CamTrace

video surveillance

Installation on a new machine

For CamTrace Server : V8.15.xx and V8.14.xx

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For further information :

www.camtrace.com

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1 Burning a bootable USB key

1.1 USB Key

Use a good quality USB flash drive with a minimum size of 4 GB and a maximum size of 16 GB.

1.2 Downloading the ISO image

ISO images of the CamTrace distribution can be found on the FTP server : "**ftp://ftp.camtrace.com**".

Login : "**camtrace**"
Password : please contact us (www.camtrace.com)

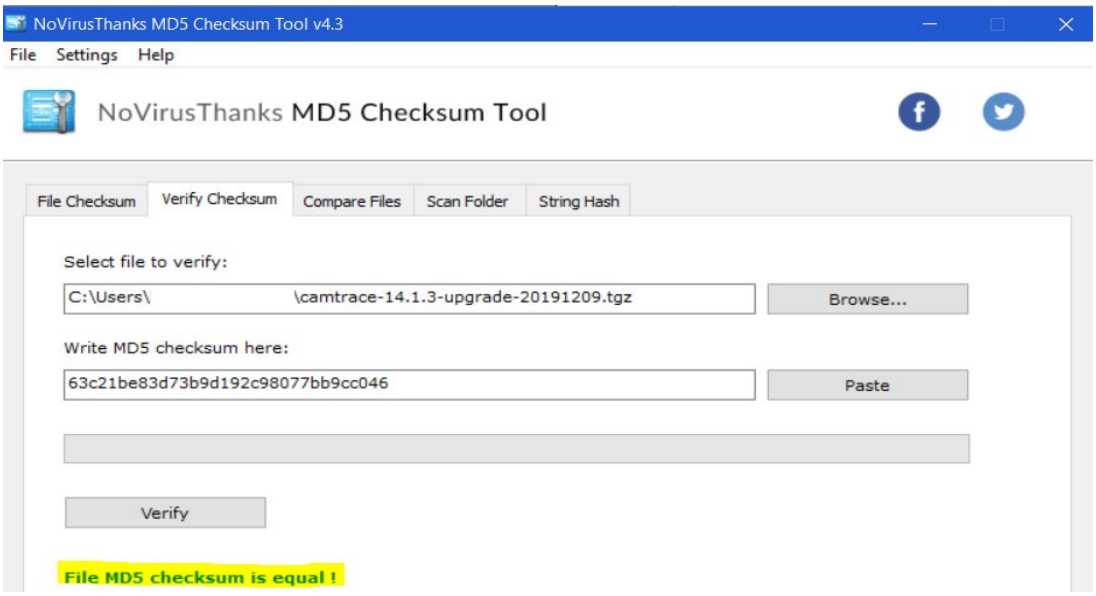
ISO images are located at the following path "http://camtrace_vms/Iso/V-**x**/" (where **x** is the CamTrace version number).

Download the ISO file and the MD5 checksum.

1.3 Downloading a software to create the bootable USB drive

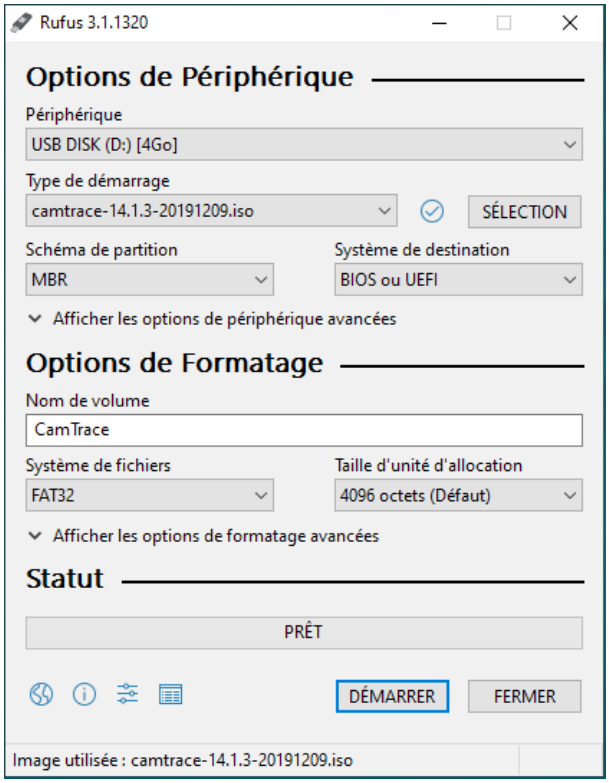
Download a software to create the bootable USB flash drive (for example : Rufus).

Important : Check with one of the many MD5 utilities (for example: "MD5 Checksum Tool"), that the ISO distribution you downloaded is not corrupted (see in yellow on the capture below) :



1.4 Creating the bootable USB drive

Launch the software (for example : Rufus) ; you must have administrator rights on your computer. Choose the USB key in the device list.



Warning: ISO burning will erased all data stored in the USB key.

Chose the ISO image (see Downloading the ISO image).

Then start the burning with the options shown on the screenshot above.

2 Preparing the installation

2.1 Compatible hardware

Make sure you have compatible hardware before starting the installation from the USB flash drive.

CamTrace is installed on a server PC with the following minimum requirements:

- a x86 64bits 3 GHz processor,
- 4 GB RAM,
- a 128GB (or more) hard disk for the OS (preferably : use SSD),
- An independent data disk (Camtrace recommend using a separate disk for data),
- a VGA card capable of displaying a resolution of 1024x768. CUDA compatible Nvidia preferably,
- a USB port (for installation),
- a gigabit Ethernet network port; (two recommended).

A keyboard and monitor connected to the server are required for installation. A mouse is also recommended but not required.

It is also possible to install a CamTrace Server on a Virtual Machine. Please read our manual « Installing CamTrace on virtual machine ».

Important : If you are updating a CamTrace server, you might need to change the motherboard battery and/or update BIOS firmware.

2.2 BIOS SETTINGS

Important : the BIOS must be on time.

2.2.1 Selecting the BIOS type

The CamTrace installation procedure is intended for UEFI BIOS. If your server offers the choice between a UEFI BIOS and legacy BIOS, always choose the UEFI.

Note : If you try to install CamTrace on an old motherboard with a legacy BIOS, the system not reboot after installation. However, there is a procedure for installing CamTrace on older hardware. To do this it will be necessary to reboot with the USB key in "Live CD" mode and run a script called "Bootloader Install" see the Using the LiveCD mode chapter.

2.2.2 Boot order

In order for your server to boot from the USB key, it may be necessary to change the boot order. Some motherboards allow you to display a boot menu at boot time (without entering the BIOS). Refer to your server's documentation to make proper configuration changes.

