Virtuozzo

Virtuozzo Storage 2.3

Quick Start Guide

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Contents

CHAPTER 1

Introduction

To support the growing demand for both high performance and high data availability, modern data centers need a fast, flexible storage solution. Existing solutions, however, are often difficult to manage and maintain, or not flexible enough (e.g., local RAID arrays), or too expensive (e.g., storage area networks).

Virtuozzo Storage is designed to solve these issues. It can run on commodity hardware, so no significant infrastructure investments are needed. It is also is easy to set up and grow on demand.

1.1 About Virtuozzo Storage

Virtuozzo Storage is a software-defined storage solution that allows you to quickly and easily transform low-cost commodity hardware and network equipment into protected enterprise-grade storage like storage area networks (SAN) or network-attached storage (NAS).

Virtuozzo Storage is optimized for storing large amounts of data and provides data redundancy (replication and erasure coding), high availability, self-healing, and storage sharing.

In Virtuozzo Storage, user data is stored on organized clusters of servers in the form of fixed-size chunks. These chunks are automatically replicated and distributed across available servers in the cluster to ensure high availability of user data.

Cluster storage space can be exported through access points like iSCSI, S3, or Acronis Backup Gateway.

1.2 Virtuozzo Storage Deployment Overview

To deploy Virtuozzo Storage for evaluation purposes, you will need to do the following:

1. Install management panel, the web-based user interface for managing Virtuozzo Storage clusters, on one of the servers in your infrastructure.

2. Install Virtuozzo Storage on every other server in your infrastructure.

3. Create a cluster in Virtuozzo Storage.

CHAPTER 2

Preparing for Installation

This chapter lists the system requirements for Virtuozzo Storage 2 and recommendations on network setup.

2.1 Minimal Hardware Requirements

Virtuozzo Storage works on top of commodity hardware, so you can create a cluster from regular servers, disk, and network cards. At least five physical servers are required to evaluate all Virtuozzo Storage features.

The following table lists minimal hardware required for a single node in the cluster:

CPU	Dual-core
RAM	2GB
Disks	Three 100GB HDDs
Network	1 Gbps or faster network interface

Even though five physical servers are recommended for the minimal configuration, you can start evaluating Virtuozzo Storage with just one server and add more nodes later. At the very least, an Virtuozzo Storage can be run on a single server or virtual machine. However, such a configuration will have several limitations:

- No data redundancy and protection will be provided. Failure of any disk will result in data loss.

- No high availability. Just one server or virtual machine will be a single point of failure. If it fails or stops, the entire cluster will stop working.

2.2 Network Setup Recommendations

To make your first Virtuozzo Storage experience easier:

- Do not use dynamic IP addresses or set up dynamic IP allocation via DHCP.

- Use the same network interface for both internal and external traffic. You will be able to configure secure networking later.

Installing Virtuozzo Storage

Virtuozzo Storage is installed in a similar way on all required servers or virtual machines. One exception is the first server where you must also install the management panel (only one is allowed per cluster).

To install Virtuozzo Storage, perform the following steps:

1. Install the management panel and storage components on the first server in your infrastructure.

2. In the the management panel, obtain a token needed for the installation of the storage component on other servers.

3. Install the storage component on all other servers.

3.1 Installing Management Panel

To start installing Virtuozzo Storage, do the following:

1. Burn the distribution ISO image onto a DVD disc.

2. Boot the server from the DVD drive.

3. On the welcome screen, choose **Install Virtuozzo Storage**. After the installation program loads, you will see the **Installation Summary** screen.

4. Open the **INSTALLATION DESTINATION** screen and select a device in the **Device Selection** section. Configure other options if required.

5. Open the **VIRTUOZZO STORAGE** screen, in the **Component Installation** section, choose **Management Panel and Storage**.

6. Make sure that the appropriate network interface is selected in both **Management Panel network** and **Management network** drop-down lists.

7. Create a password for a superadmin account of the management panel, confirm it in the corresponding field, and memorize it.

