



icaros desktop

V2.3



Quick and dirty user/reviewer guide

by Paolo Besser

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1. Introduction

The **AROS Research Operating System** is a *lightweight, efficient and flexible desktop operating system, designed to help you make the most of your computer. It's an independent, portable and free project, aiming at being compatible with AmigaOS 3 at the API level (like Wine, unlike UAE), while improving on it in many areas.* These lines, taken from the official Aros.org homepage, explain in a few words one of the most interesting open source projects available. Being distant from both Linux and Windows experiences, AROS is growing as a true alternative for people bored by the complex and resources-hungry competition. A *niche OS*, whose strongest features are speed, compactness, responsiveness, amazingly fast boot time and relatively tiny applications size.

However, like many other niche projects, AROS relies on few active developers. The team has already done a great job, re-implementing most of the functions of the original AmigaOS while improving them with modern features, such as an hardware abstraction layer, an original driver model, USB and TCP/IP stack, which allow AROS to be used for virtually everything today. The main issue, anyway, is the lack of drivers and applications, two holes that might be easily filled with more developers. Most of AROS applications have been placed on a repository called "The Archives", located at <http://archives.aros-exec.org> and a tool called AAEDT has been developed to help downloading software. These applications, however, are often difficult to install and configure for a novice user. Even AROS itself, relying on the old-age Amiga lifestyle, it's enough user-friendly for the middle/skilled user, but slightly difficult to manage for newbies.

And here **Icaros Desktop** steps in. Icaros Desktop started in November 2007 as *VmwAROS*, an already configured AROS environment for the popular VMware virtual machines. It came with a collection of applications and games already installed and configured, often with some hand-made scripts, that let the user run them as easily as clicking twice on an icon. Since then, Icaros Desktop turned into a real distribution which can easily run on real hardware or virtual machines. It is now available in two different flavors:

- **Icaros Desktop LIGHT** is a reduced version of the LIVE! DVD, which provides the core features of Icaros Desktop and can be burnt onto a single CD-ROM. It includes AROS system files, Icaros mandatory applications (web browser, text editor, word processor, timidity MIDI renderer, Audio Evolution 4, media player) and the AmiBridge subsystem, which allows almost-seamless integration of binary Amiga 68K games and applications.
- **Icaros Desktop LIVE!** is a configured environment on a bootable live-DVD which includes everything the Light version has, plus about 2 gigabytes of games, emulators, multimedia editors, song trackers, graphics applications and many more: not the whole AROS software available on the Archives, Aminet and developer websites, but certainly a good amount of. Icaros Desktop Live also includes a complete SDK and many development tools and languages: in other words, everything you need to start your own AROS app which will make you rich and famous! (well, this might be a little difficult...).

Icaros Desktop Live! is tailored to give the best AROS experience, providing the best example of what this wonderful operating system can do. You don't even need to install it on your real hardware: for a quick test, you may even run it hosted on Linux or Windows, with a very simple and not bloating installation. It may limit some features, however, so we warmly suggest a native setup on a real PC or, if you don't own supported hardware, in a VMware or VirtualBox virtual machine.

1.1 What's new in this release?

Icaros Desktop 2.3 introduces some new features:

- RNOPublisher lets you create your publications in PDF format on Icaros Desktop
- HostBridge now imports your Linux or Windows programs after 1st installation
- Many Icaros scripts have been bug-fixed and improved
- Icaros launch script for hosted modes now accepts switches and parameters like a CLI command
- A cozy calendar reminds your appointments
- IconPoser lets you create icons from two PNG images
- Audio trackers now have their own domain in Extras:
- ...and much much much much more!

No more QEMU?

Starting with Icaros Desktop 2.2, the Live! Edition does not provide the pre-configured QEMU virtual machine anymore. Hosted AROS option offers almost the same functionality and, frankly speaking, there are far better virtualization platforms you may use for Icaros: Vmware Player and VirtualBox are faster than QEMU and both provide a better set of features. However, if you don't own the rights to download and install any of them, we still provide the old, portable QEMU virtual machine on our website: head to www.icarosdesktop.org and look for **Icaros-VM** to download it. Instructions about it will follow in chapter 1.2.3.

1.2 Three ways to use Icaros Desktop

Icaros Desktop can be used either natively on your hardware, or hosted - in a window, like any other program - under your existing mainstream operating system (Windows or Linux only, Android and MacOSX are not supported at this stage). When hosted, Icaros Desktop can access the host file system and read/write your files with more ease, but compatibility with AROS programs might be limited by current state of hosted AROS flavors. Although Linux hosted kernel can be considered mature (and actually is the one most AROS core developers use for testing), the Windows one is still at its early stage, so many limitations are still present (consider it experimental). Later on, we will provide a table of differences.

1.2.1 Using Icaros Desktop as a real operating system

If your hardware is supported by AROS, you can consider installing it onto the hard drive, and use it as an alternative operating system along with any other one already installed on the same hard drive. You will need some blank (unpartitioned) space on the drive, and maybe you'll have to edit a little GRUB2 configuration files to access all the other systems (Windows should be added automatically at the end of the list by AROS installer, but if you have any other OS installed, you have to edit `/boot/grub/grub.cfg` file accordingly). For security reasons, you might prefer to use a blank EIDE or SATA drive for Icaros Desktop, or install it on a USB pen drive, so you will be sure you won't hurt any existing and important data. Installing Icaros Desktop on the hard drive is the best way to enjoy all AROS features: amazingly fast boot times (about 10 seconds on modern PCs, but it can be even faster), instant-response to user, sound support (if you have the right audio cards) and accelerated 3D for many Nvidia and Intel cards (if you have problems, though, you can switch to VESA modes). There is no real drawbacks in using Icaros Desktop on real hardware, just the time spent preparing, installing and configuring it. You can even just use the Live version without a real installation: you won't be able to save your preferences, files and boot/loading times will be *considerably* slower.

1.2.2 Hosting Icaros Desktop on Windows or Linux

Icaros Desktop 2.2 and later can run under your existing operating system as like as any other program. This is a special AROS feature that dramatically helps people testing and developing on/for it. No need to mess with drive repartitioning, no need to configure and use virtual machines, no need to change

hardware. Just run the installation scripts for your operating system (more on this in a proper chapter) and follow some simple configuration steps: Icaros will try to cook a configured environment as much easily as it can, making the most of the features provided by hosted AROS kernels.

1.2.3 Using Icaros Desktop in the Icaros-VM virtual machine

Icaros Desktop website offers **Icaros-VM**, a free, QEMU-based virtual machine for Windows, to let you “test” the OS without installing it on your real hard drive. Just save your `icaros-pc-i386.iso` file (the ISO you should burn to create an installation media for physical PCs) into the Icaros-VM folder, execute `Start-Icaros-VM.bat` file to launch QEMU and the right virtualizer (32 or 64 bit) will run *Icaros Desktop* CD or DVD. You will be **almost** in the same conditions as a user who has launched the DVD on a real computer. In fact, you will need to install Icaros Desktop on a virtual hard drive (it's provided with the virtual machine, so no problems here) and configure it to get the most of it. QEMU doesn't use your real hardware, so you will need to configure AROS using the QEMU emulated hardware.

Sound

Newer revisions of QEMU (including the one provided with Icaros Desktop Live!) include emulation of several sound cards (AC97, SB128 and HDAudio). In order to hear sound from AROS, though, you'll have to set the “SB128” audio drivers in `prefs/AHI` for music and audio units. AHI should be able to detect it automatically.

Networking

Networking in QEMU is possible, and network should be configured automatically.

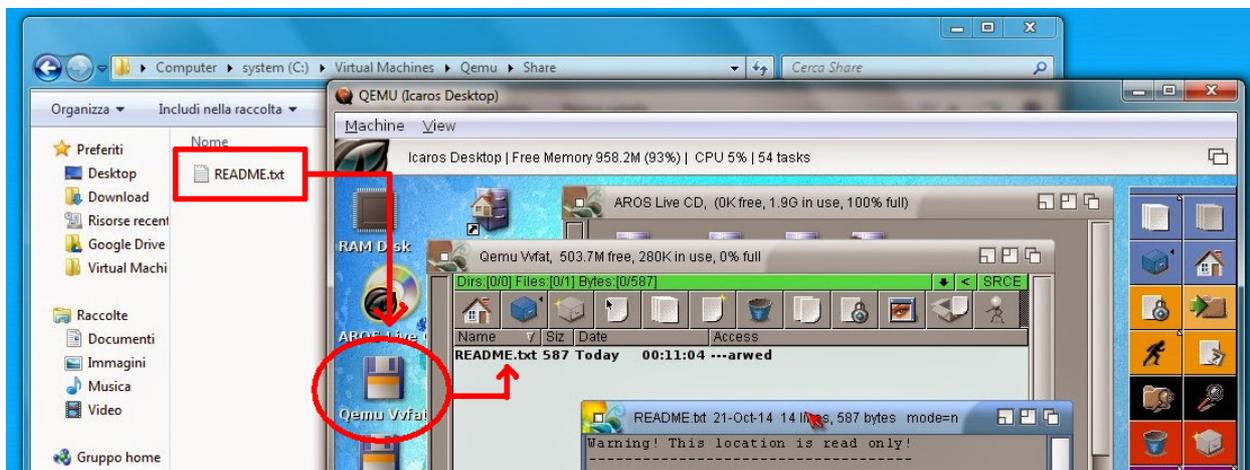
After “Installation”

Once you'll have installed Icaros Desktop on your virtual machine (follow chapter 3 like it was on a real computer), you might need to edit `Run_Icaros_in_Windows.bat` with a text editor, in order to switch the boot peripheral from the virtual DVD drive to the virtual hard drive. To get rid of the virtual DVD you may delete the highlighted part:

```
start %emulator% -vga vmware -name "Icaros Desktop" -hda "..\aroshdrive.img" -cdrom ".\icaros-pc-i386.iso" -hdb fat:..\Share -soundhw ac97 -net nic,vlan=0,model=pcnet -net user,vlan=0 -usb -localtime -m 1024
```

Shared folder

We've added a 'share' sub-directory in our file extraction path where you can easily place whatever file you want to share with your Icaros environment, and have it shown by Icaros Desktop among the virtual drives. This shared portion of Windows file system is read only: you can copy things from Windows to Icaros using it as a temporary directory (just place your files there), but not vice-versa.



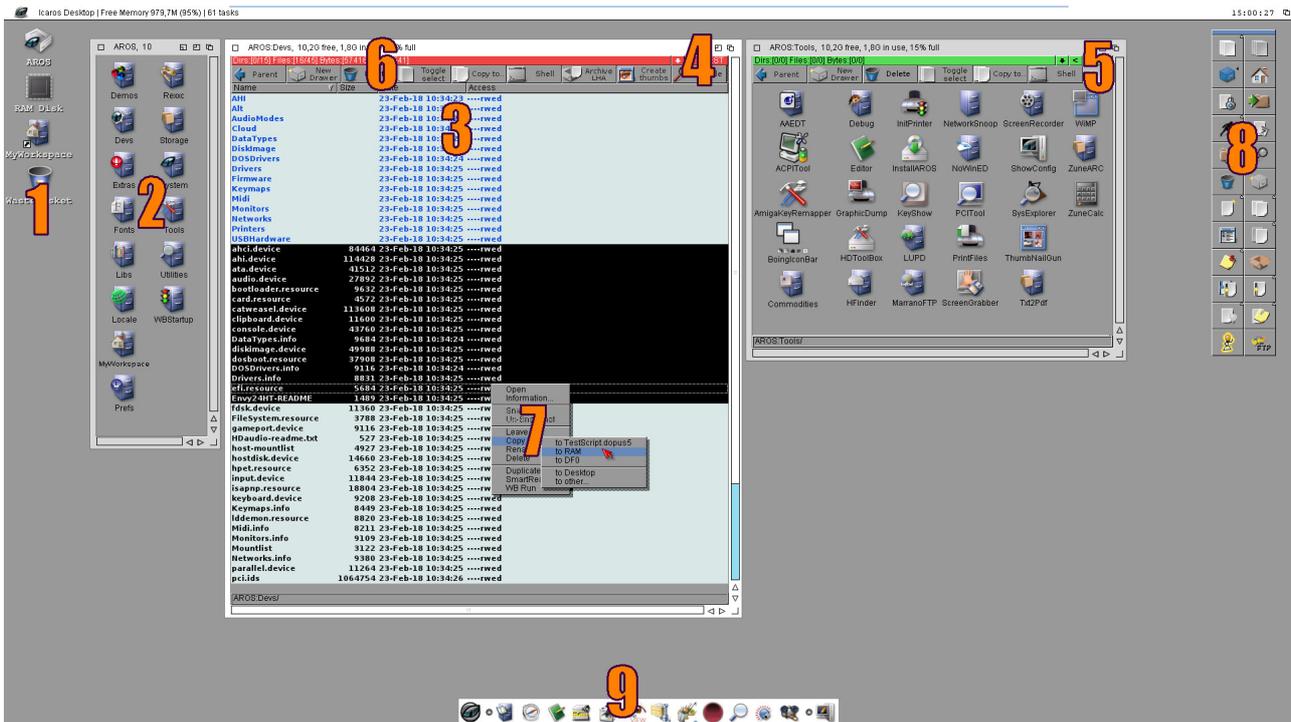
1.2.4 Differences using native/hosted/virtualized systems

How should I install Icaros Desktop, then? It depends on your intentions and feeling about Icaros Desktop. We wish to give you the greatest freedom of choice as possible, but maybe the following table might be helpful to decide:

Feature	Native or real hardware or a virtual machine	Hosted under Linux	Hosted under Windows
Needs hardware configuration	Yes	No	No
Hardware support	<ul style="list-style-type: none"> • Depends on hardware for physical PCs • Very good on Vmware • Good on Virtual Box • Good but slow with QEMU 	Full	Not complete
Networking	<ul style="list-style-type: none"> • Depending on PC hardware • Yes for Vmware • Yes for VirtualBox • Yes for QEMU 	Yes	No
Audio	<ul style="list-style-type: none"> • Depending on PC hardware • Yes for Vmware • Yes for VirtualBox • Yes for QEMU 	Yes	No
3D Acceleration	<ul style="list-style-type: none"> • Yes for physical PC with GeForce 5+ or Intel GMA cards • No for virtual machines 	Yes	No
Updatable with LUPD	Yes	Yes	Yes
Screen resolutions	<ul style="list-style-type: none"> • Full on supported 3D cards • VESA mode on any PC • VESA mode with full resolutions on Vmware and VirtualBox • VESA resolutions only on QEMU 	Yes	Only a limited set of 4:3 resolutions
Processing speed	<ul style="list-style-type: none"> • Full processor speed on physical Pcs • Good on Vmware and VirtualBox • Poor on QEMU 	Full processor speed	Full processor speed
Compatibility with AROS programs	Full	Very good	Average
AmiBridge support	Full	Full	Full
USB	<ul style="list-style-type: none"> • Up to v2.0 on native • Might work differently on VMware and VirtualBox 	Through host	Through host

1.3 Before you start using Icaros Desktop Live!

AROS is still alpha software and this means it could not work correctly on your computer. If you are totally new to AROS, you'd want to know the following:



1.3.1 Desktop and icons

1. Icons lay on desktop's top left corner. Icons can be mounted volumes, shortcuts or iconized applications already running on system. The **RAM Drive (RAM:)** is a special volume directly mounted in your volatile memory. It can be used as a fast place to unpack files or a temporary buffer for your operations. Remember that its contents will be lost when you reset or power off the machine. Icons layout and position might vary with file managers but their functions are unchanged. **Hard drives** and other volumes can have labels. You can use the **RELABEL** command to change them. In a shell, you can use both labels and volume identifiers.

You can't normally place custom icons on the desktop like other operating systems allows to. If you're using Magellan, however, you can turn on the "Files in desktop drawer" option, which will let you use a directory as desktop. Although this option is normally disabled by default, Icaros Desktop already provides a "Desktop" directory in **MyWorkspace** for this purpose.

1.3.2 Windows (and listers)

2. and 3. these are **Wanderer** or **Magellan** windows, with icons inside. **Icons in AROS are meant to identify important files only**, and can be used to open the described file with a different tool, to set file properties and so on. They are mostly PNG files with the **.info** extension. The **Show all files** option allows to see all drawers contents. You can see contents both as icons (2) or file names (3). Layout will change according to the file manager in use.

1.3.3 Magellan specific new items

4. and 5. When using **DirectoryOpus 5** Magellan, windows are called "lister". They can be set either as "source" (SRCE), "destination" (DEST) or neutral (OFF) for file operations. A copy operation, for instance, will copy all selected files from the source directory to the destination one.

6. Magellan allows to see listers in three different modes: icon only, icon action and name (detail view). Except icon only, other modes will introduce a lister toolbar with most common in-lister operations. Left and mouse right buttons will perform different actions.

7. Magellan also introduces context menus, something traditionally considered "alien" to the Amiga

philosophy, but increasingly adopted by Amiga applications. Right click on items like lister bar, buttons and icons to get a list of specific actions you may apply to them.

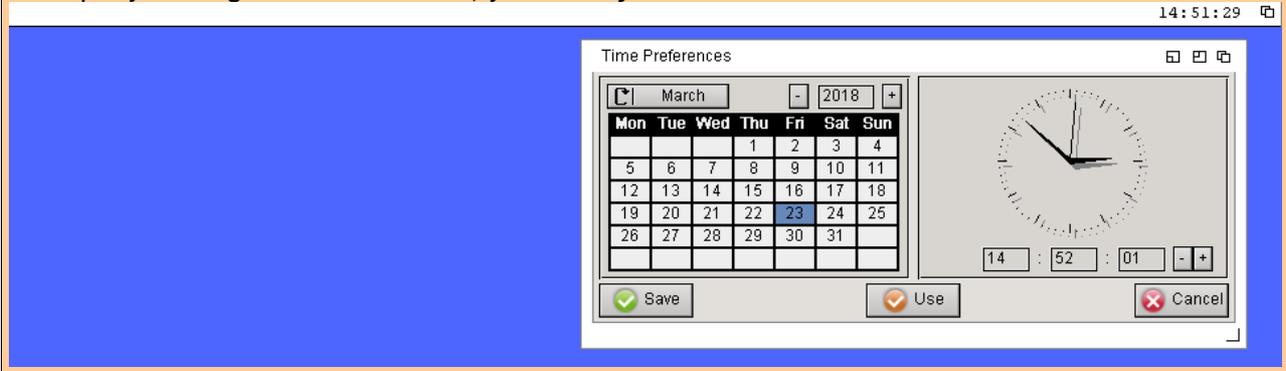
8. The right side Action Bar replicates most lister toolbar functions and adds some other. If you're getting confused by icons (Magellan does not provide bubble hints), you can toggle to a textual action bar through Icaros → Action Bar (Textual) option right click menu option. It has now been disabled by default.

1.3.4 AmiStart

9. this nice bar is not part of AROS itself, but is a program called **AmiStart**. It will help you launching programs and previewing images. **Just remember it behaves differently from Windows start menu.** You can delete icons by dragging them out of the bar. You can add new ones by dragging them from Wanderer. To close a menu, just select an option in a parent menu. To close all, click on the Icaros Desktop button on the left side.

Note

Starting with Icaros Desktop 2.2.2, both Magellan and Wanderer show the clock on the top right corner of the screen. This is due to a 3rd party application called **DigiClock**, which runs automatically after system startup. By clicking twice on the clock, you can adjust time and date.



1.4 Icaros “Workbenches”

Icaros Desktop provides at least four different file managers: Wanderer, Magellan, Workbook and Scalos. Only the first two, however, are already configured and mature enough to sustain everyday file management tasks.

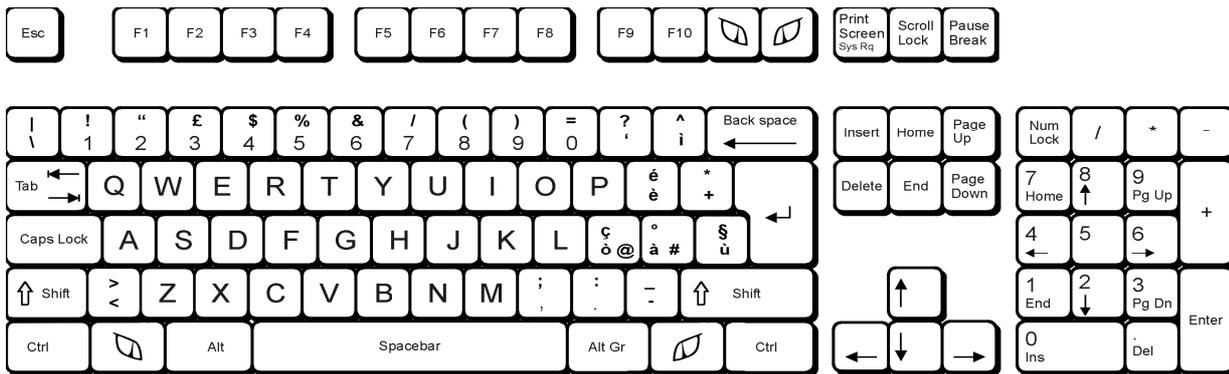
1.4.1 Wanderer

AROS' Workbench is called Wanderer. You can copy programs and files simply dragging their icons from their location to another. You can open Windows and launch program by clicking twice on their icons. Now let's talk about windows. This is a window:



Windows interface contains some gadgets which can be quite handy and, when understanding their

1.5 The AROS Keyboard



Please assume this convention: whenever you read about **lAros** and **rAros** keys on this manual, we mean the left and right *Aros* keys respectively. Since no keyboard manufacturer has decided yet to sell an AROS specific one, **lAros** corresponds to left **Windows** (*command* on Mac, *Amiga* on Amiga) key and **rAros** to the right one(s). Some keyboards, mainly compact, notebook and really old ones, might lack these keys. The scheme above shows the Italian layout, some character will change depending on the language you're using.

The **rAros** key (**rWin** or **menu**) is really important for AROS. It allows some speedy *shortcuts* you'll surely love. Starting from Icaros Desktop 1.2.4, some new **lAros** and **Alt** shortcuts had been added to the system:

Keys	Action
rAros + Q	Quit wanderer (you don't want to do that)
rAros + W	Open a shell (you'll do that quite often)
rAros + E	Open a command window
rAros + R	Rename the selected icon
rAros + I	Display icon information
rAros + O	Open the selected icon
rAros + A	Select all icons in the active window
rAros + K	Kill the active window
rAros + Z	De-select all
rAros + C	Copy to clipboard
rAros + V	Paste from clipboard
rAros + X	Cut to clipboard
rAros + N	Create a new drawer
lAros + ESC	Call the Scout task and system manager
lAros + F1	Open the manual drawer for help
lAros + F2	Open the preferences drawer (AROS' control panel)
lAros + F3	Run Hfinder to locate files on mounted volumes
lAros + TAB or lAros + M	Cycle screens
Alt + TAB	Cycle windows
Alt + Home	Toggle selected window size

1.6 Right menu

AROS doesn't use context menus like Windows or Linux. With Wanderer you won't get the familiar context menu over an object by selecting it with the right mouse key. Like it was in AmigaOS, you will get the active program's option menu while you're pressing it. Keep the RMB (right mouse button) pressed until you have selected the option you want, then release it. In order to have something similar to a context menu, however, Icaros Desktop sets the **Icontrol** applet in **Prefs**, selecting **Pop-Up** in the **Type** field by default. You can change this as you like, obviously, to get back to the classic Amiga habits. Magellan, on the other hand, provides a full context-menu system.



1.7 Icons and files



In AROS, as similar in AmigaOS, not all files have icons. This allows two levels of presentation and keeps the windows noticeably cleaner. On the other hand, this may lead to misinterpretations of the actual contents of a directory. You can view all files by selecting the **View > All files** option on the **Window** menu of **Wanderer**. Use your right mouse button to do this. You can “fix” the method for any drawer and volume using the **Snapshot → Window and Snapshot → All** options.

Once Forever (Wanderer only)

Wanderer allows the user to choose whether to use “show all files” or “icons only” by default. This setting, however, can be over-riden using the show → all files/only icons options in any specific drawer. To change default view mode in Wanderer, open **Prefs/Wanderer**, go to the **Appearance** tab and click on the **Advanced** button for drawers. Then look for the **Default view mode** option of this panel. Click OK and save.



1.7.1 Details and Icon view

Wanderer

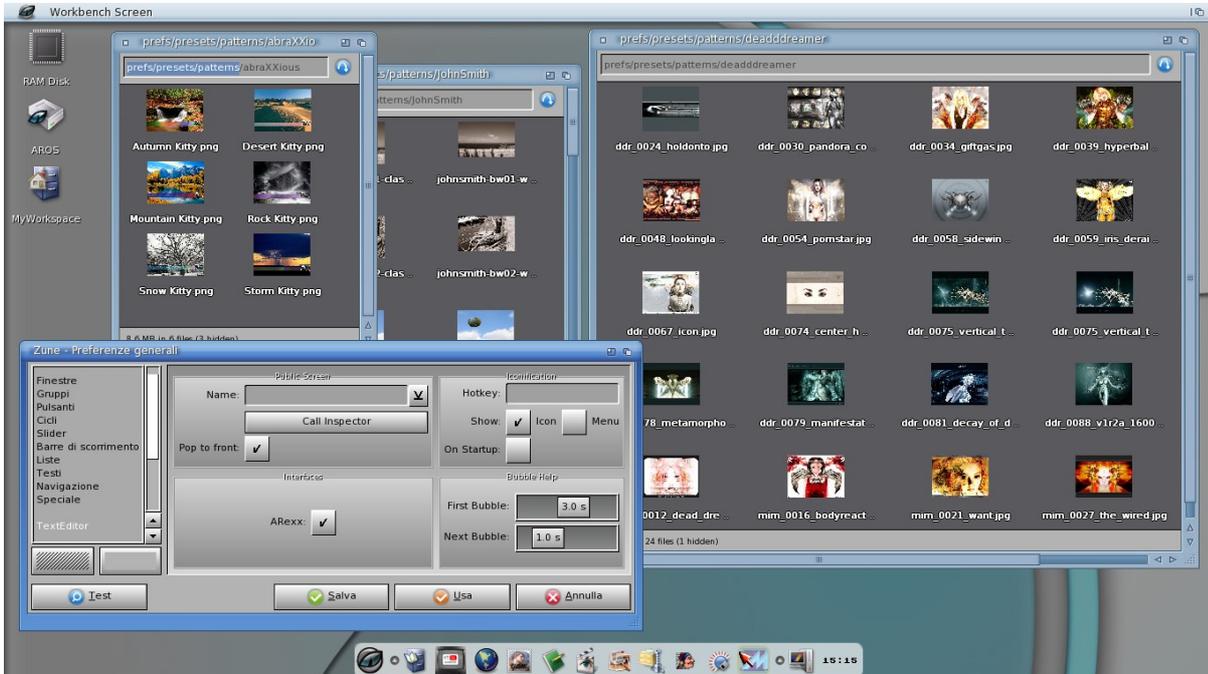
Icaros Desktop can list files in windows showing their details. Please notice, however, that this option has been recently introduced and it is still being worked on. So you may encounter some issues using it. If you need it to better handle files in copy/move/delete operations, we strongly suggest to use DirectoryOpus instead, which is already included in the distribution and easily accessible from AmiStart.

Magellan

Although DirectoryOpus 5 Magellan can show files in icon or icon-action modes, it's clearly giving its best when listers are displayed in name (details) mode. Using icon modes, Magellan will try to use the same tools defined in the system through AROS' def_info files in **envarc:SYS**. You can still access to custom contextual menus based on file type (right clicking on a image file will give different options than a music one), but to enable all customized options you'll have to switch the lister to name mode.

1.7.2 Preview for image files

Unluckily neither *Wanderer* nor *Magellan* support yet a “preview view” like many other operating systems, but Icaros provides a workaround that can easily be used instead. Please have a look into the *Tools* drawer and run the **ThumbNailGun** script. It will ask for a directory, and then will generate a 64-pixel wide thumbnail for every image file already supported by datatypes, using Yannick Erb's *dt2thumb* command.



Thumbnails in Magellan

Icaros Desktop allows creating thumbnails of current directory with two buttons, but only if Magellan is showing it either in Name or Icon Action mode. You can access this option in two ways, either with left or right mouse button:



Thumbnail selected (left button): creates a .info file with a preview for selected image files only.

Thumbnail all (right button): creates a .info file with a preview for every image file known by datatypes found in current lister.

1.7.3 Classic and modern view for Wanderer

The *Wanderer* program in Prefs lets you customize the behavior of *Wanderer*. Icaros presets the modern view, chains icons to an imaginary grid and uses transparency effects while moving icons in drag & drop operations. But you may change all this with its option. First of all, however, let's make some definitions.

Modern method

It's Icaros default view. Modern method browses file system contents using a single window. For instance, opening a drawer will change the contents of the current window with files and directories included in that drawer. To turn back to parent directory, you have to use the proper button in the window's toolbar. At the current stage icons can't be copied/pasted using menu of the file manager, but only dragged and dropped to another destination. This will copy files from starting location to that destination. Modern browsing will use the view method of the starting point for every drawer opened in the same window. For instance, if you start browsing files from AROS: and AROS: has view set to “all files”, all drawers opened afterward from the same window will be viewed by “all files”. Snapshot options will be limited: you can snapshot drawers, but they will be visible that way only using the classic view. Modern method requires that window toolbar is enabled. If you disable the toolbar in *Wanderer* Prefs → *Toolbar*, modern browsing will be disabled as well. And won't be selectable until toolbar gets enabled again. Modern method limits

snapshot options, but helps keeping the screen clean without opening unnecessary windows.

Classic method

Classic method is the one used by AmigaOS 3.x. Every drawer gets opened in a new window. This way of browsing files may be preferred by classic users and people accustomed to it. Classic method will easily make your Wanderer screen full of unneeded windows, however allows full use of snapshot options. Do you prefer Devs drawer always showing all files? Nothing is easier: just open this window, select Window → Show → All files, and then choose Window → Snapshot → Window. From now on, it will be always opened that way.

1.8 AmiStart

AmiStart is Icaros Desktop' toolbar and docking application (well, every serious operating system has one).



AmiStart behaves somewhat like Windows' task bar. There is a *starting menu* placed on the left, a dock section to *quick launch* your favorite applications, a *task list* on the right and a *digital clock* on the right. The dock section is really easy to customize. To delete a icon, just grab it with the left mouse button and drag it out of the bar. If you want to add a new application, just open its drawer, grab it with the left mouse button and drop it in the dock section of the bar (to get rid of the label, right click on the icon and set the “hide string” option active). That's all.

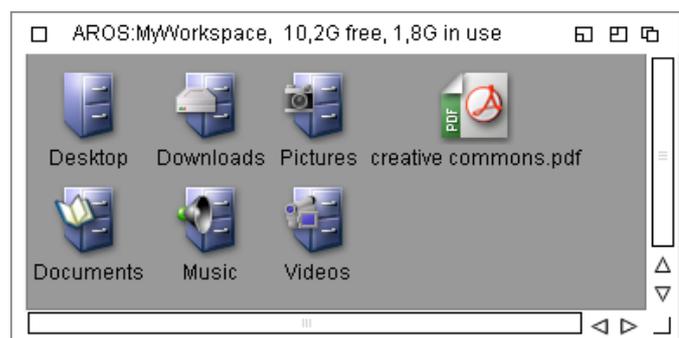
1.8.1 Compact and Full profiles

Starting with Icaros Desktop 1.2.5, there are two different profiles available for AmiStart: FULL and COMPACT. Full allows the traditional behavior of the bar, with the program menu and the task manager. It's more complete, but it needs a very long time to load from optical devices like DVD and from slower USB pen-drives. For this reason, there is now also the Compact profile, which loads faster, doesn't need caching of programs icon files, and behaves just like a dock app-launcher. You can choose your profile using the **Services** program in **Prefs**.

1.9 MyWorkspace

Starting with Icaros Desktop 1.2.5, a special drawer appears on the workbench screen, **MyWorkspace**. Even if we don't like operating systems suggesting people where they should keep all their documents - pardon, projects! ;-) - it's now common use for any mainstream OS to provide such a place, so we did it as well.

MyWorkspace is created during installation of Icaros onto the hard drive, in the same partition where the user has decided to put 'extras' and eventually the 'Development' dirs. If you've installed extras in AROS:, you'll find **MyWorkspace** in AROS:. If you did it in Work:, then you'll spot **MyWorkspace** in Work:, and so on. For your convenience, an alias of the same drawer has been put on the desktop. **Do not delete or disable **MyWorkspace**: many vital components of Icaros need it to properly work!**



Easy to access

Starting with Icaros Desktop 1.4, **MyWorkspace** is also set as default directory for the built-in FTP server, instead of the formerly used PUB: drawer. You can move your favourite files from any other computer of the local network straight to your **MyWorkspace** directory, or to any of its sub-drawers.

1.9.1 MyWorkspace in DVD-Live mode

When you're running Icaros Desktop in Live-DVD mode, without installation, you'll have MyWorkspace temporarily created in RAM:, so don't forget that you'll lose everything you save there at the next startup, if you don't copy it on a writable media, such as a USB pen drive. If you start Icaros in Live-DVD mode on a system where it's already installed, you'll find two MyWorkspace directories. That's normal.

1.9.2 MyWorkspace sub-directories and assign

MyWorkspace includes five sub-directories: Documents, Downloads, Music, Pictures and Videos. What they should contain, should be obvious. It's important to know they are accessible from the shell, and from any application file requester, with these assigns:

MyWorkspace:

Documents:

Downloads:

Music:

Pictures:

Videos:

this way, saving your projects into the right drawer should be matter of a few mouse/keyboard clicks.

Getting rid of duplicate MyWorkspace(s):

This issue should has been fixed from version 1.5, however, if you reinstall Icaros without formatting the partitions, it may happen that MyWorkspace's alias on the desktop will be shown more times. This can happen also if you attach to your current Icaros installation another drive which has a MyWorkspace directory (for instance, a USB pen-drive where Icaros had been previously installed) In order to get rid of this, you should just edit the *.backdrop* file in the root of the partition you don't want MyWorkspace to be linked at. For instance, if you have the MyWorkspace line both in AROS:*.backdrop* and Work:*.backdrop*, you may cut away the unwanted one. Moreover, if you see the MyWorkspace line written twice in a *.backdrop* file, just cut off one. The additional icon on the desktop will immediately disappear. To edit the file, just cast a command like:

```
edit work:.backdrop
```

1.10 Creating the perfect Icaros Machine

Many people like AROS and would love to dedicate a whole machine to it. That's obviously a good idea, since it is the best way to enjoy the Icaros experience too. However, choosing the right hardware might be a little problematic, since there are millions of possible configurations out there, and relatively a few supported by AROS drivers. So, here is a little step-by-step guide to setup a complete Icaros Machine to run the Live! Version on.

1.10.1 Processor

AROS doesn't need great horsepower and can't take advantage from a multicore architecture. It can run in a 64-bit environment, but there is no need for a quad-core processor to speed things up. Frequency and front-side bus speeds are the only two variables to consider. Although AROS can run on low-power and low-end processors, like old 500-1000 MHz ones, you probably would like to choose a faster one. New AROS users often think that, since their old Amiga 500 or 1200 could run the workbench and many apps with a 7 MHz processor, AROS should do this as well on older, 200 MHz PCs. That's a common mistake. Nowadays applications need more horsepower and can't definitely run on an obsolete machine. If your old 400 MHz K6-II computer didn't play DivX movies full screen and full frame-rate under Windows, it will absolutely not do that with AROS. There are also many aspects of AROS that are more advanced than bare AmigaOS 3.1: the decoration system, for instance, needs a good processor to run smoothly. Browsing the web with OWB requires power, so: the more, the better. Then, don't forget classic AmigaOS dealt with standardized hardware platforms, while AROS needs hardware abstraction layer (which introduces overhead) to target different configurations. To enjoy a good Icaros experience, please choose a 1.600 MHz processor or a better one: low-end Athlons and Celerons are perfect and absolutely affordable. Atoms are fine. And so on...

Working models are:

Intel: Pentium, Pentium II, Pentium III, Pentium4, PentiumD, Core, Core2 Duo
Core2 Quad, Core i7-i5-i3, Atom and derivatives

AMD: K6, K6-II, K6-III, Athlon, AthlonXP, Athlon64, Athlon64 X2, Phenom, Phenom II
Duron, Celeron, FX, A4, A6, A8, A10, Ryzen and derivatives

1.10.2 Motherboard

Please pay attention when buying or recovering a motherboard for an AROS computer. Since AROS **won't** support all the nice stuff already integrated unless you're very lucky, you have always to keep a "B-plan" available, in the shape of an expansion slot. Please buy/use an embedded product **ONLY** if you already **KNOW** that AROS supports all the stuff in it. To avoid problems, your motherboard may include:

- PS/2 ports for **both** keyboard and mouse (single bicolor PS/2 ports may not work)
- at least 1 EIDE port or SATA preferably working in "IDE mode" by BIOS setting
- at least 2 traditional PCI expansion slots if embedded sound and network aren't supported
- 1 AGP or PCI Express x16 video card slot

PS/2 ports are no more mandatory, since USB mice and keyboards can work. The included Poseidon USB stack supports both OHCI and UHCI controllers for 1.1 connections and EHCI ones (for 2.0) as well, but there is still the far and unlucky possibility that your USB controller isn't supported or only partially supported (for instance: USB 2.0 peripherals work, 1.1 not. And so on). SATA support is progressing and many new controllers are supported over time. Most modern BIOSes allow user to set the SATA controller to be detected as an IDE one: you can try this, but please try native AHCI mode before. IDE connectors are always supported, though. **Be careful if you've already installed another operating system on a SATA drive: changing the SATA operation mode in BIOS might stop that OS to boot correctly.**

1.10.3 Drives

You don't need a terabyte hard drive for AROS and it would give you more pains than advantages. AROS'

best file system, SFS, can handle only partitions up to 128 GB. You can obviously use larger drives, but you'll have to manually split them into partitions of 120 GB each (or less). Anyway, a spare, cheap, 40 GB or so EIDE drive will be enough for the average AROS use. You can use either dvd players or burners, AROS has also the option to burn them with FryingPan, but due to limited SATA support there is always the risk that you brand new SATA device will not be seen by AROS. You can also use USB devices as well, but keep in mind there might be still some limitations.

1.10.4 Mounting the hard drive and the DVD-ROM

Please pay attention to IDE cables. They must be 80-pin ones (40-pin work in limited PIO mode and maybe won't work at all), with master and slave terminations. On a single IDE cable you can connect up to 2 devices, and you'd probably prefer to use a single cable for both the hard drive and the DVD-ROM. In such case, **you must wire and configure them correctly, or AROS might not work.**

Here's how a cable looks like:



To run correctly, AROS must be installed on master 0, this means that you have to mount its hard drive as master to the first (or the only) EIDE connector. If you're planning to install other operating systems on the same drive, please install AROS as the last one.

1.10.5 The video card

Almost every video card will work on AROS with the VESA driver. Don't be fooled by the way some other operating systems use the VESA modes: AROS does it better, allowing a good experience with games, videos and so. AROS graphic performances mostly depend on the central processor of your computer. You can, however, get some 2D acceleration on many ATI and Nvidia cards, while 3D OpenGL acceleration is provided, on some Intel GMA integrated chipsets and most Nvidia cards (GeForce FX to GeForce GT200 series, and maybe some beyond) thanks to Gallium3D driver. Working models are

ATI: Radeon, Radeon 7500, 8500, 9x00 AGP series. 2D acceleration only.

Radeon X300, X600 PCI Express series. 2D acceleration only.

Nouveau driver: Nvidia GeForce 2, 3 and 4 (2D only). GeForce FX, GeForce 6, GeForce 7, GeForce 8, GeForce 9, GeForce GT/GTX 200-400-500, ION (2D and 3D - depending on models)

Intel driver: GMA950, GMA3100 (2D and 3D - depending on models)

Unluckily, most integrated and newer GPUs aren't supported yet.

Note: starting from Icaros Desktop 1.2.5, the old Nvidia driver has been deprecated and removed.

About AGP and PCI Express performances:

PCI Express cards work better on AROS. AGP bus needs drivers to work properly on AROS, so some motherboards are fully supported and some not, with different performance results. If your AGP GeForce card gives slow framerates, problem can be that your AGP controller is not supported (yet). If you can choose between an AGP or PCI Express motherboard/video card combination, we strongly suggest to select the PCI Express one.

1.10.6 Sound

Many AC97 and HDAudio integrated codecs already work with AROS, but there are many other that won't. The best thing you can do about this is checking in AHI prefs: if your AC97 or HD Audio sound controller is not listed under the available peripherals, well, you have to use a PCI expansion slot to add a discrete sound card. **The best option is a SoundBlaster Live! 5.1 or Audigy sound card from Creative Labs, using**

the EMU10K1 sound chip. Please mind that some models, like the “Value” ones, use a cheaper solution instead: they won't work. Some users suggest to fit the SoundBlaster card in the first available PCI slot, the nearest to the card's one.

1.10.7 Network

Any PCI network card based on RTL 8029, Etherlink 3, AMD Pcnnet 32, Nvidia Nforce, intel Pro/100, RTL 8139, RTL 8168/9 (also 8110 and others), SiS 900, Via Rhine will work. Using one of those is the only way to get networking running on AROS. No modems supported yet.

Note: if you have a TRL8168 or compatible network card, please choose the RTL8169 driver!

1.11 Virtual Machines

Icaros Desktop already supports most virtualization technologies, like VMware and VirtualBox. When creating a new virtual machine for Icaros, please keep this in mind:

RAM: please allow 768 MB of RAM or more on most powerful configurations. You may run test environments in 512 MB, but 768 MB or 1 GB are far better for everyday's use.

Sound: Icaros 1.3.2 introduced sound support for VMware emulated Ensoniq Audio ES1371 chipset. On other virtual platforms like Qemu, choose the AC97 adapter for your virtual sound board. Issues with sound have been reported for the recent versions of VirtualBox. Please use an older release or VMware Player instead.

Network: choose a “Pcnnet-PCI II (NAT)” virtual network adapter under VirtualBox to allow networking. Both VMware emulated Pcnnet and e1000 should work.

Video: even though a preliminary driver for VMware SVGA exists, all VT should run in VESA mode only. VMware already provides support for wide-screen resolutions, but maybe it will be a good idea to limit the SVGA resolution size to the one of your monitor. Otherwise, Icaros will start in a giant 2560x1600 resolution and you'll have to scroll the workbench window every time. VirtualBox doesn't provide wide-screen resolutions in its BIOS by default, but it can be configured to do so using some line-command options. Please refer to VirtualBox communities and documentation for more information.

Hard drive: please consider 4 GB for the system partition only, and a minimum of 8 GB for the work one. If you're using a single AROS partition for everything, the minimum size should be 8 GB.

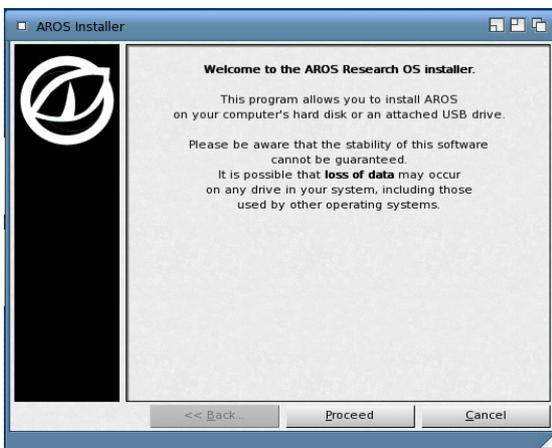
Pen drives: USB peripherals work very well under VMware, but some issues were reported using VirtualBox. Setting up USB ports to work with Qemu is really tricky, but it works. When adding a USB controller to a VMware virtual machine, please set it to use version 1.1 of the protocol.

2. Installation

Installation on the hard drive is recommended in order to use AROS programs and save their files. However, AROS is a “spare time operating system” and it isn’t really suited for a work environment. As with any other secondary OS, installation may be dangerous for operating systems already installed on your hard drive. **Icaros Desktop discourages installation on production machines with important data on them:** please be careful when performing operations like partition resizing, formatting and so on.

The following steps are good for a native installation. For hosted environments please refer to chapters 2.3 and 2.4. Some of these steps, however, will be applied as well.

1. Open Icaros Desktop Live CD-ROM by double clicking on its workbench icon, then open your **Tools** drawer. Launch **InstallAROS**.



2. Carefully read what's written in the first page. Keep it in mind and don't shout at us if something goes wrong: you were warned. Click on **proceed**.



3. The first time you install Icaros Desktop, please kill anything already present on your hard drive by selecting the **wipe disk** option. If you can't, or you're installing Icaros Desktop using the remaining free space of your hard drive, just select **Only use free space**.

WARNING!

Please beware of the content of “device” field: if you're destroying the wrong drive, you may regret it. If you're installing Icaros to a USB pen-drive, be sure it's a USB device. See chapter 2.1 for information.

4. Check the **Specify Size** option on the right.

5. Select an amount of space for your AROS system partition. It will be formatted with SFS filesystem. This is mandatory in order to boot this version of AROS and to run all applications. Some of them have problems using other filesystems. Giving a size limit will activate the other options.

The correct size:

Bare AROS system needs less than 200 MB to install. However Icaros Desktop comes with a huge amount of software, which require a minimum of 4 GB. Please select a reasonably thin system partition (4 GB - 8 GB), and a reasonably large work one (8 GB - 120 GB). Keep in mind that **currently AROS SFS file system can't handle partitions bigger than 128 GB**. So, don't create a larger one. If you have a bigger hard drive, just create a large system partition too. Or add new partitions with **HDToolBox**.

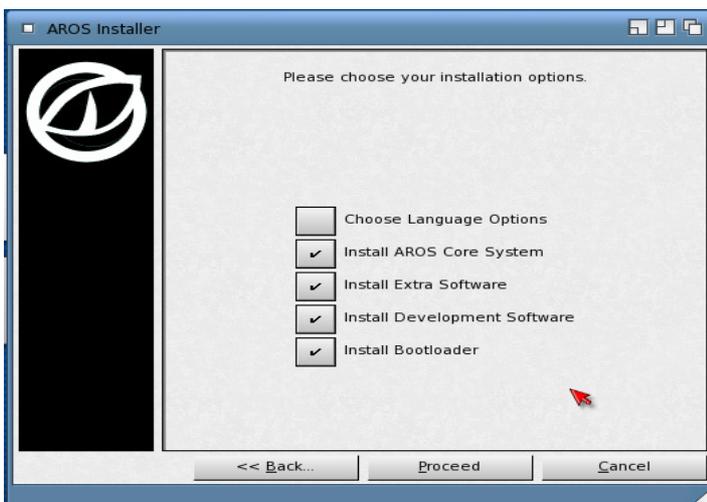
6. Unless there are good motivations not to do so (for instance, your hard drive is too small or you're installing on a USB pen-drive - in this case please read the apposite section of this chapter), please create a Work Partition by checking the **Create** option in the right bottom corner.

7. Leave the **Specify Size** unchecked to let AROS use all available space for the work partition.

8. When asked, **reboot**. It will take just a bunch of seconds.

9. Repeat points 1 and 2, however, this time select **Use existing AROS partitions** and click on proceed.

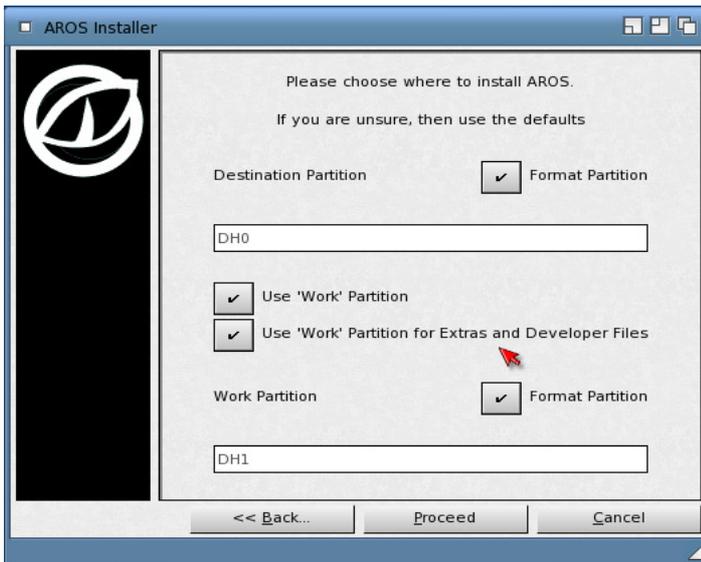
10. To install a complete Icaros Desktop system, just check all the options below, except "Change language options". By unchecking **Extra** and **Development** software, you'll get a bare and barely usable AROS installation. You can also choose to have either a graphic or a text boot menu.



Note about Development:

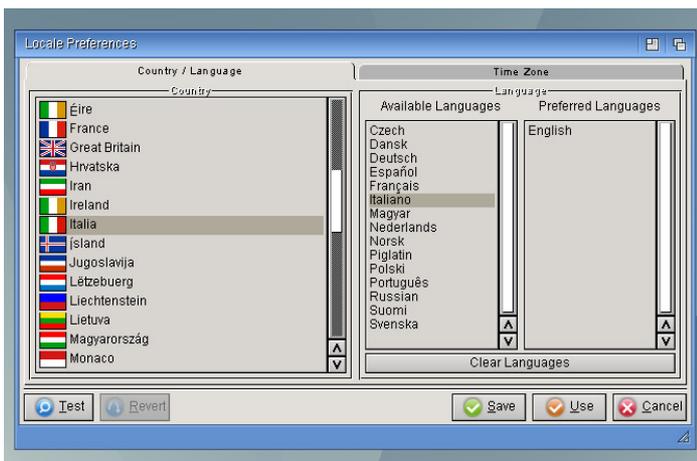
Development software is important for many AROS tasks, like compression and decompression in tar.gz format, and some applications that need executables from the Development:bin directory won't work if Development has not been installed. To prevent this, if the user has chosen not to install Development stuff, Icaros Desktop will create a *SYS:Development/bin* directory anyway, with the needed files. Please do not delete it.

11. If you're planning to move Extras and Development files outside of the system partition, please specify this in the following step. Special "MyWorkspace" directory will be created as well, in the same volume Extras and Development files will be put. Do not delete "MyWorkspace", because many components of Icaros Desktop need it to properly work.



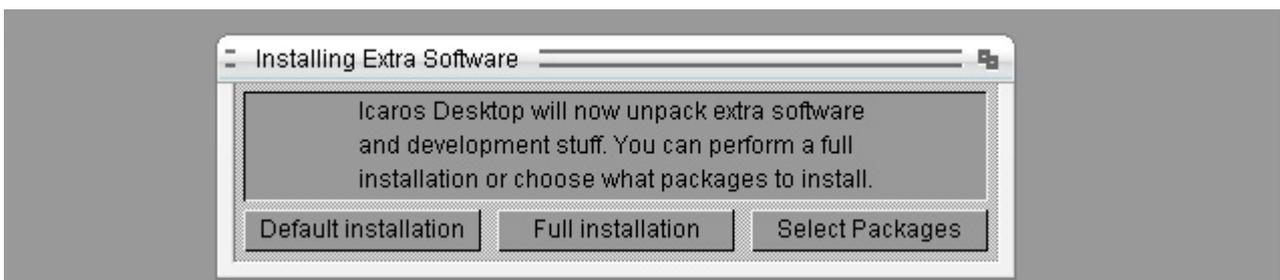
12. If you selected to choose language options at step 10, please select your keyboard layout in the left side of this window. This can be done later, by launching the **Input** panel in **Prefs**.

13. If you selected to choose language options at step 10, please select your default language. The first one appearing in the right side will be used by **Wanderer** and other applications. The second one will be used only if catalogs for the default language aren't available. Language will fall back to English if no other language is available. This can also be selected later, opening the **Locale** panel of the **Prefs** drawer.



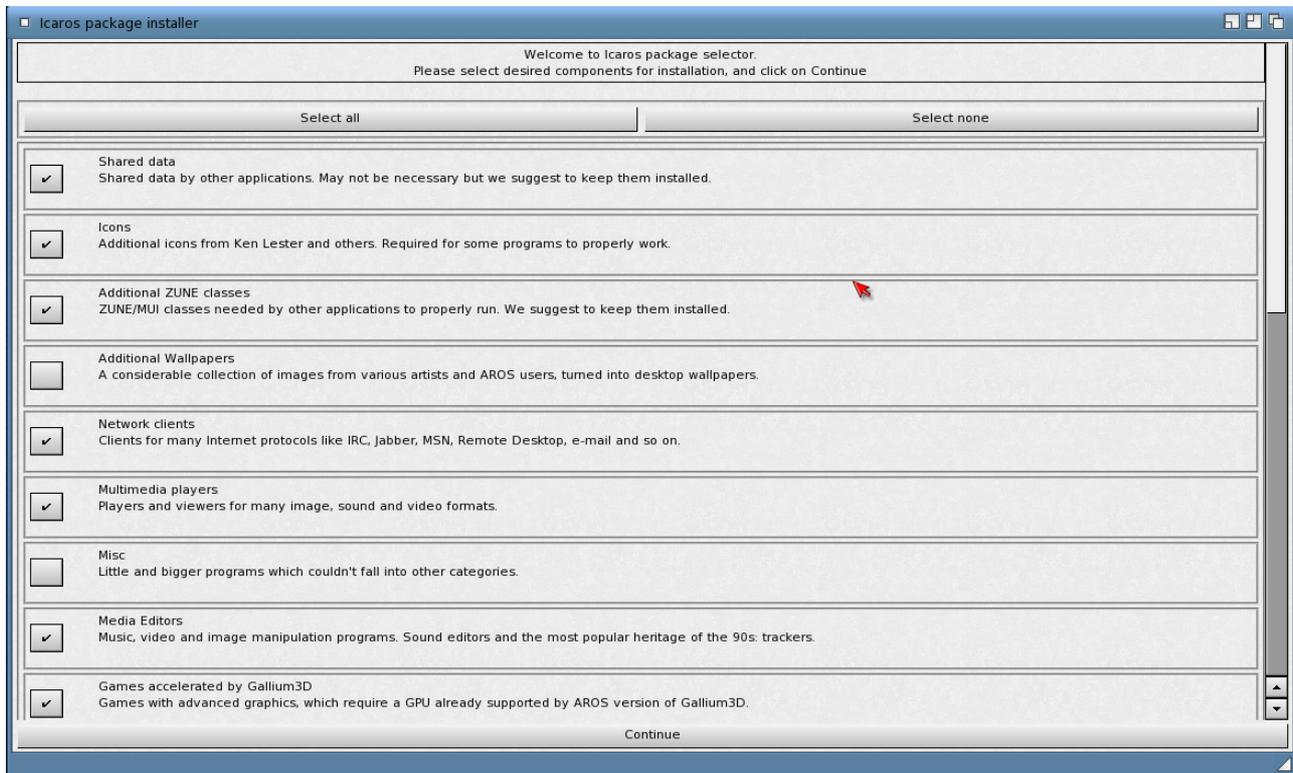
14. Files will be copied. Please wait until the file copy procedure has completed. It should take a few minutes up to 1 hour, depending on your hardware.

15. After installation, you will be prompted to perform either a Full, Default or a custom installation (“Select Packages”). The **full** installation will install all the components provided with your version of Icaros. The **default** installation will install most used components only. **Select Packages** will allow you to choose between groups of programs. If you choose the Full installation, jump to step 17.



16. If you went for the custom installation, please choose what to install with our package selector. Each

group of software will be shown with a brief description. Please notice that Icaros will give you as much freedom as it can about groups selection, however some packages may be needed by other programs to correctly run. When suggested to install a particular package, please install it.



When you're done with selection, press Continue to extract all files.

AmiBridge now optional:

To save space and time, two "hidden" options have been added to the Icaros package manager.

AmiBridge - uncheck this option to avoid extracting the M68K environment on the hard drive. The same compressed version already present on the installation media will be copied instead. This allows saving about 40 MB of space in the system partition. You can extract the contents of AmiBridge later, running the script "extract-amibridge" in S:.

See progress bar while unpacking - showing the progress while extracting files consumes many clock cycles and can slow down installation procedure on slower graphic adapters. Uncheck this option to use the old "unattended" unzip program instead of default graphic unpacker. While unpacking, the installer program will seem stuck: just wait until the end of operations.

17. Files will be extracted. Please wait until the installation program has completed its task. It may take from few minutes up to 2 hours, depending on your hardware.

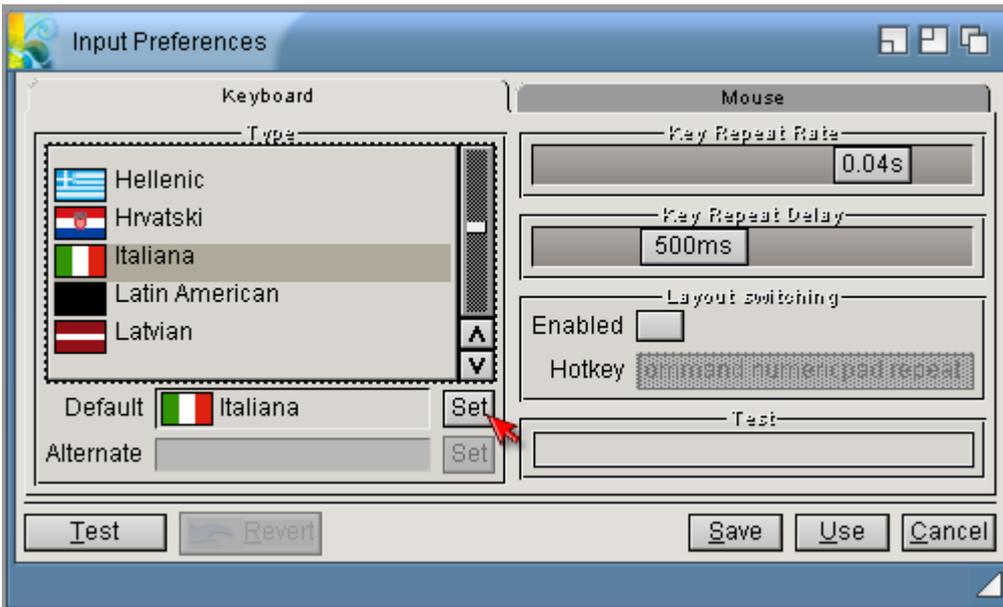
18. When finished, just remove Icaros Desktop CD-rom and reset your PC, to boot AROS from the hard drive.

2.1 First boot configuration steps

When booting for the first time from the hard drive (or a writable USB unit) Icaros Desktop will let you configure most important system and environment settings. You may decide to proceed, to be reminded later (at next reboot) or to completely skip this procedure. In the latest case, you will need to manually open the control panels in the /Prefs drawer.

2.1.3 Input settings

The second panel lets the user choose his/her favorite keyboard layout.



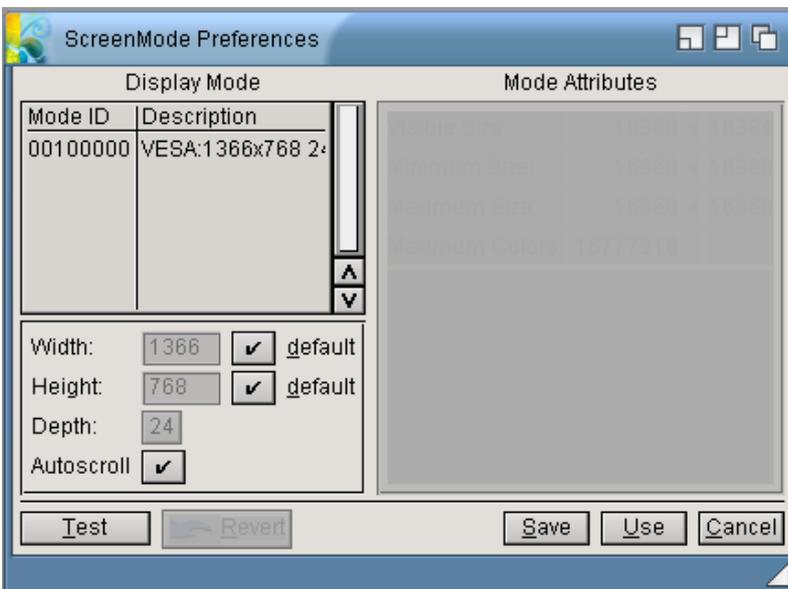
please notice the Set buttons on the left bottom corner:



you will need to use it to confirm your national keyboard layout. If you don't, you will end up using the default US layout. AROS supports also a secondary layout, but you have to enable "Layout Switching" first. Then, you will be able to choose the Alternate field (normally grayed out) and to select a hot-key for keyboard switching.

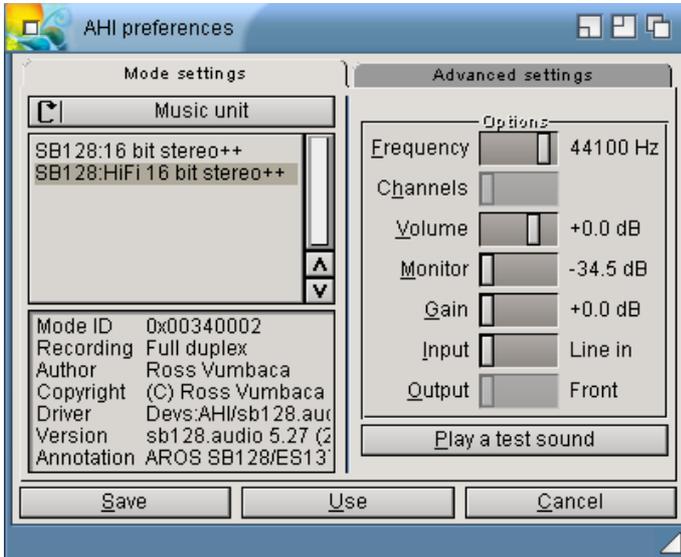
2.1.4 Screen Mode settings

The third panel will be **ScreenMode**. This will set the default screen resolution for your screen. If you're using VESA mode, you won't be able to select any different resolution from the chosen one, at boot. But if you're using a native driver for a supported video card, you will have much more options here.



You can also set a wider area than your screen by unmarking the “default” checkboxes. In this case, you will need to scroll the area to see what's hidden outside your monitor's boundaries.

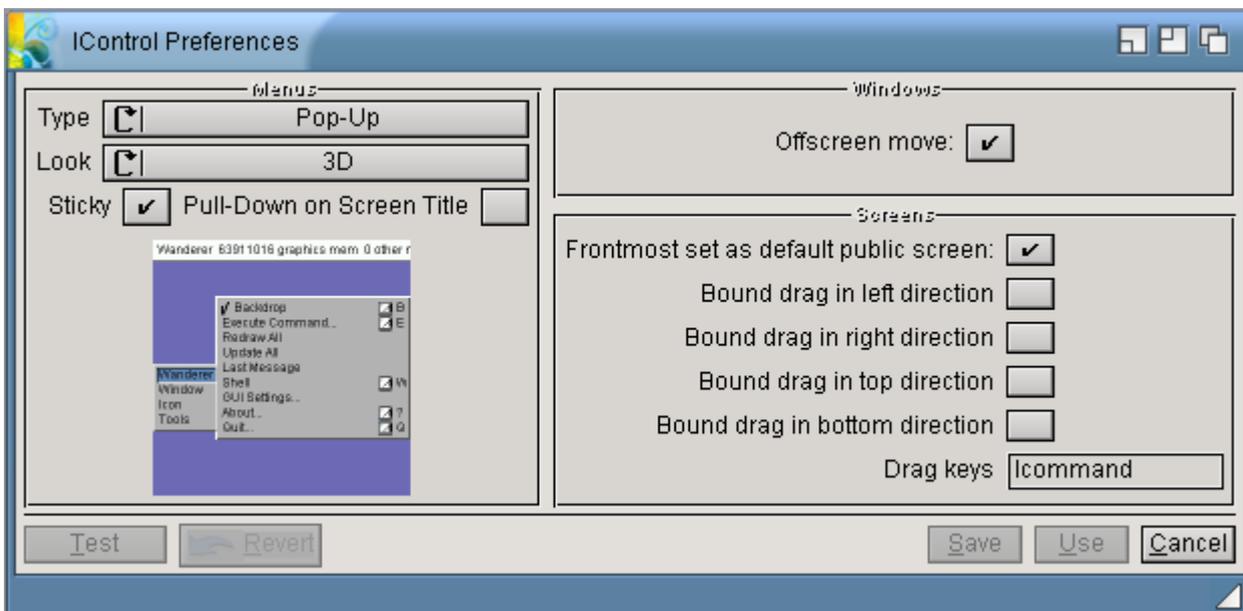
2.1.5 AHI (Sound) settings



AHI preference panel will allow you to configure your audio hardware. Unluckily, only specific integrated codecs and discrete audio cards are supported, so AROS will try to find a suitable adapter here. If it won't, you'll end up with the VOID driver which basically 'fouls' applications letting 'em think there is an audio device on the system, otherwise they wouldn't work. Play a test sound to be sure your hardware is working.

