Mageia

The tool to install Mageia with remote repositories

It was written by volunteers in their free time. Please contact the Documentation Team [https://wiki.mageia.org/en/Documentation_team], if you would like to help improve this manual.

Mageia

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Installing Mageia using a Tiny Boot Image

1. ####

1.1. ##### ##### #####

1.1.1. #####

These minimal ISO's contain:

- less than 100 MB and are convenient if bandwidth is too low to download a full DVD, or if you have a PC without a DVD drive or unable to boot from a USB stick.
- no more than that which is needed to a) start the `DrakX` installer and b) find `DrakX-installer-stage2` and other packages that are needed to continue and complete the install.

The required source packages may be on a PC hard disk, a local drive, a local network or on the Internet.

Installation via encrypted wifi or bluetooth is not supported.

1.1.2. Availability

####:

- **netinstall.iso** For those who prefer not to use non-free software, this ISO contains only free software.
- **netinstall-nonfree.iso** This ISO additionally includes proprietary device drivers, which may be required for your network device, disk controller, etc.

Both versions are available in the form of separate 32-bit and 64-bit ISO's. See here: https://www.mageia.org/downloads/

1.1.3. Preparation

After downloading the image, burn it to a CD/DVD or, if you prefer to put it on a USB stick, follow the instructions here: https://wiki.mageia.org/en/Installation_Media#Dump_Mageia_ISOs_on_an_USB_stick

1.2. Installation Stages

The installation is carried out in two stages:

- **Stage 1** This is the pre-Installation stage. You will need to provide the method and details for accessing the medium containing the files to be used for the installation. If the method involves a server, then the network connection will be activated.
- **Stage 2** This is the actual Installation stage, which will automatically commence once a connection to the installer files has been established.

During Stage 1, nothing will be written to your Hard Disk, so it is safe to quit at any point during Stage 1 if you wish. You can do so by pressing **Ctrl**+**Alt**+**Del**.

You can use **Alt**+**F3** to read the logs and **Alt**+**F1** to return to the installer screen.

Unlike when installing from DVD or LiveCD, during the first part of the installation (**Stage 1**), you will be asked to type things. During this stage, your keyboard will operate as per an American keyboard [https://en.wikipedia.org/wiki/Keyboard_layout#United_States] layout. This can be very confusing when you need to type names and paths.

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2.1.

The particular *Welcome Screen* that you will see when booting with the NetInstall media depends on whether you are booting on a BIOS or UEFI system. See the following two screenshots:

1 ####. BIOS Welcome Screen

When booting up, you can choose to read the advanced help by pressing **F2** and return to the installer screen by pressing **F1**. Otherwise, the boot will continue with default settings.

2 ####. UEFI Welcome Screen

- Use the arrow keys to highlight *Start Mageia Install* and then press **Enter**.

For both BIOS and UEFI systems, you will then see a pop-up notification saying that USB devices are being detected:
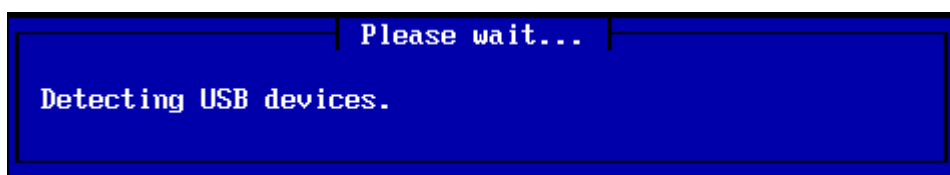
2.2. Installation Method

You can now choose an installation method via CDROM/HDD or Server (NFS, FTP or HTTP).

You also have the option to load third-party modules at this point.
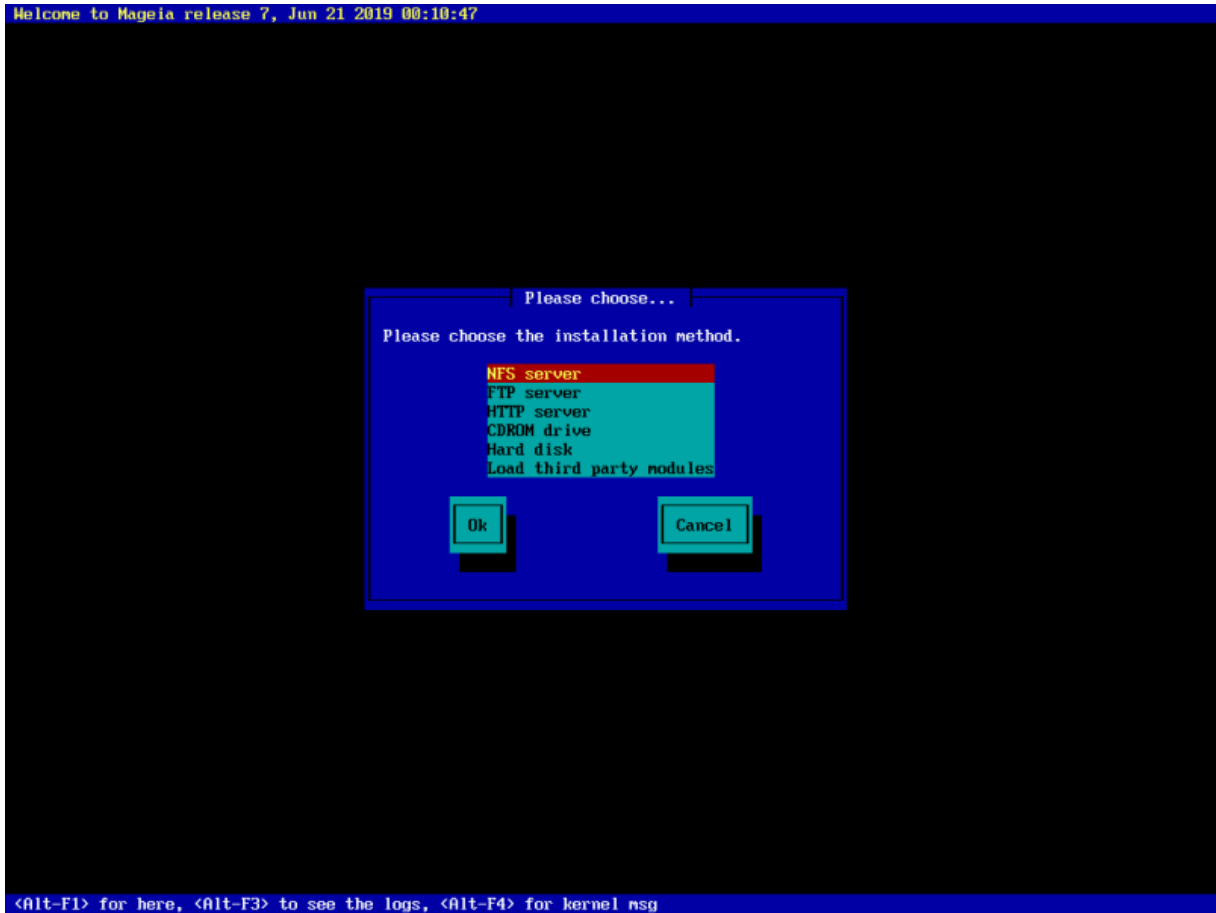
- Move up or down the list using the arrow keys until the appropriate method of installation is highlighted.

- Press the **Tab** key until *Ok* is highlighted and then press **Enter**.

2.2.1.

- If you don't know what to choose for a Network Installation, choose *FTP server*.

- On an enterprise network, FTP and rsync may be blocked, so using *HTTP server* is a good choice in this case.

After choosing any of the server options you will automatically proceed to the *Network Connection* section.