8. Click **Done** and **Begin Installation**. While Virtuozzo Storage is installing, create a password for the root account. Installation will not finish until the password is created.

Once the installation is complete, the node will reboot automatically.

3.2 Obtaining the Token

To add more nodes to the environment, you will need to install the storage component only. Such servers will run services related to data storage and will be added to the Virtuozzo Storage infrastructure during
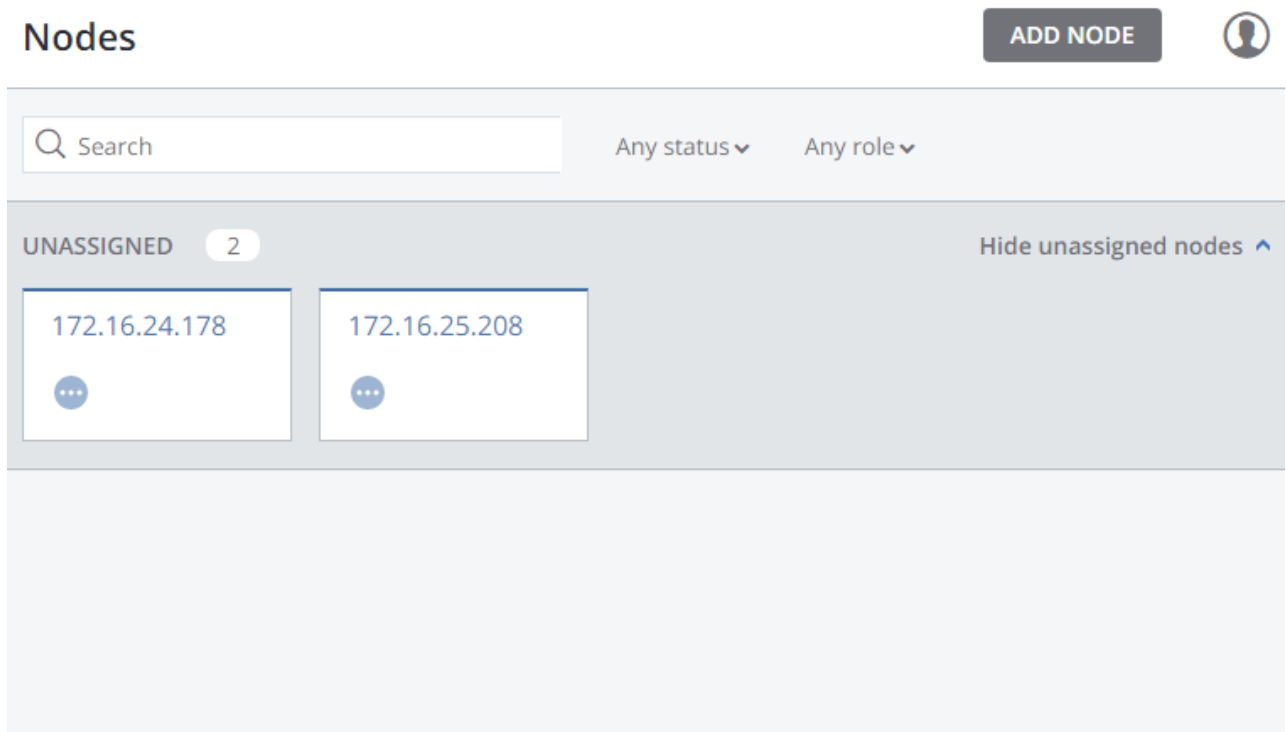
3.2. Obtaining the Token

installation.

For security reasons, you will need to provide a token that can only be obtained from the management panel you have installed on the first server. A single token can be used to install the storage component on multiple servers in parallel.

To obtain a token:

1. On any computer with access to the management panel network, open a web browser and visit the management node IP address on port 8888: `http://<management_node_IP_address>:8888`.

2. Log in to the management panel by specifying the `admin` username and the password for a superadmin account created during the installation of the management panel. You will see the **NODES** screen where the node will be shown in the **UNASSIGNED** list.

