouts and choose a key combination to switch between them.
- In **Language Support**, optionally add more languages to install support for.
- In **Time & Date**, optionally adjust time, date and time zone, add NTP servers, and enable network time.

In the **SOFTWARE** section:

- In **Installation Source**, choose a source to install Virtuozzo Linux from.

If the machine is connected to the Internet, you can choose to install from the official repository that provides all available base environments and additional software (see *Obtaining the Distribution* on page 2).

You may need to configure network in **SYSTEM > Network & Host Name** first.

- In **Software Selection**, select the desired base environment and additional software for it.

In the **SYSTEM** section:

- In **Installation Destination**, select the disk(s) to install Virtuozzo Linux to. Choose **Automatic** in **Storage Configuration** to have the installer partition the disk(s). Otherwise, choose **Custom** in **Storage Configuration** to partition the disk(s) manually. In this case, it is recommended to have these partitions at least:

- /boot for OS kernel and bootstrap files, 1 GiB or more
- / (root), the top level of the directory structure, 10 GiB or more
- /home, for user data, 1 GiB or more
- swap, 1 GiB or more, depending on the system RAM:

RAM	Recommended swap size	Recommended swap size for hibernation
Less than 2 GiB	2 times the RAM size	3 times the RAM size
2 to 8 GiB	Same as RAM size	2 times the RAM size
8 to 64 GiB	4 GiB to 0.5 times the RAM size	1.5 times the RAM size
Over 64 GiB	4 GiB or more, depends on workload	Hibernation not recommended

- /boot/efi, 200 to 600 MiB
- In **KDUMP**, optionally toggle kernel crash dumping.
- In **Network & Host Name**, configure the network and optionally edit the domain name.

When done, click **Begin Installation**. While the OS is being installed, set a password for the root user and create more users. After the installation is complete, click **Reboot** to boot to Virtuozzo Linux. Make sure that the machine boots from the destination disk with the /boot partition.

2.5 Installing in the Basic Graphics Mode

If the installer cannot load the correct driver for your video card, you can try to install Virtuozzo Linux in the basic graphics mode.

To select this mode, on the welcome screen, choose **Troubleshooting->**, then **Install in the basic graphics mode**.

The installation process itself is the same as that in the default graphics mode (see *Installing in the Graphics Mode* on page 3).

2.6 Installing in the Text Mode

To install Virtuozzo Linux in the text mode, boot to the welcome screen and do the following:

1. Select the required installation option and press **E** to start editing it.
2. Add `text` at the end of the line starting with `linux /images/pxeboot/vmlinuz`. For example:

```
linux /images/pxeboot/vmlinuz inst.stage2=hd:LABEL=<vzlinux_ISO> quiet ip=dhcp text
```

3. Press **Ctrl-X** to start booting the chosen installation option.
4. When presented with a choice of starting VNC or proceeding to the text mode, press **2** for text mode.
5. In the installation menu, at least edit settings marked `[!]`.
6. Press **b** to begin installation.
7. When installation ends, press **Enter** to reboot.

2.7 Installing via VNC

To install Virtuozzo Linux via VNC, boot to the welcome screen and do the following:

1. Select the required installation option and press **E** to start editing it.
2. Add `text` at the end of the line starting with `linux /images/pxeboot/vmlinuz`. For example:

```
linux /images/pxeboot/vmlinuz inst.stage2=hd:LABEL=<vzlinux_ISO> quiet ip=dhcp text
```

3. Press **Ctrl-X** to start booting the chosen installation option.

4. When presented with a choice of starting VNC or proceeding to the text mode, choose **1** for VNC.
5. When offered, enter a VNC password.
6. In the output that follows look up the hostname or IP address and VNC port to connect to, e.g.,
192.168.0.10:1.
7. Connect to said address in a VNC client. You will see the usual **Installation Summary** screen.

The installation process itself is the same as that in the default graphics mode (see *Installing in the Graphics Mode* on page 3).

2.8 Booting into Rescue Mode

If you experience problems with your system, you can boot into the rescue mode to troubleshoot these problems.

To enter the rescue mode, do the following:

1. Boot your system from the chosen media.
2. On the welcome screen, click **Troubleshooting->**, then **Rescue system**.
3. Once Virtuozzo Linux boots into the emergency mode, press **Ctrl+D** to load the rescue environment.
4. In the rescue environment, choose one of the following options:
 - Continue (press **1**): mount the Virtuozzo Linux installation in read and write mode under `/mnt/sysimage`.
 - Read-only mount (press **2**): mount the Virtuozzo Linux installation in read-only mode under `/mnt/sysimage`.
 - Skip to shell (press **3**): load shell, if your file system cannot be mounted; for example, when it is corrupted.
 - Quit (Reboot) (press **4**): reboot the server.
5. Unless you press **4**, a shell prompt will appear. In it, run `chroot /mnt/sysimage` to make the Virtuozzo Linux installation the root environment. Now you can run commands and try to fix the problems you are experiencing.
6. After you fix the problem, run `exit` to exit the chroot environment, then `reboot` to restart the system.

