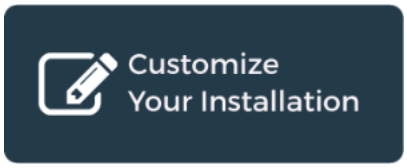
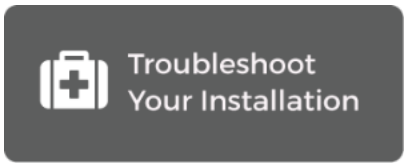
Installation Guide - System Requirements

License
Networking requirements
Hardware requirements
Operating systems
Perl installation
Filesystems
Virtual environments
Compatible browsers
Additional documentation





Overview

Before you install cPanel & WHM or cPanel DNSONLY™, make certain that your system meets all of our minimum requirements for new installations.

Warnings:

- This document lists the **minimum** requirements to install cPanel & WHM. A server that meets **only** these requirements may not function properly, especially when the server runs certain high demand functions.
- You **must** log in to the server as the `root` user in order to install cPanel & WHM. If you do **not** possess `root`-level access, contact your system administrator or hosting provider for assistance.

License

If you do not already own a license for cPanel & WHM, you **must** obtain one for your IP address before you attempt the installation. Each cPanel & WHM server requires its own license. To obtain a cPanel & WHM license, visit the cPanel Store.

Warning:
You **cannot** transfer a single cPanel & WHM license across multiple servers. This action may cause cPanel, L.L.C. to lock your license. For more information, read our Legal Agreements documentation.

Notes:

- The cPanel Store offers 15-day test licenses at no cost.
- If no one has ever licensed your IP address before, you will automatically receive a trial license for your IP address.
- You do **not** need a license to install cPanel DNSONLY.

Networking requirements

Component	Minimum requirement
Hostname	A registered fully-qualified hostname that does **not** match any of your server's domains and resolves to a valid IPv4 or IPv6 address.
IP addresses	• A valid IP address. • A valid subnet address. • A default gateway IP address. • A 1:1 NAT configuration if you server resides in a NAT-configured network.
Ethernet device	A properly-configured Ethernet device with a static IP address and fully-qualified hostname. **Warning:** You **cannot** use an IP address that a DHCP service dynamically assigns to your server.

Firewalls	You **must** disable OS firewalls **before** you run the cPanel & WHM installation. When the installation process finishes, configure your firewall with a third-party client. We recommend that you use APF or CSF.
	
	Important:
	Red Hat® Enterprise Linux (RHEL), CloudLinux™, CentOS, and Amazon® Linux distributions allow you to disable the firewall for the operating system's installation configuration. We **strongly** recommend that you use this method.
	
	Deactivate firewalls on CentOS, CloudLinux, and RHEL 6...
	Run the following commands to deactivate the firewall:
	`/etc/init.d/iptables save`
	`/etc/init.d/iptables stop`
	`/sbin/chkconfig --del iptables`
	
	Deactivate firewalls on CentOS, CloudLinux, and RHEL 7...
	Run the following commands to deactivate the firewall, where `~/firewall.rules` represents the firewall rules file:
	`iptables-save > ~/firewall.rules`
	`systemctl stop firewalld.service`
	`systemctl disable firewalld.service`

Utilities	You **must** disable Network Manager **before** you run the cPanel & WHM installation. The Network Manager service automates the network's settings and disrupts connections to the IP addresses that reside in the `ipaliases` module. **Warnings:** • Disable Network Manager from the server's console to prevent any interruption to network connectivity. • Exercise **extreme caution** when you run the commands to disable Network Manager. If you do **not** follow them exactly, your server may lose its network services.

Hardware requirements

Operating system	OS version	Processor	RAM		Disk Space		Architecture
			Minimum	Recommended	Minimum	Recommended	
CentOS, CloudLinux, or RHEL	6	1.1 GHz	768 MB	1 GB	20 GB	40 GB	64-bit
	7		1 GB	2 GB			

Amazon Linux **Warning:** We **only** support Amazon Linux on the official cPanel & WHM AMI.	All versions.	1.1 GHz	768 MB	1 GB	20 GB	40 GB	64-bit

Hardware considerations

When you choose a server, consider the following questions:

- **How many sites do you plan to host?**
  Servers that host a large number of websites with associated email addresses and databases require more processing power, disk space, and RAM.
- **What kind of web hosting do you plan to do?**
  You can run cPanel & WHM with the minimum requirements below, but servers that host videos, music, or high-volume applications require more processing power, disk space, and RAM.

