AVOAvoMakersOs 15.05

QUICK HANDBOOK

Version: 1.0   Last revision: 28/03/2015

- # INTRODUCTION

What is MakerOs?

MakerOs is linux operating system based on Linux Xubuntu, designed to have very low hardware requirements and to offer to the user an enjoyable and easy-to-use gui. It includes even many softwares that can be useful in your "Maker" activity and some security fixes, that were thought in order to allow the user to enjoy the MakerOS experience without any worries.

Why choose MakerOS?
MakerOS is a likely to be a good choice if you need science/engineering software on your linux machine and you want to exploit completely your hardware. The use of XFCE, a very light desktop environment, will provide you with a very powerful, nice and responsive system. Probably if you are a standard-user, with no interests in science/engineering you will find this OS like rubbish as you will install on your machine a huge collection of software that are useless for you.

How many versions are available?
AvoMakersOs is available in three different versions: 32-bit (x86), 64-bit (x64) and 64-bit (x64) low latency kernel. The low latency kernel version is recommended only for powerful machine and for specific purposes (e.g. audio editing). See system requirements section for further information

How often a new release is issued?
New released of AvoMakersOs are published once per year, usually in May. In November a updated version is released, but it simply includes updated packages: you can get the same result by typing the "sudo apt-get upgrade" in your terminal.

•**What are the differences between Linux Xubuntu and AvoMakersOs?**
We summarize the most important difference in the following table.

	Linux Xubuntu 14.04	AvoMakersOs 15.05
Themes and Look	XFCE - Xubuntu default theme (icon and windows)	XFCE - Numix Circle Theme (icon) e Numix (windows)
Composite	Disabled	Enabled - XFM4 Composite Manager
Splash theme	Xubuntu default	Orange (modified for AvoMakersOs)
Office Suite	None. Abiword and Numeric are installed as well.	LibreOffice (with additional extensions)
MediaPlayer		VLC
PhotoEditing	None	Gimp (with additional extensions)
Browser	Mozilla Firefox for Xubuntu	Mozilla Firefox for Xubuntu (with addiontal safety and utility extensions)
DockBar	None	Plank
App menu	Xubuntu default	Slingscold launcher
Antivirus/Safety tools	None	Artillery
Dangerous sites Host file	None	With more than 10000 dangerous websites. With script for automatic update
Gestore bluetooth	BlueMan	Removed
True Type Fonts	Not included	Included
Automated action scripts	None	Many automated action scripts
First configuration assistant	None	AvoMakersOs first boot script
Onscreen system monitor	None	Conky

Which minimum system requirements does AvoMakersOs have?

- **15.05 x64 (64 bit) version**
  RAM 500 MB (recommended 1 GB)
  x64 compatible processor (recommend at least 2 GHz clock frequency)
  15 GB free space on HDD
  DVD reader
  At least 1024x768 Monitor resolution
  Internet connection not necessary but suggested

- **15.05 x86 (32 bit) version**
  RAM 500 MB (recommended 1 GB) -*The 32 bit OS can use only 4 GB . If you have more than 4 GB RAM installed consider installing the x64 version.*
  x86 or x64 compatible processor (recommend at least 2 GHz clock frequency)
  15 GB free space on HDD
  DVD reader
  At least 1024x768 Monitor resolution
  Internet connection not necessary but suggested

- **15.05 x64 (64 bit) version with LOW LATENCY KERNEL**
  RAM 2 MB (recommended 4 GB)
  x64 compatible processor (recommend at least 2.5 GHz dual core processor)
  15 GB free space on HDD
  DVD reader
  At least 1024x768 Monitor resolution
  Internet connection not necessary but suggested

•**Why is AvoMakersOs based on a Xubuntu LTS release?**
AvoMakersOs is thought for educational purposes: we decided to base it on a stable and long-term supported system to offer a system that does not need a version upgrade every year. Xubuntu LTS versions are supported for three years: for example Xubuntu 14.04 is supported until 2017, so AvoMakersOs 15.05 is supported until 2017.