2.2.3 Precautions in case of multiple disks

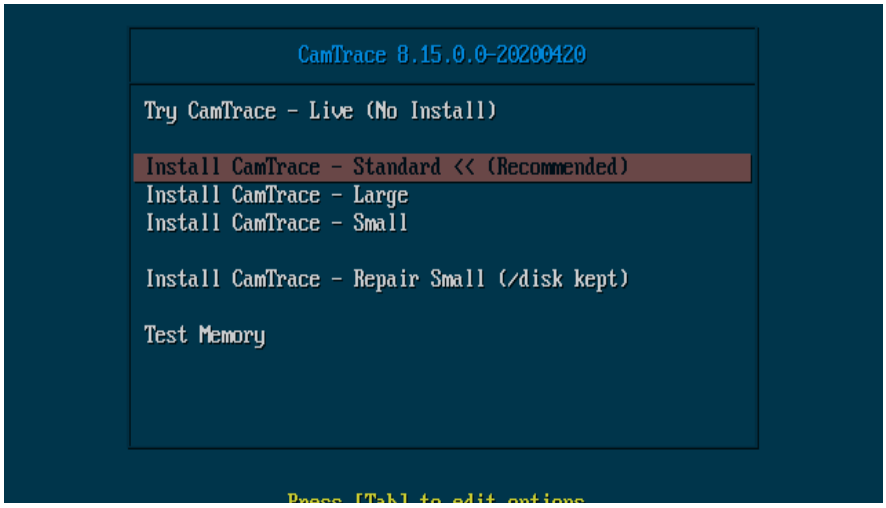
If all the disks of your server are on the same disk controller, it is preferable to put the disk intended to be the OS disk in the first position (visible at the BIOS level).

Similarly, if you have several controllers, make sure to put the OS disk on the first controller (in first position).

3 Installation

3.1 Charging the USB key

After connecting the various elements (keyboard, screen, power supply, etc.) and configuring your BIOS if necessary, insert the "CamTrace" USB key into a USB port on your server and boot it electrically. After a few moments, you should have a display similar to this one :



- **Try CamTrace** : "Live CD" mode, will not be installed. It runs using RAM. This mode also indicates if your hardware is compatible with CamTrace : if CamTrace is running, it means that the hardware you are using should be compatible.

- **Install CamTrace Standard** : recommended if the OS disk is independent of the data disks. This is the standard installation mode (recommended).

- **Install CamTrace Large** : recommended if the OS disk is independent of data disk(s) and has a capacity greater than 250 gigabytes.

- **Install CamTrace Small** : Recommended for a single disk (OS and data on the same disk) this option allows the recovery of records in case of system corruption.

- **Install CamTrace - Repair Small** : allows the system to be reinstalled without destroying data if the system was previously installed in Small.

Note : When the system is installed on a disk that is independent of the data disks, reinstallation of the system is possible without losing recordings data.

At this stage, several cases may arise depending on the number of disks present on the computer and the detection of old installations on these disks.
Interface will vary according to these different cases.

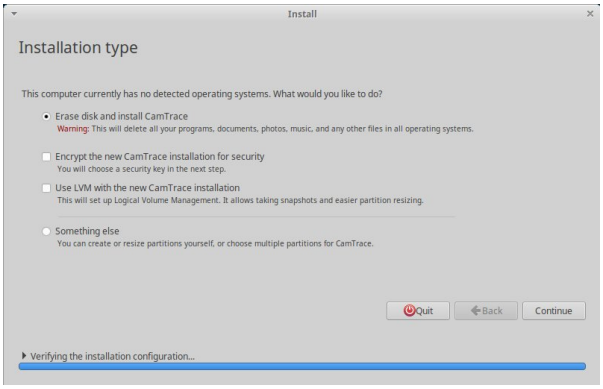
3.2 CHOOSING THE SYSTEM DISK AND TYPE OF INSTALLATION

3.2.1 Case of a single disk

This is the simplest case, where you go directly to the installation on disk, preceded by the choice of time zone and keyboard. See Installation on disk.

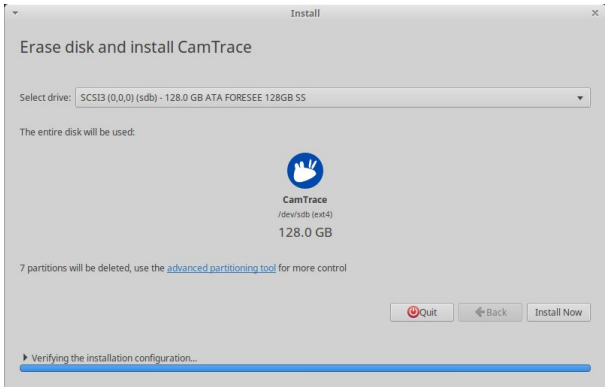
3.2.2 Case of several disks with no OS installed

The CamTrace installation software detects the presence of more than one hard disk on the server, and it informs you that no known OS has been detected on the disks.



Always make sure to choose "**Erase disk and install CamTrace**". This procedure will erase any data on the disk you select as the OS disk and install CamTrace.

After clicking on "continue" the installation software will propose you to choose the disk on which the Linux OS will be installed (called "OS disk").



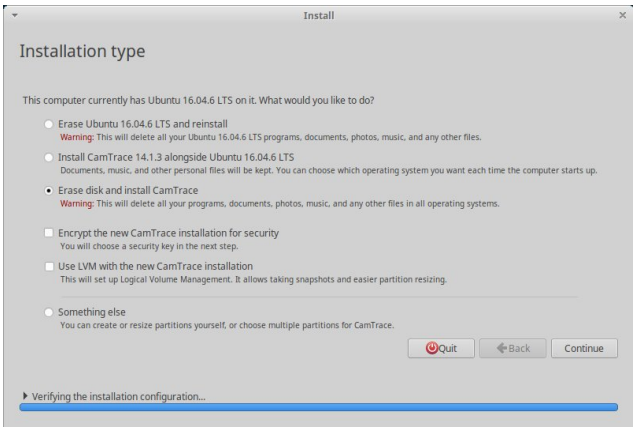
It is advisable to choose the smallest disk in size (minimum size for the OS disk: 128 GB) or, if the disks are all identical, the first one in the list.

Many CamTrace installations have an SSD disk that will be the OS disk (or multiple) disk(s) for data.

Then refer to Installation on disk.

3.2.3 Disk cases with OS detection

In the event that the CamTrace installation software detects the presence of another OS on the target disk (which may be a previous installation of CamTrace), it offers several options : Always make sure to choose "**Erase disk and install CamTrace**".



This option will install the version of CamTrace that you have loaded from the USB key.

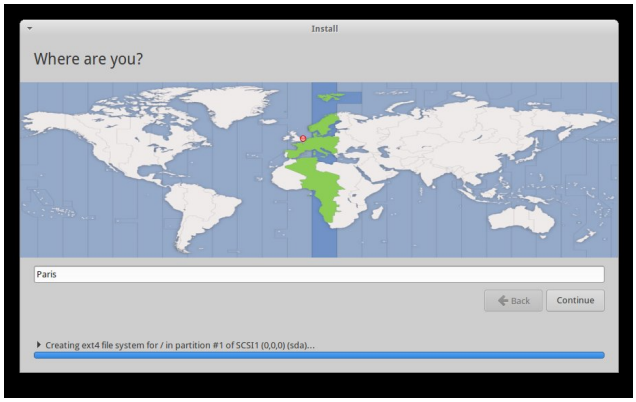
Choosing this option will not delete records from your data disks if these disks (physical or RAID volumes) are independent of the OS disk.

