ClearOS 7

Server, Network, & Gateway | Quick Start Guide

(Revised 2017/02/14)

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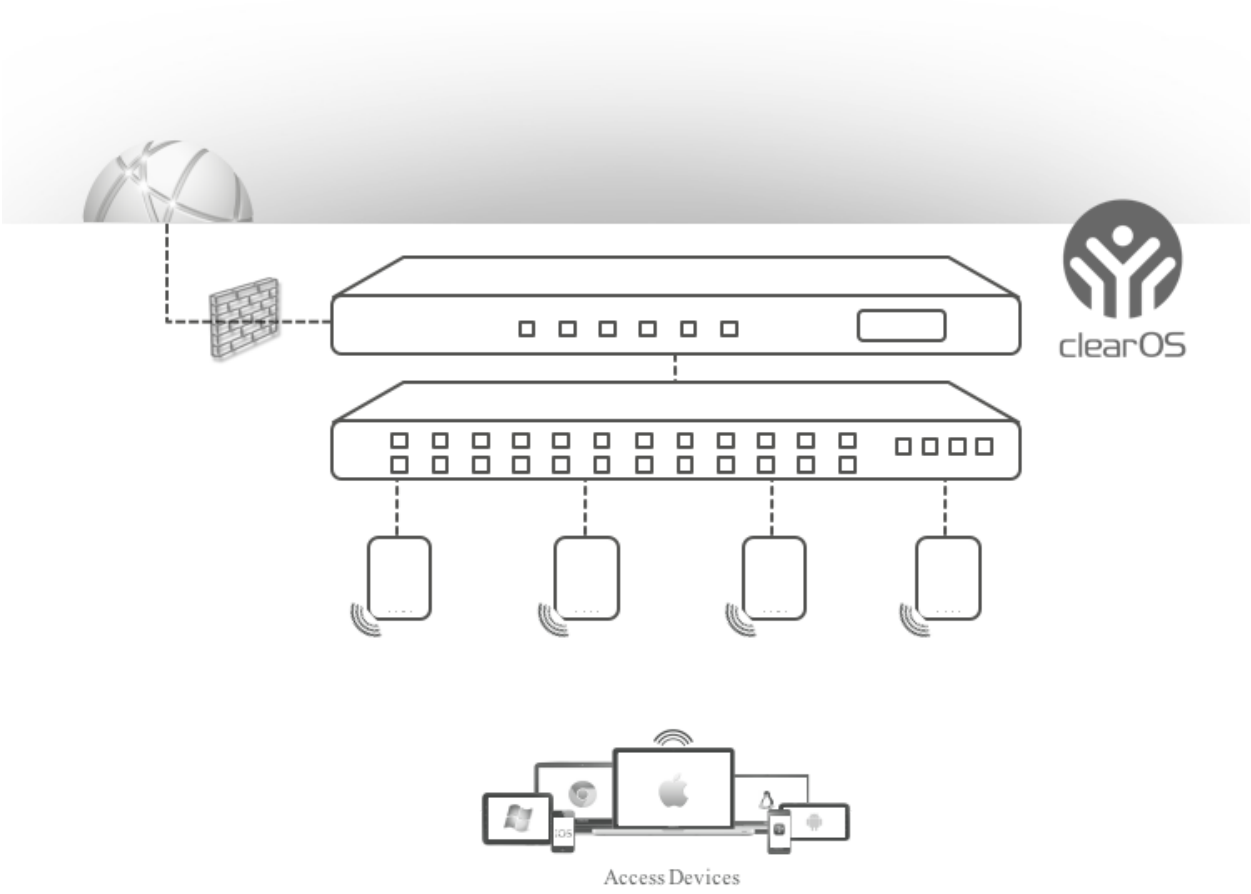
Welcome

ClearOS is a computer (server) Operating System (OS) that provides enterprise-level network security and application services to the Small/Medium-sized Business (SMB) market. It allows an organization to protect against incoming threats, enforce ongoing policy, and be more productive through the use of integrated services.