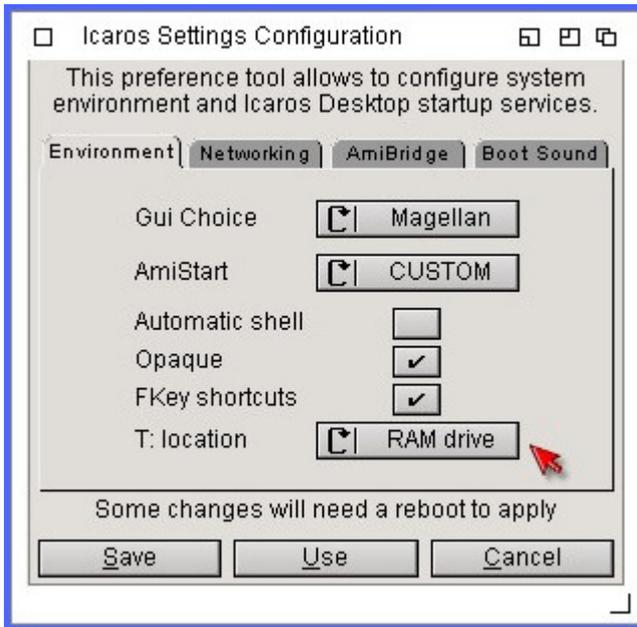
2.1.6 IControl settings

This control panel allows to customize menus, windows and screens behavior. Icaros Desktop is already configured to use 3D-like menus (this depends on themes, though) in a pop-up fashion, so the right click menu will appear near the pointer instead of in the original Amiga top-screen bar. But you can restore the old habits if you like. Normally, Icaros windows can be moved out of the boundaries of your screen, but you can decide to stop this to happen, like the original Amiga workbench did.



2.1.7 Icaros environment settings

A complete description of this tool will follow in the next chapters. For now we will just describe the main options here.

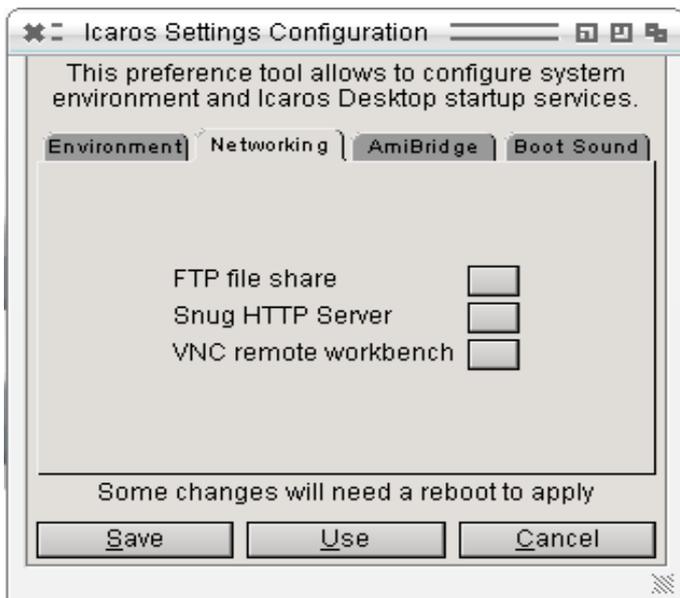


In the Environment panel we may choose the default file manager (GUI), between AROS classic Wanderer and BSzili's port of DirectoryOpus 5 Magellan. The former is an almost complete reproduction of AmigaOS' Workbench, so users loyal to Amiga habits might find this a better fit for them. Magellan, however, offers a much wider set of instruments for file management, making life a lot easier. Icaros Desktop already configured it to mimic Wanderer as much as it can, but also providing more and more functions. The AmiStart option allows to select AmiStart's behavior. See chapter 1.8 and 1.8.1 for a better explanation. The Automatic Shell checkbox enables a command line parser at startup: good if you are a coder and/or a shell-centric user. The Opaque option allows to make AROS move contents of windows along with their boundaries when you decide to place them elsewhere, while the FKey shortcuts option let user disable Icaros' keyboard shortcuts that don't belong either to Wanderer or Magellan themselves.

T: Location

Starting with Icaros 2.2.7, user can change the default path of T: assign from the RAM Drive (where it normally belongs, RAM:T) to the system volume (SYS:T). This might seem pointless, due to the fact that programs usually target to T: to perform quick operations or to store parts of their memory, create variable files etc, so having this happening on the fastest available device makes a lot of sense. However, modern hard drives and especially solid state drives tend to tighten the difference and placing T: on a more capable drive may be a better option: less speed, but more space for temporary files! Choosing the System volume won't *remove* the whole T: management from the RAM drive: a T directory in RAM will still be created to address programs with hard-coded operations performed on RAM:T. This path will still be added to the virtual T: volume with an "assign ADD" operation, but when user or a program will address to T:, the T drawer on the system volume will be addressed first.

The Networking panel allows to enable or disable three network daemons that may greatly improve Icaros' interaction with other machines over the local network. The FTP file share option allow to run a FTP server on the local machine, allowing users to read and write contents of MyWorkspace drawer from a remote computer. The VNC remote workbench option, instead, allows to manage the current session from another computer (or tablet, or smartphone) using a VNC client. The Snug HTTP server is a simple web server pointing to MyWorkspace. You can use a browser to interact with this drawer from other machines on the local network. It also allows creating very basic and very insecure web sites, why not...



The Boot Sound panel, in the end, allows to choose a mp3 file you may play at boot time, when the system is ready. We're skipping AmiBridge panel for now.

2.2 Installing Icaros Desktop on a USB pen-drive

Starting from Icaros Desktop 1.2.2, AROS can be installed on a USB pen-drive. The procedure may be tricky, but it works. First of all, we must be aware of the fact that AROS can't be installed on a FAT partition, so your target pen drive must be formatted using the SFS file system. This will destroy any data on the existing partition, so please be careful here. We can, though, create a small FAT partition on the same USB pen drive to preserve Windows and Linux compatibility (they can't read SFS), and allow file sharing between the two worlds. Icaros FAT support has slightly improved from release 1.2.2, so we can now transfer files from and to FAT partitions at a reliable speed, and with good expectations of success.

A good pen-drive for Icaros is at least 8 GB big. This will allow the whole Icaros environment to be installed on the pen-drive, and keeping about 1 GB of free space on the SFS partition, and 2 GB of FAT partition for the reasons explained above. You can choose to avoid the FAT partition, but this will make your pen-drive only usable by AROS. Moreover, any time you'll plug your Icaros pen drive in a Windows machine, you will be prompted to format it: please pay attention not to do so.

2.2.1 what you need

To follow this procedure, you'll need a standard USB pen-drive of the correct size:

1 GB or more → for the Icaros Desktop Light installation

8 GB or more → for the Icaros Desktop Live! Installation

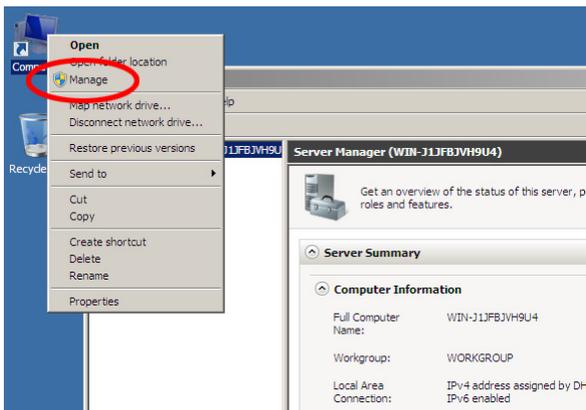
...And a Windows computer to clean pen-drive partitions, or a tool to do that on other operating systems.

2.2.2 Prepare your pen-drive

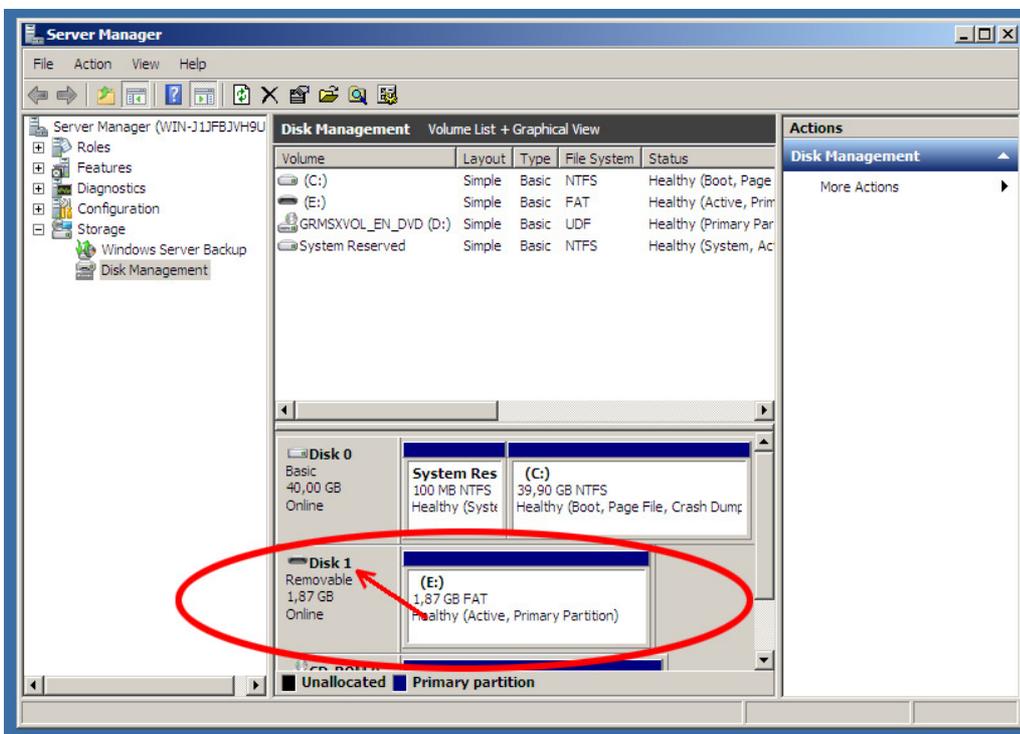
Almost all USB pen-drives are sold already formatted, with a single FAT partition or with a hidden partition with security programs for Windows. To ensure the maximum degree of compatibility, you should choose a value USB stick without all those nice features, and with a single partition only. The second partition may be difficult to remove and might create issues with AROS. In this case, please delete all partitions with **gParted** or any other similar tool. **Remember: once this has been done, you won't be able to roll back.**

If you're using a Windows XP or later PC, you should be able to use the diskpart utility under the DOS Prompt. Diskpart is really handy and fast, but pay attention to what you do: you may destroy valuable data forever, if you target the wrong drive!

Locating the right pen-drive is easy. Just right click on your computer's icon on the desktop and choose the *Manage* option. You will be sent to the *Administrative Tools* panel.



Choose *Disk Management*. You will find this option in the Storage folder or somewhere in the neighborhood, depending on your Windows version. Locate your pen-drive and write down the drive number, as shown in the following picture:



This time our pen-drive is listed as “Disk 1”. “1” is the information we absolutely need in the next step. **Don't close the disk management window**, but open the command prompt. You need a shell with administrative rights, so if you aren't logged in as administrator, please log off your Windows session and log in with an administrator account, then go further. On Vista and upwards, you also need either to turn temporarily off UAC (User Account Control) or run an elevated shell by entering `cmd` in the search field of your start menu, and press **Ctrl+Shift+Enter** instead of Enter only.

Now enter the `diskpart` command. You will get a prompt like this:

```
C:\Users\Administrator>diskpart
```

```
Microsoft DiskPart version 6.1.7600  
Copyright (C) 1999-2008 Microsoft Corporation.  
On computer: WIN-J1JFBJVH9U4
```

enter the `list disk` command to look at drives again:

DISKPART> list disk

Disk ###	Status	Size	Free	Dyn	Gpt
Disk 0	Online	40 GB	0 B		
Disk 1	Online	1913 MB	0 B		

as you may notice, you won't get the usual drive letters here. That's why we suggest to look at disk management first. Now that we are sure our pen-drive is "disk 1", enter the **select disk 1** command:

DISKPART> select disk 1

Disk 1 is now the selected disk.

..and delete any partition(s) on it with the clean command.

DISKPART> clean

DiskPart succeeded in cleaning the disk.

Warning!

This will destroy any data on the pen-drive, and you won't have them back.

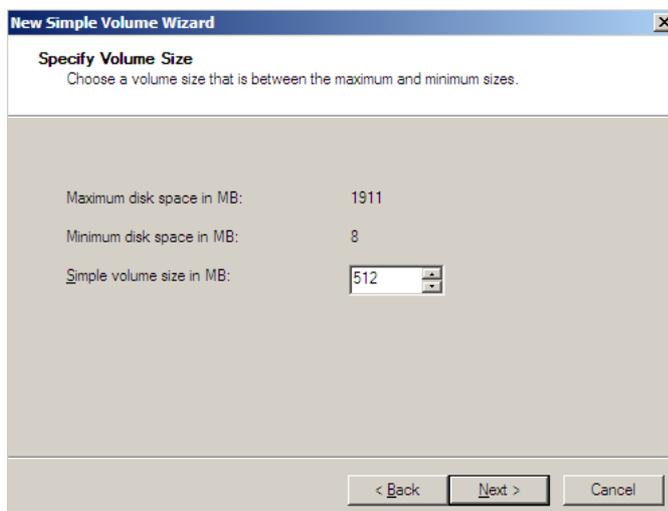
2.2.3 Setting up the FAT partition

If you want to exchange data with other operating systems, you may want to create a FAT partition on the pen-drive. This FAT partition must be created NOW, because sometimes Windows has problems creating a second partition after an "unknown" existing one. Once you have created the FAT partition, you can go on with the AROS installation.

Go back to the *Disk Management* window and right click on the now-grayed-out area on the right:

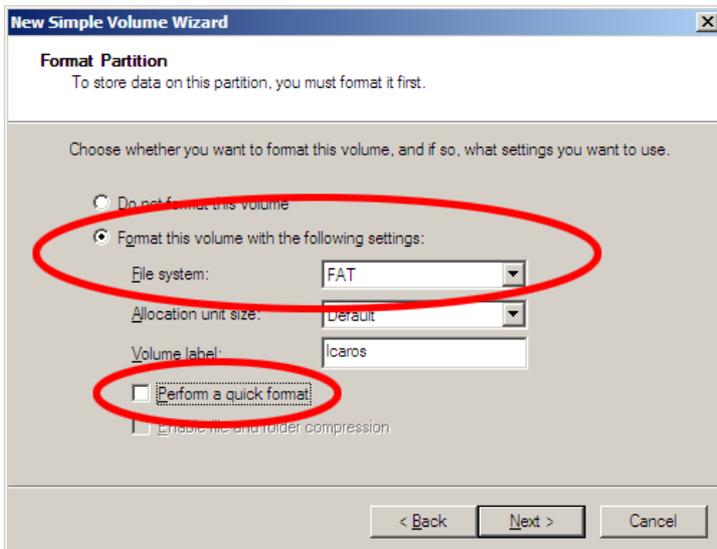


The **New simple volume wizard** will appear. Other versions of Windows might ask to initialize the drive: in this case, do that. Just remember to create a FAT partition large enough to keep your data, but also small enough to leave at least 1 or 4 GB of free space for AROS (depending on the Icaros version you have).

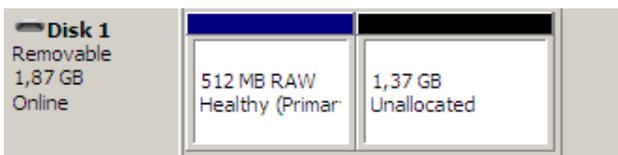


Assign any drive letter you like, it absolutely doesn't matter (for AROS), and click NEXT. Now we have to

choose the right file system. Windows allows formatting partitions with three options: NTFS, FAT and FAT32. NTFS is only for big drives, and AROS only has limited read-only support for it. So please choose another one. FAT and FAT32 are both OK, but **in order to get the maximum degree of compatibility with AROS, and being sure your FAT partition will be correctly detected, please choose FAT.** Format the partition but, to be sure, please untick the *perform quick format* option.



After a few seconds, you will notice your pen-drive will look like this in the Disk Management window:



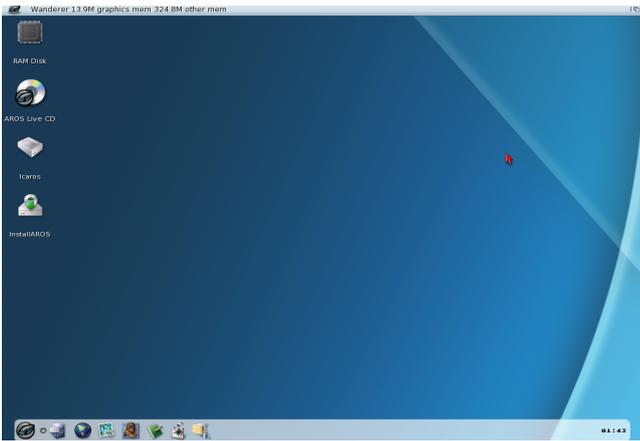
This means you are now ready to install AROS on the “Unallocated” space on the right. You can now turn off Windows and boot your computer using the Icaros CD/DVD.

Note:

You can also use a virtual machine like **Vmware** or **VirtualBox** to perform these actions. This will come in handy if your computer can't boot from the AROS DVD for any reason. Just mount the ISO and the pen-drive as if they were both physical devices on a real computer, and you'll be OK as well (this manual has been written using a real pen-drive connected to a **Vmware Server** virtual machine, for instance). It will be, anyway, a noticeably faster approach than using a physical DVD.

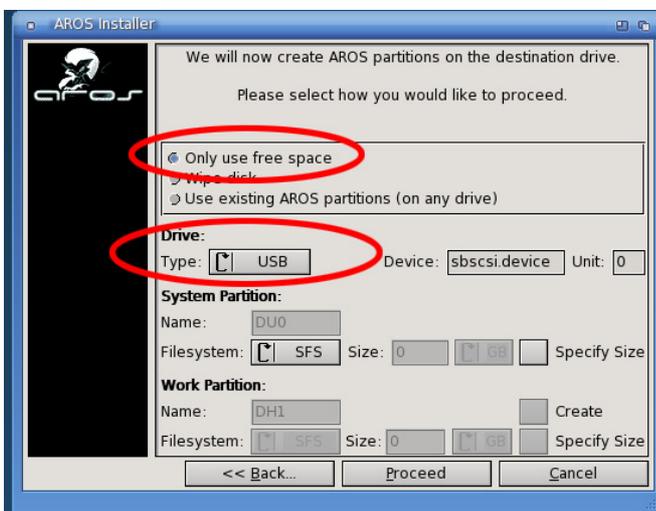
2.2.4 Installing AROS on the pen-drive

Boot your computer using the boot media of Icaros Desktop, and plug in your pen-drive. You'll get a workbench screen similar to this one:



Run InstallAROS using the icon on the desktop. Please notice your FAT partition should be visible on the desktop too (if you've created one). Installation on the pen-drive won't be so different from the usual one. You just need to correctly follow these steps:

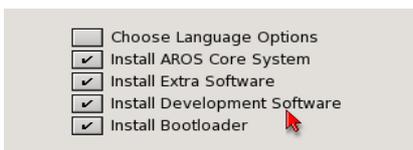
1. When partitioning, choose the **USB** option instead of IDE/SATA at the *type* label:



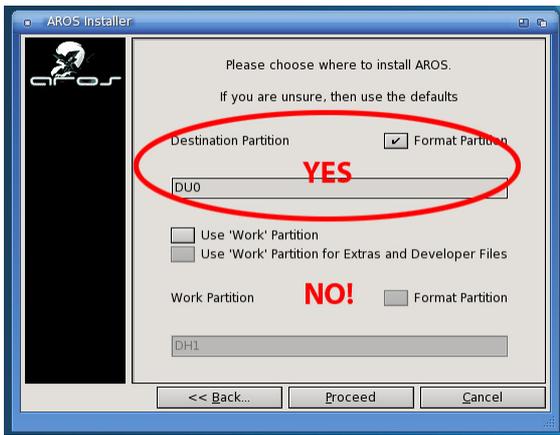
do **NOT** create the work partition, just use a **SINGLE SFS PARTITION ONLY!** If you have problem, try changing 0 to 1 in the "Unit" option on the middle-right of this window.

2. reboot when prompted to do so. Plug the pen-drive again if needed. Run InstallAROS again and choose to use the existing AROS partitions. If you have also an IDE drive connected to your computer, you might like to be sure you're targeting the right drive. To do so, click temporarily on the *only use free space* or *wipe disk* option, choose USB in the *Type* gadget and choose *Use existing AROS partitions* again. Proceed.

3. when asked for what to install, add the Development stuff as well. Yes, it's important to do it!



4. **AGAIN: DO NOT CREATE THE WORK PARTITION!** Using a second partition on the pen-drive might not work and, anyway, it will prevent you from installing AROS on a hard drive using your USB pen-drive as boot-live-drive.



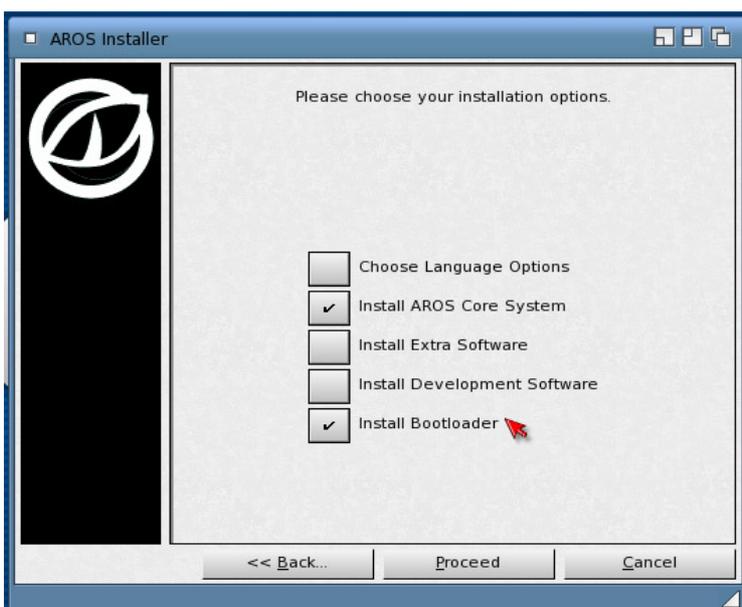
5. Proceed. Choose either the graphic or the text-only GRUB menu for your pen-drive. Wait for all the files to be copied.

6. When asked for the Full or Custom installation, choose Full.

2.2.5 Create a “installation Pen-drive”

Starting with version 1.5, Icaros Desktop installations on pen-drives can't be directly used to install Icaros again onto a hard drive, using the pen-drive themselves as boot devices. This is a side effect of new installation procedure, which expects Extras and Development stuff to be archived. So, what to do if you need to install Icaros on a hard drive, starting with a pen-drive? The solution is building a pen-drive which looks like a CD-ROM. We provided a script to do that in a semi-automated way, here's what to do step by step to use it correctly:

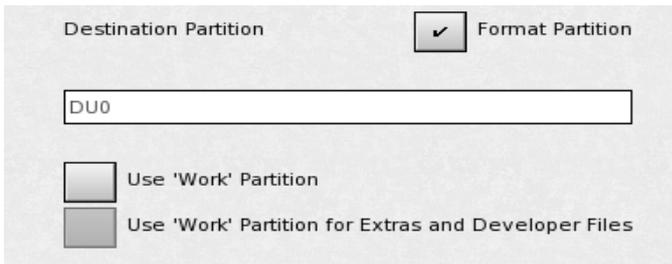
1. Follow chapter 3.1 to create a suitable pen-drive, but in this case it's better to avoid creating FAT partitions. Just use the whole space of a 2 GB USB pen-drive, wiping all existing partitions and creating the AROS SFS volume only.
2. Boot from your Icaros Desktop Live or Light optical media (or use the ISO image if you're doing this in a virtual environment like VMware or VirtualBox)
3. Run InstallAROS and follow normal USB installation. However, at this panel:



select **Install AROS core system** and **Install Bootloader ONLY**. They are the only needed components at this time, while installing also extras and development stuff would just waste a lot of time. They would be

ripped off, anyway, later.

4. Select to use only a single partition and format it

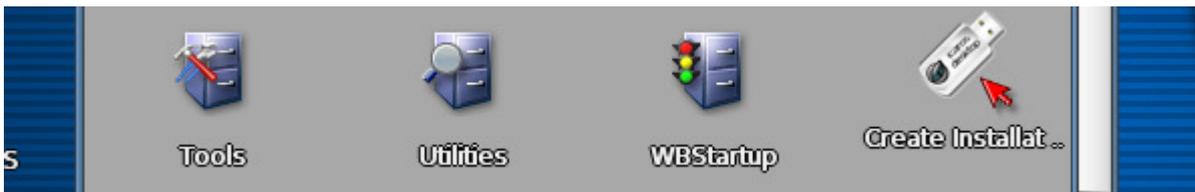


5. Be sure to install GRUB on the pen-drive and not on the hard drive



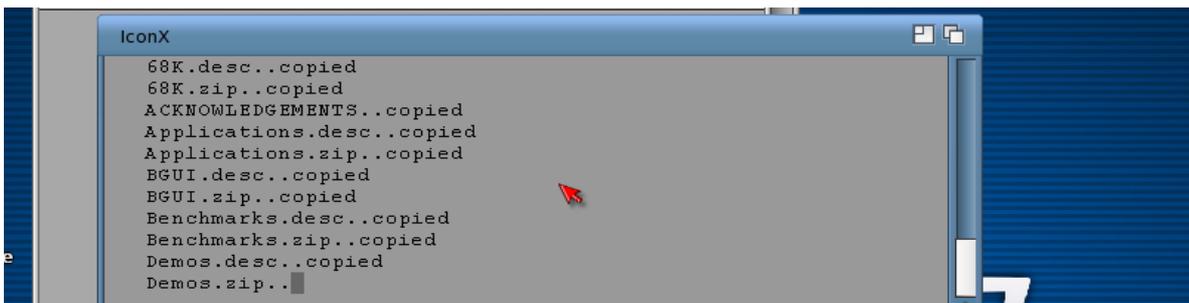
6. When finished, click Proceed. Do not reboot and do not remove the pen-drive from the system.

7. Open your Icaros' CD or DVD root and scroll down the contents until you see this icon:



8. Click twice to run the “Create Installation pen-drive” script.

9. Wait for it to finish:



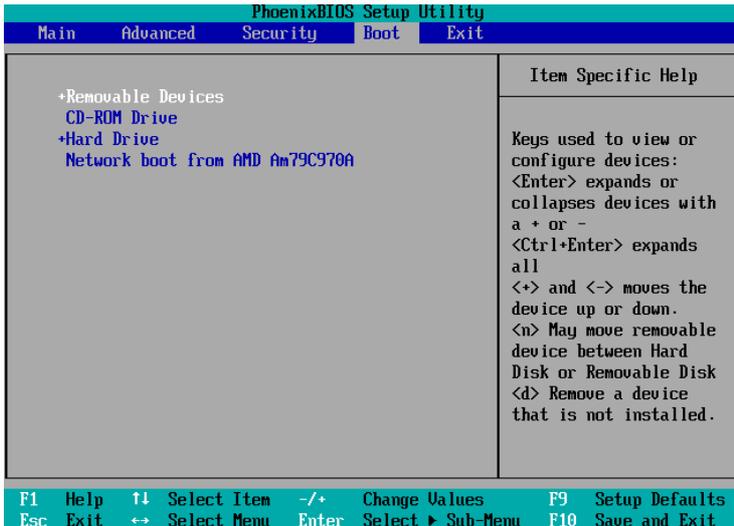
10. When finished, you will have a USB pen-drive which will act like an Icaros DVD/CD, with packaged Extras and Development stuff. You won't be able to use these contents directly as usual, but you will still be able to customize your installation pen-drive changing system settings with the ones you prefer (for instance, to choose your favorite languages, fonts, background and so on...).

Warning:

Do not apply the “Create Installation pen-drive” script to a pen-drive you're already using as 'production' system: contents in Extras, Prefs and Development drawers will be erased and overwritten with default ones, so you'll lose them permanently! This procedure is meant to create installation pen-drives only!

11. Now you can remove the installation media (CD or DVD), turn off your computer, remove the USB pen-drive and use it to install Icaros Desktop on the same computer, or on other ones. Remember you'll need to

set the USB peripheral as boot drive, to allow booting the system into Icaros Desktop.



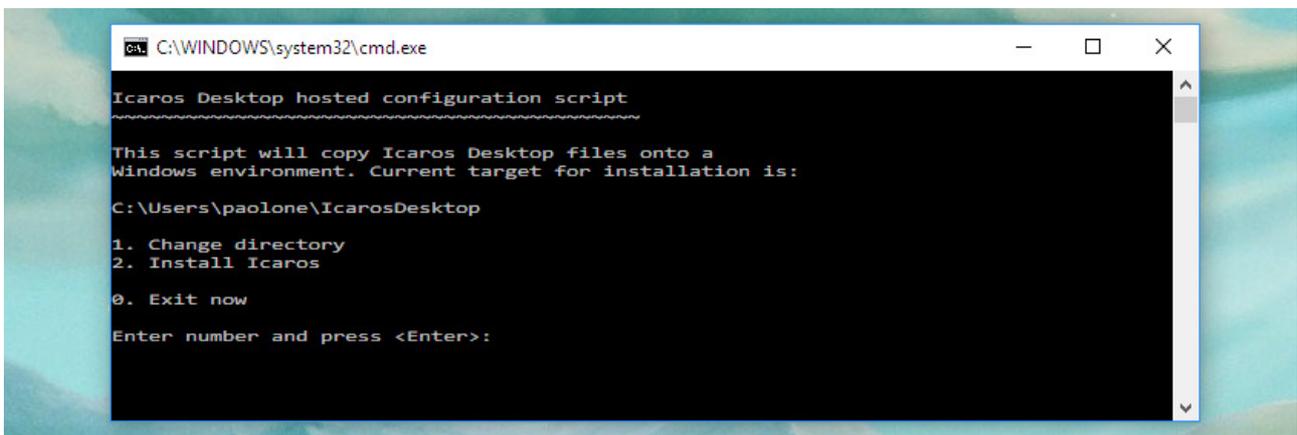
2.3 Installing Windows-hosted Icaros Desktop

Installing Icaros Desktop onto a working Windows-based computer is quite easy, but not completely customizable at this stage.

Please beware of the fact that Windows-hosted AROS is still in its “infancy”. There is no network nor audio support for this hosted flavor, and many AROS programs will fail to run either. If you really want to try AROS in a protected environment under Windows, please consider using Vmware Player or VirtualBox to provide a reliable virtualization technology. Windows-hosted Icaros is good for quick tests and little more.

Here’s the steps to follow:

1. mount your Icaros-PC-i386 iso file using Windows Explorer (v8.1 or newer) or use any program à la *Daemon Tools* which allows mounting of ISO files as virtual optical drives. Alternatively, you may always burn a CD or a DVD with the Light or Live editions of Icaros Desktop.
2. open the root directory of your installation media/ISO and run the `setup_win_hosted.cmd` script.



Select option 1 to change the default Icaros Desktop installation path, or 2 to proceed with installation.

3. Once all needed files had been copied, enter the amount of memory Windows should reserve to Icaros Desktop. We deeply suggest starting with 512 MB and use always multiples of 256 to avoid mistakes. **Important:** on latest builds of Windows 10, please specify an amount ≤ 1536 MB, or AROS won't start.

```
Please enter the amount of RAM (in megabytes) to reserve to Icaros
Please use multiples of 256 (like 512, 1024... up to 3072).
256
```

4. When done, this message will appear:

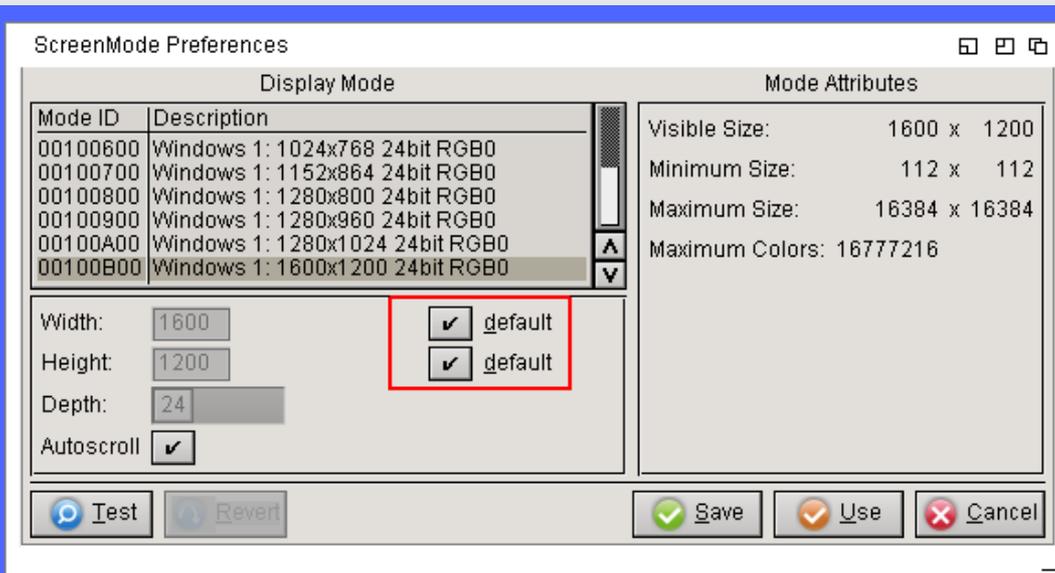
```
Icaros Desktop has been properly prepared and configured
to run hosted on your PC. When started for the first time,
it will require expansion of Develoment and Extras stuff.
```

Icaros Desktop has been installed into your \User home directory, in a folder called IcarosDesktop. So, if your user name is John, your Icaros' most probable location will be C:\Users\John\IcarosDesktop. The distribution will also create a .icarosd drawer in your profile directory. This will be hidden, though.

5. now move to the installation folder with the CD command or through Windows Explorer. The installer has created a `icaros.cmd` script you should use to run the distribution. Run it and, the first time, Icaros will decompress its archives and finish installation. Follow the steps 15-17 of chapter 2 and configuration steps from paragraph 2.1 to complete it.

Warning:

If you have problems changing the resolution of hosted screen, and Icaros' desktop only takes a 640x480 corner of the window, you just need to open Prefs/ScreenMode and be sure you have selected both 'default' checkmarks for your chosen resolution, as follows:



.NET Framework 3.5 is needed for HostBridge

Icaros Desktop 2.3 needs the installation of this Windows component to work properly. The bare system will work without it, but some new HostBridge components need this framework to run. Please refer to Windows documentation to understand how to install this Microsoft package on your system. To understand what's HostBridge and how it works, please refer to chapter 10 of this guide.

2.4 Installing Linux-hosted Icaros Desktop

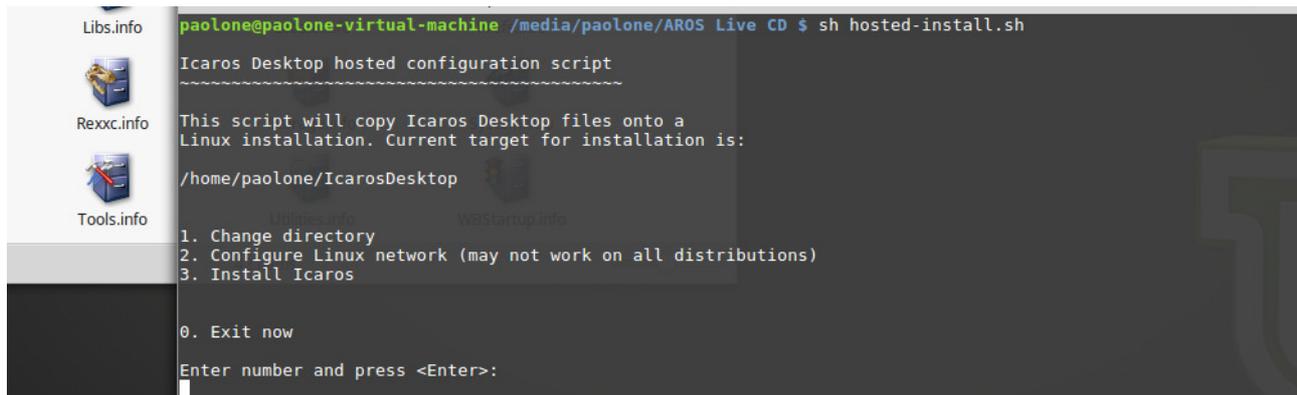
Installation procedure

1. please unpack the ISO file and mount it in your Linux machine. Open a shell, move to your cdrom mount point (on recent distros, it generally starts from /media)

2. start the hosted-install.sh script with the sh command:

sh linux-hosted-install.sh

3. the script will propose an installation directory starting from your personal /home folder. You may change it, but you must choose one where you have write and execution rights. The installer is very very basic for now, and does not handle exceptions or rights management issues. If you don't need networking, jump to step #7.



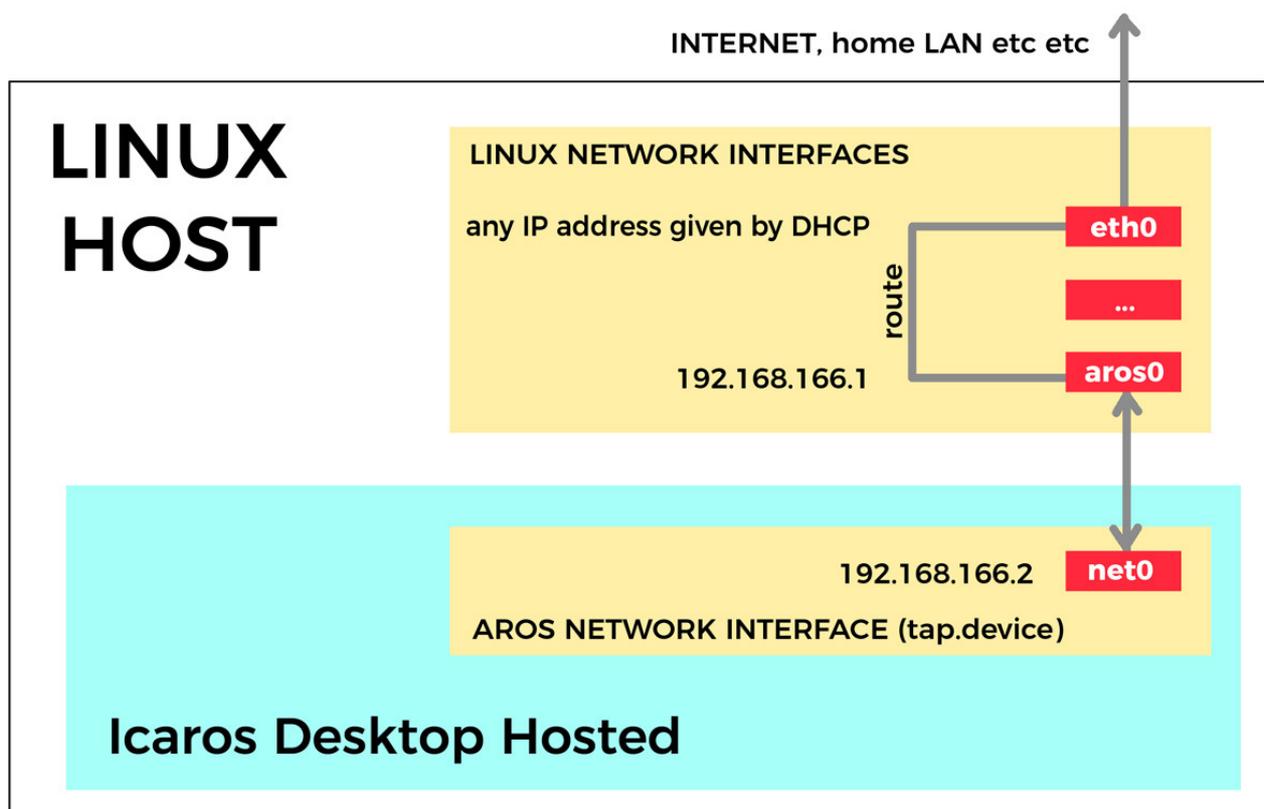
```
paolone@paolone-virtual-machine /media/paolone/AROS Live CD $ sh hosted-install.sh
Icaros Desktop hosted configuration script
-----
This script will copy Icaros Desktop files onto a
Linux installation. Current target for installation is:
/home/paolone/IcarosDesktop
-----
1. Change directory
2. Configure Linux network (may not work on all distributions)
3. Install Icaros
-----
0. Exit now
Enter number and press <Enter>:
```

4. Since being running hosted, Icaros Desktop does not need a network connection to its host to share files: it can use the same file system. However, if you need to browse the web or use network programs under AROS, you need to set up a virtual connection between Linux and Icaros. That's handled with the option 2, but since Linux distributions can be very different from each other, we can't assure this part will work every time.

Never run Icaros Desktop as root, always use a limited user account!

You don't need to be root to perform these operations, but you must be at least a *sudoer* on your system, because the *sudo* command is needed.

5. You need to enter your password to make an operation as elevated user: installing *uml-utilities* to bring up a tunneling interface on your Linux host, which will be called *aros0*. What we need to do, in practice, is creating a virtual network card on the Linux host to communicate with the virtual ethernet card "seen" by AROS with the *tap.device*, which Icaros Desktop automatically configures with a range of IP addresses that should not be normally in use for other purposes. Hosted networking works like this:



In the image above, internet packets are flowing to Linux’s “eth0” interface (its name will be different on your system), then routed to the virtual “aros0” interface (which is still installed on your Linux system). Your aros0 Linux interface will be given the 192.168.166.1 IP address, while Icaros Desktop will use the internal IP address 192.168.166.2 (on AROS’ net0 interface). These addresses can be changed only by modifying the resulting script, once done. See the example below:

```

We need to bring up a virtual network device to let
Icaros Desktop reach the Internet.
We need to be sure the uml-utilities package is available
on your system.

[sudo] password for paolone:
Reading package lists... Done
Building dependency tree
Reading state information... Done
uml-utilities is already the newest version (20070815.1-2build1).
0 upgraded, 0 newly installed, 0 to remove and 468 not upgraded.

Here's the list of available interfaces (Iface).

Iface
ens33
lo

Please enter the one used for Internet traffic.
(for example: eth0, wlan0, etc)
ens33

```

6. The script will show a list of available network interfaces on Linux. You need to locate the one dealing with Internet traffic, because we need to route the data flow to the aros0 interface which is being created. In the example above, the interface we need is called **ens33** (and it corresponds to the eth0 interface in the former image).

Once done, these step will create a startup script called `tap_on.sh` in the destination directory of Icaros Desktop. Many people prefer to bring up the `aros0` interface just before running AROS, however we think that this task should be handled by a different script, to let people run it once. Maybe even at system startup. Starting with Icaros 2.2.8, `tap_on` is executed when launching Icaros the first time, if it's not already running.

7. Once back to main menu, choose 3 to go on with installation.

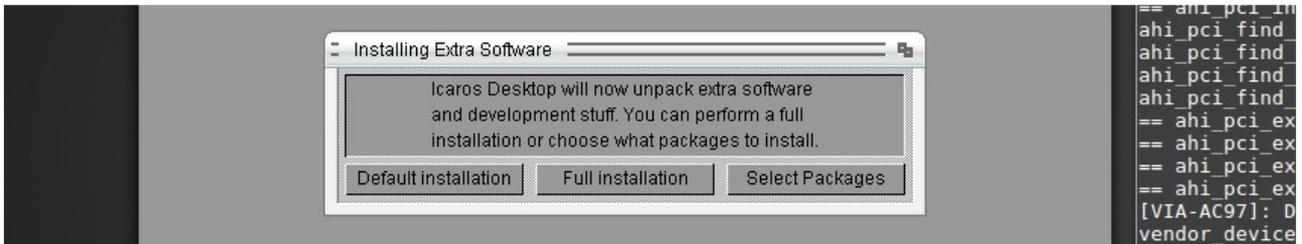
8. move with the `cd` command to your new Icaros Desktop installation folder.

9. once in your IcarosDesktop directory, run

`./icaros`

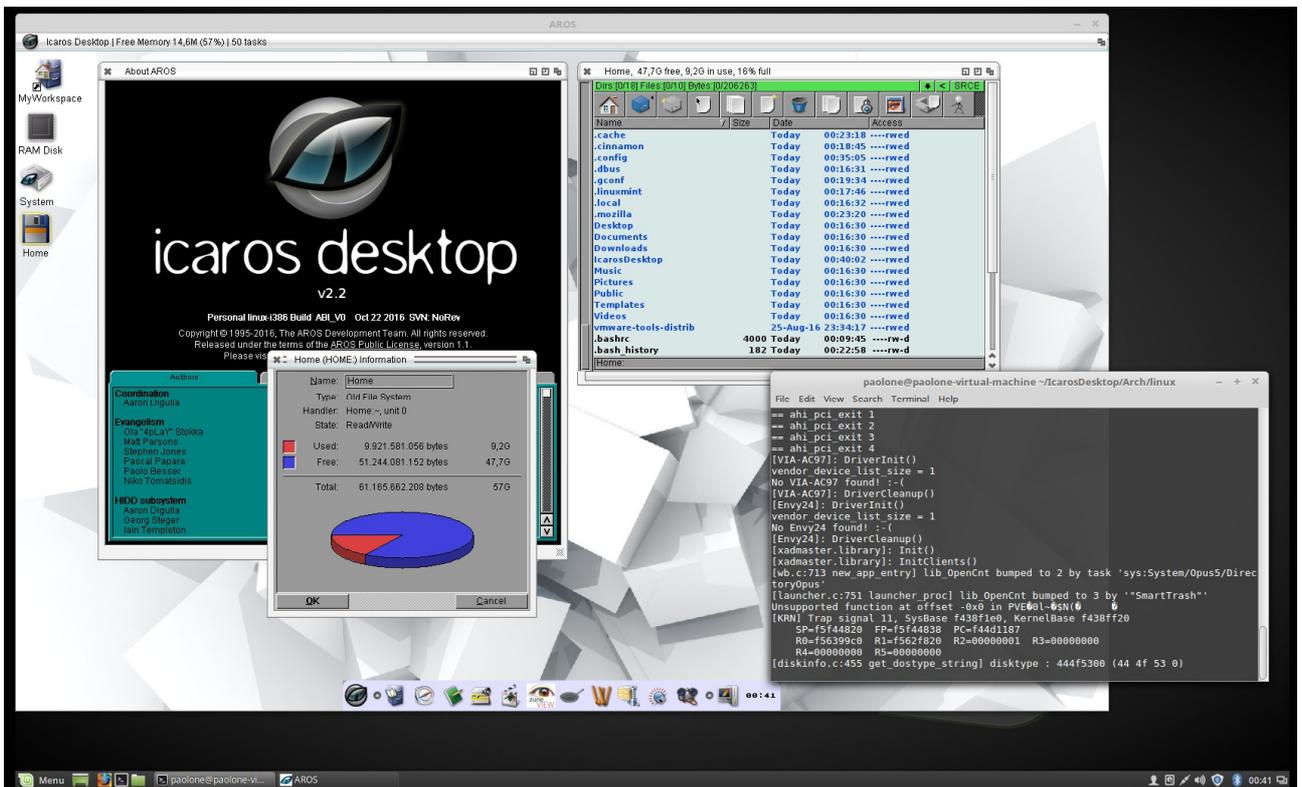
10. a couple of seconds after, the graphic interface of Icaros Desktop, with the “first installation configuration script” will appear. This will let you customize locale, keyboard, screen size, sound settings, Icaros services. You can choose to skip this part, but you will need to set all these preferences individually afterward.

11. it's now time to deal with Icaros packages.



Follow chapter 2 steps 15-17, and paragraph 2.1 for configuration.

12. once you're done with this, Icaros Desktop will be ready to run on your Linux machine.



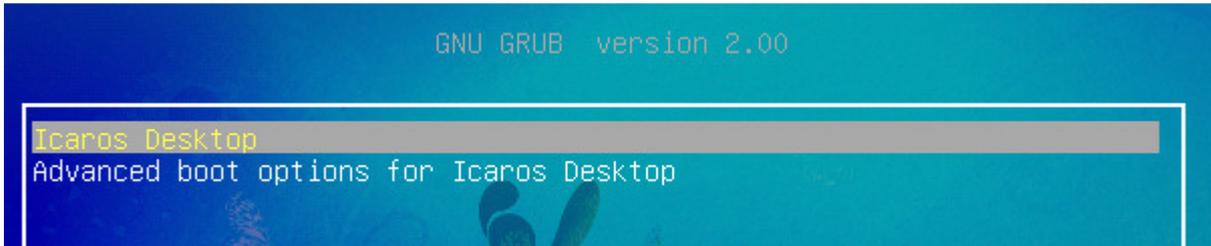
Note:

You **do not need to do anything more** to configure the network on hosted Icaros. If you correctly performed the former steps, Internet should be reachable from the AROS side without any issue. Please do not change aros0 and net0 IP addresses by hand if you don't perfectly know what you are doing. If OWB and other network clients are not working in Icaros Desktop, the most probable causes are the lack of proper software packages on the Linux host and/or a wrong choice during step 6.

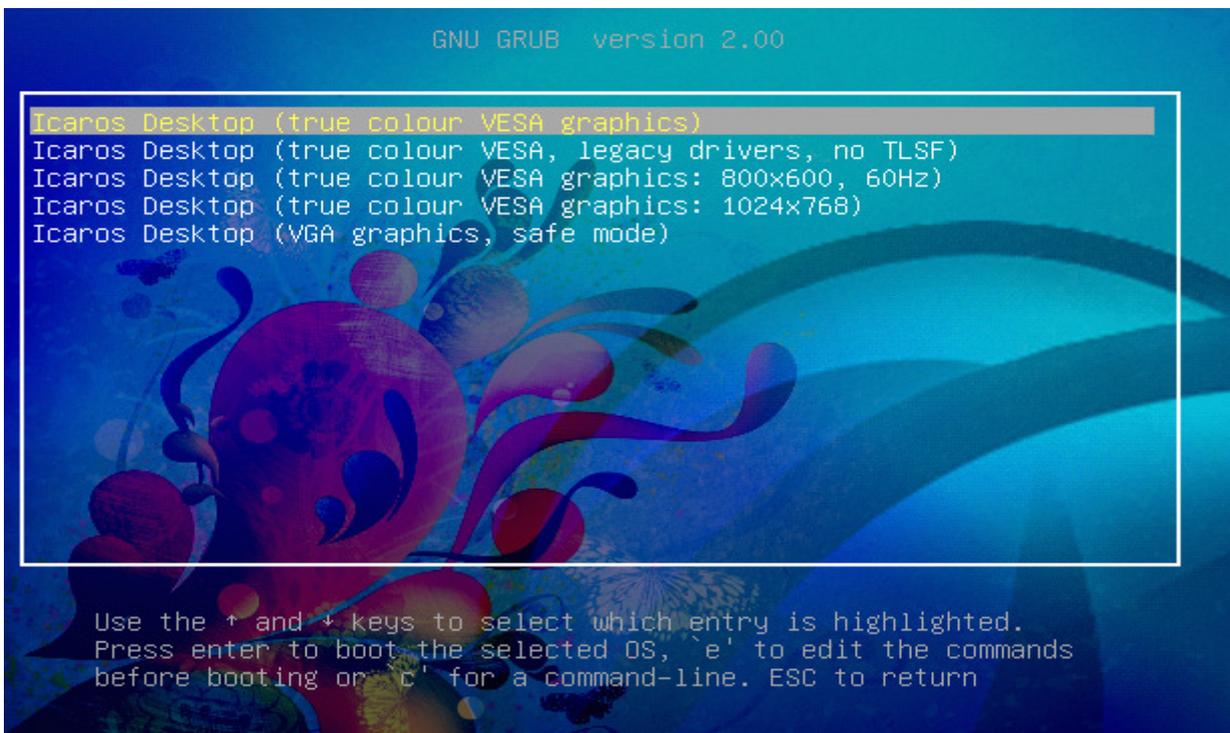
For more information about using Icaros Desktop in hosted mode, please read chapter 10.

3. Optimizing boot (native/vm installation)

Starting from Icaros Desktop 1.2.6, the initial boot menu has changed a lot, with a few self-explained options. Icaros Desktop 2.1 brought this further with a more rationalized initial menu.



Classic VESA and safe mode options have been moved to “Advanced options for Icaros Desktop”



Here is a more detailed explanation of our boot options:

3.0.1 Icaros Desktop (native graphics)

Starting with Icaros Desktop 1.2.6, the distribution provides the classic AROS/AmigaOS way of handling graphic drivers. A new “Monitors” drawer has been placed in DEVS:, so you can choose what driver to start. Icaros Desktop provides these drivers by default:



Nvidia Nouveau graphics

This is a port of an open source Nvidia cards driver from the Gallium 3D and Nouveau teams, supporting

both 2D and 3D graphics acceleration on different families of Nvidia GeForce cards. Please remember that development of this driver and of its port are still heavily work in progress, so support for different cards will increase over time. Icaros 1.2.3 provides 2D acceleration via this driver for GeForce cards from the old GeForce 2 family to the latest GeForce GTX 200 series (no tests have been made on the newest Fermi series, but maybe they can work as well), while 3D acceleration for OpenGL games and applications is supported on GeForce FX through GeForce 9 series cards (and maybe more).

NOTE: this driver provides also screen-dragging feature.

Radeon 2D Graphics

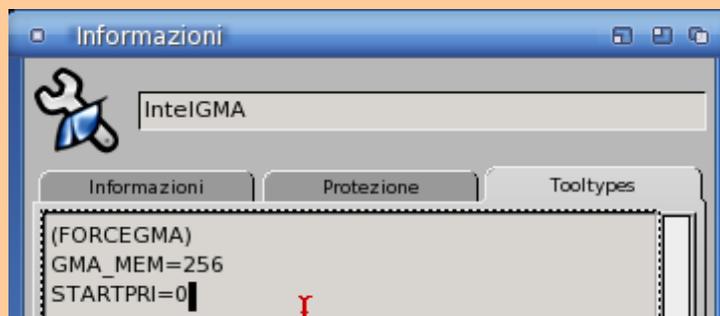
Choose this one if you have a supported ATI Radeon card. AROS driver supports all AGP Radeon cards from the first one to the 9800 series. PCI Express support is limited to X300, X550 and X600 models. If you notices glitches or dirt while moving windows contents, please replace the official radeon.hidd file you'll find in **Drivers:** with the one in the **Storage** drawer.

Intel GMA graphics

This is the driver for most Intel GMA 900 series chipsets. It will support most current motherboards with integrated IGP chipsets from Intel, but mainly GMA 945 and 950 series. Older and newer implementations might not be supported by this driver, so you'll have to try the VESA modes instead. This driver also provides 3D acceleration and screen-dragging feature.

If 3D applications crash

GMA driver allocates 64 MB of video RAM by default, but users may change this size. Some 3D applications like Cube2 might crash if not fed with enough video memory. To change this value enter the devs/Monitors drawer, select the GMA monitor icon and right click to access menu, then choose icon → Information (or press rAros+l). Go to the ToolTypes section and uncomment the GMA_MEM=<MB> line, then enter the desired value in MB. 256 MB should be enough for any current AROS 3D game or application.



VMware virtual video card driver

An old, 2D-only driver for video card emulated by VMware is also provided by AROS developers, but we strongly recommend VMware users to choose a VESA mode instead. Starting with Icaros 1.4, VMware driver has been moved to Storage.

3.0.2 VESA modes

If no native drivers are applicable, Icaros Desktop will fall back to a VESA mode matching (or at least near to) your screen resolution. But don't worry, AROS VESA modes are fast. Don't be fooled by other operating systems' bulk VESA support: under AROS VESA modes, you'll get about the same experience you'll have with native drivers, with some minor differences, the biggest one being the inability to open secondary screens of different resolution than the one you must choose at startup. And, currently, you can't change this resolution once the system has loaded. VESA modes have slightly improved over time. You may choose any resolution supported by your system BIOS. For this reason, AROS will check what is the best VESA resolution supported by your monitor and your BIOS, and then will choose it to boot AROS. This mechanism, however, might not work for every card/motherboard produce weird results (for instance, opening a 2560x1600 screen on some VMware versions...), we kept the "legacy resolutions" like 800x600

and 1024x768 with 32 bit (true colour) palette (millions of colours), you can edit at boot-time (and after) as explained in the following chapters.

NOTE: this driver also provides the screen-dragging feature.

3.0.3 Detecting supported VESA resolutions

To list supported VESA resolutions of your system, just press **C** at the boot menu and enter the **vbeinfo** command. Maybe you'll get a long list and you won't be able to read it. Anyway, you should read at least some lines like:

```
0x168: 1280 x 800 x 8 Packed
0x169: 1280 x 800 x 16 Direct, mask: 5/6/5/0 pos: 11/5/0/0
0x16a: 1280 x 800 x 32 Direct, mask: 8/8/8/8 pos: 16/8/0/24
```

just look at the resolution size parts, like “1280 x 800 x 32”. These are actually the screen sizes you can use, providing that your monitor supports them. To return to the main menu list, press **ESC**.

3.0.4 Use of a fixed, different VESA resolution

Now that you have understood what VESA resolutions are supported (see chapter 4.0.2), you can boot AROS in a resolution other than 1024x768 and 1280x1024. This can be extremely useful in VMware. For instance, to boot AROS in a 1280x800 screen, just highlight any VESA boot option...

```
Icaros Desktop (ATI graphics)
Icaros Desktop (VESA best fit, true colour, floppy disabled)
Icaros Desktop (VESA best fit, high colour, floppy disabled)
```

...and press **E**. You will enter edit mode for this grub line.

```
serial --speed=9600
multiboot /boot/aros-pc-i386.gz vesa=32bit_ATA=32bit floppy=disabled\
```

Move the cursor using the right arrow key in the position above, immediately after “vesa=32bit”, and delete “32bit” using the backspace button 5 times. Now enter only the screen size, without any reference to the palette. You can't choose colour depth, so, for now, just enter **1280x800**, this way:

```
serial --speed=9600
multiboot /boot/aros-pc-i386.gz vesa=1280x800_ATA=32bit floppy=disab\
led
```

and **don't press Enter**, just **press Ctrl+X** instead, and AROS will start booting to the desired resolution. Here is a list of some interesting values you can give to the vesa setting:

16bit	Use the highest VESA resolution with 65536 colours (high colour)
32bit	Use the highest VESA resolution with 16 millions colours (true colour)
1024x768x32	Use the legacy 1024x768x32 mode (1)
1024x768x16	Use the legacy 1024x768x16 mode (1)
NNNNxMMMM	Use the NNNN pixels large and MMMM pixels high resolution (2) at the best palette available
Notes:	(1) can be also 640x480, 800x600 and 1280x1024. Palette depth can be explicitly chosen only for these ones. (2) must be supported by your BIOS VGA extensions. Please refer to chapter 4.0.4 to get a list of supported one.

Out of range?

You can also choose screen refresh rate. This will be useful to stop your monitor getting out of sync when booting AROS in VESA modes. You just have to add @75 to your favourite resolution. For instance, to force the driver running at 75Hz, you may edit the line this way:

```
VESA=1024x768x32@75
```

for compatibility reasons, Icaros defaults to a 60Hz refresh rate, which should be good for most nowadays LCD panels. But users running Icaros on a old CRT display will prefer a higher refresh rate, in order to keep their eyes relaxed.

3.0.5 Icaros Desktop (True colour VESA, legacy drivers, no TLSF)

This safer mode allow booting AROS with enhanced compatibility settings. This option might be slower, and slowdown AROS' access to files, but at least it will run.

If Icaros doesn't boot correctly

Please try loading it **disabling DMA**. Highlight the Grub option you prefer and press **E**, move the cursor over *ATA=32bit* and replace it either with *ATA=nodma* or *ATA=nodma,32bit* or *ATA=nopci*. Press **Ctrl+X** to continue booting. If one among the three works for you, follow the next chapter to learn how to modify Grub's menu file, and make these settings permanent.

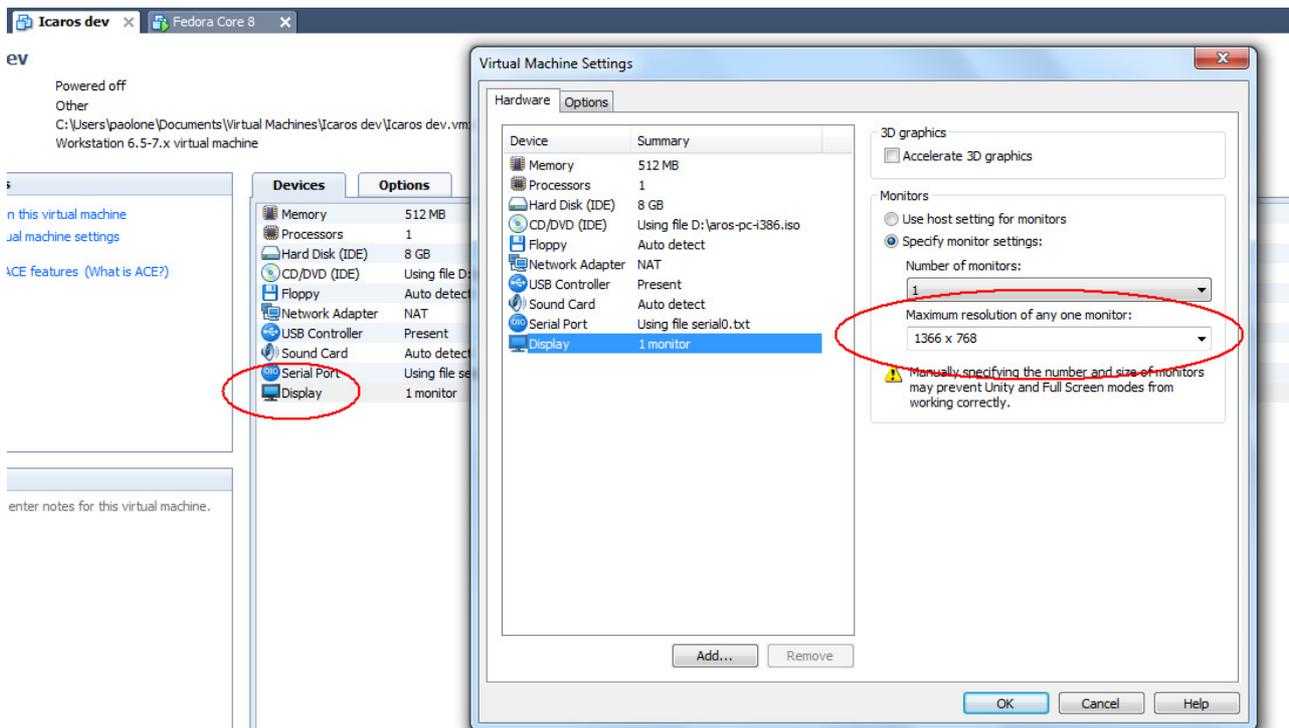
Note: disabling DMA will reduce considerably AROS speed when accessing drives (like from 5 MB/sec to about 750 KB/sec). Since Icaros updates don't modify the Grub.cfg file to keep your changes, please try booting with *ATA=32bit* when a new release of Icaros Desktop is installed. AROS' ata.device is one of the key components which is under heavier reworks by the development team.

3.0.6 Where have old menu options gone?

Icaros 1.3.x boot options haven't been completely eliminated: they have just been commented in sys:boot/grub/grub.cfg file. To enable them again, just comment out your favorite ones deleting the sharp (#) characters at the beginning of the lines.

3.0.7 Fixing highest resolution on VMware

Letting Icaros choose the best resolution for VMware may lead to oversized screens, that you will have to manually scroll to the opposite end. You may decide to edit the GRUB option line, or to change behavior of the virtual machine, by setting a fixed screen size for the monitor. This size should match the resolution of your screen. For instance, if you're running Icaros on VMware running on top of a 1366x768 display notebook, you should go for a 1366x768 emulated screen. To do that, edit your virtual machine settings clicking twice on the *Display* voice, and then imposing a 1366x768 pixel wide-monitor in the field *Specify monitor settings*, as shown in the screenshot below:



from now on, best-fit VESA modes will automatically choose the 1366x768 resolution.