•**Which is AvoMakersOs license?**
As every Linux Ubuntu derivatives it is released under GNU GPL license. You may also need to visit Ubuntu website for further information. Note that AvoMakersOs documentation, including this handbook, is released under Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0). See https://creativecommons.org/licenses/by-nc-sa/3.0/ for more

details.

• OFFICIAL REFERENCE

AvoMakersOs 15.05 is a Xubuntu 14.04 LTS derivative. Before using it is recommended to read the official Xubuntu documentation (http://docs.xubuntu.org/1404/). As Xubuntu is a Ubuntu derivative, the handbook "Getting started with Ubuntu 14.04" (http://files.ubuntu-manual.org/manuals/getting-started-with-ubuntu/14.04/en_US/screen/Getting%20Started%20with%20Ubuntu%2014.04.pdf).
The aim of this handbook is just to introduce the additional components added to AvoMakersOs 15.05 that cannot be found in Linux Xubuntu. For more information visit AvoMakersOs website (makers.itisavogadro.org/AvoMakersOs). For the presentation video see https://www.youtube.com/watch?v=qHTeLA9b9n0.
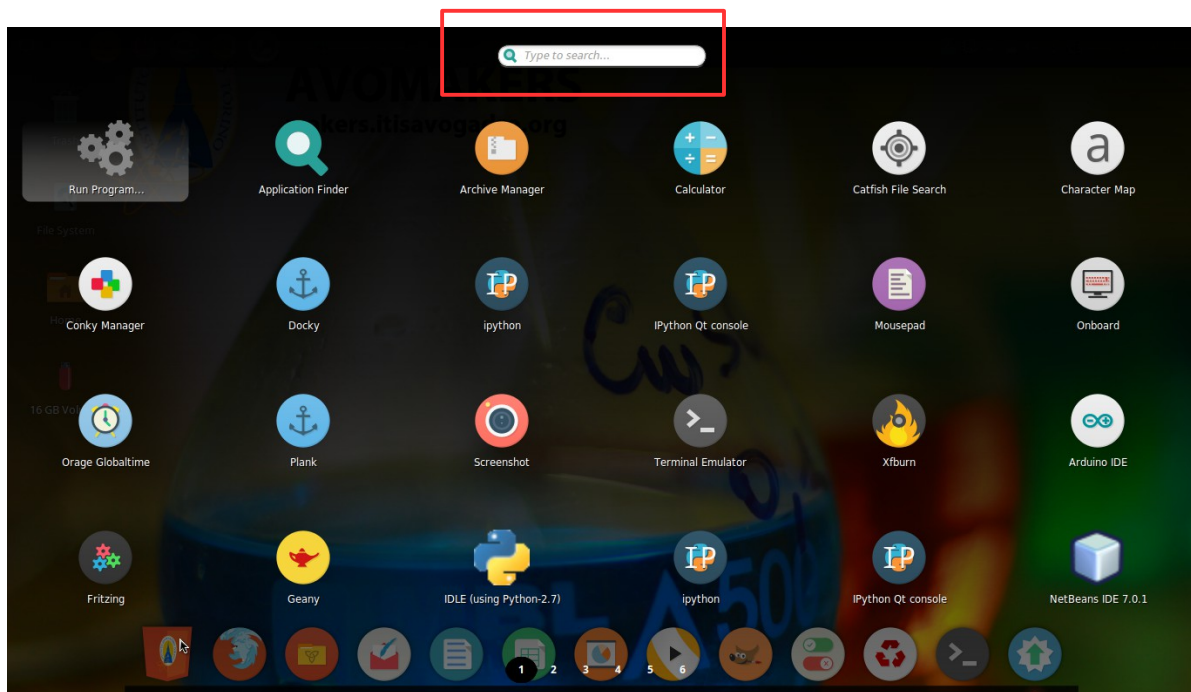
• MAKEROS INTERFACE

AvoMakersOs 15.05 uses XFCE 4 as **desktop environment**. After launching your machine you will se the system interface is very similar to Xubuntu. Of course many changes occurred. Below you can see the main differences.

