

A Memory Comparison of Light Linux Desktops – Part 2

Source:

<https://l3net.wordpress.com/2013/04/09/a-memory-comparison-of-light-linux-desktops-part-2/>

In my previous [article](#) I've tried to investigate the RAM memory requirements for running some of the most common light window managers and desktop environments available in the Linux world. Prompted by several readers, I've decided to include also the big, well-known memory hogs that grab most of the Linux market, i.e. KDE, Unity and Gnome.

I am using the same setup, based on [virtenv](#). It includes its own xserver ([Xephyr](#)) and a virtualization container ([LXC](#)). The computer is an older 64-bit machine, running Ubuntu 12.04 with LXDE as desktop environment.

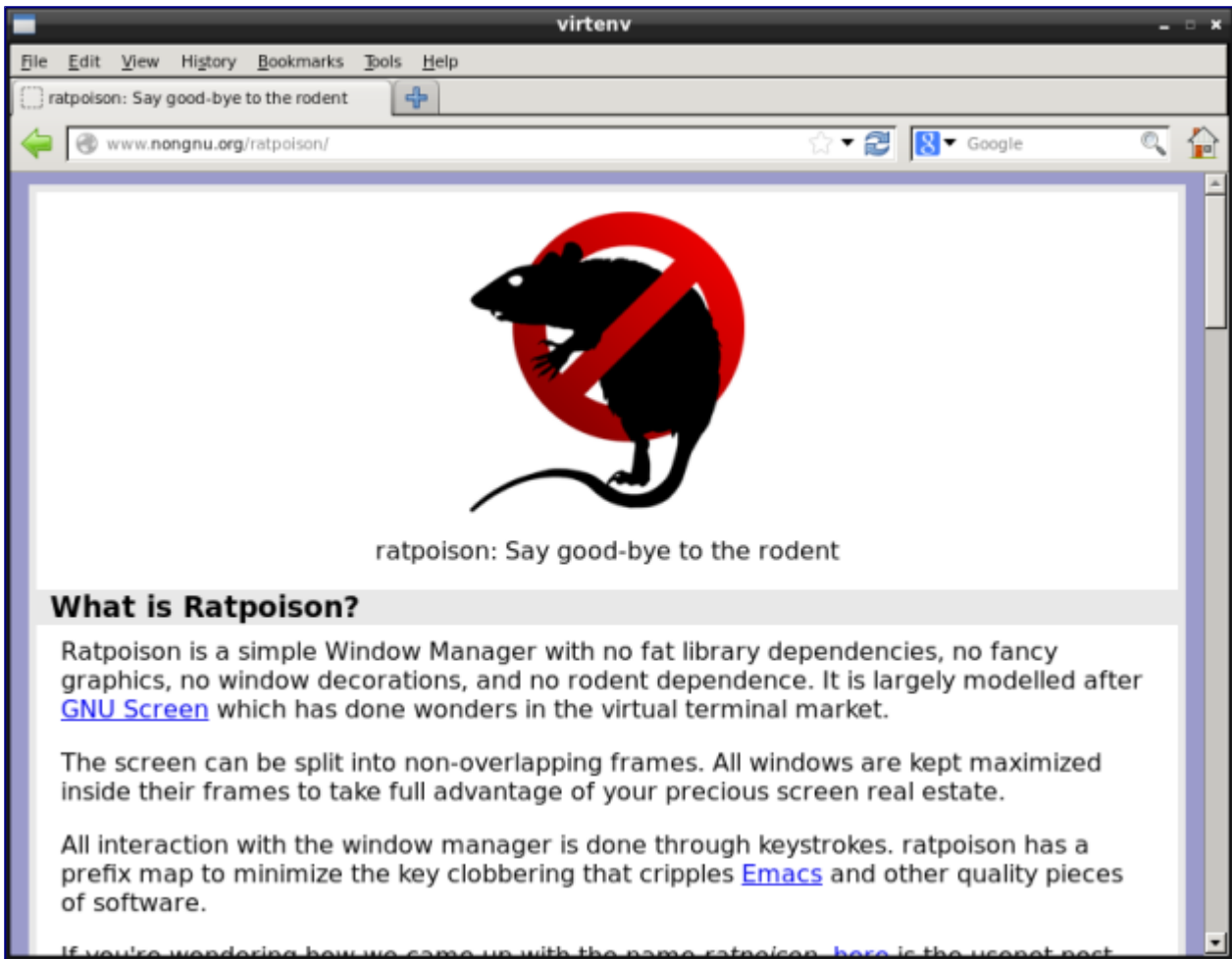
I use *free* command to measure the memory before and after the WM/DE is started. The command prints on the screen data made available by Linux kernel. The kernel knows at any moment how much memory is using and how many buffers it has available.

I measure the WM/DE as it comes out of the box, with all the features the authors intended as default. Arguably, this is not the best way to measure. All window managers are configurable, and users in general tend to personalize them. This adds more memory to whatever numbers I publish here.

Ratpoison

Lightning fast and stable, [Ratpoison](#) is a tiling window manager for the X Window System. The major design goal of the project is to let the user manage application windows without using a mouse, hence the name.

On Debian/Ubuntu install it as *sudo apt-get install ratpoison*, or *yum install ratpoison* on Fedora. Start it with *ratpoison* command. Be prepared to read the documentation. It runs in 1MB of RAM memory.