The quick start guide outlines the steps required to install and begin managing the ClearOS server. It assumes the user is somewhat familiar with software installation principles and has a basic understanding of computer hardware and networking.

Thank you for choosing ClearOS!



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Selecting Hardware

The ClearOS server is an Operating System based on Linux. As such, the software requires dedicated hardware to install and run on – it does not install on Microsoft Windows as an application.

You have many options when choosing the hardware for your server. Fortunately, ClearOS has modest minimum hardware requirements compared to other products. This allows you to either "recycle" a desktop computer or purchase new hardware, but not necessarily leading edge in terms of hardware specifications. The best configuration will depend on server location, number of users, scalability, intended use, and many other factors. You first need to consider whether a workstation or a rack-mounted server is best-suited to meet your needs. The following table will give you some points to consider when making your determination:

Workstation

- Less expensive
- Can be placed anywhere
- Easier to move / relocate
- Better suited for expansion
- Can be reconfigured for other uses

Rack-mount

- Takes less space, but requires a rack
- Increased noise levels
- Minimal support for peripherals
- Best suited for a dedicated server room

ClearOS can run in 'headless' mode.
This means that neither a keyboard nor a monitor is required once you have your system installed and running.

Depending on your requirements, you will also need to consider the number of network cards required for your system.

Mode	Required Network Cards
Standalone	1
Gateway	2
Multi-WAN / DMZ	3 or more

Multi-WAN is the ability to use two or more connections through multiple Internet Service Providers (ISPs) for the benefit of load balancing and/or failover.

Selecting Hardware (continued)

The hardware required depends on what resource demands normal use will place on your server. For example, providing proxy and website content filtering to 50 users requires higher processor and memory requirements than a system running a simple firewall. The following general guidelines can be used for estimating your system requirements:

CPU and Memory	Less than 5 users	5-10 users	10-50 users	50-250 users
Processor / CPU	1 GHz	2 GHz	Quad Core 3 GHz	Dual Quad Core +
Memory / RAM	1GB	4GB	8-16GB	32 GB +
Physical Storage:				
Hard Drive	Installation and logs require 6GB - optional storage is up to user			
RAID	Recommended for mission critical systems - see user guide for details			
Optical Drive	A CD/DVD or USB drive is required for installation and for major upgrades			

Network

In gateway mode, ClearOS requires a high-speed (broadband) network connection to the Internet. With a ClearOS server acting as the gateway to your Internet Service Provider (ISP), you will be able to share internet access to computers on the LAN while protecting your network against attacks from external threats. In many cases, an organization will also want to enforce access and user policy from within the LAN.

Today, it is not uncommon for organizations to have both a wired and wireless network. Wireless access can be achieved by adding an inexpensive wireless router to the network (in non-router mode) or by selecting a supported wireless card and installing it into the ClearOS server.

Installing the Software

Once you have selected and assembled your hardware, it is time to install the software. Keep in mind, you can always add non-essential hardware later (for example, an additional network card, a USB mass storage device etc.) without having to re-install the ClearOS software.

An installation “wizard” will guide you through the install process. By prompting you to answer specific questions related to your setup, the wizard will help customize your install to your particular requirements.

The step-by-step software installation Guide is available at:

https://www.clearos.com/resources/documentation/clearos/index:userguide7

For a step-by-step Screen Illustration for what to expect during setup, view this link:

https://www.clearos.com/resources/documentation/what-to-expect

Warning: Any data on the hard drive of the system that is the target of the installation will be overwritten. Use dedicated hardware, not your desktop PC. Neither ClearCenter or ClearFoundation can be help responsible for the loss of data that may result.

Installer

There are two stages to complete when installing ClearOS:

1st Stage | Installer

The first stage installer allows the user to select their configuration parameters such as language, location, system mode, connection type, and network settings. The installer will step the user through each configuration with simple to follow prompts. This steps takes on average 10 minutes to complete.

