



clearOS™

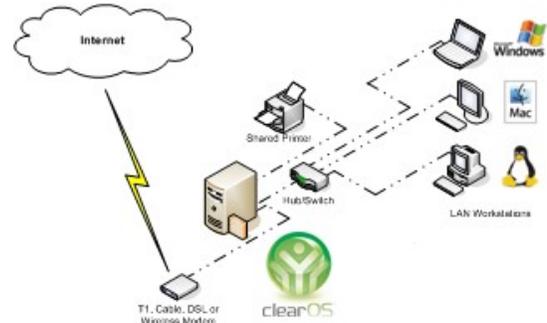
**ClearOS Network, Gateway, Server
Quick Start Guide**

Welcome

ClearOS is computer 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 outgoing policy and be more productive through the use of integrated services.

This 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 and has a basic understanding of computer hardware and networking.

Thank you for your choosing ClearOS.



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 as compared to Microsoft products, allowing you to either “recycle” a desktop computer or purchase new hardware but not necessarily leading edge in terms of 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 (a desktop computer) or a rack-mounted server is best suited to 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 network cards required for your system.

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

MultiWAN is the ability to use two or more connections through 1 or more ISP providers for the benefit of load balancing and failover.

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 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	500 MHz	1 GHz	2 GHz	3 GHz
Memory/RAM	512 MB	1 GB	1.5 GB	2 GB
Physical Storage				

CPU and Memory	Less than 5 users	5 – 10 users	10 – 50 users	50 – 250 users
Hard Drive	Installation and logs require 1GB – optional storage is up to user.			
RAID	Recommended for mission critical systems – see user guide for details			
Optical Drive	A CD/DVD drive is required for install process and future major upgrades			

For more information on selecting the right hardware to meet your specific requirements, please visit our web site at:
http://www.clearcenter.com/support/documentation/clearos_enterprise_5.2/user_guide/system_requirements

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 or by selecting a *supported* wireless card and installing it into the ClearOS server.

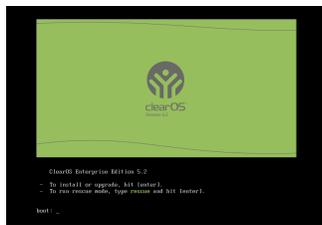
Installing the Software

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 set-up, the wizard will help customize your install to your particular requirements. If this is your first time installing server software, we advise users to download the Software Installation Guide (SIG) as a reference during the installation.

The step-by-step Software Installation Guide is available at:

http://www.clearcenter.com/support/documentation/clearos_enterprise_5.2/user_guide/start



Splash Screen

Insert the ClearOS CD-ROM into the CD/DVD drive and turn on (or reset) the computer. A splash screen will be displayed, requesting hit [enter], which indicates your intention to proceed with the install.

If you do not get the boot splash screen, reboot your computer, type the appropriate key to enter the system’s BIOS settings, and ensure the CD/DVD drive is configured to boot first.

Throughout the ClearOS installation wizard, use the cursor or tab key to cycle through the selection options - press either the space bar or enter key to confirm your selection.

Warning! Any data stored 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 held responsible for the loss of data that may result.

Installer

There are two stages to the install process:

First Stage

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.

Second Stage

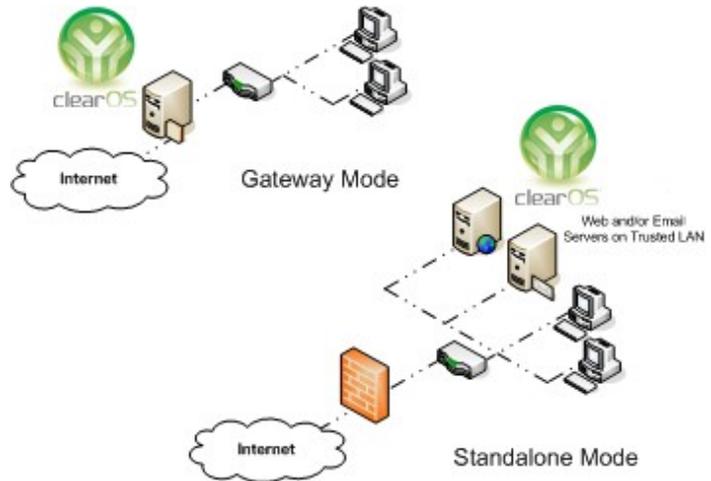
The second stage installer uses the configuration parameters specified in stage one and installs the required modules. The second stage installer takes between 10 and 30 minutes, depending on the hardware specifications and the number of modules you selected. No interaction is required during this stage.

System Mode

During the first stage of the install, the system will ask the user to select their preferred *system mode*. The user may select either *gateway* or *standalone* mode.

Gateway Mode allows your system to act as a firewall and server on your local network – at least two network cards are required for this mode.