> *Note : In the case of a re-installation on a server with only one disk, or a single RAID volume, the records will be deleted (except in the particular case of an installation in "Small" mode).*

Then refer to Installation on disk.

3.3 INSTALLATION ON DISK

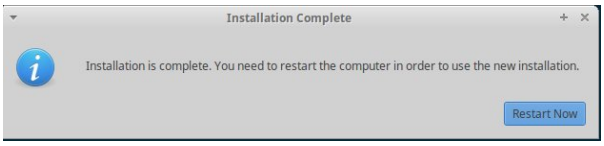
After selecting the type of installation, the server starts up and displays a first screen to select the time zone:



After selecting the zone, Confirm with "Continue". Then select your keyboard layout.

The rest of the installation is automatic and you should only see the following screen :

When the installation finishes, a last screen asks you to restart your server :



At this stage **do not remove** **the USB key from its port**, wait until the server has completed its shutdown cycle, **you will hear a beep or you will see the BIOS screen displayed.**

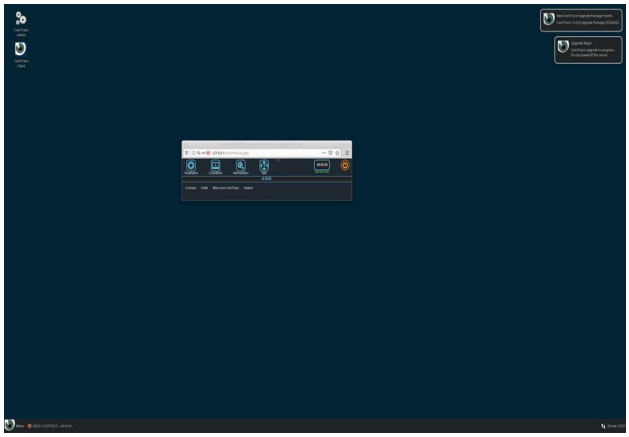
Note : If you remove the USB key too soon, your server will not be able to restart automatically, you will have to force the shutdown by holding down the "power" button.

When the server is rebooting, we recommend changing the boot order. Set the OS disk as Boot option n°1 (do not keep USB key as Boot option n°1).

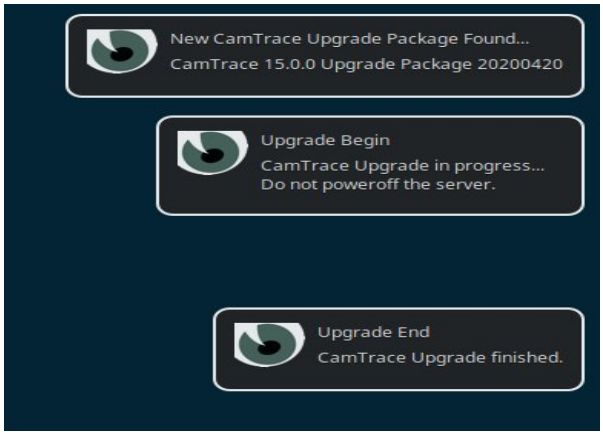
After restarting the server, a screen with the CamTrace logo will be displayed.

Note : If the server fails to reboot, check that the BIOS is set to UEFI mode and that the hard disk on which the OS was installed is configured as a bootable disk. If the server still fails to reboot or displays error messages from the bootloader grub, it may mean that the installation is unable to write to the boot sectors due to previous installations on this disk. In this case you must erase all the old partitions with the gparted utility in "Live CD" mode and then restart the installation, see the chapter Using the LiveCD mode.

The screen then displays the default user's desktop of "CamTrace User" (camuser) on which you are automatically logged in:



A series of updates will then take place on the server. Pop-ups on the main screen will inform you that this operation has been successfully completed.



DO NOT INTERRUPT, OR STOP THE SERVER BEFORE THE END OF THIS OPERATION.

Updates do not require internet access since the update files are already stored on the USB key.

Following this update operation, the server reboots in some cases.

→ **Your CamTrace server is now installed on the OS disk.**

The next step, if your server has more than one disk, will be to "mount" (logically connect) the data disks.

You will also need to add your licence key to your CamTrace (the licence information will determine the number of cameras supported and which functionnalities of the software you can use).

You can then refer to the '**QuickSetup Guide**' for the configuration of the video surveillance application.

3.4 LOGIN AND LICENSE ACCEPTANCE

Once CamTrace has been installed on the OS disk, you will see the CamTrace desktop, which will allow you to access the softwares and tools provided with the CamTrace Ubuntu distribution.

All available programs are accessible from the CamTrace icon at the bottom left of the taskbar.

Note that you are not a Ubuntu administrator. You are logged in as a "CamTrace User" user.

A shortcut named "CamTrace Admin" (gear icon) is located on your desktop. This shortcut opens the CamTrace administration interface.

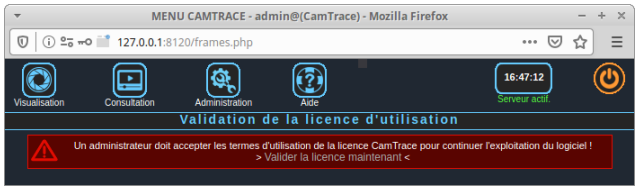
You will be able to manage the CamTrace server through a web interface. The window that you see is therefore the default web browser of the server -which is Firefox-. When you manager CamTrace from client workstations (Windows, MacOS or Linux), it is strongly recommended to use **Firefox in private mode** (you can also use Edge or Chrome in private mode).

Enter the name of the administrator: "**admin**"
and the default password: "**camtrace**".

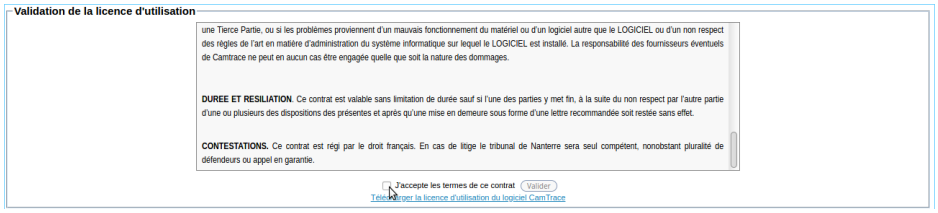
Note that this login will allow you to manage the CamTrace administration interface (it is not the Ubuntu's administrator password).

It is recommended to change the default password of the "admin" account immediately ("Manage" > "Users" page). Never connect to the Internet without first changing the default password.

Click on "Validate the license now" :



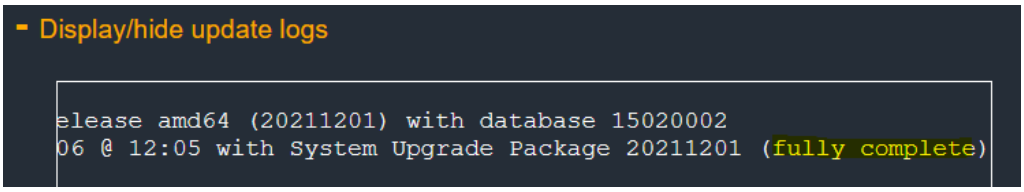
A pop-up window appears. You can accept the terms of the license after scrolling all the text (use scrollbar on the right side) :



3.5 Post-installation check in the Update Logs

To check if the CamTrace installation has been completed properly, please click on the shortcut "CamTrace Admin", then "Help" > "Camtrace Update".