2nd Stage | Wizard

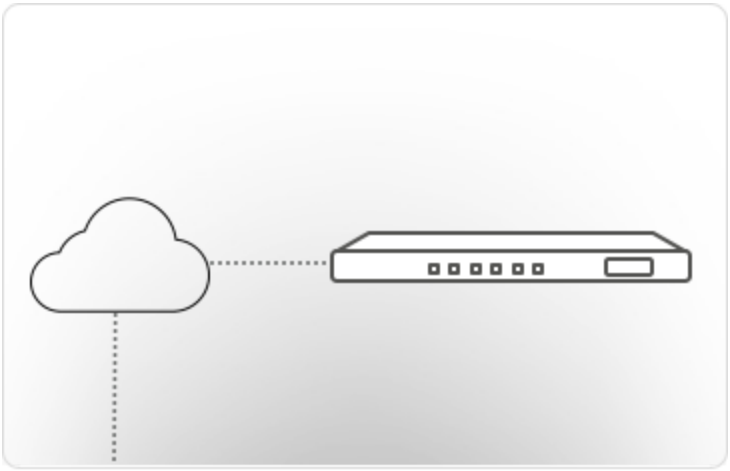
The second stage installer uses a graphical wizard to walk you through simple steps to setting up ClearOS. These steps include selecting a network mode, configuring network interfaces, configuring DNS, selecting your ClearOS edition, registering the server, performing updates, setting up an internet domain, assigning a hostname, setting the date and time on the server, navigating the Marketplace wizard, and selecting the Marketplace Apps best suited for your environment. This steps takes on average 15 minutes to complete.

System Mode

During install wizard, the system will ask the user to select their preferred system mode. The user may select either Public Server, Gateway, or Private Server mode.

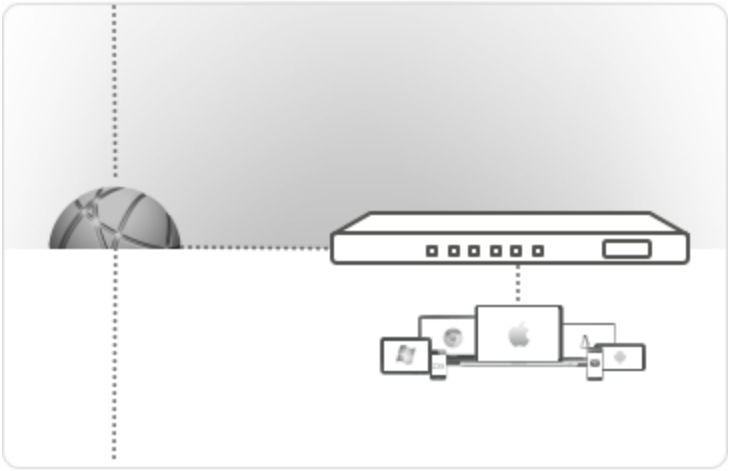
Public Server Mode

This mode is appropriate for standalone servers installed in a hostile environment. For example, a data center or public hotspot.



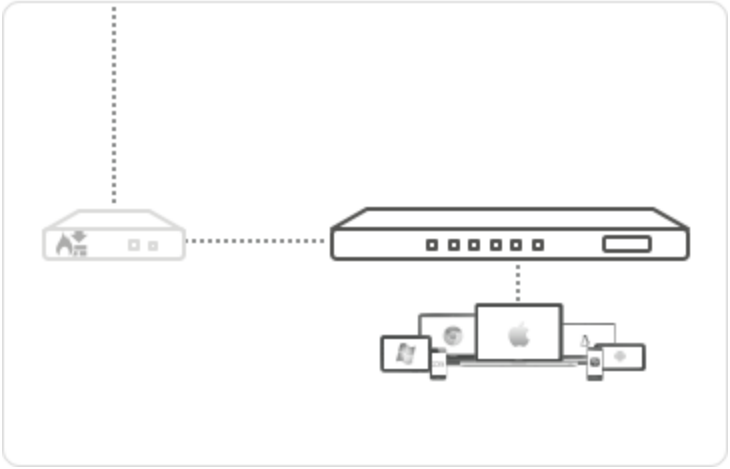
Gateway Mode

Gateway mode is used to connect a network of systems to the Internet or internal network. You need at least two network cards for this mode.



