



# Virtuozzo 7 Upgrade Guide

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# Chapter 1. Introduction

This guide describes how to upgrade

- Virtuozzo 6 to Virtuozzo 7 in both local storage and Virtuozzo Storage scenarios,
- OpenVZ 7 to Virtuozzo 7.

When upgrading Virtuozzo 6, you can

1. upgrade current Virtuozzo 6 servers by using temporary spare Virtuozzo 6 servers or
2. migrate VMs and containers from current Virtuozzo 6 servers to new Virtuozzo 7 servers.

The exact steps to perform differ depending on scenario and are described further in the guide.

## Notes:

1. This guide refers to other Virtuozzo documentation that you will need to complete the upgrade: *Virtuozzo 6 User's Guide*, *Virtuozzo 6 Upgrade Guide*, *Virtuozzo 7 Installation Guide*.
2. You can upgrade to Virtuozzo 7 from Virtuozzo 6 and OpenVZ 7 only. If your servers run older virtualization products, you will first need to upgrade them to Virtuozzo 6 or OpenVZ 7, respectively. For instructions, see the *Virtuozzo 6 Upgrade Guide* or OpenVZ documentation.

# Chapter 2. Upgrading Virtuozzo 6 with Local Storage

This chapter describes how to upgrade to Virtuozzo 7 if you have Virtuozzo 6 servers with local storage. You can upgrade your current Virtuozzo 6 servers by using spare servers or migrate VMs and containers to new Virtuozzo 7 servers. Apply either method to each server in your Virtuozzo 6 infrastructure.

After upgrading the software, you will need to upgrade your Virtuozzo 6 license as well by running `vzlicupdate`.

## 2.1. Upgrading with Spare Virtuozzo 6 Servers

To upgrade by using a spare Virtuozzo 6 server, do the following:

1. Update both the Virtuozzo 6 server to be upgraded and the spare server to the latest version. You can do this by running `yum update` on each server.
2. Back up all VMs and containers on the Virtuozzo 6 server to be upgraded. You can do this with the `pbackup` tool as described in the *Virtuozzo 6 User's Guide*.
3. Temporarily migrate VMs and containers from the Virtuozzo 6 server to be upgraded to the spare Virtuozzo 6 server. You can do this with the `pmigrate` tool as described in the *Virtuozzo 6 User's Guide*.
4. Perform a fresh install of Virtuozzo 7 on the Virtuozzo 6 server to be upgraded. For instructions, see the *Virtuozzo 7 Installation Guide*.
5. Migrate VMs and containers back to the upgraded server from the spare server. For more details, see [Chapter 4, Migrating VMs and Containers from Virtuozzo 6 to Virtuozzo 7](#) on page 9.
6. If you store VM and container backups on a Virtuozzo 6 server, move them to a Virtuozzo 7 server as described in [Chapter 5, Restoring Virtuozzo 6 Backups to Virtuozzo 7 Servers](#) on page 10.

## 2.2. Upgrading by Migrating to New Servers

To upgrade by migrating to a new Virtuozzo 7 server, do the following:

1. Update the selected Virtuozzo 6 server (from which you will migrate VMs and containers) to the latest version. You can do this by running `yum update`.
2. Back up all VMs and containers on the selected Virtuozzo 6 server. You can do this with the `pbackup` tool.
3. Perform a fresh install of Virtuozzo 7 on a different (new) server. For instructions, see the *Virtuozzo 7 Installation Guide*.
4. Migrate VMs and containers to it from the selected Virtuozzo 6 server. For more details, see [Chapter 4, Migrating VMs and Containers from Virtuozzo 6 to Virtuozzo 7](#) on page 9.

5. If you store VM and container backups on a Virtuozzo 6 server, move them to a Virtuozzo 7 server as described in [Chapter 5, \*Restoring Virtuozzo 6 Backups to Virtuozzo 7 Servers\*](#) on page 10.

# Chapter 3. Upgrading Virtuozzo 6 with Virtuozzo Storage

This chapter describes how to upgrade to Virtuozzo 7 if you have a Virtuozzo Storage cluster based on Virtuozzo 6. You can upgrade by either upgrade the current cluster to Virtuozzo 7 by using spare Virtuozzo 6 servers or migrate VMs and containers to new a Virtuozzo 7 cluster.