Quick launcher bar

Applet bar

Plank dockbar

Menu launcher   File Manager   VLC Media Player   Bleachbit

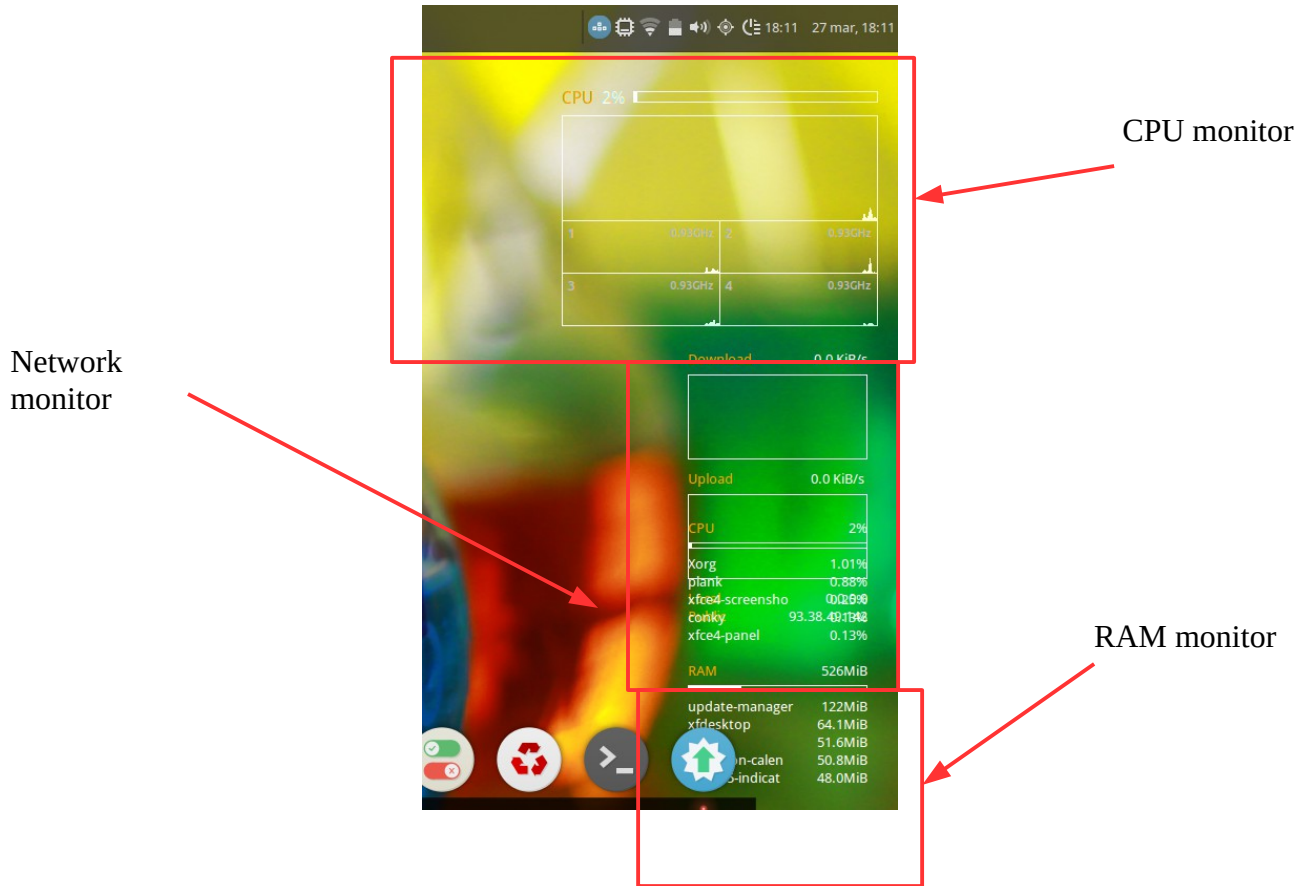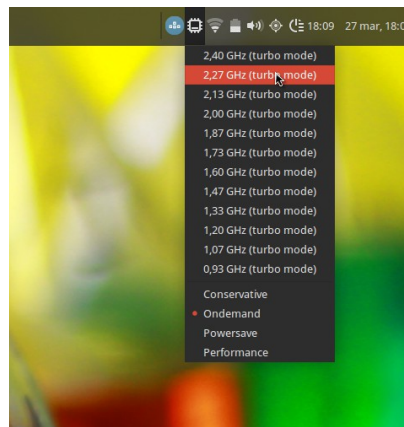Mozilla Firefox (browser web)   LibreOffice Writer, Calc, Impress   GIMP   Terminal