3.0.8 Adding widescreen resolutions to VirtualBox

VirtualBox will automatically use 4:3 resolutions only, such as 1024x768 or 1600x1200, but there is a way to add widescreen resolutions too. It requires poking with the command line shell of your host operating system, though. The following procedure is good for Windows version of VirtualBox, but can be easily adapted to Linux and MacOS X versions as well

1. Open VirtualBox and look at your virtual machine name for *Icaros Desktop*. In this example will simply be "Icaros Desktop", but yours obviously depends on the name you gave to it.
2. Run a **command prompt in the installation path of VirtualBox**, or change directory with the 'cd' command. The most simple way to do this is right-clicking on the VirtualBox icon on the desktop or the *Start Menu*, selecting *Properties* and then *Find Target*. Once you have reached the installation path in *Explorer*, go up to parent, press **shift + right click** on the VirtualBox drawer and choose *Open command prompt here*. The command to go straight to default VirtualBox installation path, anyway, is:

```
cd "C:\program files\oracle\VirtualBox"
```

3. in the command prompt, run this command:

```
VBoxManage setextradata "vm name" "CustomVideoMode1" "XXXXxYYYYxZZ"
```

where "vm name" is the name you got at point 1, XXXX and YYYY are the horizontal and vertical sizes of your custom resolution, then ZZ is the depth of your palette (16 or 32 for thousands and millions of colors).

For instance, our case-notebook has a 1366x768 panel, so we'd like to have a custom widescreen resolution of 1366x768x32 running on VirtualBox. Icaros is running in a virtual machine called "Icaros Desktop". Our command would be:

```
VBoxManage setextradata "Icaros Desktop" "CustomVideoMode1" "1366x768x32"
```

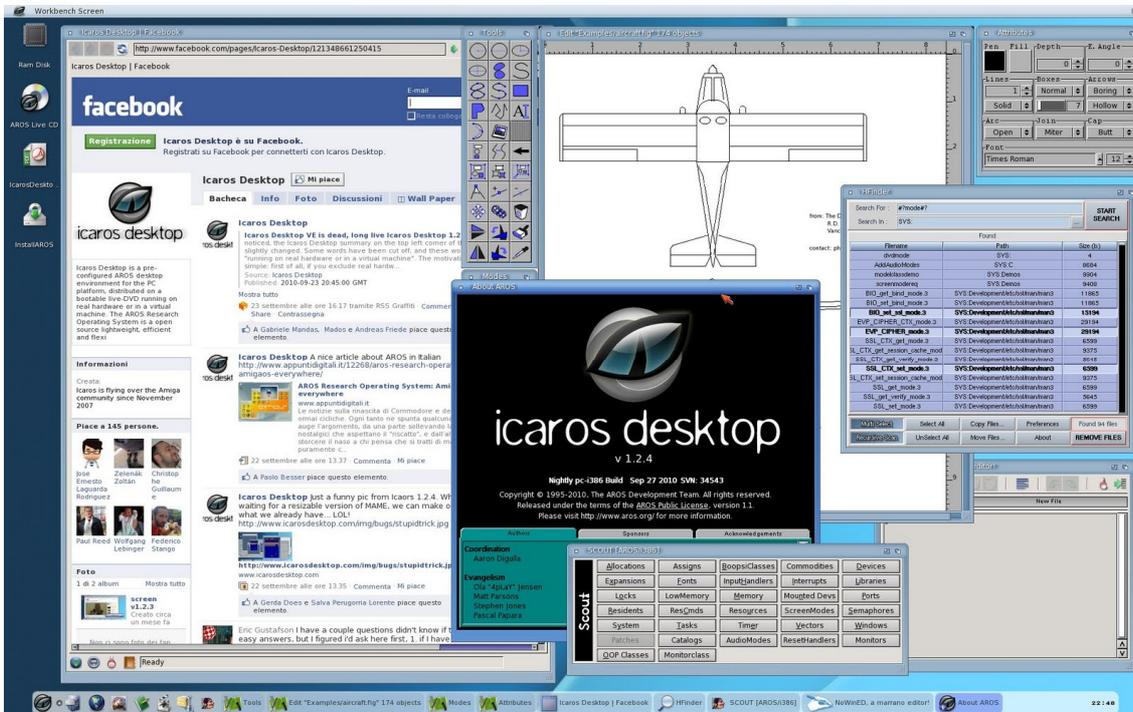
4. Once done, launch VirtualBox and, at GRUB menu, move the selection bar to the standard *VESA best-fit* resolution (the default selection if you haven't changed it) and press **E** (see chapter 4.0.4)
5. modify "VESA=32bit" to the same resolution you've set at point #3. In our case, for instance, we have to

change it to "VESA=1366x768x32".

NOTE: the resolution you choose there must match the one you've set at point#3.

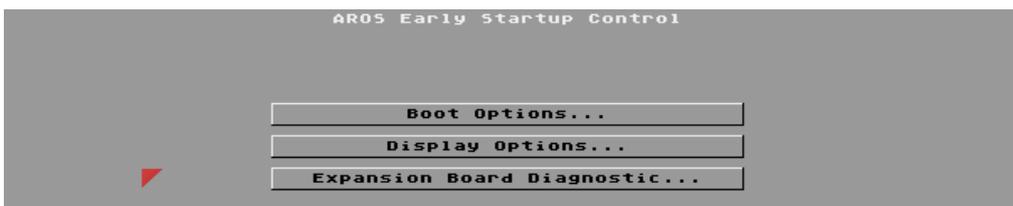
6. press **Ctrl+X** to continue booting, and enjoy Icaros in whatever resolution you'd prefer to watch it!

7. To make this change permanent, edit the `\boot\grub\grub.cfg` file according to your needs, following instructions at the next chapter.

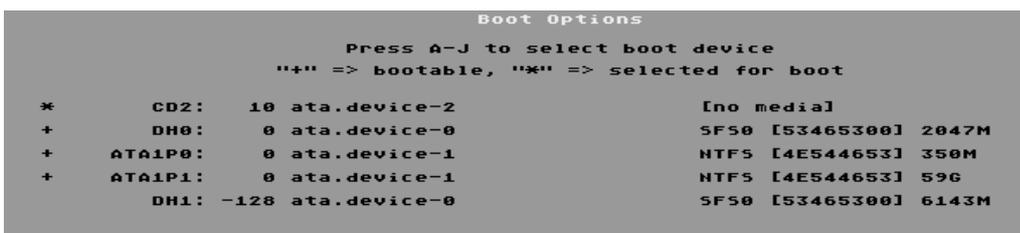


3.0.9 The Early Startup Menu

AROS has an early startup menu you can use to fix boot problems. It can be accessed pressing the **space bar** and keeping it pressed immediately after leaving GRUB.



If you have more than a single partition with AROS installed, or you need to boot off a pen drive, a CD-ROM or any different volume than your current installation, the Boot Options button will bring you to a menu similar to the following:



press the **A to J** buttons to choose the device and partition to start with.

Now you can more easily select boot device

First option is to add "bootmenu" command in grub kernel command line. This will bring up early startup menu. Click on "Boot Options..." and using letters A-J select the device. When you select the device a "*" will appear left to it (in place of "+" or space"). Then click "Use" and "Boot" on next screen. Second option is to add "bootdevice=" command in grub kernel command line. This will force booting from, for example

bootdevice=DH0.

Please note that in both cases, the kernel is already loaded from your initial bootmedium (that is selected via BIOS) and both options only impact:

- a) from which medium the disk-base libraries will be loaded
- b) which partition the SYS: volume will be pointing to.

3.1 Modifying the initial menu (you need to install Icaros Desktop)

Before starting

The *grub.cfg* file in */Arch/pc/grub* may be write-protected. So you'll have to *un-protect* it first, or you won't be able to save your modifications. Unluckily, the editor won't advice you loudly about this. To un-protect the file, just open a new shell (**rAros+W**) and type in these commands:

```
sys:arch/pc/grub  
protect grub.cfg RWED ADD
```

Scrolling that long list of resolutions every time is boring, right? Well, there's a speedy way to get rid of it. Just open the editor by clicking here:



and load the *grub.cfg* file located in the */arch/pc/grub* directory. You'll find something like this:

```
# Timeout for menu  
set timeout=5
```

```
# Set default boot entry as VESA Gfx  
set default=1
```

followed by groups of lines like these:

```
menuentry "Icaros Desktop (native graphics)" {  
  multiboot /Arch/pc/bootstrap.gz ATA=32bit floppy=disabled  
  module /Arch/pc/kernel.gz  
  module /Arch/pc/Devs/battclock.resource  
  module /Arch/pc/Devs/processor.resource  
  module /Arch/pc/Devs/timer.device  
  module /Arch/pc/Libs/expansion.library  
  module /Classes/USB/bootkeyboard.class  
  module /Classes/USB/bootmouse.class  
  module /Classes/USB/hub.class  
  module /Classes/USB/hid.class  
  module /Classes/USB/massstorage.class  
  module /Devs/Drivers/hiddclass.hidd  
  module /Devs/Drivers/graphics.hidd  
  module /Devs/Drivers/keyboard.hidd  
  module /Devs/Drivers/mouse.hidd  
  module /Devs/Drivers/ata_pci.hidd
```

```

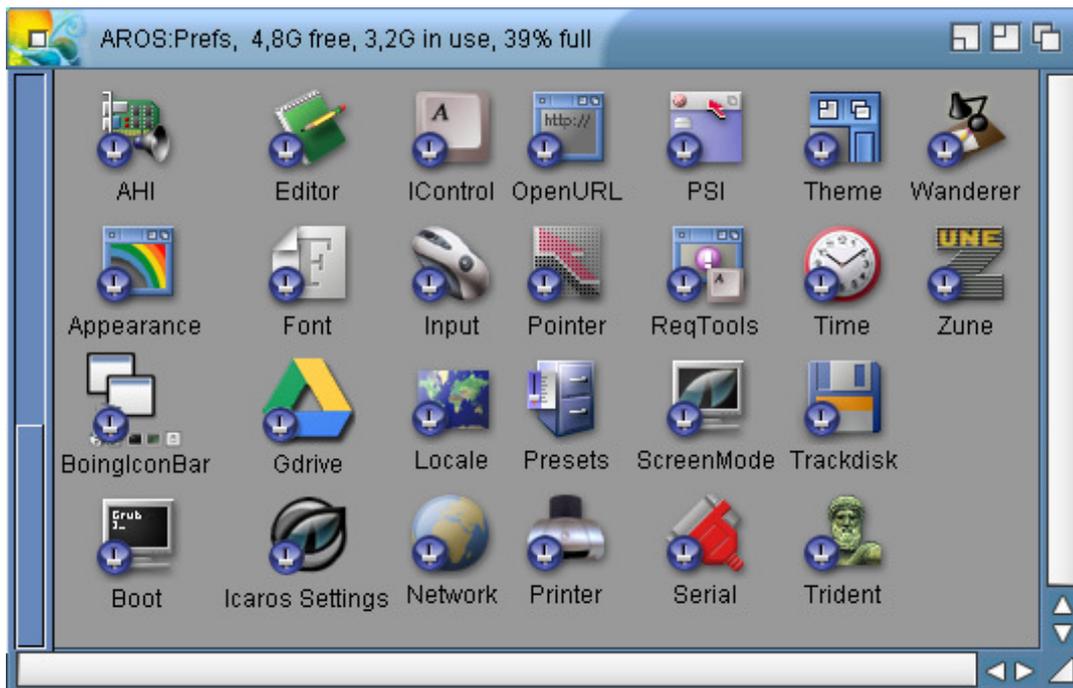
module /Devs/Drivers/i8042.hidd
module /Devs/Drivers/vesagfx.hidd
module /Devs/Drivers/vgah.hidd
module /Devs/Drivers/pci.hidd
module /Devs/Drivers/pcipc.hidd
module /Devs/Drivers/serial.hidd
module /Devs/Drivers/parallel.hidd
module /Devs/USBHardware/pciusb.device
module /Devs/usbromstartup.resource
module /Devs/bootloader.resource
module /Devs/dosboot.resource
module /Devs/FileSystem.resource
module /Devs/lddemon.resource
module /Devs/efi.resource
module /Devs/hpet.resource
module /Devs/console.device
module /Devs/input.device
module /Devs/gameport.device
module /Devs/keyboard.device
module /Devs/ahci.device
module /Devs/ata.device
module /L/afs-handler
module /L/cdrom-handler
module /L/sfs-handler
module /L/ram-handler
module /L/con-handler
module /Libs/acpica.library
module /Libs/partition.library
module /Libs/poseidon.library
module /Libs/aros.library
module /Libs/debug.library
module /Libs/dos.library
module /Libs/graphics.library
module /Libs/intuition.library
module /Libs/keymap.library
module /Libs/layers.library
module /Libs/oop.library
module /Libs/utility.library
}

```

well, every one of these walls of text (included in { and } brackets) will manage an entry of the early startup menu. As you may notice if you already know how AROS booted in the past, with Icaros Desktop 2.0 kernel has become fully modular, meaning that you can exclude from booting any problematic component. Icaros already 'cut out' NTFS and FAT32 handlers since they were known for bringing issues. This doesn't mean, though, that NTFS and FAT partitions can't be used once system has loaded: AROS can still access them if their handlers are included in the L drawer.

If you need to make the initial menu more compact, please delete all the lines you don't need, and you're almost done. Just notice the first four lines, that you must keep: the timeout value indicates the number of seconds to show the startup menu, while the default one select the option which will be chosen automatically. Please notice that the count begins with 0, not with 1, so to choose the second entry, you have to insert 1 here and not 2. And so on.

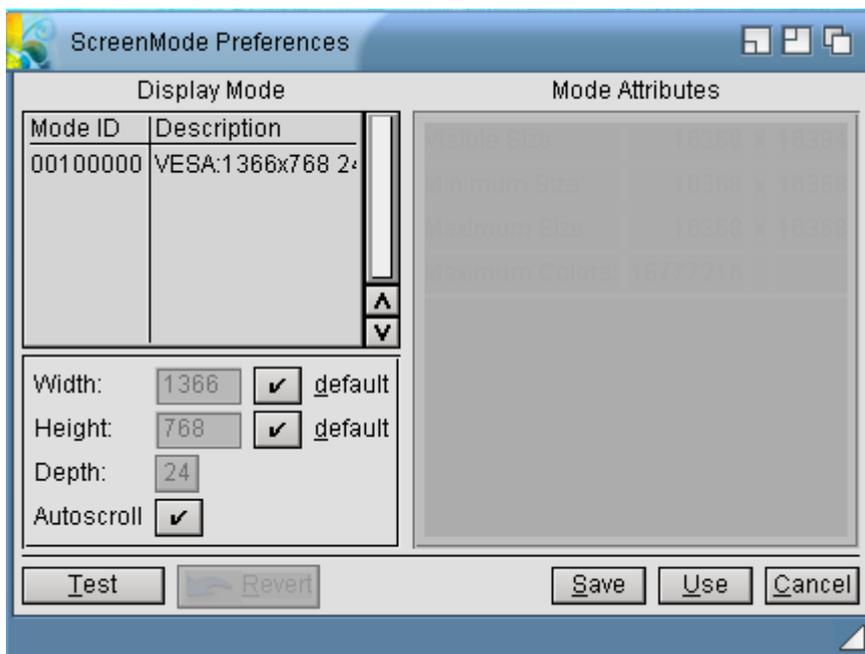
3.2 Customizing AROS



Almost all AROS settings can be accessed and changed from the Prefs drawer in AROS:. Most of options are self-explanatory, so we won't talk about them. Some other allow deep system customization, and would need too space for a quick guide like this. Icaros Desktop comes with João Ralha's AROS manuals: please read them for any further information. We will cover here only the common operations.

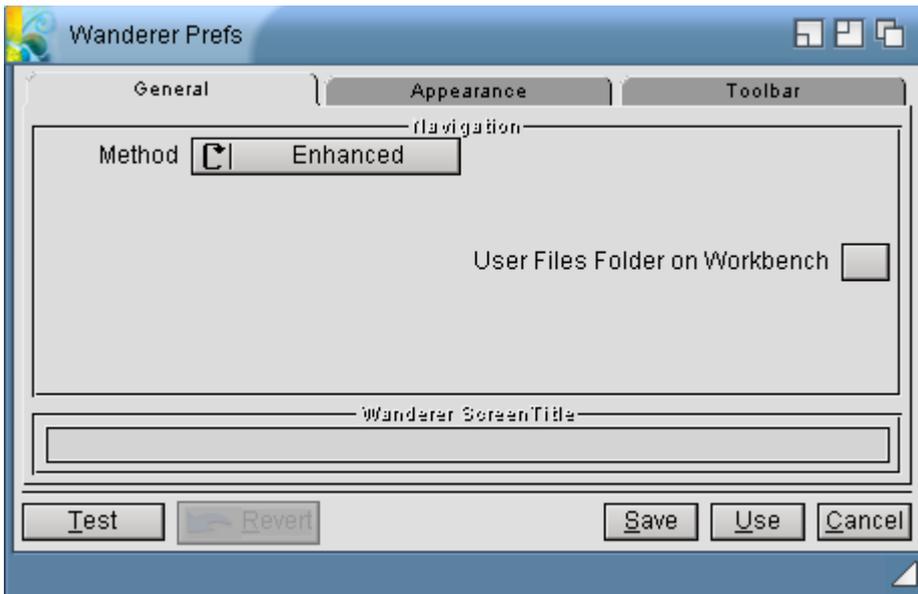
3.2.1 Changing screen resolution

Screen resolution and colour depth can be accessed only when using ATI or Nvidia accelerated drivers (by selecting one of them during boot). Just launch **ScreenMode** to change them.

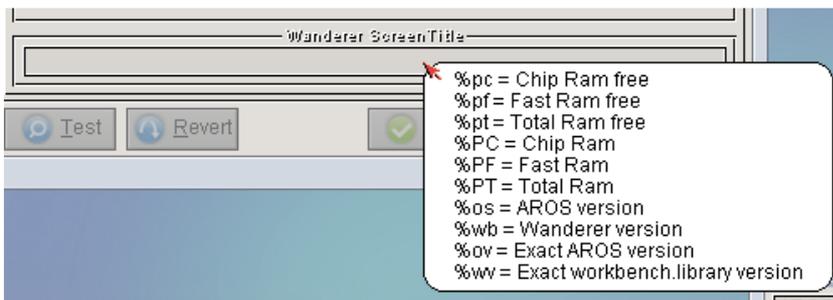


3.2.2 Changing desktop appearance

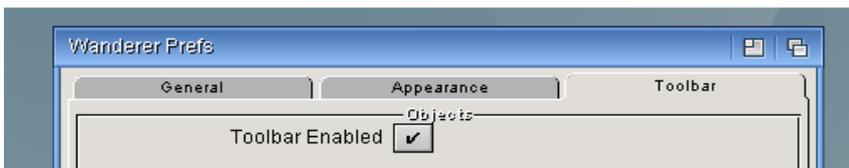
You can change desktop and windows wallpaper, icon spacing and behavior, label length, font and effects by launching the Wanderer applet.



The General tab allow switching between the *Enhanced* (default) Wanderer behavior and the *Classic* one. The former opens new drawers in the same window, the latter in a new one, exactly as AmigaOS 3.x. Please notice the **Wanderer Screen Title** option in the bottom of the page: it changes the default message on the top title bar of the screen (normally *Wanderer %pc graphics mem %pf other mem*).



Now the **Toolbar** tab:

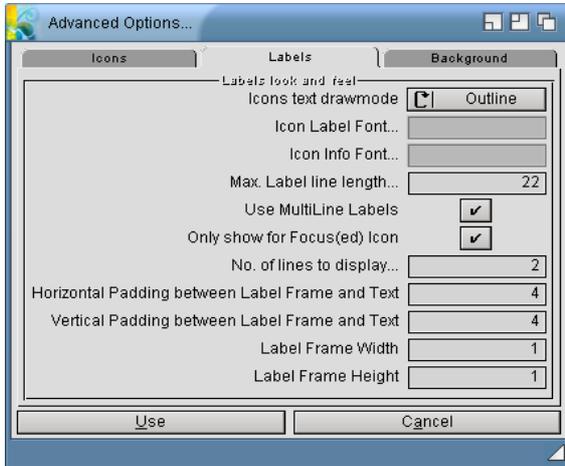


The **Toolbar Enabled** selector decides whether showing the path bar in every window or not. Eliminating it, you get more "old Amiga feeling". You will prefer enabling it again.



The **Appearance** tab is maybe the most interesting one. Click on the Workbench and Drawer buttons (the right cyan and orange squares in the upper shot) to change wallpaper. You can select either any datatype-supported image or a color effect. You'll find some nice wallpapers starting from the `SYS:Prefs/Presets/Patterns` directory.

Now, let's click on Advanced. A more complex options window will appear:



< The Draw Mode option will select how the background image will fit in the screen

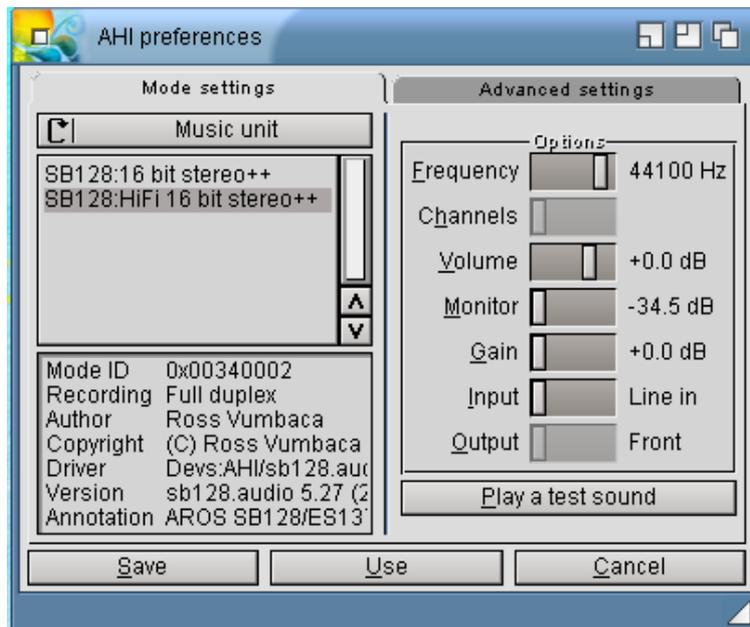
< The following options will decide how icons appear and font/dimensions of labels under them. Change the Max Label line length if you see truncated file names on your volumes.

3.3 Enabling sound

Sound will be normally disabled by default. Only few audio chipsets are currently supported. Just look at the beginning of this guide for a handsome list of supported chipsets. Anyway, to enable sound you'll need the **AHI** preference applet in **Prefs**.

AHI is the de-facto *AmigaOS and derived* standard audio layer. More information about this are available at <http://arp2.berlios.de/ahi>.

Please select your hardware in the left top window and associate it to your *Music unit* and *Unit 0, 1, 2 and 3* devices. If your hardware is supported, you'll be allowed to change options in the right side of the window. Play a test sound to check whether your card is working or not. Some quite old AC97 chipsets are working, but the best option for hearing sound in AROS is using a cheap and easy-to-spot **Creative SoundBlaster Live!** card. AROS fully supports the EMU10K1 audio processor. Click on **SAVE** to make your choice permanent.



NOTE: please be sure to have enabled your card for ALL the units available in AHI, by clicking on the top-left cycle gadget in the Mode settings panel, or you may still encounter mute applications, when they should correctly play sound.

Sound in VMware (and QEMU)

Sound in VMware is now available. Please choose a SoundBlaster PCI128 sound card in AHI prefs for units 0-3 and Music, and save.

3.3.1 Choosing a startup sound

You can set a startup sound (or change the default one) with Icaros Settings in Prefs. Just open it and go to the Boot Sound panel:



Mark or clean the check-box on the right to enable/disable startup sound, click on Browse to select a MP3 file between the ones Icaros Desktop already provides or Play to preview it. Click either on Save or Use to set it as default sound. You can use whatever MP3 file you like, but we heavily suggest to choose short samples (you definitely wouldn't like to hear the hit of the moment every time AROS boots...).

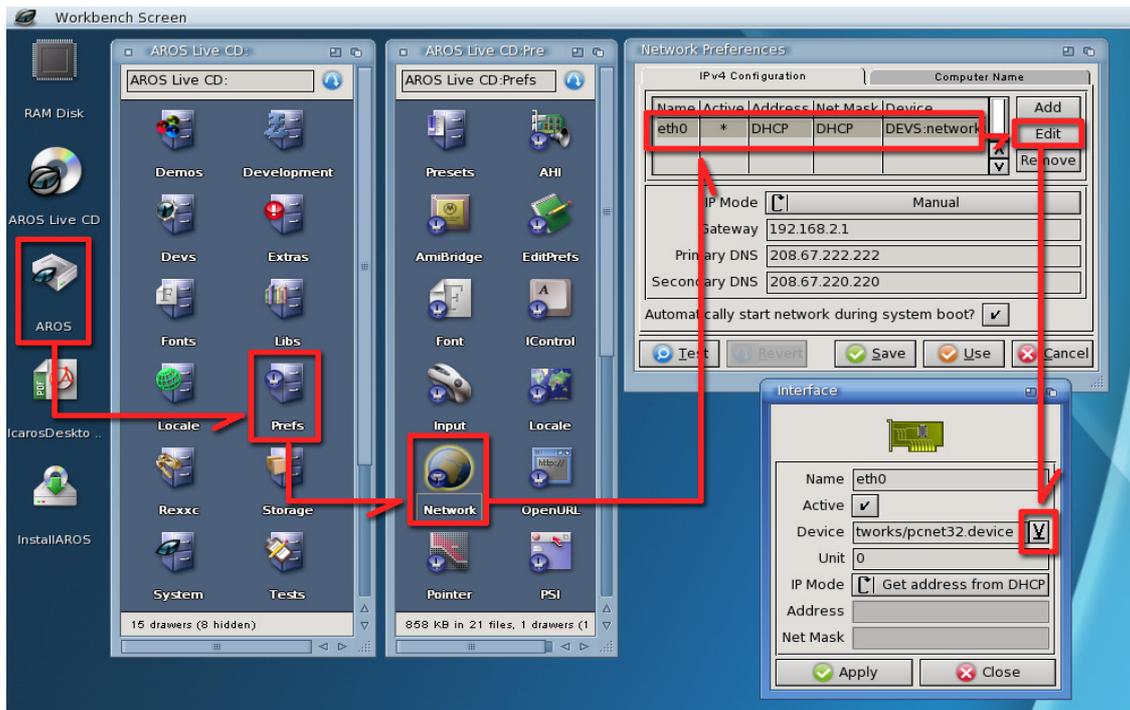
3.4 Configuring the network

Networking on AROS is now easy like in any other operating system, at least if you have a supported network or wireless card. AROS recently got DHCP support and a new preference tool called Network, however there's no *autoprobe* yet for network cards and, as usual, there is still a limited number of NIC drivers available. Luckily, those drivers cover a wide range of network cards and it's extremely easy to find one.

DHCP may be slower

We have noticed some network slowdowns when using DHCP (automatic configuration). While we are addressing the origin of the issue, you have better using a fixed IP address and enter a fixed domain name server (DNS) using the Manual IP Mode. Please ask your provider for a reliable DNS address.

In order to configure the network, you need to have Icaros Desktop Live! already installed on your hard drive (configuration files must be saved and system rebooted). When ready, just launch **Network** from the **Prefs** drawer.

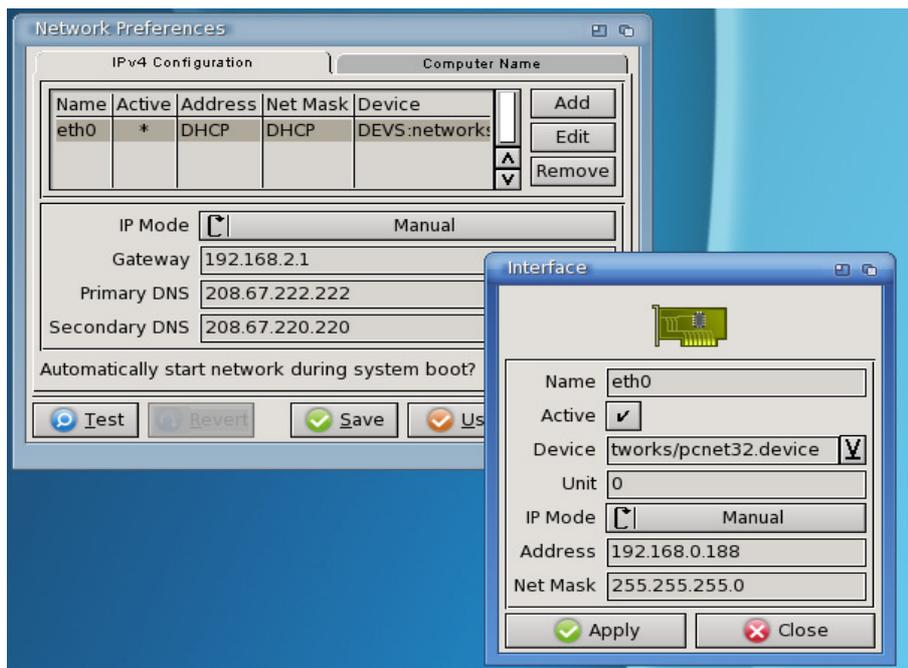


3.4.1 Automatic IP address

Icaros Desktop can be set up to look for an automatic IP address. However, it can't detect your network card and needs your help to find a reliable driver. Please open the Network prefs panel, look at the right of the Device field and press the down arrow icon. Choose a driver that fits your needs. You must know what is your network card, and it must be already supported by AROS. **On iMica systems, please choose the rtl8169.device driver.**

3.4.2 Manual configuration

Configuring the network by hand might be useful for people that often move files from other machines using YAFS. This will give AROS a fixed IP address that won't change every time it starts, depending on other machines' ones.



IP: Just edit as you wish, using addresses according to your local network. For instance, if your router is

192.168.0.100, and your computers are 192.168.0.10 and 192.168.0.11, you should give AROS another IP address starting with the first three numbers (192.168.0.) and another number, different from 100, 10 and 11: 20 might be a good choice. So correct it to 192.168.0.20.

Netmask: a good value for netmask is 255.255.255.0, which practically means only the last group of digits will change, between computers, in your LAN. If you need something different, please look at any networking how-to over the Internet.

Place also your router/server address (192.168.0.100) in the **Gate** line (remove 192.168.2.1 and place 192.168.0.100). You need to know this information.

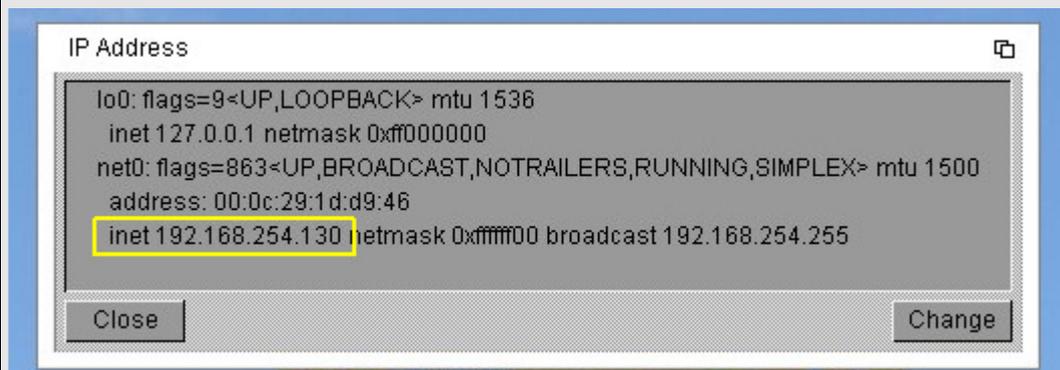
DNS1 and DNS2: you have two fields available for domain server address. Domain server allow you to use human-readable URLs like 'www.icarosdesktop.org' and they will transform them in their real IP address transparently. Many routers provide DNS service as well, so you can place your gate's address also in the 'DNS1' field, while the second DNS server should be the one provided by your ISP. If you don't know its address, you can use the ones provided by the OpenDNS.com site, which are **208.67.222.222** and **208.67.220.220**. Please look at www.opendns.com for any update about them.

3.4.3 Using DHCP

DHCP makes network configuration easier. It will look the local network for a DHCP server and will assign a IP address to AROS. Launch **Network** and select **Get address by DHCP**. You're ready to surf the web, chat with IRC, read your emails and so on.

What is my address?

In order to show your current IP address, you need to use the `ifconfig -a` command. Either press **rAros+W** or **rAros+E** and enter `ifconfig -a`. If you're using Magellan, you can get the same information from the **Icaros** menu. Just right click on the desktop and choose **Icaros -> IP Address**:



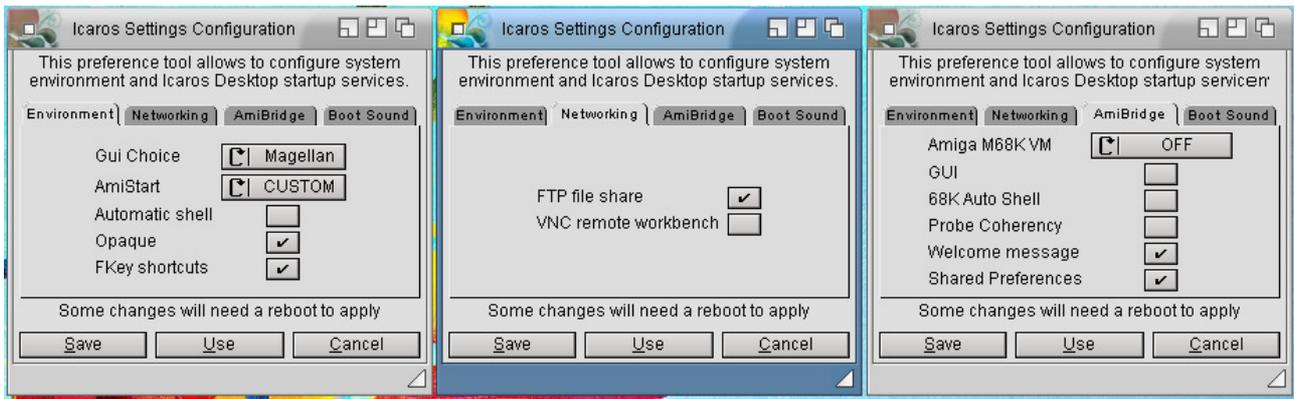
just look at the last line, after `inet`: this is your current IP address. If you don't see any `eth0`: entry, or a 0.0.0.0 address, it means your network is not completely up and running.

3.4.4 Using file sharing and DHCP together

Icaros Desktop 1.0.2 removed a former limitation which prevented using file sharing (YAFS server) together with automatic IP (DHCP) networking. This doesn't happen anymore, since from version 1.0.2 YAFS adapts itself to use the current IP address, whatever it is. If you plan to make intensive use of file sharing, though, you've maybe better to setup a Manual configured network, since it might be difficult to keep track of AROS IP address if it changes every time.

3.5 Configuring Icaros Desktop services

Icaros Desktop comes with the network already configured, and with some services that make life easier for the user, but at the expense of some clock cycles. If you don't need some of them, you can easily gain some speed (even at boot-up) disabling them. Just run the **Services** preference tool in prefs and click **OK**:



Starting from Icaros Desktop 2.0, the old Services tool has been replaced by a new one called Icaros Setting (which is, BTW, its direct evolution). You can recall a bubble hint by placing the pointer over any option name, and wait for a few seconds.

3.5.1 Changing default file manager (GUI Choice)

You can choose between Wanderer and Magellan. This setting will apply at startup, no matter if you SAVE or USE new settings on exit. Although both programs can co-exist in a single session, only one of them can be seen by AROS as current Workbench. You can also set this option to NONE. In this scenario, no GUI will be loaded at next startup except AmiStart (which can, indeed, be disabled as well using one of the following options), and a shell will automatically be loaded by system.

3.5.2 Automatic shell

If you're frequently using AROS shell, you might prefer having it immediately at your fingers when the system boots. Just mark this checkbox to enable this feature (which will automatically turned on if you select Gui Choice option to NONE).

3.5.3 Enabling/disabling Opaque

Opaque is the commodity which enables dragging of whole windows over the screen, with their decoration and contents. You can disable it, showing only borders while moving windows, but this will "block" temporarily their update.

3.5.4 Enabling/disabling FKey (Windows-like shortcuts)

Windows, but now also most other operating systems, use Alt+tab to browse between open applications. Icaros Desktop does this too with **FKey**, but since some users might find it "not enough amigan", they can disable it. Please notice that this option also enables some advanced shortcuts for calling Scout, the file finder and so on (see the first chapters of this guide for a better explanation). This option won't affect Wanderer and Magellan specific shortcuts, that will go on working.

3.5.5 Enabling/disabling FTP server (file sharing)

There are many ways to transfer files from/to AROS. The best one is Icaros Desktop' embedded FTP server (YAFS), which runs automatically when network is enabled and DHCP is disabled. If you don't need it, however, you can turn it off. Turning on file sharing will enable networking too.

3.5.6 Enabling/disabling AmiStart

AmiStart is the nice dock/toolbar sitting on the bottom of the screen. It helps Icaros Desktop being a user-friendly operating system, since it is really fine for browsing files and executing applications. On rare occasions, AmiStart creates glitches and interferes with other applications (for example, **DirectoryOpus** and **AmiBridge**), so maybe you'd like to disable it. Users of Icaros Desktop with old hardware will prefer disabling AmiStart, since it needs memory to run, and can slowdown the AROS experience while opening its menus.

3.5.7 Changing AmiStart behavior

If you've choosen to enable **AmiStart**, you will be prompted also to choose its behavior. See chapter 1.8 for

more information about this.

3.5.8 Enabling VNC Server (remote admin)

Starting from Icaros Desktop 1.2.5, you can enable a **VNC server** to remotely control your Icaros computer. Enabling this, your workbench can be exported to another computer of the local network and displayed in a window, using a VNC client of your choice. We suggest using **TightVNC** on Windows.

3.5.9 Enabling AmiBridge Amiga™ Virtual Machine

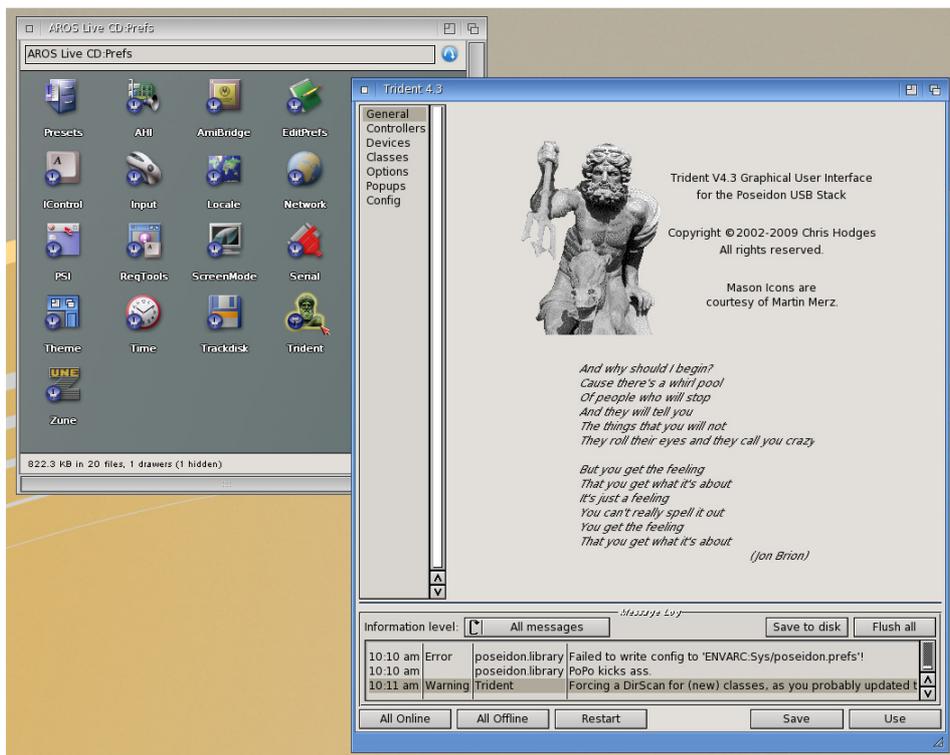
Icaros Desktop can now run the Janus-UAE Emulator in coherency mode at startup (see chapter 7 of this guide). This way, people that heavily use old AmigaOS M68K applications can now run them immediately after bootstrap. This option lets now choose between AROS M68K and AmigaOS 3.x for legacy applications. See chapter 8 for further information about Amiga M68K integration.

Warning!

Janus-UAE has improved a lot in the latest months, but please notice it is not *perfect* yet. Some times it may crash, and can make the whole system unstable. We suggest to keep this option disabled unless you are practically using Icaros as an Amiga™ replacement system.

3.6 Configuring USB peripherals

Starting with version 1.1.3, *Icaros Desktop* integrates **Poseidon USB stack**, enabled by default at startup. From Icaros Desktop 1.1.5, Poseidon has been loaded as ROM module and can be used to boot Icaros straight from a USB DVD drive. In order to configure USB peripherals, you need to open the Trident application from the Prefs drawer in your System partition.



3.6.1 some theory behind USB controllers

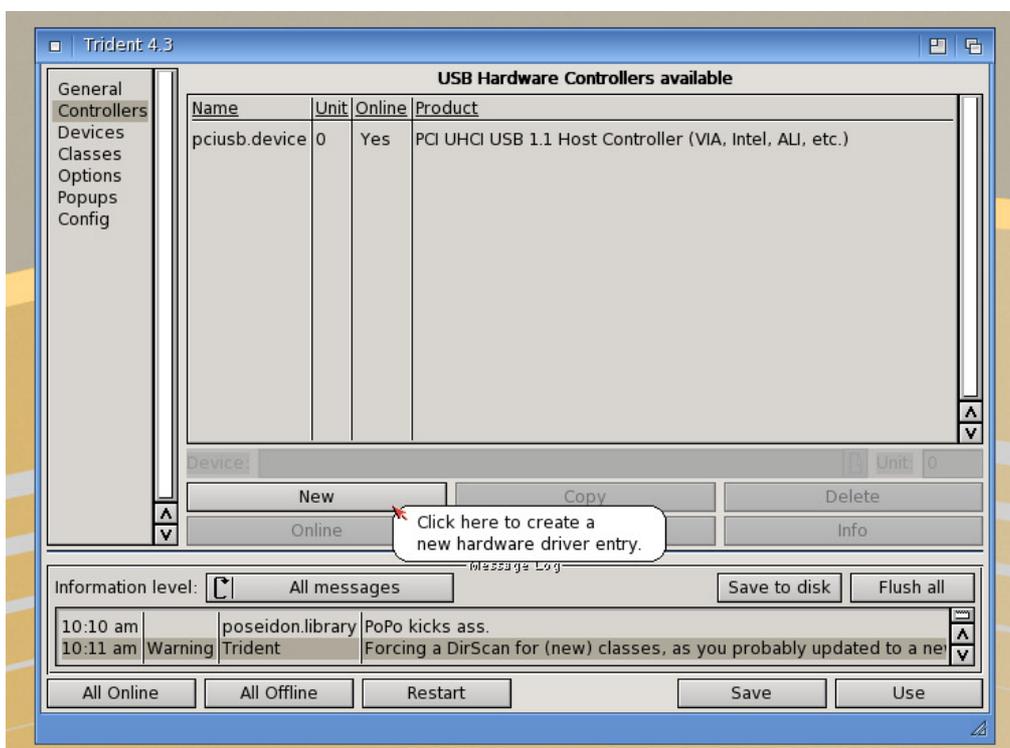
Trident is a powerful tool, which allows direct control of your USB hardware. But in order to use it, you've better understand that while the use of USB devices is generally easy and plug'n'play, the technology behind them is a little more complicated. For instance, the USB ports on your motherboard might not be bound to a single controller, a piece of hardware which enable your computer to access the ports. In modern PCs, there are generally two or more USB controllers:

- A *full speed* USB 1.1 controller, being it a UHCI or a OHCI one
- A *hi speed* USB 2.0 controller, being a EHCI one
- A *SuperSpeed* USB 3.0 controller, being a AHCI one

What you should understand, is that Poseidon need to load all your controllers before it can use the devices bound to them. If you can use your mouse but you can't see any USB disk connected to your system, you have likely loaded only the OHCI/UHCI controller in **Trident**, but not the EHCI one. However, if your USB drives are mounted but you can't still use your USB mice or keyboards, only the EHCI one has been loaded. Here is how to fix this.

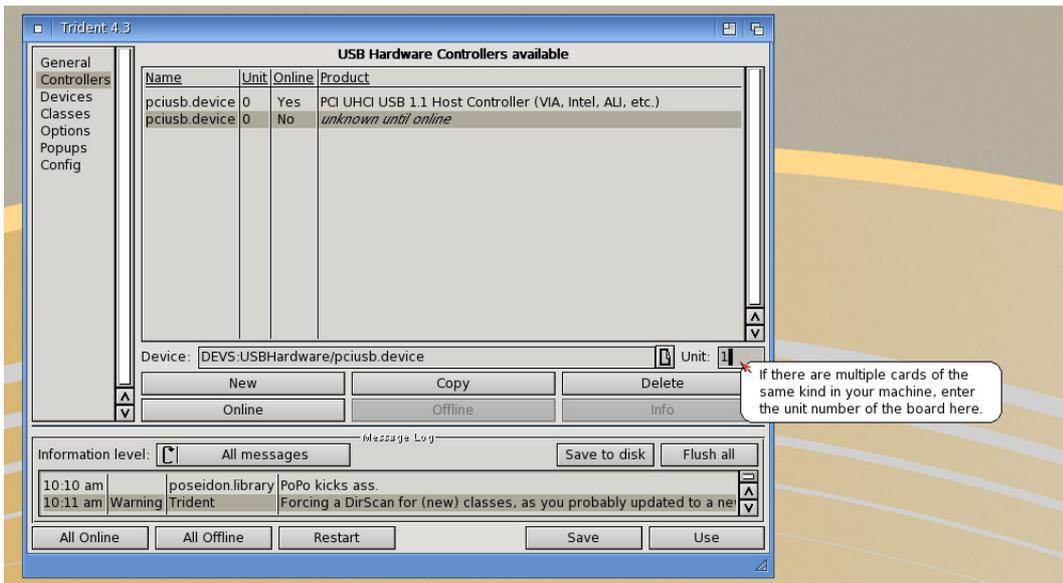
3.6.2 Adding new controllers to Trident

Icaros Desktop should detect and load all USB controllers available at startup. If a port shouldn't work, however, the most probable cause is that its controller has not been loaded by Trident. To add a new controller, look for the **Controllers** option in the left side menu of **Trident**:



Now please follow these steps:

1. click on the **NEW** button
2. select **pciusb.device**
3. ensure the new controller is highlighted and enter "1" (without commas) in the **Unit** field :



4. press the **Online** button.

At this point, a new USB controller should be added to the list:

Controllers	Name	Unit	Online	Product
Devices	pciusb.device	0	Yes	PCI UHCI USB 1.1 Host Controller (VIA, Intel, ALI, etc.)
Classes	pciusb.device	1	Yes	PCI EHCI USB 2.0 Host Controller (Emulated?)
Options				

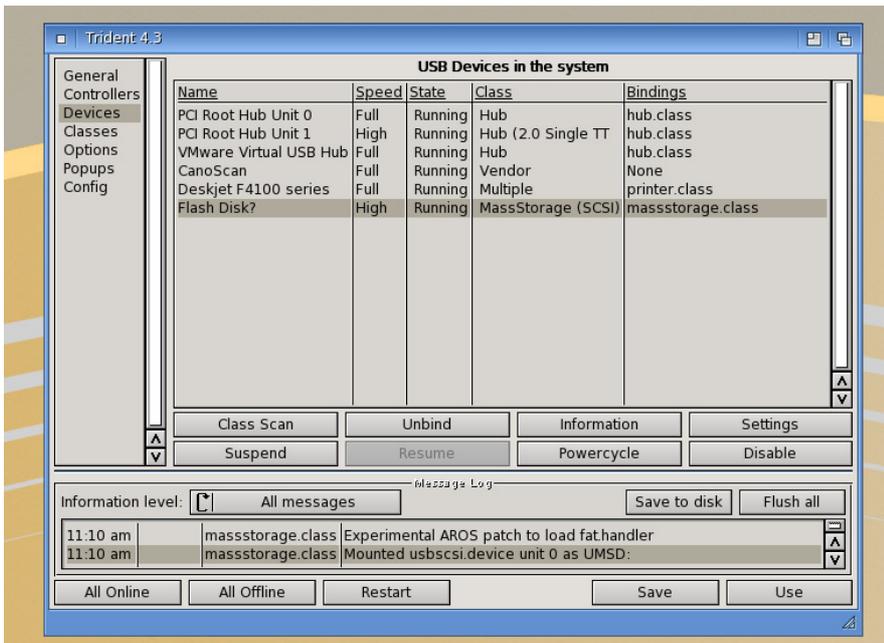
and you will start mounting the connected peripherals. Now click the **SAVE** button in the right bottom of Trident, and **repeat all these operations until you find controllers that can be activated**. Other controllers must be added like “2”, “3” and so on, in the **Unit** field.

3.6.3 Adding and removing devices

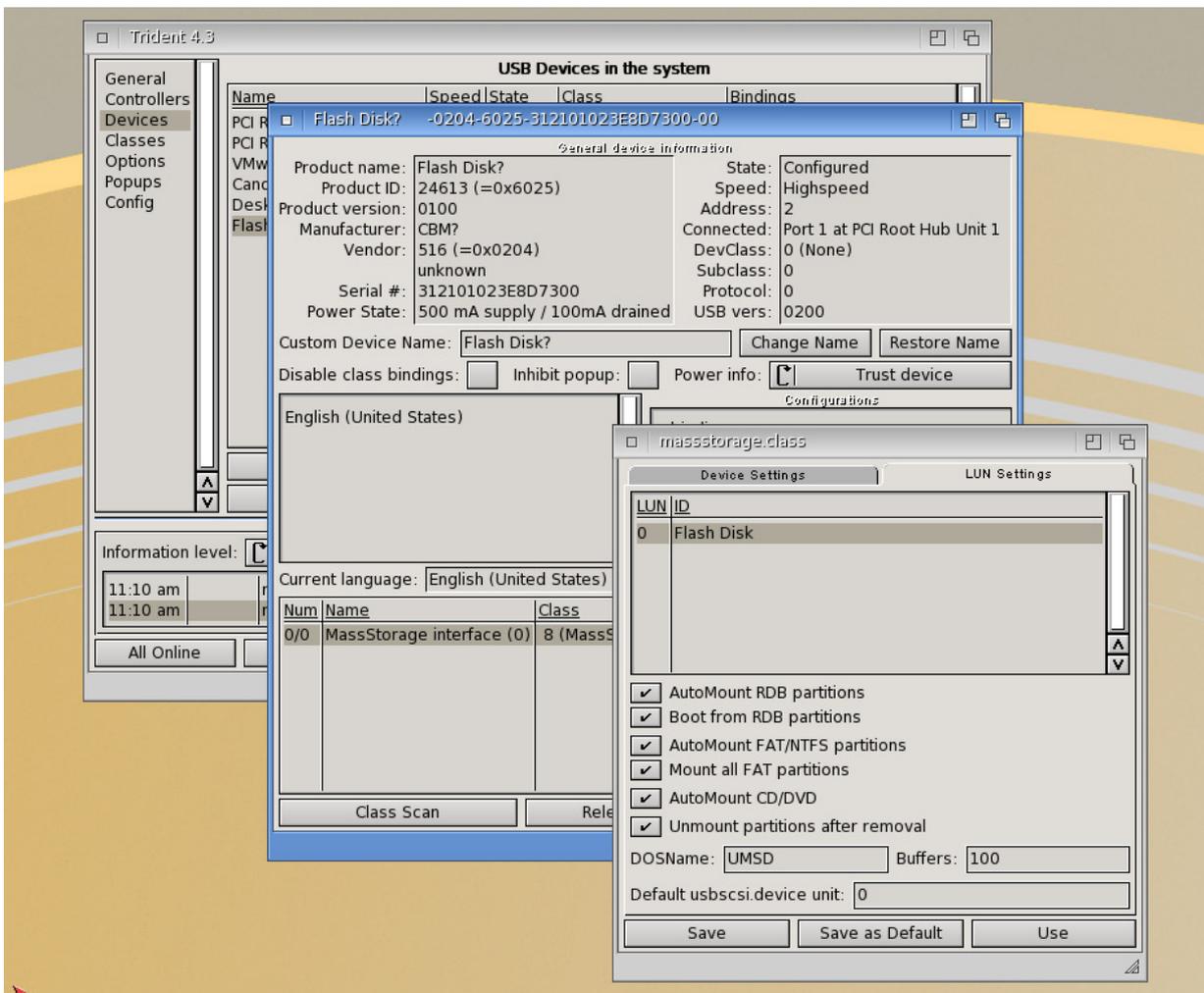
Once your controllers are set up, you can mount and dismount USB peripherals like on any other operating system. The first time you plug in a unknown device, you'll get a **Poseidon** pop up like this:



As you can see, a *multifunction printer* from *HP* has been correctly detected and bound to the proper class. When you're done adding peripherals, your Device list in **Trident** might look like this:



Clicking on **Settings** button lets you access detailed options (when available). Please notice that Poseidon allow a very advanced management of USB devices, maybe much more detailed than the one you are accustomed to in your “every day” operating system. Touching these options, though, might be dangerous and only expert people should do that.



When you remove a peripheral for the first time, you'll get a Poseidon pop up too.

IMPORTANT: Devices are DETECTED, not USED!

Please remember that Poseidon is only a USB stack, not a collection of drivers for your devices. Its job is just scanning your USB hardware, detecting it, and report to the system what is connected to the PC. Reading that a “CanonScan LIDE scanner has been detected” unluckily doesn't mean that AROS can use it to capture pictures. In order to do that, specific drivers and software must be developed first. For now, AROS can use only pen-drives, keyboards, mice and some other similar human controllers. Other “real life” USB applications like networking, audio and video capturing are still missing or only partly implemented. We're still working on them, please be patient or helpful...

Where's my USB drive icon?

AROS' USB mass storage support still has some flaws. Although every USB pen-drive should be correctly detected and recognized, not every partition on them can be mounted. We are still ironing out the issue, but in the meanwhile at least a good part of them should already work. Just try some other pen-drive, and you'll surely find one with a FAT partition you can use. Speed issues with FAT partitions have been fixed since version 1.2.2, however please prefer FAT partitions over FAT32 ones, for the best compatibility.

3.7 Accessing Cloud drives

Starting from version 2.1, Icaros Desktop provides a filesystem handler for cloud-based service Google Drive, written by Norbert Kett. The free version provided with Icaros is read-only, so you will need to have a GD account already set up, and follow these instructions to access your files.

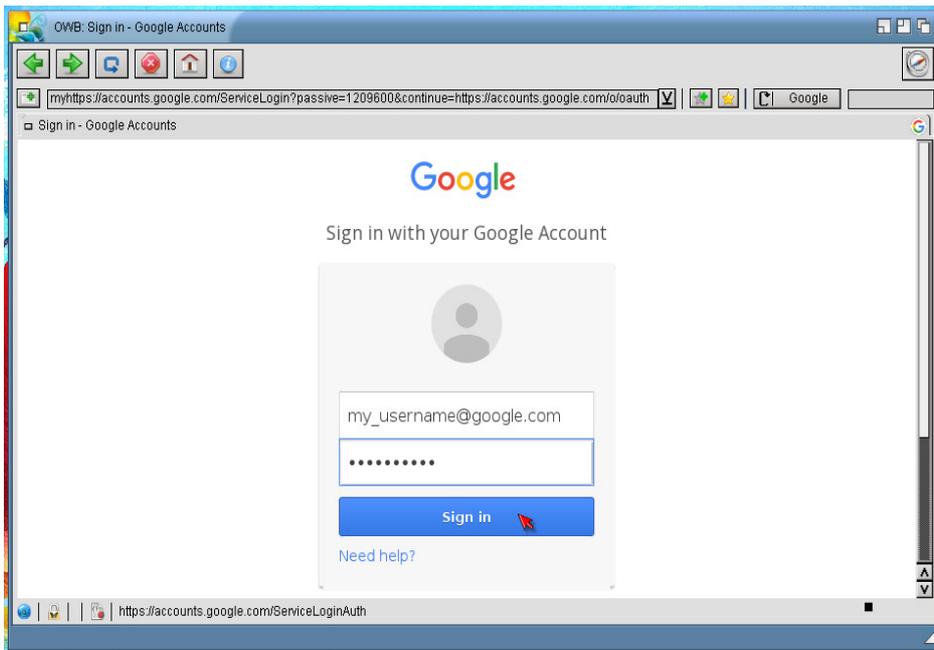
3.7.1 Accessing Google Drive

Google handler needs to know your unique Google UID, which can be generated by Google Drive on request. Here's explained how to do that. Open Prefs/CloudDrives and move to GoogleDrive tab.



Check the first option if you wish to activate the handler at boot time. You can use it for the current session only by checking the same option and exiting the configuration tool with the “Use” button. Unchecking the option will disable the handler as well, for the current session (Use), or for the next ones too (Save).

You must click on the “Get ID” button to open OWB and get your user ID. It will open the browser. Enter your username and password to logon to Google services:

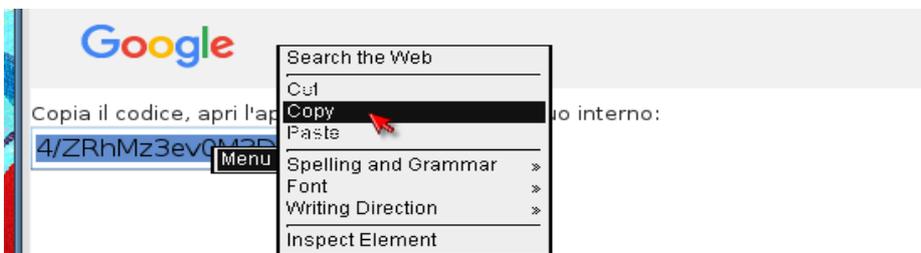


Click on “Allow” (sorry for the italian image here...). This will allow Google Drive Handler to show and manage your files in Google Drive

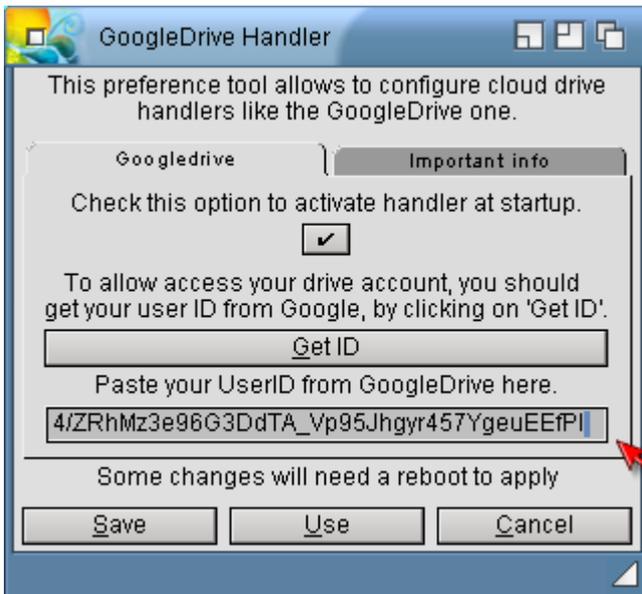
▾ google-drive-handler vorrebbe:



you will receive a unique ID generated instantly: select and copy it in the clipboard (either with rmb menu option or with rAros+C keyboard shortcut).



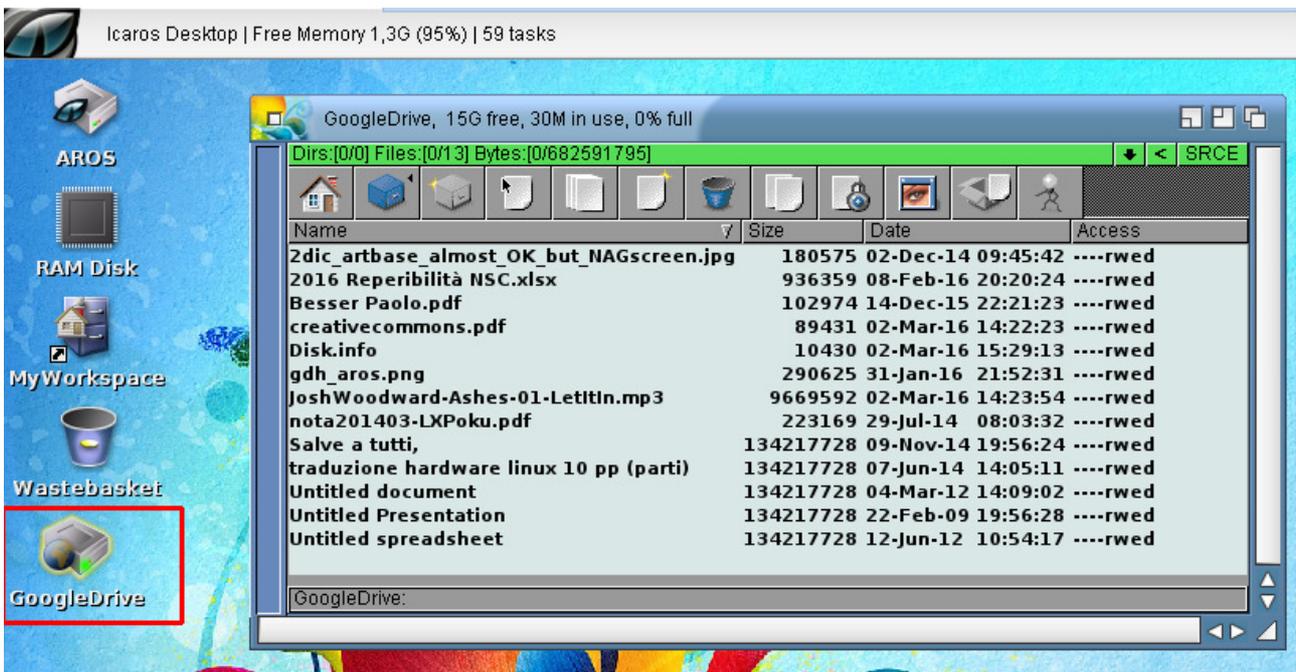
Now turn back to the configuration tool and paste the contents of the clipboard to the apposite field:



- SAVE → will make the handler run at startup.
- USE → will enable the handler for the current session only
- Cancel → will exit the setup without any change to the system

WARNING!
 Every time the UID changes, some internal files used by the handler must be deleted and recreated. With the current implementation of the configuration tool, this happens every time you click the “Get ID” button. So please click on it ONLY if you’re sure you wish to enter a new ID. Don’t worry if you have clicked it by mistake: you just need to follow the UID procedure again with OWB, enter the new ID in the field, and click either Save or Use. The new ID is always SAVED, even if you click on USE. You don’t need to change ID if you decide to disable the handler at startup and, afterwards, re-enable it.

A new unit will appear on the desktop, meaning you can access it.



Access will be read-only, unless you decide to register the handler. Follow the information in the “important info” tab of the configuration tool to understand how you can register it.

3.7.2 Accessing DropBox

Dropbox handler needs to know your unique Google UID, which can be generated by DropBox on request. Here's explained how to do that. Open Prefs/CloudDrives and move to DropBox tab.



Check the first option if you wish to activate the handler at boot time. You can use it for the current session only by checking the same option and exiting the configuration tool with the “Use” button. Unchecking the option will disable the handler as well, for the current session (Use), or for the next ones too (Save).

You must click on the “Get ID” button to open OWB and get your user ID. From now on, please follow the same procedure described above for GoogleDrive handler, since it is fairly similar. Just remember you’re looking for a DropBox code on the DropBox site!

WARNING!

DropBox handler included in Icaros Desktop is still experimental and its behavior might be unpredictable. Please do not use it in a production environment.

WARNING!

Every time the UID changes, some internal files used by the handler must be deleted and recreated. With the current implementation of the configuration tool, this happens every time you click the “Get ID” button. So please click on it ONLY if you’re sure you wish to enter a new ID. Don’t worry if you have clicked it by mistake: you just need to follow the UID procedure again with OWB, enter the new ID in the field, and click either Save or Use. The new ID is always SAVED, even if you click on USE. You don’t need to change ID if you decide to disable the handler at startup and, afterwards, re-enable it.

