

Parallels[®] H-Sphere

Adding New Parallels H-Sphere 3.2 Patch 2 Servers and Services

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Preface

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Typographical Conventions

Before you start using this guide, it is important to understand the documentation conventions used in it.

The following kinds of formatting in the text identify special information.

<u>Formatting convention</u>	<u>Type of Information</u>	<u>Example</u>
Special Bold	Items you must select, such as menu options, command buttons, or items in a list.	Go to the System tab.
	Titles of chapters, sections, and subsections.	Read the Basic Administration chapter.
<i>Italics</i>	Used to emphasize the importance of a point, to introduce a term or to designate a command line placeholder, which is to be replaced with a real name or value.	The system supports the so called <i>wildcard character</i> search.
Monospace	The names of commands, files, directories, and domain names.	The license file is located in the <code>http://docs/common/licenses</code> directory.

Preformatted	On-screen computer output in your command-line sessions; source code in XML, C++, or other programming languages.	<pre># ls -al /files total 14470</pre>
Preformatted Bold	What you type, contrasted with on-screen computer output.	<pre># cd /root/rpms/php</pre>
CAPITALS	Names of keys on the keyboard.	SHIFT, CTRL, ALT
KEY+KEY	Key combinations for which the user must press and hold down one key and then press another.	CTRL+P, ALT+F4

Feedback

If you have found a mistake in this guide, or if you have suggestions or ideas on how to improve this guide, please send your feedback using the online form at <http://www.parallels.com/en/support/usersdoc/>. Please include in your report the guide's title, chapter and section titles, and the fragment of text in which you have found an error.

About This Guide

This document provides a step-by-step instruction on adding new Parallels H-Sphere 3.2 Patch 2 physical boxes and adding new logical servers (or *services*: Web, mail, DNS, etc.).

Note: Before adding new physical boxes to Parallels H-Sphere, you need to prepare them as described in the section Preparing for Parallels H-Sphere Installation of Parallels H-Sphere Installation Guide.

Adding Parallels H-Sphere Servers and Services

To add new servers/services to Parallels H-Sphere 3.2 Patch 2, please perform steps listed below.

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Step 1. Adding Physical Servers

Note: Skip this step if you are adding logical servers (services) to a live Parallels H-Sphere box.

➤ *To add a new physical server to Parallels H-Sphere:*

- 1 Enter your administrator control panel.
- 2 Go to **E. Manager > Servers > Add P.Server**.
- 3 Click **Add Physical Server** at the bottom of the page that appears.
- 4 Enter the name of the physical server, its IP and associated net mask:

Add Physical Server		
Name	web.example.com	+
IP 1	192.168.0.1	+
Mask 1	255.255.255.0	+
IP 2		+
Mask 2		+
Login	root	
Password	*****	
OS type	Unix	▼
Submit		

Specify **Login** and **Password** parameters:

- For Windows servers, these are login (`hsadmin` by default) and password chosen when installing the Winbox.
- For Unix servers, enter login: root and root password for the server.

Don't enter IP2 and Mask2, they are not implemented for Linux and for Windows.

- 5 Click **Submit**.
- 6 Add server groups (types) of logical servers to be placed on this physical server:
 1. Create a Server Group. To do this:
 1. Go to **E.Manager > Servers > Server Groups**.
 2. At the bottom of the page that appears, enter the name of the server group and select its type.
 3. Click **Add**.
 2. Add the newly-created server group to the physical server:
 1. Go to **E.Manager > Servers > P.Servers**.
 2. Click the name of the physical server.
 3. At the bottom of the page that appears, select a server group and click **Add**.
- 7 Go to **E.Manager > Servers > P.Servers** to see the newly added server in the list of all physical servers in the system.

Note: For more information on physical servers, refer to the section Physical Servers of Parallels H-Sphere Service Administrator Guide.

Step 2. Adding the IP of the Physical Server to ips-map.xml File

Note: Perform this step only if you are adding new physical servers to a NAT configured Parallels H-Sphere cluster.

➤ **To add the IP:**

- 1 Log into the CP server as cpanel user:

1. Log in as root first:

```
$ su -
```

2. Log in as the cpanel user:

```
# su -l cpanel
```

- 2 Add the IP of the new physical server to the `~cpanel/shiva/psoft_config/ips-map.xml` file.

Step 3. Adding Logical Servers

IMPORTANT!

For correct system performance, we don't recommend that you have more than one logical server of the same type (web, mail, dns etc.) per each physical box. As an exception, two logical dns servers are permissible under one- server installation. As soon as the second box is added to the system, one of the name servers should be moved to that box.

➤ **To add a new logical server to Parallels H-Sphere, do the following:**

- 1 Enter your administrator control panel.
- 2 Go to **E.Manager > Servers > Add L.Server**.

