Installation with DrakX

The Official Documentation for Mageia

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This manual was produced with the help of the Calenco CMS [http:// www.calenco.com] developed by NeoDoc [http://www.neodoc.biz].

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

Installation with DrakX

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Installation with DrakX

No one will see all the installer screens that you see in this manual. Which screens you will see, depends on your hardware and the choices you make while installing.

1. Select and use ISOs

1.1. Introduction

Mageia is distributed via ISO images. This page will help you to choose which image match your needs.

There is two families of media:

- Classical installer: After booting the media, it will follow a process allowing to choose what to install and how to configure your target system. This give you the maximal flexibility for a customized installation, in particular to choose which Desktop Environment you will install.
- LIVE media: you can boot the media in a real Mageia system without installing it, to see what you will get after installation. The installation process is simpler, but you get lesser choices.

Details are given in the next sections.

1.2. Media

1.2.1. Definition

Here, a medium (plural: media) is an ISO image file that allows you to install and/or update Mageia and by extension any physical support the ISO file is copied to.

You can find them here [http://www.mageia.org/en/downloads/].

1.2.2. Classical installation media

1.2.2.1. Common features

- These ISOs use the traditional installer called drakx.
- They are able to make a clean install or an update from previous releases.
- Different media for 32 or 64 bit architectures.
- Some tools are available in the Welcome screen: Rescue System, Memory Test, Hardware Detection Tool.
- Each DVD contains many available desktop environments and languages.
- You'll be given the choice during the installation to add non free software.

1.2.3. Live media

1.2.3.1. Common features

- Can be used to preview the distribution without installing it on a HDD, and optionally install Mageia on to your HDD.
- Each ISO contains only one desktop environment (Plasma, GNOME or Xfce).

- Different media for 32 or 64 bit architectures.
- **Live ISOs can only be used to create clean installations, they cannot be used to upgrade from previous releases.**
- They contain non free software.

1.2.3.2. Live DVD Plasma

- Plasma desktop environment only.
- All languages are present.
- 64 bit architecture only.

1.2.3.3. Live DVD GNOME

- GNOME desktop environment only.
- All languages are present.
- 64 bit architecture only

1.2.3.4. Live DVD Xfce

- Xfce desktop environment only.
- All languages are present.
- 32 or 64 bit architectures.

1.2.4. Boot-only CD media

1.2.4.1. Common features

- Each one is a small image that contains no more than that which is needed to start the drakx installer and find drakx-installer-stage2 and other packages that are needed to continue and complete the install. These packages may be on the PC hard disk, on a local drive, on a local network or on the Internet.
- These media are very light (less than 100 MB) and are convenient when bandwidth is too low to download a full DVD, a PC without a DVD drive or a PC that can't boot from a USB stick.
- Different media for 32 or 64 bit architectures.
- English language only.

1.2.4.2. netinstall.iso

- Contains only free software, for those people who prefer not to use non-free software.

1.2.4.3. netinstall-nonfree.iso

- Contains non-free software (mostly drivers, codecs...) for people who need it.

1.3. Downloading and Checking Media

1.3.1. Downloading

Once you have chosen your ISO file, you can download it using either http or BitTorrent. In both cases, a window gives you some information, such as the mirror in use and an opportunity to change if the bandwidth is to low. If http is chosen, you may also see something like
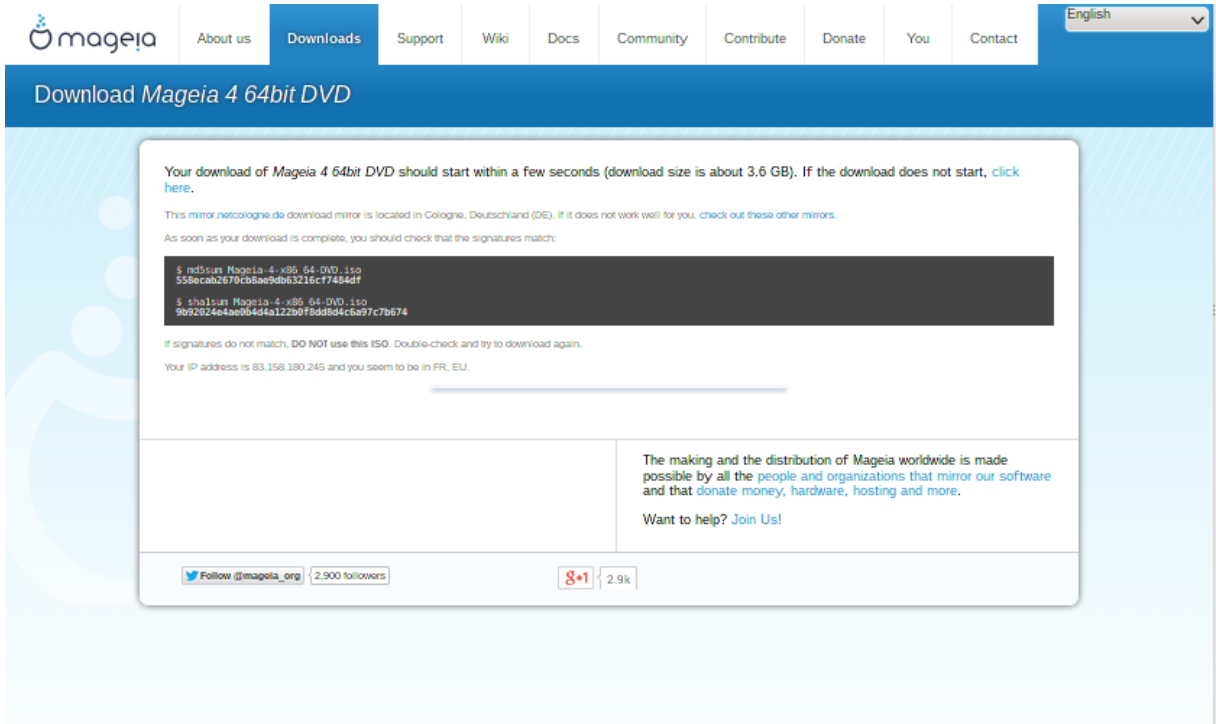
md5sum and sha1sum are tools to check the ISO integrity. Use only one of them. Keep one of them for further usage. Then a window similar to this one appears:
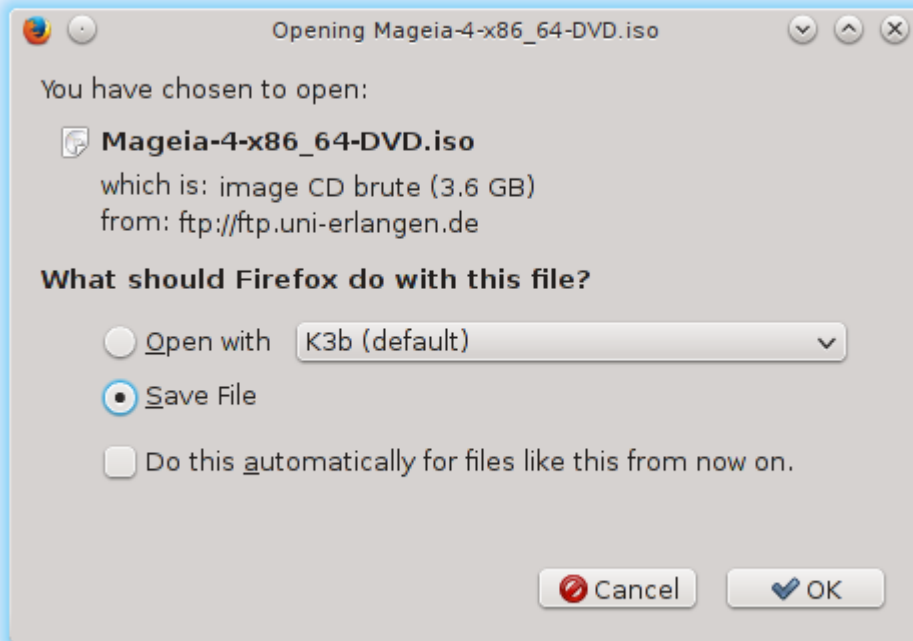
Check the radio button Save File.

1.3.2. Checking the integrity of the downloaded media

Both checksums are hexadecimal numbers calculated by an algorithm from the file to be downloaded. When you ask these algorithms to recalculate this number from your downloaded file, either you have the same number and your downloaded file is correct, or the number is different and you have a failure. A failure infers that you should retry the download or attempt a repair using BitTorrent.

Open a console, no need to be root, and:

- To use md5sum, type: [sam@localhost]$ **md5sum path/to/the/image/file.iso**.

- To use sha1sum, type: [sam@localhost]$ **sha1sum path/to/the/image/file.iso**.

and compare the obtained number on your computer (you may have to wait for a while) with the number given by Mageia. Example:

```
[sam5@localhost ~]$ md5sum /home/sam5/Downloads/Mageia-4-RC-x86_64-DVD.iso
ec1ce42c4b003b5e9bea6911968195c8  /home/sam5/Downloads/Mageia-4-RC-x86_64-DVD.iso
[sam5@localhost ~]$ 
```

1.4. Burn or dump the ISO

The checked ISO can now be burned to a CD or DVD or dumped to a USB stick. These operations are not a simple copy and aim to make a bootable medium.

1.4.1. Burning the ISO to a CD/DVD

Use whatever burner you wish but ensure the burning device is set correctly to **burn an image**, burn data or files is not correct. There is more information in the Mageia wiki [https://wiki.mageia.org/en/Writing_CD_and_DVD_images].

1.4.2. Dump the ISO to a USB stick

All Mageia ISOs are hybrids, which means you can 'dump' them to a USB stick and then use it to boot and install the system.

> "Dumping" an image onto a flash device destroys any previous file-system on the device; any other data will be lost and the partition capacity will be reduced to the image size.

To recover the original capacity, you must redo partitioning and re-format the USB stick.

1.4.2.1. Using a graphical tool within Mageia

You can use a graphical tool like IsoDumper [https://wiki.mageia.org/en/IsoDumper_Writing_ISO_images_on_USB_sticks]

1.4.2.2. Using a graphical tool within Windows

You could try:

- [Rufus](http://rufus.akeo.ie/?locale=en_US) [http://rufus.akeo.ie/?locale=en_US] using the "ISO image" option;

- [Win32 Disk Imager](http://sourceforge.net/projects/win32diskimager) [http://sourceforge.net/projects/win32diskimager]

1.4.2.3. Using Command line within a GNU/Linux system

> ⚠ It is potentially *dangerous* to do this by hand. You risk to overwrite a disc partition if you get the device-ID wrong.

You can also use the dd tool in a console:

1. Open a console

2. Become root with the command **su -** (don't forget the final '-')

```
[sam5@localhost ~]$ su -
Password:
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
```

3. Plug in your USB stick (do not mount it, this also means do not open any application or file manager that could access or read it)

4. Enter the command **fdisk -l**

```
[root@localhost ~]# fdisk -l

Disk /dev/sda: 298.1 GiB, 320072933376 bytes, 625142448 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disklabel type: dos
Disk identifier: 0x000db4bf
Partition 3 does not start on physical sector boundary.

Device     Boot     Start       End    Blocks  Id System
/dev/sda1  *          2048  21256191  10627072  83 Linux
/dev/sda2         21256192  63528959  21136384  83 Linux
/dev/sda3         63530964 625137344 280803190+  5 Extended
/dev/sda5         63531008  84873215  10671104  83 Linux
/dev/sda6         84875264 127016959  21070848  83 Linux
/dev/sda7        127019008 135985151   4483072  82 Linux swap / Solaris
/dev/sda8        135987200 198598655  31305728  83 Linux
/dev/sda9        198600704 471588863 136494080  83 Linux
/dev/sda10       471590912 496777994  12593541+ 83 Linux
/dev/sda11       496781312 504955079   4086884  82 Linux swap / Solaris
/dev/sda12       504958976 625137344  60089184+ 83 Linux


Disk /dev/sdb: 7.5 GiB, 8011087872 bytes, 15646656 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x15005631

Device    Boot Start      End  Blocks  Id System
/dev/sdb1 *        1  7598079 3799039+ 17 Hidden HPFS/NTFS

[root@localhost ~]#
```

Alternatively, you can get the device name with the command `dmesg`: at end, you see the device name starting with *sd*, and *sdd* in this case:

```
[72594.604531] usb 1-1: new high-speed USB device number 27 using
 xhci_hcd
[72594.770528] usb 1-1: New USB device found, idVendor=8564,
 idProduct=1000
[72594.770533] usb 1-1: New USB device strings: Mfr=1, Product=2,
 SerialNumber=3
[72594.770536] usb 1-1: Product: Mass Storage Device
[72594.770537] usb 1-1: Manufacturer: JetFlash
[72594.770539] usb 1-1: SerialNumber: 18MJTWLMPUCC3SSB
[72594.770713] usb 1-1: ep 0x81 - rounding interval to 128 microframes,
 ep desc says 255 microframes
[72594.770719] usb 1-1: ep 0x2 - rounding interval to 128 microframes,
 ep desc says 255 microframes
[72594.771122] usb-storage 1-1:1.0: USB Mass Storage device detected
[72594.772447] scsi host8: usb-storage 1-1:1.0
```

```
[72595.963238] scsi 8:0:0:0: Direct-Access     JetFlash Transcend 2GB
 1100 PQ: 0 ANSI: 4
[72595.963626] sd 8:0:0:0: [sdd] 4194304 512-byte logical blocks: (2.14
 GB/2.00 GiB)
[72595.964104] sd 8:0:0:0: [sdd] Write Protect is off
[72595.964108] sd 8:0:0:0: [sdd] Mode Sense: 43 00 00 00
[72595.965025] sd 8:0:0:0: [sdd] No Caching mode page found
[72595.965031] sd 8:0:0:0: [sdd] Assuming drive cache: write through
[72595.967251]  sdd: sdd1
[72595.969446] sd 8:0:0:0: [sdd] Attached SCSI removable disk
```

5. Find the device name for your USB stick (by its size), for example /dev/sdb in the screenshot above, it is a 8GB USB stick.

6. Enter the command: # **dd if=path/to/the/ISO/file of=/dev/sdX bs=1M**

    Where X=your device name eg: /dev/sdc

    Example: # **dd if=/home/user/Downloads/Mageia-6-x86_64-DVD.iso of=/dev/sdb bs=1M**

7. Enter the command: # **sync**

8. Unplug your USB stick, it is done

2. DrakX, the Mageia Installer

Whether you are new to GNU-Linux or an experienced user, the Mageia Installer is designed to help make your installation or upgrade as easy as possible.

The initial menu screen has various options, however the default one will start the installer, which will normally be all that you will need.

2.1. Installation Welcome Screen

2.1.1. Using a Mageia DVD

Here are the default welcome screens when using a Mageia DVD, The first one with an UEFI system and the second one with a Legacy system:
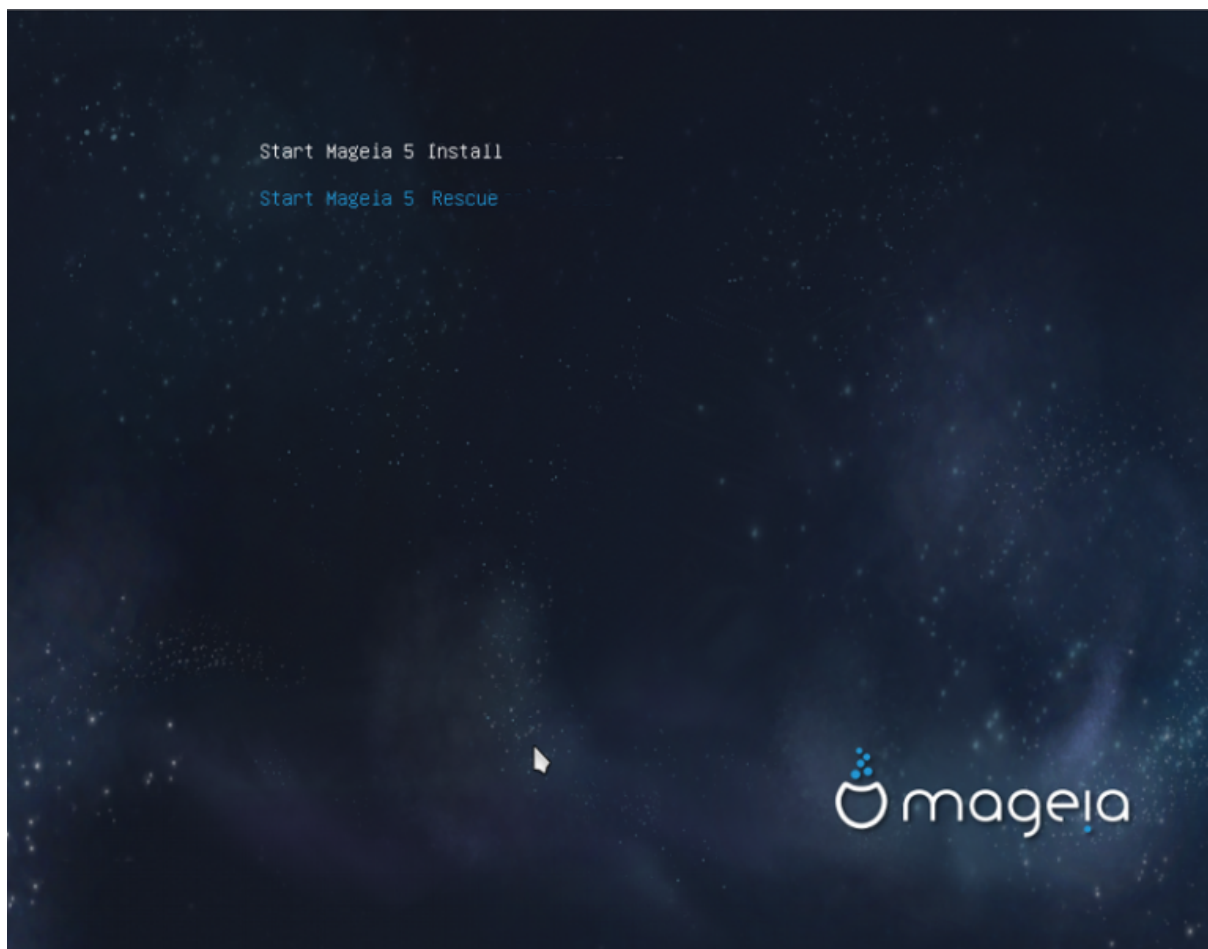
From this screen, you can access to options by pressing the "e" letter to enter the "edit mode". To come back to this screen, press either the key "esc" to quit without saving or press the key "Ctrl" or "F10" to quit with saving.

From this screen, it is possible to set some personal preferences:

- The language (for the installation only, may be different that the chosen language for the system) by pressing the key F2 (Legacy mode only)

Use the arrow keys to select the language and press the key Enter.

Here is for example, the French welcome screen when using a Live DVD/CD. Note that the Live DVD/CD menu does not propose: Rescue System, Memory test and Hardware Detection Tool.

- Change the screen resolution by pressing the F3 key (Legacy mode only).

- Add some kernel options by pressing the **F6** key for the legacy mode or the **e** key for the UEFI mode.

If the installation fails, then it may be necessary to try again using one of the extra options. The menu called by F6 displays a new line called Boot options and propose four entries:

- Default, it doesn't alter anything in the default options.

- Default, it doesn't alter anything in the default options.

- No ACPI (Advanced Configuration and Power Interface), power management isn't taken into account.

- No Local APIC (Local Advanced Programmable Interrupt Controller), it is about CPU interruptions, select this option if you are asked for.

When you select one of these entries, it modifies the default options displayed in the Boot Options line.