3.8 Sending bug reports to AROS and 3rd party software developers

Starting with v2.2.6, Icaros Desktop includes a new script in S: which allows recording useful debug logs for application developers. AROS is an operating system built for many different platforms and, some time, it might happen that a program written on a specific, different version of AROS, once ported to i386 wouldn’t run correctly anymore. Extending this concept to other amiganoid systems, it may also happen that someone who wrote an app for MorphOS or AmigaOS, and then ported it to AROS, didn’t notice some

minor compatibility issue. In this case, the best thing you can do (yes, you CAN help! And even make the difference!) is contacting the author of the software or the port. You can normally find his/her name and email address in the documentation coming with the program itself (a `readme.txt` or `programname.readme` file generally includes this information). Just pick this info, and send him/her a complete description of the issue, to help fixing it.

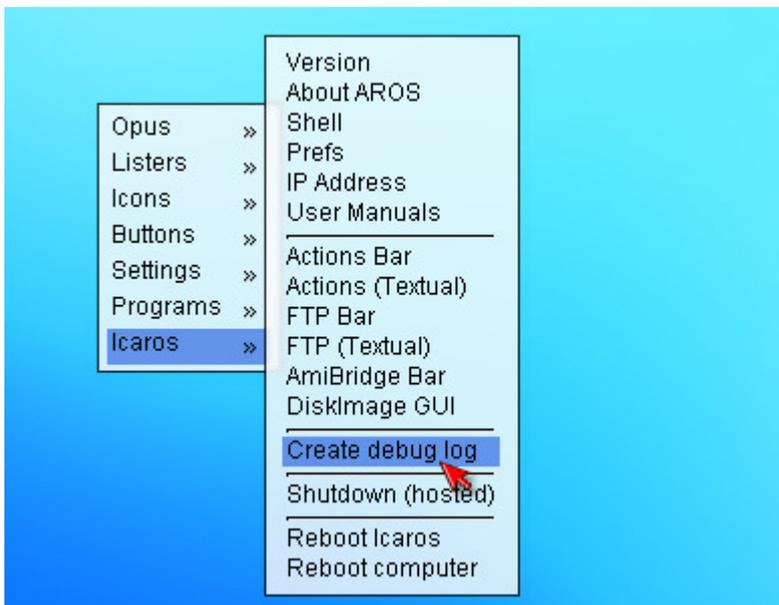
3.8.1 Needed information

When you're reporting a bug to a coder (this info can be useful also when reporting any Icaros issue) you should always specify:

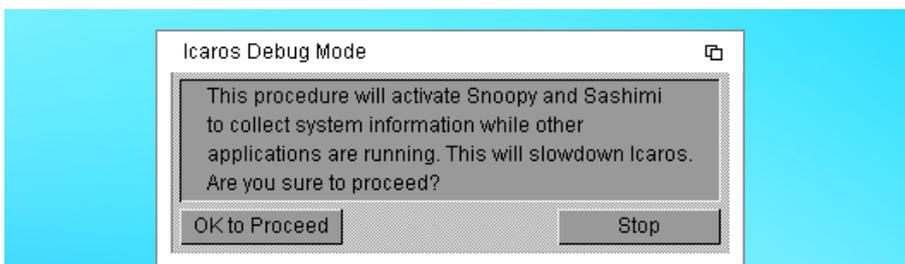
- Your kind of installation (for instance: "Icaros hosted on 32-bit Linux", or "Icaros native installation")
- Your PC specs -> open PCITool and save this information on RAM, then copy it somewhere
- A brief description of the issue (for instance: "the program freezes and does nothing more")
- How to reproduce the bug ("open this menu, select this option, click on this button")
- When applicable, the expected and actual results of the operation
- A system log

The system log could be tricky to get, since you would normally have had to open Snoopy from the System drawer, select what to log, open a shell and redirect `sys:Tools/Debug/Sashimi` output to a text file, then compress it and send everything by email. Luckily for you, Icaros has now automated most of these tasks. To collect a debug log, just follow these steps:

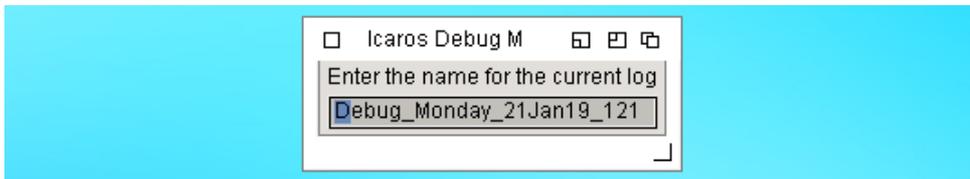
- 1) Start a plain session of Icaros Desktop. Preferably with the least services running in the background. Disable AmiBridge at startup if you use it, close all unneeded applications.
- 2) Launch `S:debugmode` from a shell (with the command "**execute s:debugmode**") or use Magellan's Icaros -> **Create Debug Log** option:



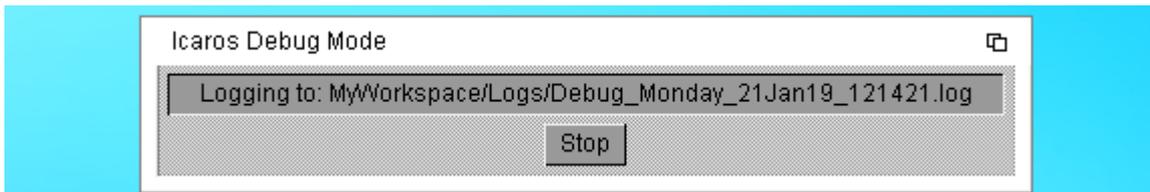
- 3) Click "Ok to proceed":



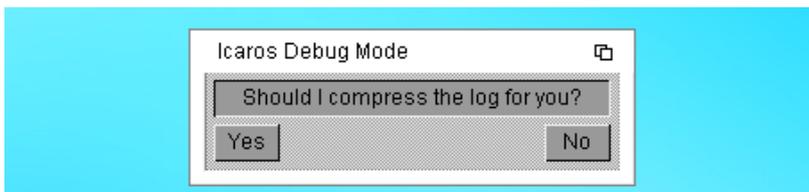
- 4) Enter a consistent name for your new debug log. By default, Icaros Desktop will propose the current date and time. You might edit this name and add the name of the application you're testing.



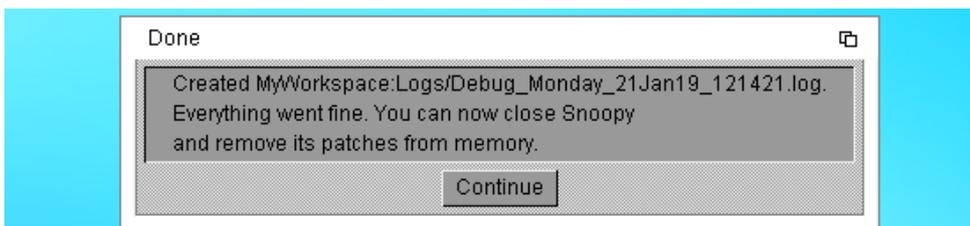
- 5) The following message will tell you that the log is being recorded. Keep this window open while testing the faulty application.



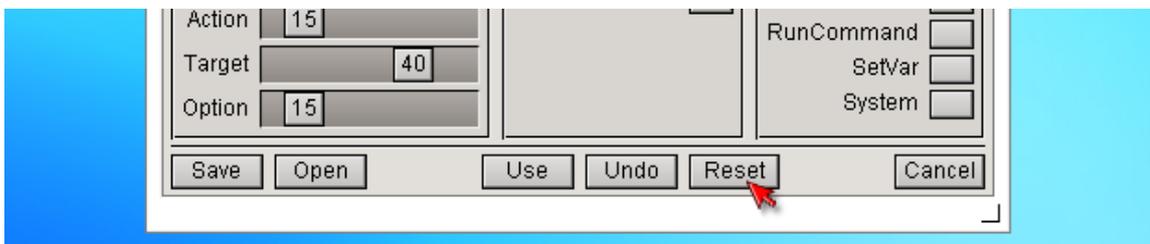
- 6) Now perform all the needed steps to reproduce your issue. **Please be quick: Icaros' logs can get very big and verbose in a few minutes.** When you're done, click the **Stop** button.
- 7) Due to the big size of logs, Icaros asks you if you prefer to keep the log in its original text format, or to compress it into a zip archive:



- 8) When done, Icaros will show the following window, confirming that everything went fine:

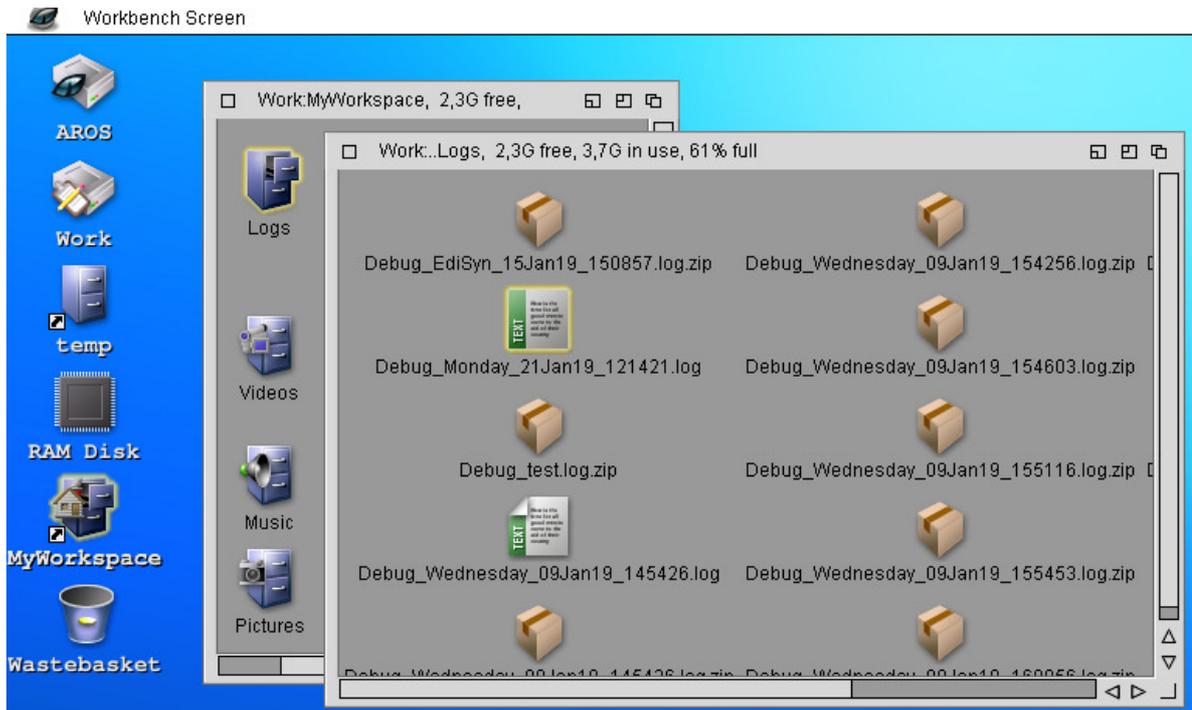


- 9) Click on **Continue**. Snoopy's window will appear.



- 10) Click on the **Reset** and **Cancel** buttons, then on the **Reset patches** button.

- 11) Logs are stored in **MyWorkspace/Logs**. This drawer does not normally exist, but it will be created automatically by Icaros Desktop the first time you record a log. You can find your log there:



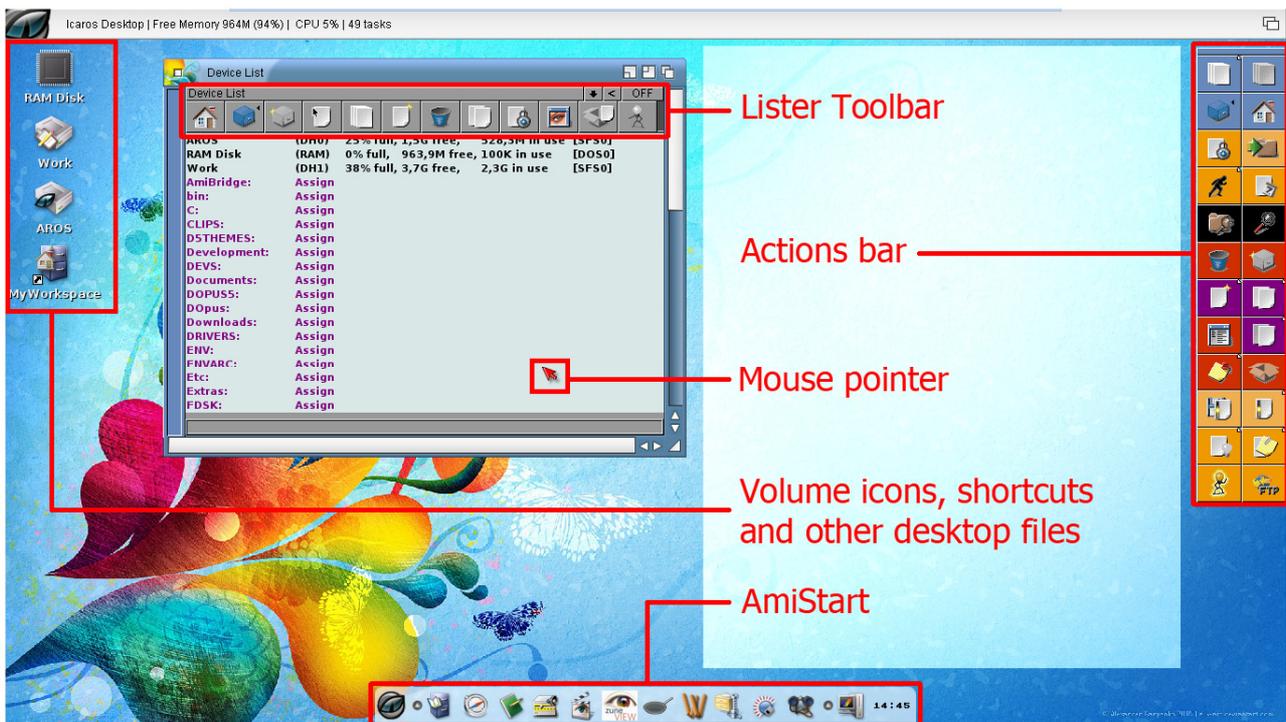
12) You are now ready to include this log file in your email to the application coder. Good luck!

WARNING!

Debug logs will not work from read-only media and installation pendrives. You will need to install the distribution to an hard drive or a USB pendrive first.

4. Managing Icaros with Magellan

We don't feel very comfortable with PC operating systems acting as phone ones. We strongly believe that computers are computers and their users expect to use them accordingly. While phones have limited screen size (even at full HD, a 6" screen will always be harder to focus than a 23" one, at the same resolution) and relatively few, big icons calling the main applications, computer users generally love to customize their desktops and keep their files in handy locations. In other terms, while phones and tablets interfaces are application-centric, computer GUIs have always been - since Mac Finder and Amiga Workbench 1.0 age - file-centric, allowing people to perform common and uncommon file operations (like copying them between directories or adding a comment to them, or packing them in a compressed archive) with simple menus and tools. Standard Amiga interface (being it AmigaOS Workbench or AROS Wanderer) was elegant and really ahead of its times, but, unluckily, time has not been a gentleman with her. File managers for mainstream operating systems improved a lot, introducing tools, toolbars, options and concepts that made life easier, which are now available to Icaros Desktop users as well, thanks to the recently re-released (and open-sourced) DirectoryOpus 5 "Magellan" file manager. We've almost thrown away its standard configuration and changed every toolbar, added custom menus and set its environment options in order to create a good replacement for Wanderer which would, obviously, make the most of the default programs in Icaros Desktop.



Icaros Desktop's default view with Magellan

Note about AmiStart

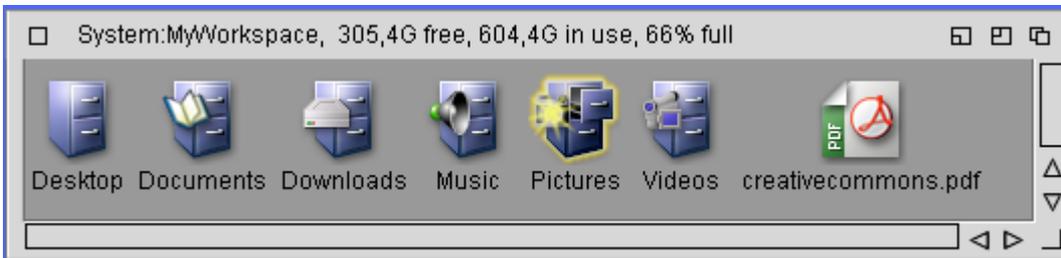
AmiStart works in Magellan like in Wanderer, except for the fact that it can't open drawers in listers like it does in Wanderer windows. You can still access all files the same way, though, and use AmiStart to run programs like Wanderer and wbrun command do.

This is a summary

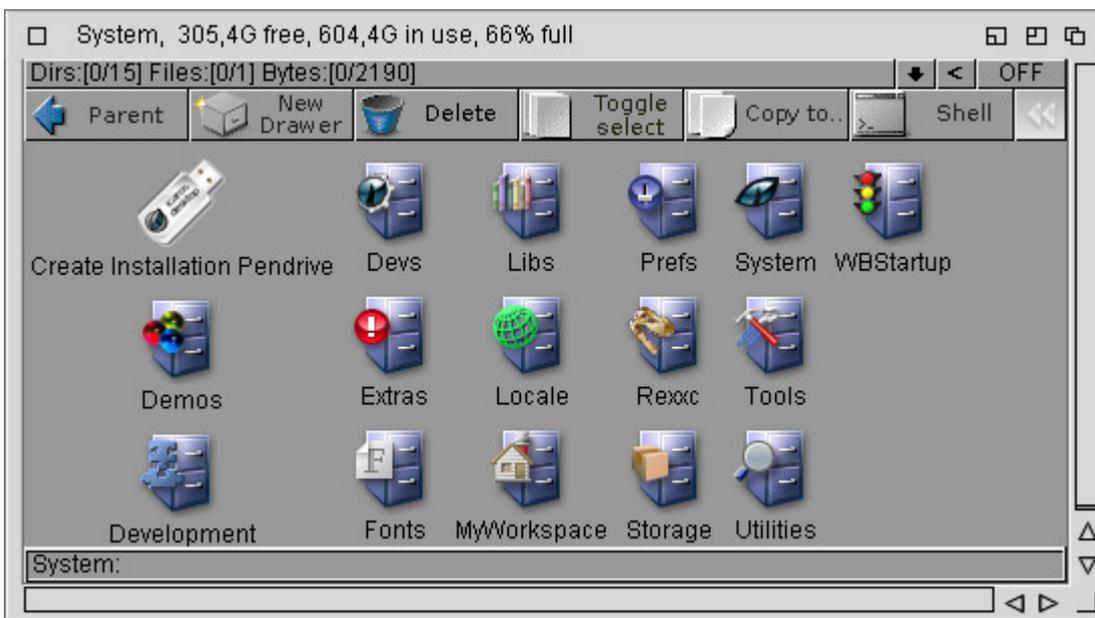
DirectoryOpus 5 "Magellan" comes with its own documentation, more than 500 pages in two different PDF manuals covering every aspect of the program. Please read them to understand all Magellan's inner working. In this section we will give just the basic information and explain how (and why) Magellan options and environment have been set in Icaros Desktop.

4.1 Listers

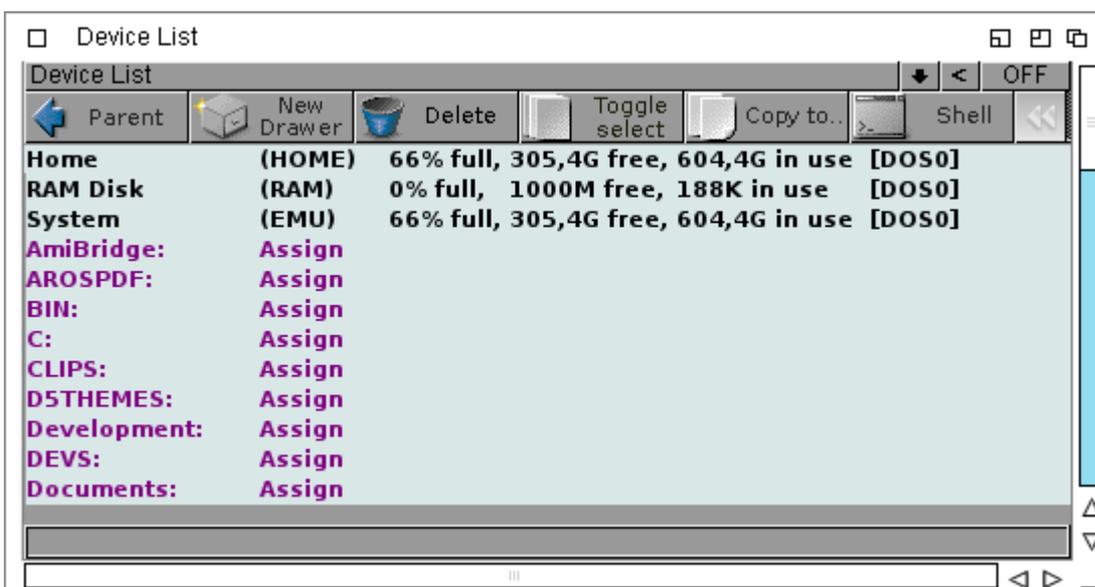
“Listers” is Magellan name for drawer and volume windows. They basically show files and directories, which can be represented as names (details) and icons.



Lister in Icon mode



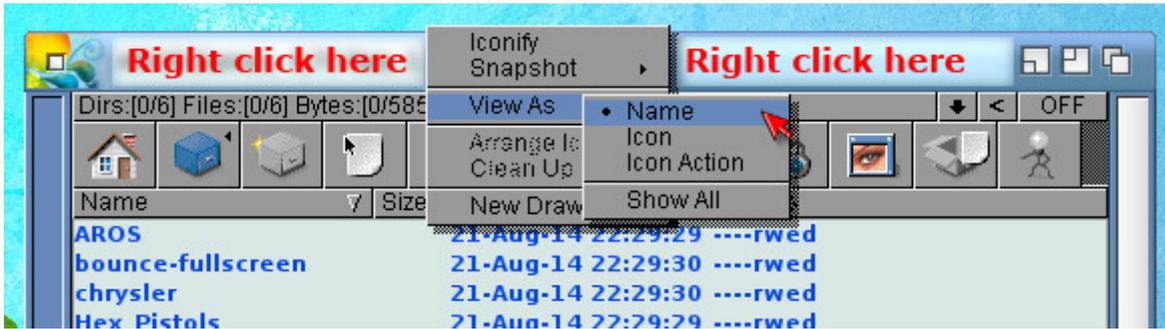
Lister in Icon Action mode



Lister in Name Mode

You can switch output modes by right clicking on the title bar and selecting the option view mode in the

context menu:



You can 'freeze' output mode with the Snapshot options, in the same menu. The Show All option will apply in icon modes only and it will act exactly as on original workbench, showing or hiding files without a icon .info file. Fields like name, size, date and access (protection attributes) can be moved, resized and ordered as preferred. We've tried to stay as much compatible to Wanderer as we could, so that information like position and view mode might be interchangeable between Magellan and Wanderer. These settings, however, can be changed by users whenever they want.

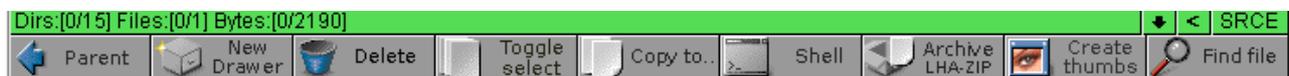
Different behavior

Magellan manages file differently in name mode than in icon modes. In name mode it will always use its own detection routines and internal filetypes to run programs and start associated applications, while in icon modes it will use a sort of hybrid between its own and AROS system routines. For example, double clicking on a PDF file in name mode will make Magellan look into its own data base of file types, detect that it is a PDF file and open its own associated program (ArosPDF). But double clickin on the same file in any icon mode will make Magellan follow another path, using system default application set in the envarc:SYS def_*.info files. **This will work for all files but executables**, which will be handled by Magellan no matter the lister mode. In all modes, moreover, Magellan will keep the right click context menu associated to files in its own filetypes. More about this in the following sections.

4.1.1 Lister toolbar

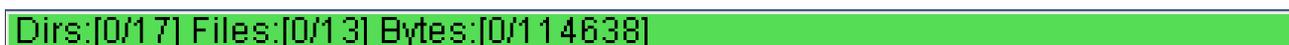
In **name** and **icon action** modes, listers include a toolbar we configured to allow in-window management actions like (multi)select, rename, copy and protect files, quickly create LHA and ZIP archives, generate thumbnails for datatype-known image files. Operations which involve more than a single lister, like copying or moving files from a directory to another, can be accessed by the Actions Bar on the right. The Actions Bar also provides almost all features of lister toolbar, since users may decide to show only icons in listers, without the toolbar.

Icaros Desktop provides lister toolbars configured like this:



This bar includes a noticeable number of elements:

1) the **lister sum of contents**, with the number of selected/total directories, files and bytes. In this example



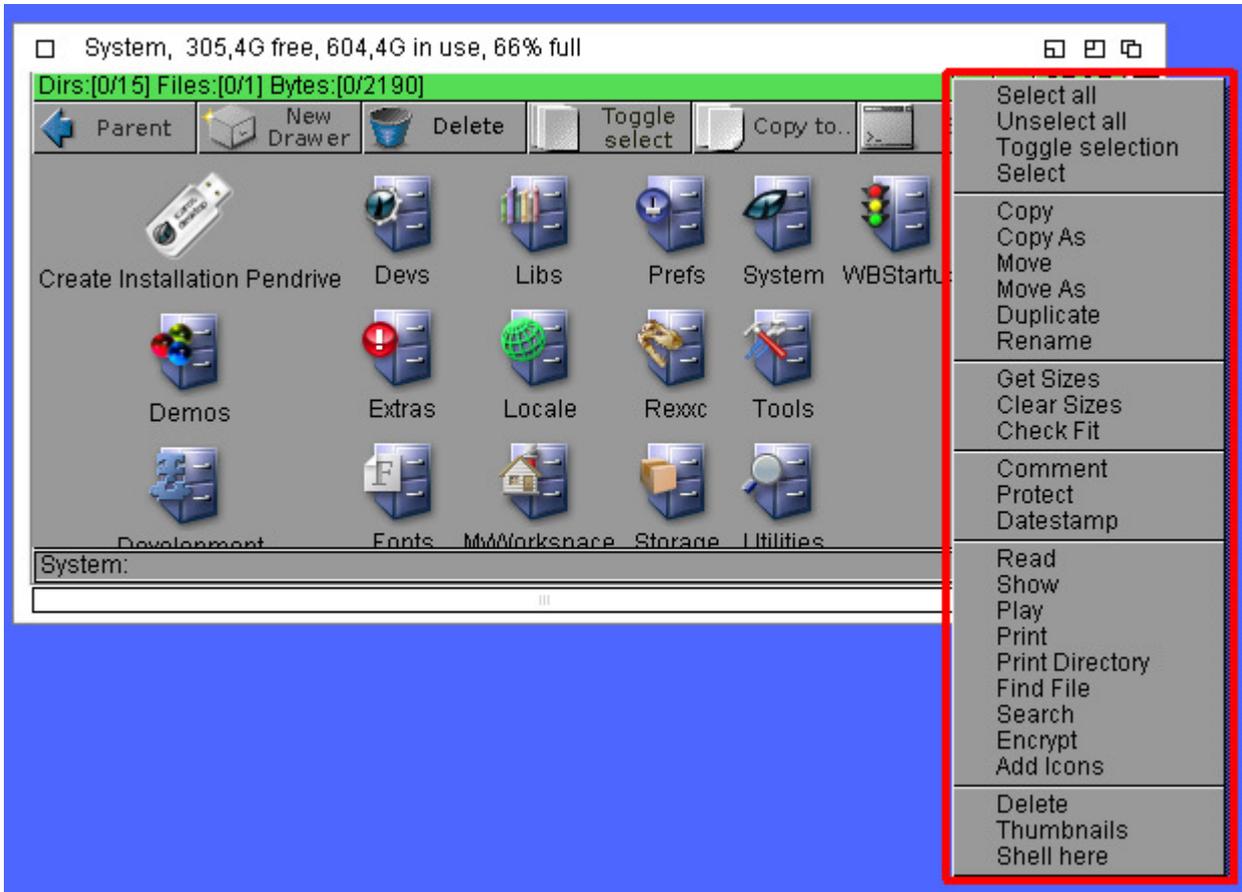
we have 0 selected directories from a total of 17, 0 selected files from 13 and 0 selected bytes from a total of 114,638.

2) **Fields for name mode:**

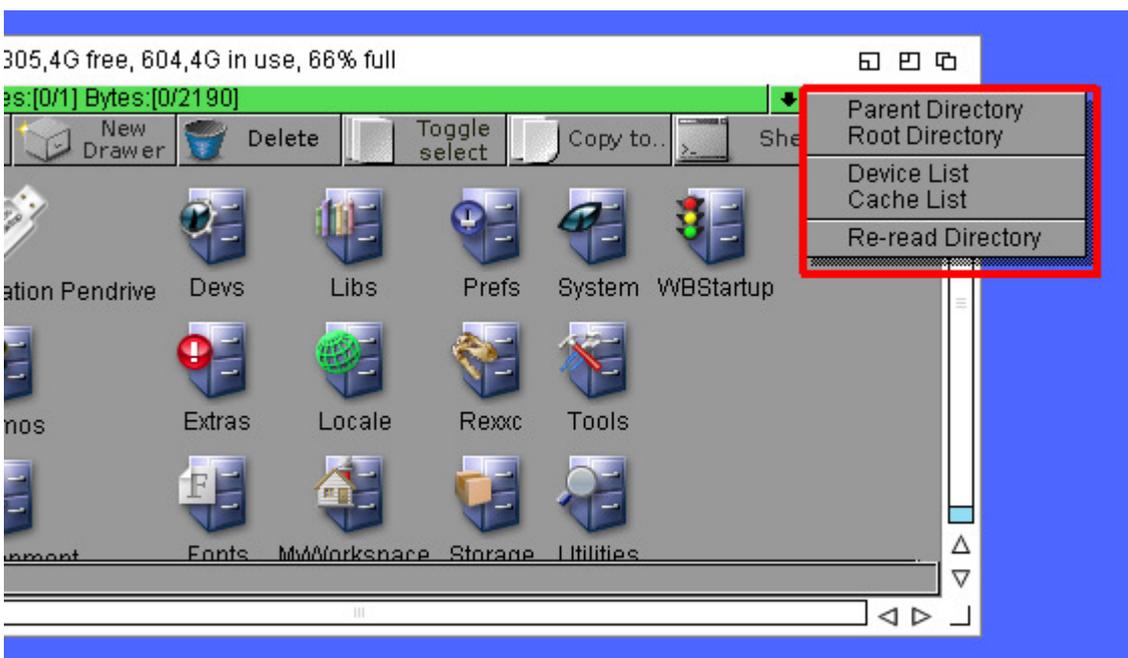


Click on a file to sort files using that particular order, or on the up/down arrow to select a increasing or decreasing order. Move the boundary between any field to resize them, or drag a field and drop it elsewhere to order fields as you like. You can also add or remove fields using DirectoryOpus 5 settings.

3) The lister menu button (⌵) which opens this menu:

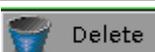
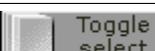
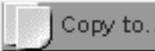


4) the parent button (⏪), which opens this other menu instead:



5) the status button (**SRCE**), which allows to set a lister either in source, destination or neutral status (see next paragraph).

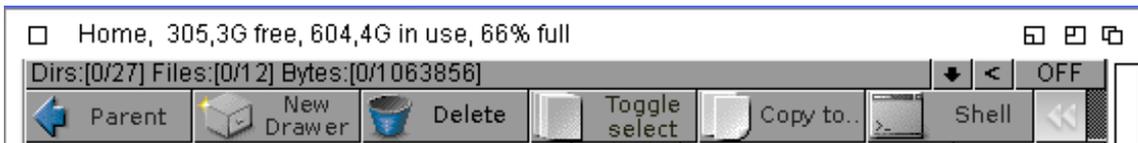
6) The **Actions buttons**, which act differently when clicked with either the left, right or central button:

Button	Left button click	Right button click	Central button click
 Parent	Parent: turns back to the parent drawer. Its contents will be shown in the current lister.	Volume root: turns back to current device's root directory.	Not used in this release
 New Drawer	Create new drawer: creates a new sub-directory in the current lister. You'll have to enter its name in a field.	Create new assign: lets the user create a new Assign that point to the opened drawer in lister.	Show Size: in list mode, calculates the size of selected folder and show them along their names.
 Delete	Delete: permanently deletes all current selected files and drawers. Warning! It may be not-recoverable.	Recycle: browse the contents of the hidden .recycled drawer of the current volume.	Not used in this release
 Toggle select	Toggle: selects all currently unselected files, and vice-versa. When no file is already selected, it acts like a 'select all' button.	Drop selection: equal to 'select none', it resets any current selection to no file selected.	Pattern select: allows to select all files matching a pattern. For instance *.txt will select all files with txt extension.
 Copy to...	Copy to...: copies selected files and drawers to another destination, either a dest lister or a new one to choose.	Copy as...: copies selected files and drawers to another destination, and lets you change the name.	Rename: renames the current selected files(s) and/or drawer(s), even in a multiple fashion.
 Shell	Shell: opens an AROS shell pointing the path to current open drawer.	Protect: changes protection bits (attributes) to selected files and drawers.	Not used in this release
 Archive LHA	Quick LHA compress: compresses selected files and folders into a LHA archive. Warning: at least 2 files must be selected!	Quick ZIP compress: compresses selected files and folders into a ZIP archive. Warning: at least 2 files must be selected!	Quick TAR archive: archives selected files and folders into a TAR archive. Warning: at least 2 files must be selected!
 Create thumbs	Thumbnail selected: creates a .info file with a preview for selected image files only.	Thumbnail all: creates a .info file with a preview for every datatype-known image file found in current lister	Not used in this release
 Find file	Find File: searches for a file starting from the selected drawer. But you can refine search.	Find Text: searches for a text string in the currently selected file(s).	Not used in this release

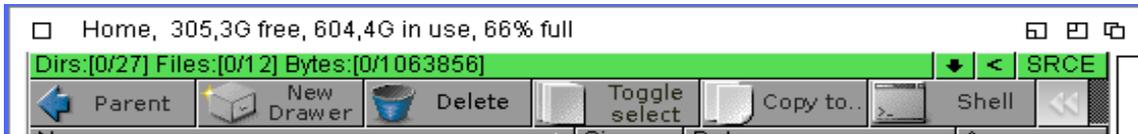
NOTE: new functions have been enlightened with **yellow**.

4.1.2 Source, Destination and neutral listers

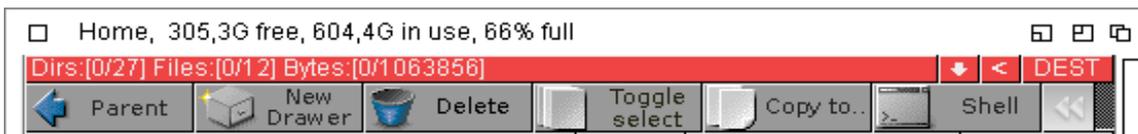
This concept has always been one of Dopus' strength but, strangely enough, no mainstream operating system ever replicated it. Yes, it is not so much intuitive and this might be the reason, but we're truly excited to take advantage of it. With DirectoryOpus 5 you can open as much drawer windows as you like, but you can also set a lister as source (SRCE) and another as destination (DEST) for your file operations. Source and Destination listers are easy to spot, because the upper part of their toolbars changes color either to green or red. Listers with grey toolbar, on the other hand, are completely neutral and classified as "OFF" in the **status button**.



lister in neutral (OFF) status



lister in source (SRCE) status

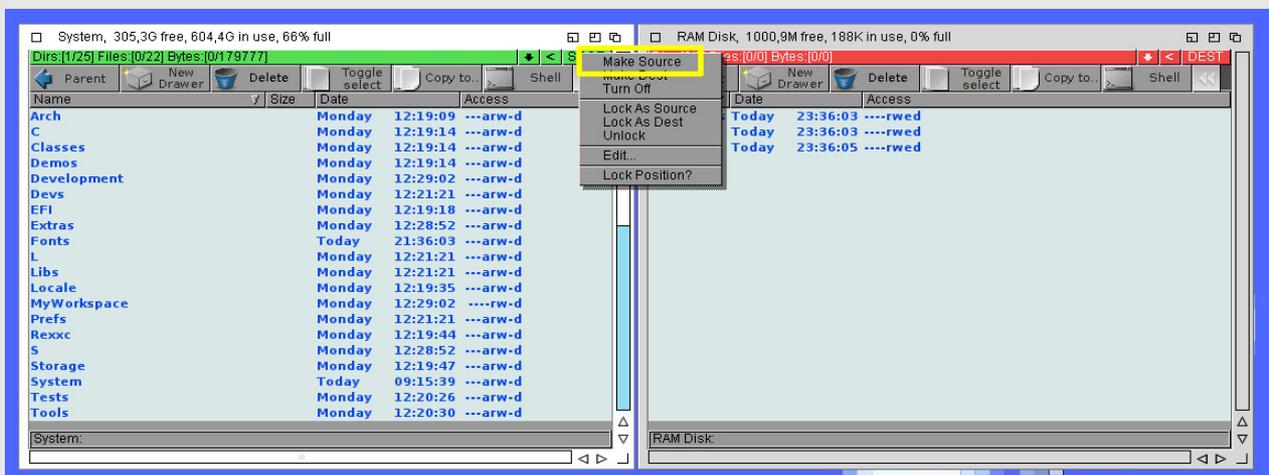


lister in destination (DEST) status

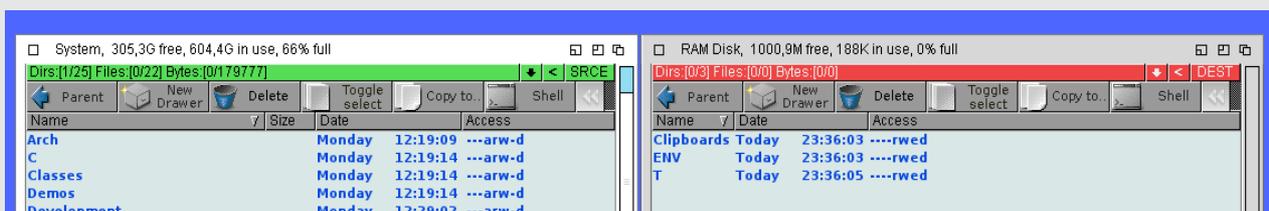
Once you set a lister as source, and another one as destination, most of file operations will start from file selected in the source lister, to end up into the destination one. For instance, you can set lister “A” as source and lister “B” as destination, select some files from lister “A” and click on the “Copy” action button, then selected files from “A” will be copied into the “B” drawer. In Icaros Desktop, Dopus has been set to change source and destination folders dynamically: this should make selection easier, but you can force listers to become either source, destination or neutral directories by clicking on the status button (see above), after activating it.

Tutorial: how to copy files from a lister to another

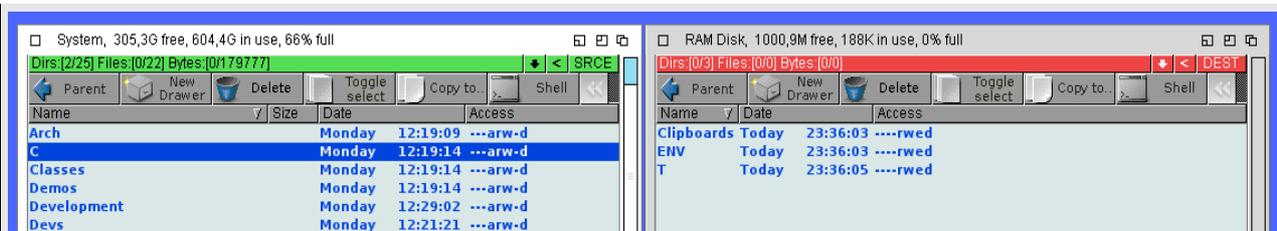
Open two volumes, RAM: and AROS:. Set them in name mode for more reliability. Now (see below) left-click on “AROS:” lister status button and choose “Make Source” to be sure your AROS: partition is the place to copy files from.



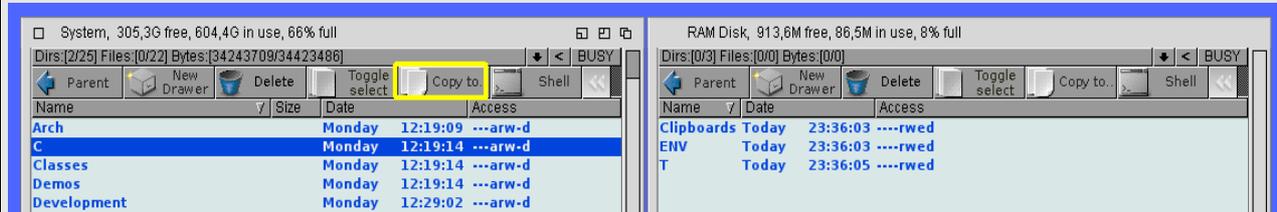
When done, the other lister should automatically enter the destination status. RAM: is now the volume you wish to copy files to.



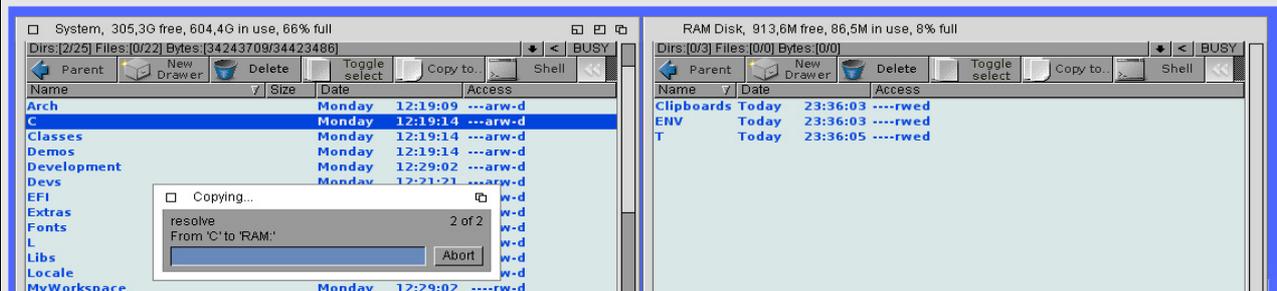
Select, for instance, the C drawer with a single click on it:



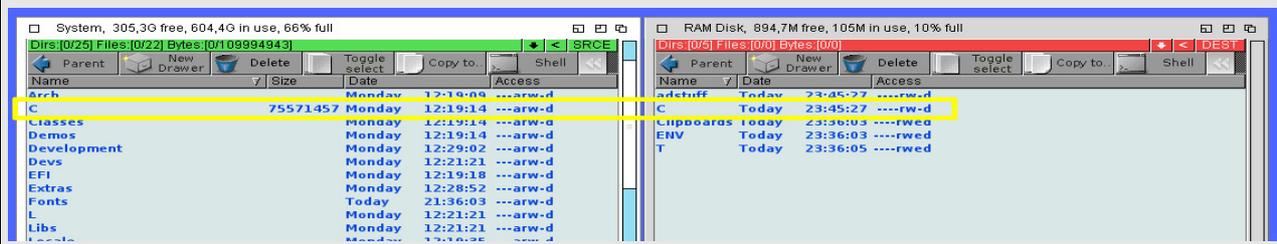
Now left click on the Copy to.. button:



Files will be copied:



...and will finally appear on the destination lister too. Notice also the size of copied directory appearing automatically on source lister:



If no destination is set, Magellan will show a requester listing all other opened listers. If no other lister had been opened on the screen, a system file requester will appear to choose the destination directory.

Note

Listers can also be locked into a status with the same button. Lock a lister as source or destination to avoid that newly opened windows will switch its status. This may be handy when copying to a single drawer files which originally belonged to many different source drawers.

The status button also allows to open a setting editor for listers and to lock position of a lister. After selecting the latest option, the windows can not be moved until the 'lock position' option will be disabled.

4.2 The main menu

You may call Magellan's main menu by right-clicking on a empty position of the workbench. It will show file manager's main sub menus and two customized ones called 'Programs' and 'Icaros'.



We'll leave the first four sub-menus because their options are either self-explanatory, or better explained in Dopus documentation (which comes, as we said, bundled among Icaros manuals in PDF format). We will now concentrate on the last two, while the Settings menu will be explained later.

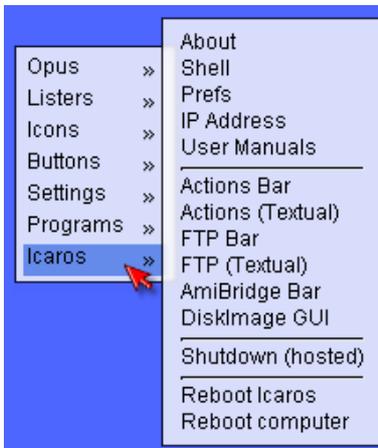
4.2.1 The “Program” menu

Program allows to run Icaros default applications with ease. It somehow replaces AmiStart so you can quietly quit it without losing its main functionalities.



4.2.2 The “Icaros” menu

Icaros sub-menu allows to perform some specific actions:



About → Shows Icaros Desktop version and AROS authors

Shell → open a shell (command prompt) window

Prefs → open AROS Prefs drawer

IP Address → shows the current network addresses

User Manuals → opens the directory where PDF manuals are stored

Actions Bar → turn on/off the graphical actions bar on the right, or returns to the graphical actions bar if the text bar is selected

Actions (Textual) → turn on/off the textual actions bar on the right, or switches to the textual actions bar if the graphical one is selected

FTP Bar → opens/closes the graphical toolbar for DirectoryOpus' integrated FTP client, or switches to the graphical version of the bar

FTP (Textual) → opens/closes the textual toolbar for DirectoryOpus' integrated FTP client, or switches to the textual version of the bar

AmiBridge Bar → opens/closes the toolbar for AmiBridge

DiskImage GUI → allows mounting of ISO and floppy images

Shutdown (hosted) → closes the current session of Icaros Desktop. It is mainly intended for hosted, but it may work natively also on some hardware configurations

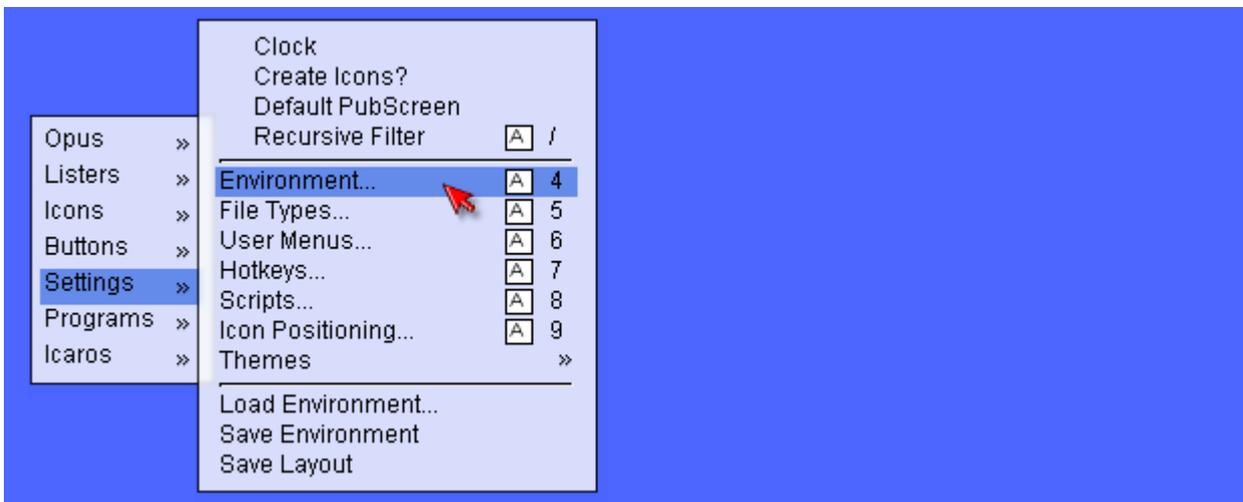
Reboot computer → cold-resets the whole system and restarts it from the POST screen

Reboot Icaros → equivalent to a warm reset, it keeps the current session but reloads Icaros Desktop alone

4.3 Customizing Magellan

Magellan is easily configurable. Once you know where to put your hands, it allows to do basically whatever you like with its options and behavior. You can create new menus and toolbars, modify the current ones, make them behave differently and set you work environment the way you like it. All this freedom, however, has a price: complexity. It will take a while to understand and master all Dopus 5 options, menus and concepts, but once aquired the skills, nobody will stop you.

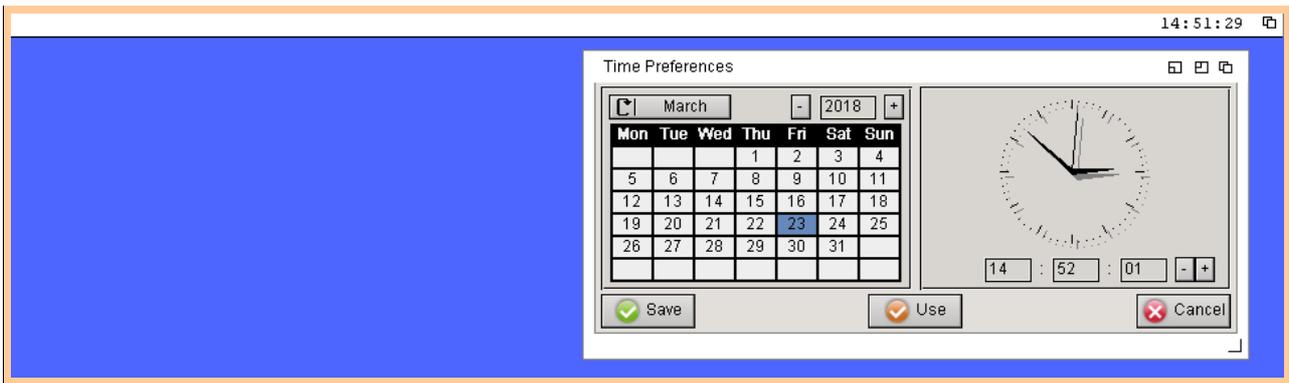
In this section we'll concentrate on basic options, the ones used for customizing your desktop environment as you like. How to change desktop wallpaper, lister colors and so on. More advanced subjects like file types and toolbars will be explained later. Let's open the Settings menu from Magellan main one:



Clock → adds date and time to the main toolbar.

Note

Starting with Icaros Desktop 2.2.2, both Magellan and Wanderer show the clock on the top right corner of the screen. This is due to a 3rd party application called DigiClock, which runs automatically after system startup. By clicking twice on the clock, you can adjust time and date.



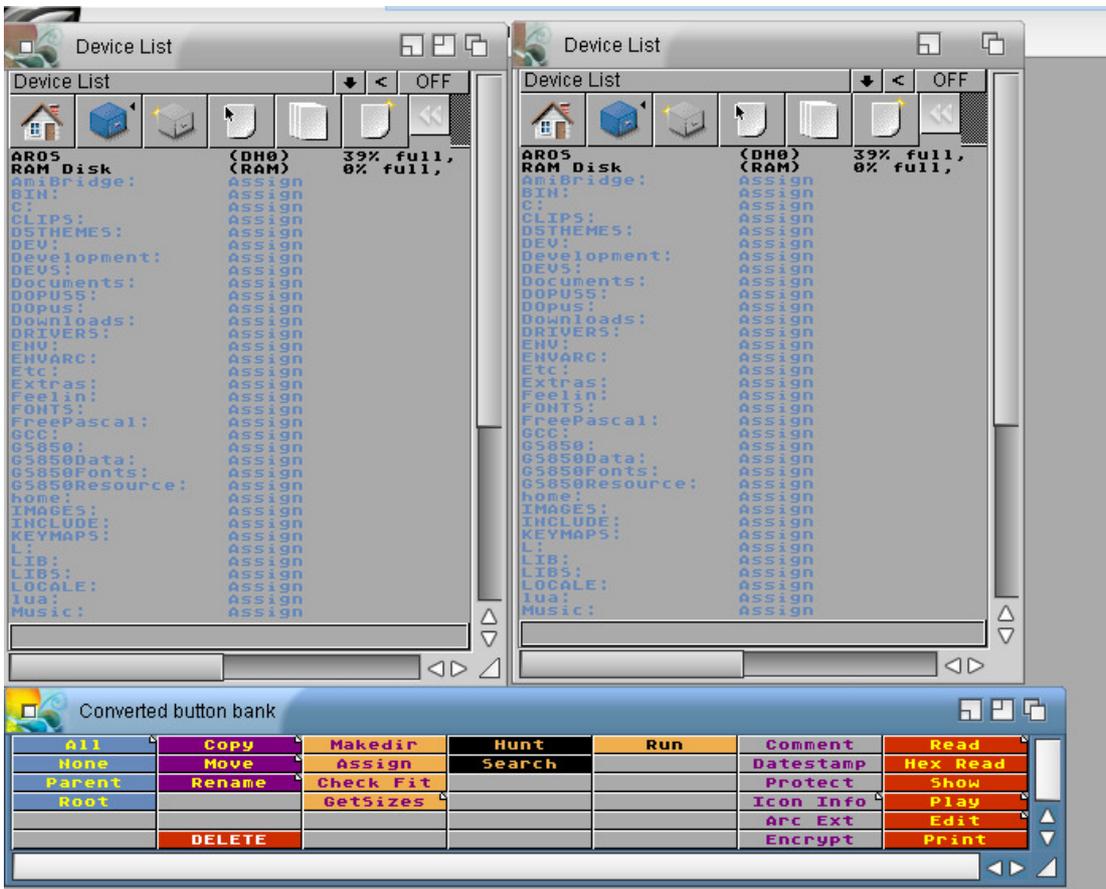
Create icons? → once selected, DirectoryOpus 5 will create a .info files for newly-created directories. Most of times, however, you will still have the choice whether doing that or not.

Default PubScreen → makes Dopus' pubscreen the default one. It does not matter when used instead of Wanderer, since it would run on the default pub screen anyway.

Recursive Filter → when the option is set to on, Magellan will ask for a different path whenever a operation should be done on subdirectories. When turned off, instead, subdirectories will be treated normally.

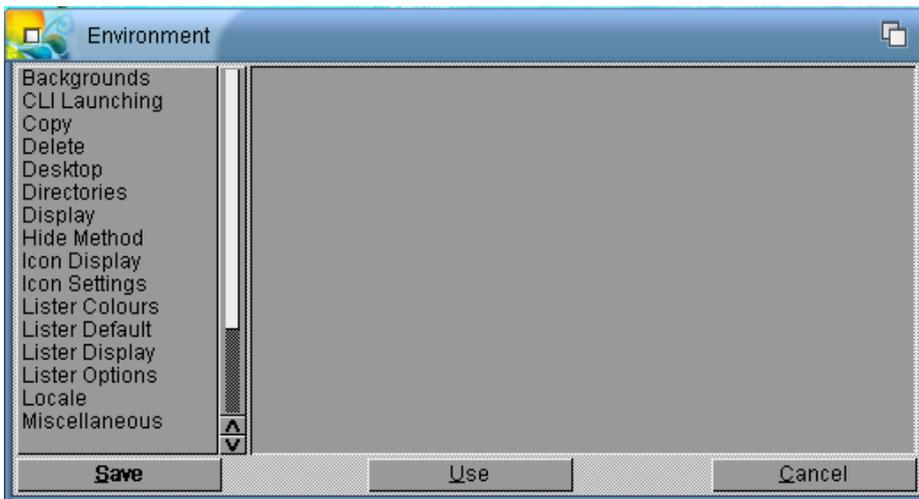
Themes → loads a 'theme' for DirectoryOpus 5. A theme is basically an archive including all Dopus settings for layout, environment, backgrounds, fonts, system sounds, screenmode, menus and so on.

Load/Save Environment → loads a pre-configured environment (default is Icaros' current one). You can set Dopus 5 to work in a different way and save it as a new environment, giving a simple name to remember it. Icaros already provides some pre-configured environments, for instance this is the Dopus4Type one, which mimics how DirectoryOpus 4 behaved:



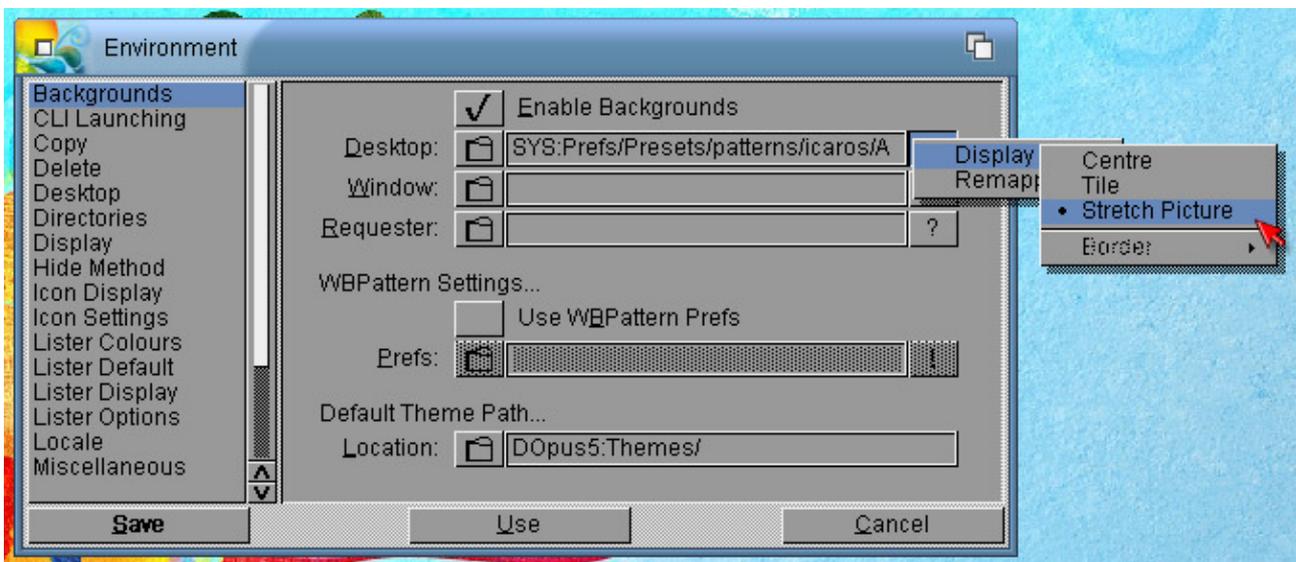
4.4 Environment

You can consider the Environment editor (from the Settings menu) the Dopus 5 equivalent for many control panels in AROS' Prefs drawer. We will see here just some of them.



4.4.1 Backgrounds

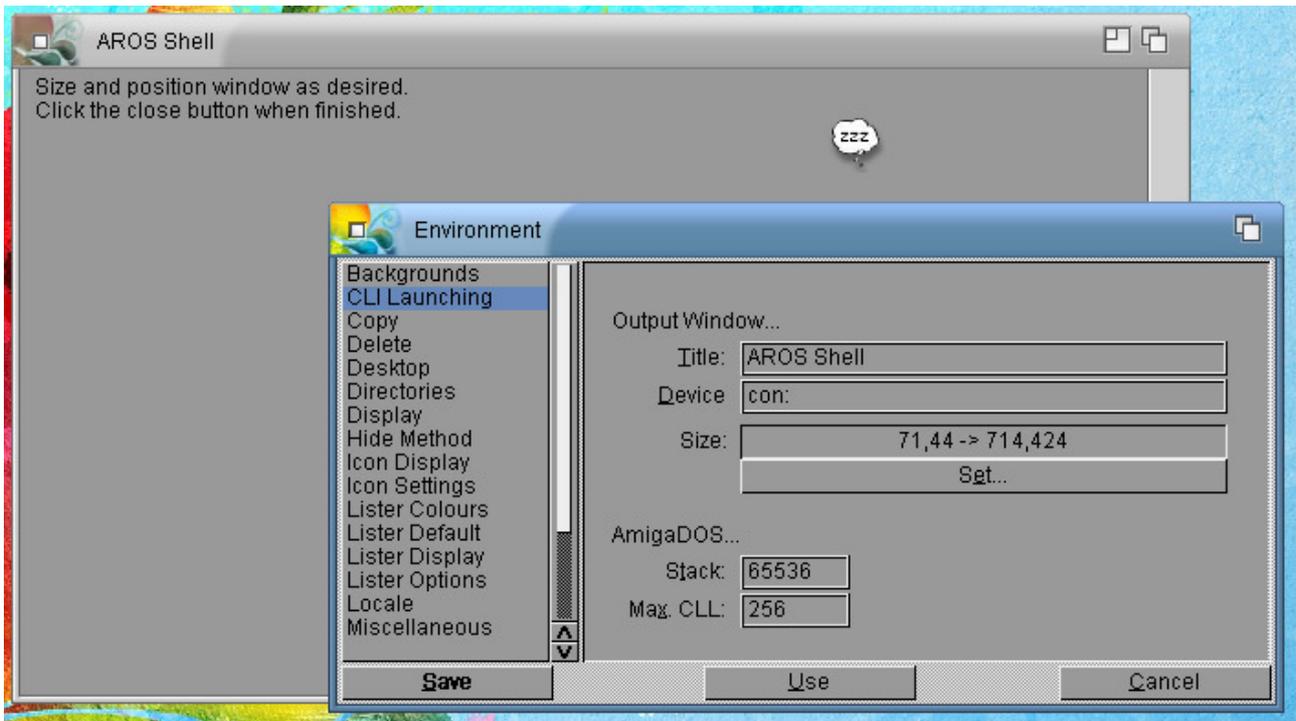
The backgrounds panel allows to change background images for desktop, windows and even file requesters. You may also change behavior between centered, tiled or stretched image, and decide the rendering quality. Obviously, you should always keep the best result one, since nowadays processors are many orders of magnitude more powerful than original 68000 ones. This option might still be helpful, however, when setting quality of Dopus 5 for M68K inside of AmiBridge.



The WBPattern settings option does not have any impact on AROS, since AROS does not have a WBPattern preference tool in Prefs.

4.4.2 CLI Launching

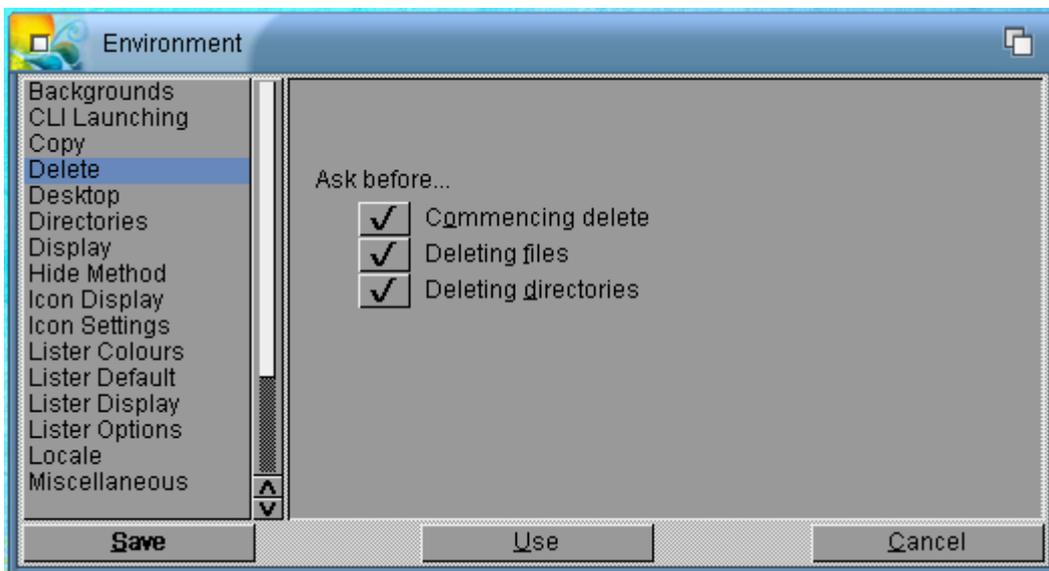
Allows to set default settings for shell windows launched by Dopus 5. Be aware that any shell-startup script in S would be executed as well, so settings done by Magellan could be overridden.



Interestingly, the Set button allows to give Shell windows a default size.