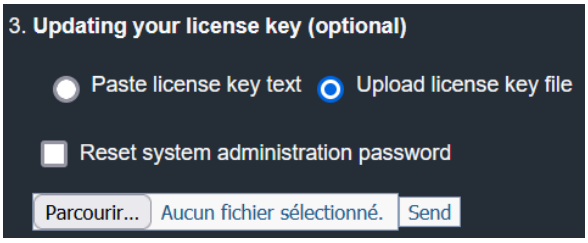
A pop-up window opens : click on "+ Show/hide update log" and check if the text "**fully complete**" is present (see below) :



If the text "fully complete" is missing : the installation was not successful (contact CamTrace Support team for assistance).

3.6 Adding the licence key

In "Help" and then "Update CamTrace" you can add your licence key in the "Updating your license key (optional)" section:

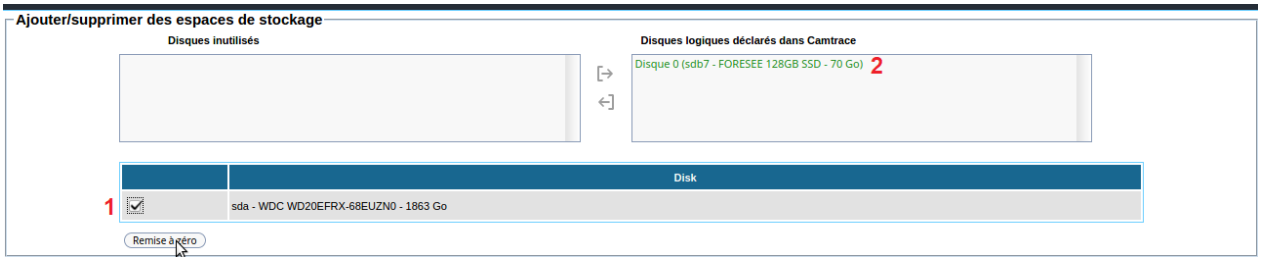


Please check that CamTrace is at the right date and time (see Web access & time server) before adding the license key (also make sure that **the BIOS date and time is correct**).

3.7 Disks

3.7.1 Mounting the disks

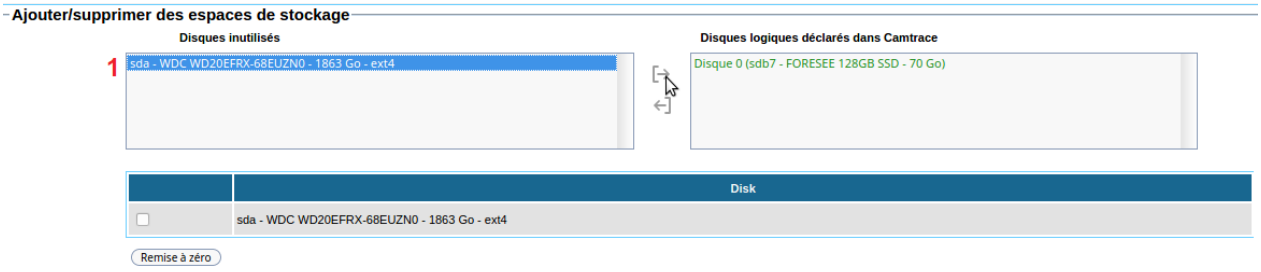
Click on "Administration" > "System" :



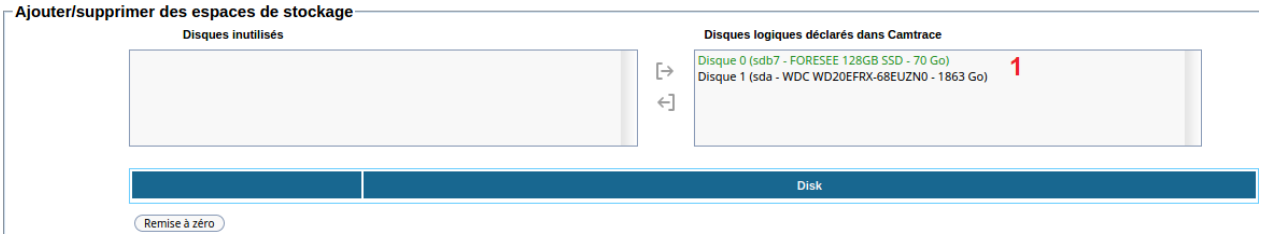
A page appears with the available disks and the OS disk. Here, we have a 2 TB disk (see **1** on screenshot above). OS disk is already mounted (see **2** above).

Select the disk(s) you want to use and click on the "Reset" button.
This will erase data on the selected disks. **This "Reset" button is very important** to make sure that CamTrace will be able to use the entirety of the disk(s).

The disks you have reset now appear in the "Unused disks" column (see **1** below).
You need to mount your data disk(s) using the arrow **[->** to make them appear in the "Logical disks declared in Camtrace" column.



After mounting, you should obtain the interface below, with the list of your data disk(s) on the right side (see **1** below) :



3.7.2 Changing the system disk

If you want to change your system disk, follow the procedure described below. The procedure is different if you want to keep your recordings (see With backup of recordings) or if you do not want to keep them (see Without backup of recordings).

3.7.2.1 If you wish to keep your records

- Export your configuration by clicking on "Administration" and then "Save configuration" (you should not have to restore your configuration; but it is always better to export just in case),
- Reinstall the CamTrace operating system on your system disk (**by reinstalling the exact same OS version**),
- In "Administration" > "System", you can see the data disks in the "Unused disks" column. Mount the disks: a pop-up appears (because the system will have found existing records): click "Restore". The disk is then mounted, and you should have recovered your records ; if no, go to "Administration" > "Disk usage", select every cameras and click "Verify".

3.7.2.2 Without records (system will be reset)

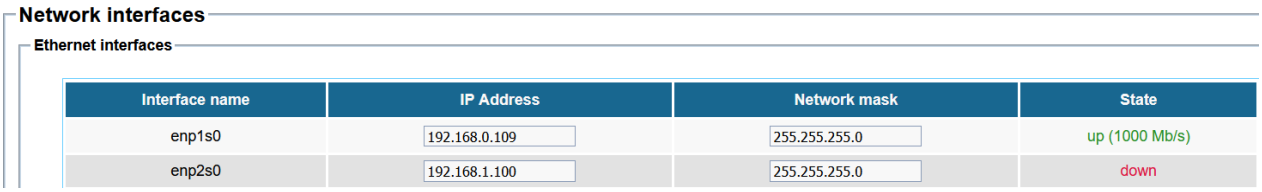
- Export your configuration by clicking on "Administration" and then "Save configuration" (you should not have to restore your configuration; but it is always better to export just in case),
- Reinstall the CamTrace operating system on your system disk (**by reinstalling the exact same OS version**),
- In "Administration" → "System", you can see the data disks in the "Unused disks" column. Reformat (to reset your disks) then mount the disks.