In some Mageia releases, it may happen that the entries selected with the key F6 does not appear in the Boot Options line, however, they are really taken into account.
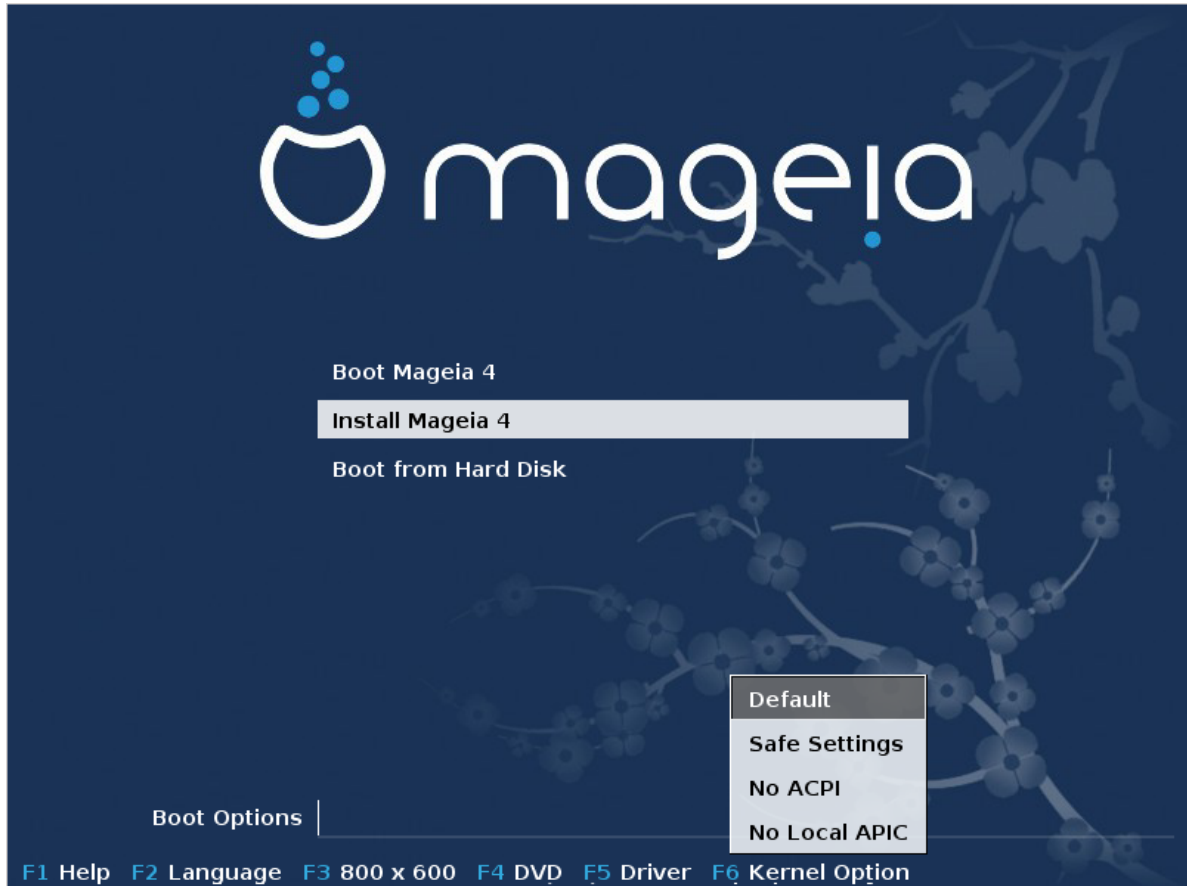
- Add more kernel options by pressing the key F1 (Legacy mode only).

Pressing F1 opens a new window with more available options. Select one with the arrow keys and press Enter to have more details or press the Esc key to go back to the welcome screen.
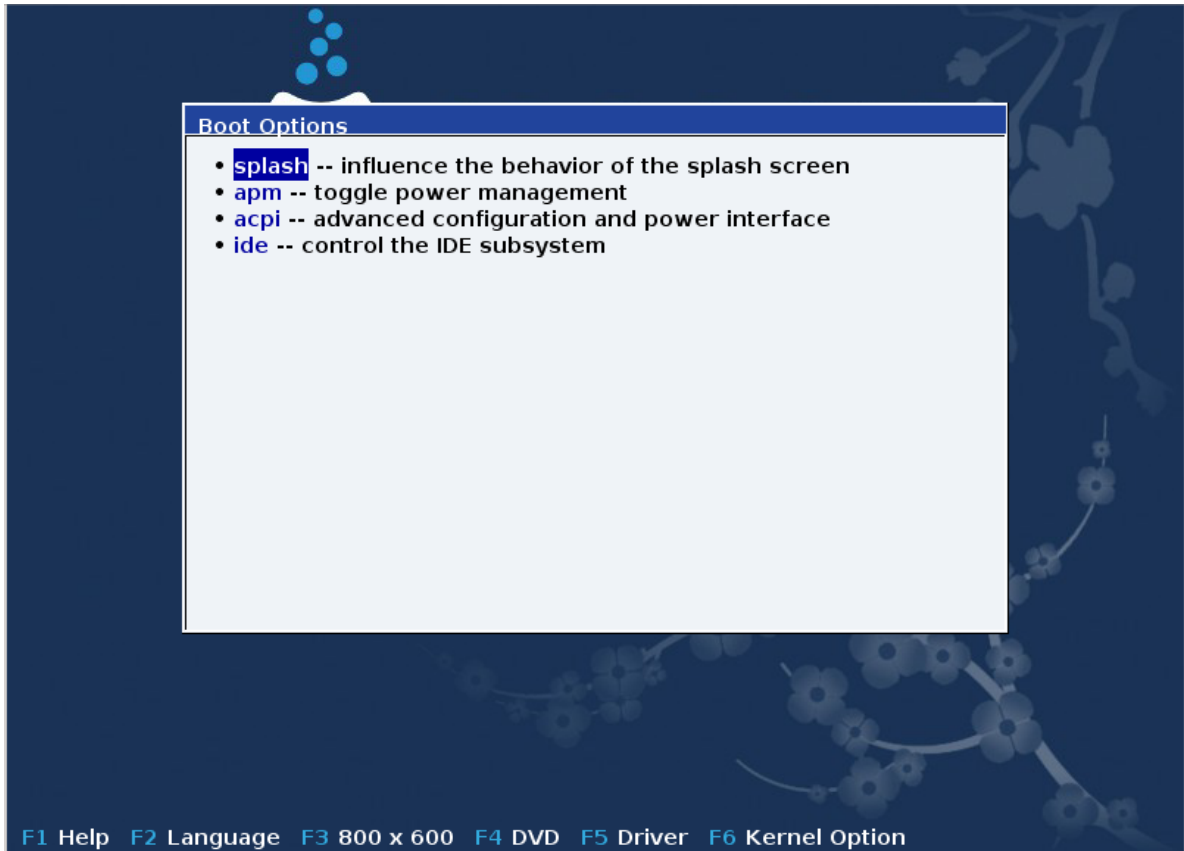
The detailed view about the option splash. Press Esc or select Return to Boot Options to go back to the options list. These options can by added by hand in the Boot options line.
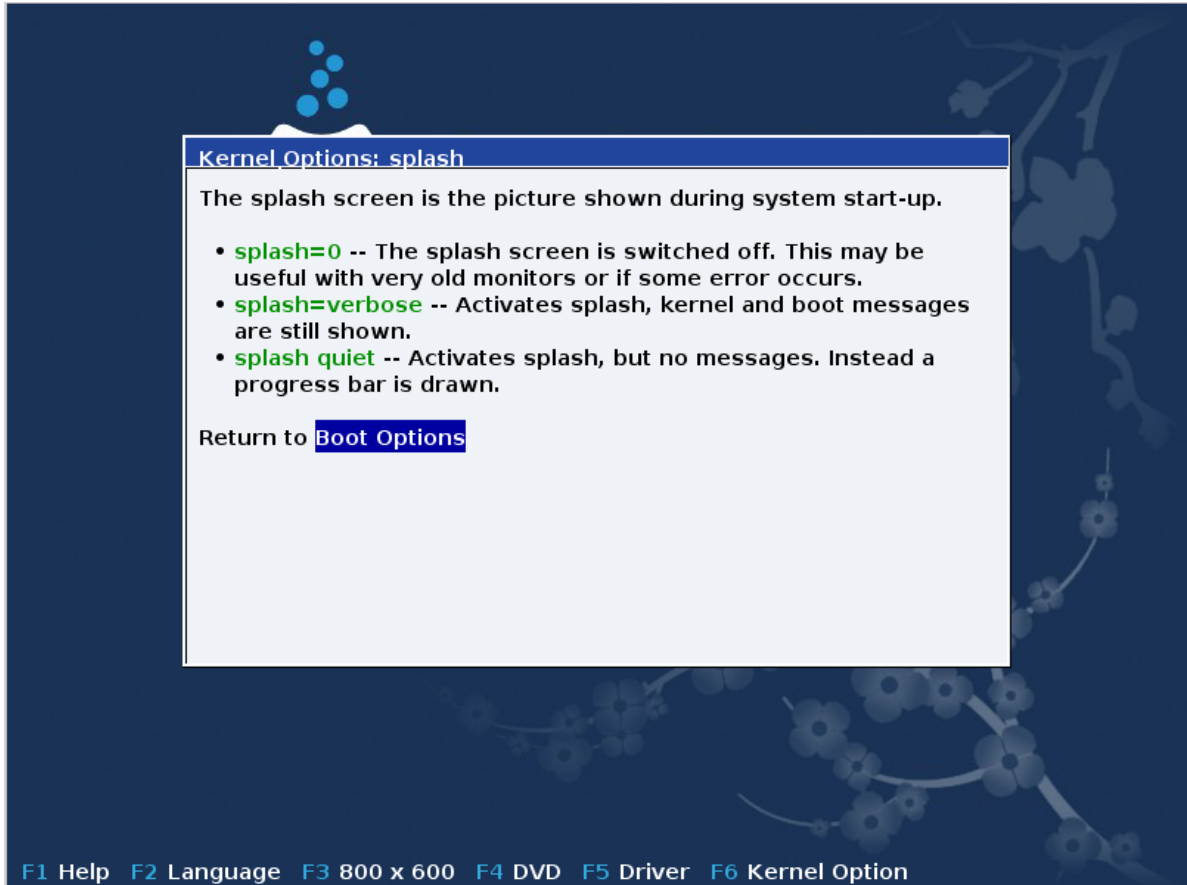
The help is translated in the chosen language with the F2 key.

For more information about kernel options on legacy and UEFI systems, see: https://wiki.mageia.org/en/ How_to_set_up_kernel_options

2.1.2. Using a Wired Network

Here is the default welcome screen when using a Wired Network-based Installation CD (netinstall.iso or netinstall-nonfree.iso images):

It does not allow to change the language, the available options are described in the screen. For more information about using a Wired Network-based Installation CD, see the Mageia Wiki [https://wiki.mageia.org/en/ Boot.iso_install]

The keyboard layout is the American one.

```
              Welcome to Mageia install help

In most cases, the best way to get started is to simply press the <Enter> key.
If you experience problems with standard install, try one of the following
install types (type the highlighted text and press <Enter>):

  o   text for text installation instead of the graphical one.
  o   linux for standard graphical installation at normal resolution.
  o   linux vga=785 for low resolution graphical installation.


To repair an already installed system type rescue followed
by <Enter>.

You can also pass some <specific kernel options> to the Linux kernel.
For example, try linux noapic if your system has trouble operating
your network adapter correctly.
NOTE: You cannot pass options to modules (SCSI, ethernet card) or devices
such as CD-ROM drives in this way. If you need to do so, use noauto mode.


[F1-Help] [F2-Advanced Help]
boot: _
```

2.2. The installation steps

The install process is divided into a number of steps, which can be followed on the side panel of the screen.

Each step has one or more screens which may also have Advanced buttons with extra, less commonly required, options.

Most screens have Help buttons which give further explanations about the current step.

If somewhere during install you decide to stop the installation, it is possible to reboot, but please think twice before you do this. Once a partition has been formatted or updates have started to be installed, your computer is no longer in the same state and rebooting it could very well leave you with an unusable system. If in spite of this you are very sure rebooting is what you want, go to a text terminal by pressing the three keys Alt Ctrl F2 at the same time. After that, press Alt Ctrl Delete simultaneously to reboot.

2.3. Installation Problems and Possible Solutions

2.3.1. No Graphical Interface

- After the initial screen you did not reach the language selection screen. This can happen with some graphic cards and older systems. Try using low resolution by typing vgalo at the prompt.

- If the hardware is very old, a graphical installation may not be possible. In this case it is worth trying a text mode installation. To use this hit ESC at the first welcome screen and confirm with ENTER. You will be presented with a black screen with the word "boot:". Type "text" and hit ENTER. Now continue with the installation in text mode.

2.3.2. The Install Freezes

If the system appeared to freeze during the installation, this may be a problem with hardware detection. In this case the automatic detection of hardware may be bypassed and dealt with later. To try this, type noauto at the prompt. This option may also be combined with other options as necessary.

2.3.3. RAM problem

These will rarely be needed, but in some cases the hardware may report the available RAM incorrectly. To specify this manually, you can use the `mem=xxxM` parameter, where xxx is the correct amount of RAM. e.g. `mem=256M` would specify 256MB of RAM.

2.3.4. Dynamic partitions

If you converted your hard disk from "basic" format to "dynamic" format on Microsoft Windows, you must know that it is impossible to install Mageia on this disc. To go back to a basic disk, see the Microsoft documentation: http://msdn.microsoft.com/en-us/library/cc776315.aspx.

3. Please choose a language to use

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 will require several languages installed on your system, for yourself or other users, then you should use the Multiple languages button to add them now. It will be difficult to add extra language support after installation.
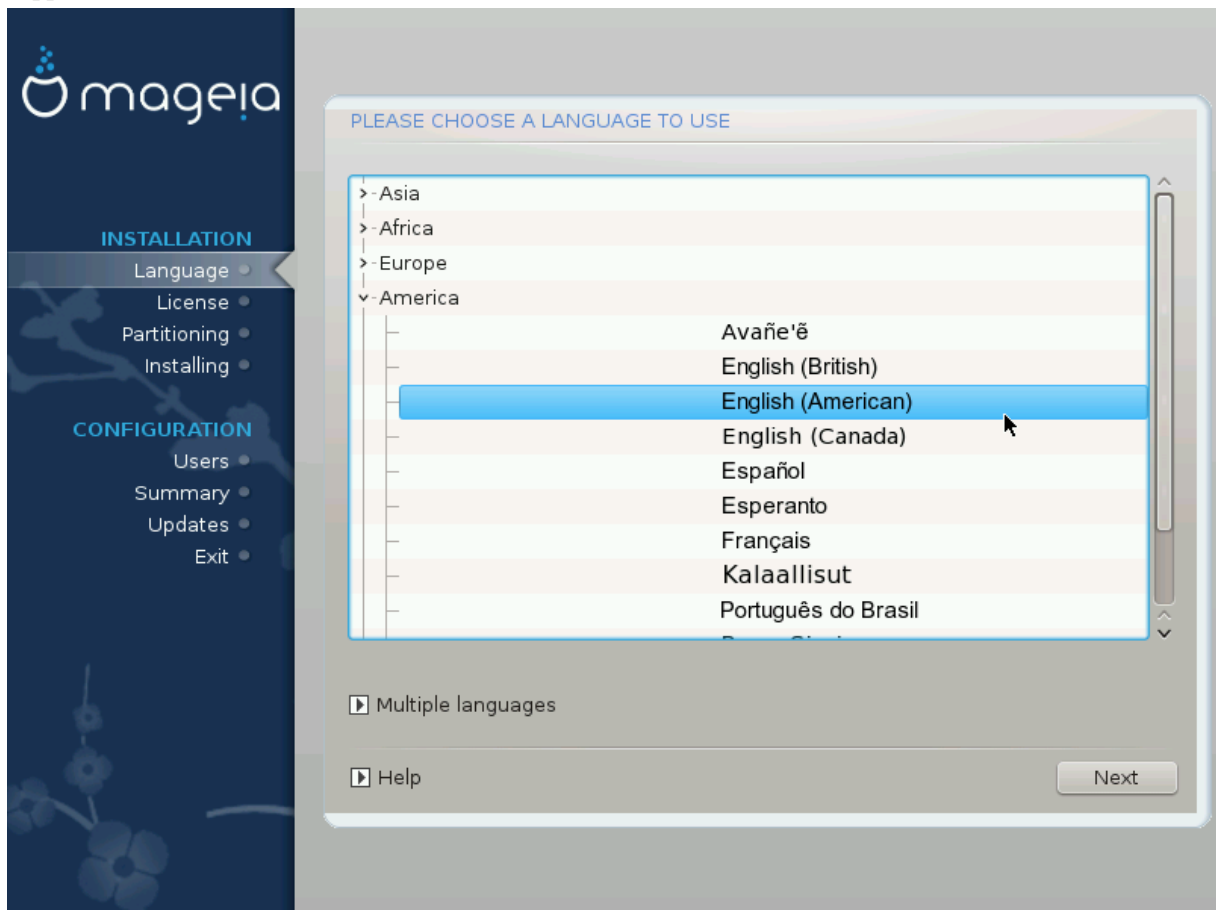
Even if you choose more than one language, you must first choose one of them as your preferred language in the first language screen. It will also be marked as chosen in the multiple languages screen .

- If your keyboard language is not the same as your preferred language, then it is advisable to install the language of your keyboard as well.
- Mageia uses UTF-8 (Unicode) support by default.

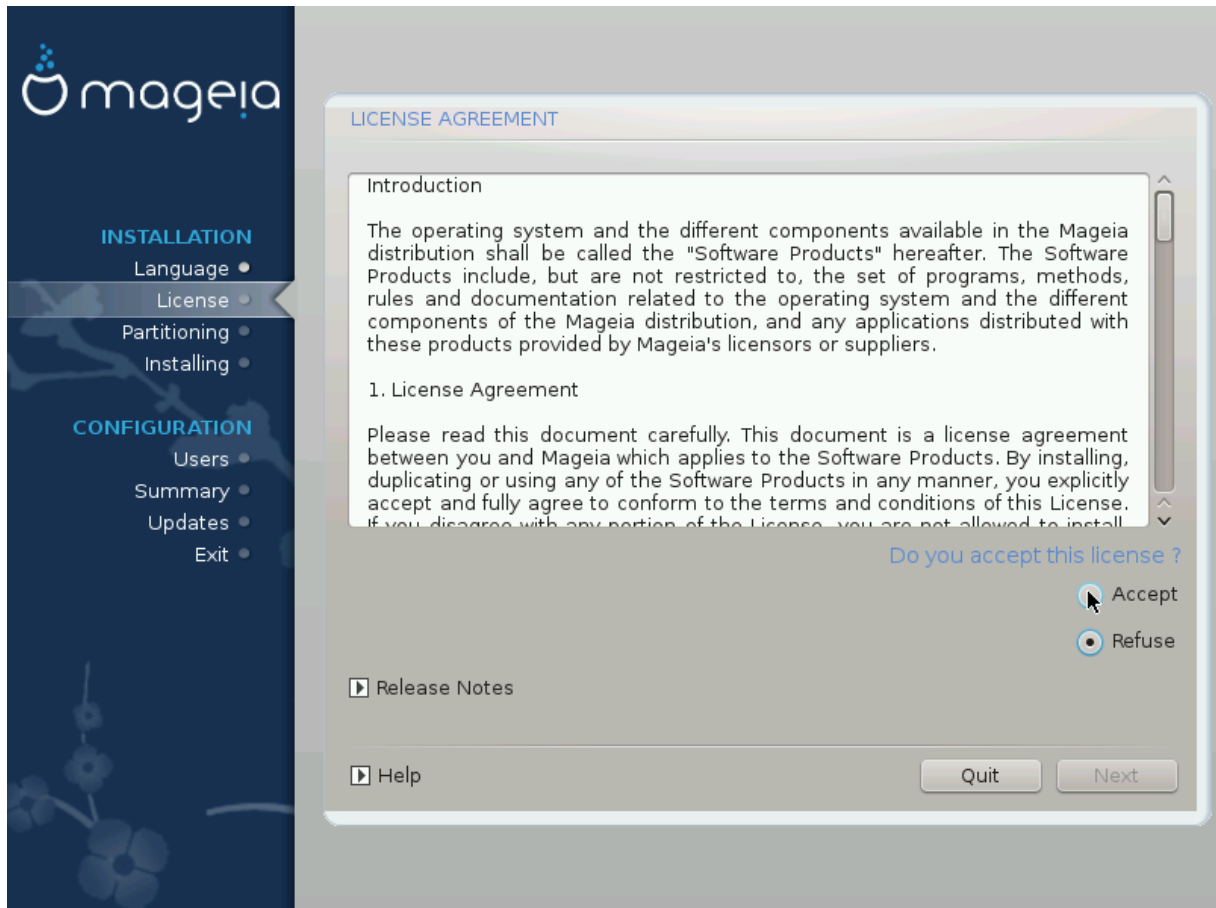 This may be disabled in the "multiple languages" screen if you know that it is inappropriate for your language. Disabling UTF-8 applies to all installed languages.

- You can change the language of your system after installation in the Mageia Control Center -> System -> Manage localization for your system.

4. License and Release Notes

4.1. License Agreement

Before installing Mageia, please read the license terms and conditions carefully.

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

To accept, simply select Accept and then click on Next.

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

4.2. Release Notes

Important information are given about this release of Mageia and are accessible clicking on the Release Notes button.