On the page that appears, enter the properties of the logical server:

Add Logical Server	
Name	<input type="text" value="ns.demo242.psoft"/> +
Group	<input type="text" value="web servers"/> ▼
Server Type	<input type="text" value="UNIX"/> ▼
Physical Server	<input type="text" value="ns2.demo242.psoft"/> ▼
Description	<input type="text" value="logical web server"/> +
File Server	<input type="text"/>
Edit file path	<input type="text"/>
<input type="button" value="Submit"/>	

- **Name:** The domain name of the logical server;
 - **Group:** The group of logical servers you are adding this server to.
 - **Type:** The type of the server.
 - **Physical Server:** The box where the logical server is installed. If nothing is available in the drop-down box, add this server group to the physical server first as described in the previous step.
 - **Description:** The note that will help you identify this server among others.
 - **File Server:** redundant parameter, not in use any longer.
 - **File Path:** redundant parameter, not in use any longer.
- 3 Click **Submit** to create a logical server. You will proceed to the page where you can configure other parameters for this logical server.

Important: Make sure you created respective custom DNS records for this logical server. To do this automatically for this logical server's DNS zone, click the button **Generate** in front of **Generate custom DNS records for this logical server** in the Logical Server options.

Note: For more information on logical servers, refer to the section *Logical Servers of Parallels H-Sphere Administrator Guide*.

Step 4. Installing New Parallels H-Sphere Server/Service on the Box

The two options for installing new servers/services are listed below.

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Option 1. Running the Update Wizard from the Interface

➤ *To run the update wizard from the interface:*

- 1 Enter your administrator control panel
- 2 Go to **E.Manager > Update > Update Boxes**.
- 3 Check the physical server you need to install the service on/complete installing.
- 4 Click **Start Update**.

Note: For more information on the update wizard, refer to the Parallels H-Sphere Upgrade Guide.

Option 2. Running the Update Wizard from Command Line

➤ *To run the update wizard from command line:*

- 1 Log into the CP server as root.
- 2 Check the Parallels H-Sphere version you have:

```
# cat ~cpanel/shiva/psoft_config/HS_VERSION
```

- 3 Download the Parallels H-Sphere update script for the version you have:

Linux:

```
# wget
http://download.hsphere.parallels.com/shiv/HS/releases/U32.0/U32.0P2/U32.0P2
```

FreeBSD:

```
# fetch
http://download.hsphere.parallels.com/shiv/HS/releases/U32.0/U32.0P2/U32.0P2
```

- 4 Run the update script:

```
# sh U32.0P2
```

- 5 In the update script's command prompt, type:

```
hspackages ips=list_of_ips
```

where `list_of_ips` is the list of IPs delimited with comma **and without spaces** for the physical servers where new logical servers are to be added. For example:

```
hspackages ips=192.168.139.40,192.168.139.41
```

The script will install all the necessary packages into the target boxes.

Note: The complete list of options for the `hspackages` script can be found in the section *Upgrade and Installation Script* of the *Parallels H-Sphere Upgrade Guide*.

Adding Parallels H-Sphere Virtual Private Servers

To add a Virtual Private Server hosting box to a Parallels H-Sphere cluster, perform the steps listed below.

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Step 1. Preparing a Box for Parallels H-Sphere VPS Host Installation

Parallels H-Sphere VPS is installed on a **dedicated box** not to interfere with Parallels H-Sphere services. The core of Parallels H-Sphere VPS includes:

- FreeVPS related software:
 - FreeVPS kernel (http://www.freevps.com/docs/vps_patched_kernel.html): a standard Linux kernel patched to support VPS;
 - FreeVPS tools (http://www.freevps.com/docs/vps_tools.html): scripts to manage virtual servers and their host server.
- OpenVZ related software (<http://openvz.org/>).

Host Operating Systems

Make sure to install one of the following OS's to a dedicated physical box:

FreeVPS based host:

- Trustix Secure Linux 2.2
- Red Hat Enterprise Linux release 3, CentOS 3.x, and White Box Enterprise Linux release 3
- Red Hat Enterprise Linux release 4, CentOS 4.x, and White Box Enterprise Linux release 4

OpenVZ based host:

- Red Hat Enterprise Linux release 4, CentOS 4.x, and White Box Enterprise Linux release 4
- Red Hat Enterprise Linux Server release 5, CentOS 5.x, and White Box Enterprise Linux release 5

We do not support Parallels H-Sphere VPS on other operating systems.