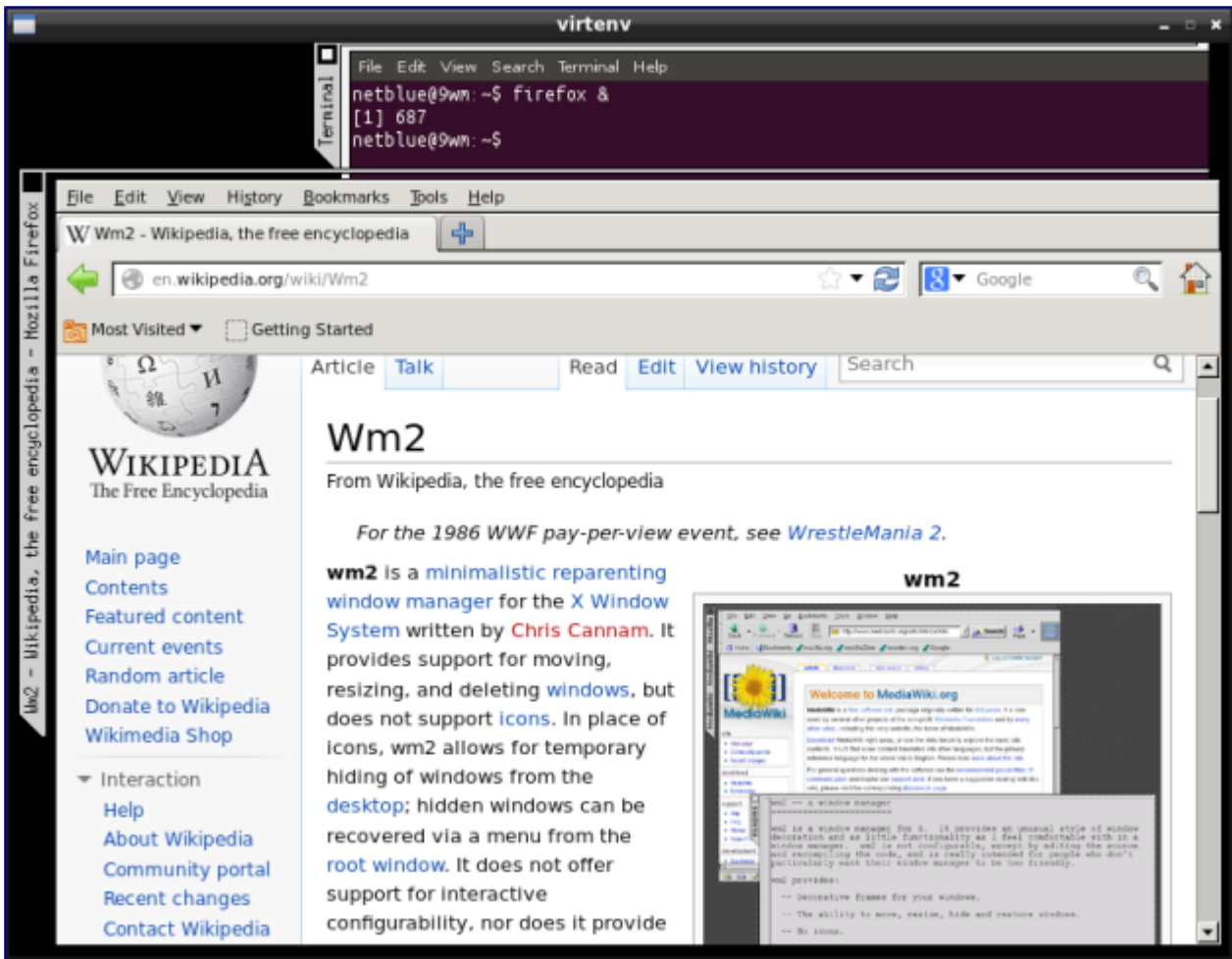


Ratpoison Window Manager

wm2

[wm2](#) simply adds a frame to each window and attempts to look stylish. In the quest for being simple, fast, and small, wm2 does not support icons, menus, toolbars, panels and docking areas.