5. Setup SCSI
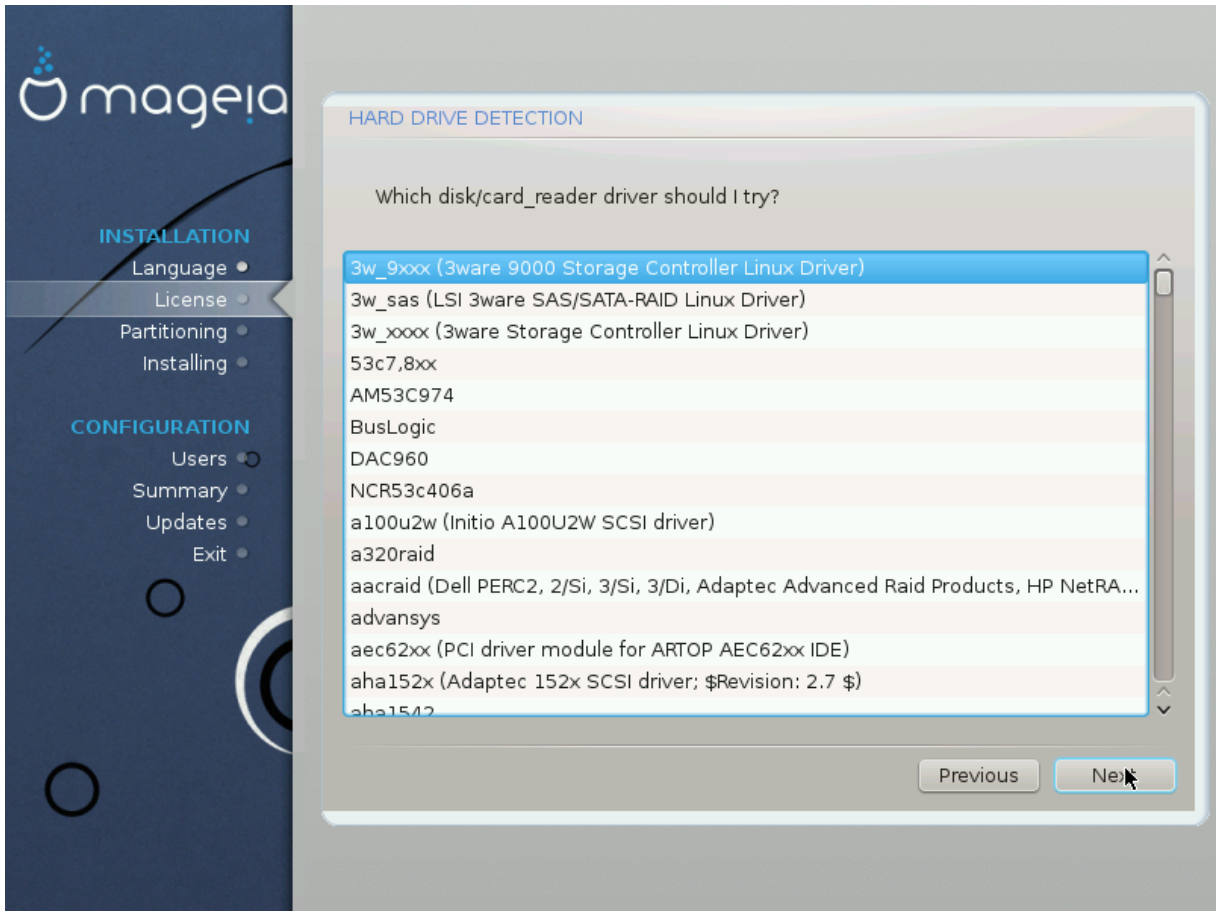
DrakX usually detects hard disks correctly. With some older SCSI controllers it may be unable to determine the correct drivers to use and subsequently fail to recognise the drive.

If this happens, you will need to manually tell Drakx which SCSI drive(s) you have.

DrakX should then be able to configure the drive(s) correctly.

6. Install or Upgrade

- Install

  Use this option for a fresh Mageia installation.

- Upgrade

  If you have one or more Mageia installations on your system, the installer will allow you to upgrade one of them to the latest release.

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 had already reached its End Of Life when this one was released, then it is better to do a clean install while preserving your `/home` partition.

If during install you decide to stop the installation, it is possible to reboot, but please think twice before you do this. Once a partition has been formatted or updates have started to be installed, your computer isn't in the same state anymore and rebooting it could very well leave you with an unusable system. If in spite of that you are very sure rebooting is what you want, go to a text terminal by pressing the three keys Alt Ctrl F2 at the same time. After that, press Alt Ctrl Delete simultaneously to reboot.

> 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 Alt Ctrl Home. Do *not* do this later in the install.

7. Keyboard

DrakX selects an appropriate keyboard for your language. If no suitable keyboard is found it will default to a US keyboard layout.
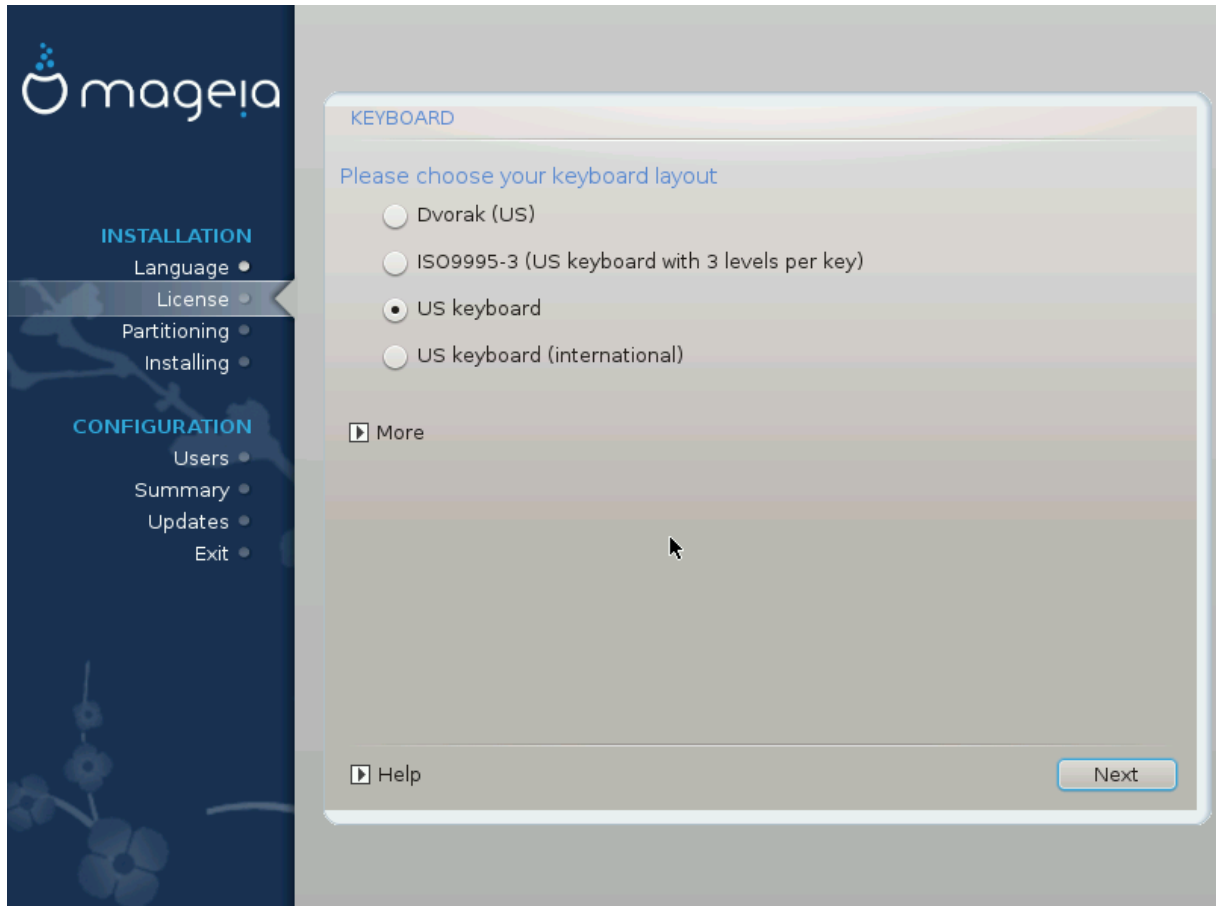
- Make sure that the selection is correct or choose another keyboard layout. If you don't know which layout your keyboard has, look in the specifications that came with your system, or ask the computer vendor. There may even be a label on the keyboard that identifies the layout. You can also look here: en.wikipedi-a.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 full list, and select your keyboard there.

> After choosing a keyboard from the More dialog, you'll return to the first keyboard choice dialog and it will seem as though a keyboard from that screen was chosen. You can safely ignore this anomaly and continue the installation: Your keyboard is the one you chose from the full list.

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

8. Partitioning

In this screen you can see the content of your hard drive(s) and see the solutions the DrakX partitioning wizard found for where to install Mageia.

The options available from the list below will vary depending on your particular hard drive(s) layout and content.
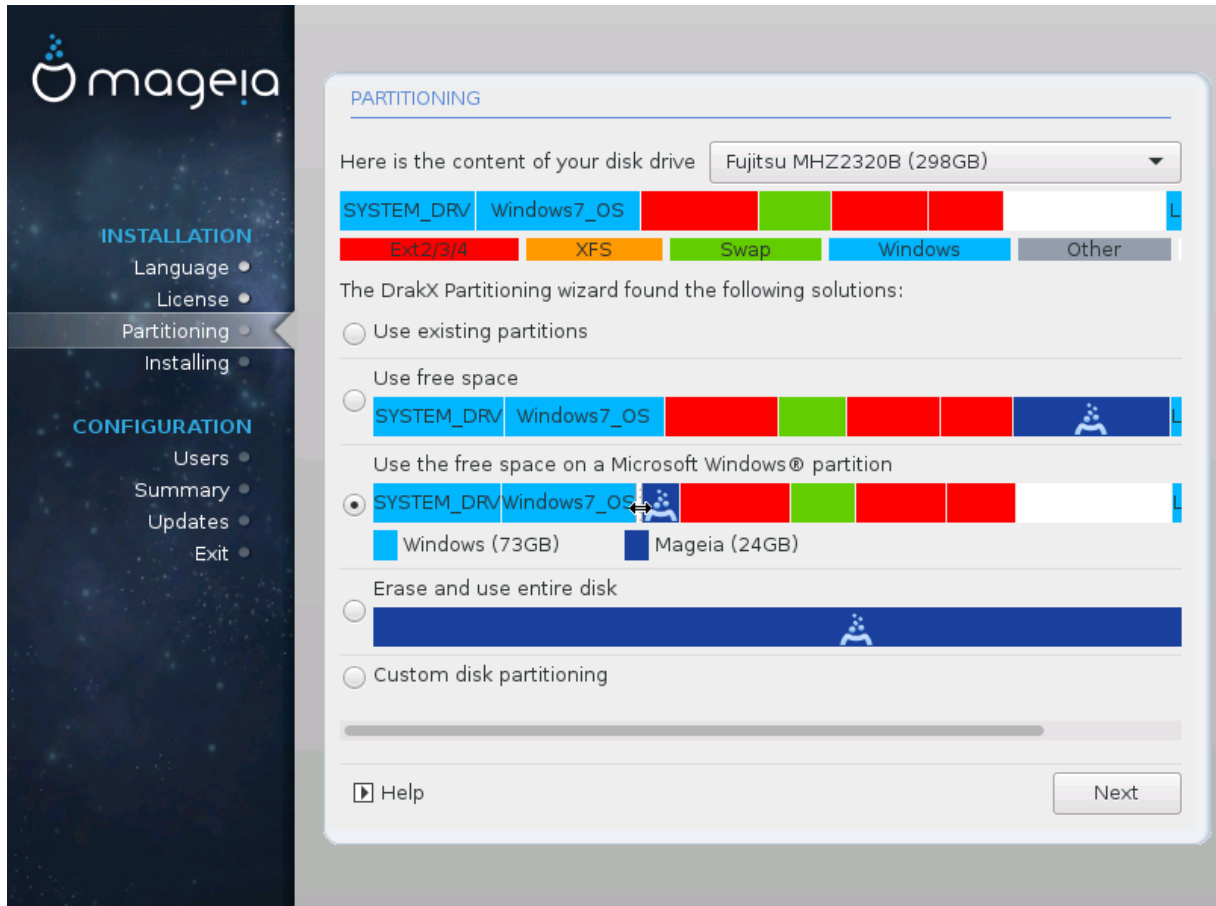
- Use Existing Partitions

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

- Use Free Space

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

- Use Free Space on a Windows Partition

  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 is a risky operation so you should make sure you have backed up all important files!

  Note that this involves shrinking the size of the Windows partition. 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. It is highly recommended to back up your personal files.

With this option, the installer displays the remaining Windows partition in light blue and the future Mageia partition in dark blue with their intended sizes just under. You have the possibility to adapt these sizes by clicking and dragging the gap between both partitions. See the screen-shot below.
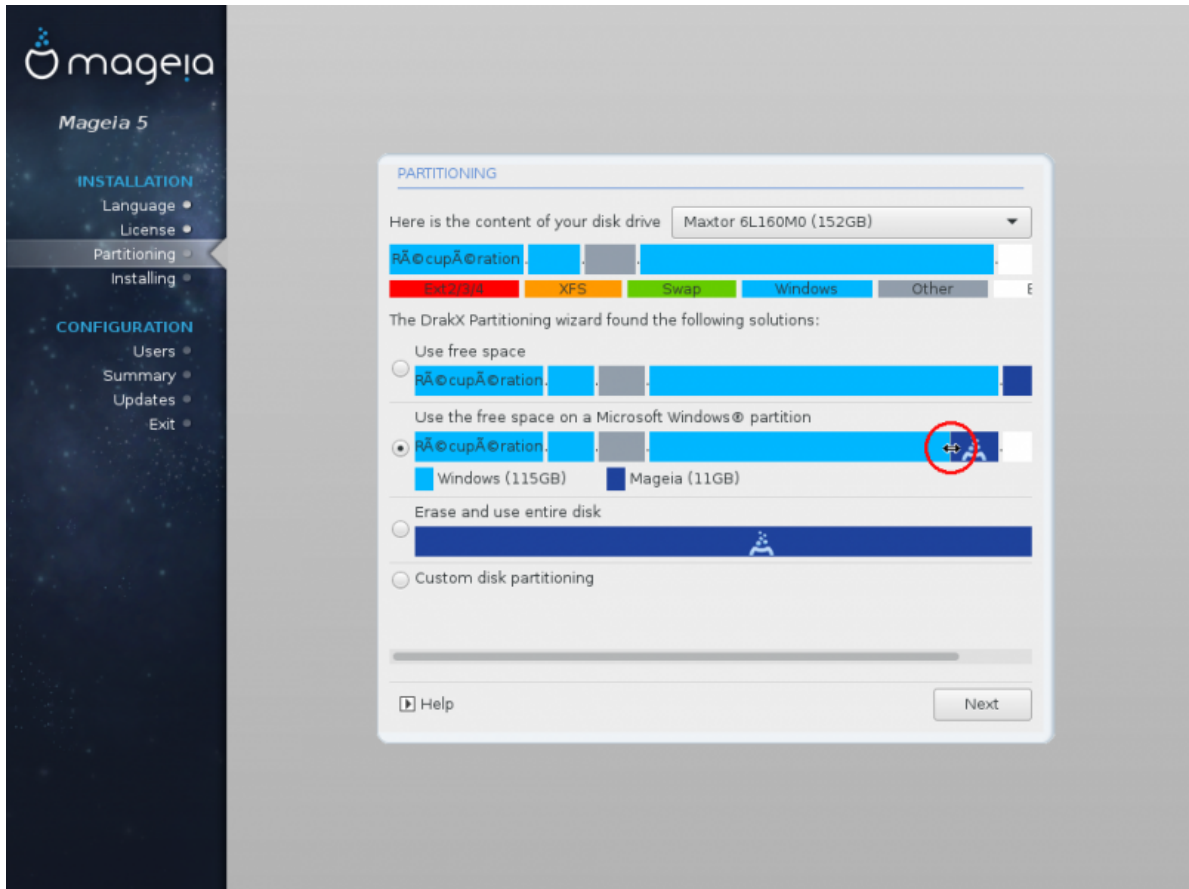
- Erase and use Entire Disk.

  This option will use the complete drive for Mageia.

  Note! 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).

Partition sizing:

The installer will share the available place out according to the following rules:

- If the total available place is lower than 50 GB, only one partition is created for /, there is no separate partition for /home.
- If the total available place is over 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

That means that from 160 GB and over of available place, the installer will create three partitions: 50 GB for /, 4 GB for swap and the rest for /home.

If you are using an 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

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If you are using a Legacy (as known as CSM or BIOS) system with a GPT disk, you need to create a Bios boot partition if not already existing. It is an about 1 MiB partition with no mount point. Choose Section 11, "Custom disk partitioning with DiskDrake" to be able to create it with the Installer like any other partition, just select BIOS boot partition as filesystem type.

Some newer drives are now using 4096 byte logical sectors, instead of the previous standard of 512 byte logical sectors. Due to lack of available hardware, the partitioning tool used in the installer has not been tested with such a drive. Also some ssd drives now use an erase block size over 1 MB. We suggest to pre-partition the drive, using an alternative partitioning tool like gparted, if you own such a device, and to use the following settings:

"Align to" "MiB"

"Free space preceding (MiB)" "2"

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

9. *Choose the mount points*

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.

> If you change anything, make sure you still have a / (root) partition.

- Every partition is shown as follows: "Device" ("Capacity", "Mount point", "Type").

- "Device", is made up of: "hard drive", ["hard drive number"(letter)], "partition number" (for example, "sda5").

- If you have many partitions, you can choose many 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 /cauldron-home for the /home partition of a cauldron install.

- For partitions you don't need to have access to, you can leave the mount point field blank.

> Choose Previous if you are not sure what to choose, and then tick Custom disk partitioning. In the screen that follows, 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(s) DrakX suggests, or more.

10. Confirm hard disk to be formatted
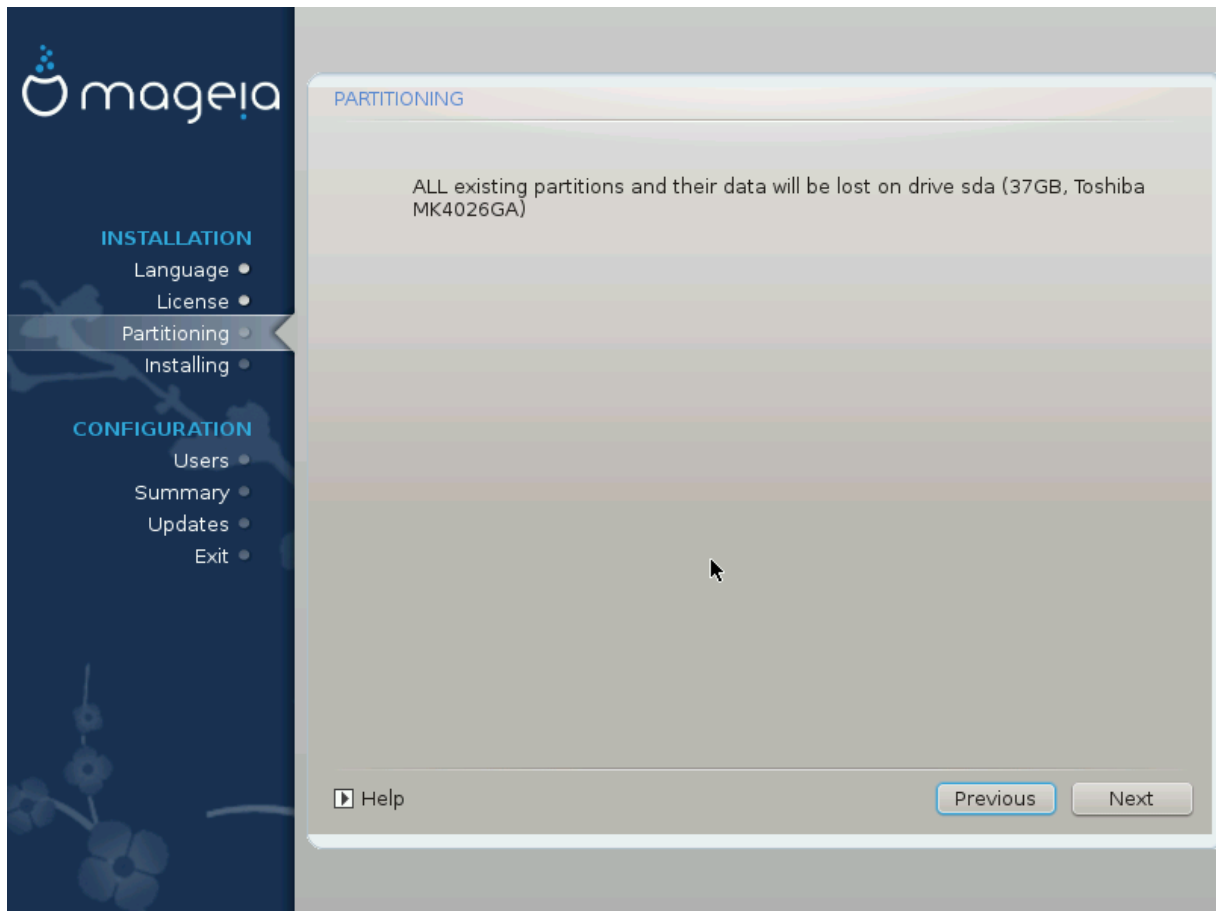
Click on Previous if you are not sure about your choice.