VPS Operating Systems

In Parallels H-Sphere there is a possibility to choose a preferred OS of future virtual servers different from that of the host, according to the compatibility table:

Hosts OS	Available virtual server OS(s)	Supported Solutions		Parallels H-Sphere VPS version	
		FreeVPS	OpenVZ	1.x	2.x

WBEL4	WBEL4, RHEL4, CentOS4	+	+	+	+
CentOS4	CentOS4, RHEL4, WBEL4	+	+	+	+
RHEL4	RHEL4, CentOS4, WBEL4	+	+	+	+
RHEL3	RHEL3, CentOS3, WBEL3	+	-	+	+
CentOS3	CentOS3, RHEL3, WBEL3	+	-	+	+
WBEL3	WBEL3, RHEL3, CentOS3	+	-	+	+
TRUSTIX 22	TRUSTIX22	+	-	+	-
RHEL5	RHEL5, CentOS5, WBEL5	-	+	-	+
CentOS5	CentOS5, RHEL5, WBEL5	-	+	-	+
WBEL5	WBEL5, RHEL5, CentOS5	-	+	-	+

where

WBEL4 - White Box Enterprise Linux release 4
WBEL3 - White Box Enterprise Linux release 3
CentOS4 - CentOS release 4.x
CentOS3 - CentOS release 3.x
RHEL4 - Red Hat Enterprise Linux AS/ES/WS release 4
RHEL3 - Red Hat Enterprise Linux AS/ES/WS release 3
RH73 - Red Hat Linux release 7.3
TRUSTIX22 - Trustix Secure Linux release 2.2
WBEL5 - White Box Enterprise Linux release 5
CentOS5 - CentOS release 5
RHEL5 - Red Hat Enterprise Linux Server release 5

Legend:

+ supported
- unsupported

Hardware Requirements

Parallels H-Sphere VPS with FreeVPS solution	Parallels H-Sphere VPS with OpenVZ solution
<ul style="list-style-type: none">▪ Hardware Requirements (http://www.freevps.com/docs/freevps_installation.html#requirements)▪ Recommended partitioning (http://www.freevps.com/docs/freevps_installation.html#partitioning)▪ SELinux must be off (http://www.freevps.com/docs/freevps_installation.html#selinux)	<ul style="list-style-type: none">▪ Filesystems (http://wiki.openvz.org/Quick_installation#Filesystems)▪ sysctl (http://wiki.openvz.org/Quick_installation#sysctl)▪ SELinux (http://wiki.openvz.org/Quick_installation#selinux)▪ Contracks (http://wiki.openvz.org/Quick_installation#Contracks)

Step 2. Installing Parallels H-Sphere VPS

Important: Add a VPS service to a separate physical box reserved only for VPS. We don't recommend to add other services to this box like web, mail etc.

➤ **To install Parallels H-Sphere VPS on a physical box:**

- 1 Add a prepared physical server to Parallels H-Sphere (on page 7).
- 2 Add a logical server Virtual Server to the physical server (on page 9).

When adding a logical server, choose which solution - FreeVPS or OpenVZ - should be installed in **Additional options**.

- 3 Run the update wizard (on page 10).

Depending on the solution you have chosen, the following VPS related packages will be installed:

- **FreeVPS**

- *FreeVPS kernel* - the kernel package contains the Linux kernel patched with FreeVPS patches

Package:

- RHEL3, TRUSTIX22: `kernel-freevps-<version>`
- RHEL4: `kernel-freevps-<version>`

- *FreeVPS tools* - FreeVPS control and management tools

Package: `freevps-tools-<version>`

- **OpenVZ**

- *ovzkernel* - the kernel package that contains the Linux kernel (vmlinuz), the core of any Linux operating system. The kernel handles the basic functions of the operating system: memory allocation, process allocation, device input and output, etc.

Package:

- RHEL4: `ovzkernel-<version>`
- RHEL5: `ovzkernel-<version>`

- *vzctl* - this utility allows system administrator to control Virtual Environments, i.e. create, start, shutdown, set various options and limits etc.

Package: `vzctl-<version>`

- *vzctl-lib* - Virtual Environments control API library.

Package: `vzctl-lib-<version>`

- *vzquota* - Virtual Private Servers as a part of Virtuozzo product family are full isolated "virtual machines" available for a user without total hardware emulation like solutions of VMware type. This utility allows system administrator to control disk quotas for such environments.

Package: `vzquota-<version>`

- **H-Sphere VPS** - provides VPS management API for H-Sphere Control Panel
Package: `hsphere-vps-<version>`

Step 3. Editing the Boot Loader Configuration File

Edit this file (`/boot/grub/grub.conf`, or `/etc/lilo.conf`) so its default variable is set to take the newly installed kernel as the boot image.

Important: Keep the old kernel image settings, so the system can start if anything goes wrong with the new kernel installation.