## 3.1. Upgrading with Spare Virtuozzo 6 Servers

1. Update all servers in the cluster based on Virtuozzo 6 to the latest version. You can do this by running `yum update` on each server.
2. Choose a server to upgrade in the cluster and migrate VMs and containers from it to other Virtuozzo 6 servers in the cluster.
3. Remove chunk servers from the server:
  - a. Find out which chunk servers are stored on the server by running `pstorage -c <cluster_name> top` on any cluster server.
  - b. Initiate removal of chunk servers from the server by running `pstorage -c <cluster_name> rm-cs --wait <CS_ID>` for each chunk server on the server.
4. Wait until the required chunk servers are removed and Virtuozzo Storage rebuilds. To monitor this process, run `pstorage -c <cluster_name> top` on any cluster server. The status of the chunk servers being removed will become `releasing` and the number of replicas on them will start dwindling. When the number of replicas on a CS reaches zero, the CS will be removed both from the server and the `pstorage top` output. Make sure that no chunk servers are left on the server to be upgraded.
5. Perform a fresh install of Virtuozzo 7 on the server. During installation, choose to create a new Virtuozzo Storage cluster. For instructions, see the *Virtuozzo 7 Installation Guide*.
6. Choose another Virtuozzo 6 server in the old cluster and migrate VMs and containers from it to the new Virtuozzo Storage cluster based on Virtuozzo 7. For details, see [Chapter 4, Migrating VMs and Containers from Virtuozzo 6 to Virtuozzo 7](#) on page 9.
7. Perform a fresh install of Virtuozzo 7 on the second server. During installation, choose to join the new Virtuozzo Storage cluster based on Virtuozzo 7. For instructions, see the *Virtuozzo 7 Installation Guide*.
8. Repeat steps 7 and 8 for the remaining servers in the old cluster until all Virtuozzo 6 servers are upgraded to Virtuozzo 7.
9. If you store VM and container backups on a Virtuozzo 6 server, move them to a Virtuozzo 7 server as described in [Chapter 5, Restoring Virtuozzo 6 Backups to Virtuozzo 7 Servers](#) on page 10.

**Note:** Virtuozzo Storage does not support mixed clusters of Virtuozzo 6 and 7 servers.

## 3.2. Upgrading by Migrating to a New Virtuozone Storage Cluster

To upgrade by migrating VMs and containers from an old Virtuozone Storage cluster based on Virtuozone 6 to a new Virtuozone Storage cluster based on Virtuozone 7, do the following:

1. Update all servers in the cluster based on Virtuozone 6 to the latest version. You can do this by running `yum update` on each server.
2. On a different set of servers, create a new Virtuozone Storage cluster based on Virtuozone 7. For instructions, see the *Virtuozone 7 Installation Guide*.
3. Migrate VMs and containers from the old cluster to the new cluster. For more details, see [Chapter 4, \*Migrating VMs and Containers from Virtuozone 6 to Virtuozone 7\*](#) on page 9.
4. If you store VM and container backups on a Virtuozone 6 server, move them to a Virtuozone 7 server as described in [Chapter 5, \*Restoring Virtuozone 6 Backups to Virtuozone 7 Servers\*](#) on page 10.



# Chapter 4. Migrating VMs and Containers from Virtuozzo 6 to Virtuozzo 7

You can migrate older Virtuozzo 6 virtual machines and containers to Virtuozzo 7 servers. During migration, such VMs and containers will be converted in the Virtuozzo 7 format. In particular, VM devices will be replaced by those supported in Virtuozzo 7 (for a list of VM hardware supported in Virtuozzo 7, see the *Virtuozzo 7 User's Guide*).

To migrate a VM or container from Virtuozzo 6 to Virtuozzo 7, run the following command on the Virtuozzo 6 server.

```
# prlctl migrate <VM_or_CT_name_> root@<VZ7_server_IP_address_or_hostname>
```

Migration from Virtuozzo 6 to Virtuozzo 7 implies VM and container downtime that depends on network bandwidth, virtual machine RAM size, and server load. To reduce downtime, it is recommended to at least perform migration when the server load is minimal.