Notes:
- The cPanel & WHM installation and upgrade processes require **at least** 3 GB of additional disk space for staging purposes.
- Before the installation process begins, the system checks to ensure that your server meets these minimum memory requirements. If your server does **not** meet these requirements, the installation process will return an error message and then exit.

Operating systems

Note:
cPanel, L.L.C. supports all of the official production release kernels for these operating systems.

We currently support CentOS versions 6.5 or later.

Notes:
- Installations of cPanel & WHM on CentOS servers **must** use CentOS version 6.5 or later.
- We recommend that you use the `minimal` installer, especially if you choose to install CentOS 7.

Click for CentOS installation instructions...

To install CentOS, perform the following steps:

1. Download a CentOS installer.

   Note:
   If you use an operating system source that cPanel, L.L.C. did not provide, you **must** disable SELinux.

2. Burn the ISO to CD or DVD, and install it on your server.

   Warning:
   After you place the OS installation disc in your server, a prompt will ask you to test the disc before you begin the installation. We **strongly** recommend that you test the disc before you proceed. This test saves time if the disc is

unreadable.

We currently support CloudLinux versions 6 and 7.

Warning:
We **strongly** recommend that you install cPanel & WHM on a `basic` CloudLinux installation. Certain CloudLinux features, such as CageFS, MySQL® Governor, and LVE Manager, modify cPanel & WHM when you install them. Because of this, we also recommend that you customize your CloudLinux installation **after** you install cPanel & WHM.

Note:
For more information about CloudLinux installation, read CloudLinux's Getting Started with CloudLinux OS documentation.

Click for more information and CloudLinux installation instructions...

Important:

- You **must** obtain a CloudLinux license before you begin the installation process. This license allows you to run CloudLinux and to receive patches and updates.
  - You can acquire the license from your provider or from the cPanel Store. If you purchase the license from the cPanel Store, you will automatically receive an IP address-based license.
  - We grant this license based on the static IP address at which you installed the operating system (OS).
  - If you purchase an IP address-based CloudLinux license, the cPanel & WHM installation process automatically installs CloudLinux.
- cPanel, L.L.C. does **not** support the use of Xen® paravirtualization (Xen PV) with CloudLinux.

To install CloudLinux from an ISO, perform the following steps:

1. Download the CloudLinux ISO that matches your server's architecture.

   Note:
   If you use an operating system source that cPanel, L.L.C. did not provide, you **must** disable SELinux.

2. Burn the ISO to CD or DVD, and install it on your server.

   Warning:
   When you place the OS installation disc in your server, a prompt will ask you to test the disc before you begin the installation. We **strongly** recommend that you test the disc before you proceed. This test saves time if the disc is unreadable.

3. Run the following commands:

```
/usr/sbin/clnreg_ks
yum update
```

Note:
If cPanel & WHM already exists on your server, you own an IP address-based CloudLinux license, and you wish to convert from CentOS to CloudLinux, run the following commands:

```
wget http://repo.cloudlinux.com/cloudlinux/sources/cln/cldeploy
sh cldeploy -i
reboot
```

We currently support Red Hat Enterprise Linux versions 6 and 7.

Notes:

- Installations of cPanel & WHM on RHEL servers **must** use RHEL version 6 or higher.
- cPanel, L.L.C. does **not** support installation on Red Hat Update Infrastructure (RHUI) systems.

Click for more information and RHEL installation instructions...

To install Red Hat Enterprise Linux, perform the following steps:

1. If your server is on the Red Hat Network and uses the satellite subscription method, you **must** install the `subscription-manager` package before you install cPanel & WHM.
2. Run the appropriate command below to subscribe to the Optional RPMs channel for your version of RHEL:
   - For RHEL 6, run the following command to subscribe to the Red Hat Enterprise Linux 6 Server - Optional RPMs channel:

     ```
     subscription-manager repos --enable
     rhel-6-server-optional-rpms
     ```

   - For RHEL 7, run the following command to subscribe to the Red Hat Enterprise Linux 7 Server - Optional RPMs channel:

     ```
     subscription-manager repos --enable
     rhel-7-server-optional-rpms
     ```

   Note:
   You may need to subscribe to additional channels to maintain all of the packages that cPanel & WHM requires.
3. Download the Red Hat Enterprise Linux ISO.

   Note:
   If you use an operating system source that cPanel, L.L.C. did not provide, you **must** disable SELinux.
4. Burn the ISO to CD or DVD, and install it on your server.