CHAPTER 3

Updating Virtuozzo Linux

Virtuozzo Linux allows quick and easy updates with the `yum` utility standard for RPM-compatible Linux operating systems.

The components you may need to update are utilities and libraries as well as the kernel.

3.1 Checking for Updates

Before updating any packages, you may want to see the list of available updates. To do this, run

```
# yum check-update
```

3.2 Updating Everything

The easiest way to update all components of Virtuozzo Linux is to run

```
# yum update
```

When executed, this command instructs the `yum` utility to do the following:

1. Access the remote Virtuozzo repositories.
2. Check for available updates for the Virtuozzo Linux kernel, utilities, libraries.
3. Install the available updates to your system.

To update one or more specific packages, run

```
# yum update <package1> ... <packageN>
```

3.3 Updating the Kernel

To update just the kernel of Virtuozzo Linux, run

```
# yum update vzkernel
```

After updating, reboot the server and switch to the new kernel.

CHAPTER 4

Converting from CentOS

You can convert CentOS 7 or CentOS 8 operating system running on a machine to Virtuozzo Linux 8.

Note: Internet access is required.

4.1 Converting from CentOS 7

To convert a CentOS 7 installation to Virtuozzo Linux 8, do the following:

1. Log in as the root user.
2. Update the system:

```
# yum update
```

3. Add the Virtuozzo Linux repository. For example:

```
# cat << EOF > /etc/yum.repos.d/vzlinux.repo
[vzlinux]
name=vzlinux
baseurl=http://repo.virtuozzo.com/vzlinux/7.9/x86_64/os/
enabled=1
gpgcheck=0
EOF
```

4. Install the conversion tool from the Virtuozzo Linux repository:

```
# yum install vzupgrade
```

5. Disable the Virtuozzo Linux repository. For example:

```
# yum-config-manager --disable vzlinux
```

- Optionally, add custom executable files. Files placed in `/usr/share/vzupgrade/pre-check` will be run before the check stage (including `vzupgrade check`). Files placed in `/usr/share/vzupgrade/pre-install` will be run before the upgrade stage. All executable files are run in the alphabetical order.
- Check that the system is ready for converting:

```
# vzupgrade check --skip-vz
No upgrade blockers found!
<...>
A report has been generated at /var/log/leapp/leapp-report.json
A report has been generated at /var/log/leapp/leapp-report.txt
<...>
Answerfile has been generated at /var/log/leapp/answerfile
```

This command will imitate the conversion, downloading the required RPM packages in the process.

If issues are found, investigate the logs in `/var/log/leapp`. In addition, note the packages that are marked as unknown. They may be removed during the upgrade.

- Once no blockers have been found and the system is ready, launch the conversion:

```
# vzupgrade install --skip-vz
<...>
A reboot is required to continue. Please reboot your system.
A report has been generated at /var/log/leapp/leapp-report.json
A report has been generated at /var/log/leapp/leapp-report.txt
<...>
Answerfile has been generated at /var/log/leapp/answerfile
```

The upgrade tool will perform preparation steps and ask you to reboot to the kernel `Vz-Upgrade-Initramfs` to perform the upgrade.

- Reboot to the Virtuozzo Linux 8 kernel.

4.2 Converting from CentOS 8

To be eligible for conversion, the system must not be running cPanel and Plesk or have package repositories configured other than official and EPEL.

Note: If conversion fails with “[Errno 24] Too many open files”, try increasing the corresponding limit, which is 1024 by default, and restart the conversion. For example, run `ulimit -n 10240` to increase the limit of open

files to 10240. It will last until the end of the session.

To convert a CentOS 8 installation to Virtuozzo Linux 8, do the following:

1. Log in as the root user.
2. Download the `vzdeploy8` script and mark it as executable:

```
# wget http://repo.virtuozzo.com/vzlinux/vzdeploy/vzdeploy8
# chmod 755 vzdeploy8
```

Note: The script is also available at [GitHub](#).

3. Run the conversion script:

```
# ./vzdeploy8
```

The script will swap the CentOS repositories with the Virtuozzo Linux ones and replace the required packages.

4. Reboot to the Virtuozzo Linux 8 kernel.