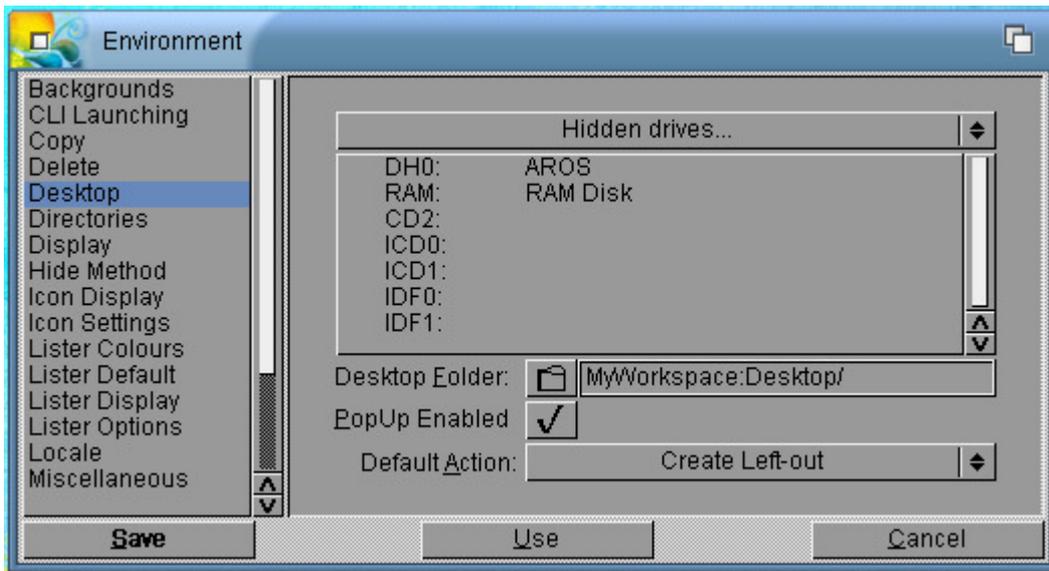
4.4.3 Delete

If you're blaming us for all those 'Are you sure?' warnings that Magellan opens every time you need to delete files and directories, this is the right place to get rid of them. But be warned: although Icaros Desktop 2.0 introduced the smart dustbin, deleted files won't be always recoverable on every device and file system!



4.4.4 Desktop

This panel allows to hide/show volumes on the workbench, enable/disable pop up windows and decide what to do when you drop an icon onto the desktop.

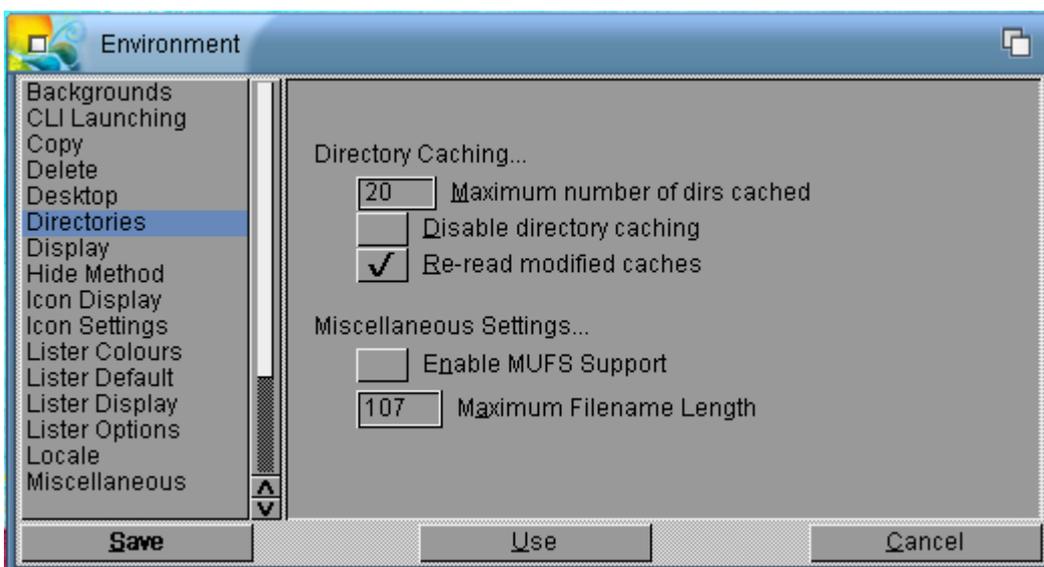


Default action is “Create left-out” which is, basically, a shortcut in the classic Amiga spirit. Magellan, however, can go ahead of this and use the desktop like any other modern operating system, letting user to fill it with files, icons and (why not?) a lot of unused garbage. So **Default action** can change to “Move to desktop” (file will be deleted from original position and placed in the desktop directory) and “Copy to desktop” (file will be copied from original position to desktop directory - you will be able to edit the copy but the original won't be affected) or even doing nothing (“None”).

You can set the default desktop directory with the **Desktop Folder** option. Icaros Desktop already sets it to a MyWorkspace: subdirectory (which is normally hidden), even if the chance to use the desktop as a normal drawer is turned off by default.

4.4.5 Directories

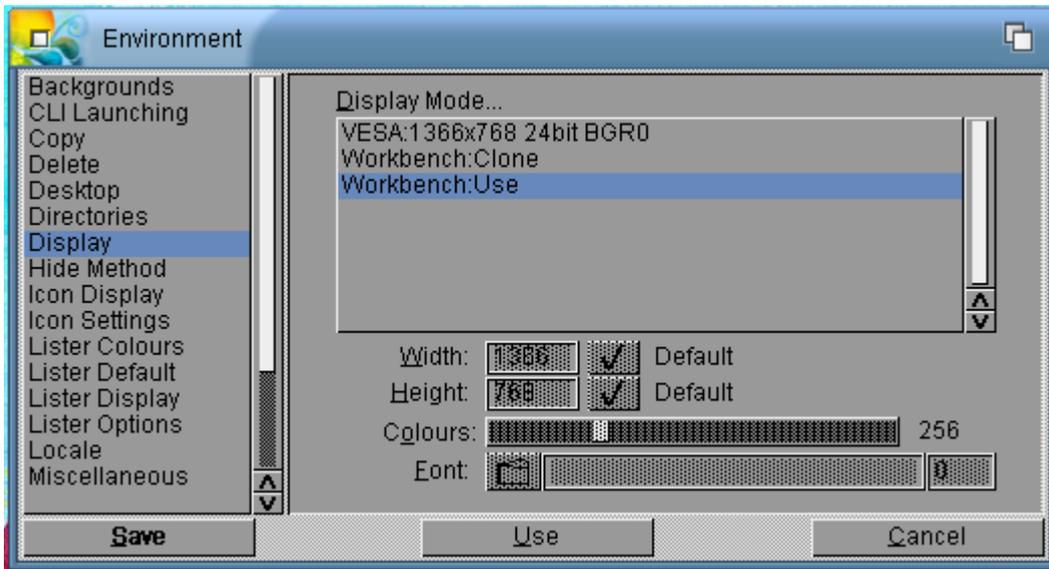
Magellan remembers the latest directories you operated on in a cache, unless told not to do so. This behavior can be set here:



You can access the directory cache from any name/icon action mode lister, using the **parent button** () menu. Miscellaneous setting about MUFS Support is not applicable to AROS, while you should pay attention to Dopus 5's limits to 107 characters in file names.

4.4.6 Display

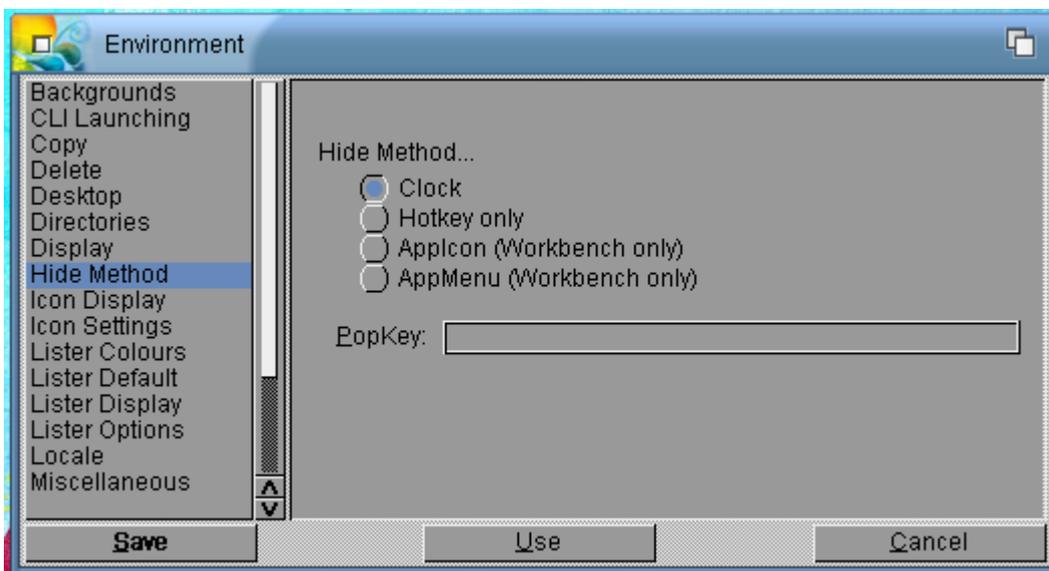
Nothing really amazing here: if you wish to run Magellan in a different screen, with a different resolution, you can set it here.



Notice: for some reason, we couldn't see more than 16 colors when using Magellan for M68K with AmiBridge.

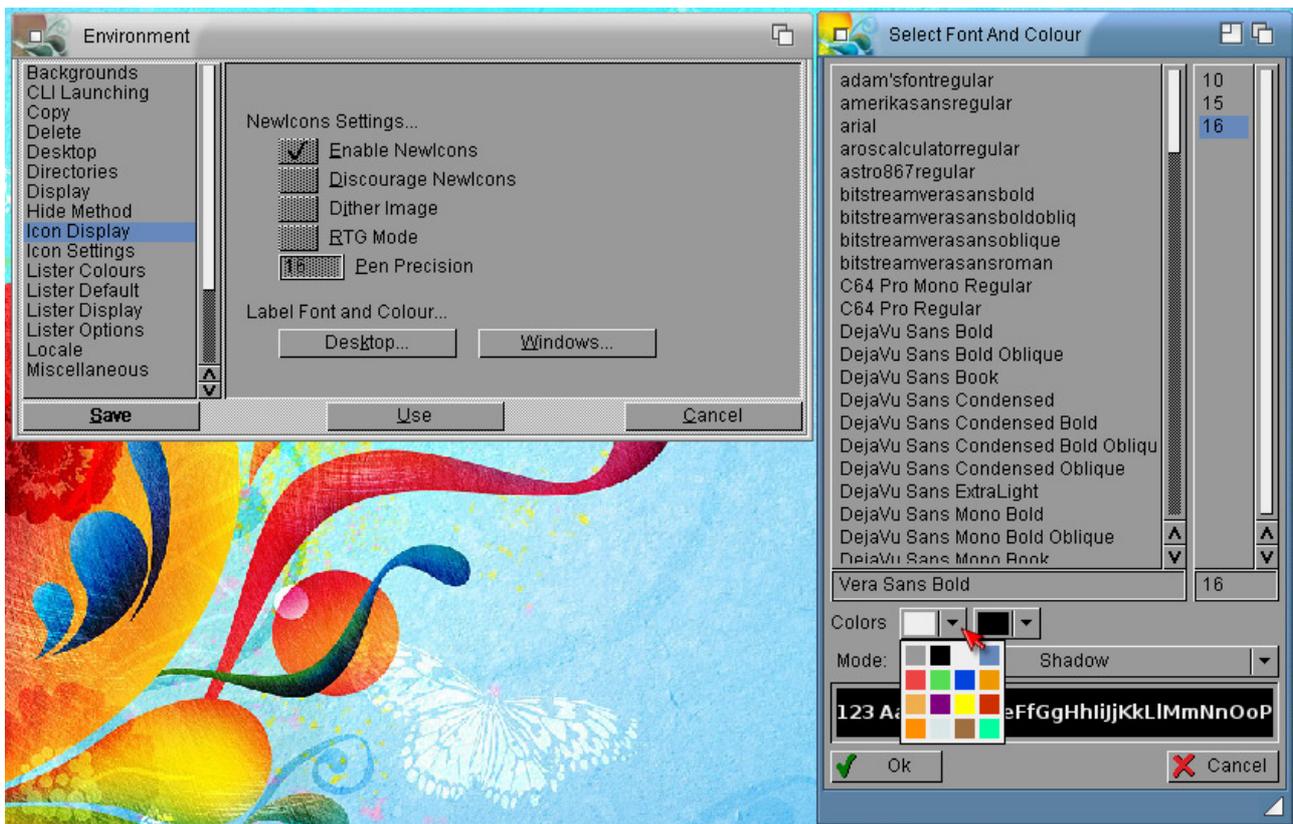
4.4.7 Hide Method

Pay attention to this panel! It allows to change the way the system will hide windows when iconized/hidden. A wrong setting might make the hidden windows impossible to display again (there are still some limitations with AROS. Be patient...). Keep it to "clock" for safety.



4.4.8 Icon Display

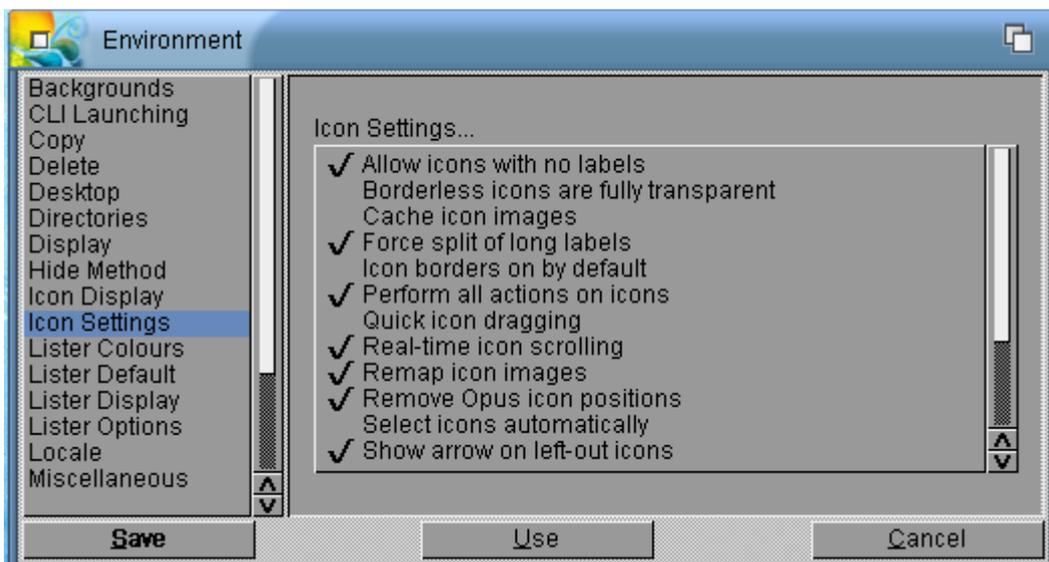
Icon Display panel allows to change the way Magellan renders icons on the screen. But most options are disabled in RTG modes, so we will be able just to change foreground and background colors for labels on desktop and in windows.



Notice the Mode: option. It allows to change style in order to create better contrast.

4.4.9 Icon Settings

Everything has to do with icon handling can be set in this panel. For a complete explanation of every single option, please read Dopus 5 documentation. We will just explain why we have set some options and skipped others.

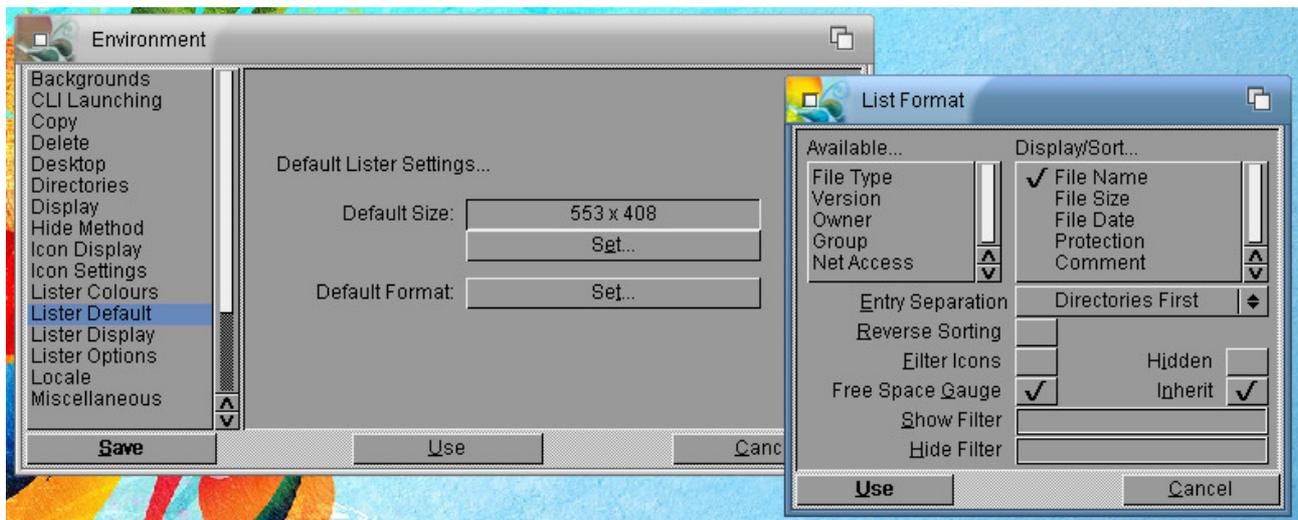


Allow icons with no labels is a compatibility option which allows some (broken) icons being displayed correctly. We set it on to avoid rare, but still possible problems. **Cache icon images** improved speed on original Commodore machines but it's not really useful in a world were fast hard drives and SSD units are the norm. We set it off also to force Magellan reloading icons after a change. You may activate it to improve speed, but be aware of the fact that, sometimes, directory contents shown in icon/action listers might not be refreshed correctly (for instance: you have changed a .info file, and Dopus still shows the old one). **Force split of long labels** tells Dopus 5 to write long labels on more lines: we did the same for

Wanderer, we are doing this here too for coherence. **Icon borders on by default** has been disabled, because turning it on would “buttonize” icons, placing a square border around them. **Perform all actions on icons** extends to icon files every action done on their parent file: copy “pippo.mod” from lister A to B, and also “pippo.mod.info” will be copied as well. Rename “Pluto.doc” to “Jupiter.doc” and also “Pluto.doc.info” will be renamed to “Jupiter.doc.info”, and so on. Disable this option to manage .info files independently from their parent ones. **Quick icon dragging, Real-time icon scrolling and Remap icon images** have been set to off-on-on for image quality reasons: weird glitches may happen changing these settings. **Remove Opus icon positions** and **Use Workbench icon position** have been activated to prevent Dopus saving its own positions for icons: we’d prefer both Dopus 5 and Wanderer to share the same position information, just to keep some coherence when switching GUI. Invert these settings if you prefer, but maybe only when sure you wouldn’t go back to Wanderer too much often. **Select icons automatically** extends Perform all actions on icons: select a file, and its icon will be automatically selected as well. **Show arrow on left-out icons** places a little arrow on a corner of desktop aliases: it can be really useful when desktop folder is on, to clearly differentiate left-out icons from common files. **Split long icon labels** has not been set because it would cut in half too much names. We also decided to **Use custom drag routines** because we experienced graphic corruption with icons otherwise.

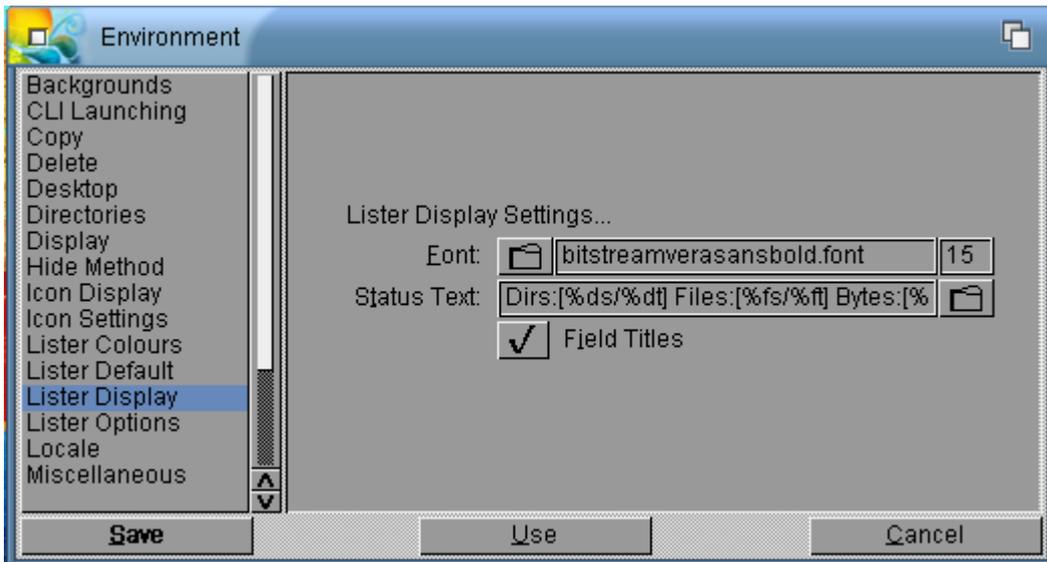
4.4.10 Lister Colour and Default

These two panels set colors for Magellan interface elements and lister default size & behavior. Select the **Lister Default** panel and click on the **Default Size** button to set default dimensions for new listers and not-snapshotted listers. You can then change window sizes individually and snapshot listers to make them behave differently. The **Default Format** button (see image below) allows to change icons, files and directories sorting inside listers, eventual filters and so on. By default, Icaros Desktop shows directories first and applies an increasing alphabetic order to file names. But if you prefer, for instance, to see files ordered by their date, you can tick **File Date** in the **Display/Sort** box and choose the right order (normal or reverse) with the **Reverse Sorting** option.



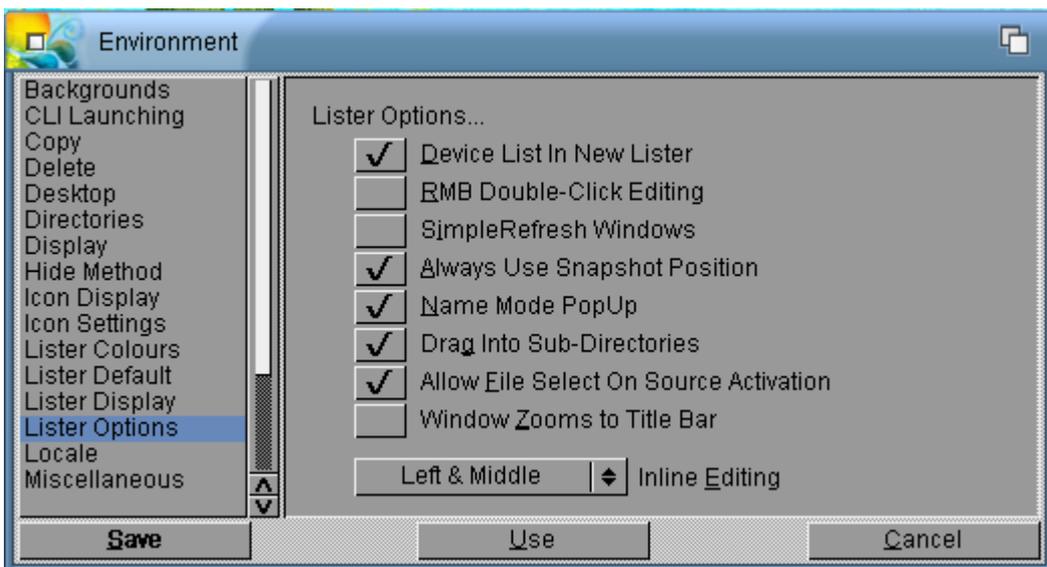
4.4.11 Lister Display

Lister Display allows to change font/size for listers and the status text on the lister toolbar. Click on the folder button on the right of the Status Text field to get %variables explained.



4.4.12 Lister Options

Some fine-grained options to decide how listers should behave. Please refer to Dopus 5 documentation for a deep explanation of every item. In Icaros Desktop we use these settings: **Device List in new listers** brings you to the device and assign list every time you open a new lister, by double clicking on the desktop with the left mouse button. The **SimpleRefresh Windows** option is unchecked because it is a good one speed-wise but it would reduce quality. **Always Use Snapshot Position** makes Magellan remember where and how listers were when you closed them, so you will find them there again (no need for manual snapshotting). The **Name Mode Popup** option enables right-click contextual menus on files in name mode listers: these popup menus are file-type specific and can be modified as we wish (see the file types section later). **Allow File Selection On Source Activation** leaves - in our opinion - more freedom to user: with this option turned on, you can easily click on a file and this will 1) select the file and 2) turn the containing lister into the source (SRCE) one. This will, apply, obviously, only when applicable: you need more than a single lister opened either in name or icon-action mode. **Windows Zoom To Title Bar** minimizes windows stretching them to their title bar, instead of iconizing them. Unluckily, this seems to be partially broken in AROS version of Dopus, so it's better to keep it turned off. You can activate it, but **you will use the minimize gadget both to shrink and expand the windows again to their original size**, because using the right bottom corner resize gadget will lead to a graphically empty window.



4.4.13 Locale and Miscellaneous

Locale panel sets date format and some other minor attributes. The Miscellaneous panel, however, is

much more interesting:

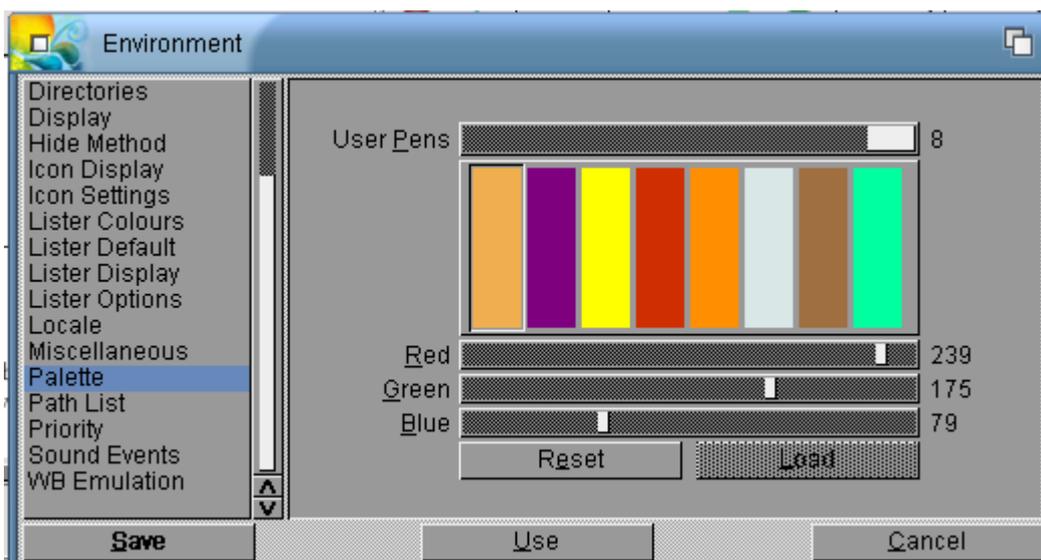


Mouse buttons over inactive banks, as the name suggests, lets the user click on tools belonging to a inactive window. For instance, you can click on a button bar even without activating it before. Unluckily, this is currently half true: even with this option is enabled, clicking on a button on a different lister than the active one can produce no results. You may see this behavior with the actions bar (see later), when you might need to click more times to have a command performed. **Filetype Sniffer** is a cozy utility which lets you create a file-type association with (relative) ease. The **Thin Gadget Borders** option is a must on RTG screens like AROS ones while the other options should be self-explanatory. Just an advise: the time interval in **Popup Delay** is measured in 50th of seconds, so the default 4 value means 2 tenth of a second. The **Custom Screen Title...** field allows to change default top bar caption when Dopus windows or screen is selected. For a complete list of %variables please see the document "DOpus582.pdf" included in Icaros user manuals, page 50 (of the document, so actually page 57 of 124 on ArosPDF), or use the inline-help provided by the folder-icon button at the left of the input field. Default string for Icaros Desktop is:

Icaros Desktop | Free Memory %fcS (%fm%%%) | CPU %pu%% | %ta tasks

4.4.14 Palette

This panel allows to choose how many custom user pens to define (with a maximum of 8) and what color set for each one. They will be added to system ones. Magellan interface colors can use only the sum of these.

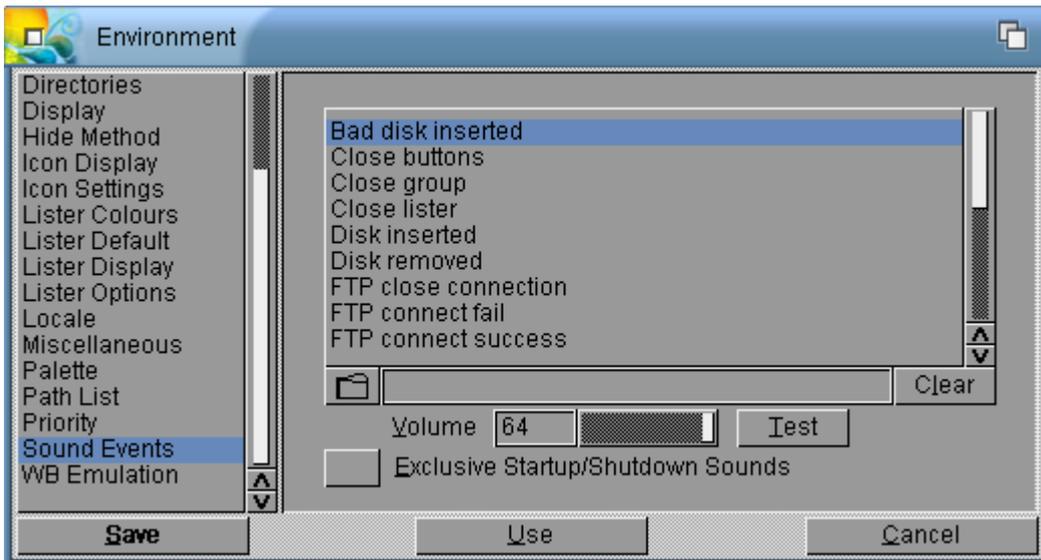


4.4.15 Path List and Priority

The Path List panel was meant to set PATHS internally in Magellan to fix some issues that could happen with AmigaOS, and is completely useless in Icaros Desktop, so we will skip it. The Priority panel, instead, allows to change priority for tasks in Magellan. If you don't know what you're doing, please just keep them all set to 0.

4.4.16 Sound events

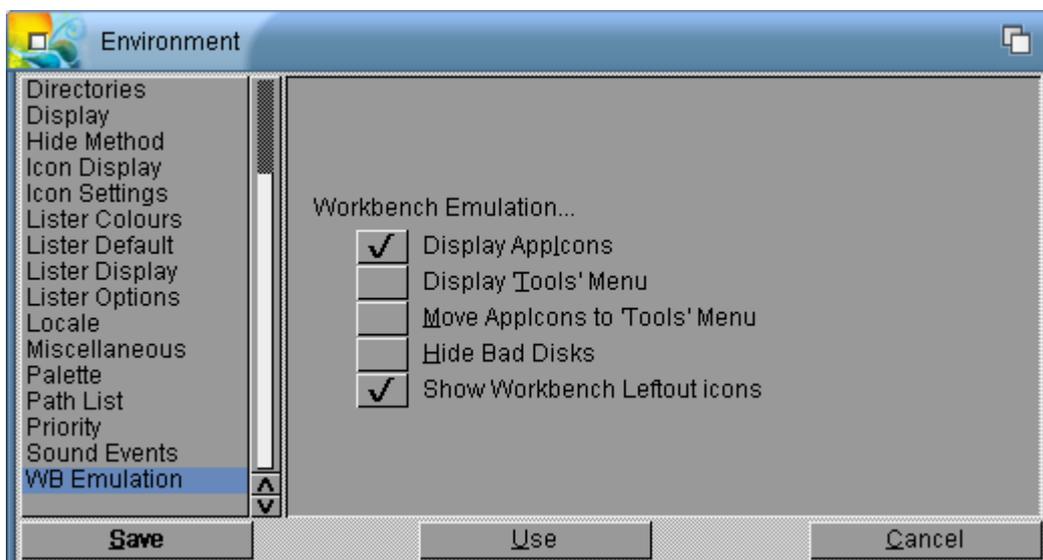
This is probably one of the funniest options in Magellan, since it allows to set a specific sound for practically every system/GUI event.



Supported sound format is AIFF. So you'll need sounds in this format, or a utility to convert them from other, more contemporary ones. We kept this option 'as is' because we feel that everyone has his/her own opinion about computers making funny sounds every minute, so the best thing we could do had been not setting sounds at all. Please notice the options for startup and shutdown sound, which are handled independently from the "Boot Sound" in Prefs/Icaros Settings: to avoid cacophony, please remember to disable sound in Icaros Settings when enabling jingles in Magellan.

4.4.17 WB Emulation

Last but not least, the WB Emulation panel decides how Magellan should replicate Wanderer functions.



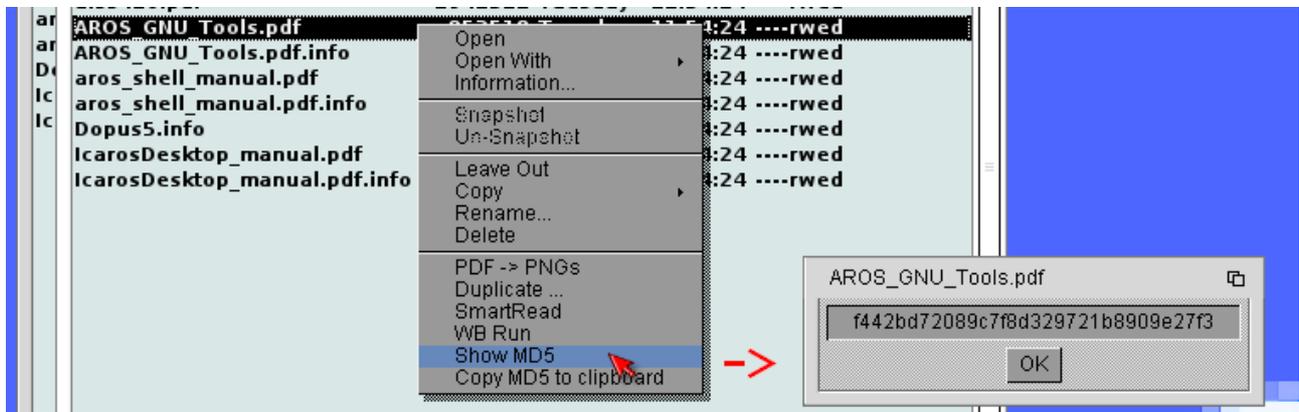
The **Display Applcons** option allows Magellan to show minimized applications in form of a little icon. Please **do not** enable **Display 'Tools' Menu** and **Move Applcons to 'Tools' Menu**, because these options are currently not supported by AROS, so they will end up in hiding minimized application windows forever (unless you find a way to do this externally, with either a popup key combination or a tool like WiMP). **Show Workbench Leftout icons** lets Magellan show screen aliases set by Wanderer (and happily stored in .backdrop files).

4.5 Icaros-defined file actions

Icaros Desktop comes with some interesting pre-defined special actions for files and directories. Here are some examples. Magellan allows to create special actions based on file types, but this is already explained by Dopus 5 user manuals, included among the Icaros ones in Storage/User Manuals. **File actions are available only in names and icon-action lister views.**

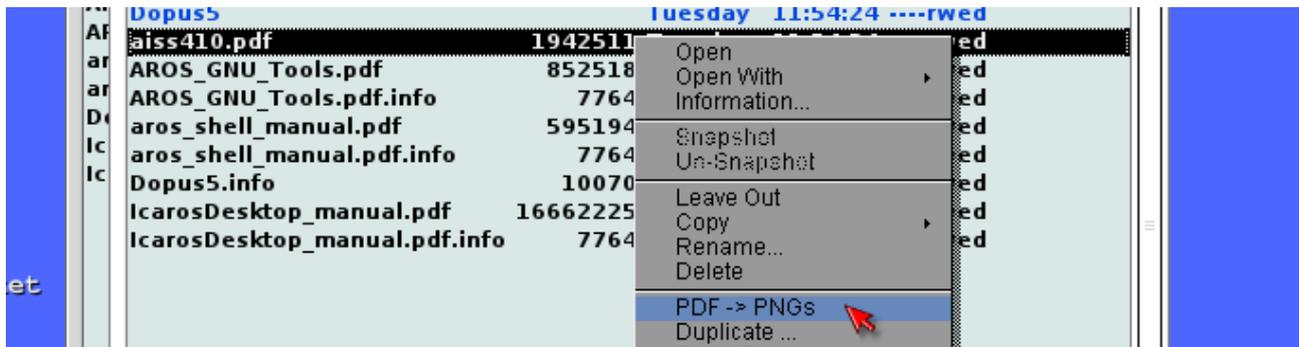
4.5.1 Calculate MD5 signature of any file

Icaros can calculate, show and copy to clipboard the MD5 signature of any selected file.

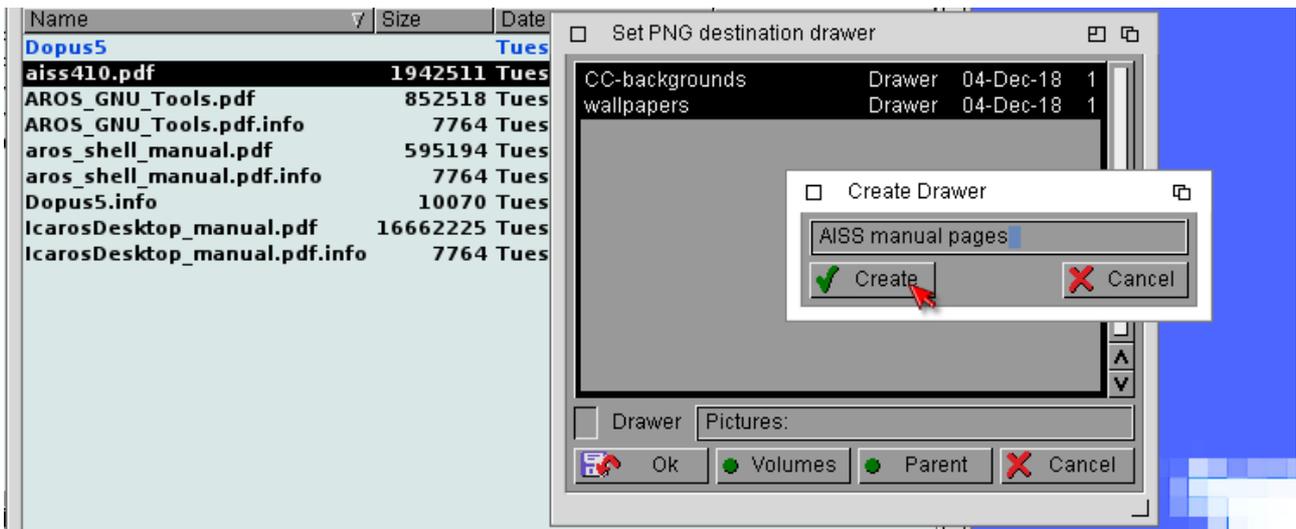


4.5.2 Transform any PDF into a series of PNG images

If you select a PDF file, you can render its page into a series of images. This was the way Icaros Desktop showed PDF files in its early days: that old code has been reprised and placed into this option.

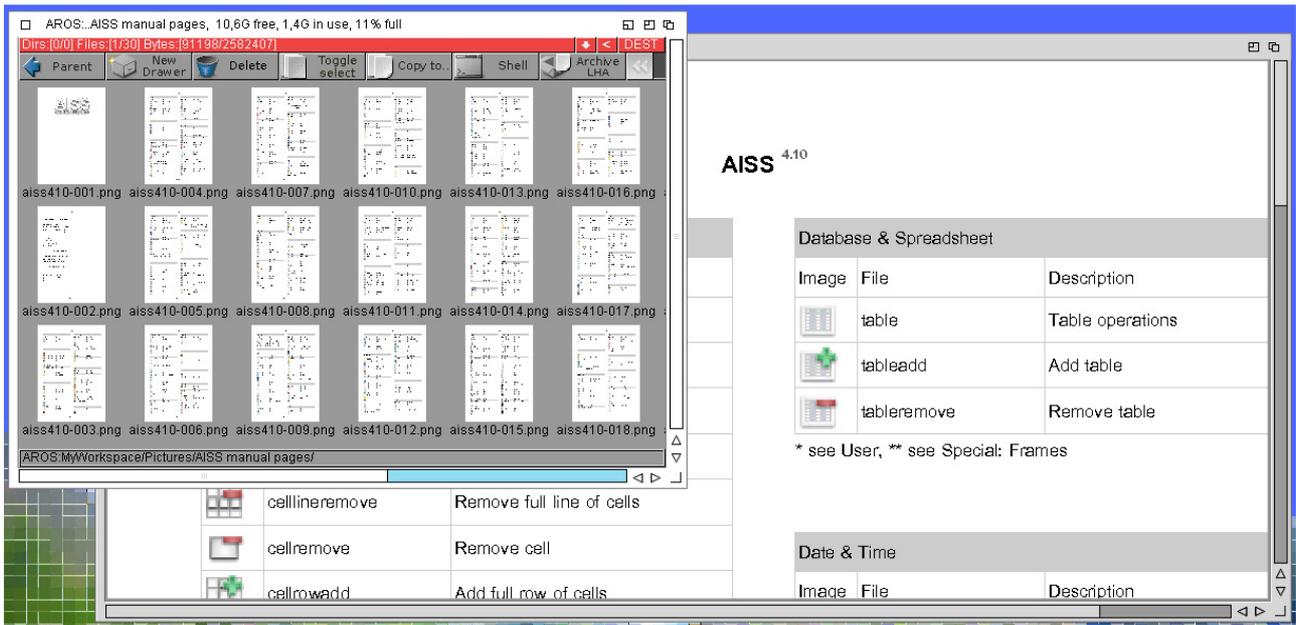


You need to specify a destination folder. If the destination folder does not exist, you can create it on the fly using file requesters' right-click menus.



Warning
 The convert operation may require time. Default setting for rendering is 24bpp, 150 dots per inch with antialiasing. These settings ensure a good image quality both for video and printing.

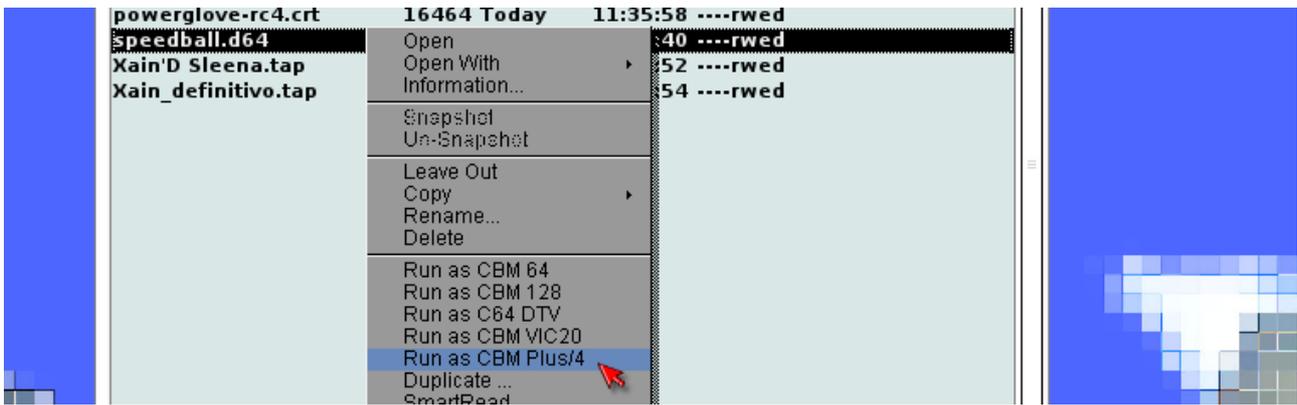
Default file name for images will be <name of pdf document>-<page number>.png. Once the images file are created, you can add an icon using the Create Thumbs option in lister tools.



4.5.3 Run Commodore disks and tapes using different VICE emulators

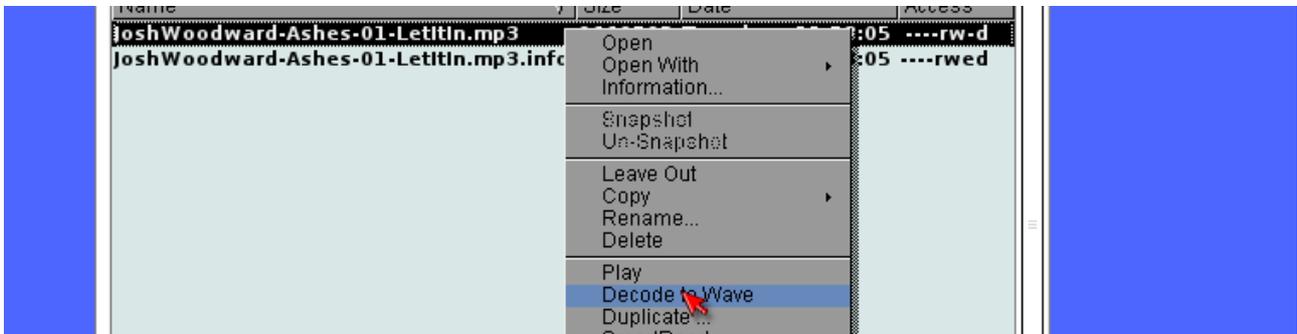
.D64 and .T64 are common formats for disk and tape images, grabbed from real disks and cassettes intended to run on 8-bit Commodore computers. Icaros can attach them to a VICE emulator of choice and start the emulation program for you, so you don't have to manually mount the image and give the LOAD command.

Note:
 You must have installed the emulators package in Extras during Icaros installation, which is selected by default on Icaros Desktop Live!. Emulators are not available on the Light edition. If you didn't install emulators, this option will silently fail.

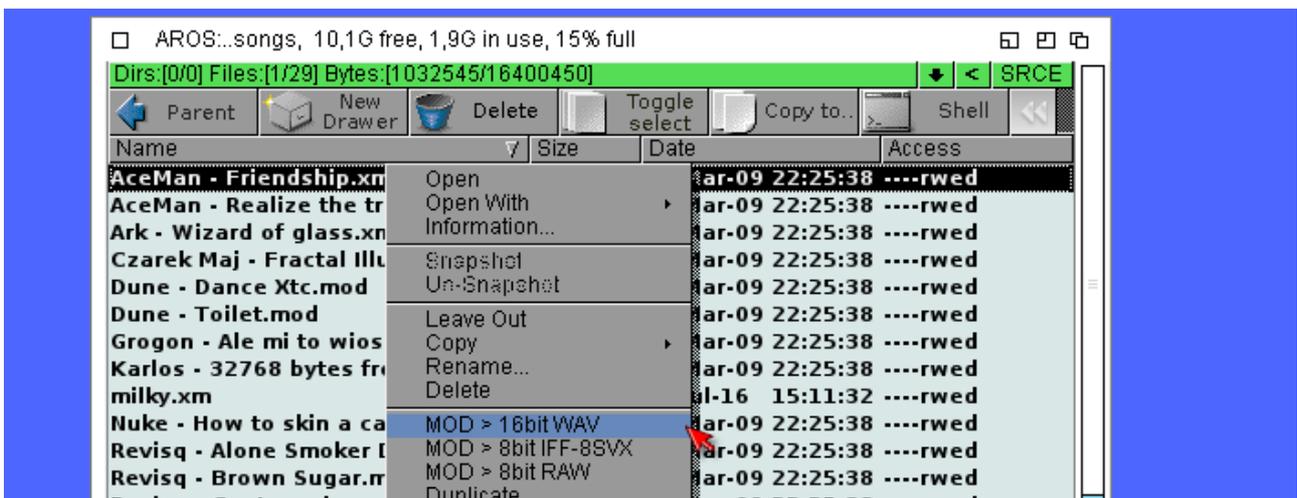


4.5.4 Convert audio from MOD, XM, MP3 etc. to WAVE (and vice-versa)

You can select a MP3 file (like Josh Woodward’s one included in Music:) and select “Decode to wave” to obtain a PCM Wave file you may transform, if you wish, in an audio CD track or something else.

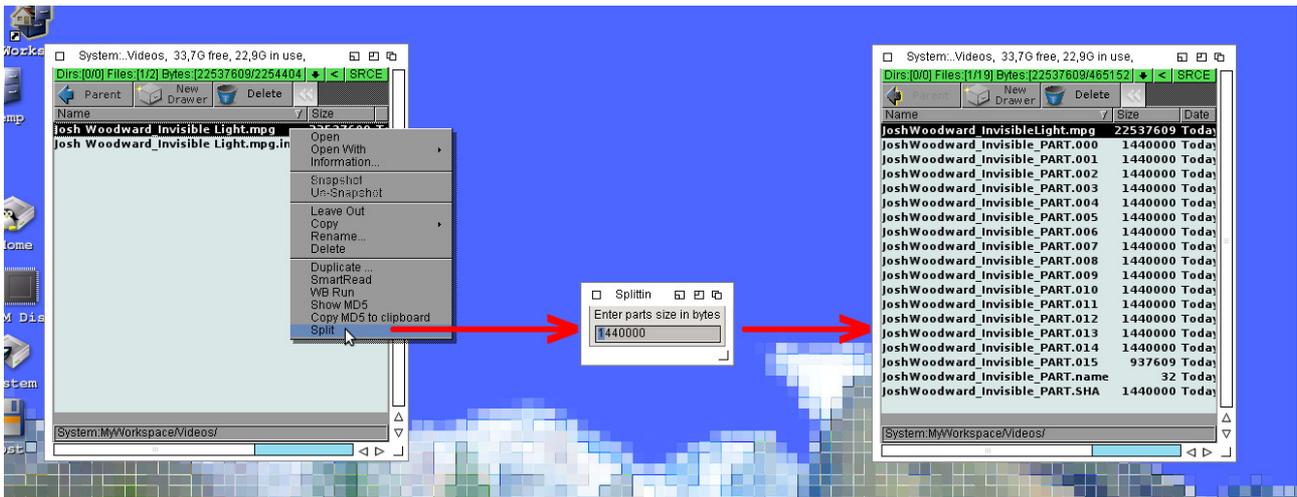


Wave files can be converted again into MP3 files with the “Convert to MP3” option. This is also true for several MOD files, which may be rendered into WAVE files (and other different formats), and then into MP3.

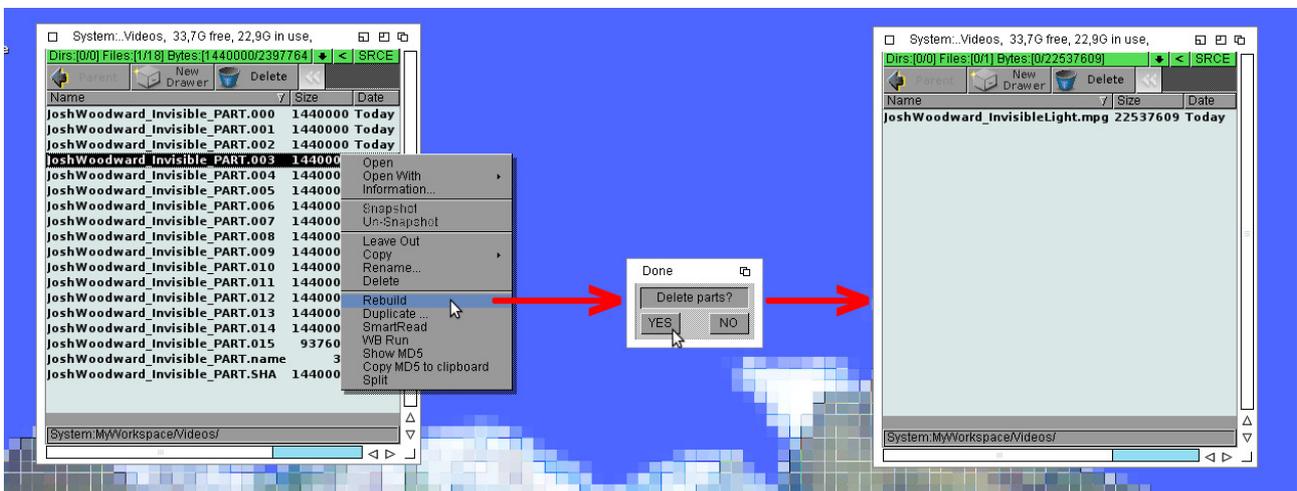


4.5.5 Split large files into pieces and rebuild them

Icaros Desktop allows to break files into smaller pieces. Default size of a ‘part’ is 1,440K (approximately the one of a 2HD PC floppy). You just need to right click on a large file and select the ‘split’ option, then enter the desired part size in byte:



In the above example, we've split the file "Josh Woodward_Invisible Light.mpg" into 16 floppy disks. The original file is kept. You can perform the opposite operation by selecting a part (any of them), right click on it and choose the 'Rebuild' option



When done, Icaros will require if parts should be kept or deleted.

Warning!

Icaros Desktop uses a cli command called **sploiner** to perform split and build operations, which also creates a CRC-like shadow part that allows reconstruction of a missing piece.

Modern files can be really big (2 or more GBs) and you might like to split them into more affordable sizes (for instance, 700 MB). Please remember you're dealing with an Amiga-derived OS, so there might be filesystem and memory related issues during this operation.

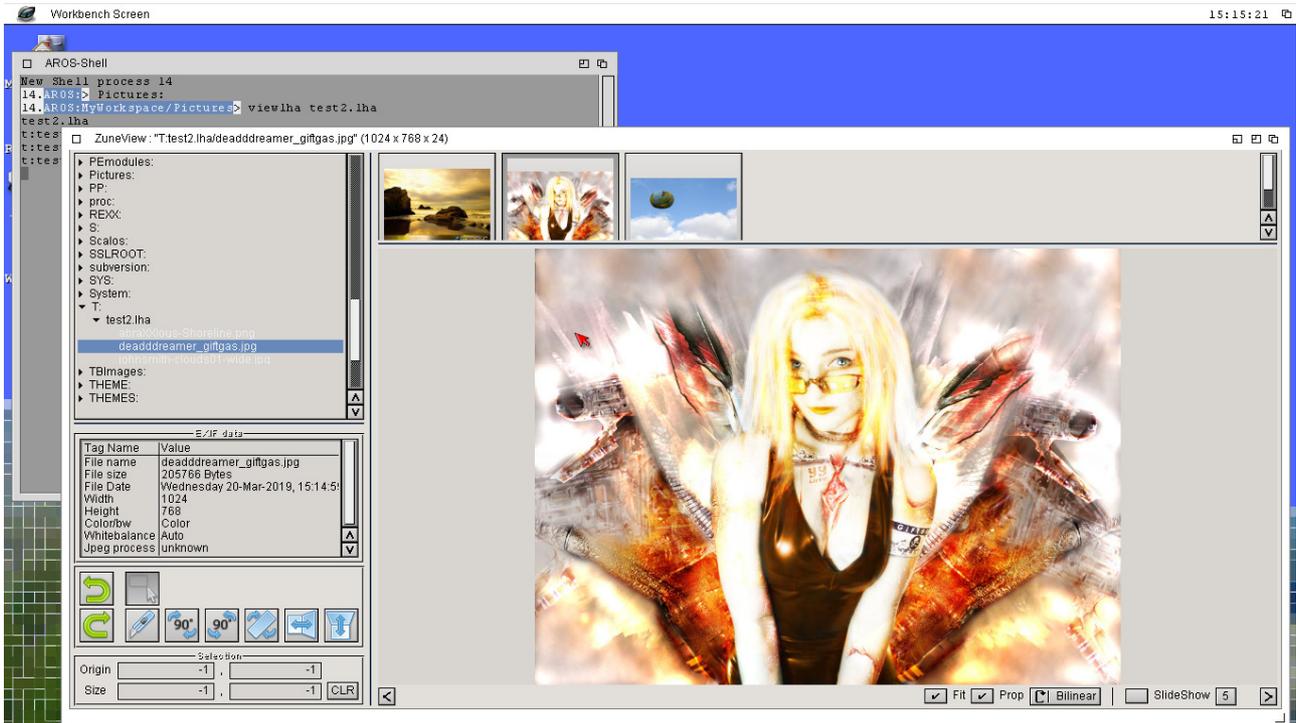
Also avoid splitting a part file into several smaller parts: even if theoretically possible, you may incur in the risk of overwriting parts with same filenames, which would basically make the original large file impossible to reconstruct.

4.5.6 Browse images included in LHA archives

LZH based archives are quite common in Amigaland, so you may find many images collections stored into LHA archives. Starting with Icaros 2.2.7, LHA files can be browsed for images. To perform this operation, Icaros Desktop uses an (already) old version of Mats Peterson's **ViewLHA**, built for AROS and adapted for this distribution. You can either open a shell window and enter the command:

Lhview <filename.lha>

Or you can right click on a LHA archive in Magellan and select the option Browse for Images. Please notice this option will appear with LHA (and Lzh) files only.



Other actions

There are several more actions defined for many file types. For instance, drawers can be turned into TAR archives and/or browsed by ZuneView to access images. ISO and ADF files can be mounted as virtual volumes or disconnected, ASCII texts can be voice-read, etc. At every release, Icaros adds some new functions in this area.

5. Icaros and other computers on the local network

5.1 Sharing files over the local network...

In order to activate file sharing with the host operating system (Icaros Desktop) and/or the other computers among the network (Icaros Desktop Live!) you need AROS networking manually configured, with a fixed or automatic IP address and a supported network card. Please read chapter 4.4 for details.

5.1.1 ...using YAFS FTP server

Once the network has been setup, a thin file server called YAFS will be launched at startup, when booting AROS, and will allow access to your MyWorkspace directory. You only need to configure a FTP client on any other computer connected to the network (or the host operating system for VMware users) and you're done. Please use these parameters:

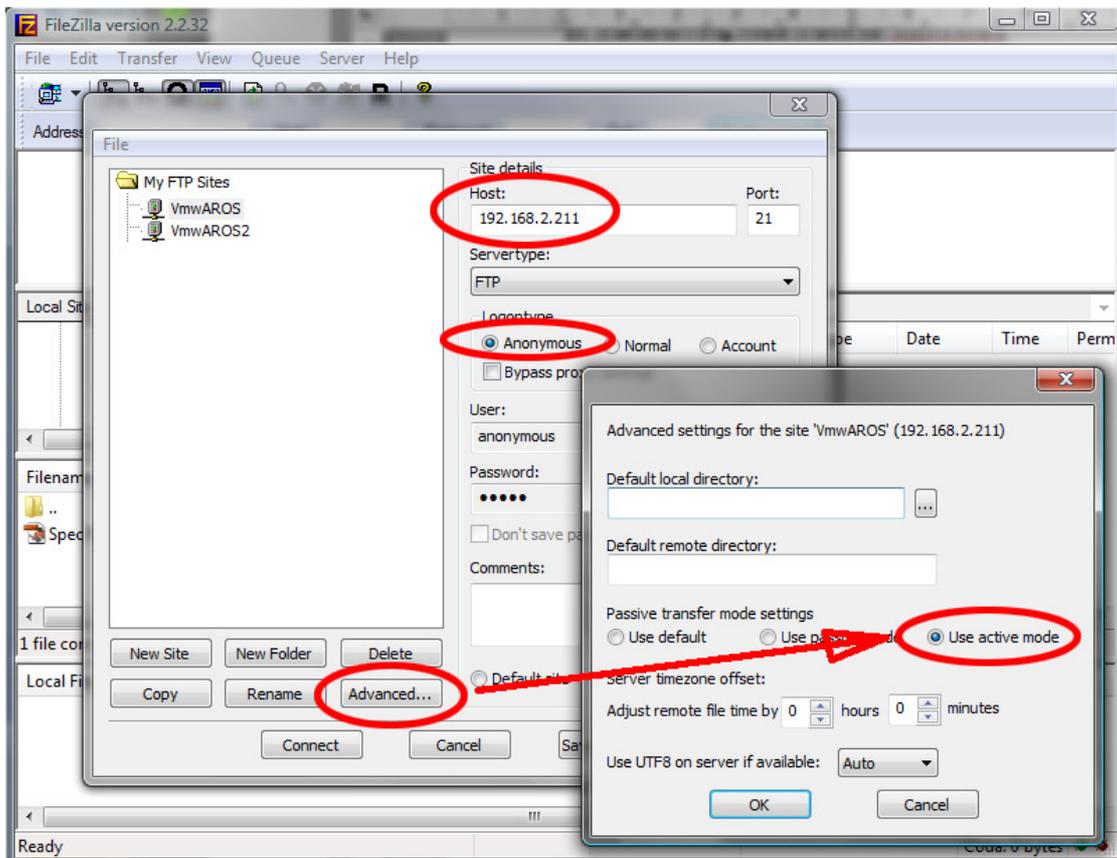
FTP site: *your AROS machine IP address*

Login: anonymous

Password: *write anything here*

FTP type: active

Please notice the last parameter. It's important you set the FTP site as active, or you won't be able to access your AROS machine. Most sites and ftp client use default passive mode. Here's an example configuration of FileZilla:



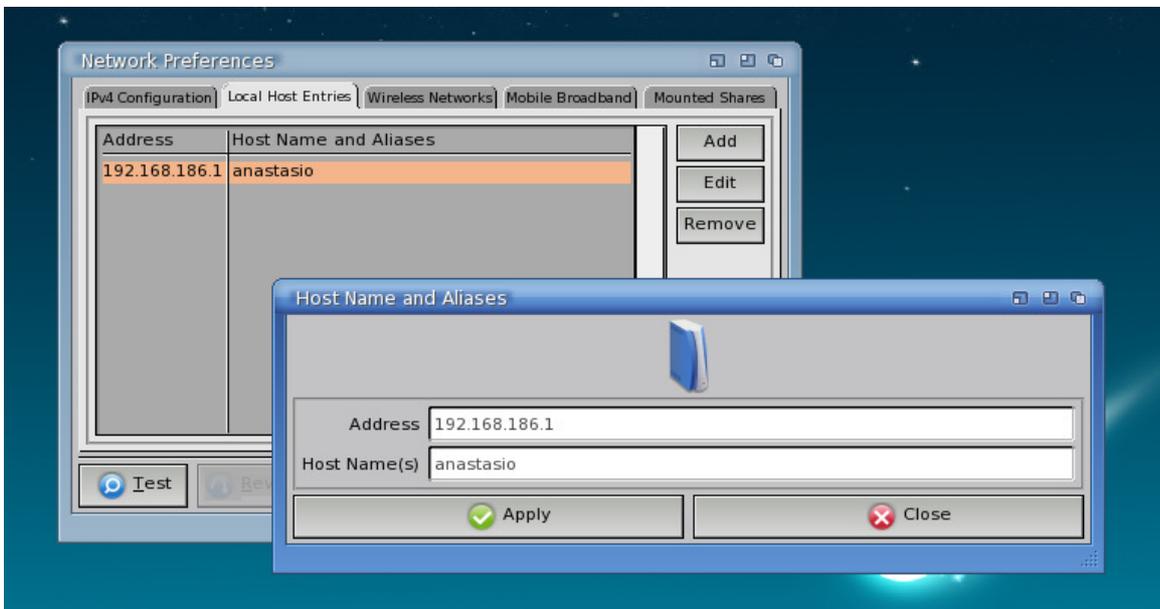
5.1.2 ...sharing folders with Windows

Another feature of Icaros Desktop is support to Windows SMB shares (or 'shared folders' as you like). To enable Windows shares, you must know some details of the machines in the local network:

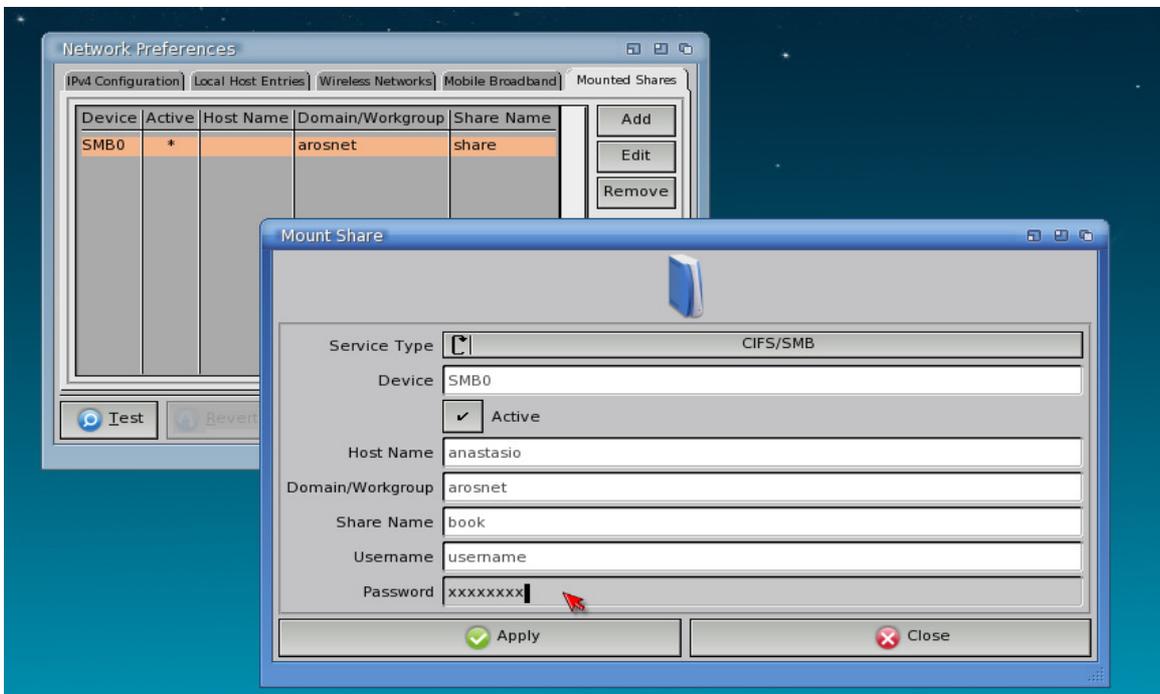
- IP address of the Windows host (get it using `ipconfig /all` command in a Windows shell)
- hostname of the Windows PC (right click on computer icon, Properties)
- share name(s) of the folder(s) you're sharing

Once you've got all these values, do the following steps on the AROS machine:

1. Open **Prefs/Network** and go to the **Local Host Entries** panel. Click on **Add**. Enter the **IP address** and the **Windows host name** in the right fields.