3. In the upper-right corner of the **NODES** screen, click **ADD NODE**.

Add storage nodes to Virtuozzo Storage

On this screen, you can get instructions on how to add storage nodes to your Virtuozzo Storage infrastructure. To add storage nodes to Virtuozzo Storage, do the following:

1. On this screen, generate a token required for adding the storage nodes.

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   Valid till Apr 25, 2017, 4:52 pm   Generate new token

   The token can be used to add multiple storage nodes. Generating a new token invalidates the previous token, so you will need to provide the new token when adding nodes.

2. Boot the node from the ISO image.

3. Choose the Storage option on the VIRTUOZZO STORAGE screen.

4. Specify the IP address or hostname of the management panel in the Management panel field.

5. Specify the token shown on this screen in the Token field.

6. Complete other installation steps if required and finish the installation.

7. Repeat the steps from 2 to 6 for each storage node you need to add to Virtuozzo Storage.

4. On the **Add node** panel, obtain a token. You can generate a new one if needed. Generating a new token invalidates the previous one.

5. Save the token and proceed to installing the storage component on other servers.

3.3 Installing Storage

Having obtained the token, boot the next server from the same installation media and do the following on the **Virtuozzo Storage** screen:

1. Choose **Storage**.

3.3. Installing Storage

2. In the **Management node** field, specify the IP address of the node with the management panel.

3. In the **Token** field, specify the acquired token. A single token can be used to install storage component on multiple nodes in parallel.

4. Click **Done**.

5. Open the **INSTALLATION DESTINATION** screen, select a device in the **Device Selection** section, and click **Done**. Configure other options if required.

6. Click **Begin Installation**. While Virtuozzo Storage is installing, create a password for the root account.

To add more nodes to the infrastructure, repeat these installation steps.

If you installed the storage component on the last server, log in to the management panel and make sure that all the storage nodes are present in the **UNASSIGNED** list on the **NODES** screen. Then proceed to creating your first cluster.

CHAPTER 4
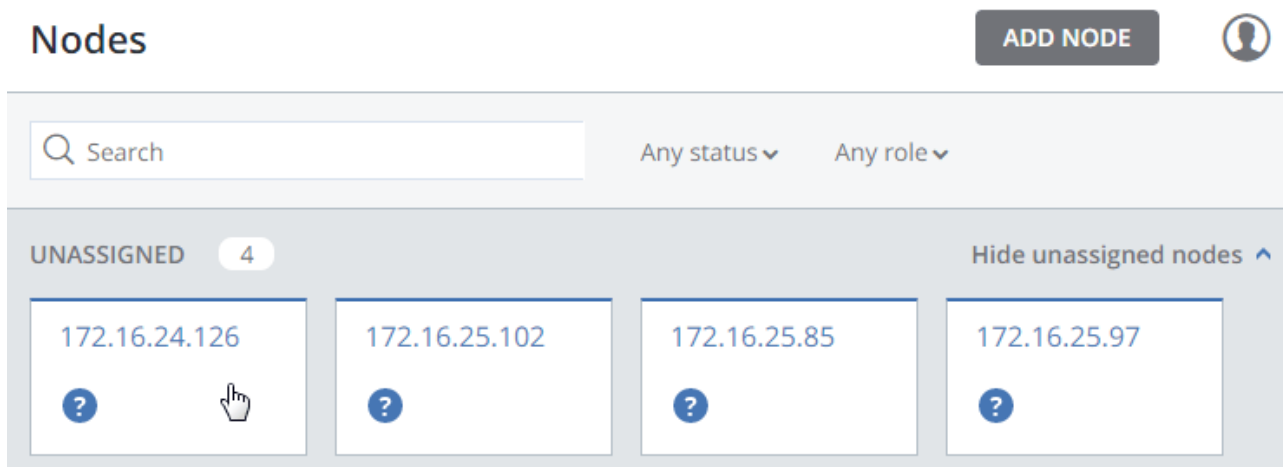
Creating the Cluster

With the management panel ready and with all the nodes present in the **UNASSIGNED** list, you can create your cluster.