Private Server Mode

This mode is appropriate for standalone servers installed on a protected network, for example, an office network. The firewall is disabled in this mode.



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Configuring TCP/IP

Configuring your Internet Settings correctly is crucial to the connectivity and performance of your network. Unless your Internet Service Provider (ISP) provides a static IP address, it is recommended that you use Dynamic IP Configuration.

If your ISP assigns a static IP, you will need to enter the individual TCP/IP settings as provided by your ISP.

Make sure you have these settings available during the installation process:

- IP Address:
- Netmask:
- Default gateway (IP):
- Primary Nameserver:

When configuring your Local Area Network (LAN) settings, unless you are experienced in network topology, it is recommended that you use the typical values provided.

For your reference a typical LAN settings are listed below:

- IP Address: 192.168.1.1
- Netmask: 255.255.255.0

Hostname

The hostname is a unique name by which the internal network can identify the ClearOS server.

Some services on a ClearOS server require a fully qualified domain name (FQDN). A FQDN consists of a host and domain name, including a top-level domain. For example, www.clearcenter.com is a fully qualified domain name.

If you are unsure what the server hostname should be, use the entries in the following table as a guideline.

Hostname (continued)

Mode / Use	Hostname	Domain
Gateway		
I own (or will buy) a domain for this server	gateway	mydomain.com
I want to use a free domain from ClearCenter	mylastname	poweredbyclear.com
Private Server Mode		
Any scenario	mylastname	server.lan

System Password

The system password is the “root” account password - and the highest level of permission/access to the server. **It is highly recommended that you use a STRONG password.** A strong password would be a randomly generated series of characters that:

- is at least 8 characters long (longer is better)
- contains a mix of upper and lower case letters
- includes numerals, special characters, and/or punctuation

An example of a good password is: **s3f1$8Ba**

Do not lose or forget the system password

You can always change your password used for ‘root’ by logging into Webconfig as ‘root’ and clicking [user profile] under the name ‘root’ in the upper right-hand corner of Webconfig.

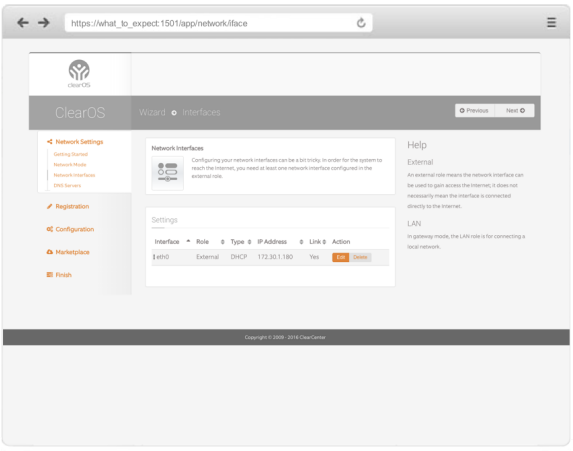
Setting up the Network

The ClearOS server is robust enough to handle multiple network topologies and can be configured to handle many roles, such as:

- gateway/firewall
- proxy/content filter
- application server
- storage server
- authentication server
- all-in-one server

Network Connections

Gateway Mode



In Gateway Mode, you will need 2 (or more) network cards and you will need to determine the mapping between each physical network card as represented in the software interface - as shown in Webconfig.

The simplest way to approach this task is to physically connect only one cable to an interface and look for which one says ‘yes’ in the link field.

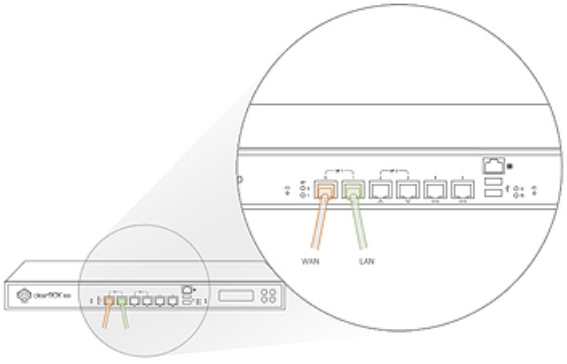
Using ClearOS’s graphical console (Webconfig), go to the Interfaces Screen. You will need to login as ‘root’ and supply the password you used during the installation. If ClearOS came pre-installed, use the password ‘password’ for the root user.