   Warning:
   When you place the OS installation disc in your server, a prompt will ask you to test the disc before you begin the installation. We **strongly** recommend that you test the disc before you proceed. This test saves time if the disc is unreadable.
5. To register the server with the Red Hat network, run the following command:

```
rhn_register
```

Warning:
You **must** register the server before you install cPanel & WHM or cPanel DNSONLY. If you do not register the server, the installation will fail.

We currently support Amazon Linux.

To install Amazon Linux, follow the instructions in the Amazon Web Services documentation.

Warning:
- We **only** support Amazon Linux on the official cPanel & WHM AMI. To find this AMI, navigate to the cPanel & WHM AMI downl oad in the AWS™ marketplace.
- We **strongly** recommend that you do **not** install cPanel & WHM on servers that rely on snapshot data (for example, Amazon EC2™ Spot Instances). When these servers revert to use snapshot data, the system detects this action as a uniqueness change. This behavior causes these servers' cPanel & WHM licenses to lock due to the uniqueness changes for that server's cPanel & WHM license. A locked license disables a cPanel & WHM server.

Operating state

In Linux, the operating system possesses several levels of operating states. Each different level represents a system configuration and allows users to access different processes.

Operating system	Operating state	Setting		Location	How to change the operating state
		Default	Recommended		

CentOS, CloudLinux, or RHEL 6	Runlevel	3	3	`/etc/inittab`	Click to view... To change the OS's runlevel, perform the following steps as the `root` user: 1. Open the `/etc/inittab` file with a text editor. 2. Locate the following line: 3. Change the number after `id:` to the runlevel that you wish to set. **Note:** For a complete list of runlevels, read linfo.org's Runlevel definition documentation 4. Save your changes.

CentOS, CloudLinux, or RHEL 7, or Amazon Linux	Target	`multiuser.target`	`multiuser.target`	`/usr/lib/systemd/system`	Run the following command as the `root` user, where `TARGET.target` represents the operating state target: `systemctl set-default TARGET.target` For a complete list of targets, visit freedesktop.org's systemd.target article.

Disable SELinux

If your server runs an operating system from a source other than the cPanel & WHM installer, you **must** disable SELinux to make your system compatible with cPanel & WHM.

To disable SELinux security features, use one of the following methods:

- Use the graphical interface to disable SELinux while you configure your operating system, and then reboot the server.
- Edit the `/etc/selinux/config` file to set the `SELINUX` parameter to `disabled`, and then reboot the server.
  - The contents of the /etc/selinux/config file should resemble the following example...

```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
# enforcing - SELinux security policy is enforced.
# permissive - SELinux prints warnings instead of enforcing.
# disabled - No SELinux policy is loaded.
SELINUX=disabled
# SELINUXTYPE= can take one of these two values:
# targeted - Only targeted network daemons are protected.
# strict - Full SELinux protection.
SELINUXTYPE=targeted
```

Important:
Make **certain** that the number sign (`#`) **does not** precede `SELINUX=disabled`. If a `#` precedes this configuration option, the system ignores the option.

Warning:

- To run cPanel & WHM on your server, SELinux **must remain disabled**.
  - SELinux in **enforcing** mode does **not** allow cPanel & WHM to function properly. For more information about SELinux modes, read the SELinux Mode documentation.
  - While cPanel & WHM can function with SELinux in **permissive** mode, we recommend that you do **not** use it. **Permissive** mode generates a large number of log entries.
  - To check the status of SELinux on your server, run the `sestatus` command.
- Do **not** transfer the SELinux configuration file between computers. It may destroy the file's integrity.

Perl installation

Perl **must** exist on your server before the installation script for cPanel & WHM can run successfully. If Perl does **not** exist during installation, the cPanel & WHM installer attempts to install Perl via the `yum -y install perl` command.

- If you see errors during this step of the installation process, read our Troubleshoot Your Installation documentation.
- For more information about Perl on your server, and which versions of Perl ship with specific operating systems, read our Guide to Perl in cPanel & WHM documentation. cPanel & WHM servers use multiple Perl environments.

Note:
We **strongly** recommend that you allow your operating system's distribution to control the system Perl installation. Do **not** customize this Perl installation.

Filesystems

When you install your operating system (OS), we recommend that you use the following filesystems:

- **CentOS, CloudLinux, and RHEL 7** — Use the XFS® or `ext4` filesystems.
- **All other supported operating systems** — Use an `ext` filesystem (`ext3` or `ext4`).

Note:
We **only** develop and test cPanel & WHM on filesystems that support flock. Some network filesystems (for example, NFS) may require additional configuration in order to function properly. However, these configurations are difficult to implement successfully and we do **not** support them.