3.7.3 Adding a new disk

To add one or more new disk(s) to a CamTrace server, they must be physically connected to the machine : direct SATA connection or adding a disk array to a RAID controller.
This requires the server to be stopped and restarted. When the new disks are seen by the system, proceed as described in the Mounting the disks chapter.

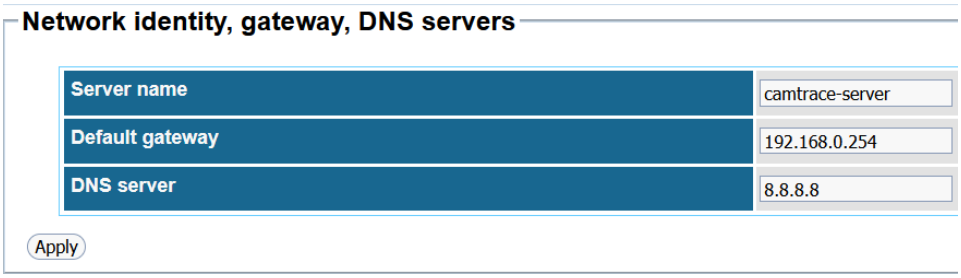
3.8 Web access & time server

In the "Network interfaces" section, check that at least one network interface is "up":



Important : Verify that the network speed ("**1000 Mb/s**" on the screenshot above) is adapted to your needs and the number of cameras to be installed.

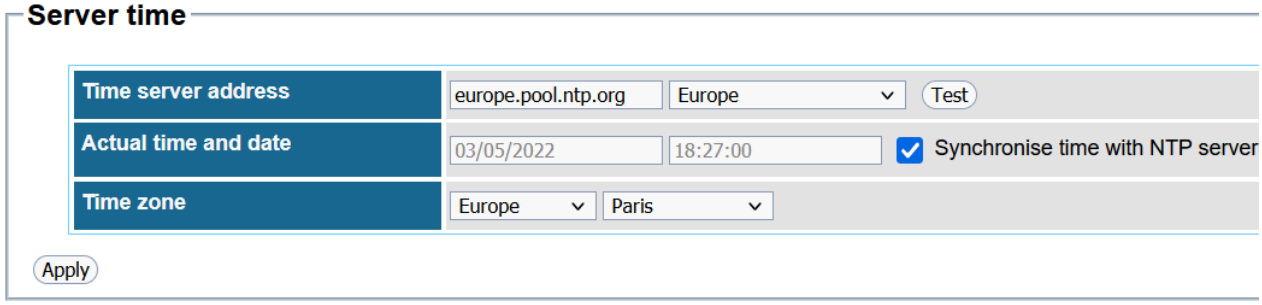
To access the internet (if the architecture of your network allows it), you must indicate the default gateway of the internet router :



Enter the domain name system. You can type "8.8.8.8" to use the Google Public DNS.

To make sure that Internet access is OK, go to the "Network tools" section (bottom of the page), and ping "www.camtrace.com".

To add the time server, specify "europe.pool.ntp.org" :



Click on "Test".

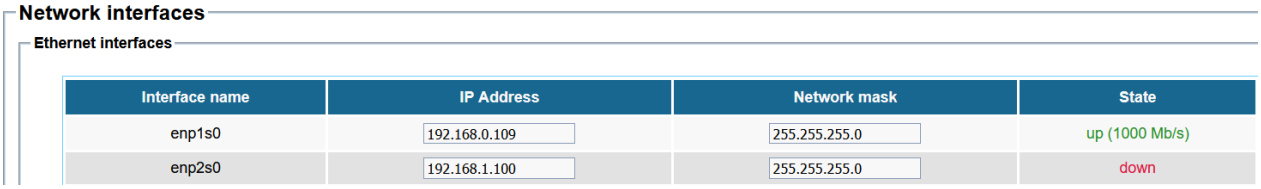
If the test is successful, you will get the following message :

The server responded

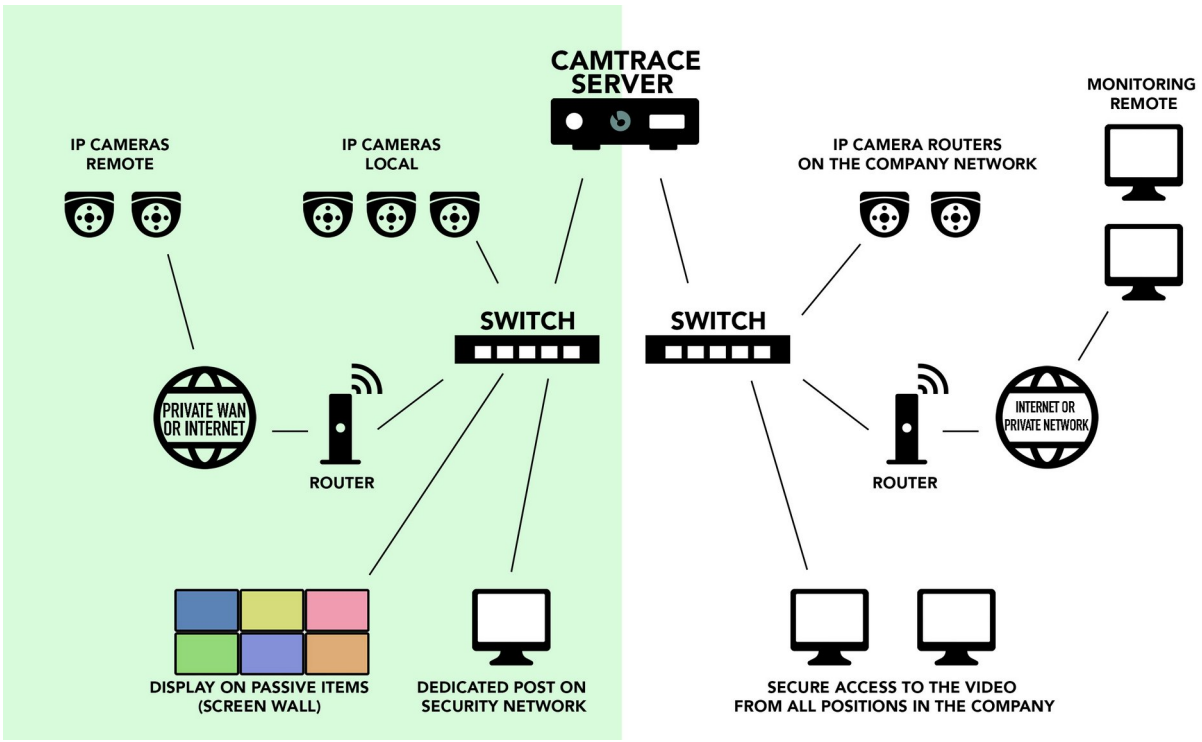
Then check the "Synchronize with time server" box, and click on "Apply".