Click on Next if you are sure and want to erase every partition, every operating system and all data on that hard disk.

11. Custom disk partitioning with DiskDrake

> ⚠️ 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.
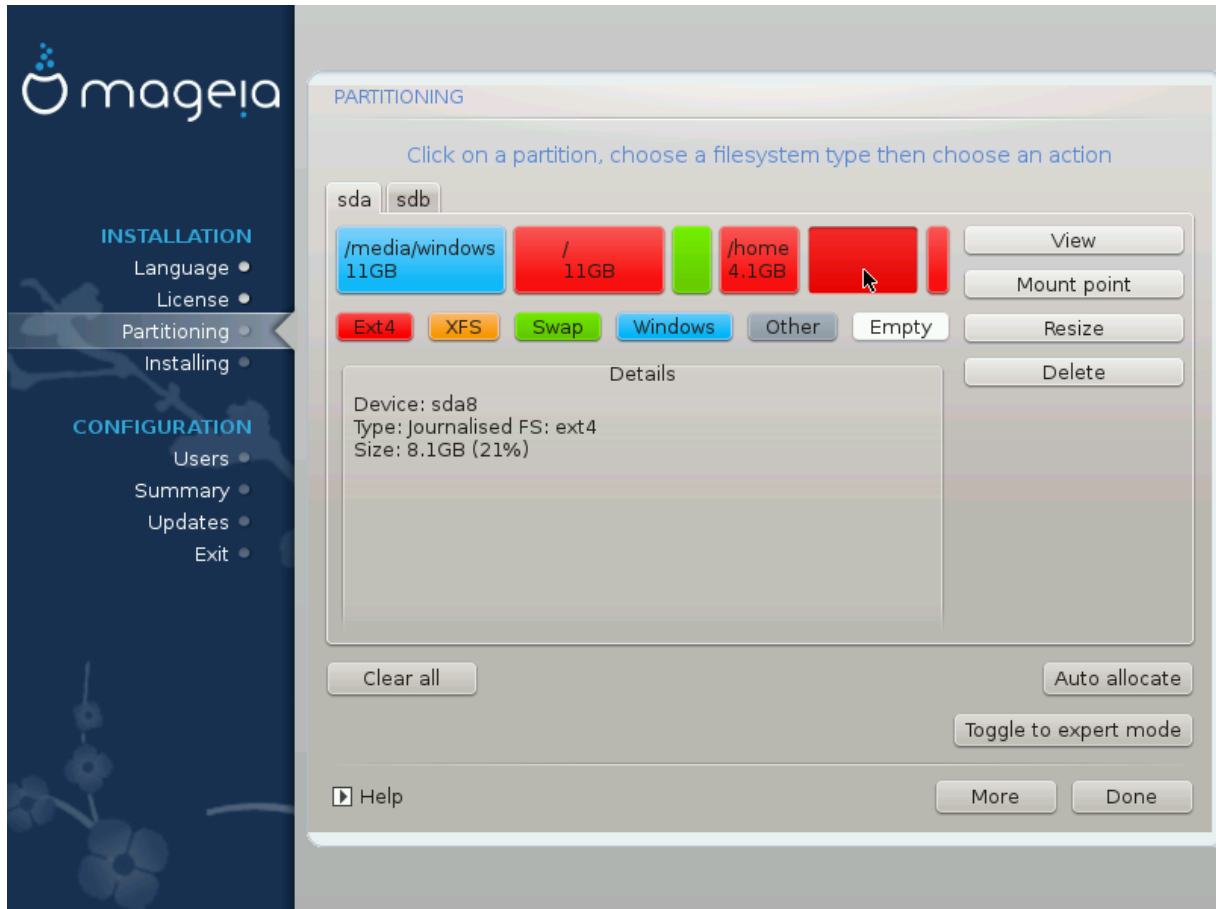
Adjust the layout of your disk(s) here. You can remove or create partitions, change the filesystem of a partition or change its size and even view what is in them before you start.

There is a tab for every detected hard disk or other storage device, like an USB key. For example sda, sdb and sdc if there are three of them.

Push Clear all to wipe all partitions on the selected storage device

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. Toggle to expert mode (or Expert mode) gives some more tools like to add a label or to choose a partition type.

Continue until you adjusted everything to your wishes.

Click Done when you're ready.

> 📝 If you are installing Mageia on an UEFI system, check that an ESP (EFI System Partition) is present and correctly mounted on /boot/EFI (see below)
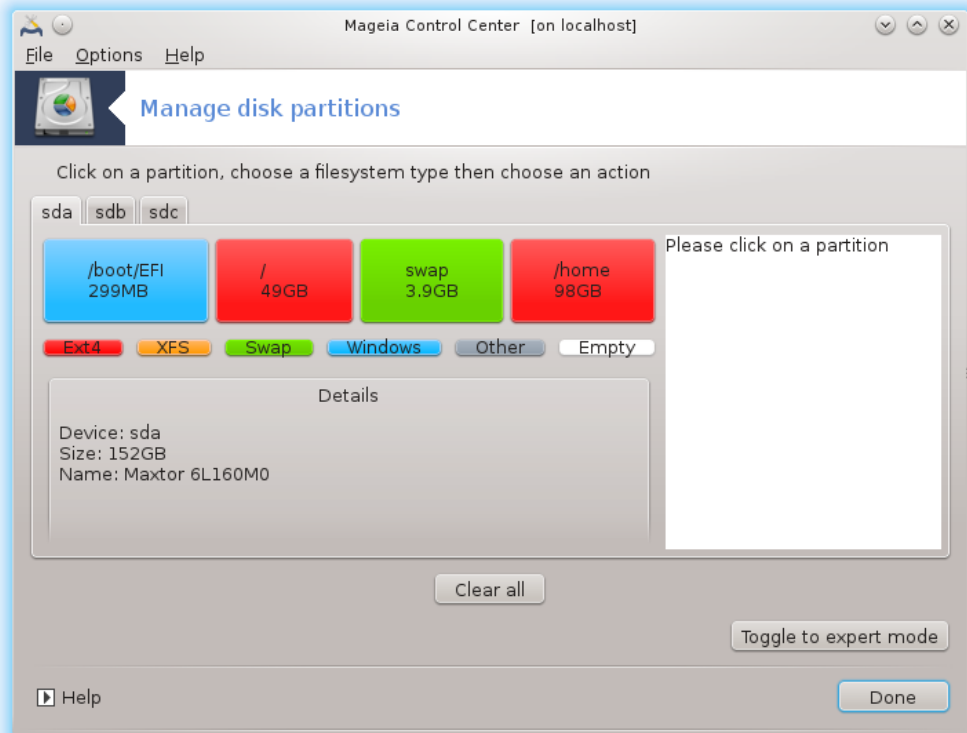
If you are installing Mageia on a Legacy/GPT system, check that a BIOS boot partition is present and of the correct type
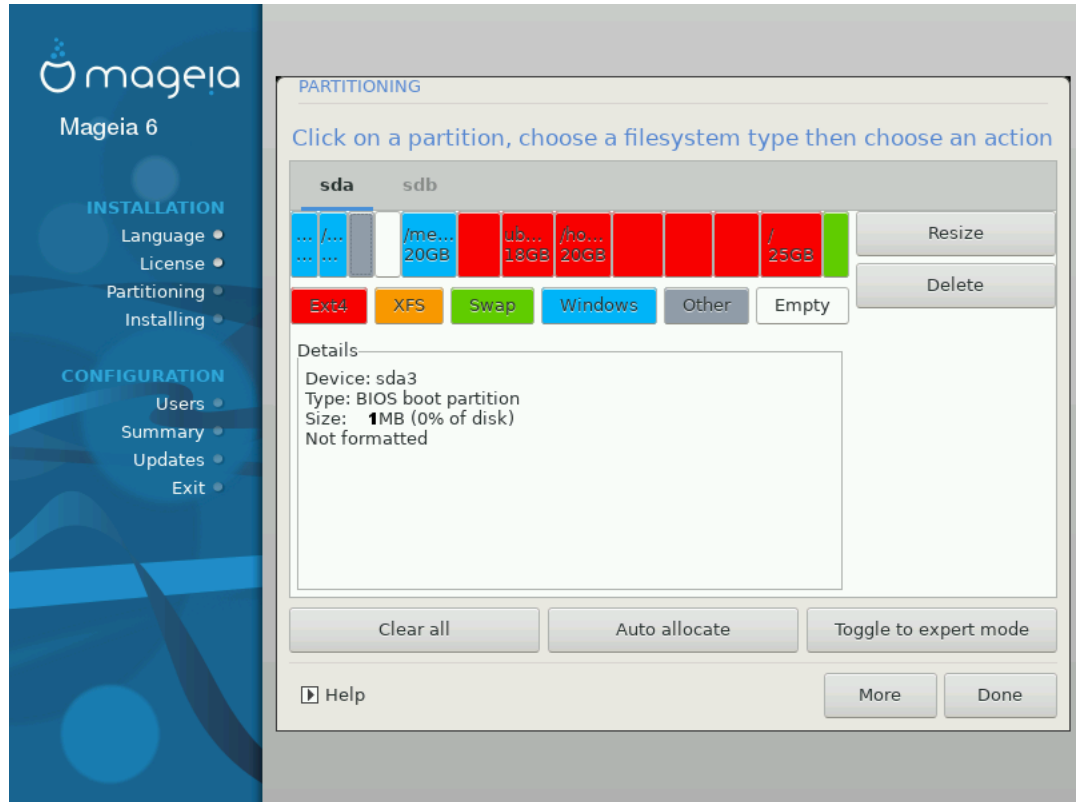
12. Formatting
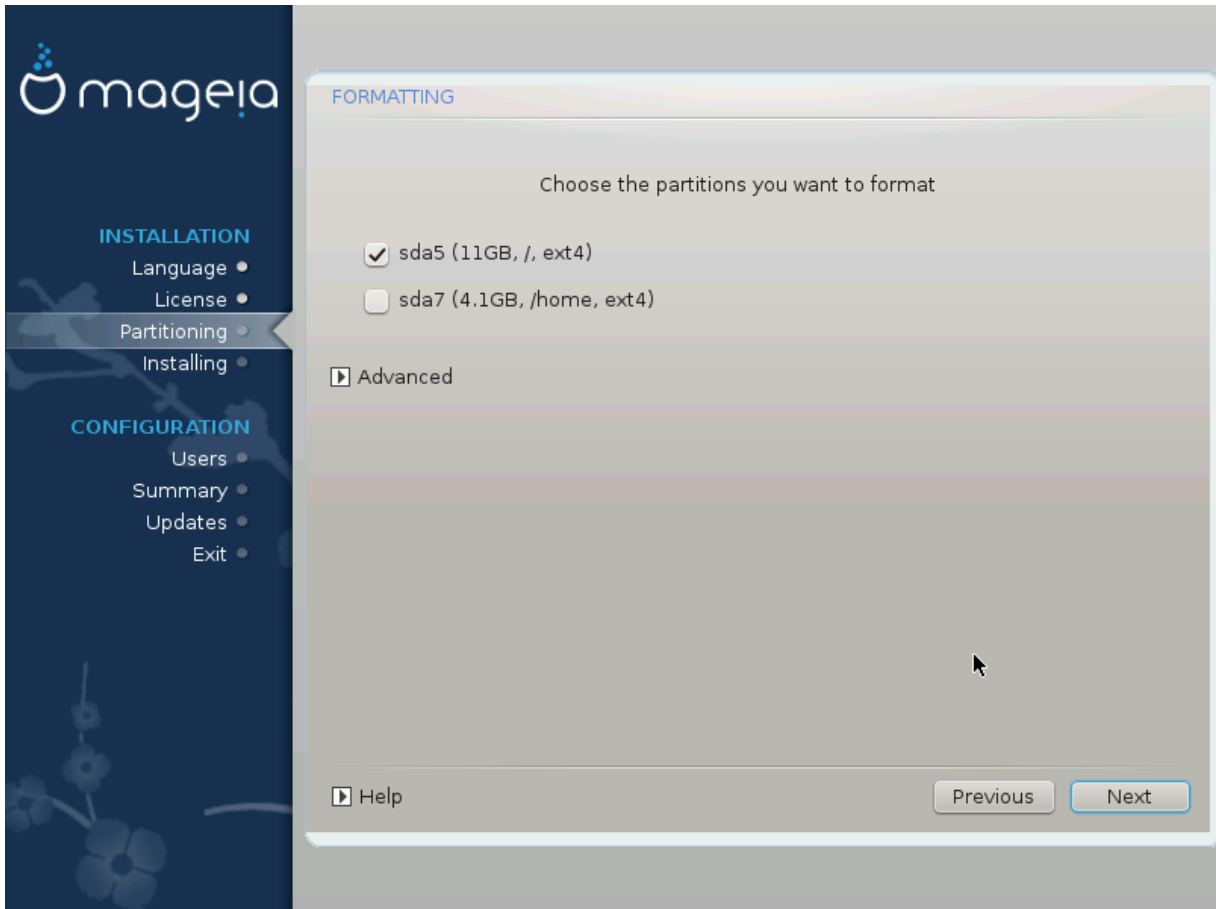
Here you can choose which partition(s) you wish to format. Any data on partitions *not* marked for formatting will be saved.

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

Click on Advanced to choose 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. In that screen you can choose to view what is in your partitions.

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

13. Media Selection (Configure Supplemental Installation Media)
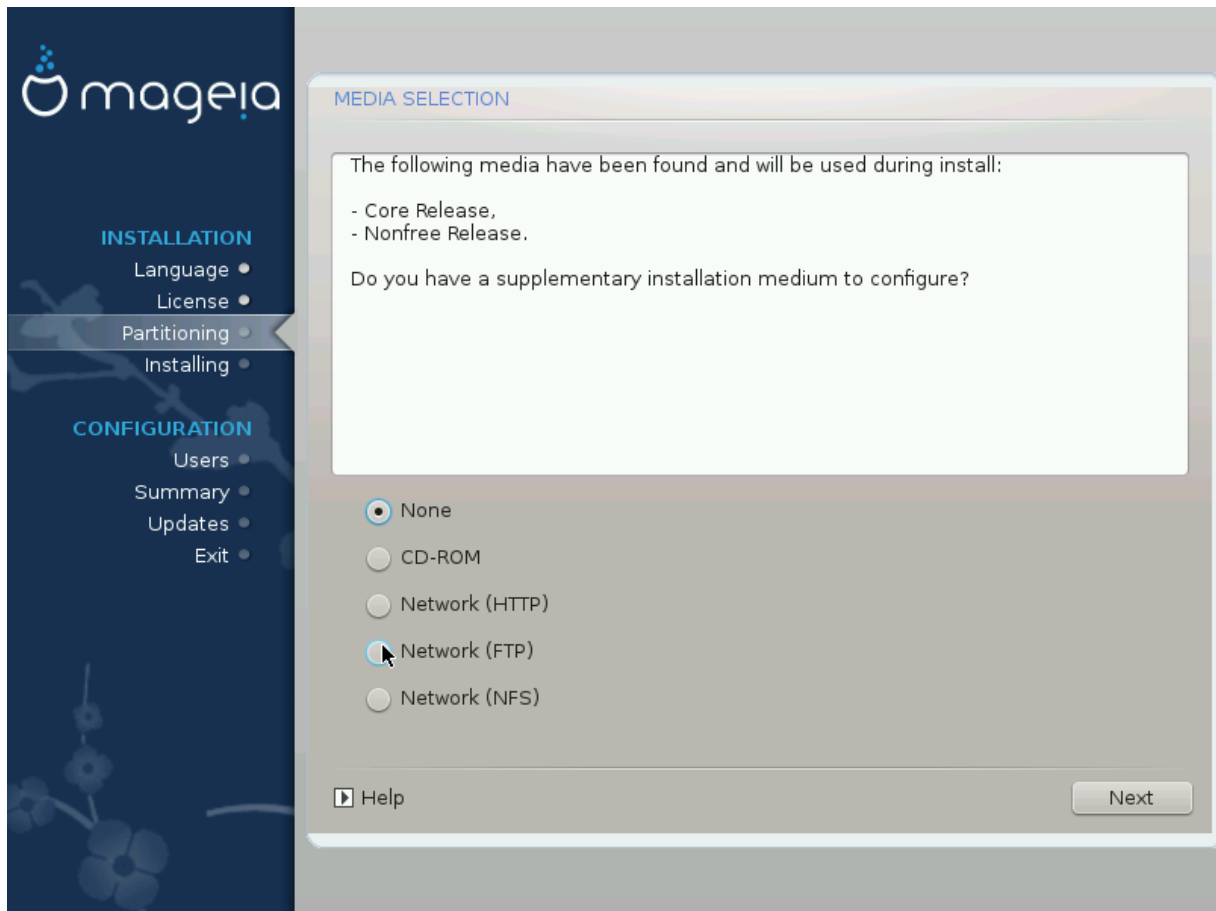
This screen gives you the list of already recognized repositories. You can add other sources for packages, like an optical disc or a remote source. The source selection determines which packages will be available for selection during the next steps.

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

1. Choosing and activation of 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 ticking 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, installer will find the needed 32 bit packages there.

---

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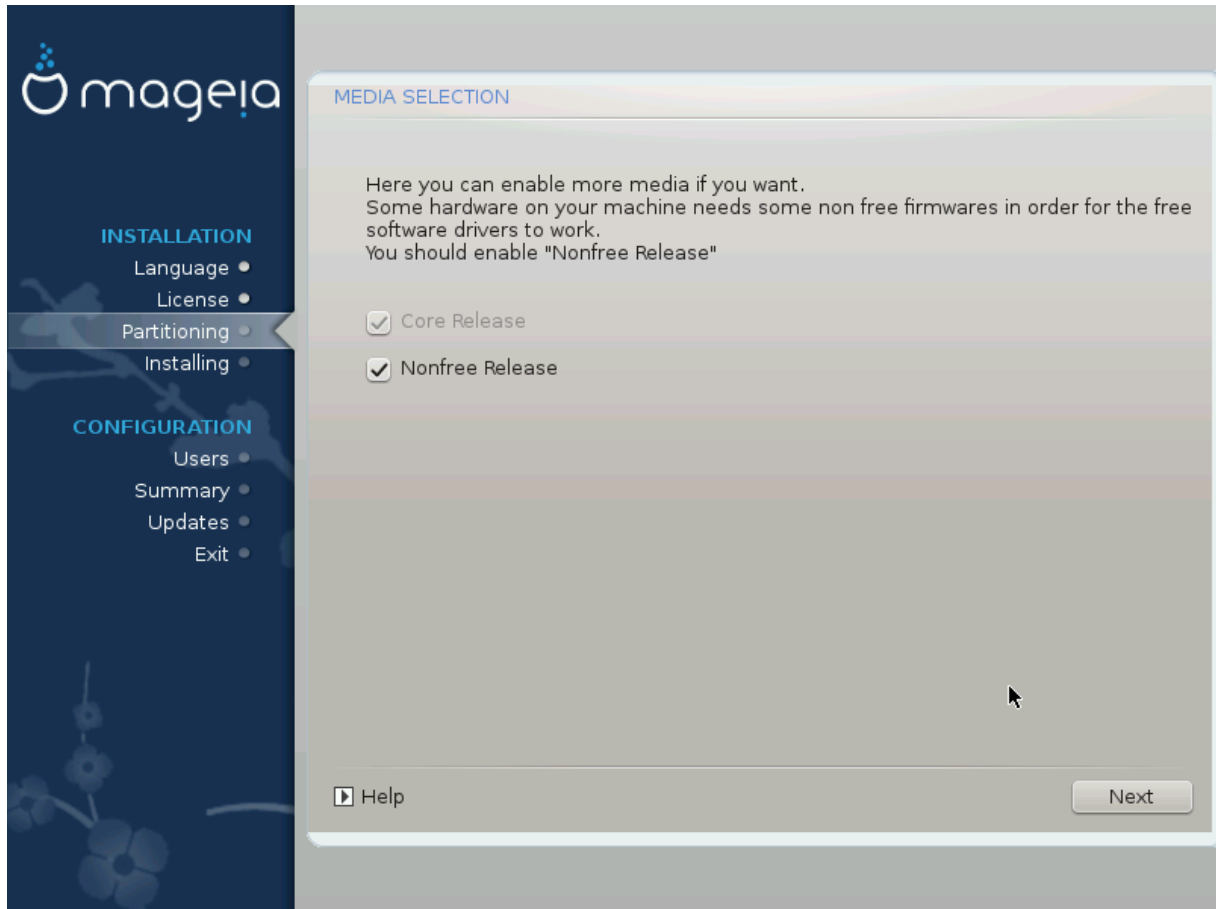
Here you have the list of available repositories. Not all repositories are available, according to which media you use for installing. The repositories selection determines which packages will be available for selection during the next steps.

- 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 ATI 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, etc.

15. Desktop Selection

Depending on your selection here, you may be offered further screens to fine tune your choice.