2.2.2. CDROM/HDD

If you choose to install from either a CDROM or hard disk (or USB stick), a scan for storage devices will be performed:
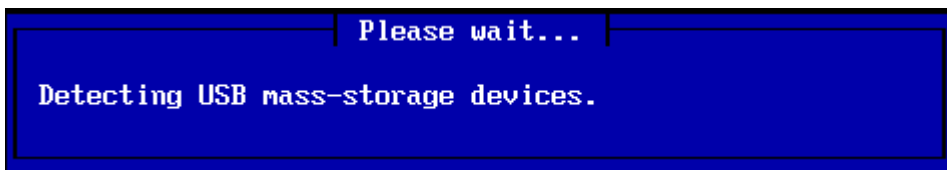
- First, select the relevant hard drive (or USB stick)

- Followed by the relevant partition
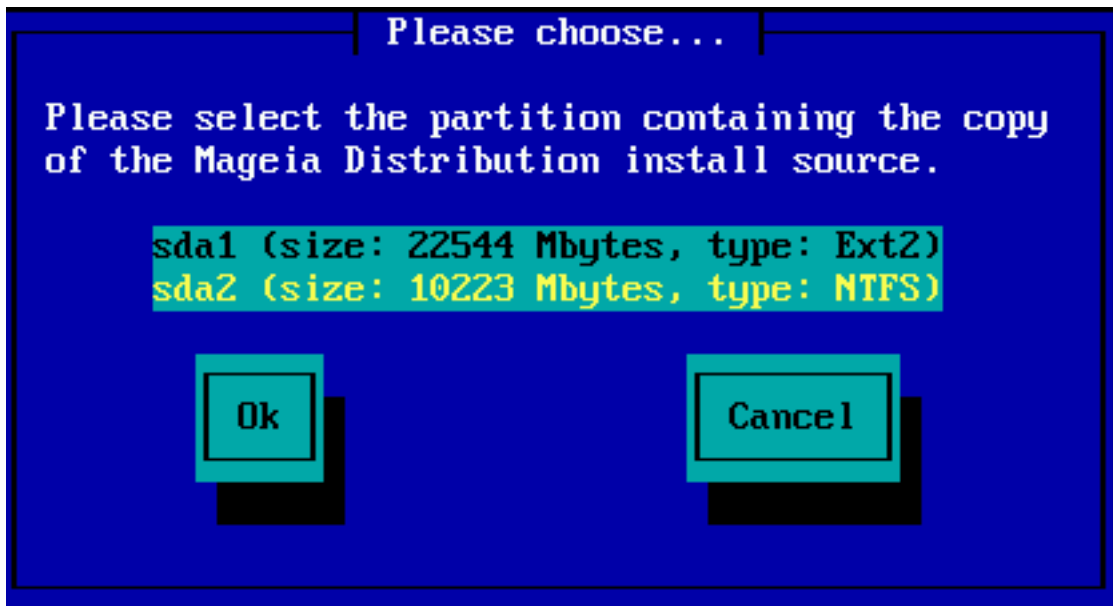
- Then specify the directory or the file name of the ISO

Leaving this open, or using the directory is easier, because the installer then presents you with a list of directories and files from which you can make your selection using the up and down arrows, as seen in the second of the following images.
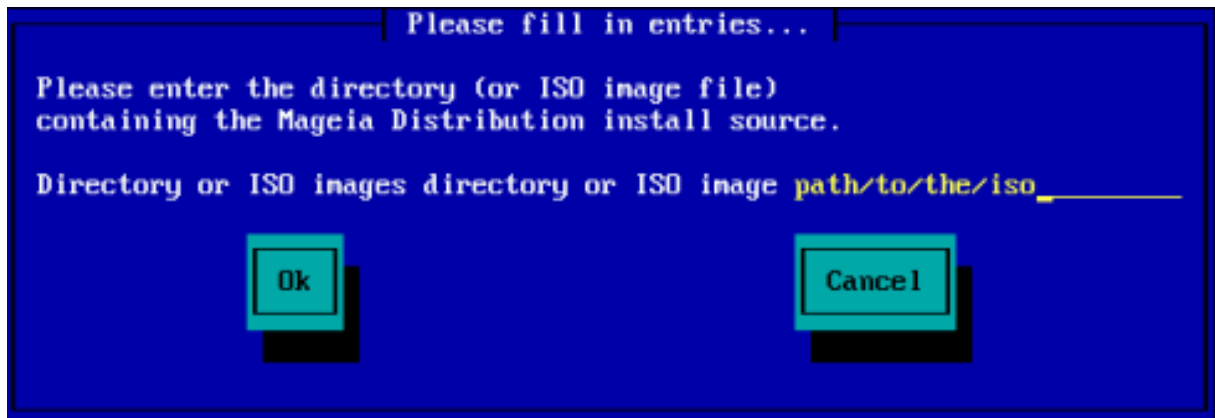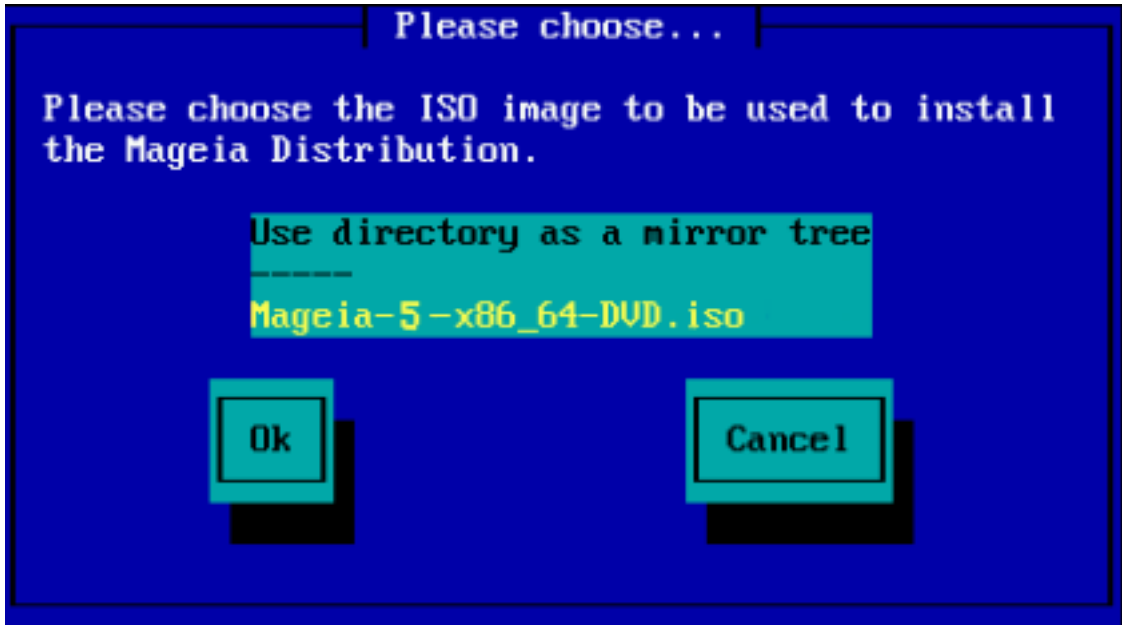
Once the information has been provided for the location of the ISO, either on CDROM or HDD, you will automatically proceed to *Stage 2* (the actual installation stage).