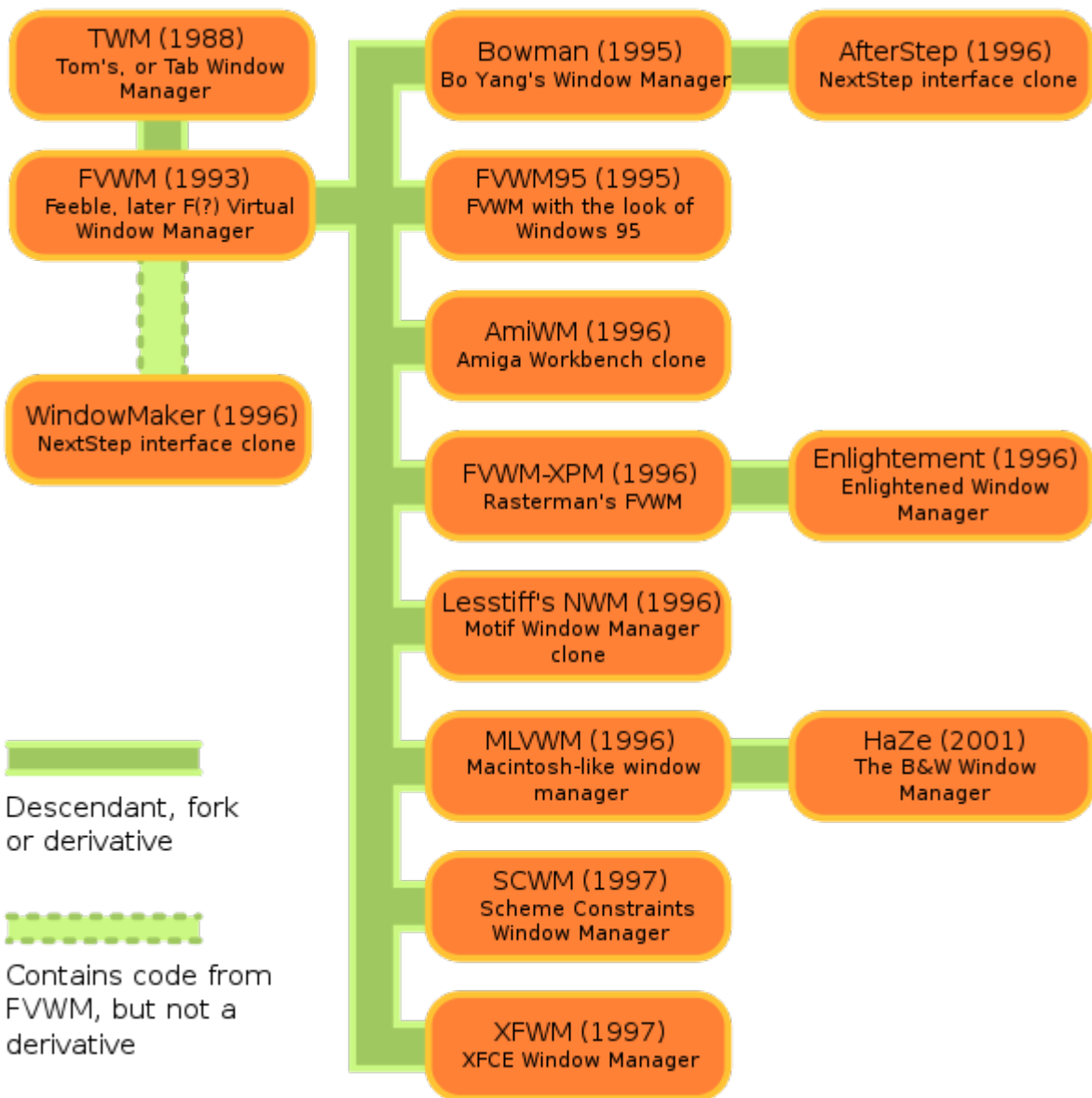
Install it as *apt-get install wm2* on Debian/Ubuntu, and start it as *wm2*. It runs in 0.7MB, this is the smallest WM I've tried so far. wm2 is not supported on Fedora.



wm2 Window Manager

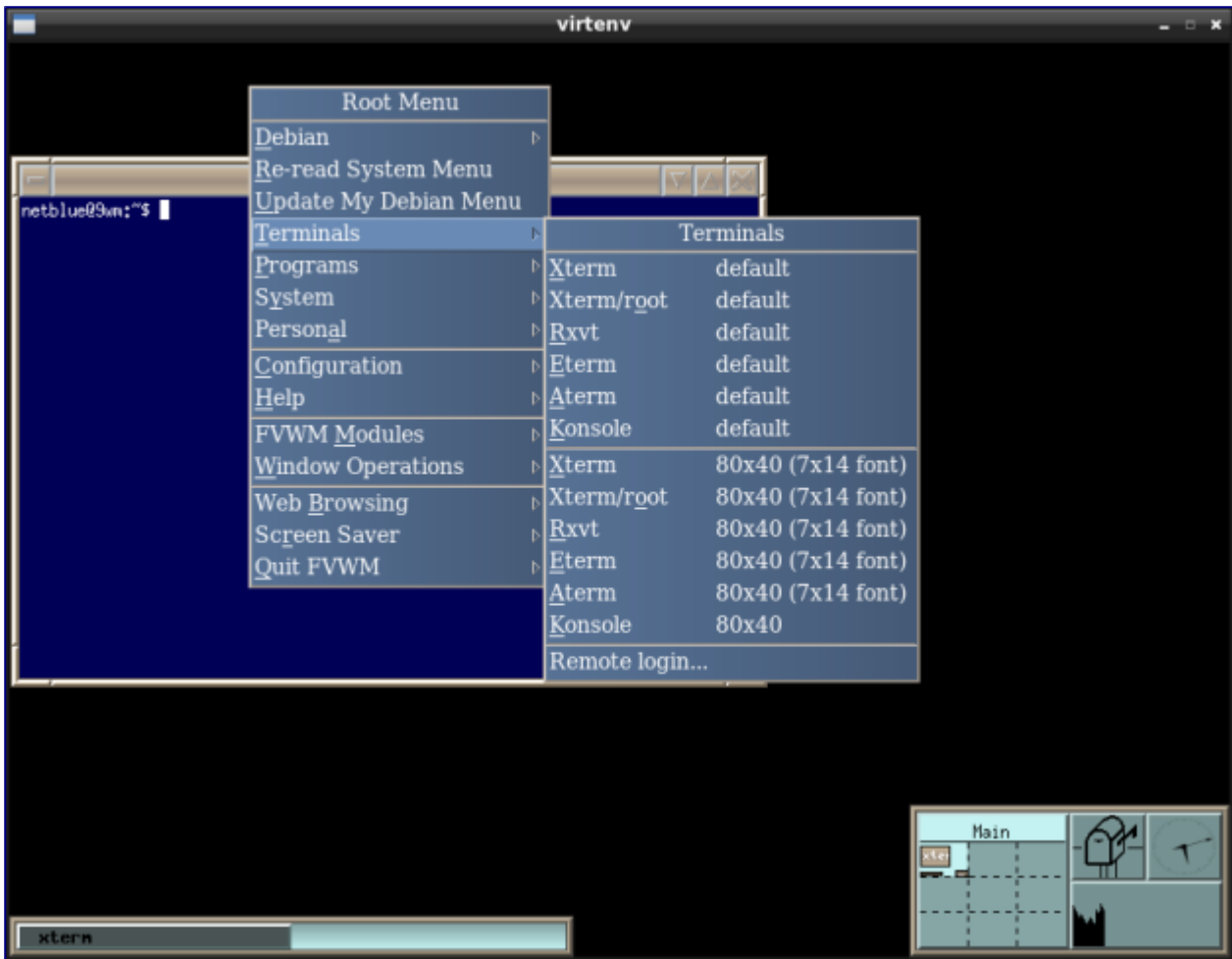
FVWM

[FVWM](#) (Feeble Virtual Window Manager) is one of the most ancient window managers still in use today. It is a powerful and highly configurable environment for Unix-like systems. Some very popular window managers and desktop environments, such as [Afterstep](#), [Xfce](#), are derived from FVWM.