2. Do not click on **USE** or **SAVE** for now. Move on the **Mounted Shares** panel instead and click on **ADD**.

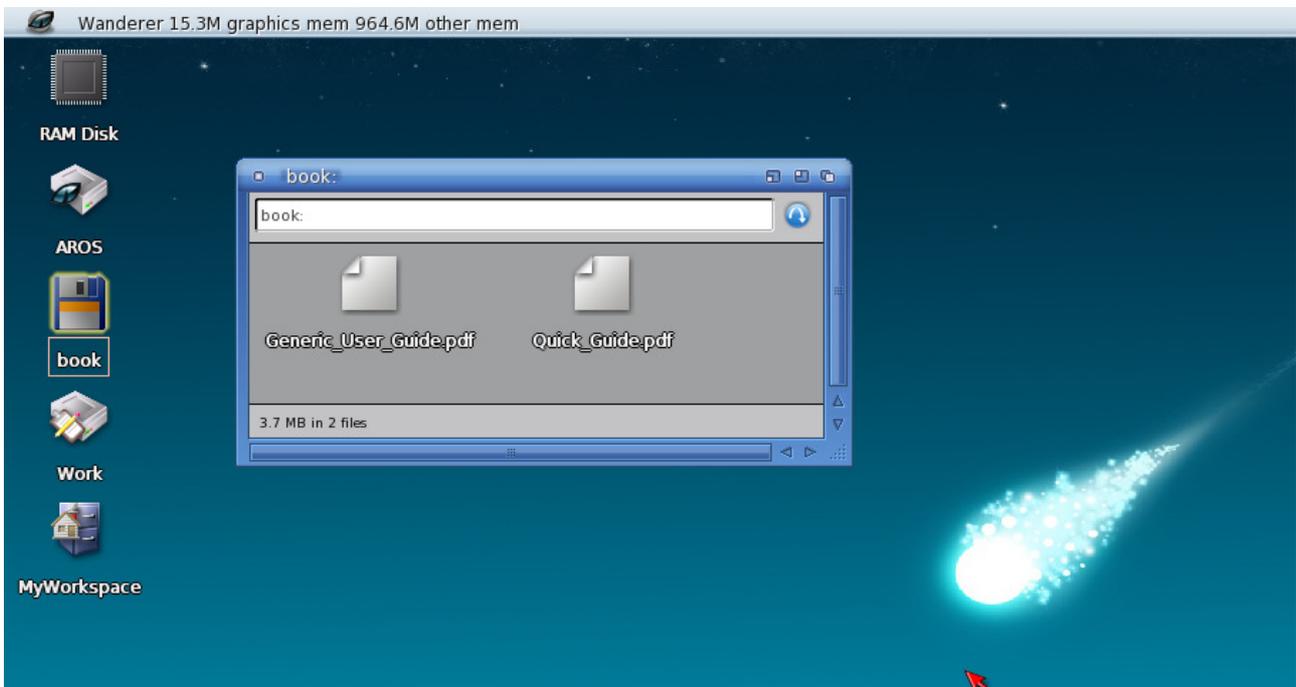


A new **SMBO** device will appear in the first column. Enter Windows **host name** (the same you've entered before), the windows **share name**, the **user name** and **password** for your account on the Windows machine. For now, you can leave the **Domain/Workgroup** value to the default 'arosnet' even if your Windows' workgroup is the default one ("WORKGROUP"). Click on **Apply**.

3. Save your network preferences. AROS will probably tell you it can't change network settings and ask for

a reboot. Reboot the machine.

4. At the next boot, your Windows share will appear with the default icon of a floppy disk. You can move files from the Windows host to the AROS one and vice-versa, if your user has write access to the share (look at Windows manuals to learn how to correctly manage shares).



To disable the share, open **Prefs/Network** again, go to the **Mounted shares** panel, select the offending share service and click on **Remove**. Reboot the machine.

Booting slowly?

Wrong settings for Windows shares can make boot times loooooooonger. If you get noticeable slowdowns booting Icaros when Windows shares are active, you can disable them cleaning the Active checkmark for the offending share service. This typically happens when a DHCP server manages the IP addresses of the local network, and Windows machines use dynamic IP settings for the local network. AROS can't manage them dynamically as well, so if you plan to use Windows shares on Icaros every day, consider switching *stable* machines to fixed IP settings.

Problems with SMB?

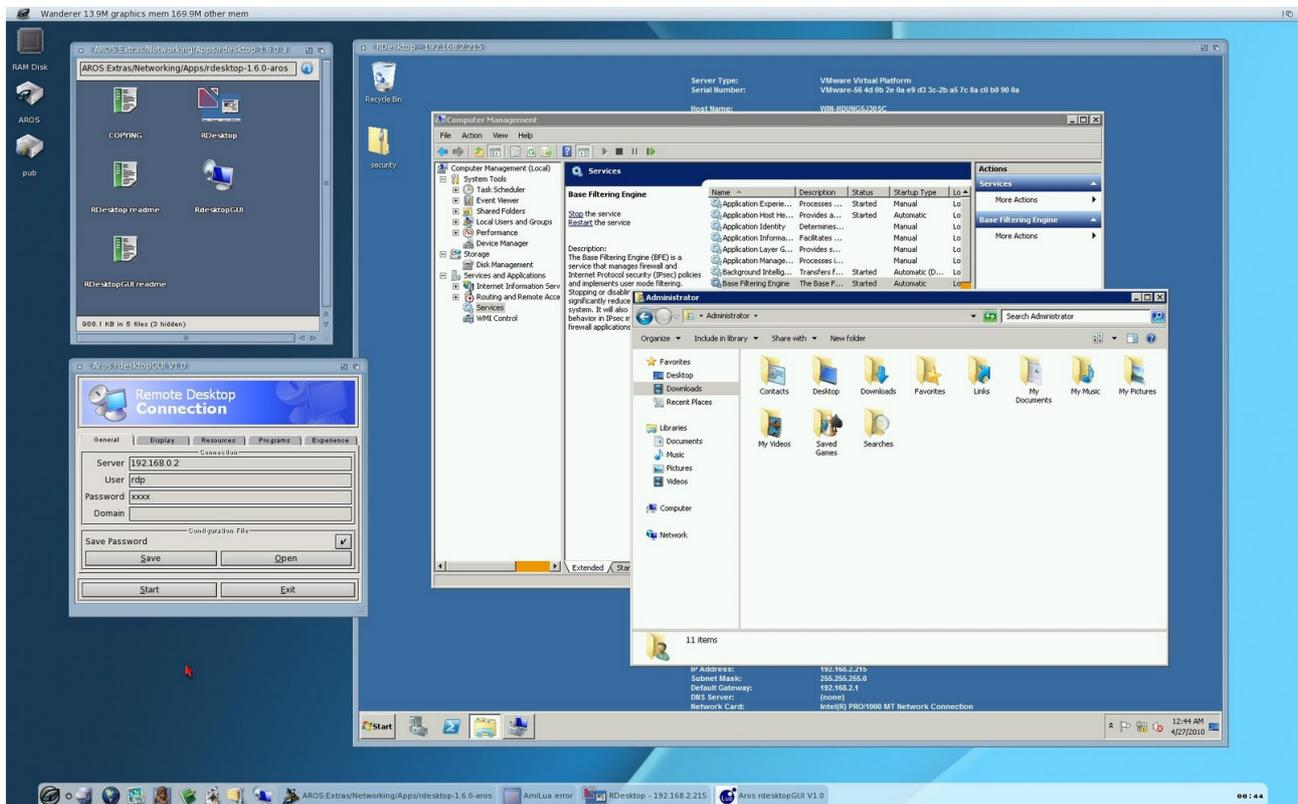
Current release of smb-handler supports Windows 7 and later release of the SMB protocol. It may not work correctly, though, with Windows XP based computers (and older releases of Windows), and also with some embedded systems or Linux based routers. In this case, you may try removing smb-handler from the L drawer and replace it with the one included in Storage/L.

What is my address?

In order to show your current IP address, you need to use the `ifconfig -a` command. Either press `rAros+W` or `rAros+E` and enter `ifconfig -a`. If you're using Magellan, you can get the same information from the **Icaros** menu. Just right click on the desktop and choose **Icaros -> IP Address**. Look at the last line, after *inet*: this is your current IP address. If you don't see any **eth0**: entry, or a 0.0.0.0 address, it means your network is not completely up and running. If you don't see any **eth0**: entry, it means your network is not completely up and running.

5.2 Manage remote computers using rDesktop and ArosVNC

Icaros Desktop provides two ways to manage other computers over a network. Windows PCs can be remotely controlled using AROS' **rDesktop** client, while hosts using other operating system can be controlled using the **ArosVNC** client. **Windows machines must have Remote Control enabled, and other operating systems a VNC server running, adequately configured on the host.** Please refer to Windows, Linux and MacOS X documentation to learn how to meet these requisites. You also need to know the current IP address of the machine you'd like to control.



5.3 Control your Icaros PC using another computer over the network

Icaros Desktop now provides a VNC server that can run on the background, enabling remote administration of your workbench over the local area network. VNC server can start automatically and can be enabled using the **Services** script in the **Prefs** drawer.

You need a VNC client running to reach Icaros' desktop. Please notice that not everything can be remotely displayed. You can't run MESA applications over the network, for instance, and in order to gain decent speeds over the internet it might be necessary to reduce video quality to the minimum available.

You can telnet to your Icaros Desktop machine

Starting with version 2.2.2, Icaros Desktop includes a simple remote login daemon which can be started from a shell. Just launch a CLI and enter this command:

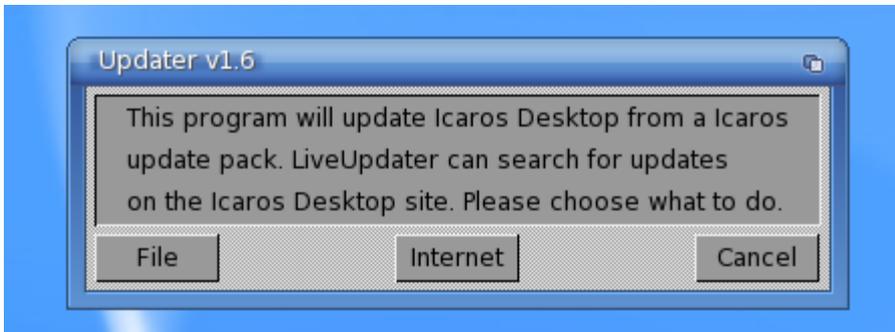
```
remote_aros_shell [local_ip] [port] [password]
```

Use a telnet client and open a connection using the same ip address, port and password to access an AROS CLI running from the Icaros machine.

6. Keeping Icaros Desktop updated

(Icaros Desktop must be already installed on HD)

You can update your Icaros Desktop installation with update packs and patches. When you're ready, launch **LiveUpdater** from the **Icaros Desktop > My Software > System** menu of AmiStart (or in the *Tools/LUPD* drawer of Icaros Desktop system partition).



LiveUpdater window will appear. Choose your source for new files or press **Cancel** to abort. Be aware that your existing AROS files will be overwritten. So, if you aren't sure, before updating make a backup of your important data or, if you're using a virtual machine, create a *snapshot* of your current state: it will help you reverting to the old situation if something goes wrong.

6.0.1 File

Download a Icaros Update file and place it wherever you like on your system, then choose this option and locate it with the following file requester. It will be installed and your Icaros version will change accordingly.

6.0.2 Internet

LiveUpdater can download the latest Icaros update pack, check for its compatibility and then update your files. You need ArosTCP running and a reliable Internet connection.

No more CD-ROMs?

Older updating system based on ISOs and burned CD-ROMs is now officially deprecated. From now on, only update packs and patches will be compatible with LiveUpdater. This decision has been taken to prevent wrong installations by users. Nightly Builds are not compatible anymore, because many applications and files have been moved from their original locations to - in our opinion - better places. Installing file for a nightly over a Icaros installation would duplicate files and make the system behave unpredictably.

7. Running Amiga™ software inside Icaros Desktop

Icaros Desktop allows Amiga users to keep their habits. Or, at least, it gives a fair support to old Amiga 68K applications using the **Janus-Uae emulator**. This technology is called **AmiBridge**, which consists of a series of scripts that allow integrating workbench applications in the AROS system, and also running games and demos straight from their ADF files.

7.1 Running Amiga games and demos under Icaros Desktop

Old Amiga games and coding demos are often available in ADF floppy-image files. Starting from Icaros Desktop 1.4, **AmiBridge** adds direct support for them without even requiring original Amiga ROMs: by default, the AROS KickStart replacement ROM will be used instead. You can also decide to integrate Amiga Forever as explained in the following chapters: in this case, the options to use original Amiga™ ROMs instead of AROS ones will be shown. You can add ADF files to **AmigaApps** menu either running the **ADD_ADF-GAME** script from AmiStart's **My Software > AmigaApps** menu, or by double clicking on the icon of an ADF file. Notice: differently from AmigaOS programs, ADF files may sit anywhere on the hard drive. To keep things clean, however, we warmly suggest you to place ADF files in *extras:AmiBridge/adf*, which has been created for this purpose from day one.

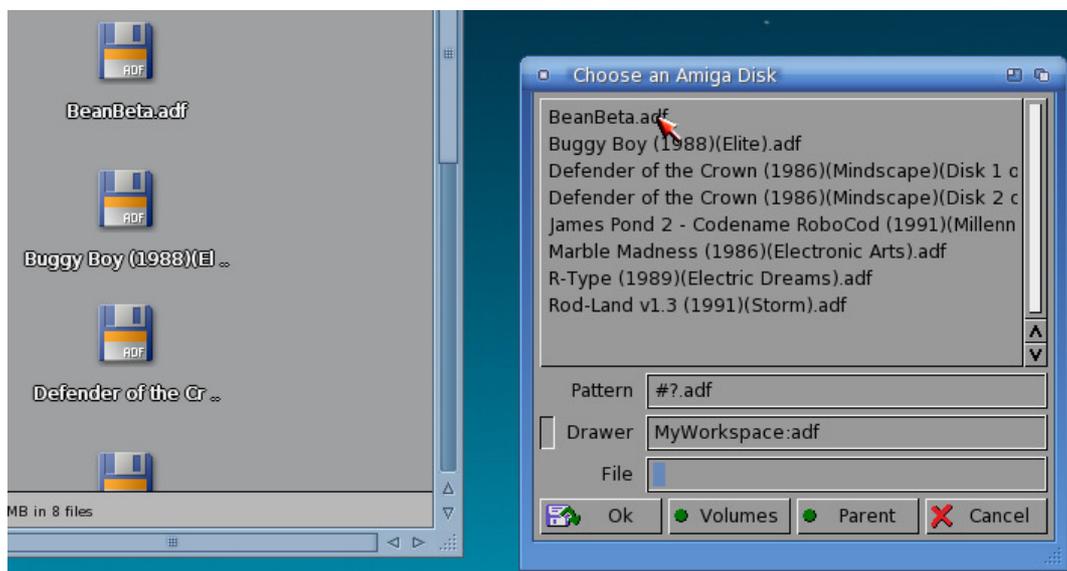
Every time you add a new ADF disk to AmiBridge, two files will be created in the *AmigaApps/Floppy* directory: a launch script, with a custom name you'll be prompted for, and a setting (.urc) one with the same name of the ADF file, but with the .urc extension added automatically. For instance, if you decide to add to AmiBridge the file "myamigadisk.adf", and you enter "my game" as game/demo name, at the end of the procedure you'll spot two new files in AmigaApps:

- "my game" → the launch script for E-UAE
- "myamigadisk.adf.urc" → the E-UAE configuration file for that ADF disk

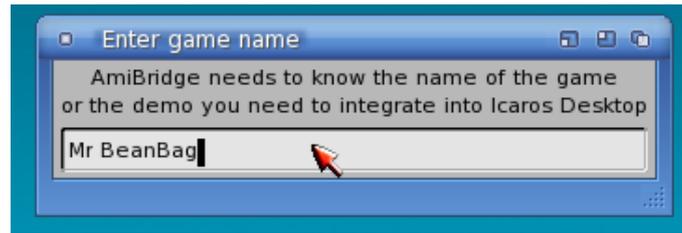
A different .urc file is used for every added ADF, so people can easily tweak emulator settings for that ADF file only.

7.1.1 Adding a single disk game/demo

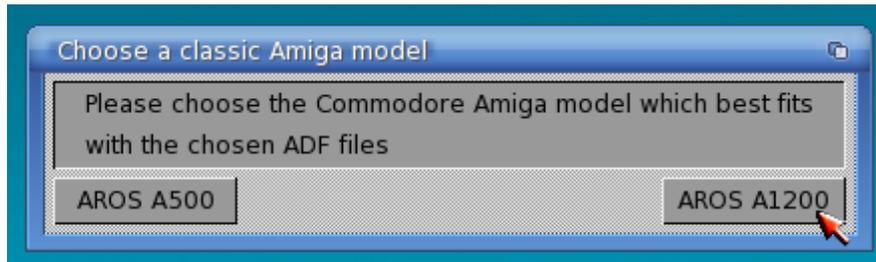
You can add ADF files to AmigaApps menu as well, either running the new **ADD_ADF-GAME** script from AmiStart's **My Software > AmigaApps** menu, or by double clicking on the icon of an ADF file. In the former case, a file requester will ask you to locate the ADF file. Let's add, for instance, Mr Beanbag, a funny platformer freshly released of classic AGA machines (A1200/A4000)...



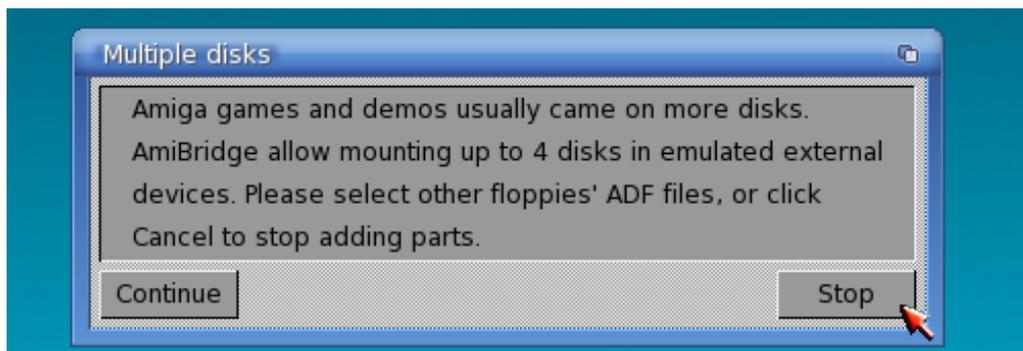
Choose the “beanbeta.adf” file. Enter the clean name of the game this way:



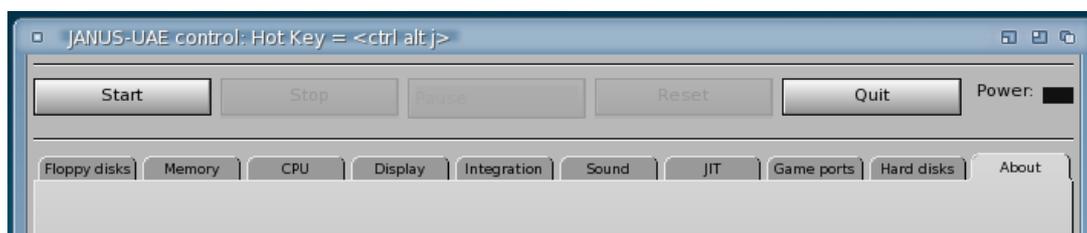
And now choose the right Amiga model to run it. Mr BeanBag runs best on an **Amiga 1200**. Since Icaros Desktop uses AROS KickStart ROMs instead of Amiga™ ones by default, old OCS/ECS machines are indicated by the **AROS A500** option, while AGA ones by **AROS A1200**. In this case, we must choose **AROS A1200**.



The next requester will warn you that many Amiga games and demos were distributed on more than a single floppy disk. Mr BeanBag, however, comes only on a single disk. For this reason, click on **STOP**.



Once you have done this, J-UAE will run. Just click on **START** to play the game:



You can fine tune the configuration of the emulated computer (for instance, to change audio or control settings, enable or disable full-screen and so on) using the options in various Janus-UAE GUI panels. Don't forget to click on Save to keep your changes permanent. If you need to turn back to the Janus GUI, the shortcut is **Ctrl+Alt+J**.

Lost in full screen?

When the full-screen option of Janus-UAE is active, you can switch back to Wanderer's screen using the **IAros+M** or **IAros+Tab** shortcuts, then you can press **Ctrl+Alt+J** to recall J-UAE GUI.

And now... enjoy your game!

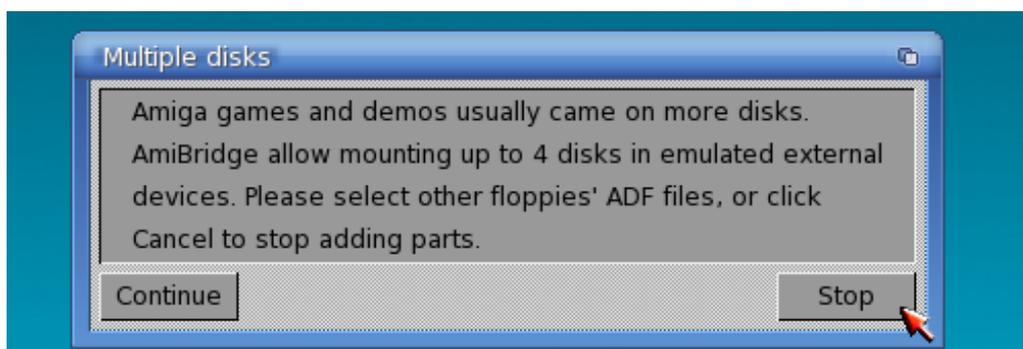


7.1.2 Adding a multiple disks game/demo

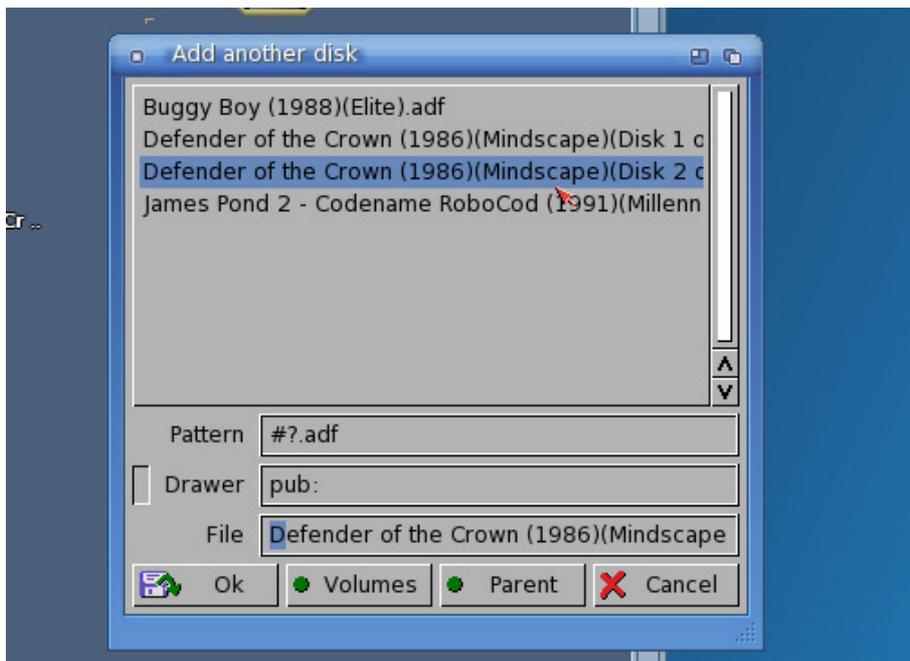
You can use multiple ADF files if necessary, just start adding a game using the **first disk** (as explained before), either running the new **ADD_ADF-GAME** script from AmiStart's **My Software > AmigaApps** menu, or by double clicking on the icon of the **first disk's** ADF file. For instance, if "Defender of the Crown" came on these two ADF files:

- "*Defender-of-the-crown_disk1of2.adf*"
- "*Defender-of-the-crown_disk2of2.adf*"

Please add the first one following the same steps you learned in chapter 7.5.1. However, this time, when looking at this requester:

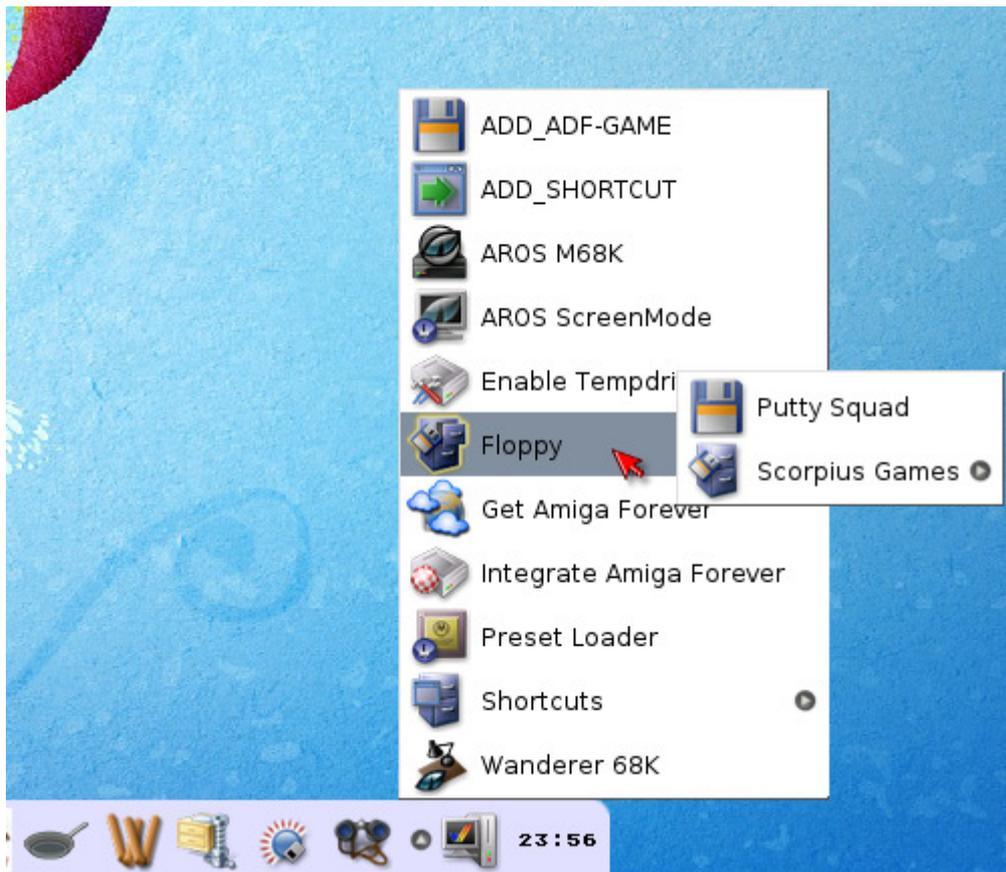


Click on **Continue** instead. You will be prompted for the second (third and fourth) drive until you click on Cancel. But for now, enter the second disk's ADF. Then press **Cancel** next time. **AmiBridge supports up to 4 disks**. Games coming on more than 4 disks should be installed somehow on a hard drive file to load. You may also use Janus-UAE GUI to switch disks.



7.1.3 Running imported games

Once you have “imported” a game or a demo with this procedure, you can easily start it with the icon that AmiBridge just added in the Floppy subdirectory, introduced with Icaros Desktop 2.0.

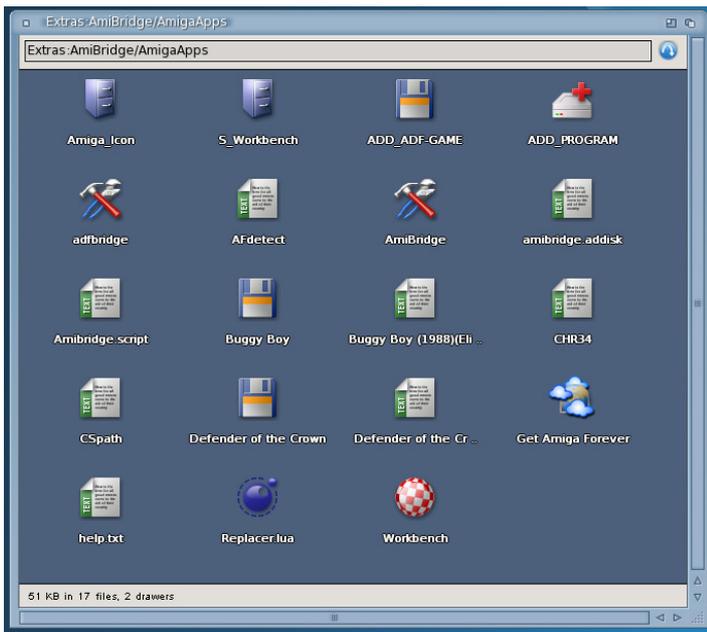


Icaros Desktop already provides some free Amiga games, including a real gem like Putty Squad.

7.1.4 Editing configuration files (default ones too!)

You can “fine tune” emulation settings for Janus-UAE editing every .urc file in the AmigaApps directory as

you wish. To access them, however, you should enable all file view using the Window menu of Wanderer. You may get a similar output:



Just double click on any .urc file (they all have the text icon) and they will be opened with Jano Editor.

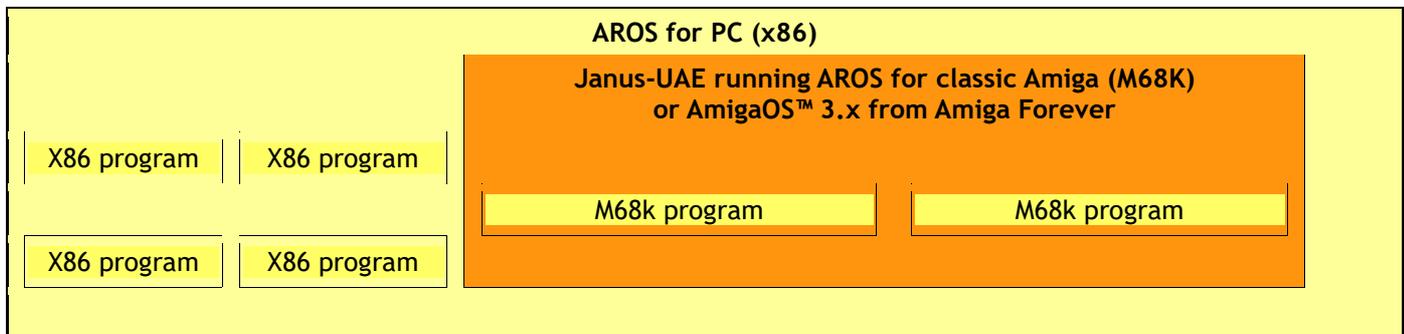
You can also use Janus-UAE GUI to do so. Just load the configuration file you need to edit, change the options as you wish, and save it again. Please refer to the Janus-UAE documentation in the *AmiBridge/emulator* directory to learn how to use UAE settings.

If you don't want to change every .urc file, and you'd like to add the same default personal setting to any new .urc file created, just open the *AmiBridge/emulator* directory and edit the **A500.urc**, **A500plus.urc** and **A1200.urc** files. But please create a backup copy of them before.

8. Running Workbench M68K applications

8.1 AmiBridge's M68K environment

Starting from version 1.4.4, the AmiBridge system had been extended to use the M68K port of AROS to run old AmigaOS applications. This way, Janus-UAE can run old software without the need of original Amiga™ boot ROM (KickStart) and operating system (AmigaOS 2.x or 3.x). Please notice AROS M68K is still under heavy development, so compatibility may not be perfect yet. But it's still improving over time.



AmiBridge aims to be as much transparent to the user as it can, hiding all the necessary technology to allow compatibility with old M68K software. Version 1.5 extended this concept further, creating a common environment for both AROS 68K and AmigaOS 3.X. Users of former versions of Icaros may have noticed differences between virtual drives mounted by the two systems, now they are exactly the same. AROS 68K and AmigaOS 3.X needed a completely different setup, now it's very similar, and so on. The new version of AmiBridge gives the user a far more comfortable way to run his/her classic Amiga™ applications on Icaros Desktop.

8.1.1 Filesystem

Both AROS 68K and AmigaOS 3.X (once integrated) will see these virtual drives:

AROS: → AROS M68K system files, located at host's sys:System/AmiBridge/AROS68K

Icaros: → the host system drive, readable and writable

Host RAM: → the host RAM: device, read only

MyWorkspace: → host's MyWorkspace

Work: → partition for Amiga software, located at host's extras:68K/Work

There are, also, some virtual devices mounted in form of ASSIGNS:

Downloads: → MyWorkspace subdirectory

Pictures: → MyWorkspace subdirectory

Videos: → MyWorkspace subdirectory

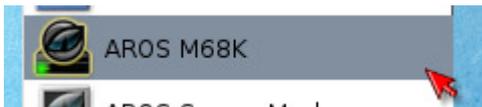
Documents: → MyWorkspace subdirectory

Please notice there are some little differences with the past. AmiBridge system files (emulator + AROS 68K) have been moved from Extras: to SYS:System, while 68K's Work partition has been relocated to Extras:68K. This is due to our newer drawer layout and allows people to avoid installation of Icaros' 68K programs if they do not want them at all. If you wish to take advantage of some great Amiga™ applications as well, be sure to install the 68K package with Icaros Desktop. While MyWorkspace will be seen as a simple Assign by host applications, guest ones will access it like a whole drive.

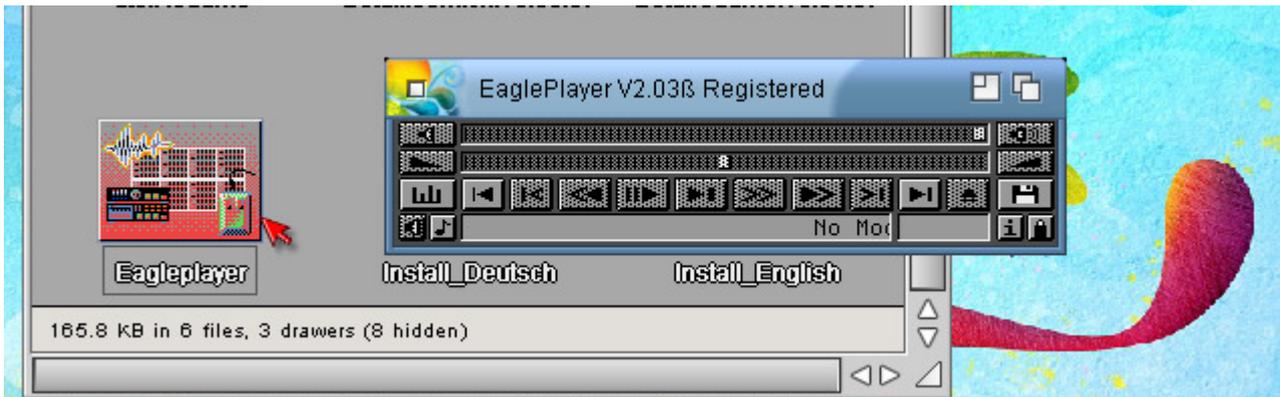
8.1.2 Running applications: required steps

So, in a nutshell, what should you do to run an old application? It's quite easy, once you understand what to do and why. Essentially, you have to:

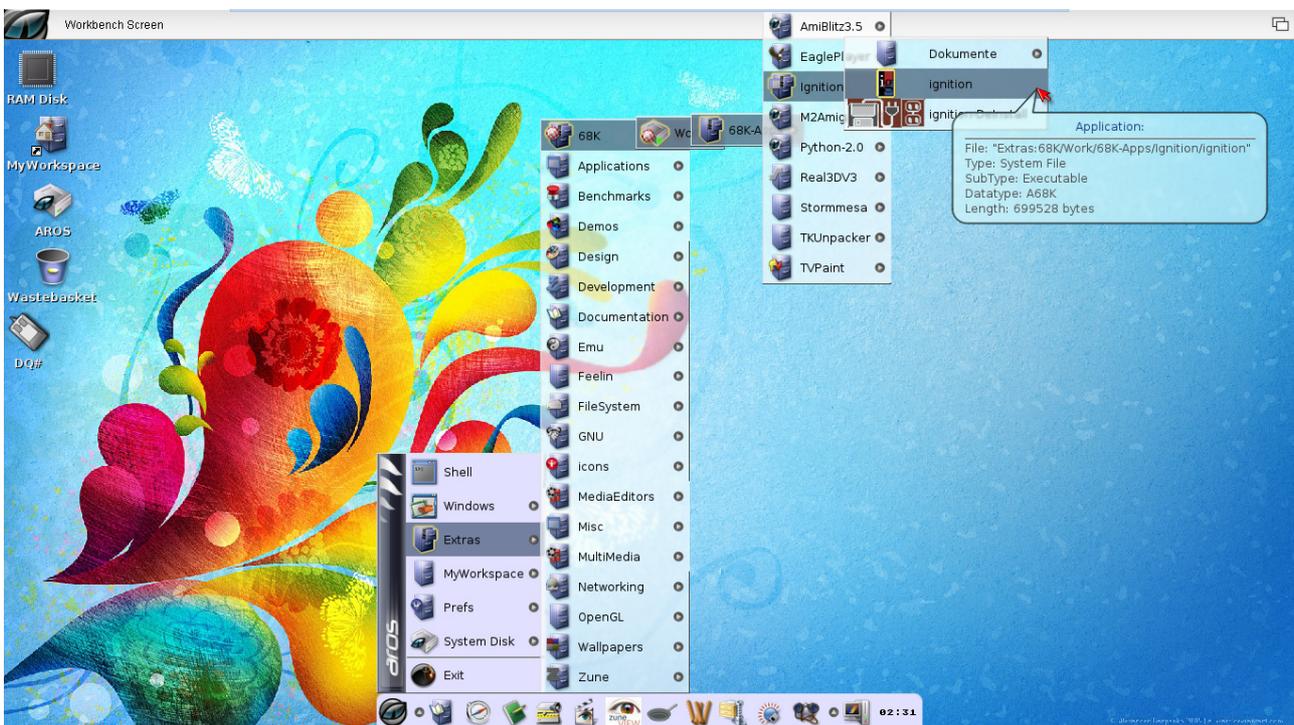
1) run the emulation environment, calling either the 'AROS M68K' script (whenever you want) or the 'Workbench' one (once you have integrated Amiga Forever)



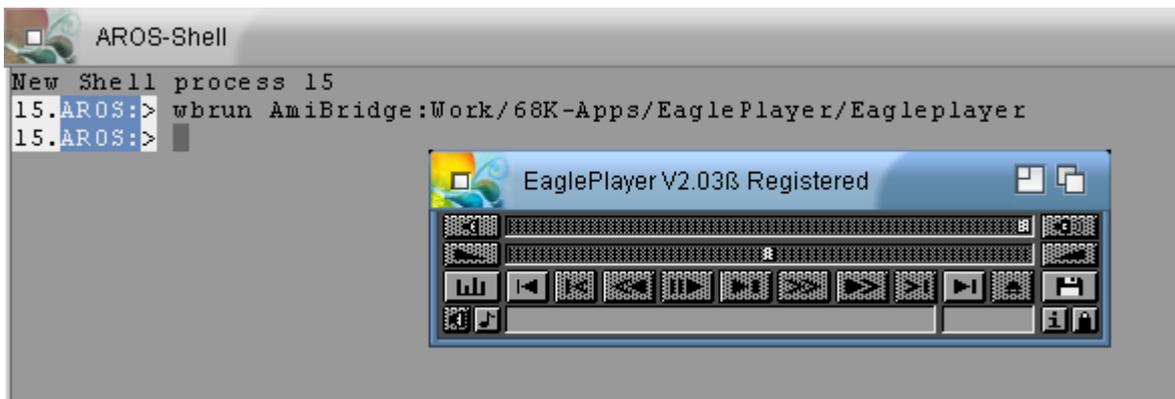
2) run an Amiga application, starting with either Wanderer, with AmiStart or with the wbrun command. With Magellan, you'll have to right click on the icon and select the Wbrun option in the contextual menu:



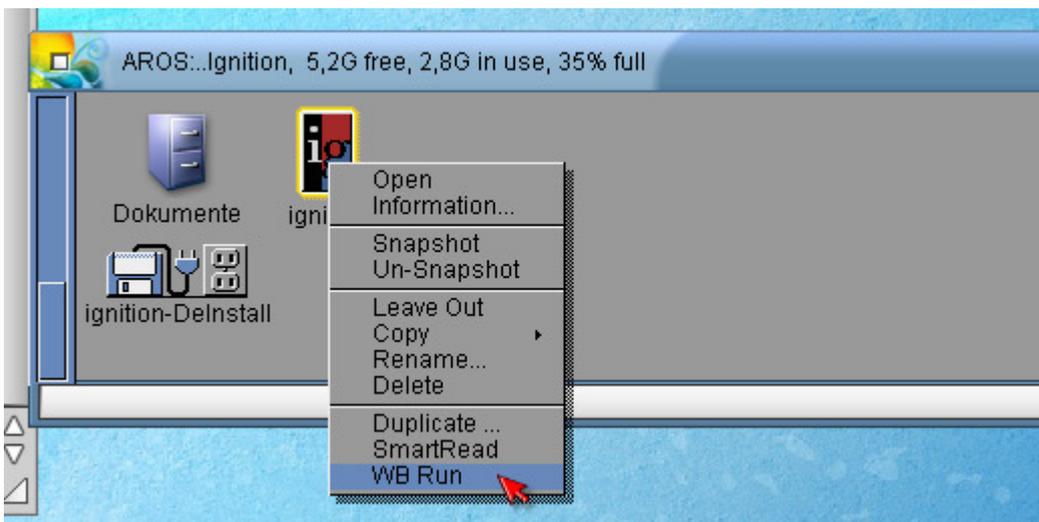
Wanderer: double click with left button



AmiStart: run the application from extras → 68K → Work and subdirectories



shell: use the **wbrun** command with application path, starting from **AmiBridge**:



Magellan: select program icon and right click on it, then choose **WB Run**

REMEMBER!
68K applications won't run if the emulation environment is not ready!

3) if you're running the emulation environment on a separate screen, move to that screen with **IAROS+Tab** or **IAROS+M**.

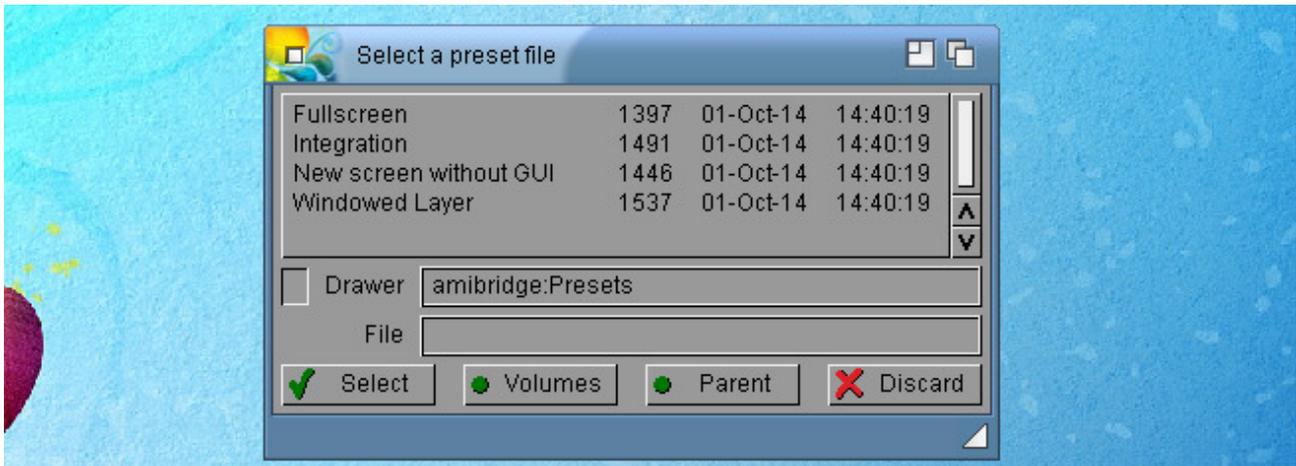
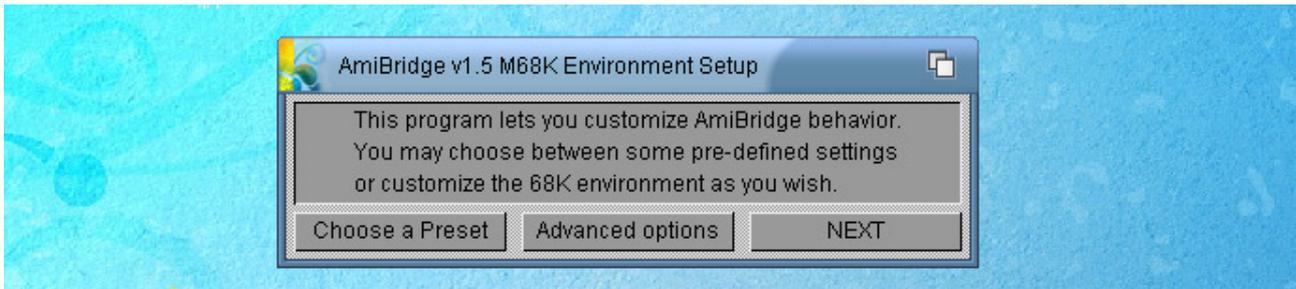
8.2 Setting up the 68K environment

Icaros Desktop 2.0 eliminated the preferences script for **AmiBridge** introduced in **/Prefs** long ago. You may decide to use one of new **AmiBridge** presets, like integration, full screen Wanderer/Workbench, compatibility layer in a new screen and emulation-in-a-window at a fixed resolution through the **Preset Loader** script in **AmiBridge**, or fine-tune **AmiBridge**'s **M68K** environment with the **Icaros Settings** tool in **/Prefs**.

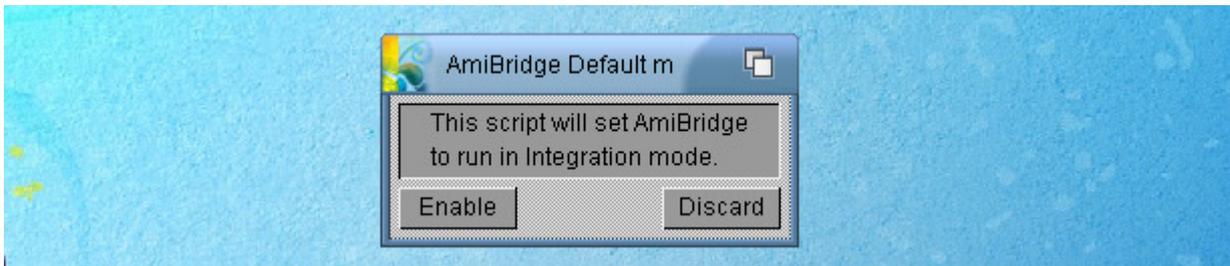


8.2.1 Presets

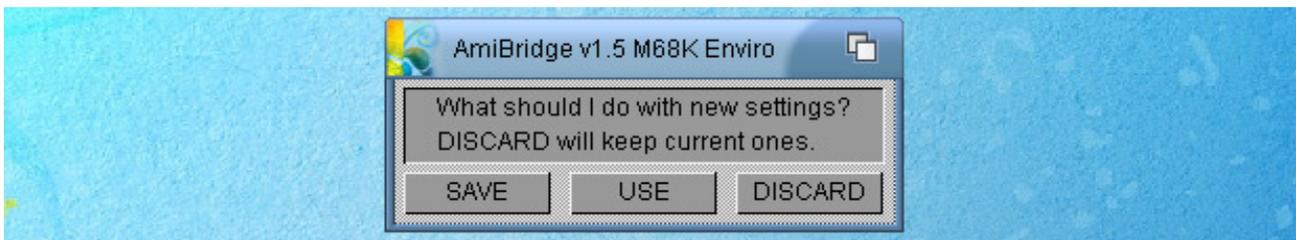
AmiBridge can behave in many ways. **Icaros Desktop** comes with a few presets, covering the most common user needs. Presets are meant to be expandable, so new presets may be available in the future and users can easily learn how to create new presets as well. Anyway, when running **Preset Loader**, you will be prompted with the list of available ones:



Every preset comes with a short description of its settings, so you can decide either to Enable it or not.



Once done, click **Save** to make the new preset your new behavior for AmiBridge.



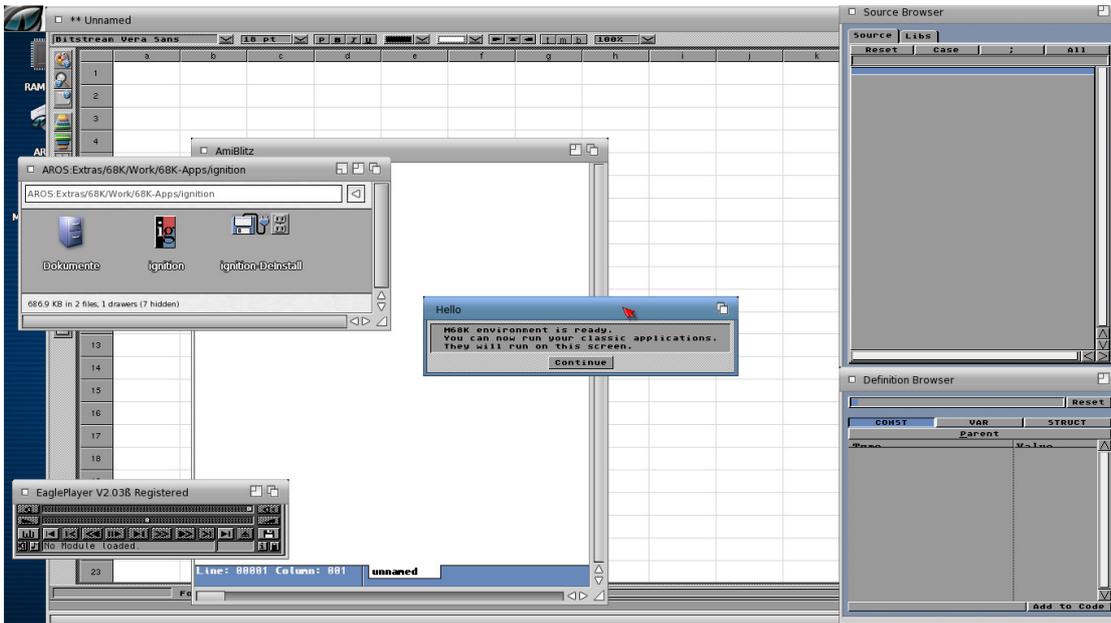
Warning!

Presets are shell script that may modify Janus-UAE settings. Once enabled, they will be permanent even if you choose just the USE option afterward. You can disable them using Janus GUI or choosing a different Preset which does a completely different thing. **Be careful about 3rd party Presets, they may harm your AROS installation if badly written.**

Integration

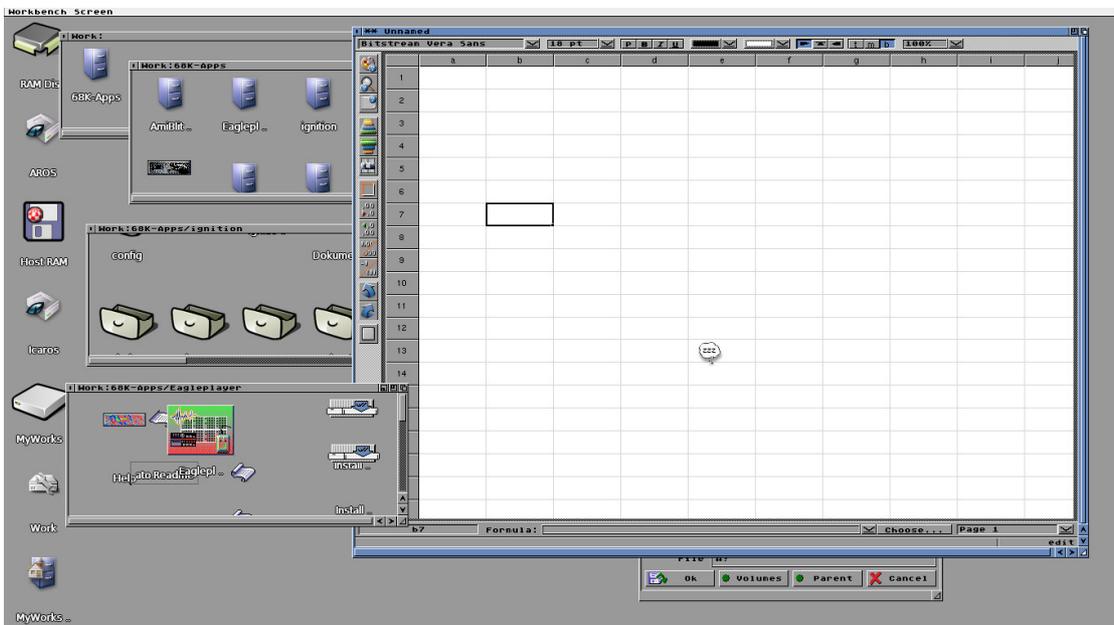
AmiBridge will try to integrate classic applications as much as it can. Classic applications will appear on the screen as AROS x86 windows, and to make them look as much integrated as they can, some host's

preferences like (global settings for) Zune. Fonts, Pointer, locale, iconcontrol and input will be copied from host to guest at startup. Fonts: assign on the guest is extended to host fonts directory, so you won't have to maintain two different fonts drawer for your applications. Just place needed fonts in the x86 AROS drawer. **Coherency mode, anyway, will work only if x86 and 68K screen resolutions are the same.**



Fullscreen: a full 68K experience on a new screen

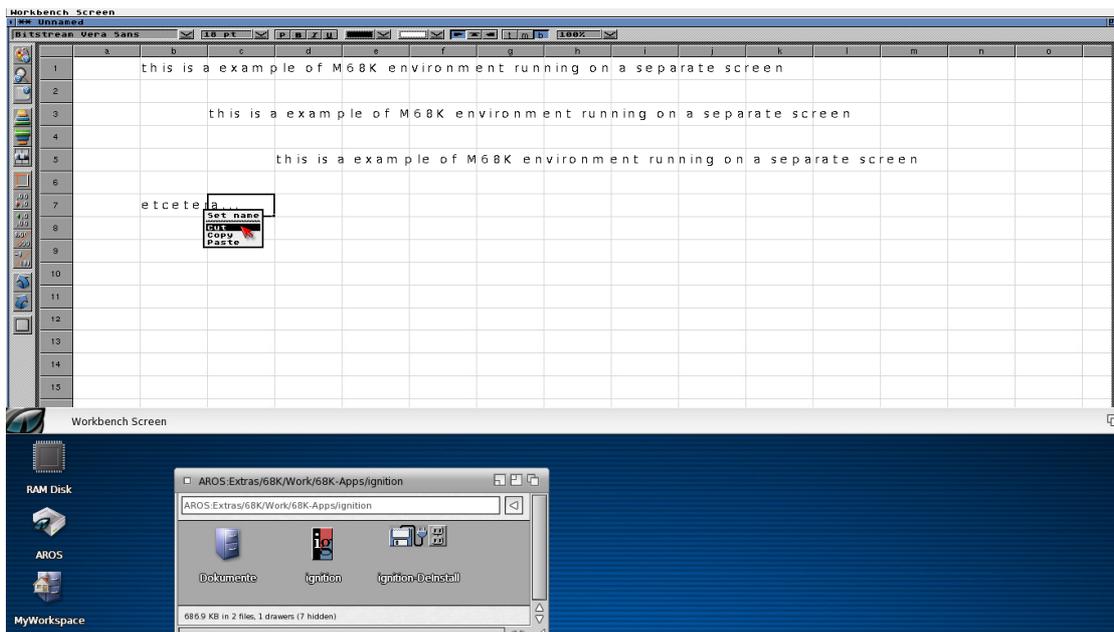
With this Preset, the M68K environment will be opened in a new screen, keeping the OS GUI active. This means that you may have a full 68K Wanderer or Amiga™ Workbench on top of AROS x86 (classic emulation). Fullscreen mode is generally faster than default integration, especially for AROS M68K, and can be preferable because it doesn't suffer of menu issues and other integration glitches.



New screen without GUI: a clean emulation screen for your classic apps

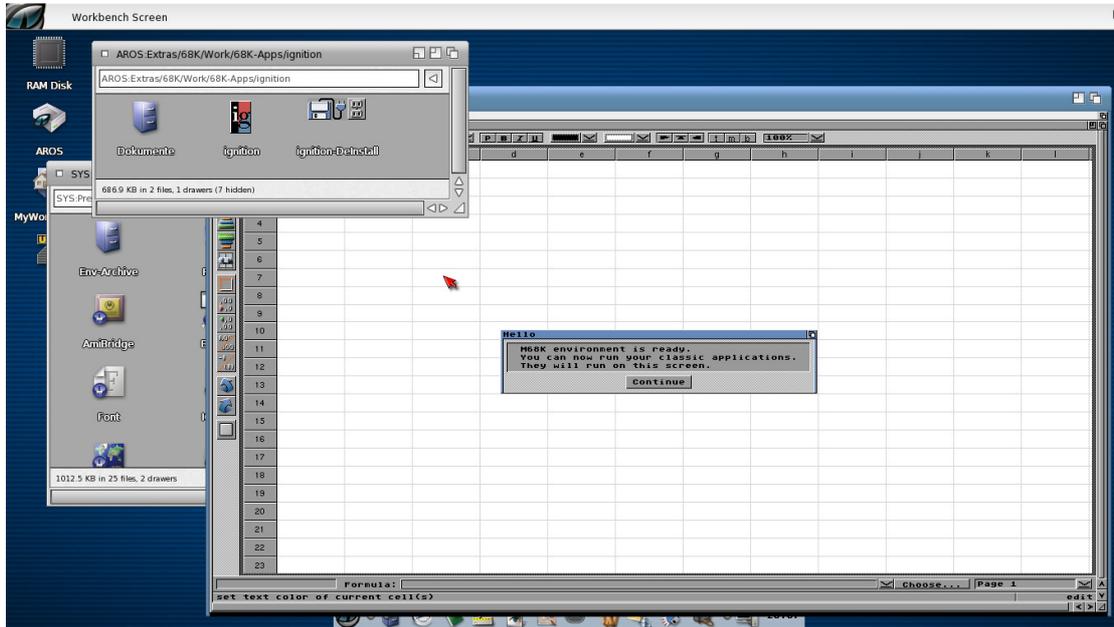
This preset opens AmiBridge as a clean “68K screen” without Wanderer or Workbench. You can start classic apps with their icons straight from AROS x86, but they will be opened on this screen. Please notice that Janus screens can't be dragged like regular ones, so you'll have to reach the top right corner of the screen

to move between screens or use `!Aros+M` or `+Tab` keyboard shortcuts. You can, however, drag the x86 AROS screen up and down revealing the 68K one behind:



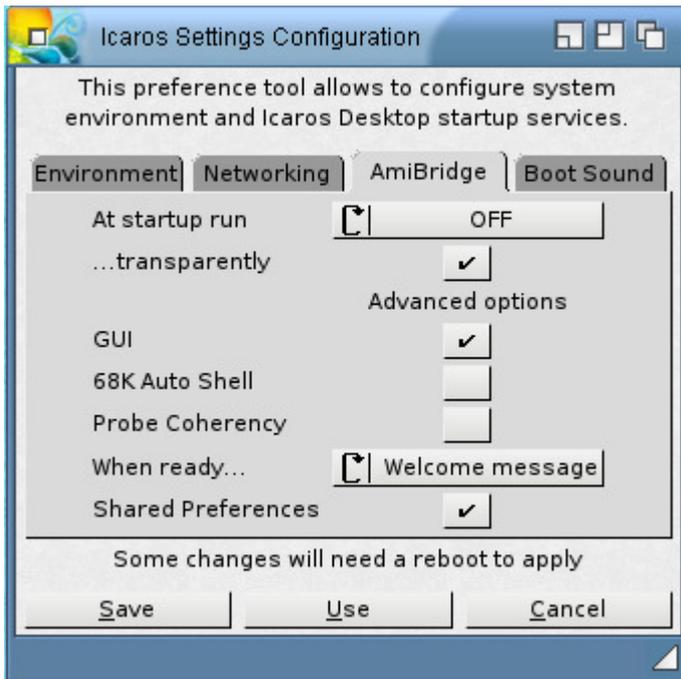
Windowed layer: a 68K window on your Wanderer screen

Conceptually similar to the former one, this preset opens a 68K screen with or without GUI (it's generally disabled by default, but you may change this behavior using advanced options). You can run classic applications with host's Wanderer, and they will all appear in the single AmiBridge window.



8.2.2 Advanced Options

With default preset, AmiBridge will normally disable 68K Wanderer or Workbench, share some settings between host (x86) environment and guest (M68K) one, and so on. But you may change something with advanced options. To access them, you need to run Icaros Settings from the Prefs drawer, and move to AmiBridge panel:



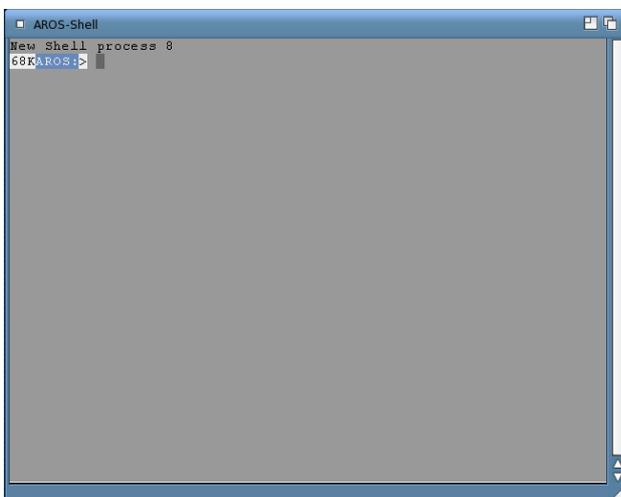
Once done with your settings, click on the **Save** button to make them permanent, or on **Use** to try them just for this AROS session. You won't need a reboot to enable them.

GUI

AmiBridge will normally disable 68K Wanderer or Workbench. In fact, you are supposed not to use them at all. Just move with x86 Wanderer to your 68K program location, and run it as usual: it should appear on the screen few seconds later. You may even decide to drop its icon on AmiStart, it will run from there as well. There are occasions, however, when accessing to the original GUI/File Manager can be useful or necessary. To re-enable Wanderer or Workbench, click on the Workbench button on the left. You will be prompted either to enable or disable it. Remember that the M68K environment must be powered off before making changes to this setting.

68K Auto Shell

For your convenience, AmiBridge can run a shell from the guest environment. It may be useful to run command line programs or to perform installations, or other 68K tasks, without the need of loading the whole GUI of the guest system.