Use the link status field to help you determine that a physical connection between your ClearOS server and the rest of your network has been established. Once done, you can now connect to the server using ClearOS’s Webconfig from a desktop or laptop on the LAN, effectively running the ClearOS server ‘headless’ (i.e. no monitor or keyboard required).

Be aware that in ClearOS terms, ‘external’ means internet facing. You will need at least one ‘external’ interface to register ClearOS.

Once it is determined which network card has been assigned an interface by the operating system, you can proceed to configure the role (i.e. external or LAN) of each card by highlighting an interface and executing the configuration wizard (press the Enter or Space key).

Public or Private Server Mode



If you selected Public or Private Server Mode during the software installation, physically connecting the ClearOS server to your existing network is straightforward.

Using standard Ethernet cable, run a cable between the single Network Interface Card (NIC) (sometimes called network adapter) on the ClearOS server to a free port on your network segment (usually a multi-port hub or switch).

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Using ClearOS's graphical console (Webconfig), go to the Interface Screen. You will need to login as 'root' and supply the password you used during the installation. If ClearOS came pre-installed, use the password 'password' for the root user.

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Be aware that in ClearOS terms, 'external' means internet-facing. You will need at least one 'external' interface to register ClearOS.

Webconfig - Web (browser) based Administration

Webconfig is an easy-to-use, browser based administrative tool that allows an administrator to use any PC (running an operating system and through a browser) to configure and manage all aspects of your server. The administrator could be connecting from within the LAN or from a PC located on the other side of the world.

Webconfig uses HTTPS protocol, which allows for secure, remote management of the server from an access device outside the LAN. This is the same protocol used by banks to encrypt financial transactions, so any remote access can be considered extremely secure.

Webconfig listens for incoming client requests on a non-standard port (port 81). This is done in case you want to run a web server with the same encryption/security policies. As a result, there is one small (but important) addition to the URL that you will enter in your browser when connecting to ClearOS's Webconfig user interface.

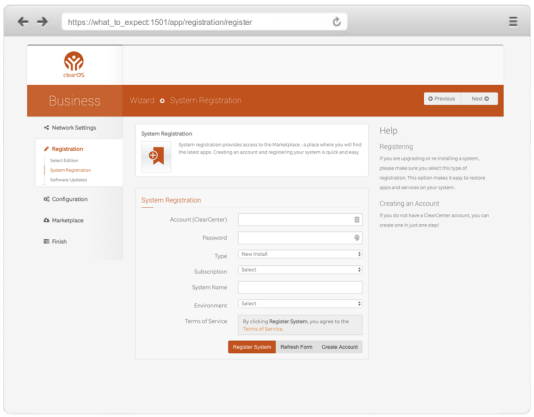
https://192.168.1.1:81

Note the insertion of the port number by placing the characters ":81" between the IP address (192.168.1.1). Of equal importance, the example given above assumes you are connecting from within your LAN (or over a VPN tunnel) and that you selected the default IP settings for your LAN. Modify the IP to suit your configuration or substitute the IP with a domain name that has been mapped correctly. For example, the server's hostname as described earlier in this guide if this has been previously configured.

Your browser will issue an "Invalid Certificate" message when you access the site. Your connection is still secure however, and is encrypted, but your server certificate is not official. A valid certificate can be purchased and applied, but is not required for the browser-based Webconfig administration tool.

System Registration

Once your system is online, one of the most important actions to take is to register your server. Registration ensures your software will be kept up-to-date with the latest software errata and new features, which ensures a secure, reliable, and productive network. Registration also enables Marketplace, the on-board app installation engine for ClearOS.