Standalone Mode allows your system to be a server on your local network – only one network card is required for this mode.



Unsure whether you should use Gateway or Standalone mode? Choose **Gateway** mode if the following two statements are true:

- I have two or more network cards installed in the server
- I want to protect my local network against threats originating from the Internet

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 install 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 default values provided.

For your reference the default 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 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.

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
Standalone		
Any scenario	mylastname	lan

System Password

The system password is the 'root' account password - 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: **s3fq\$8Ba**

Do not lose or forget the system password.

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 server
- application server
- all in one server

Network Connections

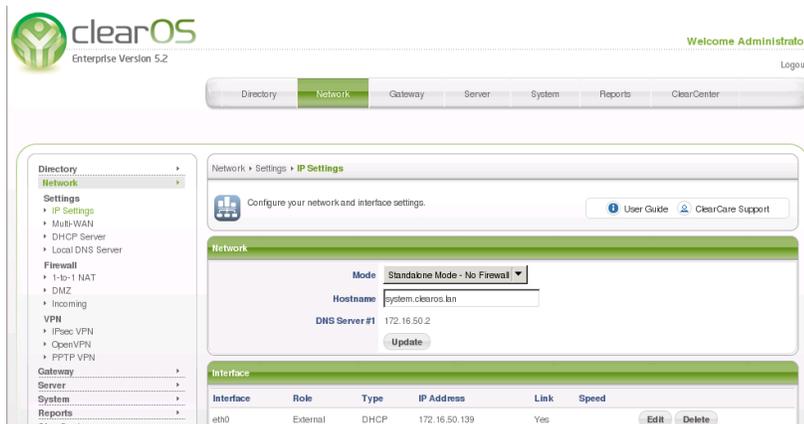
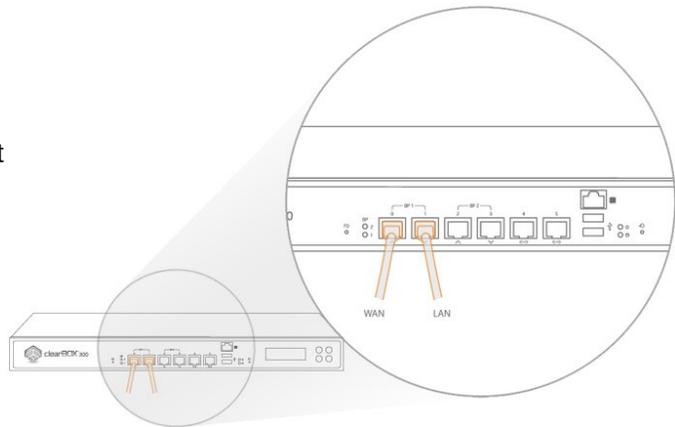
Standalone Mode

If you selected standalone 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).

Using ClearOS's graphical console, go to the Interfaces screen (F3).

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' (ie. no monitor or keyboard required).



Gateway Mode

In Gateway Mode, the fact that there are 2 (or more) network cards means an extra step to determine the mapping between each physical network card and the software interface - as detected by the operating system (OS).

The simplest way to approach this task is to physically connect only one cable to an interface chosen at random while watching the graphical console "Interface" page (F3).

Under the "Link" column, you should see the icon change from red to green, indicating physical connectivity. Once it is determined which network card has been assigned an interface by the operating system, you can proceed to configure the role (ie. external or LAN) of each card by highlighting an interface and executing the configuration wizard (press the Enter or Space key).

If you have two network cards supporting different transfer rates (ie. 1 x 10/100MB and 1 x 100/1000MB), ensure you select the highest transfer rate card for the internal network (LAN interface) for optimal network performance.

Webconfig – Web (or Browser) based Administration

Webconfig is an easy to use, web based administrative tool that allows an administrator to use any PC (running any operating system) 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 country.

Webconfig uses the HTTPS protocol, which allows for secure, remote management of the server from a PC 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/admin/`

Note the insertion of the port number by placing the characters “:81” between the IP address (192.168.1.1) and the resource (admin). 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.

Your browser will issue an “Invalid Certificate” message when you access the site. Your connection is still secure and encrypted, but your server certificate is not official. A valid certificate costs over \$100 a year to maintain and is not necessary for the web-based 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.

Additional Modules

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 by way of modules. It should be noted that not all modules are available at install time.

To view the list of available modules for your installation, use ClearOS's Webconfig interface and go to ClearCenter → *ClearOS* → *Software Modules*.

Additional Help

Available Resources include:

- User Guides
- How-to
- Tech Support
- Community Sites
- User Forums
- Search Engines

In addition, several levels of Tech Support are available to licensed users. For a complete list of offerings please visit us at:

<http://www.clearcenter.com/Support/clearcare.html>

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