(source Wikipedia)

On Debian/Ubuntu install it as *apt-get install fvwm*, or *yum install fvwm* on Fedora. Start it as *fvwm*. It runs in 13MB of memory.



FVWM Window Manager

Window Maker

[Window Maker](#) window manager provides the users with a consistent, clean, and elegant desktop based on [NeXTStep](#) interface, which eventually evolved into Mac OS X.

Window Maker is again under active development after seven years without an official release. It is not available in Ubuntu software repositories (as of 12.04), you can however install it from a PPA:

```
sudo add-apt-repository ppa:profzoom/wmaker
sudo apt-get update
sudo apt-get install wmaker
```

On Debian install it as `apt-get install wmaker`, and as `yum install windowmaker` on Fedora. Start it as `wmaker`. It runs in 7MB of memory.



Window Maker Window Manager

Razor-qt

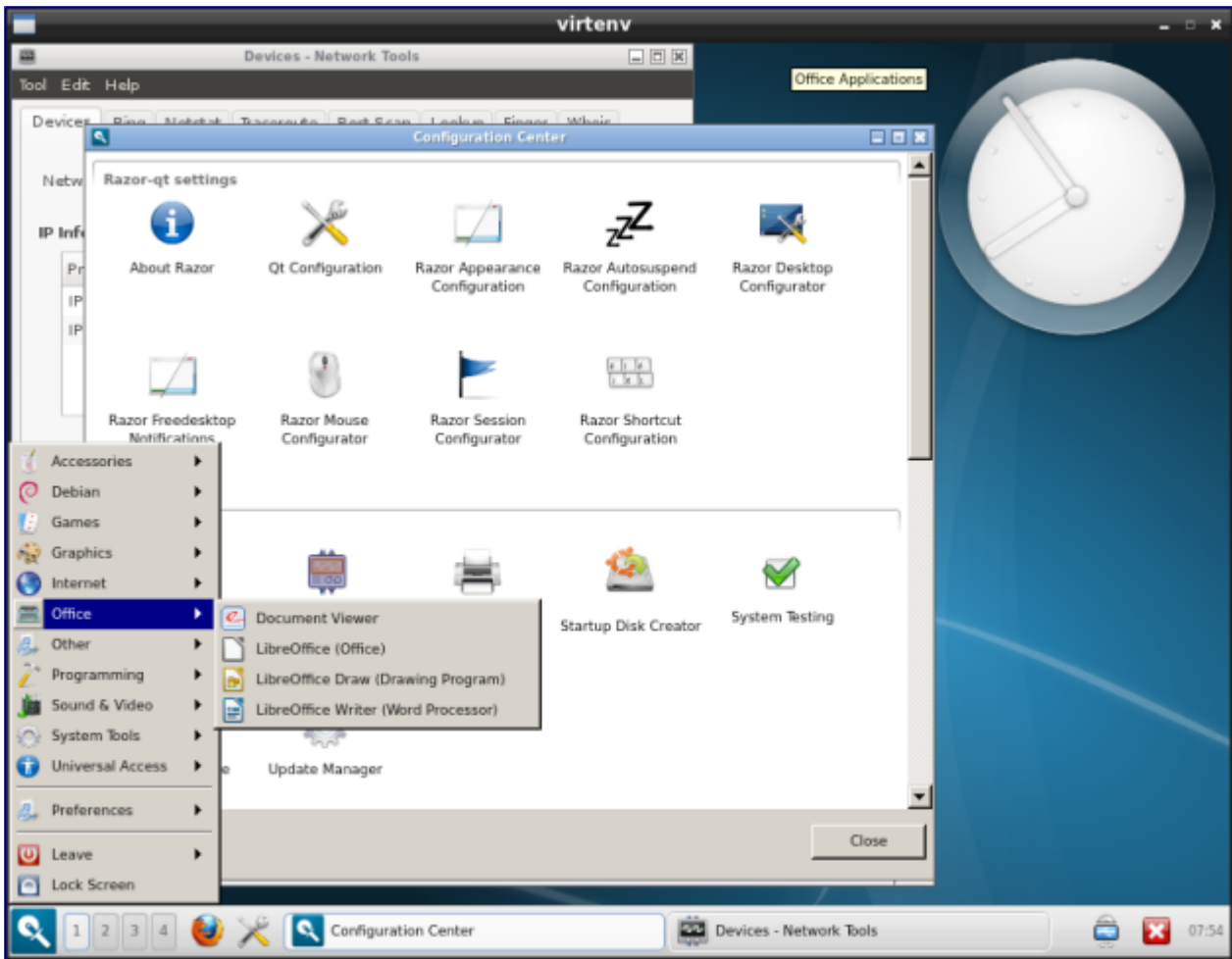
[Razor-qt](#) is an advanced, easy-to-use, and fast desktop environment based on [Qt](#) technologies. It is a desktop for people who think KDE is bloated and suffers from over-engineering.

Razor-qt is a new open-source project, and it is not officially supported by most Linux distributions. For Ubuntu users, the development team keeps a PPA up-to-date. The software works on any Ubuntu from version 9.10 onwards. Installation is as follows:

```
sudo add-apt-repository ppa:razor-qt
sudo apt-get update
sudo apt-get install razorqt
```

The default install from PPA runs on top of KWin in 139MB of memory. It can be switched to OpenBox, drastically reducing the memory size.