When pressing **Menu Launcher** button (or pressing on the keyboard ALT + M), the app menu is shown in full screen mode. Press ESC to Exit or press an icon to open the related app. Note on the top there is even a search bar.

If, during the first boot configuration, you decided to keep *Conky*, you will see the *real time system monitor* on the right of your screen.

CPU monitor

Network monitor

RAM monitor

In the *applet bar*, among the other icons, you can also find the *processor governor* icon. By using this applet you can scale your CPU frequency in order to get a more performant PC or to save energy.
You could set manually the frequency of your CPU by click on one of the values shown in the list, or, you can choose an automatic governor mode (ondemand, conservative, powersafe and performance).
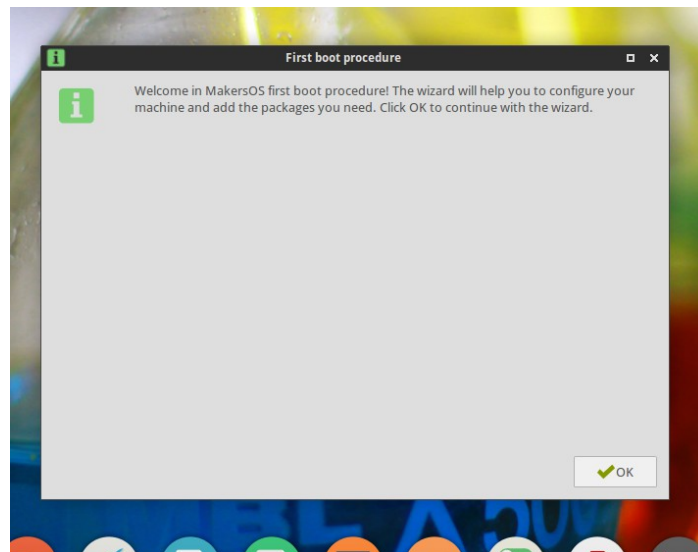
- # KEYBOARD SHORTCUTS

AvoMakersOs includes a certain collection of keyboard shortcuts that are useful to use the system very efficiently. Below you can find a list of the most important and used.

Alt + M	Open launcher Menu
Alt + T	Open terminal
Ctrl + Alt + T	Open terminal as root
Alt + A	Open Skippy window selector
Ctrl + Alt + Esc	Xkill
Alt + F2	Run a command

- # FIRST BOOT SCRIPT

When booting your system for the first time after installation, the *first boot configuration script* will run. In first windows you just have to press Enter and in the second one you will have to choose if you want to proceed with the first boot configuration procedure or not. If you press not the script will be run automatically no longer. If you want to run it manually type in your terminal "s*udo sh /AvoMakersOs/scipts/firstboot/first_boot.sh*". Instead if you press Yes the wizard will start and you will have the chance to customize your installation.
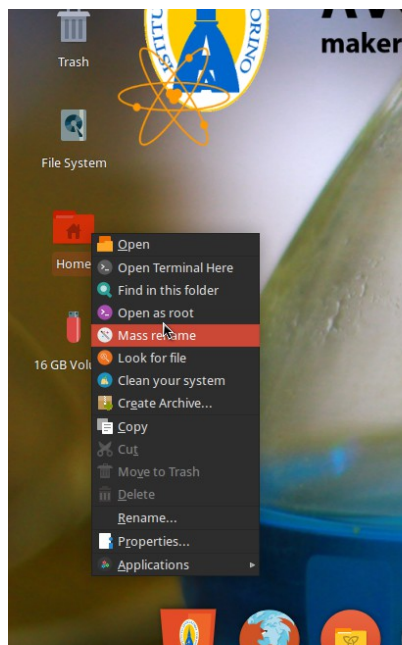
- # FORCE APPLICATION QUIT