After the selection step(s), you will see a slide show during package installation. The slide show can be disabled by pressing the Details button
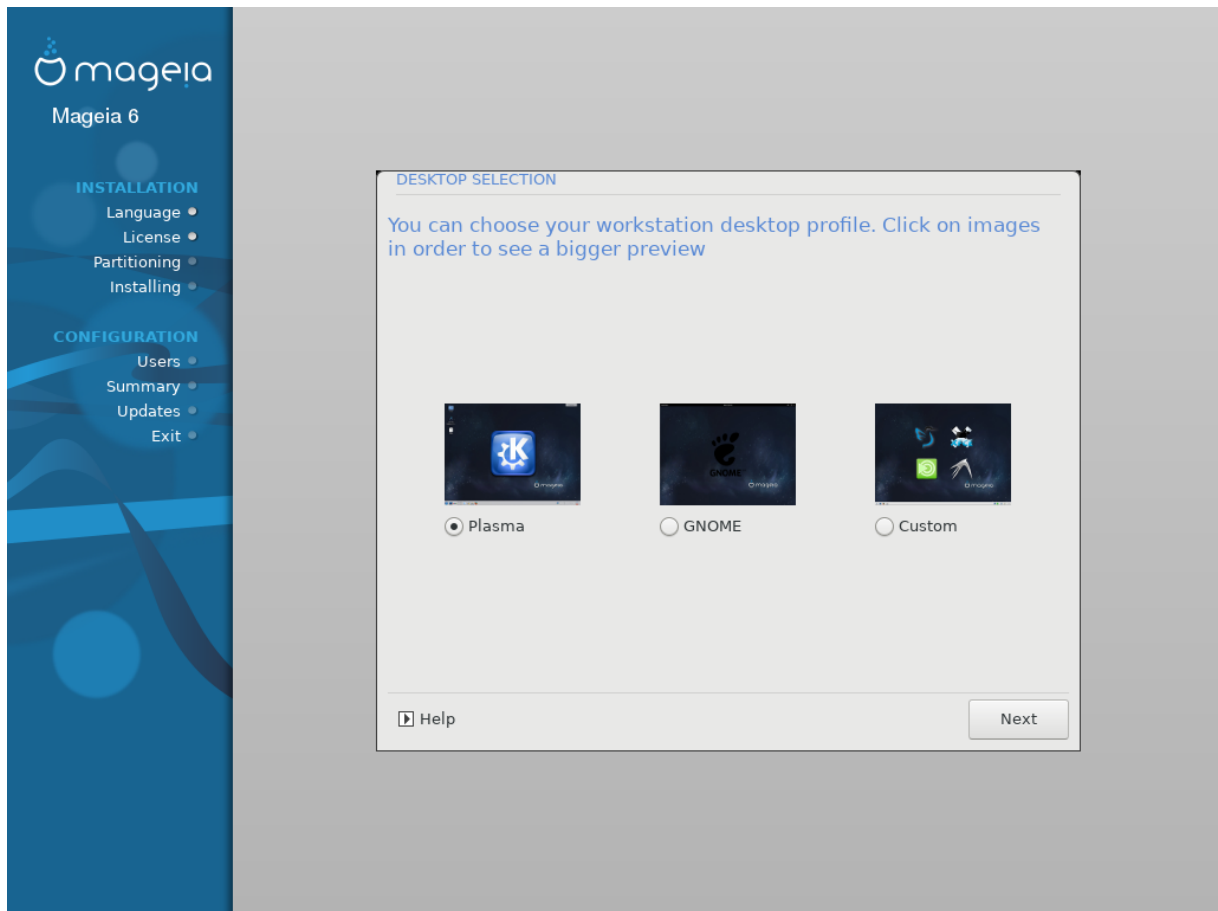
Choose whether you prefer to use the KDE or Gnome desktop environment. Both come with a full set of useful applications and tools. Tick Custom if you want to use neither or both, or if you want something other than the default software choices for these desktop environments. The LXDE desktop is lighter than the previous two, sporting less eye candy and fewer packages installed by default.

16. Package Group Selection
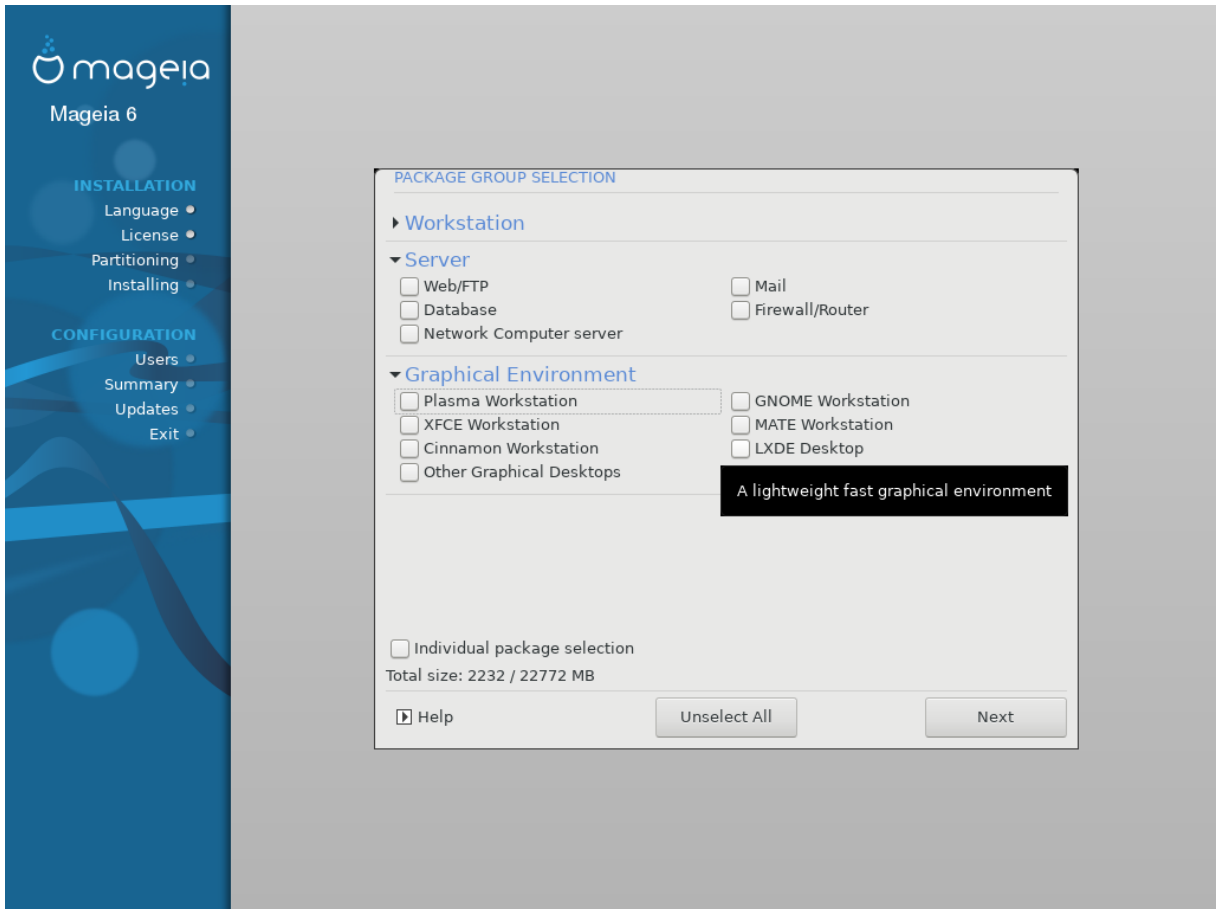
Packages have been sorted into groups, to make choosing what you need on your system a lot easier. The groups are fairly self explanatory, however more information about the content of each is available in tooltips which become visible as the mouse is hovered over them.

- Workstation.

- Server.

- Graphical Environment.

- Individual Package Selection: You can use this option to manually add or remove packages.

Read Section 17, "Minimal Install" for instructions on how to do a minimal install (without or with X & IceWM).

17. Minimal Install

You can choose a Minimal Installation by de-selecting everything in the Package Group Selection screen, see Section 16, "Package Group Selection".

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

Minimal Installation is intended for those with specific uses in mind for their Mageia, such as a server or a specialised workstation. You will probably use this option combined with the "Individual package selection" option mentioned above, to fine-tune your installation, see Section 18, "Choose Individual Packages".

If you choose this installation class, then the related screen will offer you a few useful extras to install, such as documentation and X.

If selected, "With X" will also include IceWM as lightweight desktop environment.

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) [http://www.tldp.org/manpages/man.html] and the [GNU coreutils](http://www.gnu.org/software/coreutils/manual/) [http://www.gnu.org/software/coreutils/manual/] info pages.
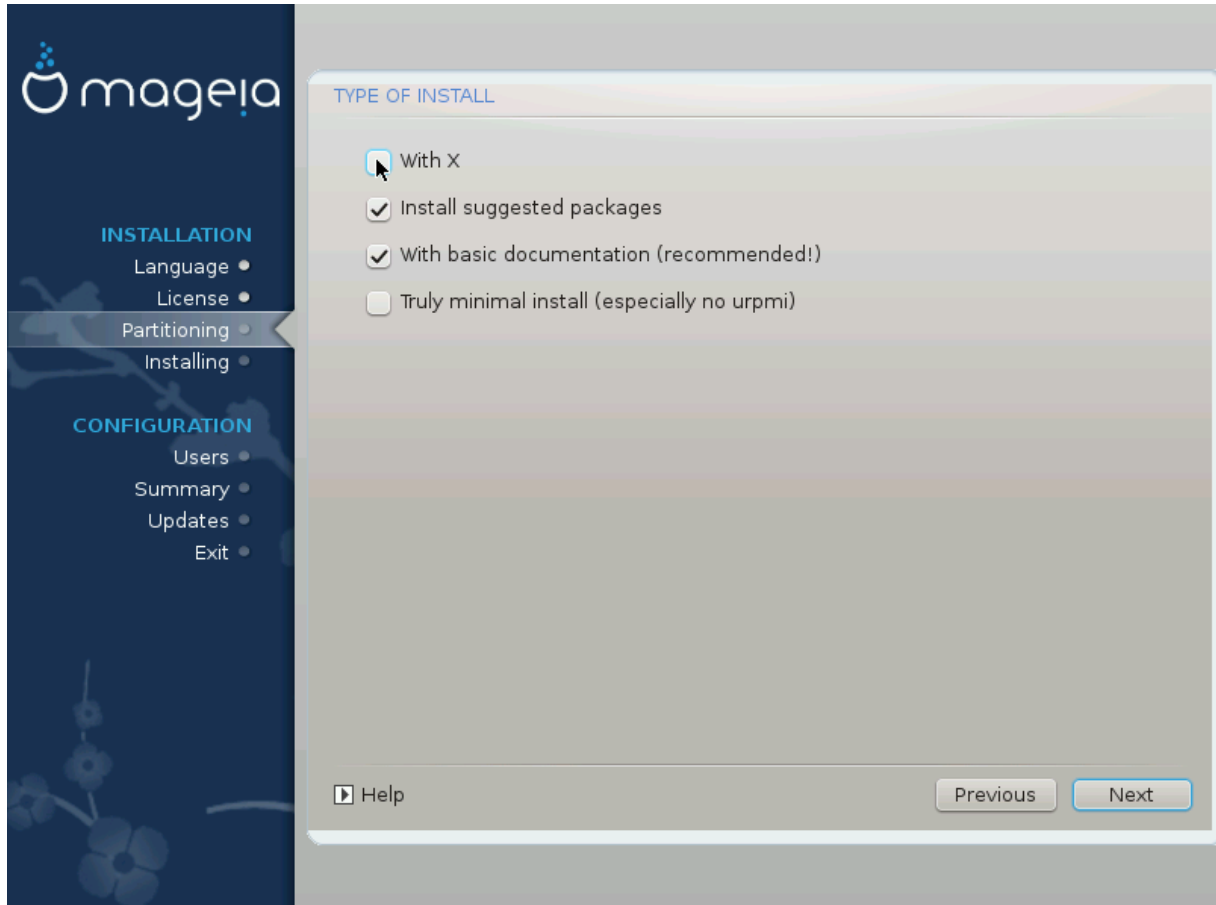
18. Choose Individual Packages
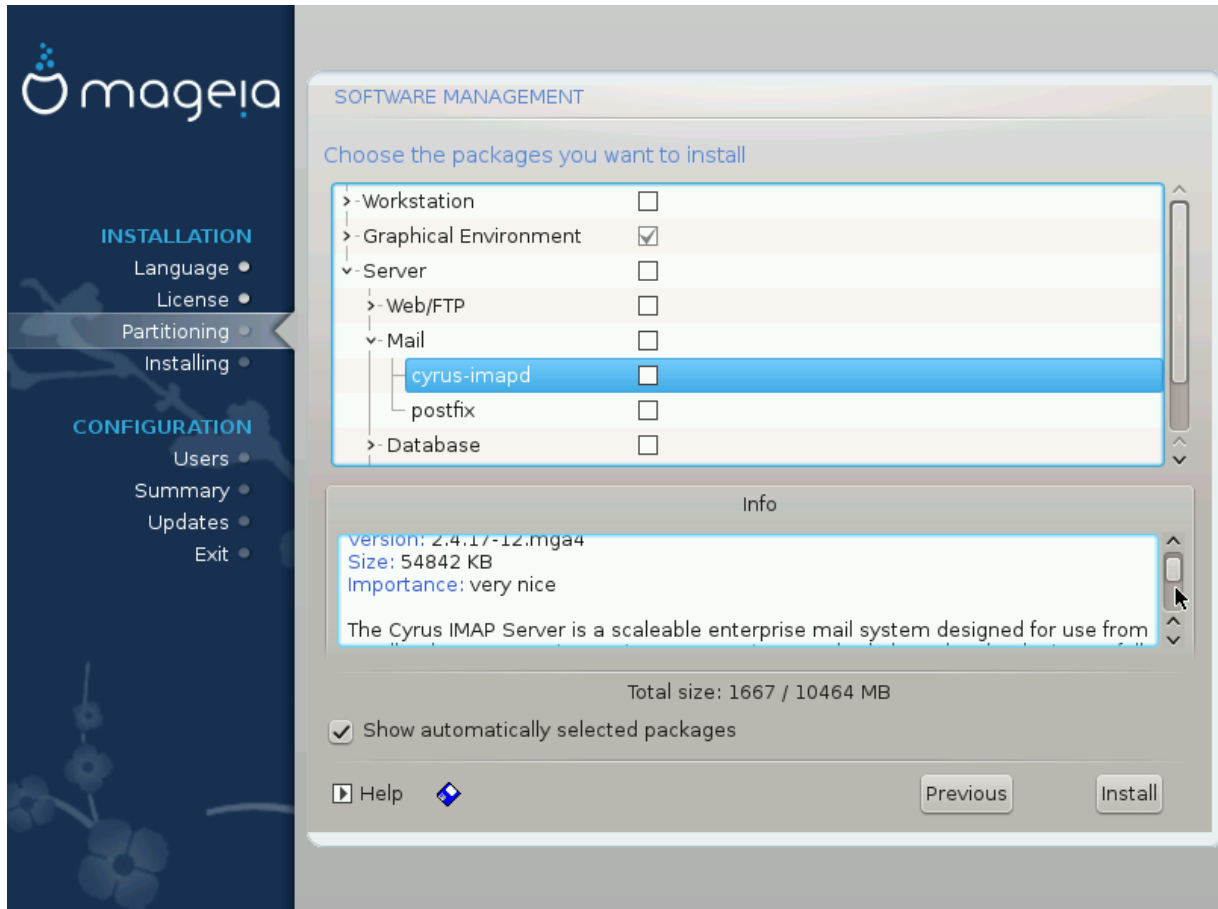
Here you can add or remove any extra packages to customise your installation.

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.

19. User and Superuser Management

19.1. Set Administrator (root) Password:

It is advisable for all Mageia installations to set a superuser or administrator's password, usually called the *root password* in Linux. As you type a password into the top box the colour of its 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. You need to repeat the same password in the box just below the first password box, this checks that you have not mistyped the first password by comparing them.
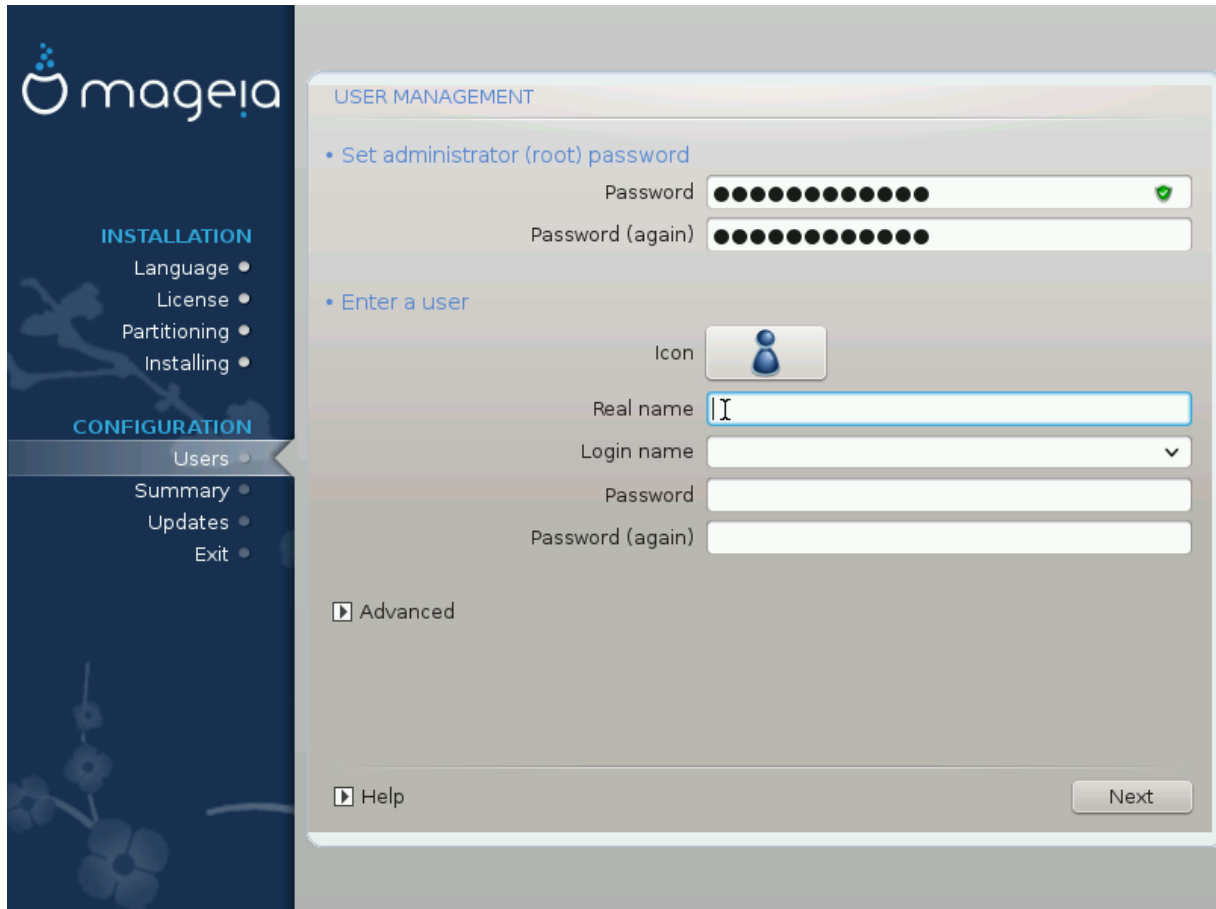

All passwords are case sensitive, it is best to use a mixture of letters (upper and lower case), numbers and other characters in a password.

19.2. Enter a user

Add a user here. A user has fewer rights than the superuser (root), but enough to use the internet, office applications or play games and anything else the average user does with his computer

- Icon: if you click on this button it will change the user's icon.

- Real Name: Insert the user's real name into this text box.

- Login Name: Here you enter the user login name or let drakx use a version of the user's real name. *The login name is case sensitive.*

- Password: In this text box you should type in the user password. There is a shield at the end of the text box that indicates the strength of the password. (See also Note)

- Password (again): Retype the user password into this text box and drakx will check you have the same password in each of the user password text boxes.

> Any user you add while installing Mageia, will have a both read and write protected home directory (umask=0027).
>
> You can add all extra needed users in the *Configuration - Summary* step during the install. Choose *User management*.
>
> The access permissions can also be changed after the install.

19.3. Advanced User Management

If the advanced button is clicked you are offered a screen that allows you to edit the settings for the user you are adding.

Additionally, you can disable or enable a guest account.

> Anything a guest with a default *rbash* guest account saves to his /home directory will be erased when he logs out. The guest should save his important files to a USB key.

- Enable guest account: Here you can enable or disable a guest account. The guest account allows a guest to log into and use the PC, but he has more restricted access than normal users.