2.2.3. Load Third-Party Modules

If you wish to *Load third-party modules*, then you will be asked for the location of the directory containing the modules:

2.3. Network Connection

2.3.1. Connection Device

If you chose any of the server options at the *Installation Method* step, you will then be asked to choose a network device:
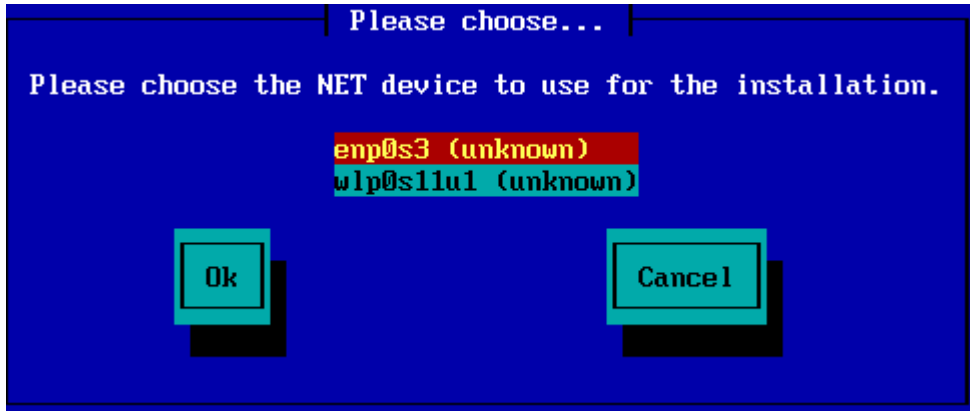
2.3.2. Connection Type

Now you need to choose whether the network device will use a DHCP, Static or ADSL connection:
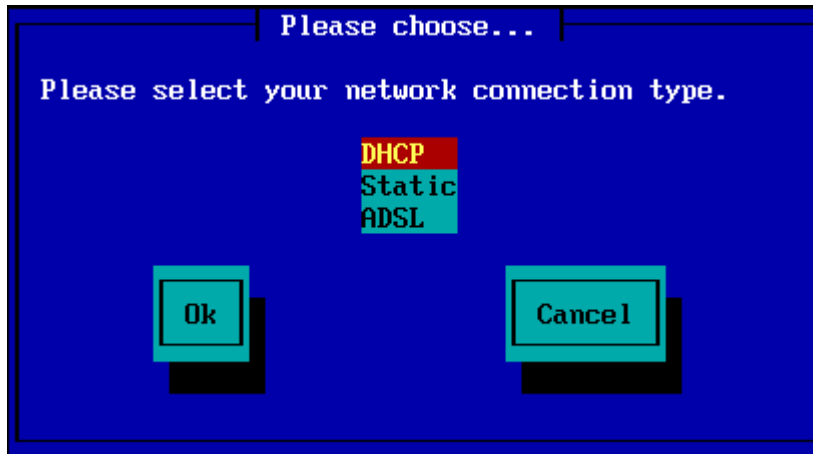
If you are unsure which option is suitable, then you should probably accept the default option (DHCP).

2.3.3. Host/Domain Names

If necessary, you can now supply your Host and Domain names:
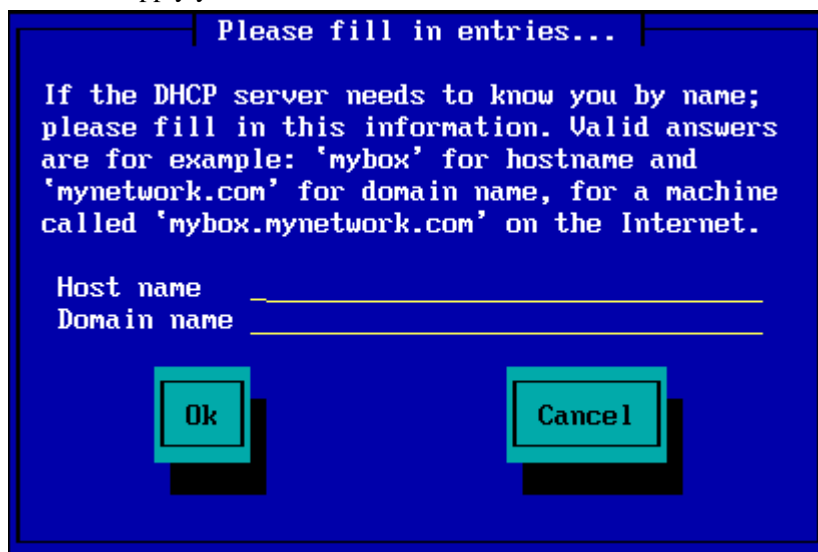
- If you are unsure what this means then you can just leave the fields blank, highlight *Ok* and press **Enter** to proceed. The network connection will now be activated.

If you are using either FTP or HTTP, you will automatically proceed to the *Mirrors* section

If you are using NFS, you will be asked for the NFS server name and the directory containing the Mageia distribution:
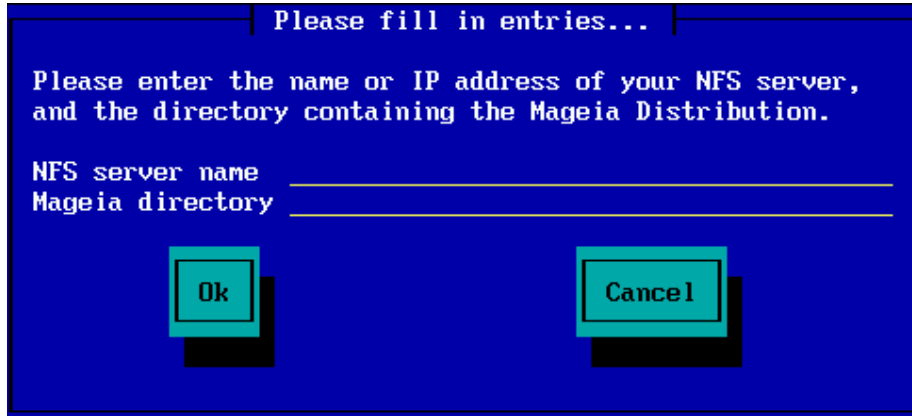
After entering the NFS details, you will automatically proceed to *Stage 2* (the actual installation stage).

2.4. Mirrors

If using FTP or HTTP, you now have to specify a mirror to use. This can be done manually or by choosing from a list
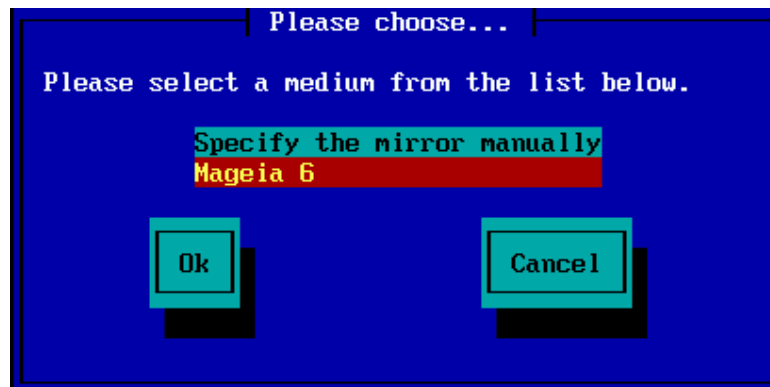
2.4.1. Specify Manually

You will find a list of all available mirrors here: http://mirrors.mageia.org/

Whichever mirror you choose, it should use the same tree-like structure from "mageia" (or "Mageia") as used by the official Mageia mirrors. That means .../mageia/distrib/<version>/<arch>

A correct entry (when using an official mirror) in the *Mageia directory* field below, could be:

`pub/linux/mageia/distrib/cauldron/i586`

Another example (for Mageia 6 x86_64) could be:

`pub/Mirrors/Mageia/distrib/6/x86_64`

Other mirrors may have a different path structure and the screenshots below show such examples:

If you are using an FTP server:
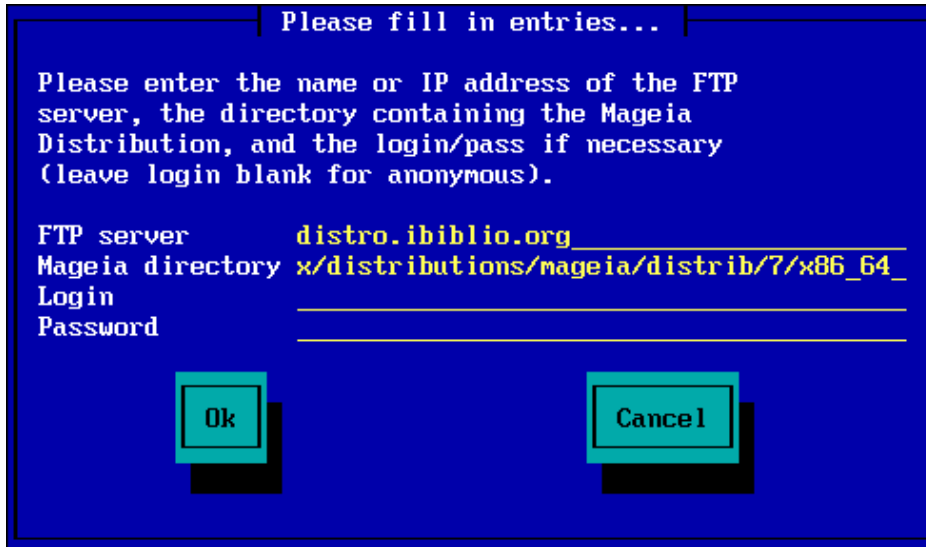
If you are using an HTTP server:
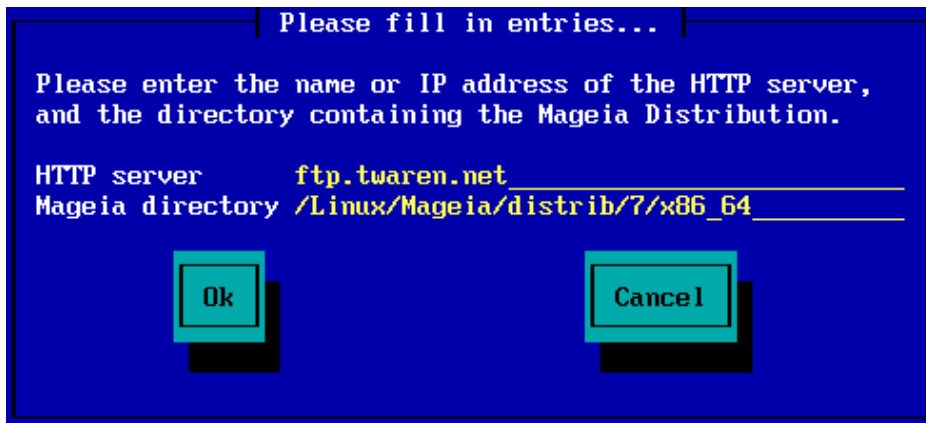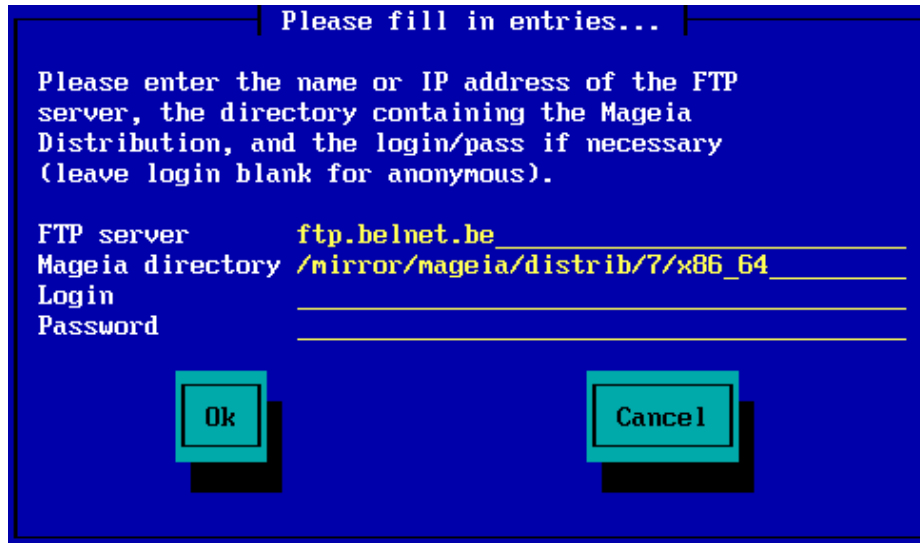
Once this information has been provided, you will automatically proceed to *Stage 2* (the actual installation stage).

2.4.2. Select From a List

If you get a lot of missing dependency errors later in the install, reboot and try a different mirror.
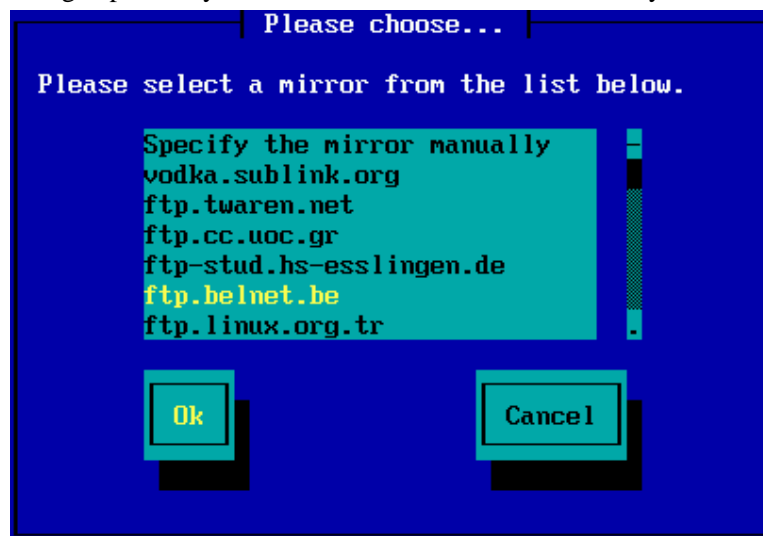
After choosing an FTP server, you will see a screen where you can optionally add a login name and password if required.

```
┌──────────┤ Please fill in entries... ├──────────┐
│                                                  │
│   Please enter the name or IP address of the FTP │
│   server, the directory containing the Mageia    │
│   Distribution, and the login/pass if necessary  │
│   (leave login blank for anonymous).             │
│                                                  │
│   FTP server      ftp.belnet.be_____ │
│   Mageia directory /mirror/mageia/distrib/7/x86_64_____ │
│   Login           _____ │
│   Password        _____ │
│                                                  │
│        ┌──────┐              ┌──────┐            │
│        │  Ok  │              │Cancel│            │
│        └──────┘              └──────┘            │
│                                                  │
└──────────────────────────────────────────────────┘
```

Once this information has been provided, you will automatically proceed to *Stage 2* (the actual installation stage).

3. Stage 2 (Installation Stage)

Nothing has been written to your hard disk at this point. Therefore, if you decide not to proceed with the actual installation, then it is safe to reboot now: go to `tty2` with **Ctrl**+**Alt**+**F2** and press **Ctrl**+**Alt**+**Del** (or **Ctrl**+**Alt**+**F7** to come back if you change your mind).

3.1. *###### ### ##### ##*

- Select your preferred language, by first expanding the list for your continent. Mageia will use this selection during the installation and for your installed system.

- If it is likely that you (or others) will require several languages to be installed on your system, then you should use the *Multiple languages* option to add them now. It will be difficult to add extra language support after installation.

⚠️ Even if you choose more than one language, you must first choose one as your preferred language from the main list of languages. It will also be marked as chosen in the *Multiple languages* screen.

- If your keyboard language is not the same as your preferred language, then it is advisable to install the required language for your keyboard as well

- Mageia uses UTF-8 (Unicode) support by default. This may be disabled in the *Multiple languages* screen if you know that it is inappropriate for your language. Disabling UTF-8 applies to all installed languages.

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- These terms and conditions apply to the entire Mageia distribution and must be accepted before you can continue.

- *##### ## ##### ### ##### ## ##### #### ## ,###### ###*

If you decide not to accept these conditions, then we thank you for your interest in Mageia. Clicking *Quit* will reboot your computer.

3.2.2. #####

Important information about this particular Mageia release can be viewed by clicking on the *Release Notes* button.

3.3. Setup SCSI

DrakX will normally detect hard disks correctly. However, with some older SCSI controllers it may be unable to determine the correct drivers to use and subsequently fail to recognise the drive.