3.9 NETWORK CONFIGURATION

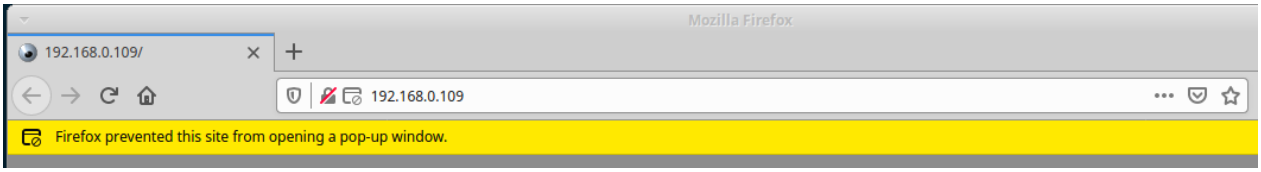
By default, the specified IP address is "192.168.0.100". In the example below, we gave the address "192.168.0.109" to our Camtrace server, and all our cameras were declared on the address range "192.168.0.x".



In our example, the rest of the corporate network is on address range "192.168.1.x". We recommend, if it is possible, to have two networks : one camera network and one company network (see below) :



To test if you have access to the CamTrace server from a PC, try to ping the server or use **Firefox** in **private browsing** and enter (in the address bar) the IP address chosen for the CamTrace server :

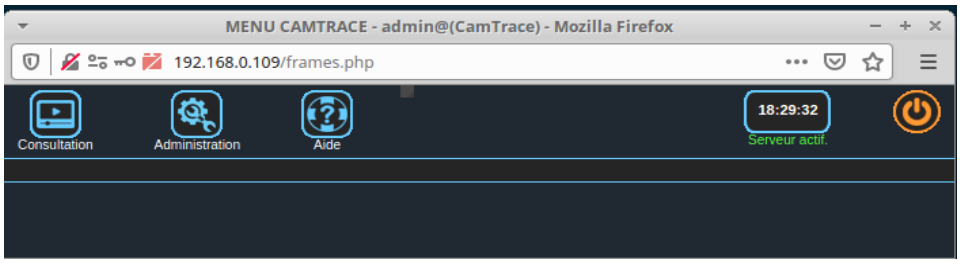


Important : It is recommended **to connect from the camera network** (192.168.0.109 in our example) to configure.

Pop-ups must be enabled in the web browser settings. If pop-ups have been activated, a CamTrace pop-up appears :

*Note : As a reminder, the default login is "**admin**", and the password is "**camtrace**". Choose the language, and click "Enter".*

If connection OK :



→ Your CamTrace is now installed properly. Please refer to the "QuickSetup Guide" to continue the installation of CamTrace.

4 Saving and loading a configuration

The configuration backup allows the definitions and settings of cameras, groups, plans, users, profiles, rights, scenarios, excluding image files, to be saved for restoration purposes.

A configuration is loaded on a blank server without any recordings.

It can be loaded on a more recent version of CamTrace than the one from which the backup was made. In particular, it is possible to import a server configuration in CamTrace 8.15.0.x or 8.14.1.x from a version 6/7 server.

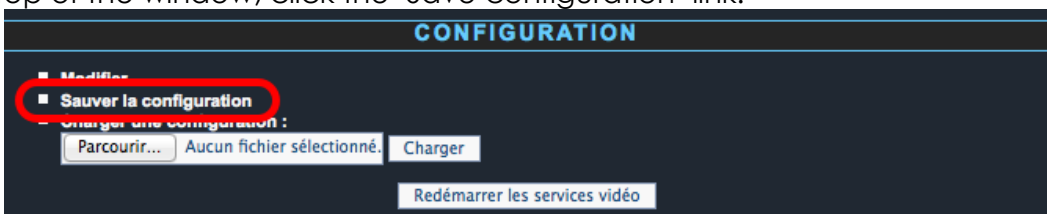
Configuration restoration is therefore intended for :
- a repaired machine if, because of a hardware failure, in particular of the disks, all the recordings have been lost,
- a new blank machine in case of license migration to new hardware.

Note: Never load a configuration on a system being repaired. This action would definitively destroy access to the image files.

4.1 Configuration backup procedure.

To save your old configuration, log on as an administrator on the administration web interface of your server and then go to the "Configuration" section.

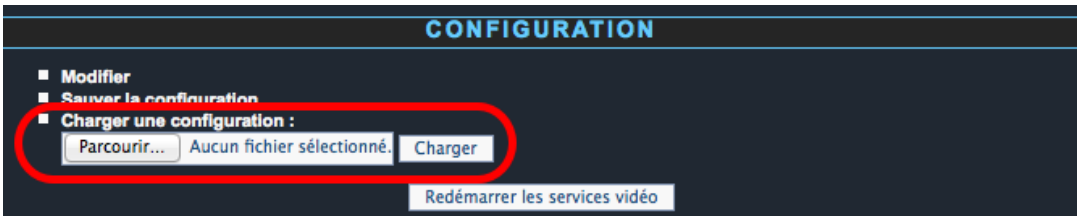
At the top of the window, click the "Save configuration" link.



Save the Zip file on your client workstation for later use.

4.2 LOADING PROCEDURE

After installing your CamTrace, go to the administration interface as administrator. Follow the "Configuration" link, then click on the "Browse..." button below the "Load Configuration" link.



You will need to select the .zip backup file that you have previously saved from your old version of CamTrace.

If you reload the configuration for an older version of CamTrace, the settings for features that appeared after you saved will be set to defaults or ignored.

Then click 'Load' to apply the transferable configuration settings.

Note: **A configuration should never be loaded on a system with recordings. Before reloading a configuration it is necessary to empty all your records from the data disks**.

5 Repairing a CamTrace server and retrieving records.

If your CamTrace server requires a complete re-installation of the OS part, for example if the system disk is damaged, the CamTrace system can be reinstalled from the USB key without losing data, **if** the data partition(s) are intact.

The CamTrace database is operational on the OS disk. This database contains :
- the indexes to the image files (changing part),
- Definitions and parameters concerning cameras, groups, plans, users, profiles, rights, scenarios (fixed part).

The entire database including the fixed part and the changing part is automatically saved every hour on the data disk(s).
In the event of a re-installation of the CamTrace OS part, the entire database saved on the data disk(s) will be restored to the OS disk.

The fixed part can be saved by the user in a configuration file, see Saving and loading a configuration. This configuration reload procedure should not be used if the OS disk is changed. It is meant to be used for a machine with no data because it loads the entire database without index to images (image database is reset).

Very important : You need to reinstall the **same version** of CamTrace that was working before. You will need to prepare a bootable USB key that contains this version.

5.1 Single-disk server

Only an installation in "Small" mode allows this possibility. You should try to reinstall the OS on a disk that no longer boots and that contains data, hoping that only the boot sectors or the system part have been damaged.

Carry out the installation as described in the chapter Installation
In the first menu choose: "Install CamTrace - Repair Small (/disk kept)".