- Shell: This drop down list allows you to change the shell used by the user you are adding in the previous screen, options are Bash, Dash and Sh

- User ID: Here you can set the user ID for the user you are adding in the previous screen. This is a number. Leave it blank unless you know what you are doing.

- Group ID: This lets you set the group ID. Also a number, usually the same one as for the user. Leave it blank unless you know what you are doing.

20. Graphic 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, Gnome, LXDE or any other graphical environment to work well, the following X settings need to be correct. Choose the correct settings if you can see that DrakX didn't make a choice, or if you think the choice is incorrect.

- *Graphic card*: Choose your card from the list if needed.

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

> Incorrect refresh rates may damage your monitor

- *Resolution*: Set the desired resolution and color depth of your monitor here.

- *Test*: The test button does not always appear during install. If the button is there, you can control your settings by pressing it. If you see a question asking you whether your settings are correct, you can answer "yes", and 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 is good. *Make sure your settings are on the safe side if the test button isn't available*

- *Options*: Here you can choose to enable or disable various options.

21. Choose an X Server (Configure your Graphic Card)
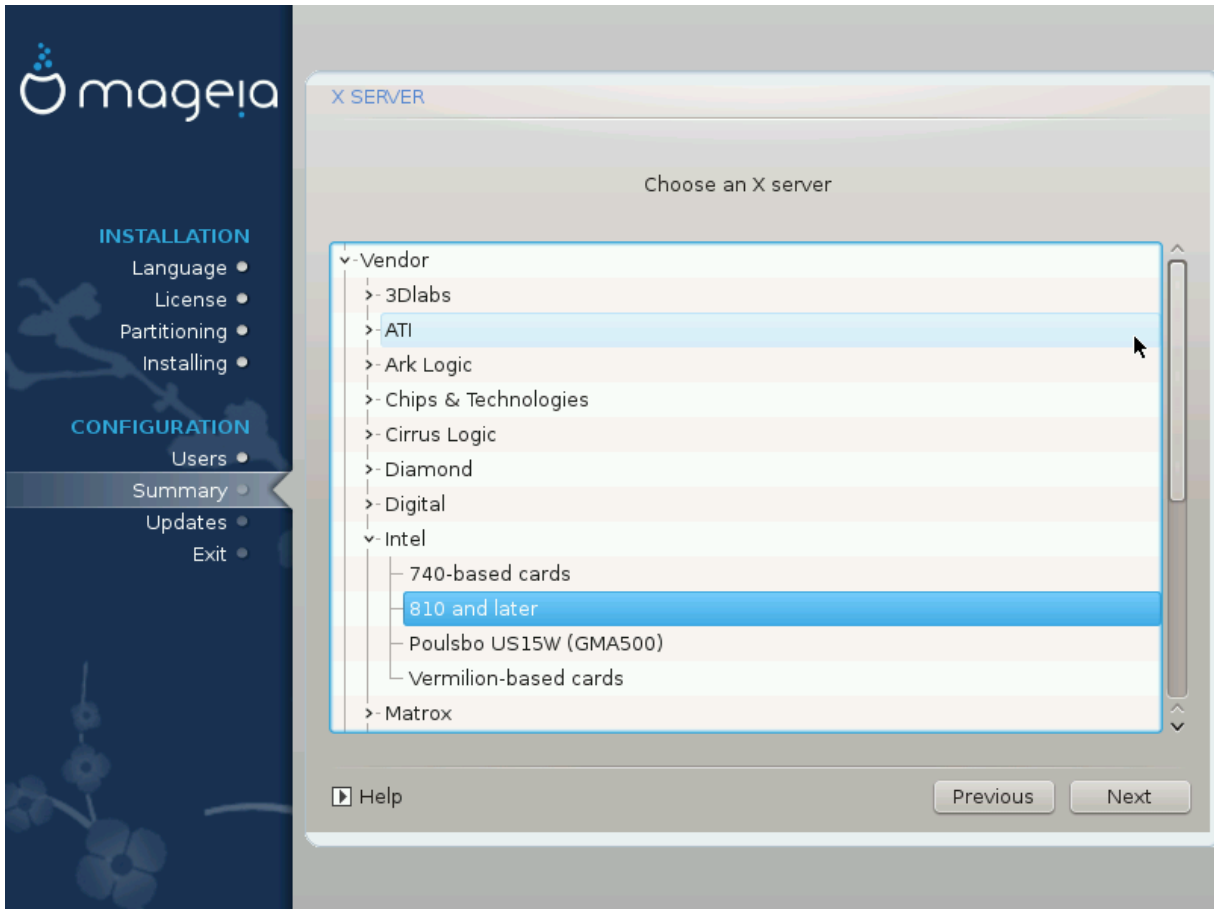
DrakX has a very comprehensive database of video cards and will usually correctly identify your video device.

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:

- vendor
- then the name of your card
- and the type 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

The Xorg listing provides more than 40 generic and open source video card drivers. If you still can't find a named 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 Commandline 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 select it previously, you should do this after your first reboot.

22. 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
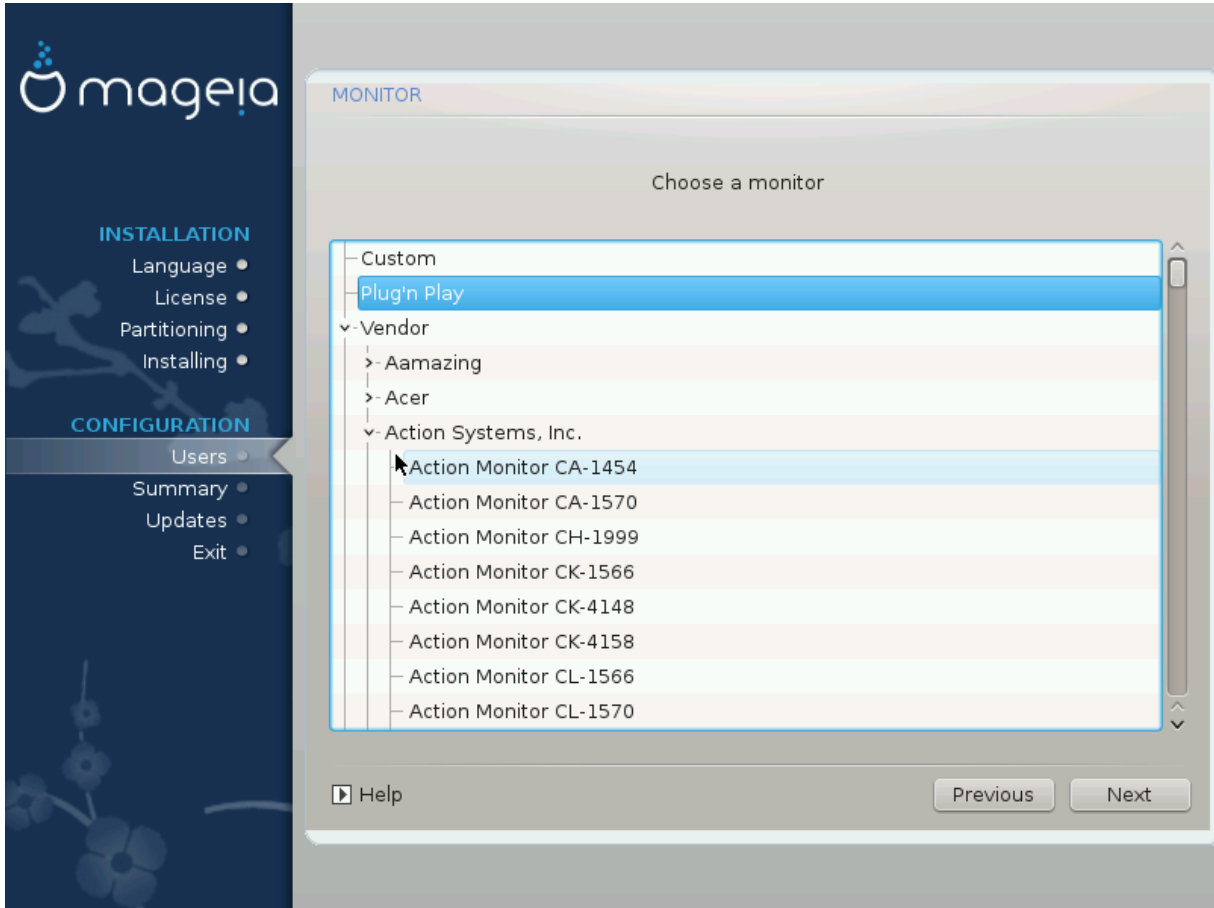
Custom

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.

Plug 'n Play

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

Vendor

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

- vendor
- the monitor manufacturers name
- the monitor description

Generic

selecting this group displays nearly 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.

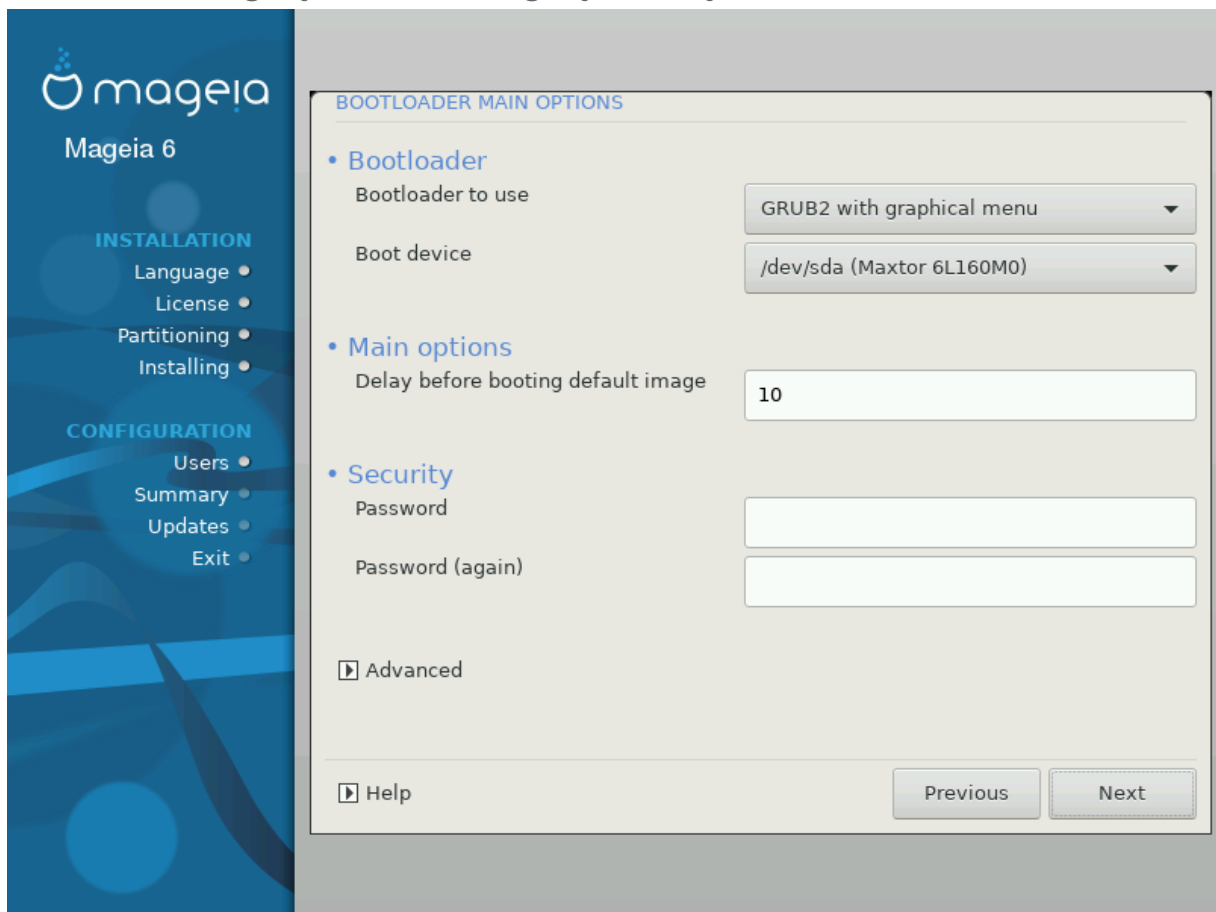# 23. Bootloader main options

23.1. Bootloader interface

By default, Mageia uses exclusively:

- Grub2 (with or without graphical menu) for a Legacy/MBR or Legacy/GPT system

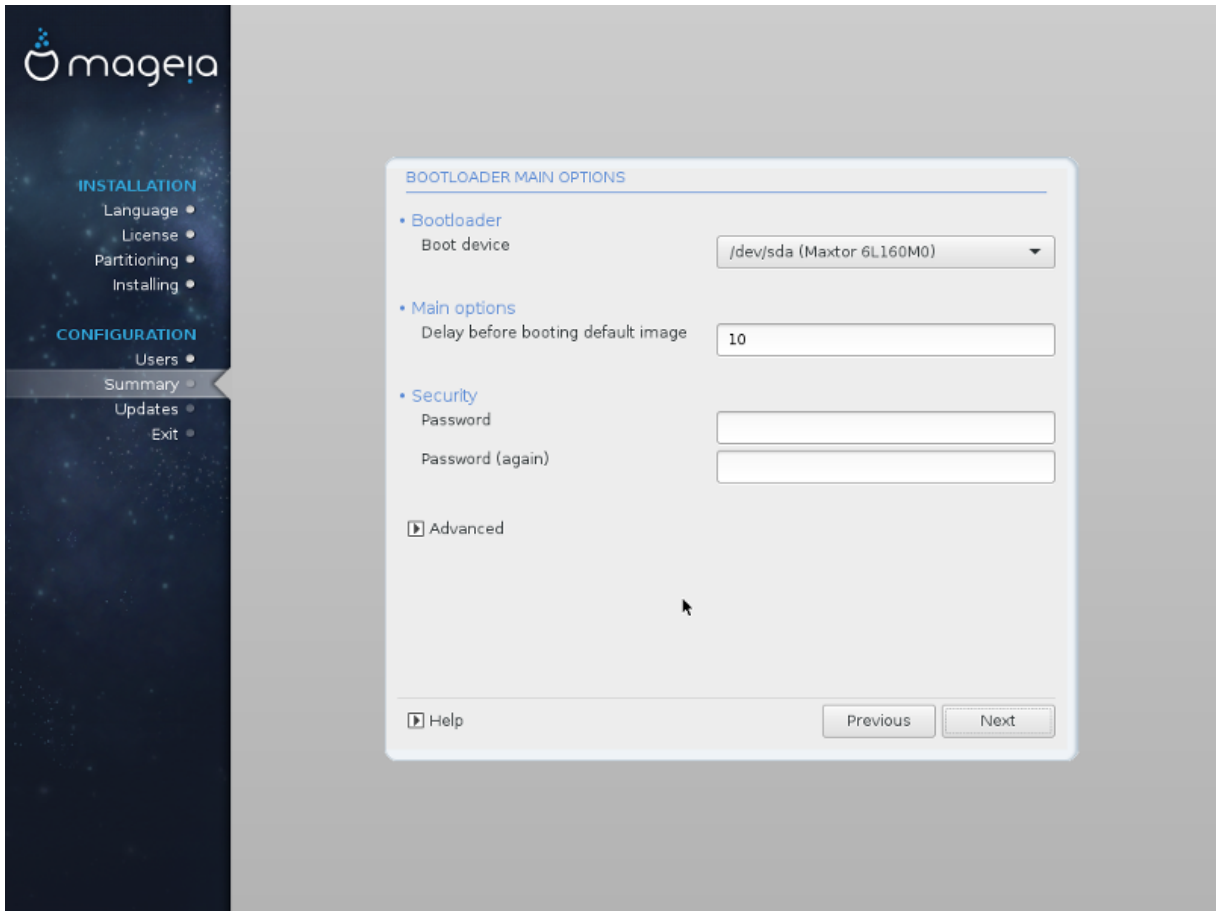- Grub2-efi for a UEFI system.

The Mageia graphical menus are nice :)

23.1.1. Grub2 on Legacy/MBR and Legacy/GPT systems

Don't modify the "Boot Device" unless you really know what you are doing.

23.1.2. Grub2-efi on UEFI systems

With an UEFI system, the user interface is slightly different as you cannot choose between with or without graphical menu

If Mageia is the only system installed on your computer, the installer created an ESP (EFI System Partition) to receive the bootloader (Grub2-efi). If there are already UEFI operating systems installed on your computer (Windows 8 for example), the Mageia installer detects the existing ESP created by Windows and adds grub2-efi. Although it is possible to have several ESPs, only one is advised and enough whatever the number of operating systems you have.

Don't modify the "Boot Device" unless you really know what you are doing.

23.2. Using a Mageia bootloader

By default, according to your system, Mageia writes a new:

- GRUB2 bootloader either into the MBR (Master Boot Record) of your first hard drive or in the BIOS boot partition.
- Grub2-efi bootloader into the ESP

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, click on Next and then uncheck the box Probe Foreign OS
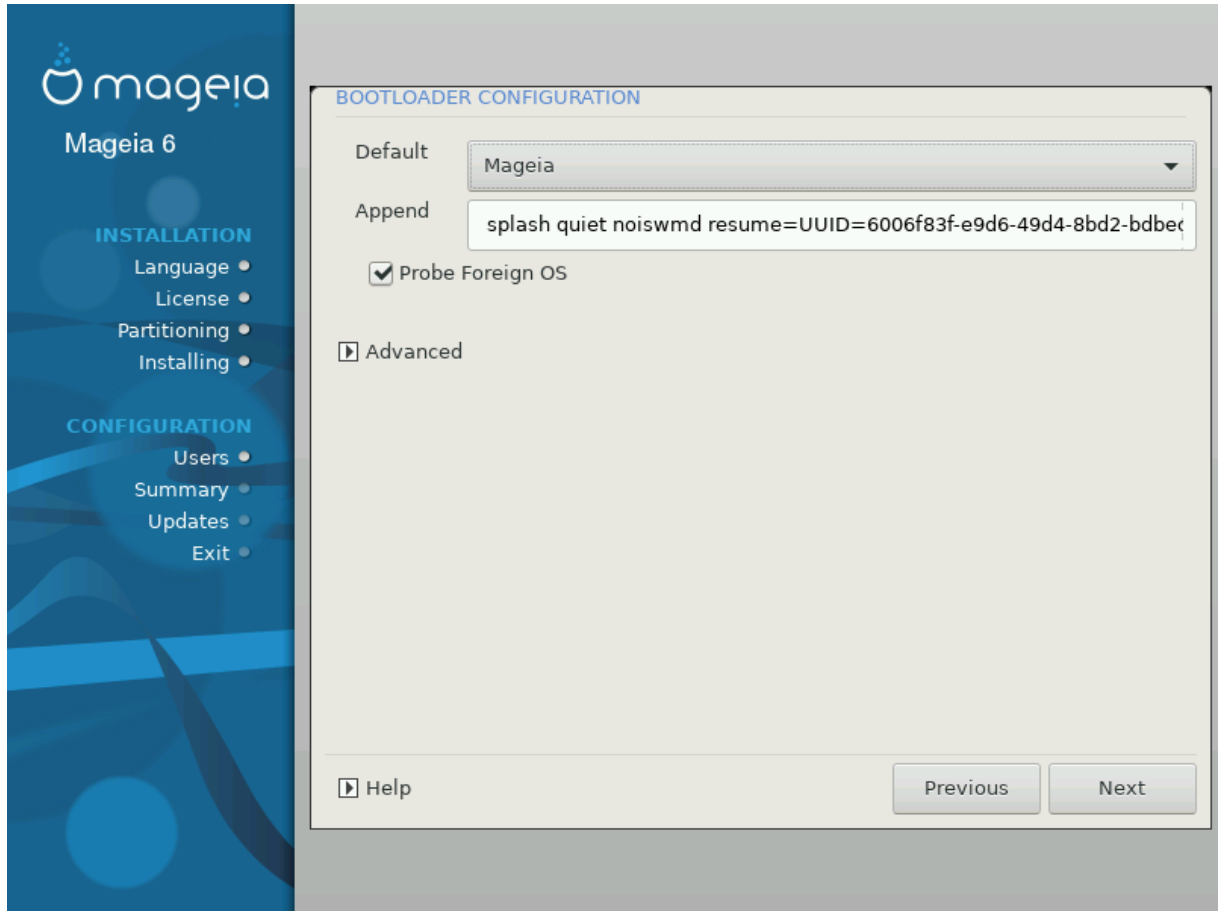
23.3. Using an existing bootloader