- **FreeVPS** (Example for RedHat EL 4 and its clones):

- **grub.conf**

```
default=0
timeout=10
splashimage=(hd0,0)/grub/splash.xpm.gz
title Red Hat Linux (2.4.21-freevps-1.5-15.3)
root (hd0,0)
kernel /vmlinuz-2.4.21-freevps-1.5-15.3 ro root=/dev/sda5
initrd /initrd-2.4.21-freevps-1.5-15.3.img
title Red Hat Linux (2.4.18-3)
root (hd0,0)
kernel /vmlinuz-2.4.18-3 ro root=/dev/sda5
initrd /initrd-2.4.18-3.img
```

- **lilo.conf**

```
prompt
timeout=50
default=linux_patched
boot=/dev/sda
map=/boot/map
install=/boot/boot.b
message=/boot/message
linear

image=/boot/vmlinuz-2.4.18-3
label=linux
initrd=/boot/initrd-2.4.18-3.img
read-only
root=/dev/sda5

image=/boot/vmlinuz-2.4.21-freevps-1.5-15.3
label=linux_patched
initrd=/boot/initrd-2.4.21-freevps-1.5-15.3.img
read-only
root=/dev/sda5
```

- **OpenVZ** (Example for RedHat EL 4 and its clones)

- **grub.conf**

```
default=0
timeout=10
```

```
splashimage=(hd0,0)/grub/splash.xpm.gz
title Red Hat Enterprise Linux ES (2.6.9-023stab044.11-smp)
root (hd0,0)
kernel /vmlinuz-2.6.9-023stab044.11-smp ro root=/dev/hda3
console=tty0 console=ttyS1,38400n8
initrd /initrd-2.6.9-023stab044.11-smp.img
title Red Hat Linux (2.4.18-3)
root (hd0,0)
kernel /vmlinuz-2.4.18-3 ro root=/dev/sda5
initrd /initrd-2.4.18-3.img
```

- **lilo.conf**

```
prompt
timeout=50
default=linux_patched
boot=/dev/sda
map=/boot/map
install=/boot/boot.b
message=/boot/message
linear

image=/boot/vmlinuz-2.4.18-3
label=linux
initrd=/boot/initrd-2.4.18-3.img
read-only
root=/dev/sda5

image=/boot/vmlinuz-2.6.9-023stab044.11-smp
label=linux_patched
initrd=/boot/initrd-2.6.9-023stab044.11.img
read-only
root=/dev/sda5
```

Now apply changes to `lilo.conf` (skip this step if you use grub boot loader):

```
# lilo
```

If you correctly edit `lilo.conf`, the command will list all the labels' values as added.

Step 4. Rebooting the Server

To reboot the server, run:

```
# shutdown -r now
```

Step 5. Checking the Kernel Version

To check the kernel version, run:

```
# uname -a
```

If the procedure has been performed correctly, this command will return a line with parameters of the server which must include the correct kernel version.

Step 6. Configuring VPS Host

Note: This is optional step for advanced configuration.

To configure your virtual servers, run the configuration script:

```
# /hsphere/shared/scripts/vps-configure.pl
```

With the further steps, you will perform basic configuration of your virtual servers. Read more on VPS host configuration in the section with the same title of Parallels H-Sphere System Administrator Guide.

Step 7. Configuring Network Gateways

Parallels H-Sphere provides adding multiple subnets and network gateways to virtual servers via administrator control panel.

➤ **To configure network gateways:**

- 1 Select **E.Manager > VPS Network Gateways**.
- 2 Click the **Add** button to **Add new Network Gateway**.
- 3 In the **VPS Boxes** section Click **Show Assigned Devices** for the server you want to edit.
- 4 On the page that appears, click **Assign Device** for the subnet you are adding.
- 5 Select the network device to associate the subnet with.
- 6 Click **Submit Query**.

Updating Parallels H-Sphere Virtual Private Servers

➤ *To update Parallels H-Sphere VPS, perform the steps listed below:*

- 1 Suspend Virtual Servers on the VPS Host. To do this, login as root on the VPS host server and run:

```
# cd /hsphere/shared/scripts  
# ./vps-suspend.pl -a
```

- 2 Run the update wizard (on page 10) that will install the packages listed in Step 2 (on page 16) of adding Parallels H-Sphere VPS.
- 3 Edit the Boot Loader Configuration File (on page 18).
- 4 Reboot the server (on page 19).
- 5 Check the kernel version (on page 19).
- 6 Run the update script.

Note: This is optional step for advanced configuration.

Run:

```
# cd /hsphere/shared/scripts/  
# ./vps-update.pl
```

and follow the script instructions.

- 7 Configure VPS host (on page 20).

Note: This is optional step for advanced configuration.

- 8 Configure network gateways (on page 20).