To create an Virtuozzo Storage cluster means to create a cluster on one (first) node, then populate it with more nodes.

4.1 Creating the Cluster on the First Node

To create a cluster, do the following:

1. In the management panel, open the **NODES** screen and click a node in the **UNASSIGNED** list.

2. On the node overview screen, click **Create cluster**.

3. In the **Cluster** field, type a name for the cluster. The name may only contain Latin letters (a-z, A-Z),

numbers (0-9), underscores ("_") and dashes ("-").

4. Click the cogwheel icon next to the **Storage interface** drop-down list.

5. On the **Network Configuration** screen, select a network interface and click **Choose role**.

8. Select all roles by checking **Internal** and **Public** and click **Done**.

9. Click X and, back on the **New cluster** screen, click **New Cluster** to have Virtuozzo Storage assign the roles to disks automatically.
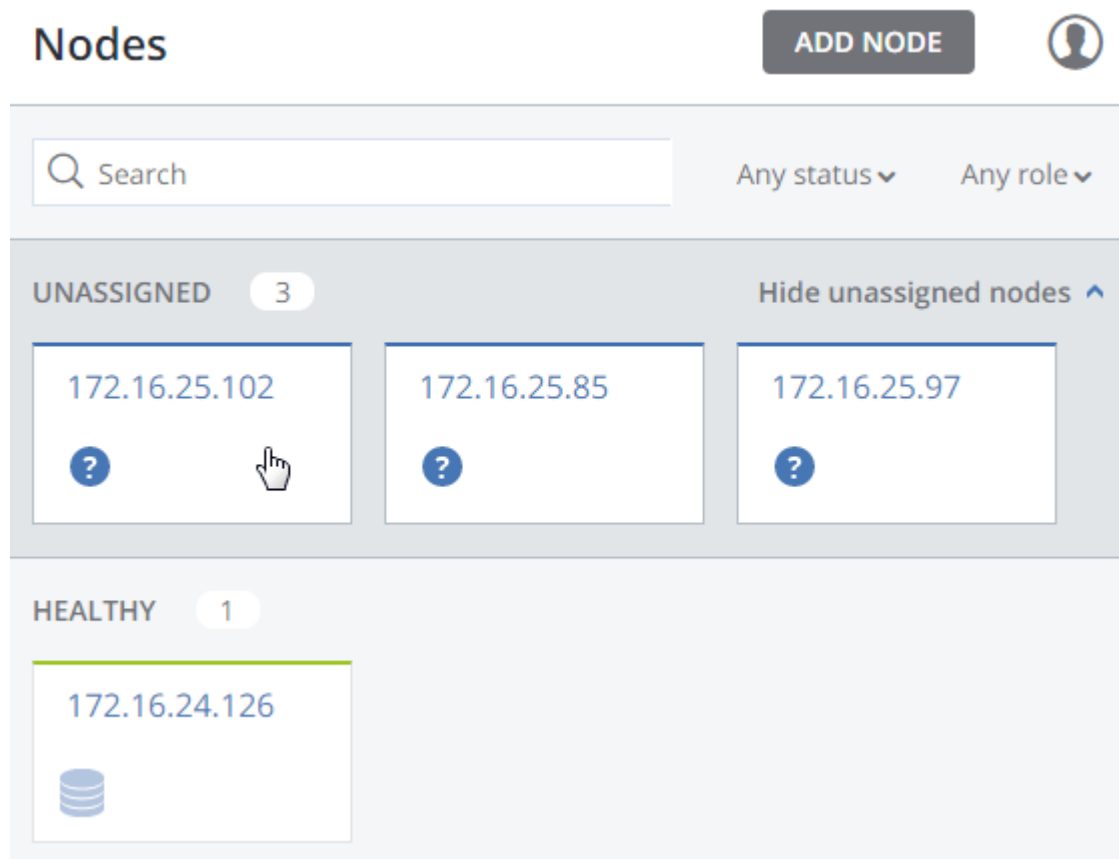
You can monitor cluster creation progress in the **HEALTHY** list of the **NODES** screen. The creation might take some time depending on the number of disks to be configured. Once the automatic configuration is complete, the cluster is created.