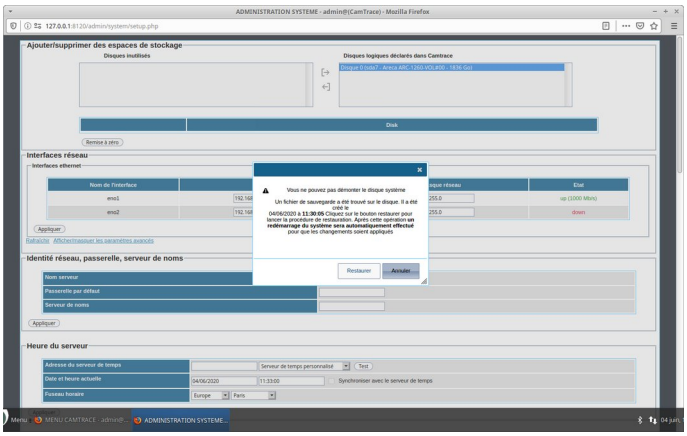
Continue the installation as described.
When the system has updated and rebooted, go to the administration web interface by clicking on the "CamTrace Admin" icon.

In the web banner go to "Administration" and then "System".

In the "Logical disks declared in CamTrace" section, you should see a line corresponding to the single disk of this server.

You must then double click on the disk to start recovery.

You will see a pop-up message telling you that the installation procedure has detected a backup of the database in the /disk directory. Then click on the "Restore" button.
The system will then reboot one last time.



5.2 MULTI-DISK SERVER

This procedure can be used to change a damaged OS disk. You must reload the OS on the new disk and then find all the records present on the data disk(s).

The first two steps consist of :
- physically change the defective disk on the machine
- burn a bootable USB key **in the same version** of CamTrace as the one previously installed. Example: If the latest version installed on your server is version "8.14.1.2", recovery of your system and recordings will only be possible if you reinstall a version "8.14.1.2".

Carry out the installation as described in the chapter Installation
In the first menu choose: "Install CamTrace - Standard" or "Install CamTrace - Large" depending on the size of your OS disk.
Continue the installation as described in the chapter Choosing the system disk and type of installation
If the new system disk is blank, you are in this case : Case of several disks with no OS installed
If the new system disk already had an operating system installed you are in this case : Disk cases with OS detection

In both cases, you will designate the new OS disk during the installation procedure. Then click on "Erase disk and install CamTrace".

Caution: Do not choose one of the disks containing data as the new OS disk.
Note: The OS disk is usually the smallest disk in size or the first disk in the list shown when they are all identical.

The USB key installation procedure preserves the data on a multi-disk server. The only condition is that the version reinstalled on the OS disk is identical to the version that was installed.

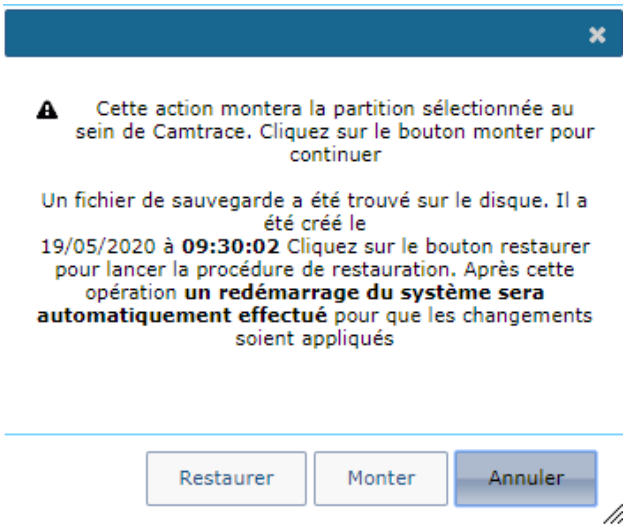
Caution: As stated above, never reload a configuration backup if you wish to preserve the records.

Then proceed with the installation as described in: Installation on the disk Installation sur le disque

The last step is to mount the data disks. Proceed as described in the chapter: Mounting the disks

At the end of this procedure, when the data disk is mounted, you will be asked to start the restoration procedure.

Reminder : The restoration of recordings is only possible if you have reinstalled the same version as the one previously installed.



Click on **Restaure**.

6 Using the LiveCD mode

The start menu of the USB key offers the option to start your server in LiveCD mode. This menu can be particularly useful if you encounter errors with your installation (example: black screen when launching the OS).

6.1 Starting the LiveCD mode

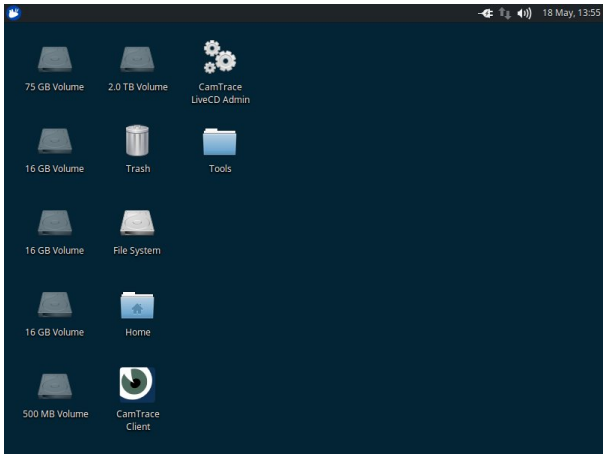
In LiveCD mode CamTrace runs in your computer's RAM, it is not installed on the computer disk.

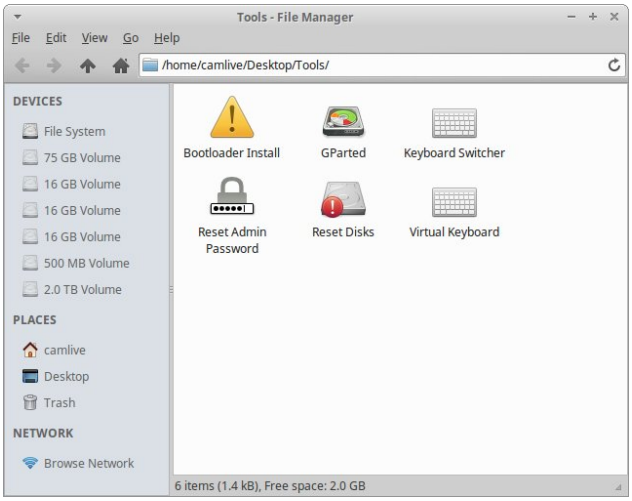
This LiveCD mode allows :

- to run CamTrace without first installing it on the server, for demonstration or hardware compatibility testing.
- to operate on a CamTrace server for curative maintenance operations;
- to prepare a server before installing CamTrace (for example to reset disks used by an older version of CamTrace),
- to force the boot loader on a PC without the UEFI bios

To start in LiveCD mode, select the first entry in the boot menu by highlighting it and press Enter.

After the boot sequence, the LiveCD mode desktop appears:





The "Tools" folder includes the following utilities shown opposite.