Additional Modules/Apps

ClearOS is unique in its design. It allows an administrator full control over how many services/applications run on any particular installation. For example, where security of the network is paramount, only edge device services like the firewall, intrusion detection/prevention, and virus scanning would be selected. In applications where the budget is limited and an 'all-in-one' server/appliance suits the environment, additional services can be added through Marketplace by selecting needed apps. It should be noted that not all apps are available together in combination.

Additional Help

Available Resources Include:

- Online User Guides
- Online How-To Documents
- Tech Support
- Community Sites
- Community Forums
- Search Engine

https://www.clearos.com/resources/documentation/documentation-overview

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Additional Help (continued)

ClearCARE Technical Support

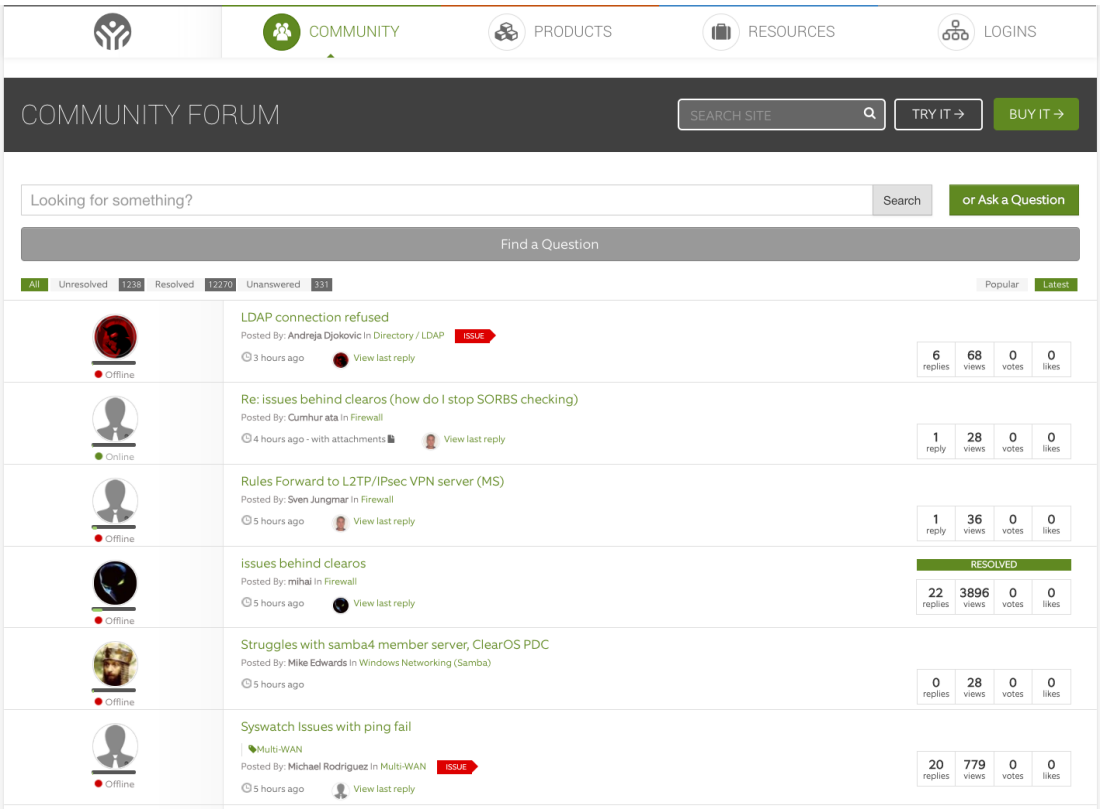
In addition, several levels of professional tech-support are available to licensed users. For a complete list or more info on ClearCARE support, visit:

https://www.clearos.com/products/support/clearcare-overview

ClearOS Community Forums

ClearOS is driven by a very engaged and rapidly growing community. Community members enjoy helping each other with setting up, developing, troubleshooting, and pushing the boundaries of ClearOS. Get started participating in the community below:

https://www.clearos.com/clearfoundation/social/community



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