If your device is not recognised, you will need to manually tell DrakX which SCSI drive(s) you have. DrakX should then be able to configure the drive(s) correctly.

3.4. ##### ##

- *#####*

  Use this option to perform a fresh installation of Mageia. This will format the `root` partition (`/`), but can preserve a pre-existing `/home` partition (a dedicated /home partition, rather than being incorporated within the root (/) partition itself).

- *#####*

  Use this option to upgrade an existing installation of Mageia.

Only upgrading from a previous Mageia version that was *still supported* when this Installer's version was released, has been thoroughly tested. If you want to upgrade a Mageia version that has reached its "End Of Life" then it is better to do a "clean" install instead, while preserving your `/home` partition.

If you have discovered that you forgot to select an additional language, you can return from the *Install or Upgrade* screen to the language choice screen by pressing **Ctrl**+**Alt**+**Home**. Do **NOT** do this later in the install.

3.5.

DrakX selects an appropriate keyboard for your language. If no suitable keyboard is found it will default to a US keyboard layout.

- Make sure that the selection is correct or choose another keyboard layout. If you don't know which layout your keyboard has, look in the specifications that came with your system, or ask the computer vendor. There may even be a label on the keyboard that identifies the layout. You can also look here: en.wikipedia.org/wiki/Keyboard_layout [http://en.wikipedia.org/wiki/Keyboard_layout]

- If your keyboard isn't in the list shown, click on *More* to get a fuller list, and select your keyboard there.

> After choosing a keyboard from the *More* dialogue, you'll return to the first keyboard choice dialogue and it will seem as though a keyboard from that screen was chosen. You can safely ignore this and continue the installation: the keyboard chosen from the full list will be applied.

- If you choose a keyboard based on non-Latin characters, you will see an extra dialogue screen asking how you would prefer to switch between the Latin and non-Latin keyboard layouts

3.6. #######

3.6.1. ####### ######

In this screen you can see the content of your hard drive(s) along with the DrakX partitioning proposals for where to install Mageia.

The actual options available from those shown below will vary according to the layout and content of your particular hard drive(s).

#########

- **Use Existing Partitions**

  If this option is available, then existing Linux compatible partitions have been found and may be used for the installation.

- ##### #### #####

  If you have unused space on your hard drive then this option will use it for your new Mageia installation.

- ###### ##### #### ##### **Windows**

  If you have unused space on an existing Windows partition, the installer may offer to use it. This can be a useful way of making room for your new Mageia installation but see the warning below.

  With this option, the installer displays the remaining Windows partition in light blue and the proposed Mageia partition in dark blue with their intended sizes just underneath. You have the option to modify these sizes by clicking and dragging the gap between both partitions. See the following screenshot:

> This involves shrinking the size of the Windows partition, and therefore is a risky operation, so you should make sure you have backed up all important files before proceeding.

> The partition must be "clean", meaning that Windows must have closed down correctly the last time it was used. It must also have been defragmented, although this is not a guarantee that all files in the partition have been moved out of the area that is about to be used for Mageia.

- ##### ### ###### #####

This option will allocate the entire drive for Mageia

> This will erase ALL data on the selected hard drive. Take care! If you intend to use part of the disk for something else, or you already have data on the drive that you are not prepared to lose, then do not use this option.

- **Custom Disk Partitioning**

This gives you complete control over the placing of the installation on your hard drive(s).

If you are not using the *Custom disk partitioning* option, then the installer will allocate the available space according to the following rules:

- If the total available space is less than 50 GB, then only one partition is created. This will be the `/` (root) partition.

- If the total available space is greater than 50 GB, then three partitions are created
    - 6/19 of the total available place is allocated to `/` with a maximum of 50 GB
    - 1/19 is allocated to `swap` with a maximum of 4 GB
    - the rest (at least 12/19) is allocated to `/home`

This means that from 160 GB or greater available space, the installer will create three partitions:

- 50 GB for `/`
- 4 GB for `swap`
- and the remainder for `/home`

> If you are using a UEFI system, the ESP (EFI System Partition) will be automatically detected - or created if it does not exist yet - and mounted on `/boot/EFI`. The *Custom disk partitioning* option is the only one that allows to check it has been correctly done.
>
> If you are using a Legacy (also known as BIOS) system with a GPT partitioned disk, you need to create a BIOS boot partition if it doesn't already exist. It should be about 1 MiB with no mount point. It can be created with the Installer, under *Custom disk partitioning*, like any other partition. Be sure to select "BIOS boot partition" for filesystem type.
>
> See DiskDrake for information on how to proceed.

> Some newer drives are now using 4096 byte logical sectors, instead of the previous standard of 512. Due to lack of available hardware, the partitioning tool used in the installer has not been tested with such a drive.
>
> Some SSD devices now use an erase block size over 1 MB. If you have such a device we suggest that you partition the drive in advance, using an alternative partitioning tool like gparted, and to use the following settings:
>
> - *Align to* = MiB
> - *Free space preceding (MiB)* = 2

> Also make sure all partitions are created using an even number of megabytes.

3.6.2. ##### ######

Here you see the Linux partitions that have been found on your computer. If you don't agree with the DrakX suggestions, you can change the mount points yourself.

- To the left of the drop-down menus is a list of available partitions. For example: sda is a hard drive - and 5 is a *partition number*, followed by the *(capacity, mount point, filesystem type)* of the partition.

- If you have several partitions, you can choose various different *mount points* from the drop down menu, such as /, /home and /var. You can even make your own mount points, for instance /video for a partition where you want to store your films, or perhaps /Data for all your data files.

- For any partitions that you don't need to make use of, you can leave the mount point field blank.

> If you make any changes here, ensure you still have a / (root) partition.

> If you are not sure what to choose, click *Previous* to go back and then tick *Custom disk partitioning*, where you can click on a partition to see its type and size.

If you are sure the mount points are correct, click on *Next*, and choose whether you only want to format the partition suggested by DrakX, or more.

3.6.3. Confirm hard disk to be formatted

- Click on *Previous* if you are at all unsure about your choice.

- Click on *Next* to proceed if you are sure that it is OK to erase **every** partition, **every** operating system and **all data** that might be on that hard disk.

3.6.4. Custom Disk Partitioning with DiskDrake

- Modify the layout of your disk(s) here. You can remove or create partitions, change the filesystem or size of a partition and even view their details before you start.

- There is a tab at the top for every detected hard disk (or other storage device, like a USB key), for example: sda, sdb, sdc etc.

- For all other actions: click on the desired partition first. Then view it, or choose a filesystem and a mount point, resize it or wipe it. *Expert mode* provides more options such as to label (name) a partition, or to choose a partition type.

- Continue until you have adjusted everything to your satisfaction, then click *Done* when you're ready.

> 1. Take care with the *Clear all* option, use it only if you are sure you want to wipe all partitions on the selected storage device.

2. If you wish to use encryption on your / partition you must ensure that you have a separate /
   `boot` partition. The encryption option for the /`boot` partition must NOT be set, otherwise
   your system will be unbootable.

- If you are installing Mageia on a UEFI system, check that an ESP (EFI System Partition) is
  present and correctly mounted on /`boot/EFI`. See Figure 1 below.
- If you are installing Mageia on a Legacy/GPT system, check that a BIOS boot partition is
  present and of the correct type. See Figure 2 below.

3 ####. EFI System Partition

4 ####. BIOS boot partition

3.6.5. Formatting

Here you can choose which partition(s) you wish to format. Any data on partitions *not* marked for formatting
will be preserved.

Usually, at least the partitions that DrakX selected need to be formatted.

Click on *Advanced* to choose the partitions you want to check for so-called *bad blocks*

If you're not sure you have made the right choice, you can click on *Previous*, again on *Previous*
and then on *Custom* to get back to the main screen, where you can choose to view details of
your partitions.

When you are confident about the selections, click on *Next* to continue.