Partitions

Partition	OS	RAM	Minimum size
/	All supported operating systems.	N/A	Grow to fill disk (40 GB recommended, 20 GB minimum). **Note:** To host a greater number of accounts, allocate more disk space to this partition.
swap	CentOS, CloudLinux, or RHEL 6 or 7, or Amazon Linux	2 GB or less	Two times the amount of RAM on the server.
		2 GB to 4 GB	The same as the amount of RAM on the server.
		4 GB or more	4 GB

Note:
Your system's applications may require additional swap space. Consult your application's software developers or documentation for their swap space recommendations.

Warning:
CentOS 7's automatic partitioning scheme is **not** optimized for cPanel servers. This scheme creates a relatively small home partition and a relatively large root partition (/).

In order to optimize space partitions for CentOS 7, we recommend the following options:

- Use your hosting provider's CentOS 7 image to install cPanel & WHM.
- Create a partition manually. For more information, read the *Recommended Partition Scheme* documentation for CentOS 7.

Note:
Additional partitions improve performance for some servers, especially servers with high email volume. The OS can only access a limited number of files per partition.

Inodes

In Linux, an inode is a filesystem object that contains the owner, permissions, and other important metadata. Every file, image, directory, email, and symbolic link on your server requires an inode.

- On average, files on webservers are usually smaller than on other types of servers. Therefore, we recommend that you allocate more than the default number of inodes on your server's partitions.
- If you install everything on a single partition, the base cPanel & WHM or cPanel DNSONLY installation requires **at least** 1,000,000 inodes, **plus at least** 50,000 inodes per cPanel account that you plan to host.

Virtual environments

cPanel products support the following virtual environments:

Virtual environment	Additional restrictions
KVM	*None.* **Note:** If you use a Linux bridge on a KVM server, you may experience problems with multicast routing. - These problems affect the server's ability to resolve nodes on the network. For example, IPv6 Stateless Address Autoconfiguration (SLAAC) addresses may drop off intermittently, or the server may experience problems when it attempts to find the router. - To resolve this issue, set the `multicast_router` system knob value to 2. For more information, read the CentOS-virt mailing list thread.
Linux Containers	cPanel & WHM requires additional configuration to run inside a Linux Container. For more information, read our Linux Containers and cPanel documentation.
Linux-VServer	*None.*
Microsoft Server® 2008 Hyper-V, Microsoft Server 2012 Hyper-V	cPanel **only** supports the drivers and configurations that Microsoft® provides.
OpenVZ	- cPanel **only** supports stable releases. - CloudLinux is **not** compatible with OpenVZ.
Oracle VM VirtualBox, VirtualBox OSE	*None.*
SmartOS	cPanel & WHM detects this virtual environment and reports as functional, but we do **not** officially support it.

Virtuozzo™	• CloudLinux is **not** compatible with Virtuozzo. • We support Virtuozzo version 7 and earlier. • We **only** support Virtuozzo KVM and container environments.
VMware® Server, VMware ESX Server	*None.*
Xen, XenEnterprise™, XenExpress™, XenServer™	*None.*

Compatible browsers

We specifically test cPanel & WHM with certain browsers to ensure compatibility. Other browsers will likely function, but may display differently or experience issues with certain features.

We develop and test cPanel & WHM to function with the latest versions of the following browsers:

- Chrome™ (MacOS®, Microsoft® Windows®, Linux)
- Firefox (MacOS, Windows, Linux)
- Internet Explorer® (Windows)
- Safari® (MacOS)

Mobile versions of Firefox, Chrome, and Safari are also compatible with cPanel & WHM.

> **Note:**
> These browsers support some email features. The interfaces in cPanel & WHM will likely function, but you may notice minor defects or inconveniences that relate to specific functionality.

Additional documentation

Suggested documentation For cPanel users For WHM users For developers

- Installation Guide - System Requirements
- The sysinfo.config File
- Installation Guide - Troubleshoot Your Installation
- Installation Guide - Customize Your Installation
- Linux Containers

- Server Information for cPanel

- Installation Guide - System Requirements
- The sysinfo.config File
- Amazon AWS Guide
- Amazon AWS Instance Management
- Launch an AWS AMI Instance

- WHM API 1 Functions - expunge_mailbox_messages
- WHM API 1 Functions - get_all_contact_importances
- WHM API 0 Functions - sethostname
- WHM API 1 Functions - sethostname
- WHM API 1 Functions - get_available_profiles