On Debian “jessie” install it as *apt-get install razorqt*, and in Fedora 19 and up as *yum install razorqt*. Start it as *razor-session*.



Razor-qt Desktop Environment

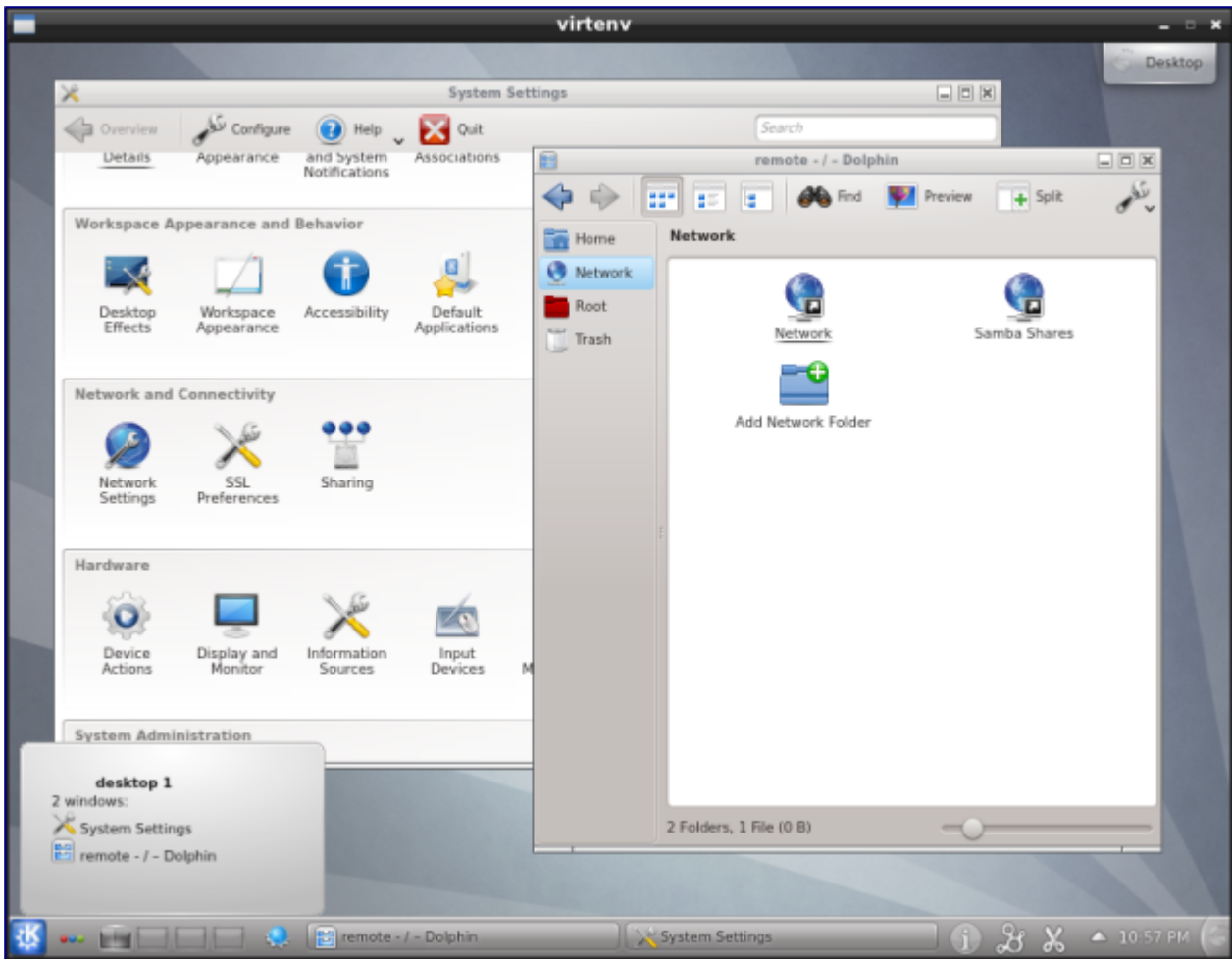
KDE

I've always liked [KDE](#). Elegant and reasonably fast, it is an excellent desktop choice for people developing GUI software. In particular I like [Kate](#) text editor and [KDiff3](#). Qt development tools are also well supported, but that was to be expected from a desktop based on Qt library.

I installed `kde-plasma-desktop` packet from Ubuntu 12.04. The packet is described [here](#) as “the bare-minimum required”. I started it in console as `openbox-kde-session`. It runs in 201MB. On a real KDE desktop such as Kubuntu it will be much more.

Note: the 201MB measurement was done on top of Openbox window manager. Usually, distros will pair KDE with KWin window manager. This will add 100MB.

A full installation on Debian/Ubuntu is done as `apt-get install kde`, and on Fedora as `yum install @kde-desktop`.