3.7.

3.7.1. ####

3.7.1.1. Supplemental Installation Media

This screen shows you the list of already recognised repositories. You can add other sources for packages,
like an optical-disc or a remote source. The source selection determines which packages will be available
during the subsequent steps.

For a network source, there are two steps to follow:

1. Choosing and activating the network, if not already up.
2. Selecting a mirror or specifying a URL (very first entry). By selecting a mirror, you have access to
   the selection of all repositories managed by Mageia, like the *Nonfree*, the *Tainted* repositories and the
   Updates. With the URL, you can designate a specific repository or your own NFS installation.

If you are updating a 64-bit installation which may contain some 32-bit packages, it is advised
to use this screen to add an online mirror by selecting one of the Network protocols here. The
64-bit DVD ISO only contains 64-bit and *noarch* packages, it will not be able to update the 32-

bit packages. However, after adding an online mirror, the installer will find the needed 32-bit packages there.

3.7.1.2. Available Media

Here you have the list of available repositories. Not all repositories are available, according to which media you use for installing. The repositories selection determines which packages will be available for selection during the next steps.

- The *Core* repository cannot be disabled as it contains the base of the distribution.

- The *Nonfree* repository includes packages that are free-of-charge, i.e. Mageia may redistribute them, but they contain closed-source software (hence the name - Nonfree). For example this repository includes nVidia and AMD graphics card proprietary drivers, firmware for various WiFi cards, etc.

- The *Tainted* repository includes packages released under a free license. The main criteria for placing packages in this repository is that they may infringe patents and copyright laws in some countries, e.g. multimedia codecs needed to play various audio/video files; packages needed to play commercial video DVD's, etc.

3.7.2. ##### #####

Some choices made here will open other screens with related options.

After the selection step(s), you will see a slideshow during the installation of required packages. The slideshow can be disabled by pressing the *Details* button.

- Choose whether you prefer to use the KDE Plasma or GNOME desktop environment. Both come with a full set of useful applications and tools.

- Select *Custom* if you do not wish to use either (or, actually use both) of these, or if you want to modify the default software choices for these desktop environments. The LXDE desktop, for instance, is lighter than the previous two, sporting less eye candy and having fewer packages installed by default.

3.7.3. #### ### ###### #####

Packages are arranged into common groups, to make choosing what you need on your system a lot easier. The groups are fairly self explanatory, however more information about the content of each is available in tool-tips which become visible as the mouse is hovered over them.

- **Workstation**
- **###**
- **##### #####**
- **Individual Package Selection**: you can use this option to manually add or remove packages

See [Minimal Install](#) for instructions on how to do a minimal install (without or with X & IceWM).

3.7.4. ########

Minimal Installation is intended for those with specific uses in mind for Mageia, such as a server or a specialised workstation. You will probably use this option combined with the *Individual package selection* option to fine-tune your installation. See [Choose Packages Tree](#).

- You can choose a *Minimal Installation* by de-selecting everything in the *Package Group Selection* screen, see Choose Package Groups.

  If desired, you can additionally tick the *Individual package selection* option in the same screen.

- If you choose this installation method, then the relevant screen (see screenshot below) will offer you a few useful extras to install, such as documentation and "X".

  If the *With X* option is selected, then IceWM (a lightweight desktop environment) will also be included.

The basic documentation is provided in the form of "man" and "info" pages. It contains the man pages from the Linux Documentation Project [http://www.tldp.org/manpages/man.html] and the GNU coreutils [http://www.gnu.org/software/coreutils/manual/] info pages.

3.7.5. ###### ######

Here you can add or remove any extra packages to customize your installation.

After having made your choice, you can click on the *floppy* icon at the bottom of the page to save your choice of packages (saving to a USB key works, too). You can then use this file to install the same packages on another system, by pressing the same button during install and choosing to load it.

3.8. #######

3.8.1. Set Administrator (root) Password:

It is advisable for all Mageia installations to set a `superuser` (Administrator) password, usually called the *root* password in Linux. You need to repeat the same password in the box underneath, to check that the first entry was not mistyped.

> As you type a password into the top box a shield will change from red-to-yellow-to-green depending on the strength of the password. A green shield shows you are using a strong password.
>
> All passwords are case-sensitive. It is best to use a mixture of letters (upper and lower case), numbers and other characters in a password.

3.8.2. ##### ####

Add a User here. A regular user has fewer privileges than the `superuser` (root), but enough to use the Internet, office applications or play games and anything else the average user might use a computer for.

- *###*

  ###### ### ## ##### ###### ## ## ### ## ##### ##

- *###### ###*

  ## #### ##### ###### ## ##### ### ## ##### ##

- **Login Name**

  Enter the user login name or let DrakX use a version of the user's real name. **The login name is case-sensitive.**

- *#####*

Type in the user password (remembering the advice in the Note above).

Password (again): Retype the user password. DrakX will check that you have not mistyped the password.

Any users added while installing Mageia, will have a home directory that is both read and write protected (umask=0027)

You can add any extra needed users in the *Configuration - Summary* step during the install. Choose *User management*.

The access permissions can also be changed after the install.

3.8.3. #####) ####### #####)

The *Advanced* option allows you to edit further settings for the user you are adding.

- *Shell*: This drop-down list allows you to change the shell available to any user you added in the previous screen. Options are `Bash`, `Dash` and `Sh`
- *User ID*: Here you can set the user ID for any user you added in the previous screen. If you are unsure what the purpose of this is, then leave it blank.
- *Group ID*: This lets you set the group ID. Again, if unsure, leave it blank.

3.9. Graphical Configuration

3.9.1. Graphics Card and Monitor Configuration

No matter which graphical environment (also known as desktop environment) you chose for this install of Mageia, they are all based on a graphical user interface system called `X Window System`, or simply "X". So in order for KDE Plasma, GNOME, LXDE or any other graphical environment to work well, the following "X" settings need to be correct.

Choose the appropriate settings manually if you think the details are incorrect, or if none are shown.

- ### #####

  If you need to, you can select a specific card from this expandable list. See Choose an X Server (Configure your Graphic Card).

- ##

  You can choose Plug 'n Play, if applicable, or choose your monitor from the *Vendor* or *Generic* lists. Choose *Custom* if you prefer to manually set the horizontal and vertical refresh rates of your monitor. See Choosing your Monitor.

- ########

  The resolution and color depth of your monitor can be set here.

- #####

  The test button does not always appear during install. If the option is there, and you test your settings, you should be asked to confirm that your settings are correct. If you answer *Yes*, the settings will be kept. If you don't see anything, you'll return to the configuration screen and be able to reconfigure everything until the test result is satisfactory. If the test option is not available, then make sure your settings are on the safe side.

- ########

Here you can choose to enable or disable various options.

> There is a risk of damaging a monitor if you choose refresh rates that are outside the frequency range of that monitor. This applies to older CRT displays: modern monitors will reject an unsupported frequency and normally enter standby mode.

3.9.2. Choose an X Server (Configure your Graphic Card)

DrakX has a very comprehensive database of video cards and will usually correctly identify your video device.

If the installer has not correctly detected your graphic card and you know which one you have, you can select it from the tree by:

- ####
- then the make of your card
- and the model of card

If you cannot find your card in the vendor lists (because it's not yet in the database or it's an older card) you may find a suitable driver in the *Xorg* category, which provides more than 40 generic and open source video card drivers. If you still can't find a specific driver for your card there is the option of using the VESA driver which provides basic capabilities.

> Be aware that if you select an incompatible driver you may only have access to the *Command Line Interface*

Some video card manufacturers provide proprietary drivers for Linux which may only be available in the *Nonfree* repository and in some cases only from the card manufacturers' websites. The *Nonfree* repository needs to be explicitly enabled to access them. If you didn't enable it previously, you should do this after your first reboot.

3.9.3. Choosing your Monitor

DrakX has a very comprehensive database of monitors and will usually correctly identify yours.