# Chapter 5. Restoring Virtuozzo 6 Backups to Virtuozzo 7 Servers

Virtuozzo 7 supports restoring backups of Virtuozzo 6 VMs and containers to Virtuozzo 7 servers.

The following rules and considerations apply:

- Restore commands are run on the destination server (to which the backups will be restored).
- Only stopped virtual machines and containers can be restored from backup.
- Backups of virtual machines and containers with guests unsupported in Virtuozzo 7 may not be restored correctly.
- VZFS-based containers must be converted to ploop format and backed up again before they can be restored to Virtuozzo 7.

To restore a specific backup stored on a remote Virtuozzo 6 server, do the following:

1. Find out the backup ID by listing backups stored on the remote Virtuozzo 6 server:

```
# prlctl backup-list -s root@<VZ6_server>
```

2. Specify the found backup ID in the restore command:

```
# prlctl restore -t <backup_ID> -s root@<VZ6_server>
```

To restore a remotely stored backup of a Virtuozzo 6 VM or container after said VM or container has been migrated to a Virtuozzo 7 server, run

```
# prlctl restore <VM_or_CT_name_or_UUID> -s root@<VZ6_server>
```

To copy a Virtuozzo 6 VM or container backup to a Virtuozzo 7 server and restore it there, do the following:

1. Find out the backup ID by listing backups stored on the Virtuozzo 6 server:

```
# prlctl backup-list root@<VZ6_server>
```

2. Find out the default backup directory on the Virtuozzo 7 server:

```
prlsrvctl info | grep "Backup path"
```

3. Copy backup files to the default backup directory on the Virtuozzo 7 server. For example, if backups are stored in the default directory on a Virtuozzo 6 server, run:

```
# scp -r root@<VZ6_server>:/var/parallels/backups/<VM_UUID> \
/vz/vmprivate/backups/
```

Or, if you keep backups on network storage, attach said network storage to the default backup directory on the Virtuozzo 7 server. For example, if you store backups on an NFS share, mount this share to `/vz/vmprivate/backups/`.

#### 4. Restore the copied backup:

```
# prlctl restore -t <backup_ID>
```

# Chapter 6. Upgrading from OpenVZ to Virtuozzo 7

Currently two methods of upgrading from OpenVZ to Virtuozzo 7 are available:

- Containers created with OpenVZ based on kernels 2.6.18 and 2.6.32 can be migrated to Virtuozzo 7.
- OpenVZ based on kernel 3.10 can be upgraded to Virtuozzo 7.

## 6.1. Migrating Containers from OpenVZ Based on Kernels 2.6.18 and 2.6.32 to Virtuozzo 7

You can migrate containers from a server running OpenVZ based on kernels 2.6.18 and 2.6.32 to a Virtuozzo 7 server by means of the `ovztransfer.sh` script freely available at <https://src.openvz.org/scm/ovzl/ovztransfer.git>. Do the following:

1. Install the SSH key on the destination server for the root user. To do this, on the source server generate a key with `ssh-keygen -t rsa`, then transfer the key to the destination server with `ssh-copy-id root@<dest_server>`.
2. Clone the repository with the script to the source OpenVZ server with `git clone https://src.openvz.org/scm/ovzl/ovztransfer.git`.
3. Change to the `/ovztransfer` directory and make the script executable with `chmod 755 ovztransfer.sh`.
4. Run the script on the source OpenVZ server as follows:

```
# ./ovztransfer.sh <dest_server> <source_CT1_ID>[:<new_CT1_name>]\  
[ ... <source_CTn_ID>[:<new_CTn_name>]]
```

where `<source_CT_ID>` (the source container ID) and `<new_CT_name>` (the new container name) must both be specified in the old numerical ID format. For example:

```
# ./ovztransfer.sh 192.168.0.10 100:200
```

So, in the example above, `200` will be the name of the resulting ploop-based container on the Virtuozzo 7 server, even though said name looks like an old numerical ID.

## 6.2. Upgrading from OpenVZ Based on Kernel 3.10 to Virtuozzo 7

To upgrade from OpenVZ based on kernel 3.10 to Virtuozzo 7, run

```
# do-upgrade-vz7
```

In the process, the commercial Virtuozzo 7 packages will be downloaded and installed on your server and a Virtuozzo 7 trial license will be activated.

**Warning:** This procedure cannot be reverted.