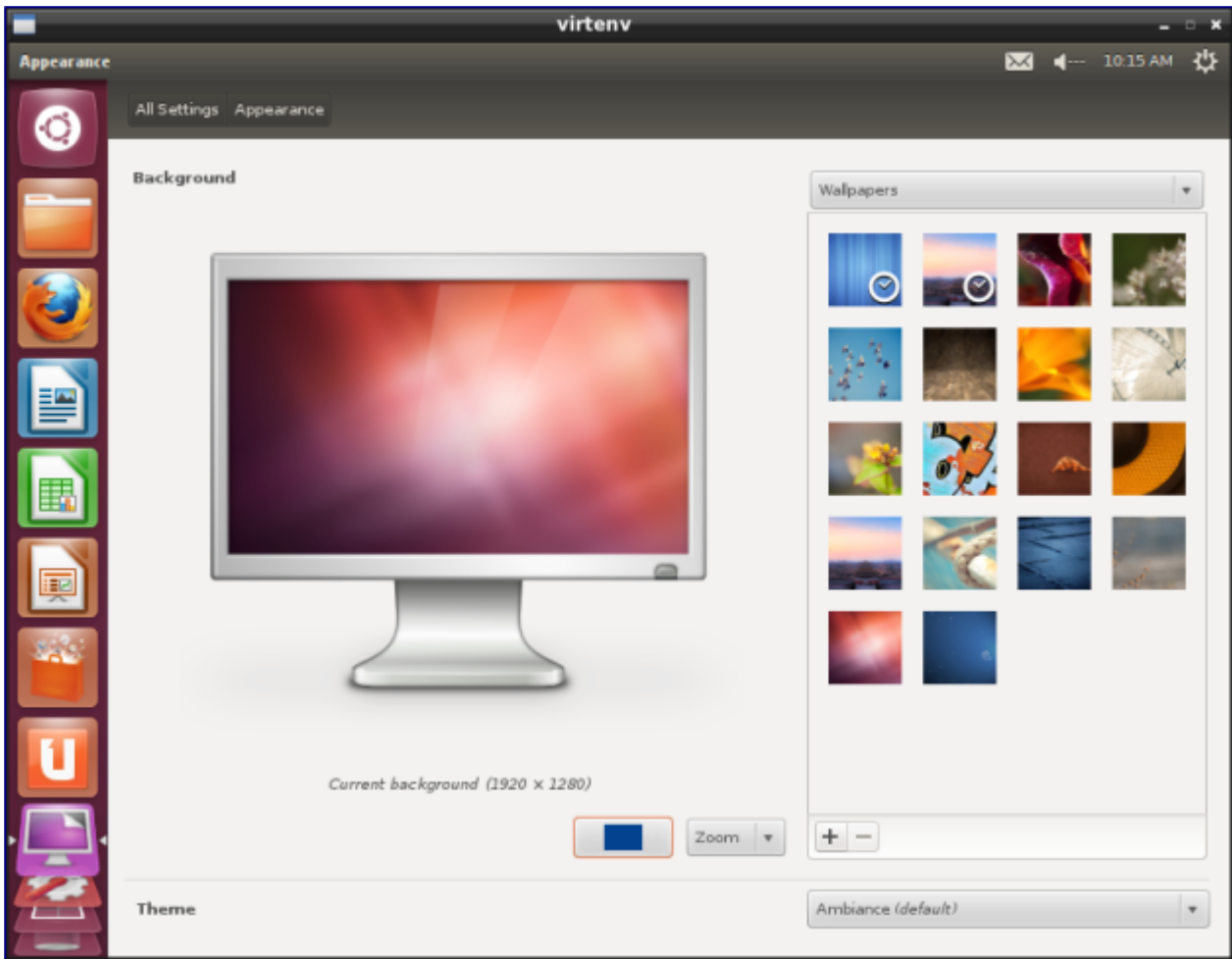


KDE Desktop Environment

Unity

[Unity](#) is the default desktop in [Ubuntu](#). Ubuntu is what they recommend you to try when you move to Linux. It is friendly, functional, and geared towards “human beings”. Too bad it runs in 192MB of memory! It would be a good idea to trim it down, let’s say by 50%. As a note, DOS conquered the world by running in 64KB of memory.

Unity is installed as `sudo apt-get install ubuntu-desktop`. You can start it with `unity` command.