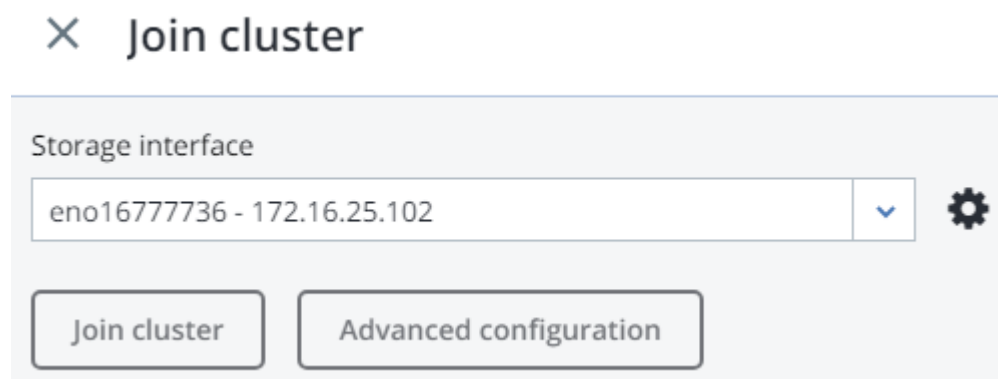## 4.2 Adding Nodes to the Cluster

To add an unassigned node to the cluster, do the following:
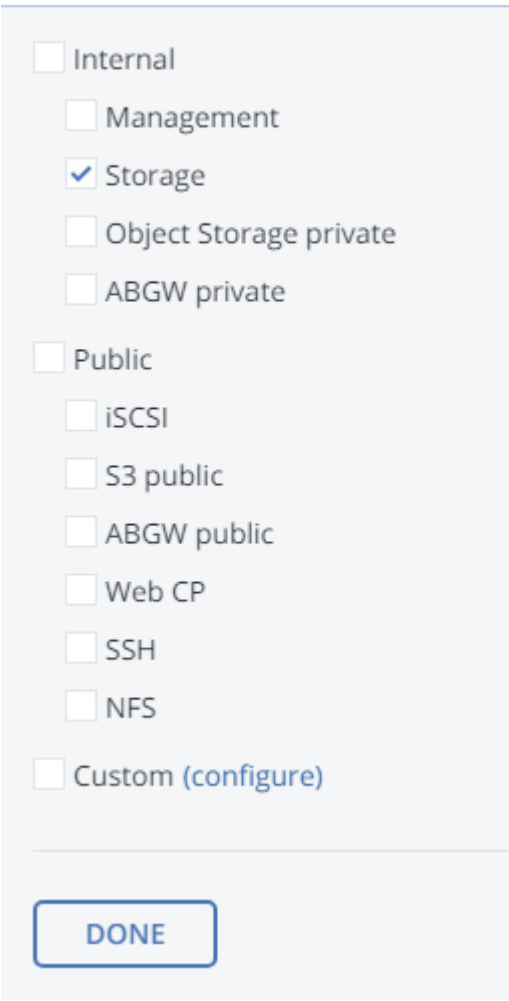
1. On the **NODES** screen, click an unassigned node.

2. On the node overview screen, click **Join cluster**.

3. Click the cogwheel icon next to the **Storage interface** drop-down list.

4. On the **Network Configuration** screen, select a network interface and click **Choose role**.

5. On the **Choose roles** panel, check **Storage**, and click **Done**.

6. Click X and, back on the **Join cluster** screen, click **Join cluster** to have Virtuozzo Storage assign the roles to disks automatically and add the node to the cluster.

To complete cluster deployment, add all the unassigned nodes to the cluster.

Once the cluster deployment is complete, you can proceed to configuring node network interfaces.