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

23.4. Using chain loading

If you don't want a bootable Mageia, but to chain load it from another OS, click on Next, then on Advanced and Check the box Do not touch ESP or MBR.
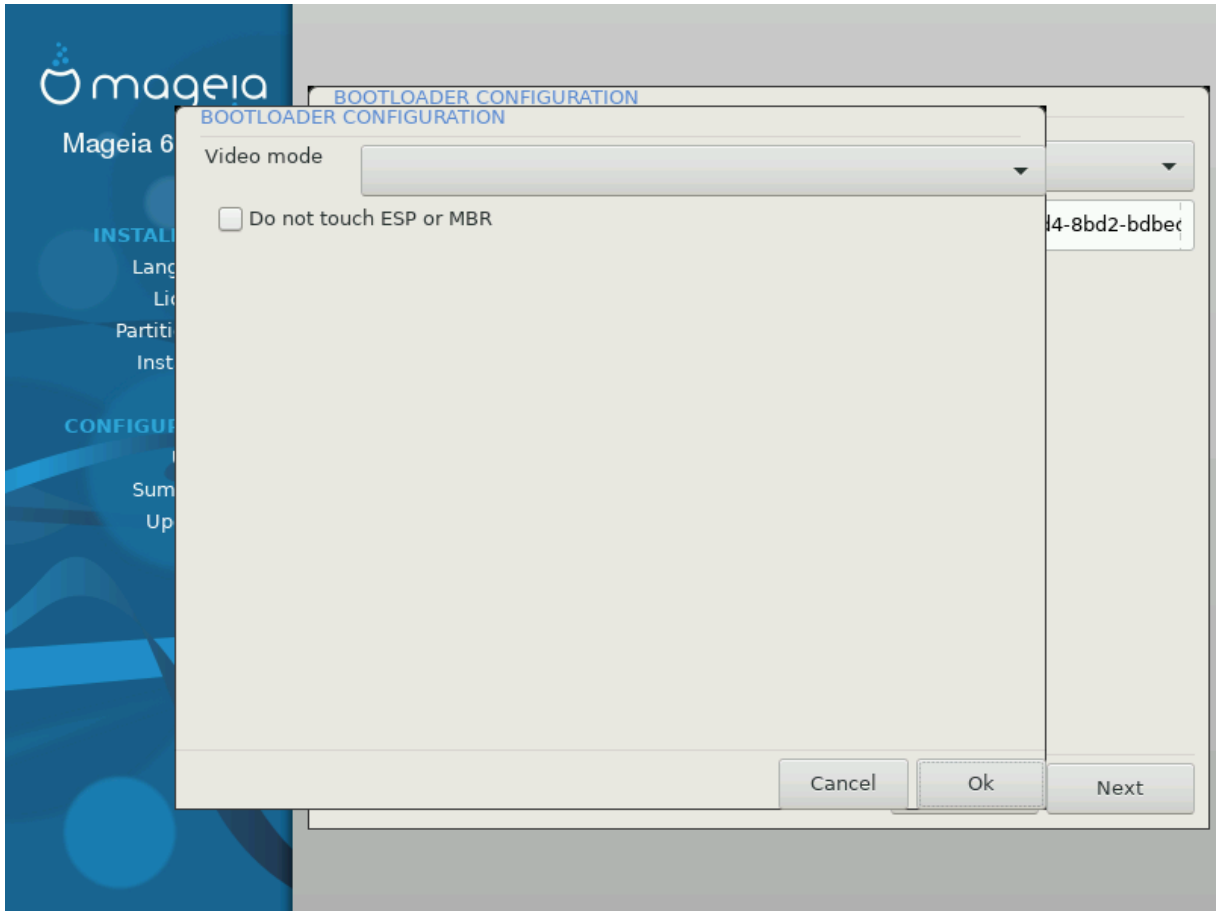
You will get a warning that the bootloader is missing, ignore it by clicking OK.

23.5. Options

23.5.1. First page

- Delay before booting the default image: This text box lets you set a delay in seconds before the default operating system is started up.
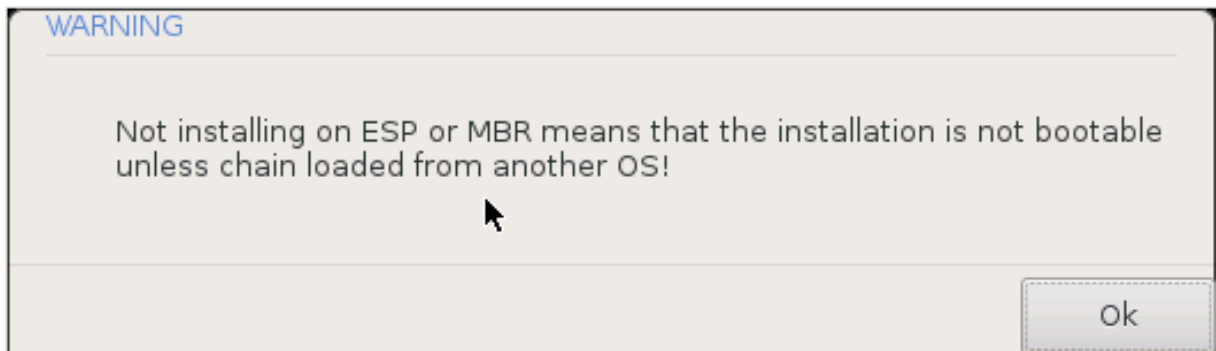
- Security: This allows you to set a password for the bootloader. This means a username and password will be asked at the boot time to select a booting entry or change settings. The username is "root" and the password is the one chosen here after.

- Password: This text box is where you actually put the password

- 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 the power management. It can save energy by stopping unused devices, this was the method used before APM. Unchecking 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 or disabling 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.

23.5.2. Next page

- Default: Operating system started up by default

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

- Probe foreign OS: see above Using a Mageia bootloader

- Advanced

  – Video mode: This sets the screen size and colour depth the boot menu will use. If you click the down triangle you will be offered other size and colour depth options.

  – **Do not touch ESP or MBR**: see above Using the chain loading
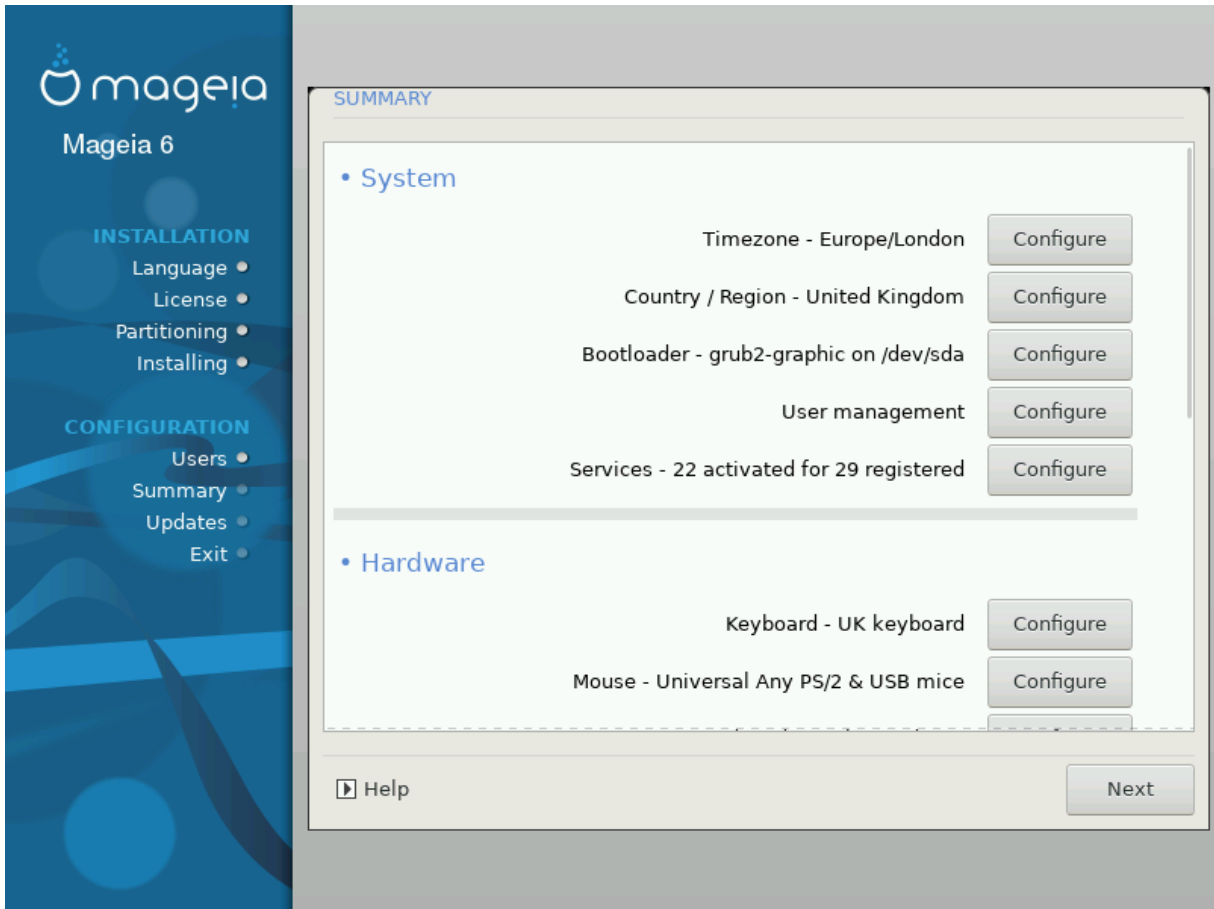
24. Add or Modify a Boot Menu Entry

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

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

25. Summary of miscellaneous parameters

DrakX made smart choices for the configuration of your system depending on the choices you made and on the hardware DrakX detected. You can check the settings here and change them if you want after pressing Configure.

As a general rule, default settings are recommended and you can keep them with 3 exceptions:

- there are known issues with a default setting
- the default setting has already been tried and it fails
- something else is said in the detailed sections below

25.1. System parameters

- Timezone

  DrakX selected a time zone for you, depending on your preferred language. You can change it if needed. See also Section 26, "Configure your Timezone"

- Country / Region

  If you are not in the selected country, it is very important that you correct the setting. See Section 27, "Select your Country / Region"

- Bootloader

  DrakX has made good choices for the bootloader setting.

Do not change anything, unless you know how to configure Grub2

For more information, see Section 23, "Bootloader main options"

- User management

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

- Services:

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

  You should check carefully before changing anything here - a mistake may prevent your computer from operating correctly.

  For more information, see Section 28, "Configure your Services"

25.2. Hardware parameters

- Keyboard:

  This is where you setup or change your keyboard layout which will depend on your location, language or 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.

- Mouse:

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

- Sound card:

  The installer uses the default driver, if there is a default one. The option to select a different driver is only given when there is more than one driver for your card, but none of them is the default one.

- Graphical interface:

  This section allows you to configure your graphic card(s) and displays.

  For more information, see Section 20, "Graphic Card and Monitor Configuration".
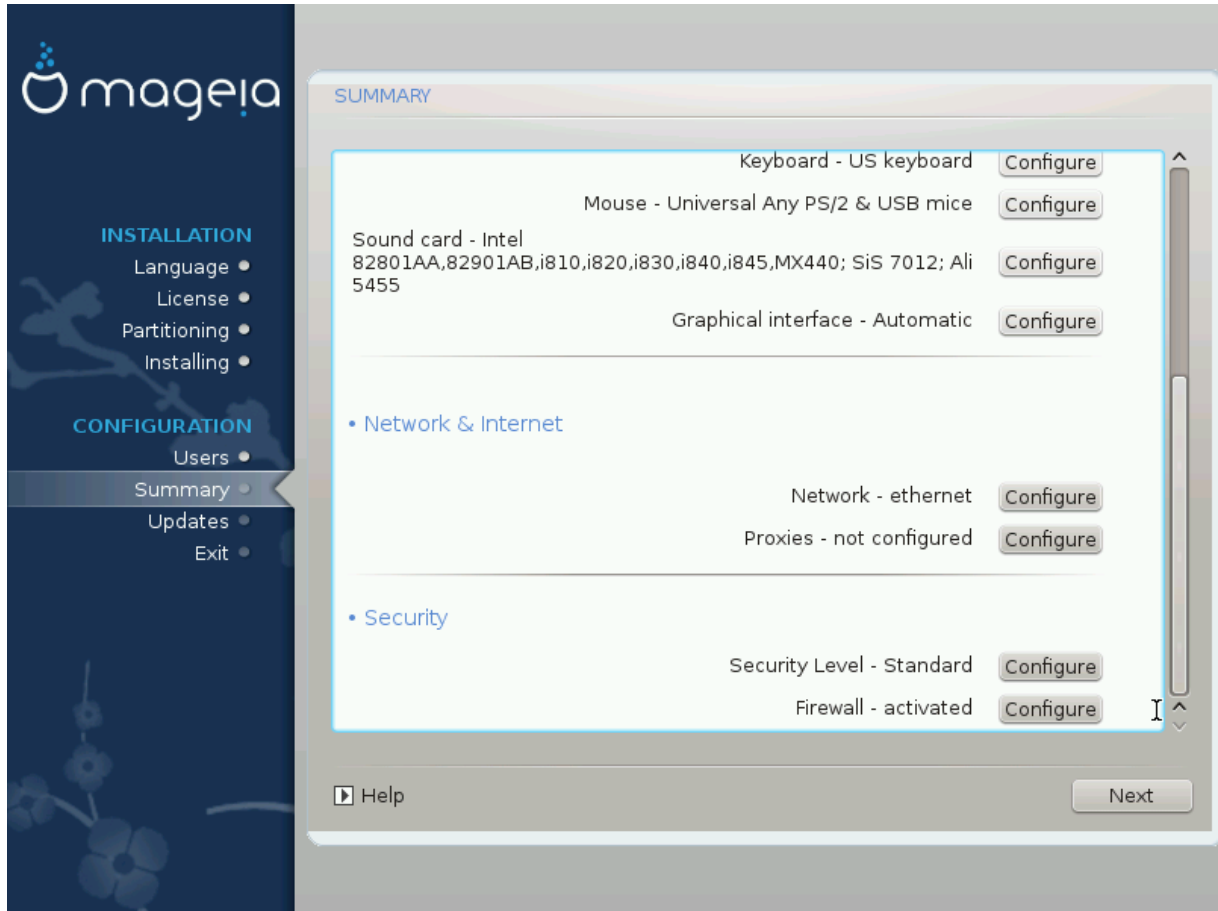
25.3. Network and Internet parameters

- Network:

  You can configure your network here, but for network cards with non-free drivers it is better to do that after reboot, in 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 watch 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 get the parameters you need to enter here

25.4. Security

- Security Level:

  Here you set the Security level for your computer, in most cases the default setting (Standard) is adequate for general use.

  Check the option which best suits your usage.

- Firewall:

  A firewall is intended to be a barrier between your important data and the rascals out there on the internet who would compromise or steal it.
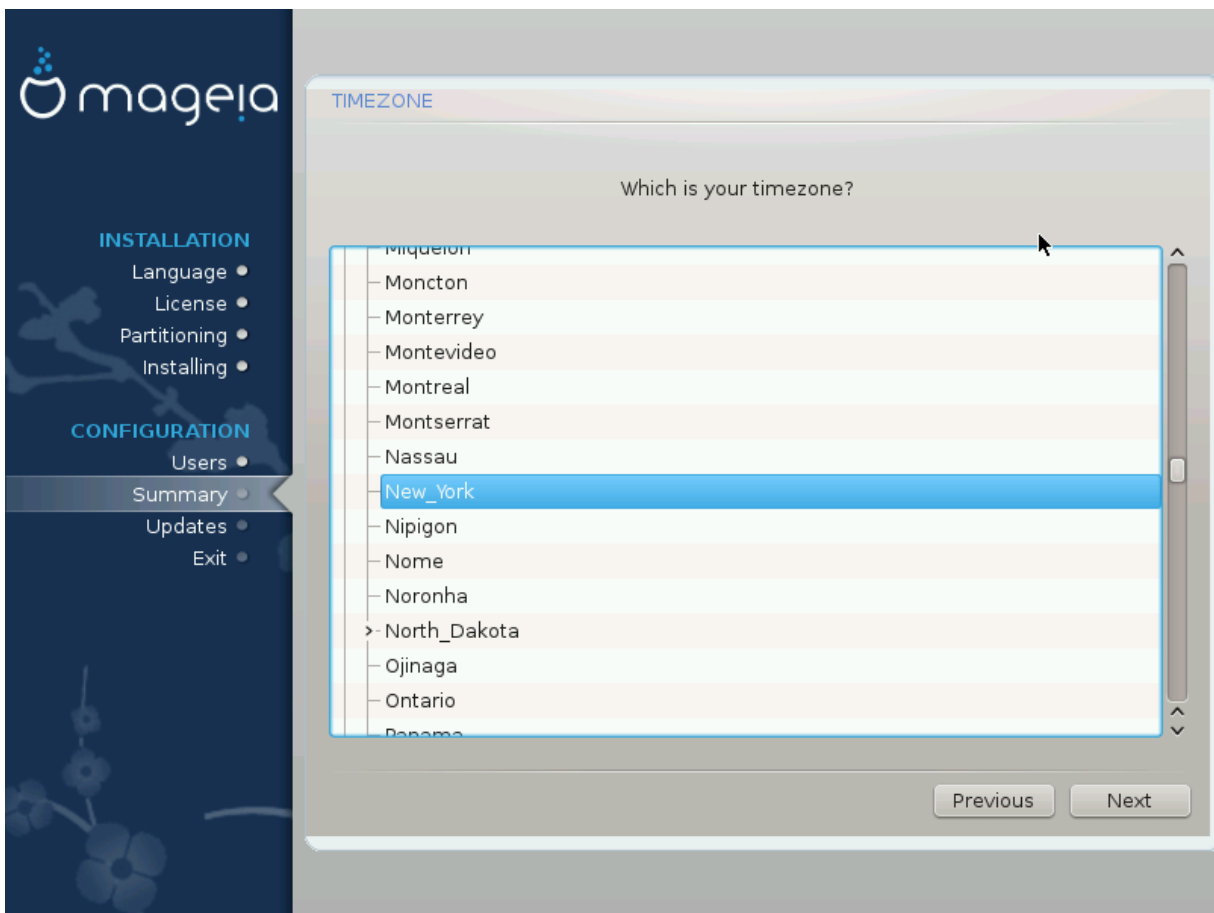
  Select the services that you wish to have access to your system. Your selections will depend on what you use your computer for. For more information, see Section 32, "Firewall".

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

---

26. Configure your Timezone

Choose your time zone by choosing your country or a city close to you in the same time zone.
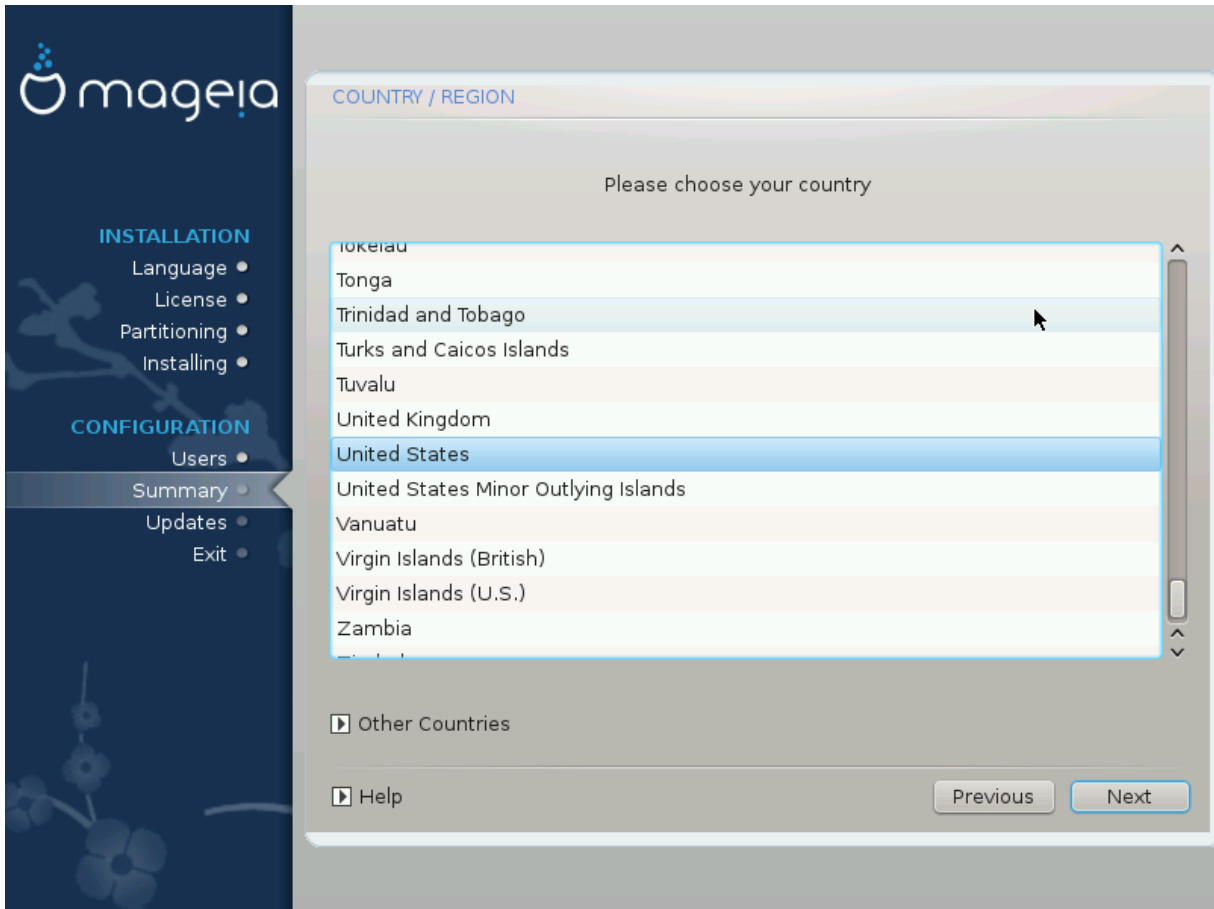
In next screen you can choose to set your hardware clock to local time or to GMT, also known as UTC.