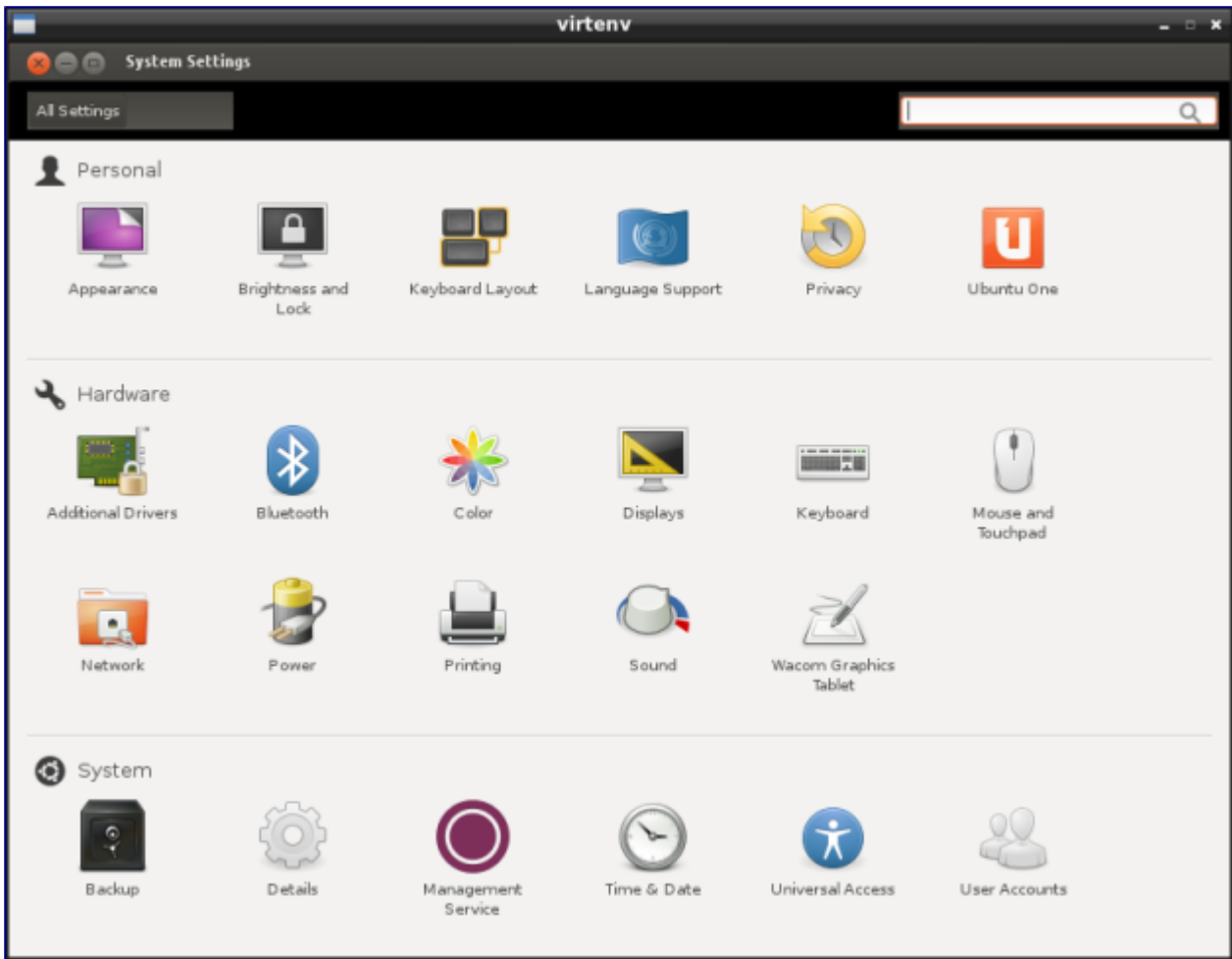


Unity Desktop Environment

Gnome 3

[Gnome 3](#) is an experimental desktop developed mostly by RedHat. Not all the functionality is ready (for example the taskbar and the menus are missing), and there are problems in the listening-to-your-users department. If you are looking for Gnome 2 functionality or something similar, check out [Linux Mint website](#).

I installed Gnome 3 as `sudo apt-get install gnome-shell` (Debian/Ubuntu) and started it as `gnome-session`. It went through 155MB of memory before painting anything on the screen. On Fedora Gnome 3 is installed as `yum install @gnome-desktop`.



Gnome 3 Desktop Environment

Trinity, Mate, Cinnamon

In a normal world, where development teams listen to users, this should never have happened. Not only these environments are smaller and faster, they actually do what desktop environments are supposed to do.

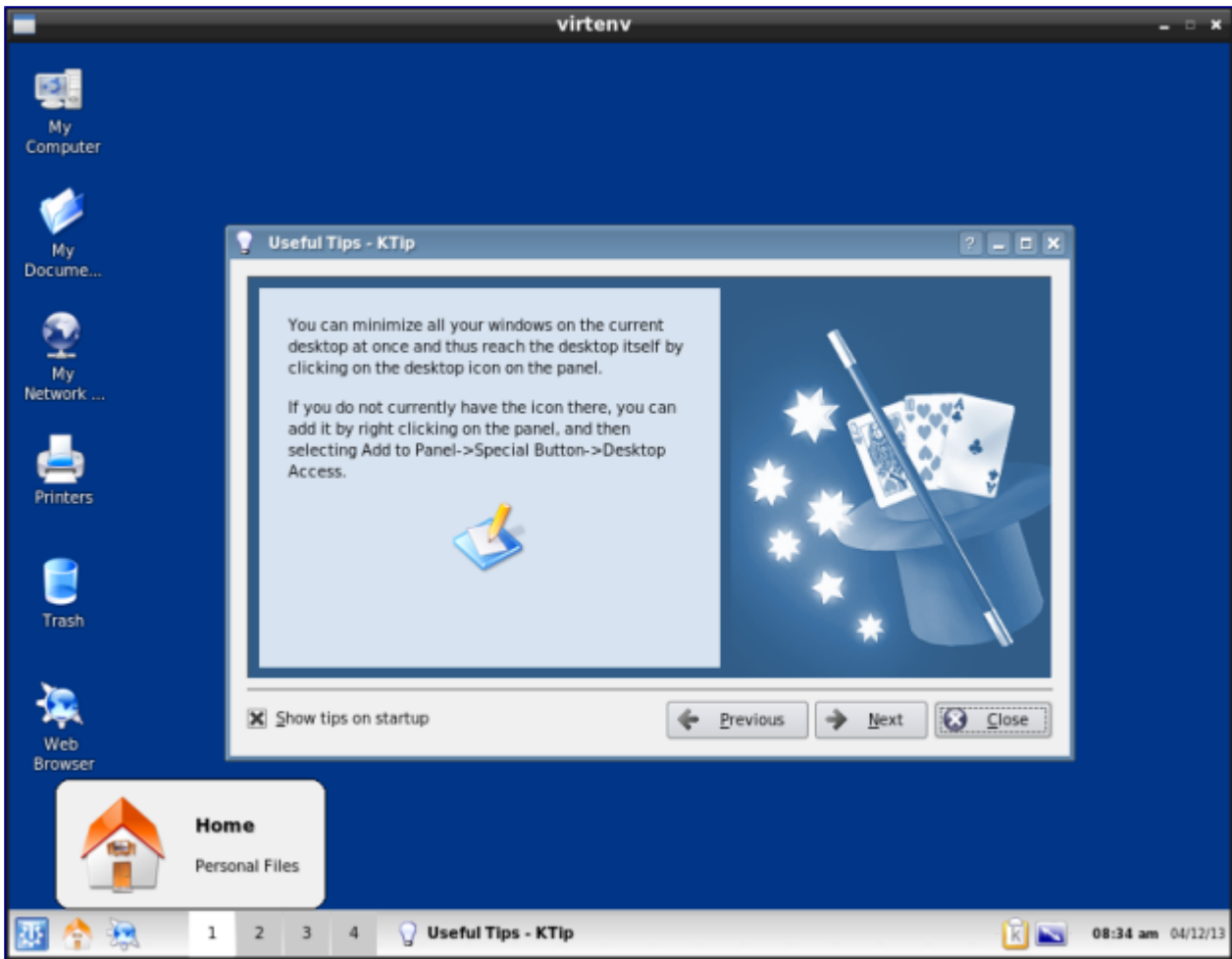
To install [Trinity](#), follow the instructions from [here](#). Start it as `/opt/trinity/bin/startkde`. It runs in 55MB of memory.