We decide to dedicate an entire paragraph to this very powerful tool included in AvoMakersOs 15.05. When using very heavy software they could crash or stop working. If you are not able to close them you can use the **Force Kill script**. Just click on the key icon you find in the quick launch bar. The admin password will be required and then you will a zenity dialog with the instruction to use this function. If you want to stop the script just press the mouse right button, instead if you want to kill a application click on it with the left button.
Be very careful! Killing an application with this script could cause unsaved data loss!

- # RIGHT BUTTON MENU SHORTCUTS

When click on a file or folder with the mouse right button, you will see the standard menu. We added some shortcuts to this menu: Find in this folder, Open this position as root, Mass rename and Look for file.

- # SECURITY AND UPDATES

We tried to make the distro safer without installing too many packages that require too powerful hardware. Eventually we added a very recent and powerful Antivirus/Honeypot: _Artillery_.
Artillery essentially monitors the file system and the ports which are most likely to be used to attack a system. It doesn't have a gui but you can easily check it is protecting your system by typing "**netstat**

-antp | grep LISTENED" in your terminal: you will get the list of the ports which are controlled by Artillery.

Moreover the system included a list of dangerous site (see the file */etc/hosts*): when trying to visiting a site included in the list the browser will redirect the connection to the **localhost (127.0.0.1)**.

In the launcher bar you can even use the button **Security Fix** to check Artillery is working and to launch the hosts file updating scripts. The dangerous hosts list comes from http://someonewhocares.org/.

For what concerns system updating you can very easily update your system by typing "**sudo apt-get update && sudo apt-get upgrade**" in the terminal. The system will update all packages using Xubuntu 14.04 LTS repositories. When releasing new updates of AvoMakersOs features (not included in Xubuntu repo) you will be able to download an updating .sh script from AvoMakersOs 15.05 download page.   (The   link   for   the   update   script   is www.makers.itisavogadro.org/files/AvoMakersOs/update/update.sh).

For a complete updating and cleaning (recommend to keep your machine safe) you can use the Cleanubuntu script that can be launched by clicking the Cleaning button in the launcher bar.

- # LIST OF PACKAGES INCLUDED

Here the list of the most important installed packages. For the complete list see the file list.txt that can be download from the repository.

- **GRAPHICS**
    - Gimp
    - Ristretto Image viewer
    - Scribus
    - Inkscape
    - Drafsight (only x64 version)
    - LibreCad (only x86 version)
    - Image J

- **OFFICE**
    - LibreOffice Calc
    - LibreOffice Writer
    - LibreOffice Impress

- **INTERNET**
    - Transmission
    - Mozilla Firefox
    - Mozilla Thunderbird
    - FileZilla

-
- **PROGRAMMING**
  - g++
  - gcc
  - Python (v. 2.7 e v. 3.0)
  - Geany IDE
  - Netbeans IDE
  - Java Open JDK
  - Python IDLE (v. 2.7 e v. 3.0)
  - Spyder

- **MATHEMATICS AND PHYSICS**
  - Octave
  - QtOctave
  - WxMaxima
  - Geogebra
  - SciDavis

- **CHEMISTRY**
  - Gchempaint
  - Avogadro
  - Kalzium
  - Chemical Calculator
  - Molecular Viewer
  - Spectrum Viewer

- **ELECTRONICS**
  - Arduino IDE
  - Fritzing
  - GeDa Schematics

- **AUDIO/VIDEO**
  - VLC Media Player

- **UTILITY**
  - Ubuntu Tweak
  - Conky/Conky manager
  - Plank