> 📝 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.

---

27. *Select your Country / Region*

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 not being able to use a Wireless network.

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

> If your country is only in the Other Countries list, after clicking OK it may seem a country from the first list was chosen. Please ignore this, DrakX will follow your real choice.

27.1. *Input method*

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 after you boot your installed system via "Configure your Computer" -> "System", or by running localedrake as root.

28. Configure your Services
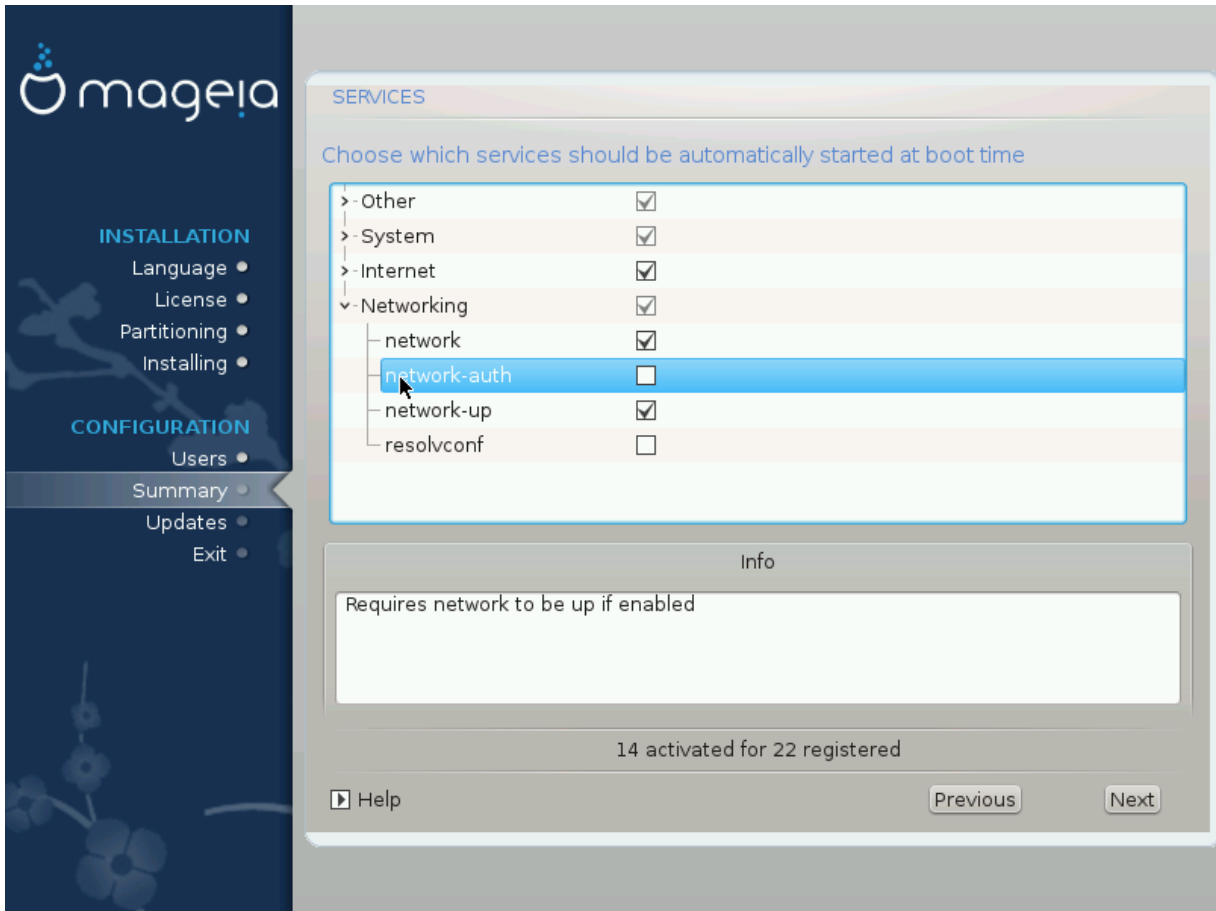
Here you can set which services should (not) start when you boot your system.

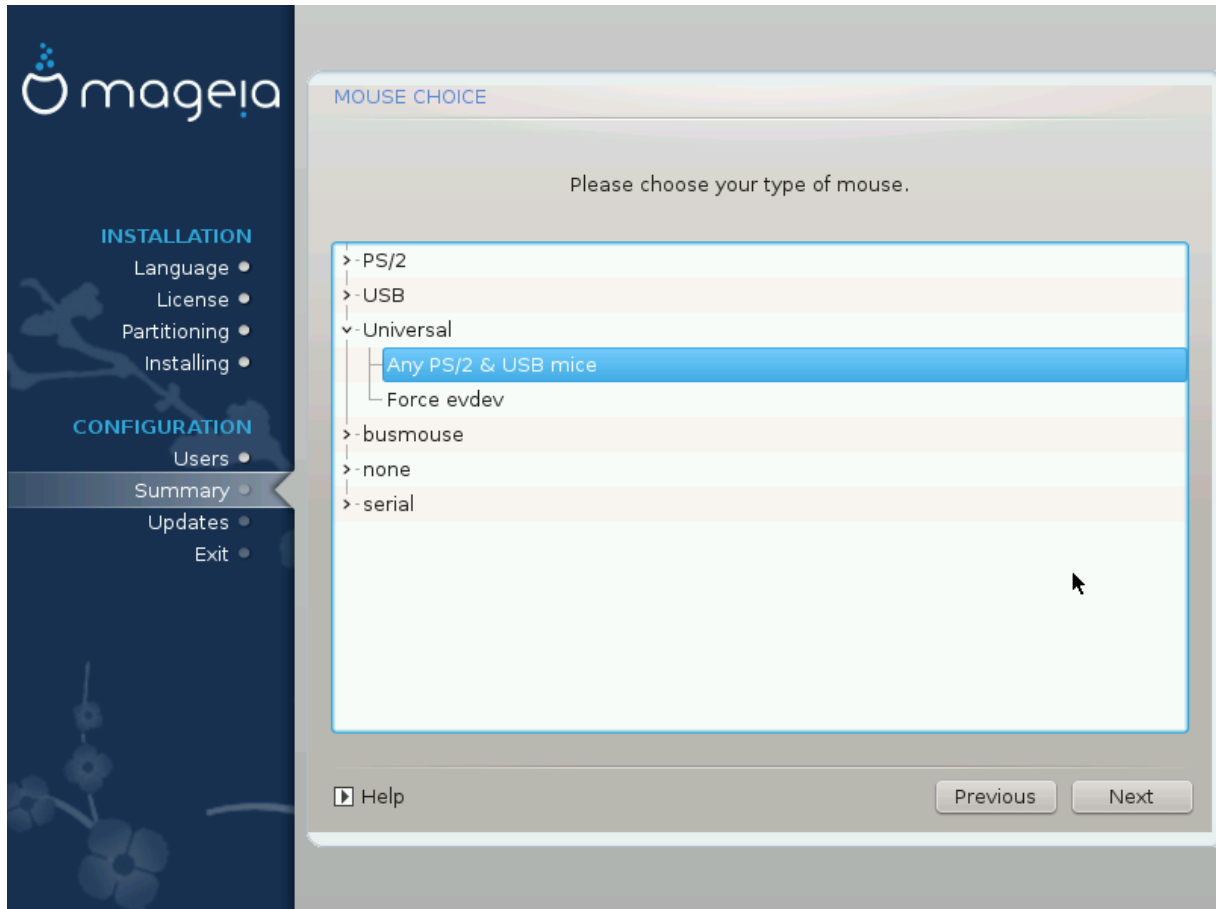There are four groups, click on the triangle before a group to expand it and see all services in it.

The setting 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.

29. Select mouse

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.

30. Sound Configuration

In this screen the name of the driver that the installer chose for your sound card is given, which will be the default driver if we have a default one.

The default driver should work without problems. However, if after install you do encounter problems, then run **draksound** or start this tool via MCC (Mageia Control Center), by choosing the Hardware tab and clicking on Sound Configuration at the top right of the screen.

Then, in the draksound or "Sound Configuration" tool screen, click on Advanced and then on Troubleshooting to find very useful advice about how to solve the problem.

30.1. Advanced

Clicking Advanced in this screen, during install, is useful if there is no default driver and there are several drivers available, but you think the installer selected the wrong one.

In that case you can select a different driver after clicking on Let me pick any driver.

31. Security Level
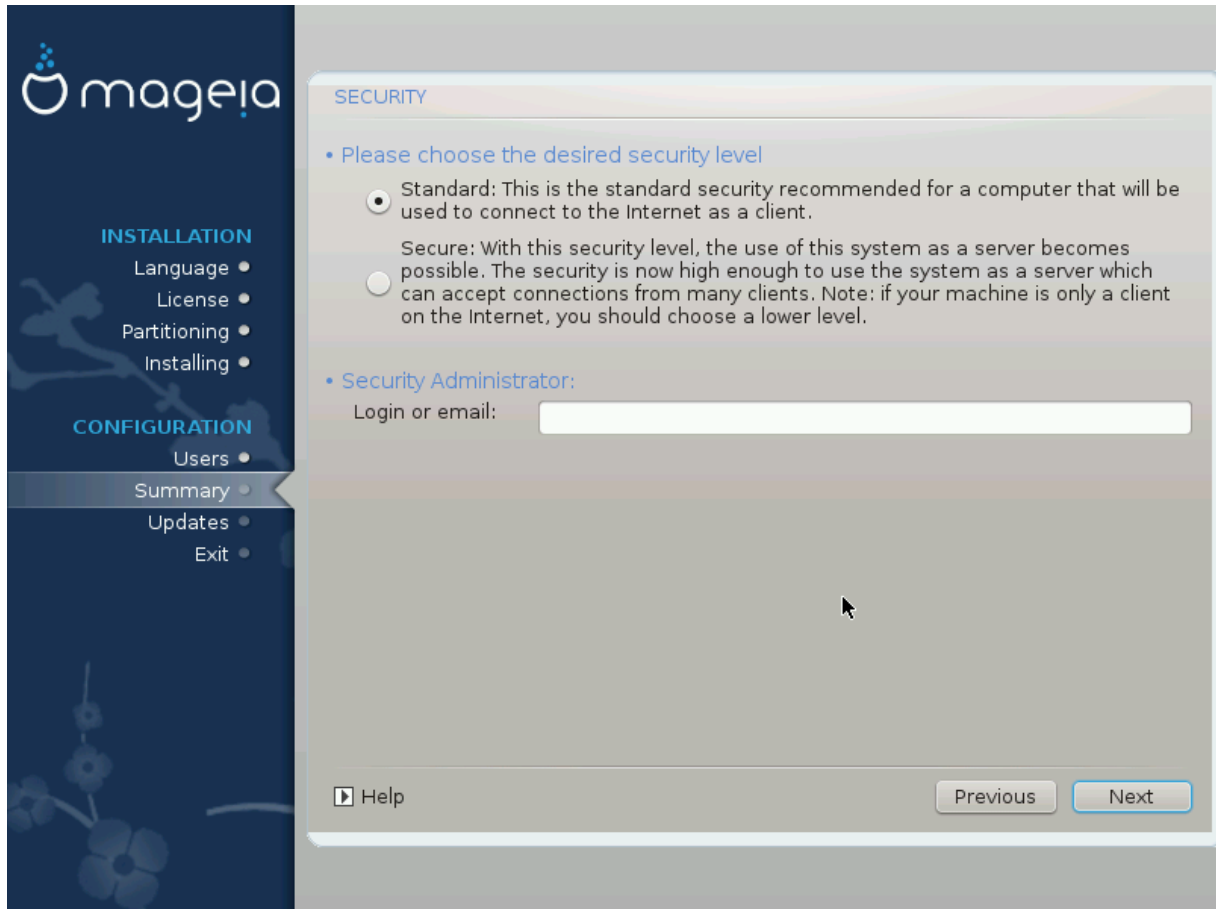
Please choose the desired security level

The default setting ("standard") is OK for the average user. The alternative ("secure") setting will create a highly protected system - for instance if the system is to be used as a public server - normally you should leave this at the default setting.

Security Administrator

This item permits 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 fill this field with <user>@localhost - where <user> is the login name of the user configured 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!

After install, it will always be possible to adjust your security settings in the Security part of the Mageia Control Center.

32. Firewall

This section allows 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 accessibly from the network. The "*Everything (no firewall)*" button has a particular role: it 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 checkbuttons are more or less self-explanatory. As an example, you will check the "CUPS server" button if you want printers on your machine to be accessible from the network.

Advanced

The set of checkbuttons only comprises the most common services. The "Advanced" button allows to enable messages that correspond to a service for which no checkbutton exists. The "*Advanced*" button 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.
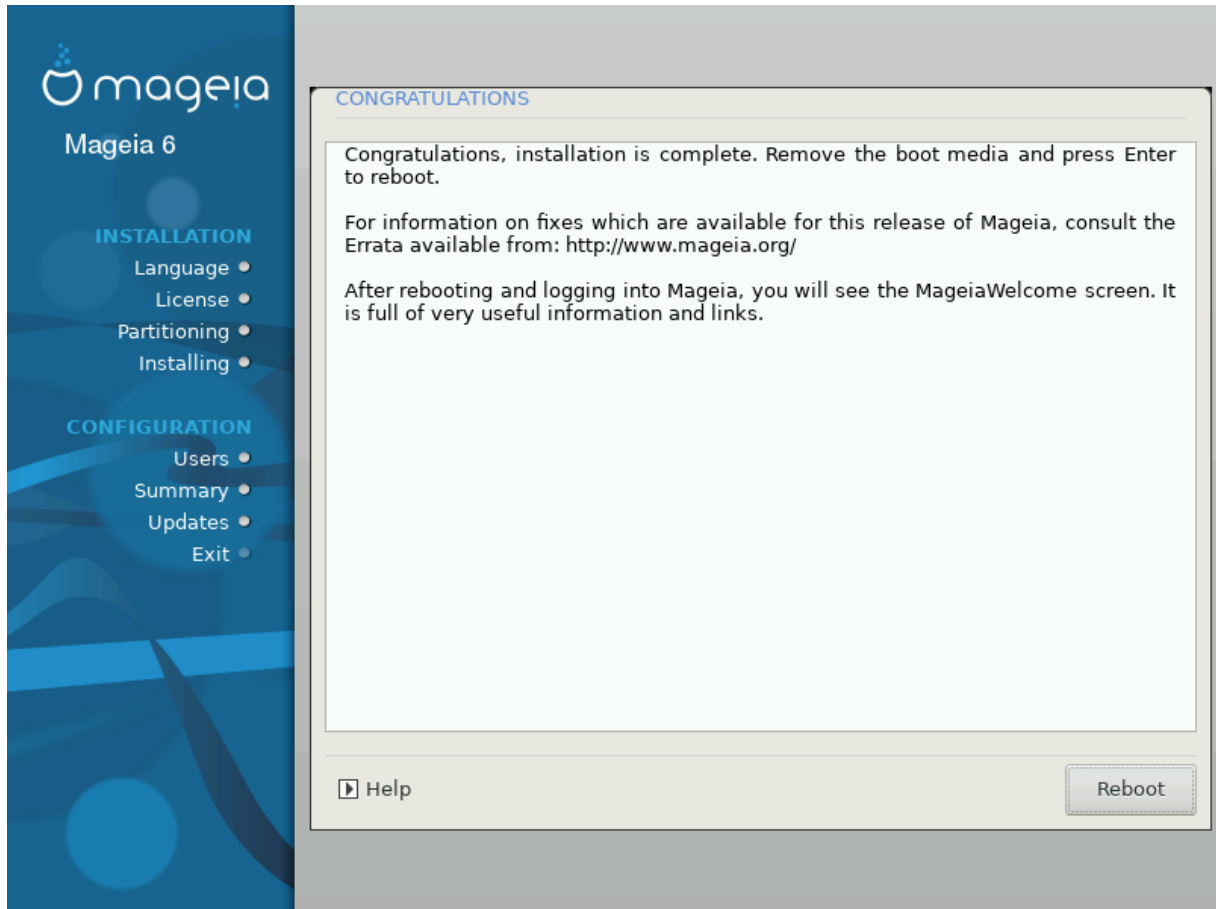
33. Updates
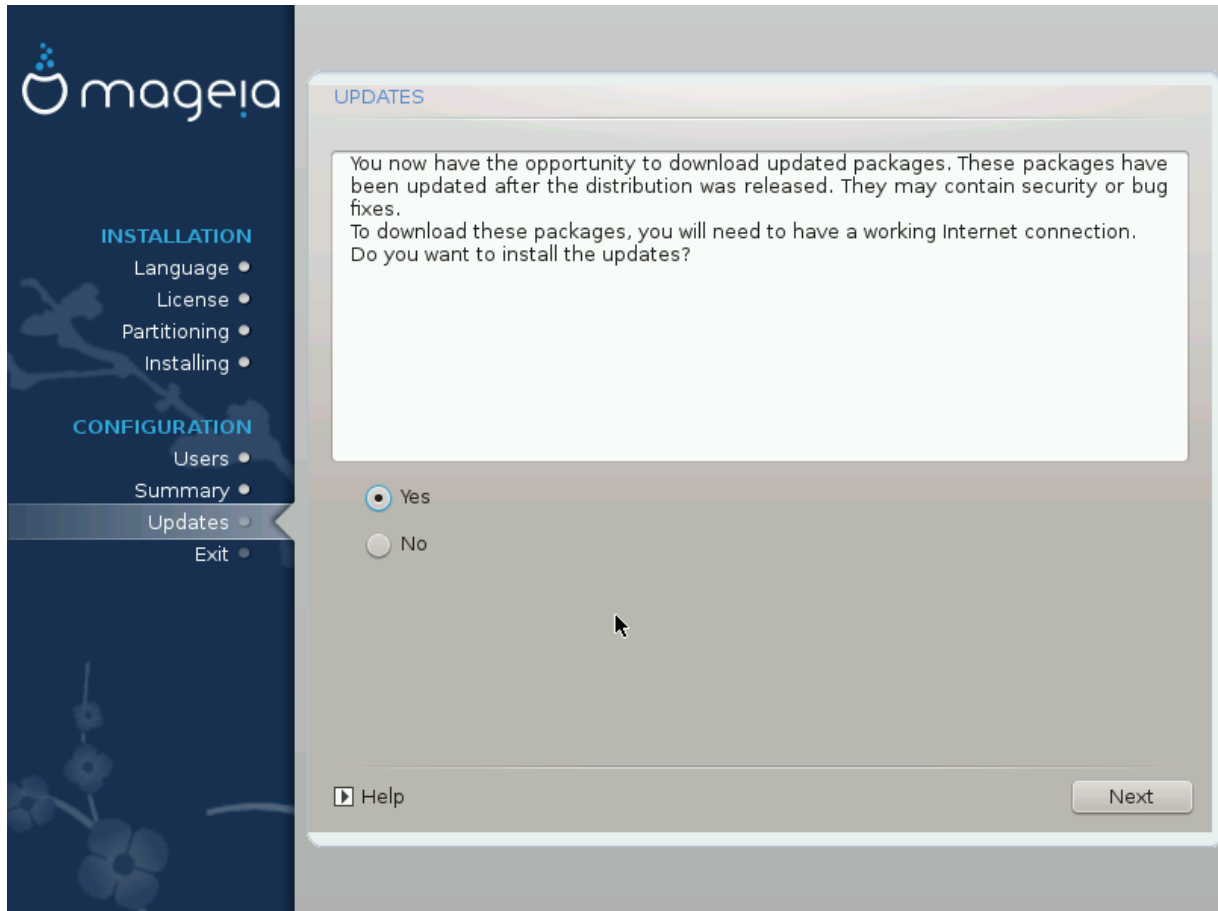
Since this version of Mageia was released, some packages will have been updated or improved.

Choose 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

Then press Next to continue

34. Congratulations

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

After reboot, in the bootloader screen, you can choose between the operating systems on your computer (if you have more than one).

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

Enjoy!

Visit www.mageia.org if you have any questions or want to contribute to Mageia