> **Selecting a monitor with different characteristics could damage your monitor or video hardware. Please don't try something without knowing what you are doing.** If in doubt you should consult your monitor documentation.

This option allows you to set two critical parameters: the vertical refresh rate and the horizontal sync rate. Vertical refresh determines how often the screen is refreshed and horizontal sync is the rate at which scan lines are displayed.

It is *VERY IMPORTANT* that you do not specify a monitor type with a sync range that is beyond the capabilities of your monitor: you may damage your monitor. If in doubt, choose a conservative setting and consult your monitor documentation.

####-####   This is the default option and automatically tries to determine the monitor type from the monitor database.

####	If the installer has not correctly detected your monitor and you know which one you have, you can choose it from the options by selecting:

- Manufacturer

- ### ###

####	Selecting this group will list approximately 30 display configurations such as 1024x768 @ 60Hz and includes flat-panel displays as used in laptops. This is often a good monitor selection group if you need to use the VESA card driver when your video hardware cannot be determined automatically. Once again, it may be wise to be conservative in your selections.

3.10. #####

3.10.1. Available Bootloaders

3.10.1.1. Grub2

Grub2 on Legacy MBR/GPT systems

- GRUB2 (with or without graphical menu) will be used exclusively as the bootloader for a Legacy/MBR or Legacy/GPT system.

- By default, a new bootloader will be written into either the MBR (Master Boot Record) of your first hard drive or in the BIOS boot partition.

Grub2-efi on UEFI systems

- GRUB2-efi or rEFInd may be used as the bootloader for a UEFI system.

- By default, a new bootloader (Grub2-efi) will be written into the ESP (EFI System Partition).

  If there are already UEFI-based operating systems installed on your computer (Windows 8 for example), the Mageia installer will detect the existing ESP created by Windows and add grub2-efi to it. If no ESP exists, then one will be created. Although it is possible to have several ESPs, only one is required, whatever the number of operating systems you have.

3.10.1.2. rEFInd

rEFInd on UEFI systems

- rEFInd has a nice graphical set of options, and can auto-detect installed EFI bootloaders. See: http://www.rodsbooks.com/refind/

> Please note that in order to be able to use the `rEFInd` option, an installed EFI System Partition must match your system architecture: if you have a 32bit EFI System Partition installed on a 64bit machine for instance, then the rEFInd option will not be displayed/available to you.

3.10.2. Bootloader Setup

3.10.2.1. ##### #### ## #######

- **Bootloader to use**
  - GRUB2 (with either a graphical or a text menu), can be chosen for both `Legacy MBR/BIOS` systems and `UEFI` systems.

– rEFInd (with a graphical menu) is an alternative option solely for use with `UEFI` systems.

- **Boot device**

> Don't change this unless you really know what you are doing.

> There is no option to write GRUB to the boot sector of a partition (e.g: `sda1`), as this method is considered unreliable.

When using UEFI mode, then the Boot device will be listed as EFI System Partition.

- **Delay before booting the default image**

This text box lets you set a delay, in seconds, before the default operating system is started up.

- *#####*

This allows you to set a password for the bootloader. This means a username and password will be required when booting in order to select a booting entry or change settings. This is optional, and most people are not likely to have a need for it. The username is `root` and the password is the one chosen hereafter.

- *#####*

Choose a password for the bootloader (optional)

- **Password (again)**

Retype the password and DrakX will check that it matches with the one set above

Advanced

- *Enable ACPI*

ACPI (Advanced Configuration and Power Interface) is a standard for power management. It can save energy by stopping unused devices. Deselecting it could be useful if, for example, your computer does not support ACPI or if you think the ACPI implementation might cause some problems (for instance random reboots or system lockups).

- *Enable SMP*

This option enables/disables symmetric multiprocessing for multi-core processors

- *Enable APIC*

Enabling this gives the operating system access to the Advanced Programmable Interrupt Controller. APIC devices permit more complex priority models, and Advanced IRQ (Interrupt Request) management.

- *Enable Local APIC*

Here you can set Local APIC, which manages all external interrupts for a specific processor in an SMP system

3.10.2.2. ##### ####

If, in the previous section you selected `rEFInd` as the bootloader to use, you would then be presented with the options shown in the screenshot directly below. Otherwise, please instead move on to the subsequent screenshot for your options.

Your rEFInd configuration options:

- **Install or update rEFInd in the EFI system partition.**
- **Install in /EFI/BOOT.**

  This option installs the bootloader in the /EFI/BOOT directory of the ESP (EFI System Partition). This can be useful when:

  (a) Installing onto a removable drive (e.g. a USB stick) that can be removed and plugged into a different machine. If the bootloader is stored in /EFI/BOOT, UEFI BIOS's will detect it and allow you to boot from that drive.

  (b) As a workaround where, due to a buggy UEFI BIOS, the newly written bootloader for Mageia will not be recognized at end of the installation.

If you did not select rEFInd as the bootloader to use in the previous section, then your bootloader configuration options are shown below:

- *#### #####*

  The operating system to be started up by default.

- **Append**

  This option lets you pass information to the kernel or tell the kernel to give you more information as it boots.

- **Probe foreign OS**

  If you already have other operating systems installed, Mageia attempts to add them to your new Mageia boot menu. If you don't want this behaviour, then untick the Probe Foreign OS option.

- **Install in /EFI/BOOT.** (Note: this menu option only becomes available where the installer detects that a machine is in UEFI mode).

  This option installs the bootloader in the /EFI/BOOT directory of the ESP (EFI System Partition). This can be useful when:

  (a) Installing onto a removable drive (e.g. a USB stick) that can be removed and plugged into a different machine. If the bootloader is stored in /EFI/BOOT, UEFI BIOS's will detect it and allow you to boot from that drive.

  (b) As a workaround where, due to a buggy UEFI BIOS, the newly written bootloader for Mageia will not be recognized at end of the installation.

Advanced

- *Video mode*

  This sets the screen size and colour depth to be used by the boot menu. If you click the down-triangle you will be offered other size and colour depth options.

- *Do not touch ESP or MBR*

  Select this option if you don't want a bootable Mageia, but would rather chain-load it from another OS. You will get a warning that the bootloader is missing. Click Ok only if you are sure you understand the implications, and wish to proceed.

> Chain-loading via legacy bootloaders (GRUB Legacy and LiLo) is no longer supported by Mageia as it is likely to fail when attempting to boot this resulting installation of Mageia. If you use anything other than GRUB2 or rEFInd for this purpose, then you do so at your own risk!

3.10.3. #####

3.10.3.1. Using an existing bootloader

The exact procedure for adding Mageia to an existing bootloader is beyond the scope of this documentation. However, in most cases it will involve running the relevant bootloader installation program, which should detect Mageia and automatically add an entry for it in the bootloader menu. See the documentation for the relevant operating system.

3.10.3.2. ##### #### ###

While you can opt to install Mageia without a bootloader (see section 2.1 Advanced), this is not recommended unless you absolutely know what you are doing, as without some form of bootloader your operating system will be unable to start.

3.10.3.3. Add or Modify a Boot Menu Entry

To do this you need to manually edit /boot/grub2/custom.cfg or use the software **grub-customizer** tool instead (available in the Mageia repositories).

> For more information, see: https://wiki.mageia.org/en/Grub2-efi_and_Mageia

3.11. ######

DrakX presents a proposal for the configuration of your system depending on the choices you made and on the hardware detected. You can check the settings here and change them if you want by pressing *Configure*.

> As a general rule, it is recommended that you accept the default settings unless:
>
> • there are known issues with a default setting
> • the default setting has already been tried and it fails
> • some other factor mentioned in the detailed sections below is an issue

3.11.1. System parameters

• **Timezone**

DrakX selects a timezone for you, depending on your preferred language. You can change it if needed. See also Configure Timezone

• **Country / Region**

If the selected country is wrong, it is very important that you correct the setting. See Select Country

- **Bootloader**

  DrakX proposal for the bootloader setting

  Do not change anything, unless you know how to configure GRUB2. For more information, see Bootloader

- **User management**

  You can add extra users here. They will each be allocated their own `/home` directories.