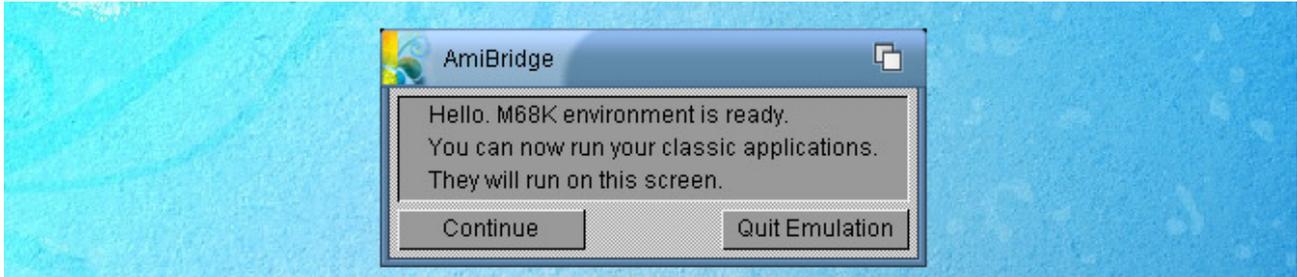
When using the AROS M68K shell, you can always recognize it by its different prompt: `68KAROS:>`.

Probe Coherency

AmiBridge will try running your applications in coherency mode as much as it can. But you may change this behavior by clicking on the **Probe Coherency** button. After disabling it, AmiBridge will stop re-enabling coherency mode automatically when you change resolution using the proper scripts, or when you change this setting in Janus GUI and then you reboot the system.

When ready...

Default way to warn user about the availability of 68K environment is a message appearing on the screen:

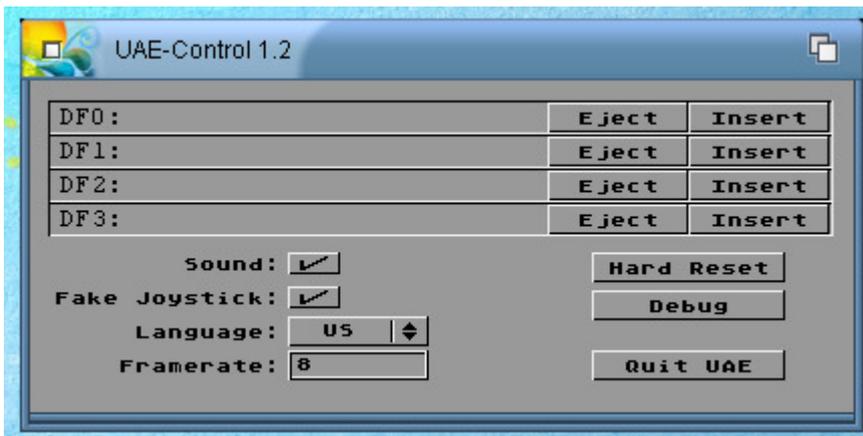


If you usually run AmiBridge as a service, you may prefer not to see this message every time you reboot the system. The Warning message button lets you decide whether showing or hiding it. Please notice with Icaros Desktop 2.0 a new “Quit Emulation” button has been added to the welcome message. It will help you quitting the emulation layer immediately if you have ran it by mistake, but it will become much more handy when you'll use a shortcut to run a single application through a new Icaros Desktop 2.0 feature: shortcuts. We will see them later.

With this option, you may also run UAE-Control instead:



UAE-Control is a M68K program that allows partial managing of the UAE emulator from the guest side of emulation environment. You can use it to stop emulation, reset it, or mount ADF files in the virtual floppy disk drives (**DF0, DF1 only on AROS; DF0 to DF3 on AmigaOS**)



The **Insert** buttons will ask you the path for an ADF file.



Click on the **Select** button to open a file requester, or manually enter path and file name in the left text field. Once you're ready, press Enter to confirm selection. Please beware of the fact that **your path must**

be a valid one from the host side, not the guest one. In a nutshell, if your ADF files are in AROS X86's DH1:Temp directory, you should enter this path in the form DH1:Temp/my_adf_file.adf. For your convenience, Icaros Desktop provides *MyWorkspace*: and other shared virtual volumes, please use them! Save your ADF files, for instance, in the Downloads:ADF drawer, and you'll be able to mount them from Downloads:ADF with UAE-Control too! Shared virtual volumes, between host and guest, are:

MyWorkspace: → MyWorkspace special drawer
Downloads: → MyWorkspace subdirectory
Pictures: → MyWorkspace subdirectory
Videos: → MyWorkspace subdirectory
Documents: → MyWorkspace subdirectory

That's why, in Icaros Desktop, opening the file requester with the Select button will send you straight to MyWorkspace.

Other UAE-Control buttons are:

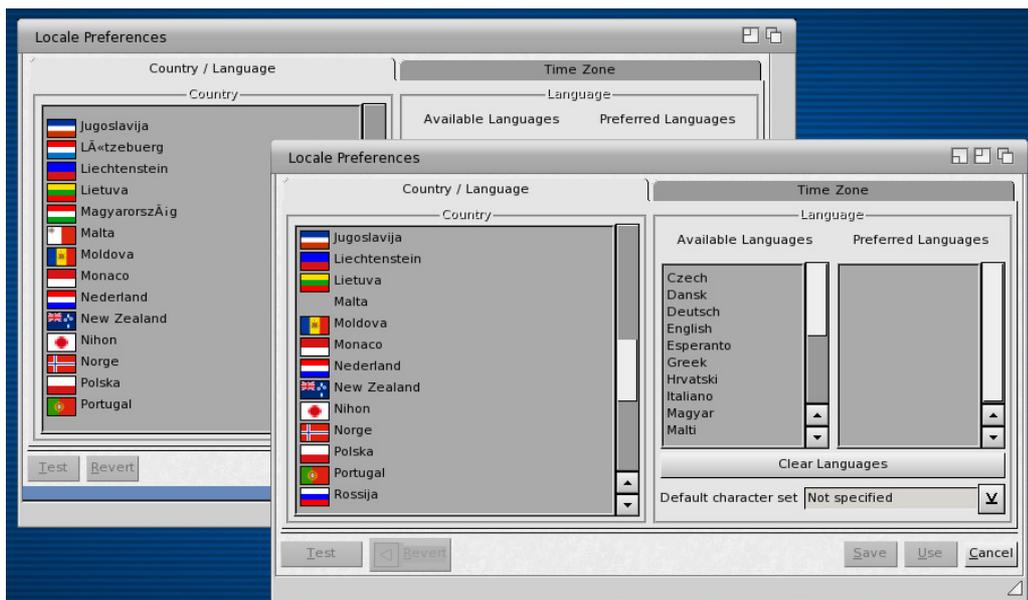
Eject → unmounts ADF image file from associated virtual DF unit
Hard Reset → resets the emulation environment only, making it boot again
Debug → starts UAE debugger, freezing the emulation layer
Quit UAE → shuts Janus-UAE down, exiting from AmiBridge to AROS desktop

Alternative ways

You can easily make AmiBridge running the shell instead of the warning message every time it boots the guest operating system: just enable the shell and disable the warning message. It had been the default behavior in Icaros Desktop v1.4.5.

Shared preferences

When using AROS 68K, you can share some settings with the host operating system. Technically speaking, these settings will not be really *shared* between x86 and 68k, but they will be *imported* by the guest when the 68K environment will startup: if you decide to change something when AmiBridge is running, for instance, the new settings in the x86 environment will not be reflected into the 68K one, nor the 68K preferences will affect in any way the x86 ones. Every time the M68K environment will be brought up, 68K preferences will be overwritten. If you wish to avoid that, and keep two different profiles for x86 and 68k preferences, you can click the Shared prefs key. It will let you enable or disable this feature.



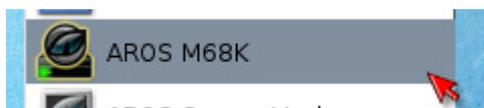
coherency mode: these are x86 and 68K locale prefs. Can you spot the differences?

Only AROS makes it possible

Please remember shared settings are possible only with AROS M68K. AmigaOS 3.X preference files are different and not compatible, so you'll have to manually configure your AmigaOS™ installation to match the x86 AROS settings as much as possible. Obviously if you're interested in doing so.

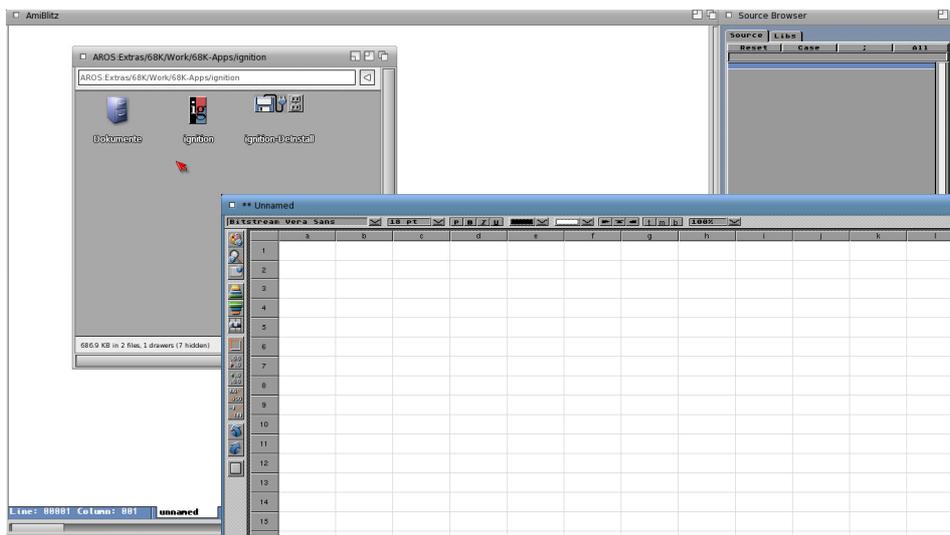
8.3 Running AROS 68K

Starting with Icaros 1.5, AmiBridge doesn't need manual configuration of screen mode anymore. Oliver Brunner (Janus-UAE coder) provided a nice new tool which chooses the right resolution when AROS M68K starts up. Once again, this only works with AROS M68K. From the user point of view, it's like M68K guest windows are running in the X86 host desktop space. If you're familiar with VMware or VirtualBox product, just think about their Unity and Integration modes. The clipboard will be shared between host and guest, while parts of host file system will be accessible also from the guest. So, running the 68K environment with AROS is just matter of launching this script from AmiStart's AmiBridge menu:



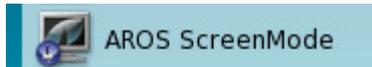
←This script will launch AROS M68K environment

Once the environment has loaded, you're ready to run your classic applications. Some are ready to run in extras:68K/Work/68K-Apps drawer.

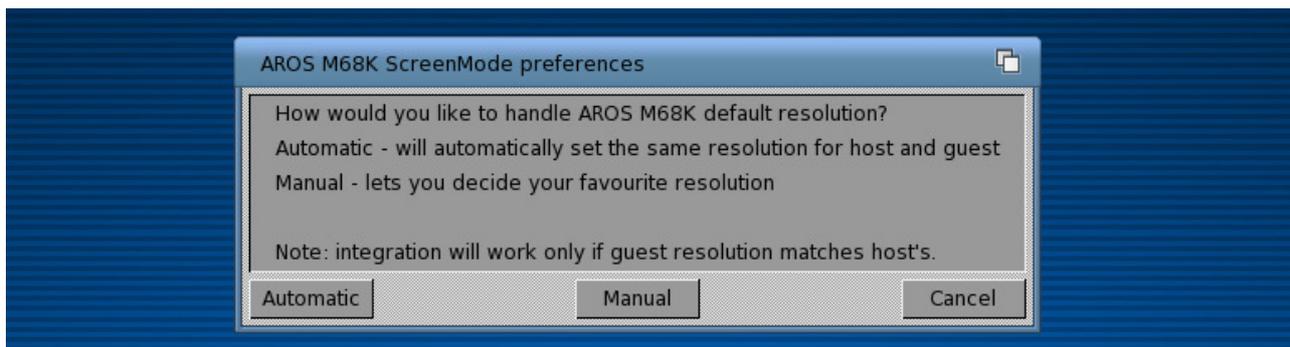


8.3.1 Legacy screen mode configuration and AROS Wanderer

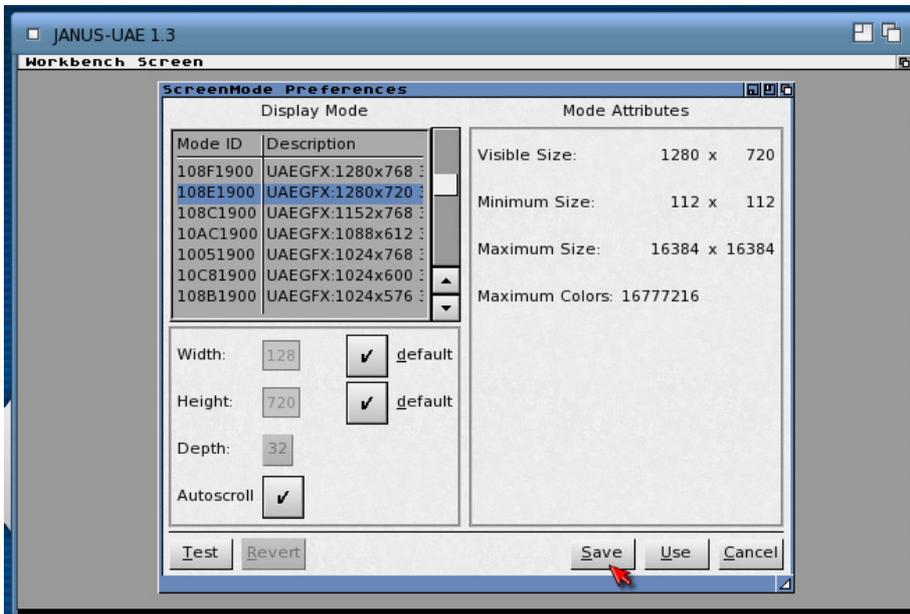
If, for any reason, you'd prefer to manually handle host and guest resolutions, you can run this other script, which has been modified to reflect the current situation:



This script will let you choose AROS M68K screen resolution

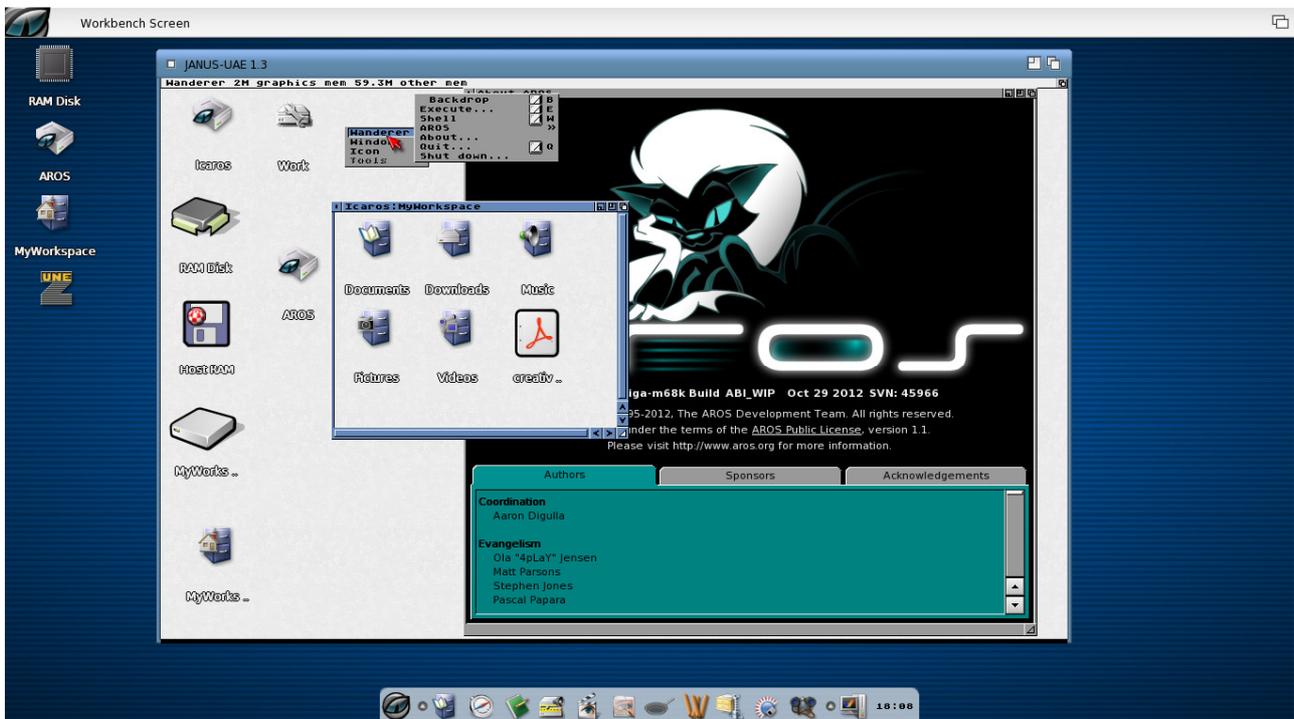


Once run, it will ask the user how to handle resolution: automatically or manually. By choosing Automatic, AROS M68K will normally choose resolution by itself. With Manual, you'll have to select the resolution the old way. After clicking on Manual, a session of Janus-UAE will run, allowing to select a resolution. Please remember that coherency mode will run only if AROS M68K resolution matches X86 AROS' one.



Once you're done. Click on **Save** to set up your favorite resolution. Janus will then close automatically.

You can now run AROS m68k as if it was a normal UAE session. Please notice you can still run software in the AROS window using x86 Wanderer (as if it was a remote command to a tv-set). You double click on a M68K icon on the x86 side, and it will appear in the M68K window.



This combination has been accomplished using the following settings:

- AROS x86 screen: 1366x768x32
- AROS 68K screen: 1024x600x32
- Icaros Settings → Amibridge → GUI → enable

Icaros Settings → Amibridge → Probe Coherency → disable
Icaros Settings → Amibridge → When ready... → OFF
Janus-UAE GUI → Integration → Coherency mode disabled
Janus-UAE GUI → Integration → Mouse integration enabled

You may also run AROS 68K Wanderer with this script:

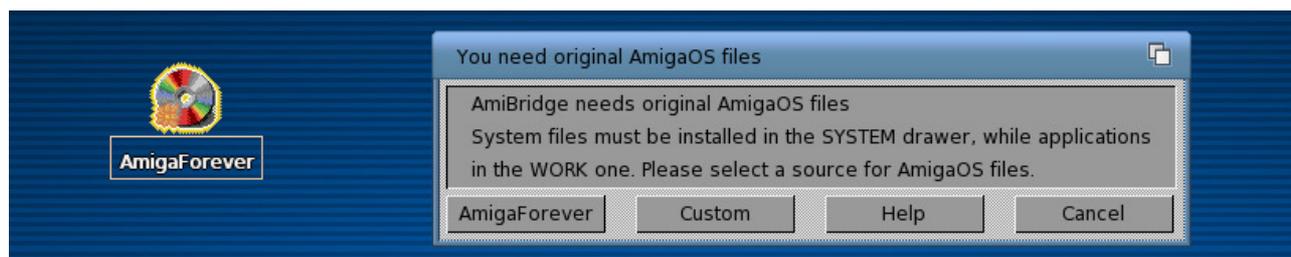


8.4 Running AmigaOS™ 3.X inside AmiBridge

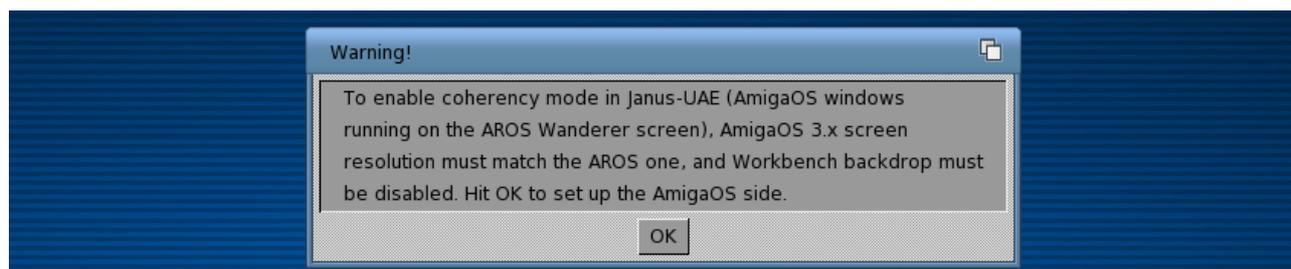
If AROS M68K isn't just enough to fit your needs, and you wish to take advantage of “the real Amiga operating system” to run your legacy apps, you can still integrate Amiga Forever's system files and ROM into Icaros Desktop. The way is exactly the same as before. There are, however, some little differences from the past: user can now activate/disable auto-shell, Workbench and welcome message with AmigaOS as well and, most important, they're not supposed to manually disable backdrop anymore.

8.4.1 Integrating AmigaOS™ 3.X

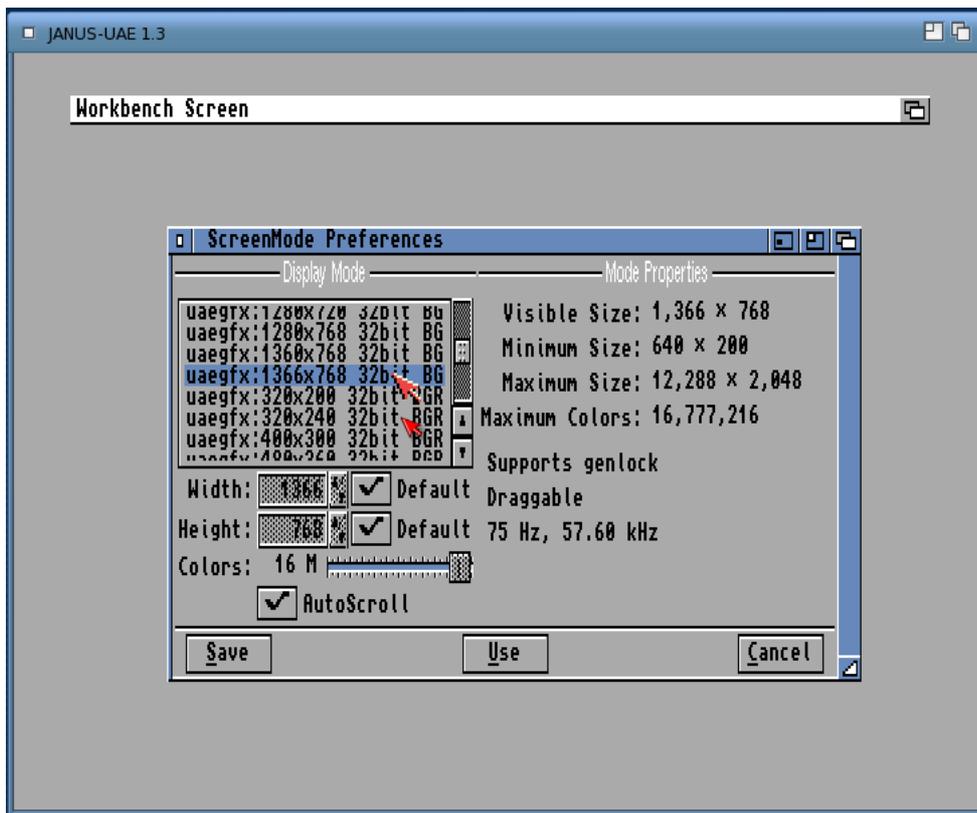
If you're using Amiga Forever 2006, 2008 or 2009, all needed files will be automatically copied from the AF CD-ROM in the right position. It is possible that older/newer releases of Amiga Forever behave differently. In this case, you only need to copy the right files in the right drawers manually. Don't forget to keep the “View” option in Wanderer set to “All files”. Look in the AmigaApp drawer and launch the **Setup-Amibridge** icon. If you have Amiga Forever, mount its CD and press **AmigaForever**.



This will copy all needed rom, system and application files automatically. It will also add the necessary lines to the users AmigaOS Startup files to enable seamless integration of Amiga applications.



Click on OK, the **Amiga Workbench** and the **ScreenMode** preference panel will load automatically. You must choose the exact same resolution you are using for your AROS desktop.



You may notice a double pointer here. Don't worry, it's not a problem: just remember the right one is the biggest, and scroll down the *Display Mode* option list to match your current AROS resolution. Use a **uaegfx** voice. Then click on SAVE. Janus-UAE window size will change accordingly.

Manual integration

You can always integrate your own KickStart and AmigaOS files. Just remember that:

- **AmigaOS system files must be copied in the System drawer** (which has a disk icon with a boing ball over it)
- **Application files must be copied in the Work drawer** (in Extras:68K/Work)
- **Amiga ROM images must be placed in the "rom" drawer.**

You can use the Amibridge: assign for your convenience.

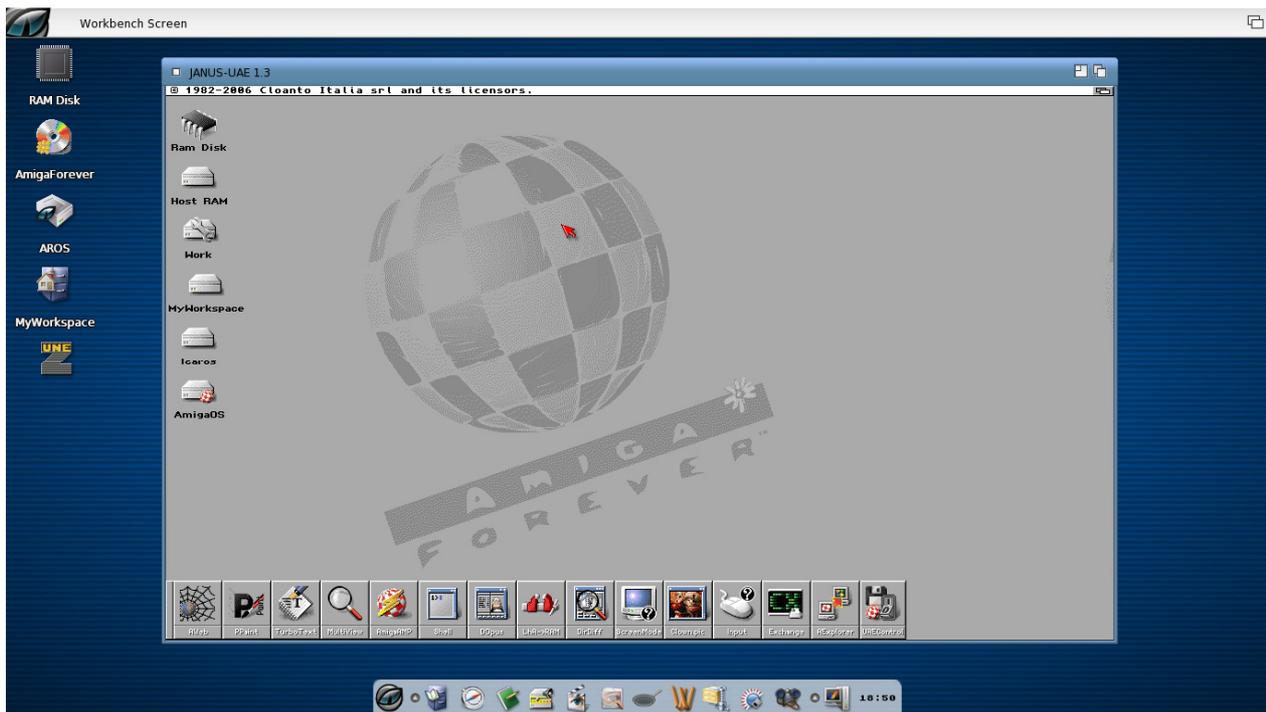
8.4.2 Running AmigaOS™ 3.X

Once installation has ended, two new entries will appear in AmiStart's AmiBridge menu:



ScreenMode → will run AmigaOS™ screen mode preferences without coherency mode. This will allow you to change the emulated Amiga resolution after you've changed the AROS one.

Workbench → will run AmigaOS™ inside Icaros Desktop, either in coherency mode or not - depending by your other settings in AmiBridge pref program and Janus-UAE GUI.

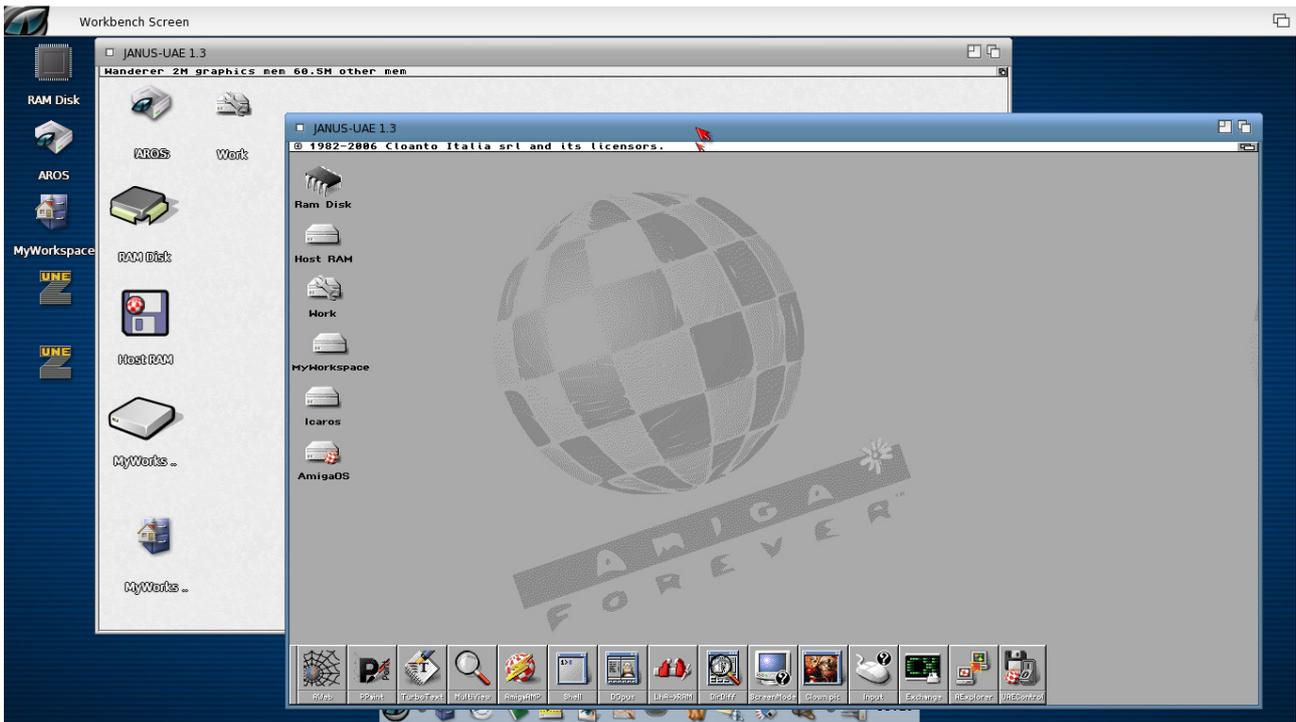


AmigaOS applications can obviously run in coherency mode as they do with AROS.

8.5 AROS 68K vs AmigaOS™ 3.X

What's better? Both choices have their pros and their cons. AROS M68K allow a better integration of 68K applications into the x86 desktop, does not require much configuration efforts and, best of all, comes for free with Icaros Desktop. On the other hand, AmigaOS 3.X is perfectly compatible and does not suffer of some glitches in coherency mode, however you have to grab it from your old Amiga™ computer or buy Amiga Forever from Cloanto to get it (www.amigaforever.com). Here is a little comparison table, to help you decide. Don't forget, anyway, that AmiBridge can use both!

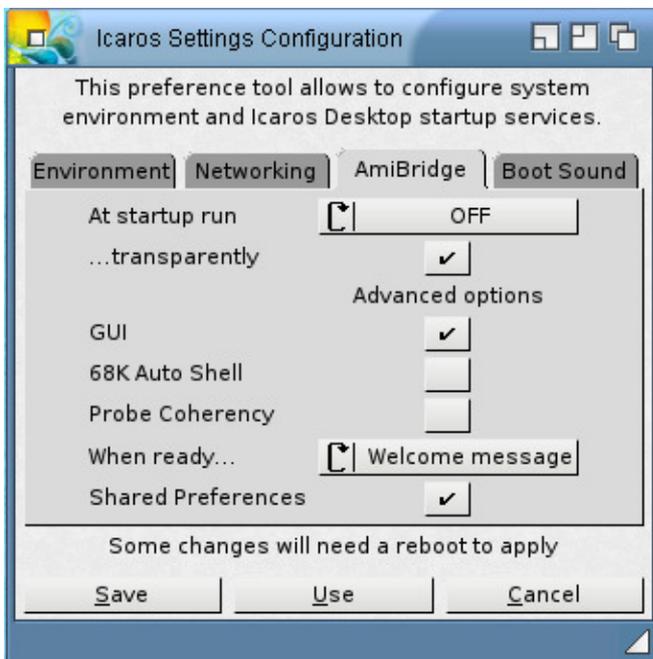
Feature / OS	AROS 68K	AmigaOS 3.x
Automatic screen resolution	Yes	No
Shared settings for locale, input, fonts, Zune and pointer	Yes	No
Compatibility with classic software	Good	Perfect
Coherency mode	Yes	Yes
Icaros 68K apps setup	Ready	Manual
Original KickStart	Not needed	Needed
Initial configuration	Not needed	Needed
Shared clipboard	Yes	Yes
Shared FS volumes	Yes	Yes
Sound	Good	Better
Network Support	No	No
Mouse synchronization	Perfect	Good
Set up phase	Not needed	Needed



Something that couldn't comfortably be done before: running AROS M68K and AmigaOS 3.X together

8.5.1 "Amiga as a service"

Normally, you are supposed to run the Amiga™ environment only when needed. However, if you heavily use M68K applications, you can run the whole AmiBridge sub-system at startup. To do this, please run the Icaros Settings preferences program, and move to the AmiBridge panel.



Look at the **At startup run** field. You'll have three options:

- **OFF** → selected by default. No Amiga virtual machine will be loaded at Icaros startup
- **AROS m68K** → the AROS M68K environment will be loaded at startup
- **AmigaOS 3.X** → AmiBridge will start AmigaOS 3.X, once integrated from Amiga Forever. It won't work without AmigaOS already installed.

The **Transparently** option will override current settings for AmiBridge and will run the preferred M68K environment (AROS or AmigaOS 3.X) in the background. Amiga applications will run in seamless integration mode. Remember you'll need to right-click 68K apps icons and launch them with the **WBrun** option under Magellan. Usual double click will still work, however, with Wanderer.

Beware of the fact that the AmiBridge sub-system requires a lot of computing resources. It may noticeably slow down any other host operation and heavily impact on x86-side performances. You're not expected to run this option unless you're always using classic applications for your personal productivity.

8.6 Configuring Janus-UAE

Janus-UAE is the emulator which runs the Amiga™ virtual machine inside Icaros Desktop. This machine does not see the whole amount of memory available to the host system, nor it can take advantage of your hardware directly. However, its configuration may change accordingly with your needs.

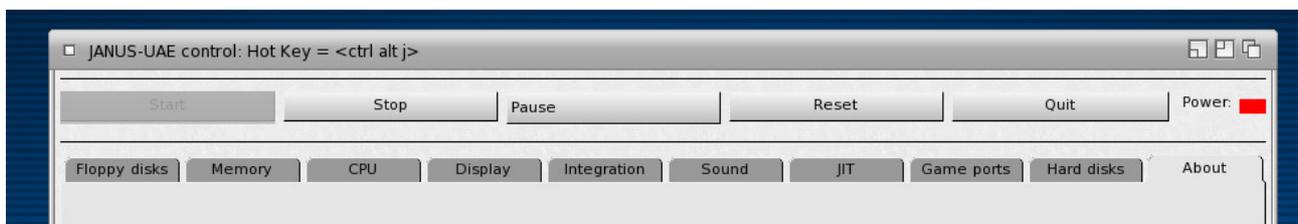
important.uaerc

Janus configuration files are included in SYS:System/AmiBridge/Emulator drawer. Main AROS 68K configuration file is called aros.uaerc while AmigaOS 3.x one is amigaos.uaerc. Please backup these files before doing any modification to them.

To call Janus-UAE GUI, press Ctrl+Alt+J when running.

8.6.1 The main panel

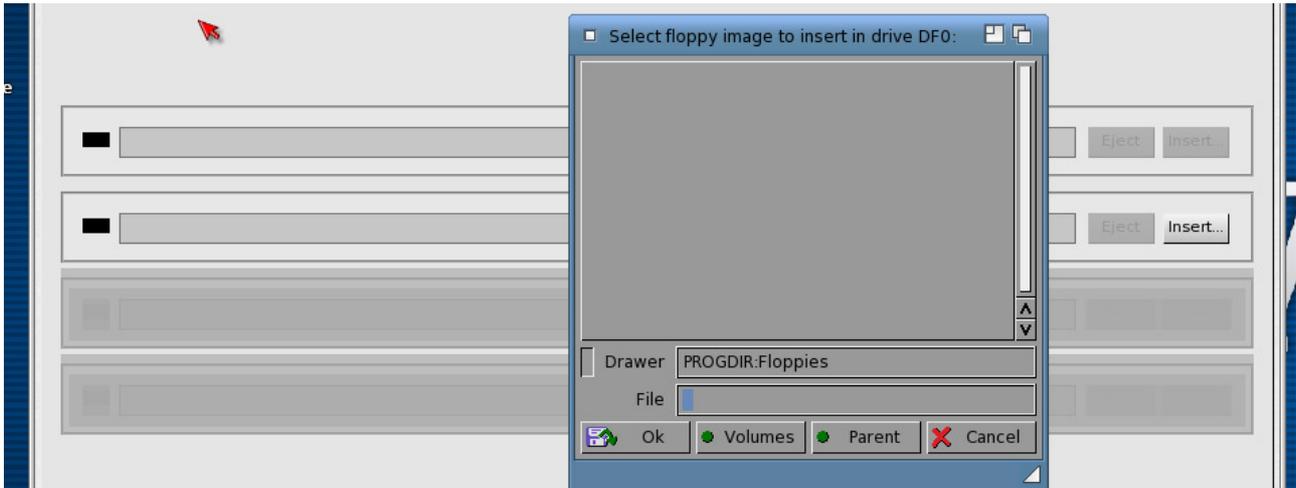
The main panel allow starting, stopping, pausing, resetting and quitting emulation.



Click on Stop to shut down the Amiga virtual machine and Quit to end Janus-UAE and the AmiBridge session. Janus should be stopped when you don't need it anymore as it would otherwise keep running in the background and cause performance issues on your system. To gain speed when you're using x86 programs, you can also Pause the emulator. Remember that all processes handled by the emulator will be frozen until you un-pause them.

8.6.2 Mounting floppy disks

The floppy disk panel allows mounting floppies.



You can add an .adf floppy image file choosing the Floppy panel of Janus-UAE GUI and clicking on Insert. Use the file requester to seek for the desired floppy image and click OK to virtually place it in DF0: and DF1:.. Original AmigaOS ROMs support 1 to 4 floppy units.

AROS 68K ROM replacement will allow using up to 2 drive for now. You can also mount ADF files from the guest side using UAE-Control. See chapter 8.4.3 for more information about it.

8.6.3 ROMs and memory

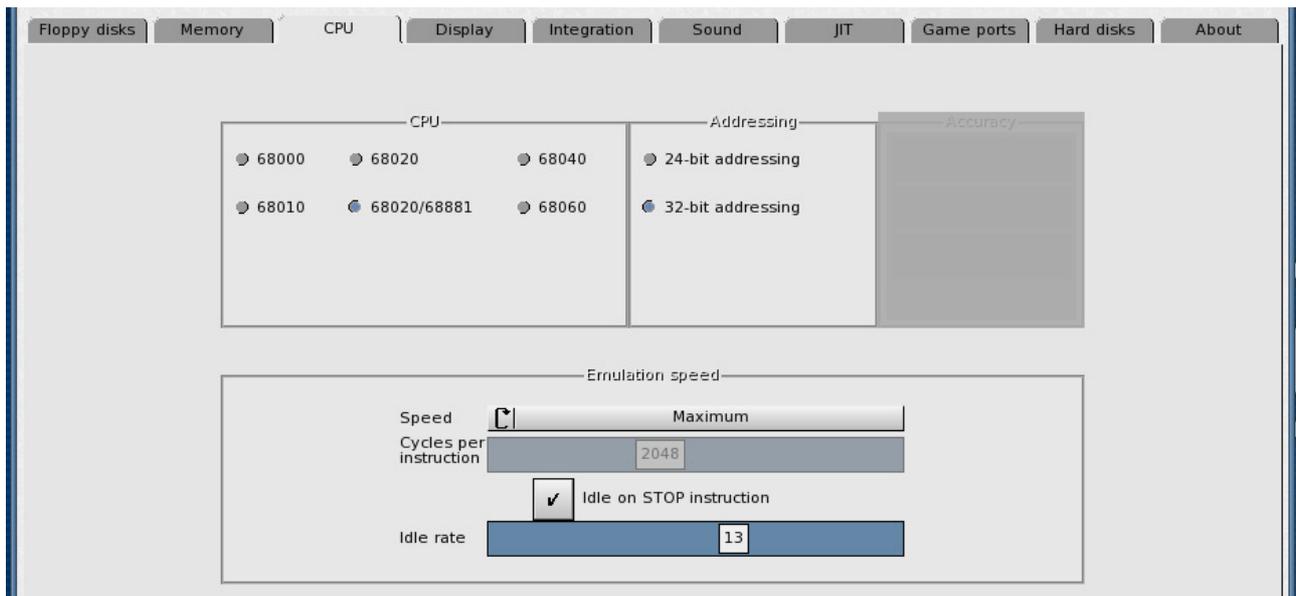
On the Memory panel you can select ROM files. AROS 68K ones are found in SYS:System/AmiBridge/AROS68K/boot, while original Amiga™ KickStart ROMs are available inside the Amiga Forever package from Cloanto. You may also grab them from your classic Amiga computers with the tools provided in SYS:System/AmiBridge/Emulator/Tools.



The section below will let you choose the amount of memory reserved to Janus-UAE. Since AmiBridge heavily uses RTG graphics we'll need an advanced configuration. Don't use slow and fast memory on your virtual machine, but Z3 and P96 memory instead. The former for applications, the latter for graphics.

8.6.4 Main processor

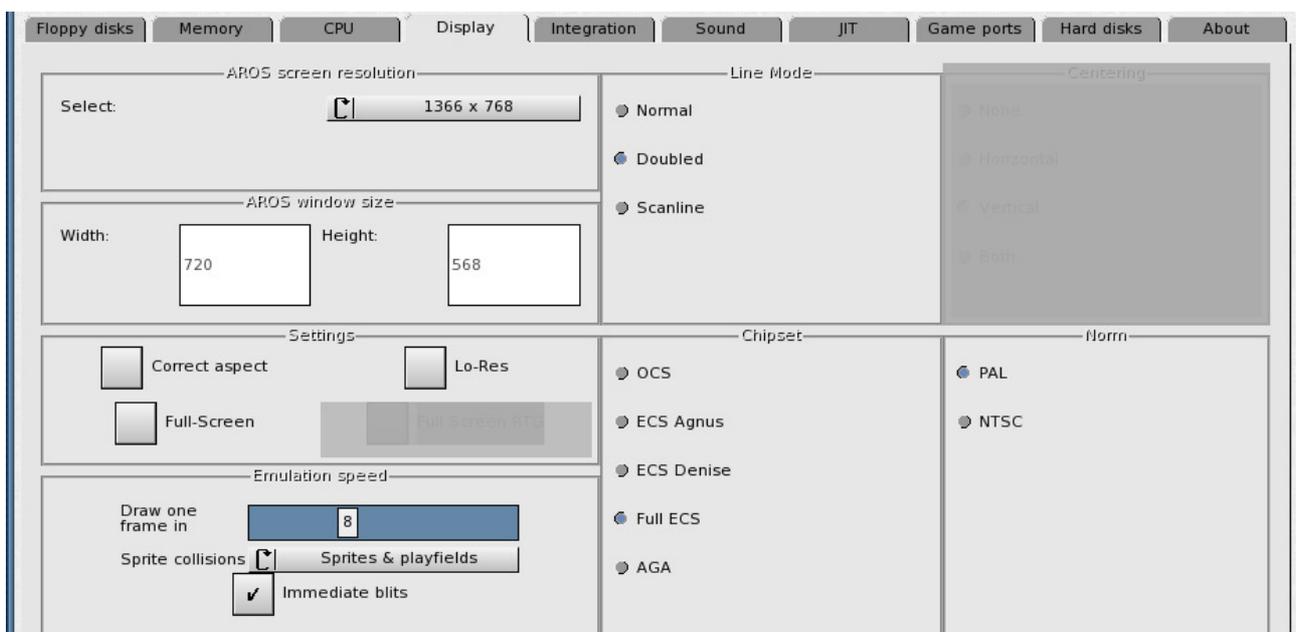
The CPU panel allow modifying processor model and specs:



68020/68881 allows the best degree of support, but you may also choose 68040 and other models as well, if you need them for some special applications. Remember that choosing a 'better' Motorola processor won't speed up your applications, since the real star here is your host's X86 or X86-64 CPU. Look at the emulation speed section instead: Icaros desktop normally sets it to Maximum, which will run software at the maximum speed allowed by your host processor. Some Amiga programs, however, may need to cap speed to a particular Motorola CPU model frequency. You can set it here. Emulating the right frequency may be mandatory for games and coding demos, which make heavy use of timings to perform their tasks.

8.6.5 Display

The Display panel allow modifying graphics mode:



AROS screen resolution → chooses the resolution for full screen mode

AROS window size → chooses the size of the window in windowed mode. 720x568 is a PAL-friendly size.

Settings → lets you configure the aspect ratio correction, Lo-Res and full-screen settings

Emulation speed → allows to skip frames to gain processor speed. Since most workbench applications

don't need full framerate, Icaros defaults to showing a frame every 8. To gain speed, please activate also Immediate blits.

Line mode → allows to fix proportions with single/doubled scanline modes, and to emulate also the old scanline effect in PAL and NTSC modes. It won't work with RTG modes.

Chipset → the graphics chipset to emulate. It doesn't matter with RTG/P96 modes, but can heavily impact with games.

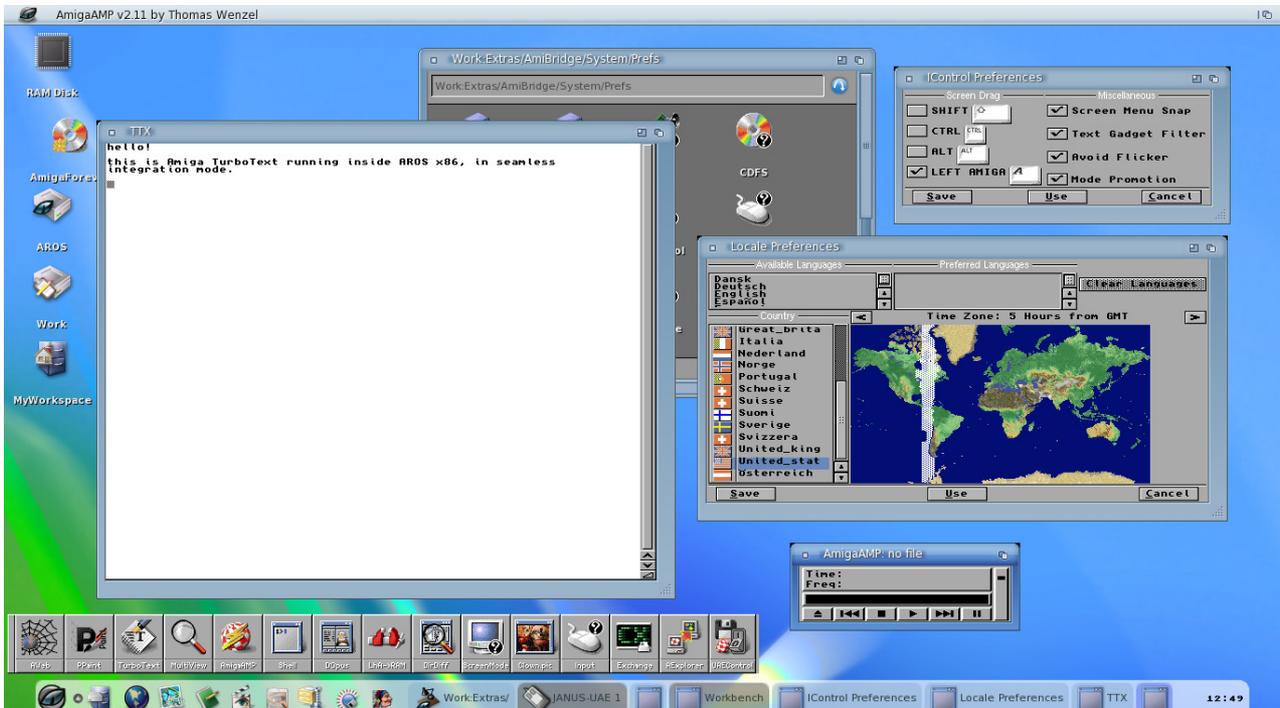
Norm → switch between the european PAL television format and the american NTSC one. Games were released to work either with the former or the latter. It doesn't matter with RTG/P96 modes.

8.6.6 Integration

This is really important. We'll see each option



Coherency → is the ability to hide AmigaOS or AROS 68K main GUI and show 68K window contents inside x86 AROS screen. Here is an old screenshot of Icaros Desktop running some programs from Amiga Forever in coherency mode:



Right menus with AROS 68K in coherency mode

The old bug which forbid using right click menus on AROS 68K has been fixed with Janus-UAE 1.4, included in Icaros Desktop 2.0.

Mouse sync → both x86 and M68K environments will have their mouse pointers. This option allow syncing

their position, so you will see a single pointer only (or, better, two overlapping pointers which seem one). Please use the Shared Setting option in Prefs/AmiBridge to be sure that both x86 and M68K AROS will use the same pointer.

Clip Sync → allow sharing of clipboard

Wanderer Integration → allow running classic programs running them from x86 Wanderer, and even from x86 AmiStart.

In order to run, all these settings will need some daemons running in the guest operating system. AmiBridge provides a modified version of AROS M68K startup files in 68K's "S" drawer, while AmigaOS ones are modified on the fly by our Setup-AmiBridge script.

8.6.7 Sound



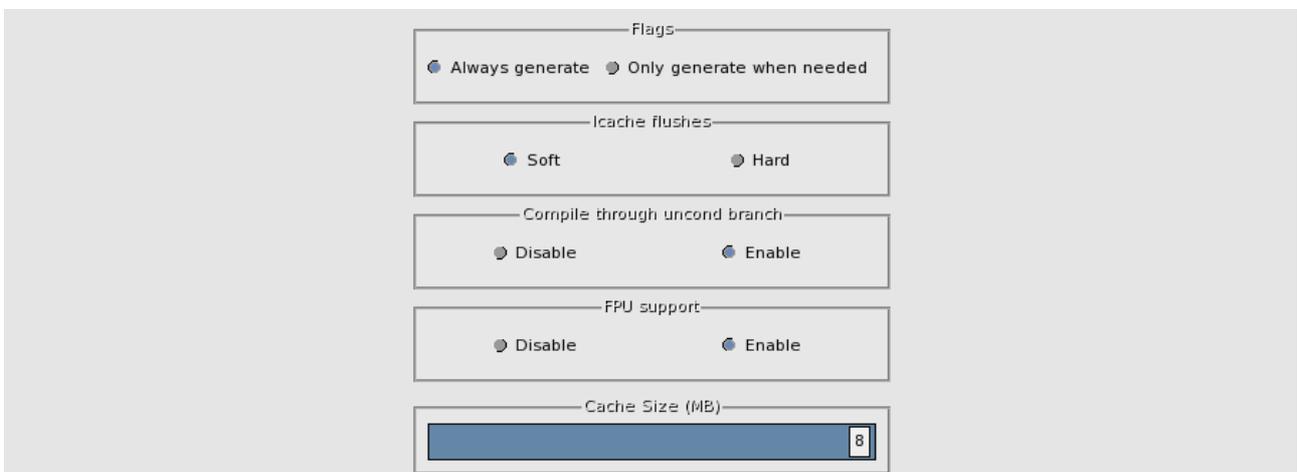
Sound is a critical aspect of emulation. It needs processor grunt to be performed with appreciable fidelity and may be a problem for AROS 68K in coherency mode. We strongly recommend users to prefer x86 native applications for sound. Icaros Desktop already provides players for many song and tracker formats, so you shouldn't need the classic Amiga hardware for them. Games and demos, however, will "sound good" also using AROS ROMs replacements.

Interestingly enough, there is no selector for sampling frequency in Janus-UAE GUI. But you can always change frequency editing .uaerc files. The best audio quality can be achieved using a value of 44100 for the **sound frequency** variable in configuration files, while the fastest emulation speed is given lowering that value to 11025. Since we don't think you'll urge to use AROS 68K to run old workbench music tools, we set 11025 by default. Another good value to use, however, may be 22050.

You will gain speed choosing a 8 bit resolution and a monophonic reproduction as well. With games, however, quality should be raised to appreciate a better "Amiga feeling".

8.6.8 Just-in-time compiler

That's what makes emulation the right way to handle classic apps

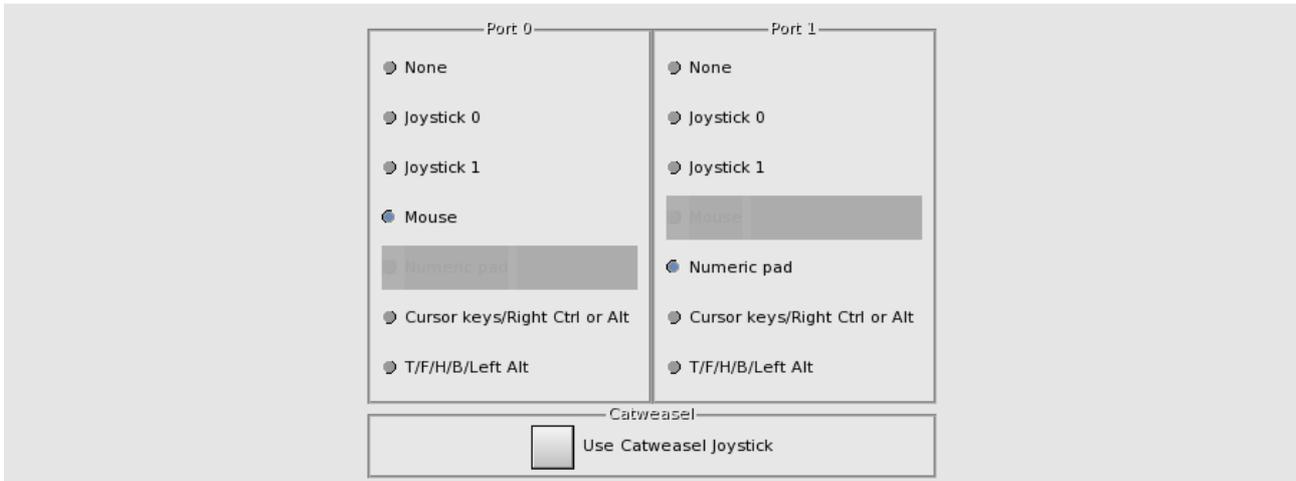


the JIT compiler translates emulated instructions into ones that can be directly executed by the host's processor, accelerating emulation speed of many times. Please keep these settings when using classic

software with AmigaOS or AROS 68K. JIT should be however disabled with games and demos, since it can break compatibility, timings, and other things that matter for them.

8.6.9 Game ports

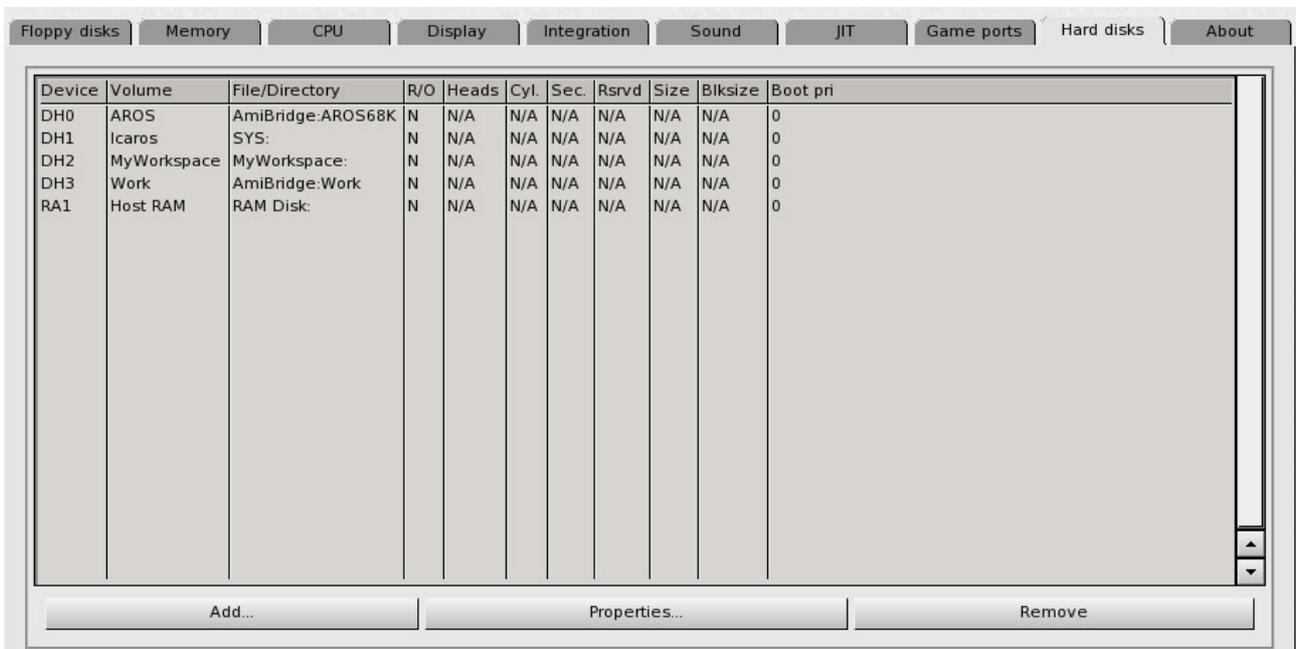
Do you seriously wish to play those Amiga games with a keyboard?



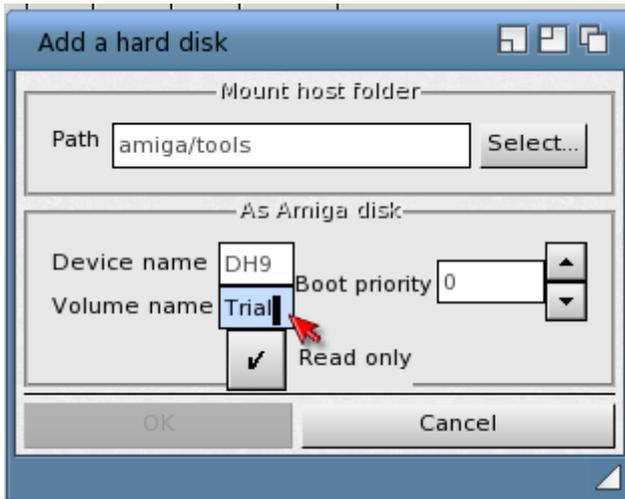
This section will let you manage controls for games, eventually enabling joypads connected to the USB ports. Lucky owners of a Catweasel controller may also use its joystick ports to connect two old Atari compatible joysticks (the ones used by the Commodore 64, the C128 and, obviously, all Amigas).

8.6.10 Hard drives

This panel lets you manage file system.



Janus-UAE can use both hardfiles (image files of Amiga hard drives, like ISO files are images of CD/DVD media and .vhd or .vmdk are disk image files for Hyper-V and VMware products) and host drawers as virtual devices. Every new entry should get a device name, a Volume name, a path and some flags for read/write grants and boot priority. You may add new devices using the Add button, setting their advanced Properties and obviously Remove them when you don't need them anymore. When pressing the Add button, a new window will appear on the screen:



- ← Use this section to add a new path from the file system
- ← x86
- ← Give a device name
- ← Choose a boot priority
- ← Give a volume name
- ← Choose whether the new volume will be writable or read only

Why the OK button does not appear?

It's a long standing "feature" of Janus GUI. To enlighten the OK button and turn it to be usable, just enter one of the fields above, like the Volume name indicated by the pointer, and press the Enter button from your keyboard. The OK button will become available.

8.7 Shortcuts

Shortcuts allow running a single Amiga application in a sandboxed M68K environment. In other words, they allow starting a program in Janus-UAE and nothing else, then closing the emulator when you finish using it. To create a shortcut, user must select "Add_Shortcut" from AmiBridge's menu:



then, with the file requester, user must select an Amiga program. Ensure to use the program name, and NOT the companion .info icon file. Let's assume that we want to run EaglePlayer only, in a better suited emulation environment for sound. Once we've chosen EaglePlayer for its path, we can find its icon copied in the Shortcuts submenu:

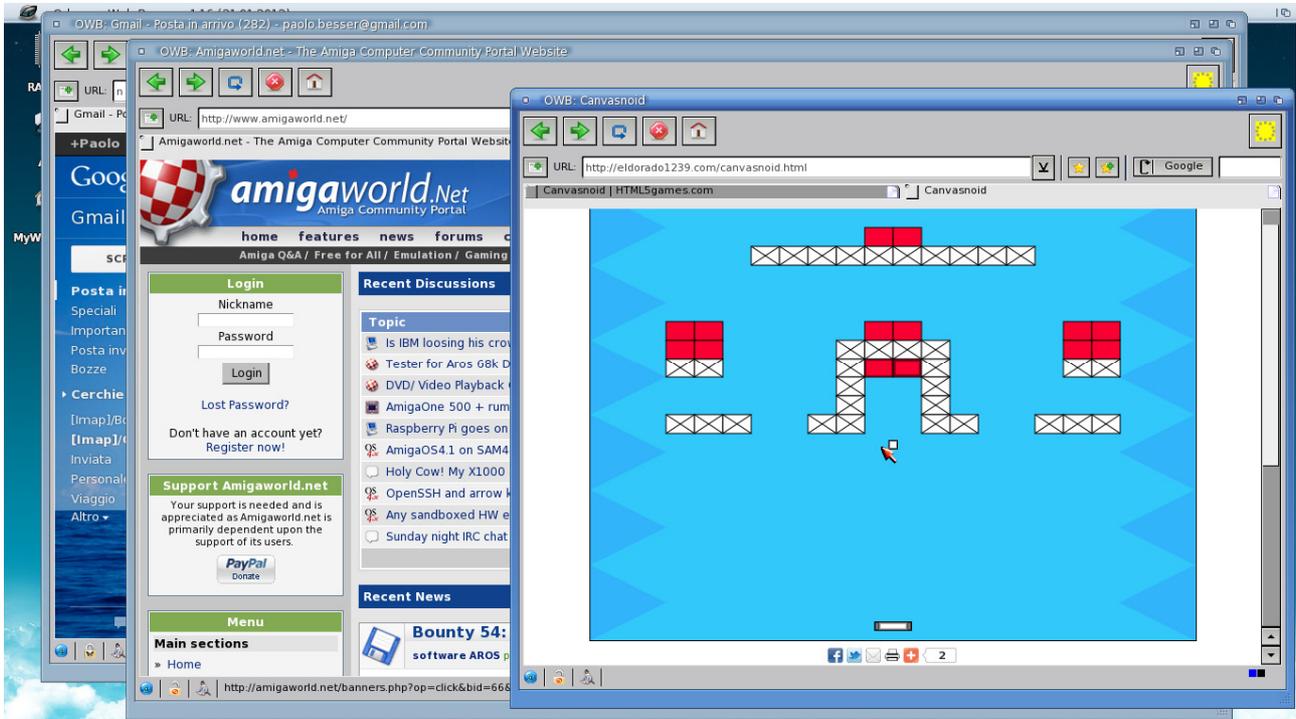


once we got EaglePlayer running in its custom Janus-UAE session, we have to switch to Janus-UAE GUI (IAROS+Tab, then click on the mouse icon on the left), choose the CPU panel, and de-select "Idle on STOP instruction". Then move to the ABOUT panel and click on Save. From now on, sound won't stutter anymore.