To install [MATE](#), follow the instruction from [here](#). Start it as `mate-session`. It runs in 42MB of memory. Mate was included in Fedora 19, where is installed as `yum groupinstall "MATE Desktop"`.

I installed [Cinnamon](#) as follows:

```
sudo add-apt-repository ppa:gwendal-lebihan-dev/cinnamon-stable
sudo apt-get update
sudo apt-get install cinnamon
```

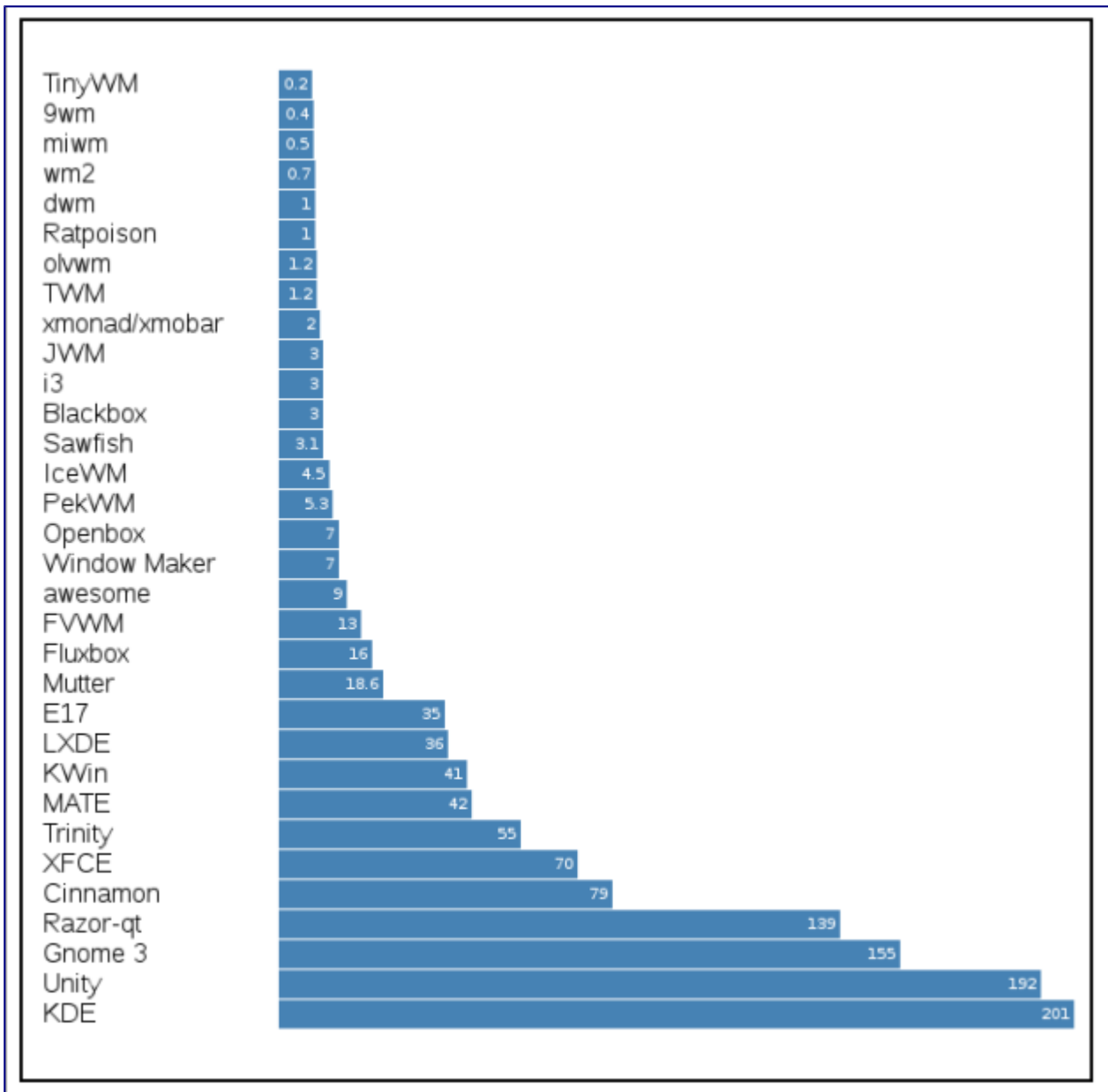
I've started it as `cinnamon`. It runs in 79MB. The package was included in Debian "sid" and it is installed as `apt-get install cinnamon`. Cinnamon was also included in Fedora 19, where it is installed as `yum groupinstall "Cinnamon Desktop"`.



Trinity Desktop Environment

Conclusion

If you have some ancient hardware that you need to breathe new life into, or if you need to fit a distro on a modestly sized memory stick, the first thing you should look at is the window manager/desktop environment. Whatever your needs, Linux is much more than Gnome and KDE.



WM/DE Memory (MB)