- *#######*

  System services refer to those small programs which run in the background (daemons). This tool allows you to enable or disable certain processes.

  You should check carefully before changing anything here - a mistake may prevent your computer from operating correctly. For more information, see Configure Services

3.11.2. Hardware parameters

- *#####*

  Configure your keyboard layout according to your location, language and type of keyboard.

  > If you notice a wrong keyboard layout and want to change it, keep in mind that your passwords are going to change too.

- *####*

  Here you can add or configure other pointing devices, tablets, trackballs etc.

- *### #####*

  The installer will use the default driver if one is available.

  If there is no actual default driver for your sound card, there may be other possible alternative drivers available to choose from. If this is the case, but you think the installer has not made the most appropriate choice, you can click on *Advanced* to manually specify a driver.

- **Graphical interface**

  This section allows you to configure your graphics card(s) and displays. For more information, see Graphics Card and Monitor Configuration

3.11.3. Network and Internet parameters

- **Network**

  You can configure your network here, but for network cards with non-free drivers it is better to do that after reboot, using the Mageia Control Center, if you have not yet enabled the *Nonfree* media repositories.

  > When you add a network card, do not forget to set your firewall to monitor that interface as well.

- **Proxies**

A Proxy Server acts as an intermediary between your computer and the wider Internet. This section allows you to configure your computer to utilize a proxy service.

You may need to consult your systems administrator to obtain the parameters you need to enter here.

3.11.4.

- **Security Level**

The Security level for your computer, in most cases the default setting (Standard) is adequate for general use. Select the option which best suits your usage.

- *### ####*

The firewall allows you to manage which network connections are allowed on your computer. The safe and secure default is to allow ZERO inbound connections. This does not stop you connecting outbound and using your computer normally.

Please be aware that the Internet is a high risk network where there are continuous attempts to probe and attack systems. Even seemingly "safe" connections such as ICMP (for ping) have been used as covert data channels for exfiltrating data by malicious persons.

,#### ##### [Firewall](#).

> Bear in mind that allowing *everything* (no firewall) may be very risky.

3.12. Locale

3.12.1. ### #### ####

- Choose your timezone by choosing your country, or a city close to you in the same timezone.

In the next screen you can choose to set your hardware clock to local time or to GMT, also known as UTC.

> If you have more than one operating system on your computer, make sure they are all set to local time, or all to UTC/GMT.

3.12.2. ##### \ ###### ## #####

- Select your country or region. This is important for all kinds of settings, like the currency and wireless regulatory domain. Setting the wrong country can lead to being unable to use a Wireless network.

- If your country isn't in the list, click the *Other Countries* option and choose your country / region there.

> If your country is only in the *Other Countries* list, after clicking *OK* it may seem that a country from the main list was chosen. Despite this, DrakX will actually apply your choice.

3.12.2.1. ###

In the *Other Countries* screen you can also select an input method (at the bottom of the list). Input methods allow users to input multilingual characters (Chinese, Japanese, Korean, etc). IBus is the default input method, so users should not need to configure it manually. Other input methods (SCIM, GCIN, HIME, etc) also provide similar functions and can be installed if you added HTTP/FTP media before package selection.

> If you missed the input method setup during installation, you can access it post-install via Configure your Computer → System, or by running **localedrake** as *root*.

3.13. Configure your Services

Here you can choose which services should start when you boot your system.

- Click on a triangle to expand a group to all the relevant services. The settings DrakX chose are usually good.
- If you highlight a service, some information about it is shown in the info box below.

Only change things when you know very well what you are doing.

3.14. ####

If you are not happy with how your mouse responds, you can select a different one here.

Usually, Universal → Any PS/2 and USB mice is a good choice.

Select Universal → Force evdev to configure the buttons that do not work on a mouse with six or more buttons.

3.15. ###

This screen shows the details of the sound card driver chosen for you by the installer, and this driver should work without problems.

However, if you encounter any issues post-install, then run **draksound** or start this tool via Mageia Control Center → Hardware → Sound Configuration. Then, in the draksound or *Sound Configuration* screen, click on *Troubleshooting* to find useful advice about how to solve the problem.

3.15.1.

If there is no actual default driver for your sound card, there may be other possible alternative drivers available to choose from. If this is the case, but you think the installer has not made the most appropriate choice, you can click on *Advanced* to manually specify a driver.

3.16. #####

Please choose the desired security level

Standard is the default, and recommended setting for the average user.

Secure will create a highly protected system - for instance if the system is to be used as a public server.

Security Administrator

This item allows you to configure an email address to which the system will send *security alert messages* when it detects situations which require notification to a system administrator.

A good, and easy-to-implement, choice is to enter <user>@localhost - where <user> is the login name of the user to receive these messages.

> The system sends such messages as **Unix Mailspool messages**, not as "ordinary" SMTP mail: this user must therefore be configured for receiving such mail!

It will always be possible to adjust your security settings post-install in the *Security* section of the Mageia Control Center.

3.17. ##

This section allows you to configure some simple firewall rules: they determine which type of message from the Internet will be accepted by the target system. This, in turn, allows the corresponding services on the system to be accessible from the Internet.

In the default setting (no button is checked), no service of the system is accessible from the network. The *Everything (no firewall)* option enables access to all services of the machine - an option that does not make much sense in the context of the installer since it would create a totally unprotected system. Its veritable use is in the context of the Mageia Control Center (which uses the same GUI layout) for temporarily disabling the entire set of firewall rules for testing and debugging purposes.

All other options are more or less self-explanatory. As an example, you will enable the CUPS server if you want printers on your machine to be accessible from the network.

#####

The *Advanced* option opens a window where you can enable a series of services by typing a list of "couples" (blank separated)

<port-number>/<protocol>

- *<port-number>* is the value of the port assigned to the service you want to enable (e.g. 873 for the RSYNC service) as defined in *RFC-433*;
- *<protocol>* is one of *TCP* or *UDP* - the internet protocol that is used by the service.

For instance, the entry for enabling access to the RSYNC service therefore is *873/tcp*.

In case a service is implemented to use both protocols, you specify 2 couples for the same port.

3.18.

Since this version of Mageia was released, some packages will have been updated or improved.

• Select *Yes* if you wish to download and install them
• Select *No* if you don't want to do this now, or if you aren't connected to the Internet
• ##### ##### ## ##### ##

3.19.

You have finished installing and configuring Mageia and it is now safe to remove the installation medium and reboot your computer.

After rebooting, you can use the bootloader screen to choose which operating system to start (if there are more than one on your computer).

If you didn't adjust the settings for the bootloader, your Mageia install will be automatically selected and started.

#####!

Visit www.mageia.org/en/ [http://www.mageia.org/en/] if you have any questions or want to contribute to Mageia

3.20. #### Mageia

If Mageia didn't convince you or you can't install it correctly - in short you want get rid of it - that is your right and Mageia also gives you the possibility to uninstall. This is not true for every operating system.

After backing up your data, reboot your Mageia installation DVD and select *Rescue system*, then *Restore Windows boot loader*. At the next boot, you will only have Windows, with no option to choose your Mageia operating system.

In Windows, to recover the space used by Mageia partitions: click on Start → Control Panel → Administrative Tools → Computer Management → Storage → Disk Management. You will recognise a Mageia partition because they are labeled `Unknown`, and also by their size and place on the disk. Right-click on each of these partitions and select *Delete* to free up the space.

If you are using Windows XP, you can create a new partition and format it (FAT32 or NTFS). It will then get a partition letter.

If you have Vista or 7, you have one more possibility, you can extend the existing partition that is at the left of the freed space. There are other partitioning tools that can be used, such as **gparted**, available for both Windows and Linux. As always, when changing partitions, be very careful to back up anything important to you.