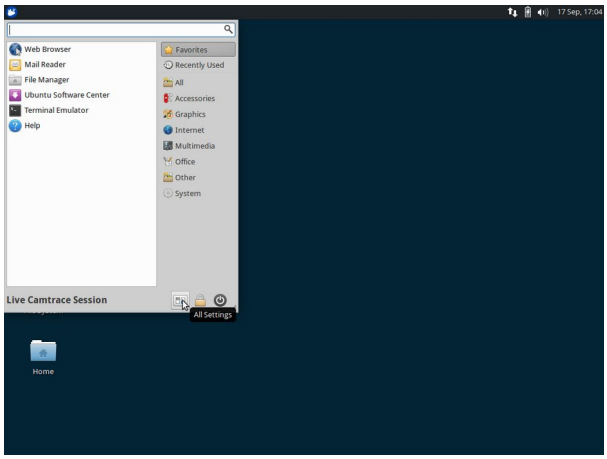
Bootloader Install : allows to force the boot (reboot required) on a server that does not have UEFI bios.
Just double click on the icon and choose the boot disk (proposed by default).

Reset Disks : allows to reset a disk which had been formatted with an old CamTrace OS using FreeBSD. **Caution**: this procedure destroys all the data on your FreeBSD disks.

GParted makes it possible to operate on the partitions of a disk. In practice this utility will be used to erase the boot data of a OS disk.

6.2 Changing the Live CD mode keyboard

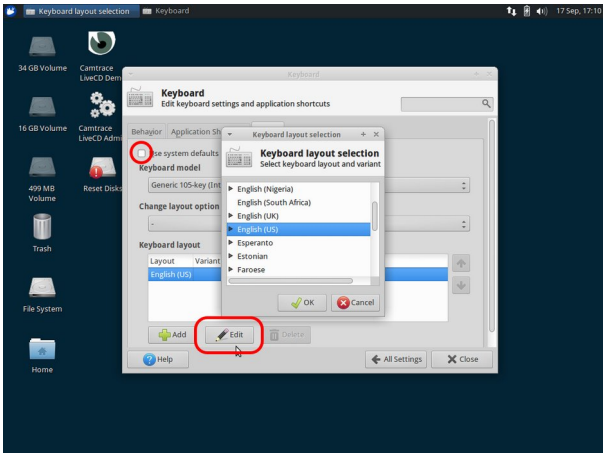
By default, LiveCD mode uses a US keyboard. To change the keyboard layout, you can use the following procedure:



Click on the blue and white icon in the top left corner of the desktop.

In the menu that appears, click on the "settings" icon at the bottom right:

In the menu that appears, select "Keyboard" :



In the "Keyboard" settings, go to the "Layout" tab, uncheck the "Use system default" box and then click on the "Edit" button at the bottom of the screen. You can choose the keyboard layout that corresponds to your hardware.

6.3 GPARTED UTILITY, DELETING PARTITIONS ON A OS DISK

The *gparted* utility allows you to view and edit the partitions on a disk. To erase all the data on a disk before reusing it as a OS disk, it is necessary to erase these partitions. This is especially necessary if the disk has already hosted an OS.

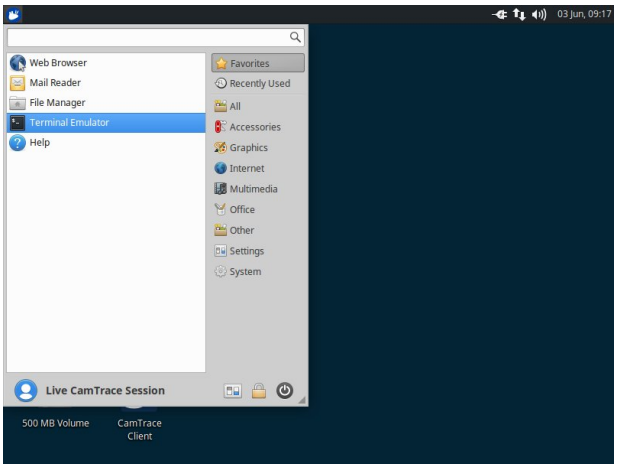
Another solution is to use the formatting tools of disk manufacturers to perform a true disk reset.

To view the partitions you can use the gparted utility as it appears in the "tools" folder. Once the utility is open you can access the different disks by clicking on "*gparted*" and then on "*devices*".

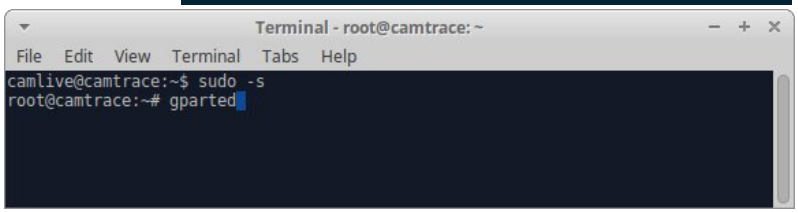
To operate on the partitions, it is necessary to launch *gparted* in *superuser* mode.

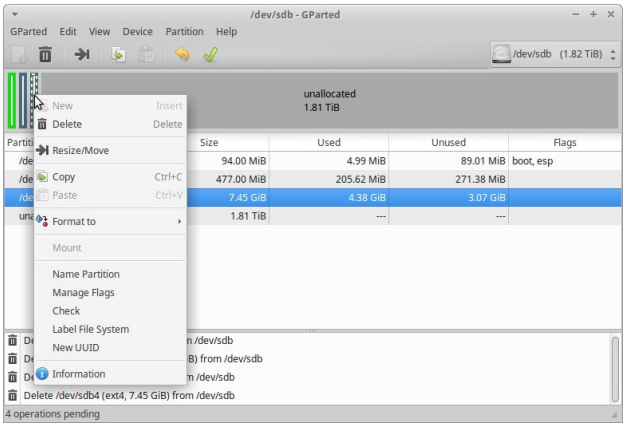
To do this, go to the terminal emulation.

Click on the blue and white icon at the top left of the LiveCD desktop and choose "Terminal Emulation" from the menu.



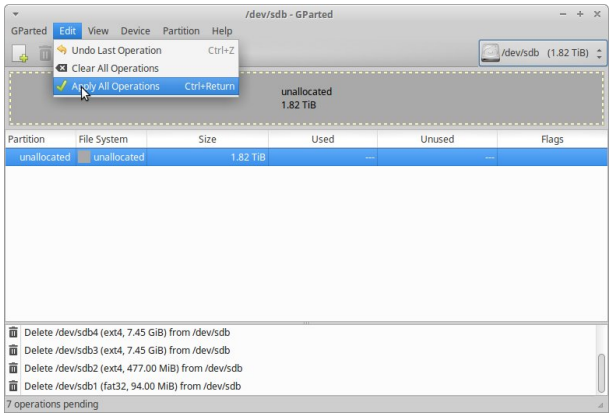
In the terminal, type the command "sudo -s" to switch to superuser.
Then run *gparted* from the command line:



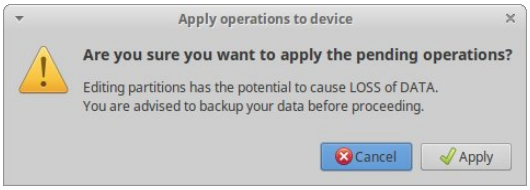


Choose the partitions to be deleted starting with the last ones.

Usually all partitions are deleted to prepare the disk for a new installation.



Once all the partitions have been erased, you must validate. Go to "Edit" and then to "Apply all operations".



The system asks for a final confirmation: click on "Apply".

For further information :

www.camtrace.com