9. Something you should know about applications

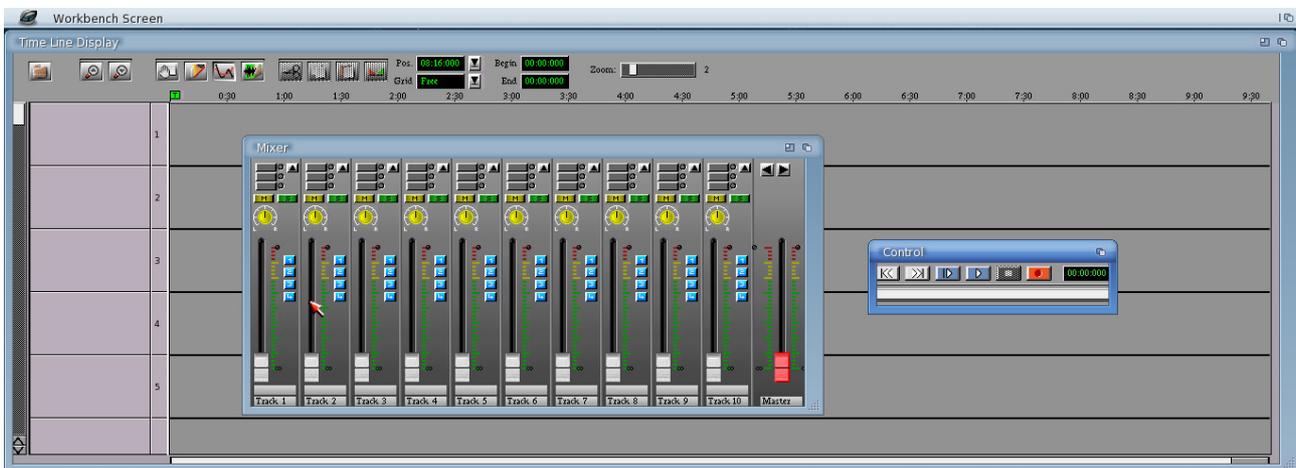
We have learned how to use Icaros Desktop tools and functions. Now it's time to discover what you can actually DO with Icaros Desktop' collection of software. There are many things you can do.

9.1 Browsing the web with Odyssey Web Browser



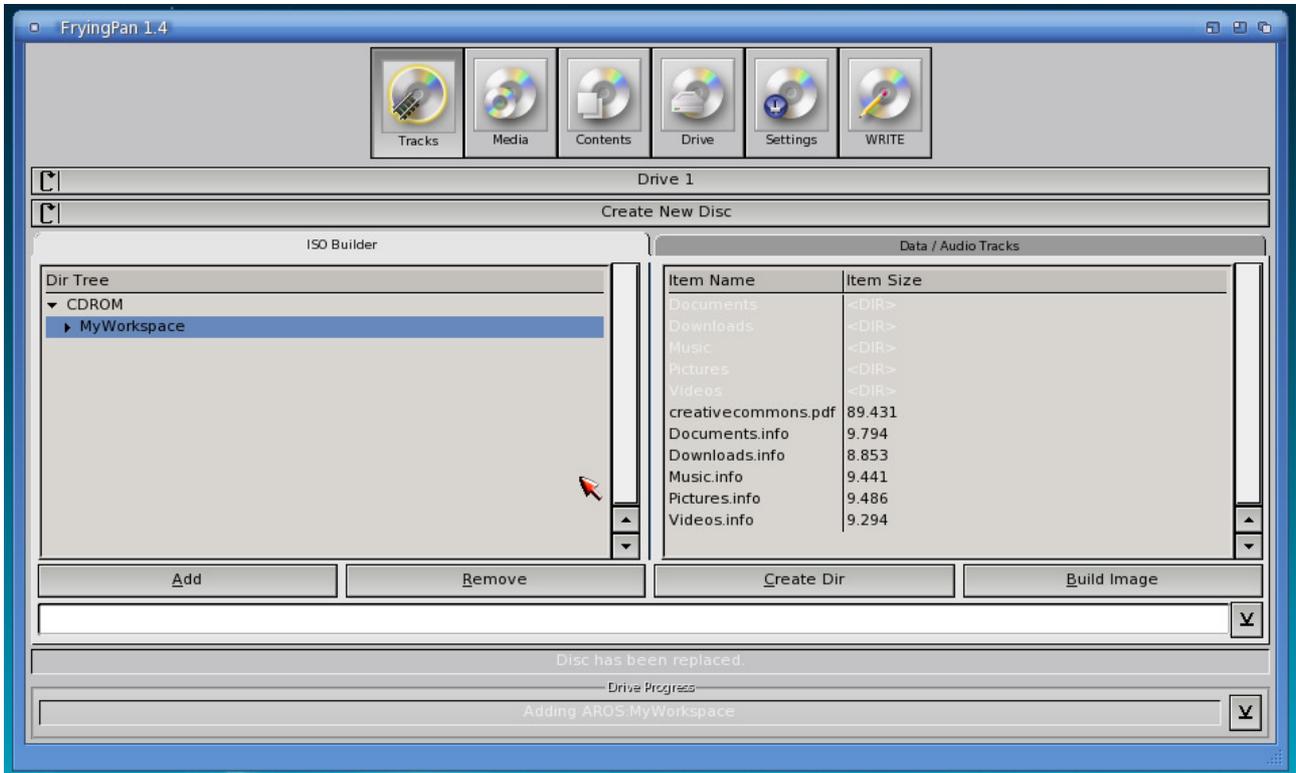
Odyssey Web Browser (OWB) is a powerful and modern web browser based on Webkit, and is already available on many other platforms. Although being new to the game, this browser is already reliable and provides support for many Internet sites such as Google Docs, Google Earth, Gmail, Facebook and every Amiga community portal, like amigaworld.net, amiga.org and many others. AROS OWB also supports tab-browsing: to open a new tab, just right click on the tab title and select tabs > open new tab. OWB supports Javascript and HTML5: you can play games and use web applications based on both technologies, but there is a limitation for this release. You can't play all movies or music, since codecs aren't supported yet. Youtube, Vimeo and some other well established video sites, however, will now work smoothly.

9.2 Record your music like professionals do, with AudioEvolution 4



AudioEvolution 4 is the best audio-recording tool for the Amiga platform. Still developed by its author Davy Wentzler (who also coded some of the audio drivers provided by Icaros Desktop), it allows multi-track management, sampling and sound effects.

9.3 Burn your DVDs with FryingPan



While former versions of Icaros Desktop included a demo of FryingPan, which was still a commercial program, Icaros 1.4 provides the recently re-released open source version, freshly recompiled for AROS. In order to use it, you should select your drive first, choosing the right device in the 'Drive' options of the upper bar. If you're using an internal drive, you may choose the `ata.device`, while `usbcsdi.device` will be good for USB connected drives.

9.4 68K Applications

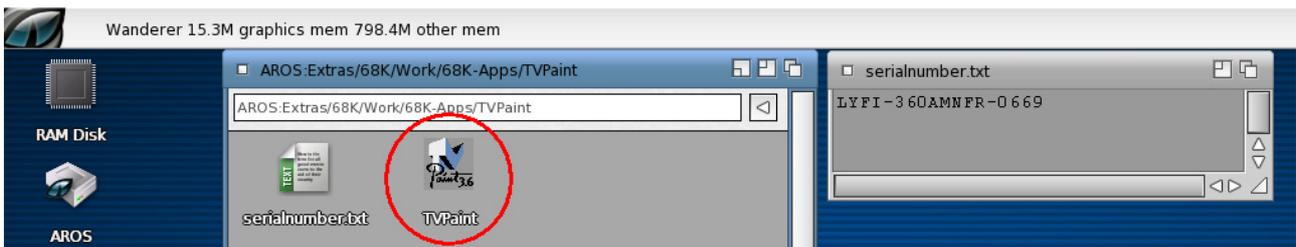
Icaros Desktop comes with a nice (and increasing) selection of programs originally written for the Commodore Amiga, whose distribution rights have been granted by the original authors either directly (under their written permission) or indirectly (redistribution allowed by a newer open source / public domain or freeware license).

9.4.1 TVPaint

TVPaint is a well-known free-hand painting program written by a French company named TVPaint Développement SARL and which till today is still being developed for mainstream platforms. Version 1 of this application had been released for the Amiga in 1991 and we kindly have granted permission to add version 3.5.9 to our distribution. You can learn more about current and past TVPaint solutions at www.tvpaint.com website.



To run TVPaint you need to set up and run the M68K environment. Please see chapter 8 to learn how to do that. Once you're done, you can start the application:



Choose your favorite resolution:



Entering your personal data and registration key should not be mandatory anymore. However, if required, you are allowed to use this one: **LYFI-360AMNFR-0699**



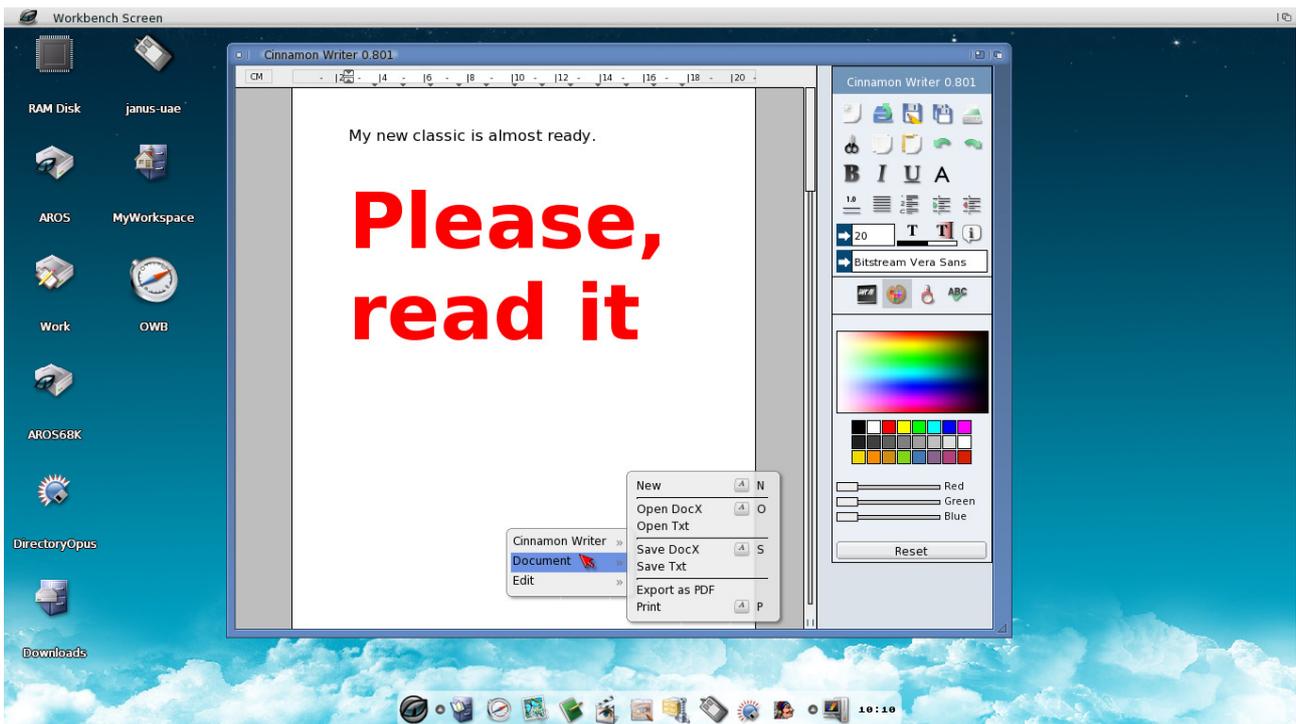
Then you will be able to start painting. Please notice there are a quick-start guide and a user manual in the application drawer, in PDF format. You may use ArosPDF to read them (see chapter 9.5).

9.5 Read your PDF files with ArosPDF



ArosPDF is Icaros Desktop' embedded PDF reader. PDF files can be opened both by double clicking on their icons, and by formerly running ArosPDF from AmiStart or Wanderer.

9.6 Write your best-seller with Cinnamon Writer



Cinnamon Writer is a new, Amiga-based word processor with text formatting features, able to open and save .docx files and, best of all, to export them to PDF files. This is still a early version, but really promising. We could include this release thanks to Pascal Papara and, obviously, Claus Desler.

9.7 Play many SDL games and some great classics

The Commodore Amiga® has been a great gaming platform. Icaros Desktop offers a wide choice of games you can relax with: the shareware episodes of **Doom** and **Quake**, a big selection of SDL library-based games like **Blob Wars**, **X-Penguin** and others, the great *Revolution Software* classic adventure **Beneath a Steel Sky** and many, many others. And, if that isn't enough, Icaros Desktop also provides emulators for all 8-bit Commodore computers, for the Sony PlayStation™ and other exciting gaming platforms of the gold age.

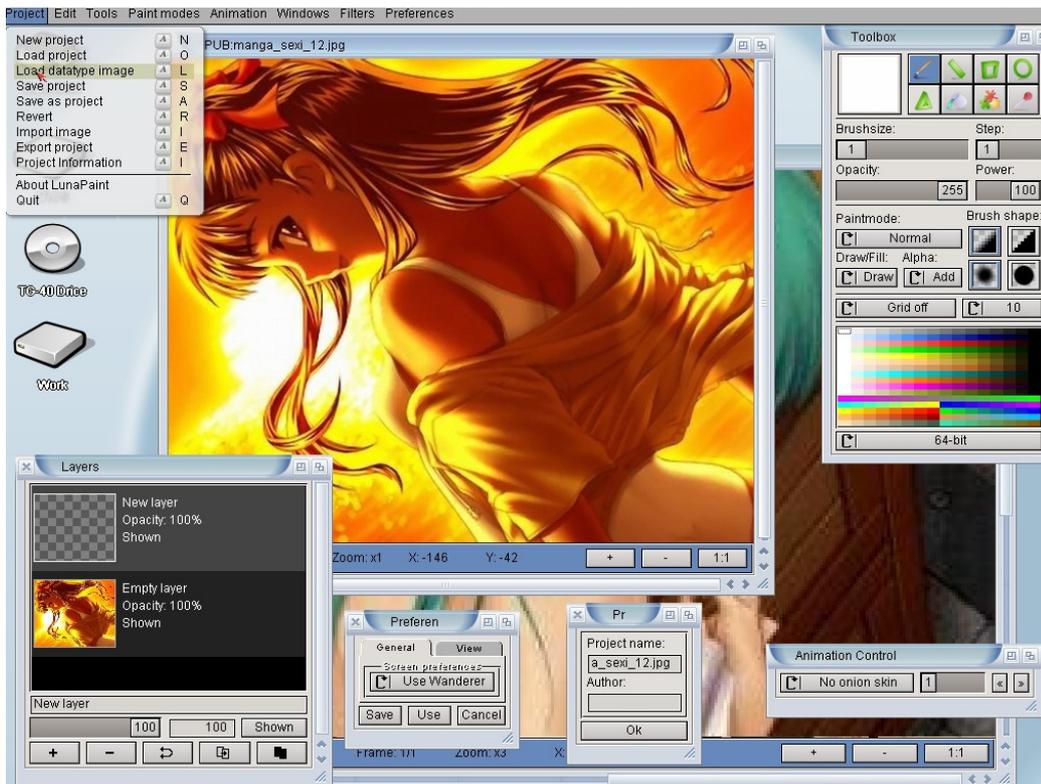




If you have problems running games and emulators with the ATI or Nvidia driver, please boot Icaros Desktop in VESA mode, with a 32 bit palette.

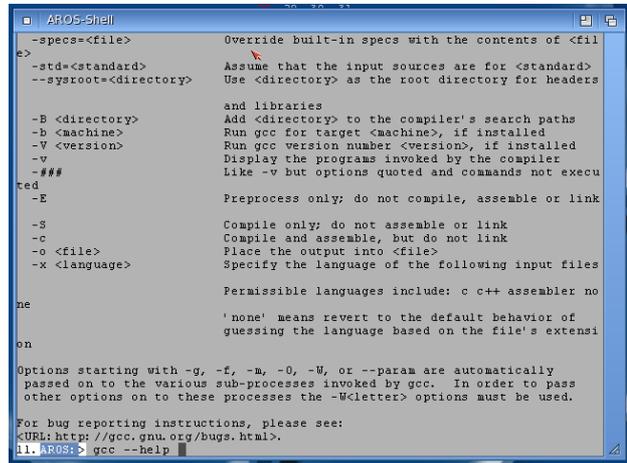
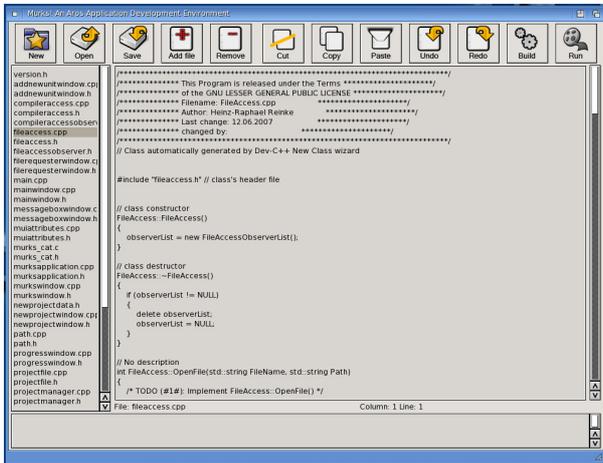
9.7 Paint your pictures with LunaPaint

LunaPaint has probably been the first real AROS-based application. It's a paint and photo-editing software using layers and nowadays features, with a simple menu and tool-based graphic interface. Load and edit your images or create a new one from scratch: LunaPaint will help your creativity in a funny way.



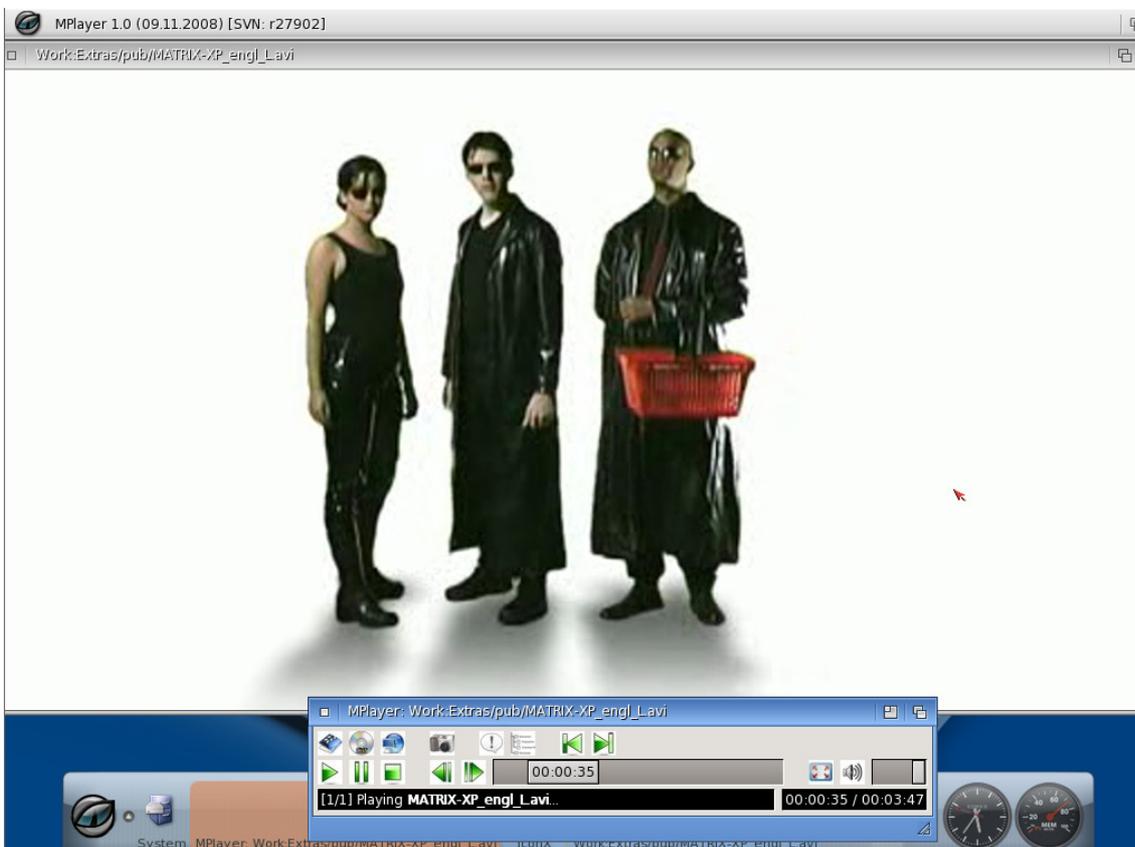
9.8 Develop your applications with GCC and Murks! IDE

Icaros Desktop provides a full development chain based on gcc version 4.4.2 which includes all needed tools to build AROS itself and its applications. Murks!IDE is a graphic integrated development environment which should speed up your work. Besides with gcc, you can also find other programming languages (python, perl, lua, PortabIE, false, bwbasic), libraries (SDL, mesa, libidl, etc) and many, many examples.



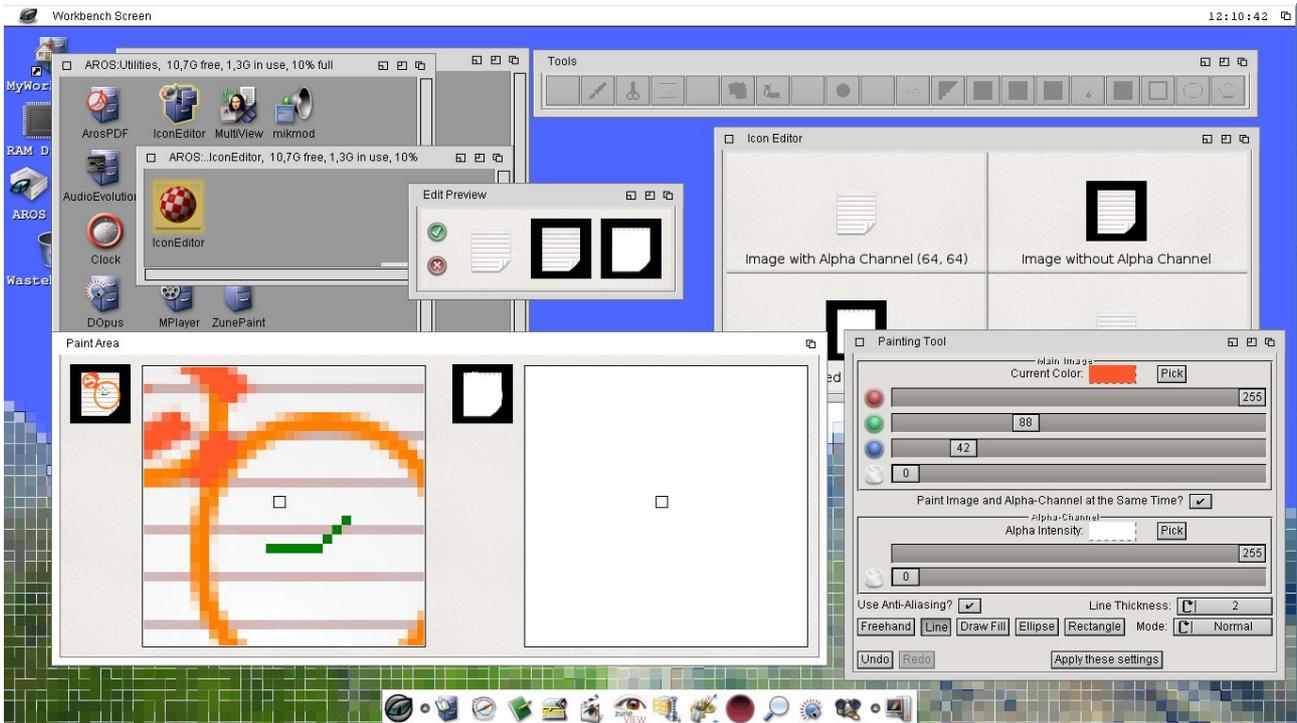
9.9 Play your favourite music, DVD and videos with Mplayer

Mplayer is a full-featured multimedia player which allows you to have an amazing media experience even in un-accelerated VESA modes. It plays the most popular audio and video file formats, including MP3, DivX, XviD and many, many, many others. It can play DVDs as well.



9.10 Create your double-state icons with Icon Editor

Paul Bloedel's Icon Editor is a Hollywood-based application which allows to create, modify and manage double-state icons.



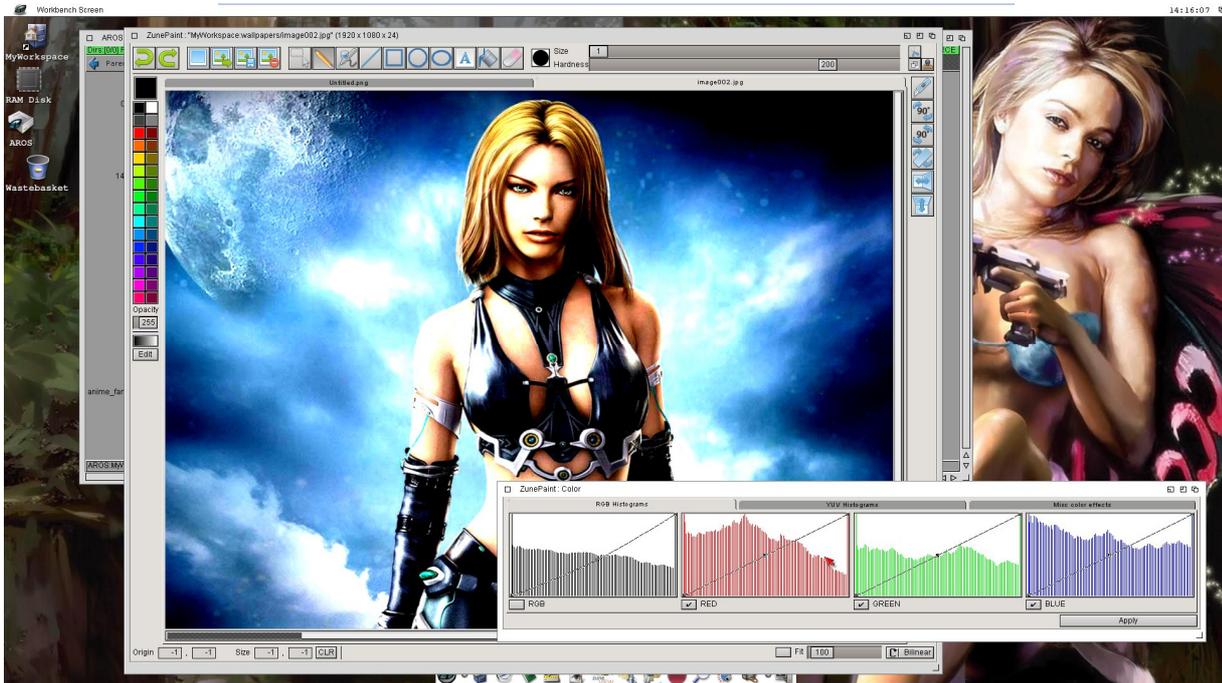
9.11 Make your own music with HivelyTracker, MilkyTracker and ProTrekkr

Trackers were Amiga's best known music tools, allowing people to use sampled instruments in a easy and reliable way. HivelyTracker, Protrekkr and MilkyTracker are available on many platforms, and on AROS as well.



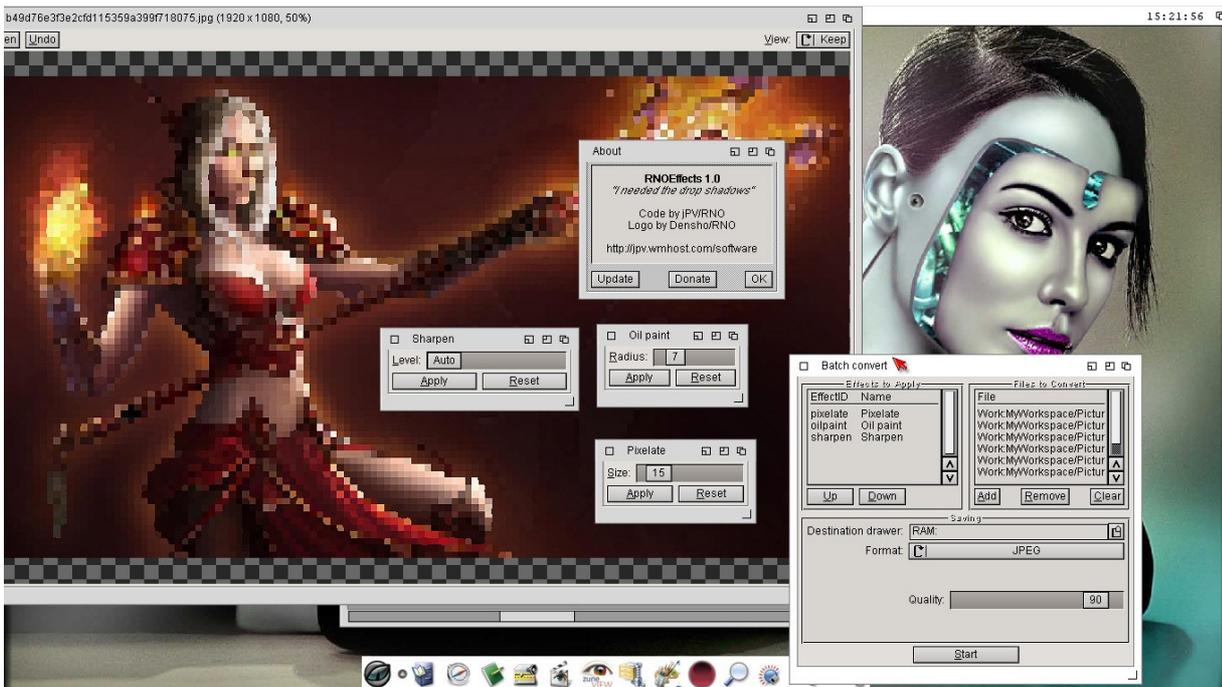
9.12 Browse your images with ZuneView

Yannick Erb's ZuneView is a great image viewer which can also perform simple modifications to the current image. Do not forget to try also ZunePaint from the same author, a fast image manipulation program for quick editing, and the vector-image editor ZuneFIG.



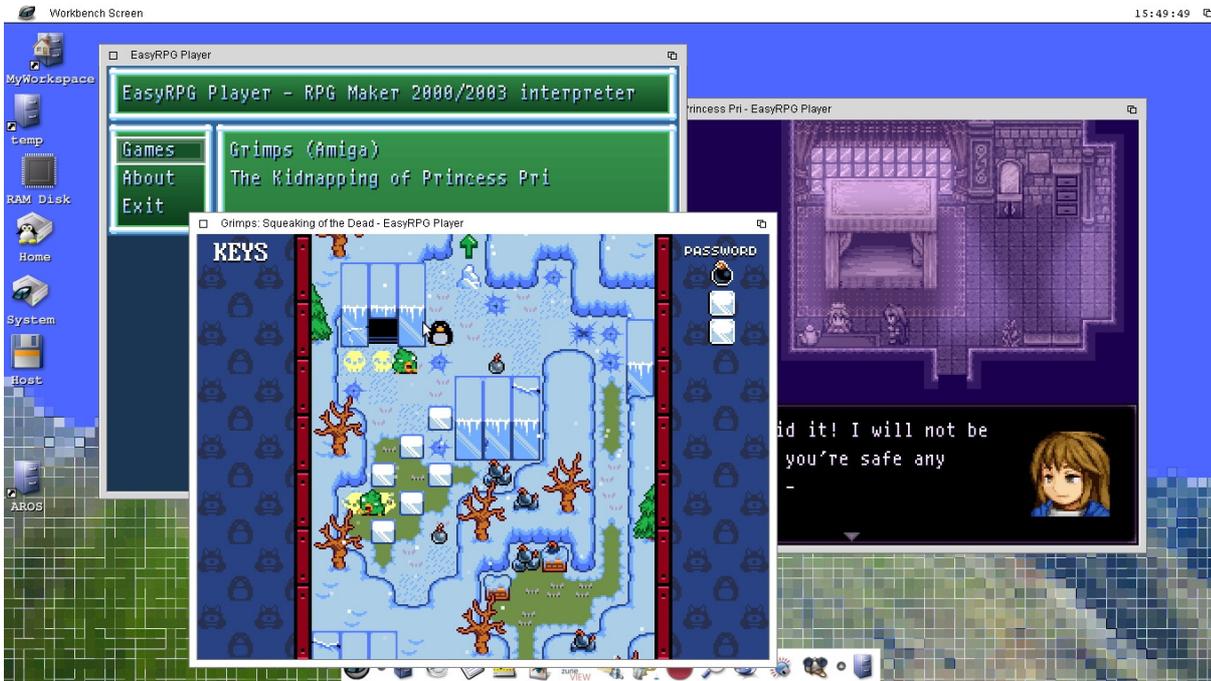
9.13 Batch-convert images with RNO Effects

Another recent program ported to AROS, jVP's RO Effects is a full-featured batch image processing software which can quickly add several advanced graphic effects to many many images in a single passage, and save them as a different type. On Icaros web site, you can even find a video tutorial explaining how to quickly create hundreds of dual-state icons in less than 5 minutes, using this amazing program.



9.14 Play dozens of indie games made with RPGmaker

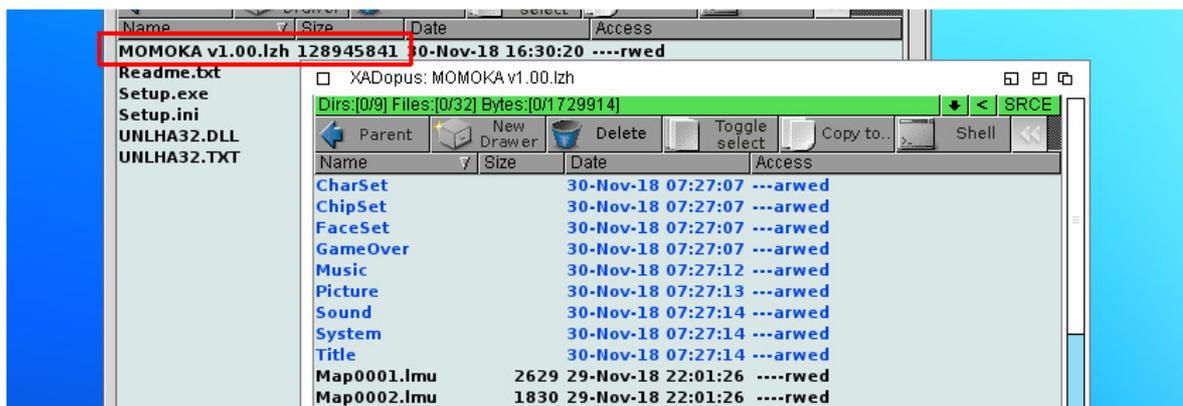
Starting with Icaros Desktop 2.2.6, the distribution includes **EasyRPG Player** in Extras:Emu. This program is a virtual machine/interpreter for games written with two popular editors: **RPG Maker 2000** and **RPG Maker 2003** (newer versions are not supported, though). Icaros comes with two games already installed: **The Kidnapping of Princess Pri** and **Grimps: Squeaking of the Dead**, both kindly authorized for distribution by the respective authors, but you can add many more to them. The first place you should search for them is the official rpgmaker.net website, where the creators community normally announce and publish their projects. But there are also many other sources you can easily search for.



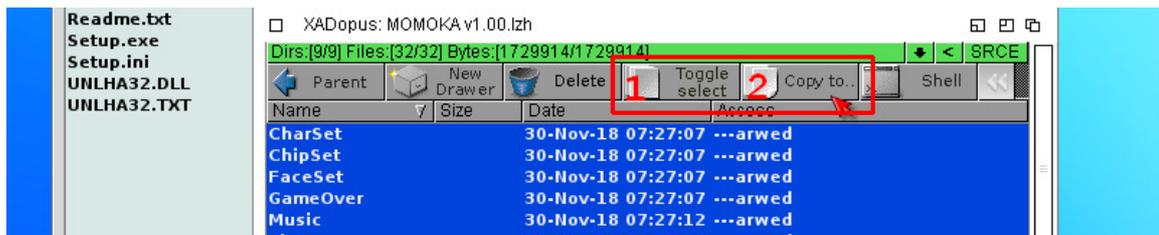
9.14.1 How to convert a RPGMaker game and let it run on EasyRPG Player

Games won't run straightforward. You will need to adapt them a bit. Luckily, this is very easy to do:

- 1) Move to **Extras:Emu/EasyRPG** and create a new subfolder with the name of the game. For instance, if you wish to play MOMOKA (a quite disturbing horror adventure ad <https://rpgmaker.net/games/10880>) please create a "Momoka" drawer inside of **Extras:Emu/EasyRPG**. If you're using Magellan, set this as destination.
- 2) Download the game bundle. If you open it with Magellan, you will find a bunch of files including a .lzh archive. Decompress this one until you find a folder which includes many sub-directory and a lot of .mpu files, exactly like the following one:



- 3) Select all files there and copy all them into **Extras:Emu/EasyRPG/Momoka**. Clicking once on the **Toggle select** and on **Copy to...** buttons will do the trick.

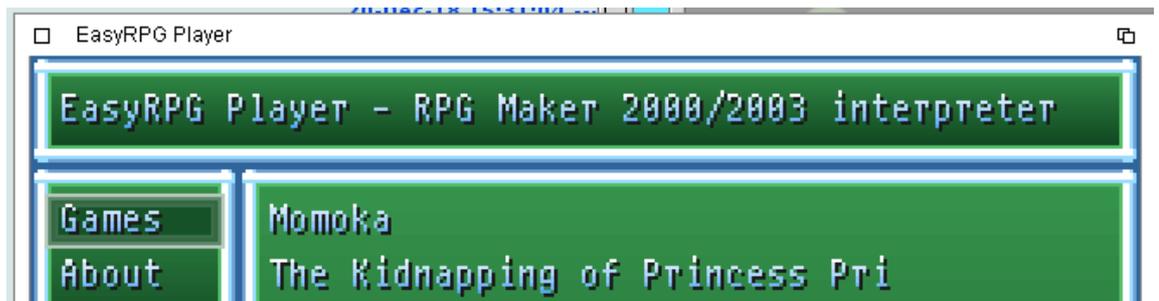


- 4) Now it's time for a check. Scroll down all the contents in **Extras:Emu/EasyRPG/Momoka** and look for the following files:

RPG_RT.exe	1032704	12-Aug-18 15:58:42	----rwed
RPG_RT.ini	58	30-Nov-18 07:21:39	----rwed
RPG_RT.ldb	394866	29-Nov-18 22:08:56	----rwed
RPG_RT.lmt	1977	30-Nov-18 07:21:39	----rwed

The four RPG_RT files are **mandatory** for the game to run. If you don't find these four files, you need to look in the subdrawers of the original game until you find them, and copy them in **YOUR** main subdrawer, in this case **Extras:Emu/EasyRPG/Momoka**

- 5) When everything is in the right place, you just have to start EasyRPG Player. The added game will be listed in the main menu:



If the game does not work...

Be sure, first of all, that you have copied the four RPG_RT files in the correct directory. Every RPG Maker game comes with these four files (they are not inter-changeable, you need to use the right files for every game, don't mess them up!), but their location might be different. Some coders prefer to place all game assets in a "Data" subdirectory and the four RPG_RT files in the root. Some others will act differently. The most important thing, however, is that you'll provide EasyRPG Player a consistent subdirectory including all assets data and the four RPG_RT files together. Please also consider that EasyRPG Player is not endorsed or supported by RPG Maker authors, so compatibility issues might arise. Last but not least, before playing a game please be sure you're entitled to: some games come with a full commercial version and you should pay for them.

10. Hosted mode and HostBridge

Icaros Desktop has been developed for 10 years focusing on native installations only. It can now be successfully installed on many different configurations and it supports a good variety of expansion cards. However, in the latest times we've got many requests for a 'hosted' release that could run on top of a Linux or even Windows installation. Since AROS already offers these chances, we started adapting Icaros to work also in a hosted environment, other than the classic native mode.

When hosted, Icaros Desktop can access the host file system and read/write your files with more ease, but compatibility with AROS programs might be limited by current state of hosted AROS flavors. Although Linux hosted kernel can be considered mature (and actually is the one most AROS core developers use for testing), the Windows one is still at its early stage, so many limitations are still present (consider it experimental). Chapter 1.2.4 provides a table with differences between native and hosted modes. Installation of Icaros Desktop in hosted mode is covered by chapter 2.

10.1 Running Icaros in hosted mode

10.1.1 Starting Icaros Desktop

You have followed all steps described in chapter 2, and you're now ready to launch Icaros Desktop for the second time (the first one was part of the installation procedure - see chapter 2). So you already know that, to start Icaros, you just have to open a shell, move to the installation directory, and enter the command

```
./Icaros
```

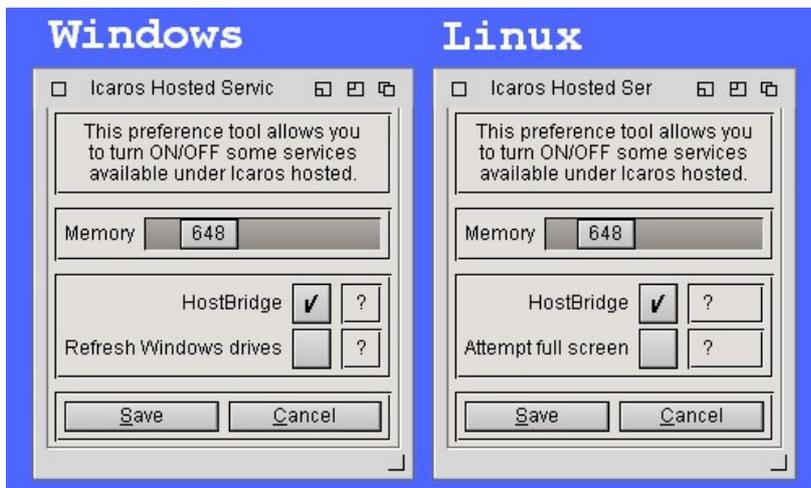
(or simply 'icaros' on Windows). Exclusively on Linux, the launch script will check if the hosted Icaros installation should go on line, and brings the aros0 interface up if it's not already running. Icaros script now accepts the following switches:

```
./icaros      starts Icaros Desktop
./icaros -q | -s  shutdown running sessions of icaros desktop
./icaros -r      restarts icaros desktop
./icaros -c variable value  changes/adds value of envarc/icaros/variable
./icaros -d variable        removes a envarc/icaros/variable and its value
./icaros -l      lists available variables and values
./icaros -f      force fullscreen for this session (Linux only)
./icaros -u      updates HostBridge links to host applications
./icaros -U      deletes older ones and updates links to host applications
./icaros -x      stops ./icaros execution (used in combination with -a and -v)
```

Please pay attention to -c and -d, since messing with Icaros' files in Envarc: might be dangerous for your AROS operation. Acting directly onto system variables assumes you already know what to expect. These switches act like a "Save" button and changes to your system will be persistent, until you'll revert them with a different value or using Prefs/Icaros Settings.

10.1.2 Configuring the hosted environment

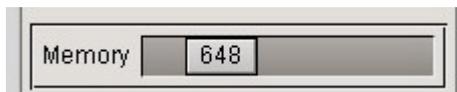
Starting with Icaros 2.2.8, we've enhanced how initial memory allocation works and added the ability to run Icaros Desktop full screen on supported Linux configurations. Unluckily, fullscreen mode does not work at all on Windows, and can give unpredictable results on Linux, depending on your distribution, architecture and window manager. You can access option using the Hosted configuration program in /Prefs, whose options will change from Windows to Linux:



Both host OS will let you change memory allocation and run HostBridge (see chapter 10.2), but only Linux will allow fullscreen, while Windows can refresh the list of mounted volumes at every startup.

Linux and Windows: changing the RAM Size

During installation, Icaros Desktop asks for the quantity of host RAM it can use, falling back to 256 MB if no answer is given. This amount gets allocated when Icaros starts up and can't change in the current session. It can be raised or lowered for the future ones, though. Suggested ranges for operation is between 256 and 3072 megabytes, however Icaros allows a minimum value of 64 MB and a maximum of 3584 (3.5 GB). Since Icaros Desktop is a 32bit system, larger amounts would be completely pointless. You can give any value included in the range, although multiples of 4 are preferred.



RAM limitation with WINDOWS 10

Latest builds of Windows 10 introduced two issues - that we are still trying to properly address. You can't assign more than 1536 MB of RAM to the AROS environment and restarting Icaros will lead to a memory error. When you have to restart AROS, please shutdown it instead, and restart it again with the Icaros.cmd script.

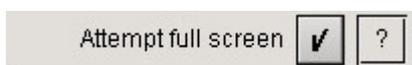
Linux and Windows: enabling HostBridge

HostBridge allows to run programs 'outside' of the Icaros Environment, to take advantage of them when AROS applications aren't "just enough". See chapter 10.2 for a complete description.



Linux only: attempting fullscreen

Icaros Desktop can run in full screen on some Linux configurations only. The others will give unpredictable results. As for now, we can tell you that Linux Mint 18 + Xfce 32bit can run Icaros Desktop full screen out of the box. We warmly encourage you to use this distribution for this purpose. Don't choose the Mate and Cinnamon flavors, download the Xfce one! Just tick this option:



and shutdown the Icaros hosted session: the -fullscreen parameter must be given at startup, so you need

to start `./Icaros` again to enable the change.

If full screen does not work...

Full screen is supported by a limited range of distributions. If your one is not compatible, AROS might give unpredictable results. If you need to step back from your choice, and you haven't access to the AROS screen, you can move to your Icaros installation directory and give this command

more `./Prefs/Env-Archive/Icaros/hosted-fscreen`

you should see 'True'

Just change it to 'False' with this command instead

Echo False `>./Prefs/Env-Archive/Icaros/hosted-fscreen`

Repeating the first command should return a 'False' instead. You can then start Icaros again.

Please beware of the fact that **Icaros Desktop, in full screen mode, will take ownership of the current Linux display**. This means that regular keyboard shortcuts to switch to other applications or workspaces may not work. Unfortunately, in this case you won't be able to switch back to Linux if AROS crashes. There is obviously a workaround: just switch to another console with a key combo like `Ctrl+Alt+F1` and give this command: `./quitaros`. **Full screen also prevents HostBridge to work as intended, so please use this option only if you don't need Linux applications at all.**

Windows only: refresh drives

When you run Icaros Desktop on Windows, Icaros can search for mounted volumes and mount them on AROS as well. You can decide whether to do that at every Icaros boot or not, with the following option:

Refresh Windows drives

10.1.3 Accessing host volumes

Icaros Desktop mounts selected parts of your host's filesystem. Both Windows and Linux hosted will mount a **Home:** drive pointing to your personal space (`/home/user` on Linux, `%USERPROFILE%` on Windows).

Linux hosted will provide also a **Host:** drive, pointing to the `/` folder (your root partition), which will be of course accessible according to your user's privileges. If you run Icaros Desktop as a regular user and try to access the `/root` directory, for instance, you'll get nothing. **Do NOT run Icaros as root user!**

Windows hosted Icaros will expose mounted volumes in the form of **WdX:** drives, where **X** corresponds to the same drive letter on Windows. Your drive `C:\` will be **WdC:**, drive `D:\` will be **WdD:**, drive `R:\` will be **WdR:** and so on. Please notice that Icaros Desktop won't make any difference about media types, so network shares, CD-ROMs and pen drives will be treated like any other hard drive. If you detach a USB drive or a DVD-ROM from your Windows host, which were already mounted on Icaros as well, Icaros won't notice that and those drives will simply get inaccessible.



Disk.info on Windows drives

Icaros Desktop will save a convenient `disk.info` file in the root of all writable volumes connected at startup. The icon is needed to let Wanderer and Magellan show the drive contents even if they haven't a info file.

10.1.4 Closing Icaros

You can leave Icaros Desktop and return your host environment in many ways:

- From the AROS shell, invoking AROS' shutdown command. It also works if you open Wanderer's "Execute Command" window.
- From Magellan, right clicking on the workbench and selecting the option Icaros -> Shutdown (hosted)
- From Wanderer, choosing the Shutdown computer option

- From the host system shell, invoking the **quitaros** script from the installation folder of Icaros Desktop (we provide a version of the script for both Linux and Windows)

NOTICE

Closing Icaros will close the AROSBootstrap process only. Hostbridge's daemon will still run in the background. To ensure stopping it, just give focus to the shell Icaros was launched from and press the Ctrl+C combination, to stop the batch process. Windows will ask if it has to "stop the batch process": just agree. When an AROS process will crash the whole Icaros environment, you need to use **quitaros**.

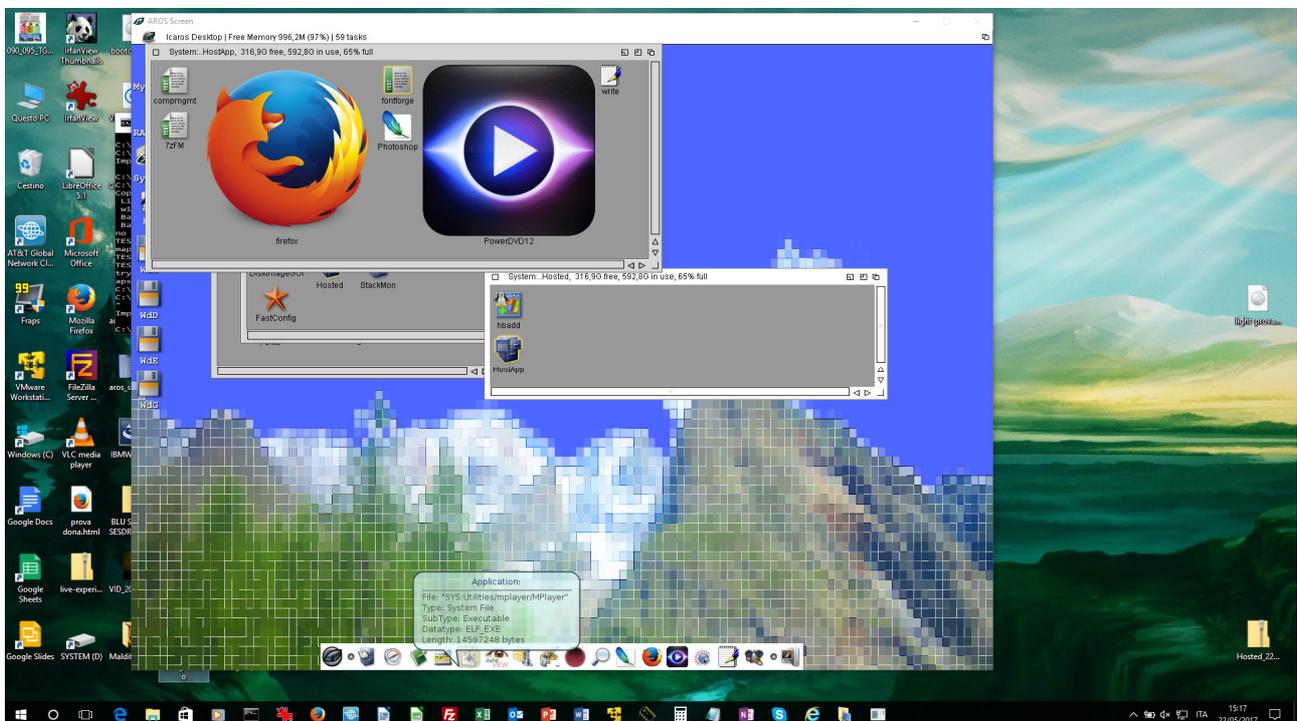
10.2 Launching Windows/Linux programs with HostBridge

10.2.1 In the beginning...

Why should you use AROS software on a Windows or a Linux installation, when you already have all the programs these mainstream operating system offer? You have Chrome and Firefox, so why using OWB at all? You have Photoshop and GIMP, why using LunaPaint? The question, however, is wrong. The real question is: "I have all Linux/Windows programs available *outside* of Icaros Desktop: what may I do with them?" And the answer is HostBridge.

10.2.2 What is "HostBridge"

HostBridge allows starting host applications from Icaros Desktop. It's neither an emulation layer, nor a complex networking tool, but just something that asks the host operating system to run something else for you. You won't get Linux or Windows applications appear on AROS workbench, nor their window theme will follow AROS' one, but at least you will be amazed by its simplicity and clean structure, which already allows you to use a host program to open a hosted file and allows to set a host program as default tool, for file formats which aren't yet supported by AROS applications. Most of HostBridge components are already in-place and written to be future proof, allowing planned expansions.



10.2.3 Definitions

- The **host system** is the operating system running on your PC. When running Icaros Desktop in native mode, the host system would be AROS but, since we are now talking about a hosted installation, the host

system can be Linux or Windows.

- The **hosted** or **guest environment** is your hosted installation of Icaros Desktop, which does not run on your real hardware but, instead, on your host operating system as any other application.

- **host applications**, or **host programs**, are the ones you normally use on Windows or Linux: bash, the command prompt, Internet Explorer, Firefox, Photoshop, InDesign, GIMP, Inkscape, PowerDVD and any other

- **guest applications**, or **guest programs**, are the AROS ones running inside of Icaros Desktop

- do not mistake with virtual machines and so on, since there are no virtual machines involved: hosted Icaros works as a 'translation' layer and behaves like any other Windows or Linux program. It can just be used to run AROS applications that otherwise wouldn't run on Windows or Linux

- a virtual ethernet card is used by Linux hosted Icaros to let guest programs use the host TCP/IP connection, but it must be configured independently from HostBridge

- "**importing**" a host application means making AROS aware of its existence, with the creation of a **launcher script**. You'll find **imported applications** in your **SYS:System/Hosted/HostApp** directory. For your convenience, we have added a new ASSIGN to this directory called **HostApp**..

10.2.4 Scripts and components

HostBridge works in a very simple way. It runs a little daemon on the host operating system, which is basically a shell script looking into a directory for another script to run, once a second. If it finds it, it launches it, otherwise it will just wait for a second and look again. When Icaros Desktop needs to run a host application, HostBridge provides that script in the right location. In a nutshell, it's like sending an order to a postal box: when the destination receives the order, it just executes it. Modern computers and modern operating systems can easily deal with a process polling a specific place of the filesystem to look for a file every second: you won't even notice it.

This daemon is platform specific and it's copied by Icaros hosted installation script in your S directory. It starts in the background when you launch Icaros Desktop with the "Icaros" startup script.

On the guest environment, you'll find a "Hosted" drawer in Sys:System one. This drawer includes HostBridge's main scripts and data files. HostBridge scripts are executable and automatically added to \$PATH, so they can be used like any other AROS CLI command. Each one has been conceived to deal with a single part of the process, so they can be placed on a chain to get a more complex result. Here's the list

hb <executable path>

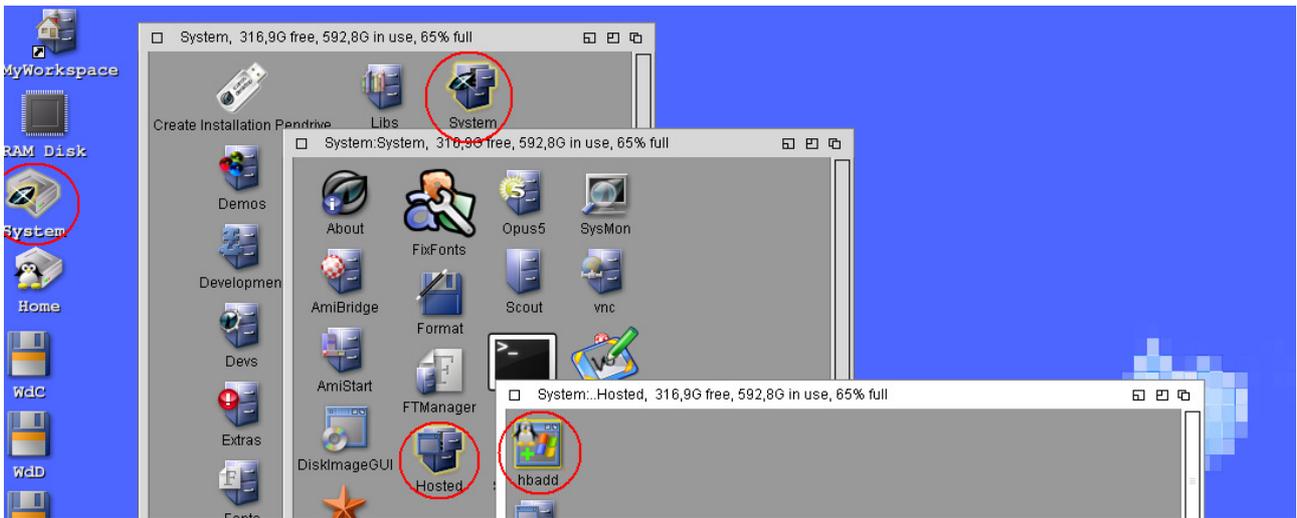
hb is a command line utility which allows shell-centric users to quickly integrate host applications. In practice, it lets you skip the first requester of hbadd forwarding the host application path to it. Example:

hb Host:usr/lib/libreoffice/program/soffice

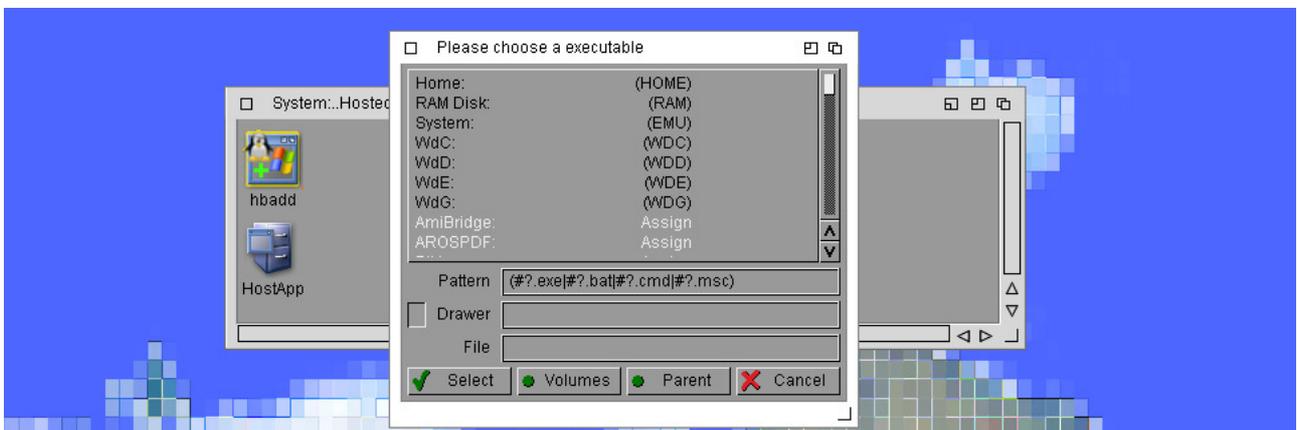
will immediately add the 'soffice' program to HostBridge, skipping the requester (on a Linux-hosted configuration). Path must be provided in the AROS format, like in the above example.

hbadd

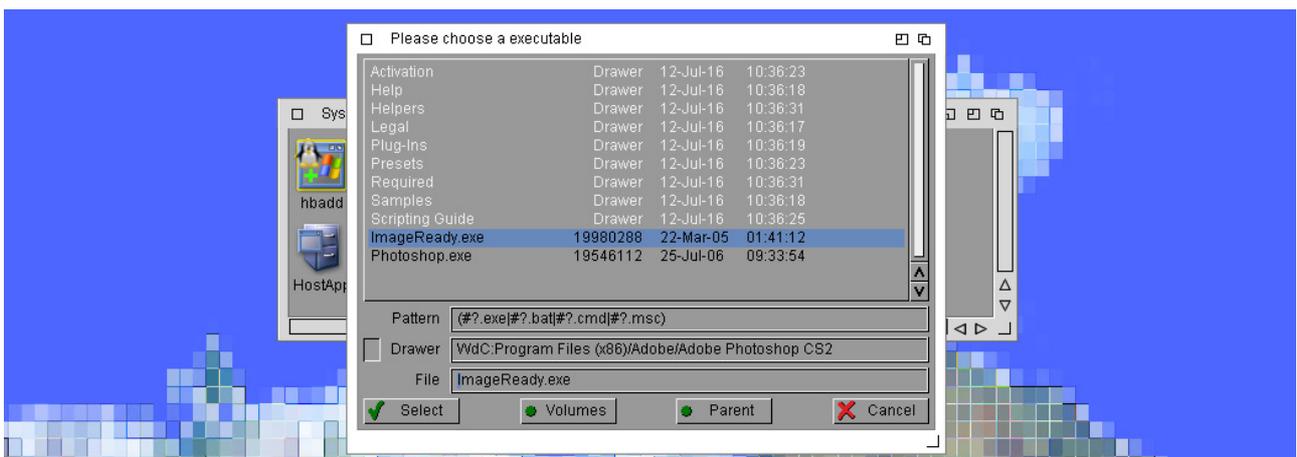
hbadd starts a wizard to import a host application. Don't worry: nothing happens to your precious Photoshop or Firefox installation! Hbadd just creates a launch script for that program and puts it into SYS:Linux or SYS:Windows, depending on your host operating system, eventually associating an icon. The process is quite straightforward. Let's imagine you wish to Adobe's ImageReady CS2 to Icaros Desktop, then you only need to run hbadd, either by its own icon from its folder or, if you prefer, by entering 'hbadd' from the AROS shell.



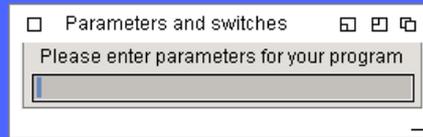
Then, you must locate the right executable from its path. You don't have to worry about the difference between AROS and Windows (or Linux) paths, because HostBridge already includes what's needed to convert them. Just start from your Volumes and locate ImageReady.exe



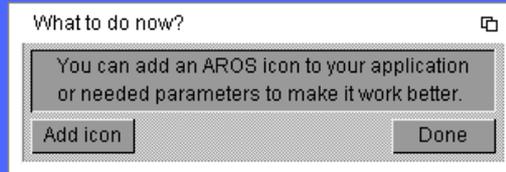
Remember: on Linux systems, the Host: volume is your filesystem's root directory, while on Windows host drives are called WdC, WdD, WdE and so on. Windows and programs are generally stored on WdC.



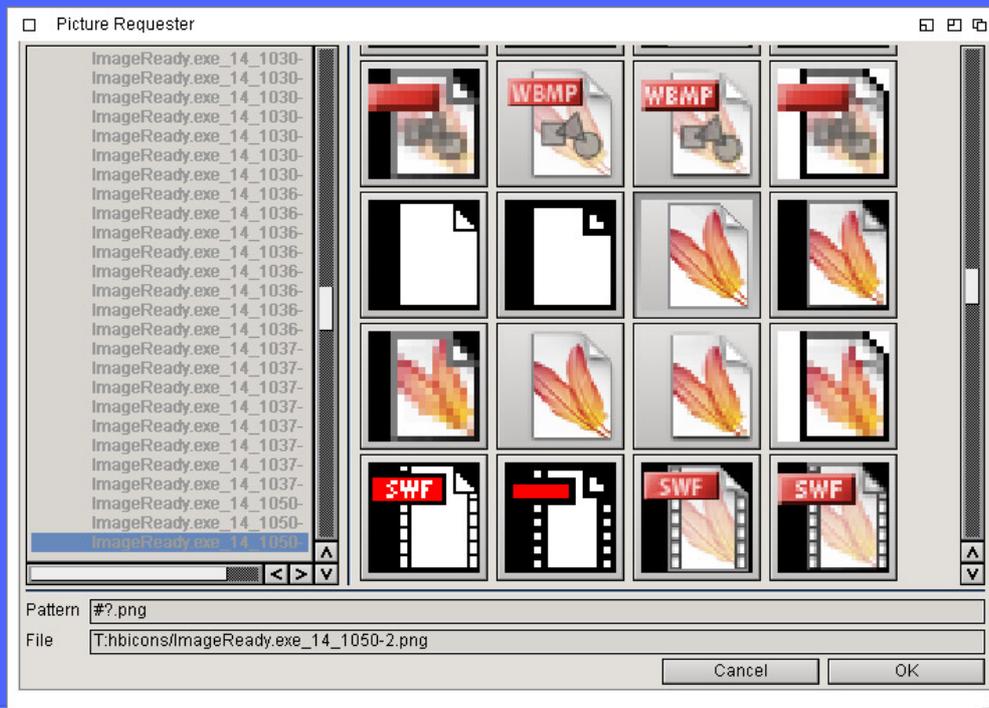
Once you've found it, select it and proceed. This field will appear:



It allows to add parameters to your program's command line if needed. If you don't need any, then you should just leave it blank and press enter, or click on the close gadget in the top left corner. When done, the following requester will appear:



It lets you pick an icon (from the executable, on Windows only) and associate it to your integrated app. Click on 'Add icon' and wait for a few seconds (do not click twice or more times). A picture requester with all available icons will appear:



Please notice only Windows executables embed icons: Linux programs will need a separate icon in PNG format. If you're integrating a Linux application, this requester will appear as well, but you'll need to provide a suitable .png file by yourself. Look on the web: you'll find dozens with Google!

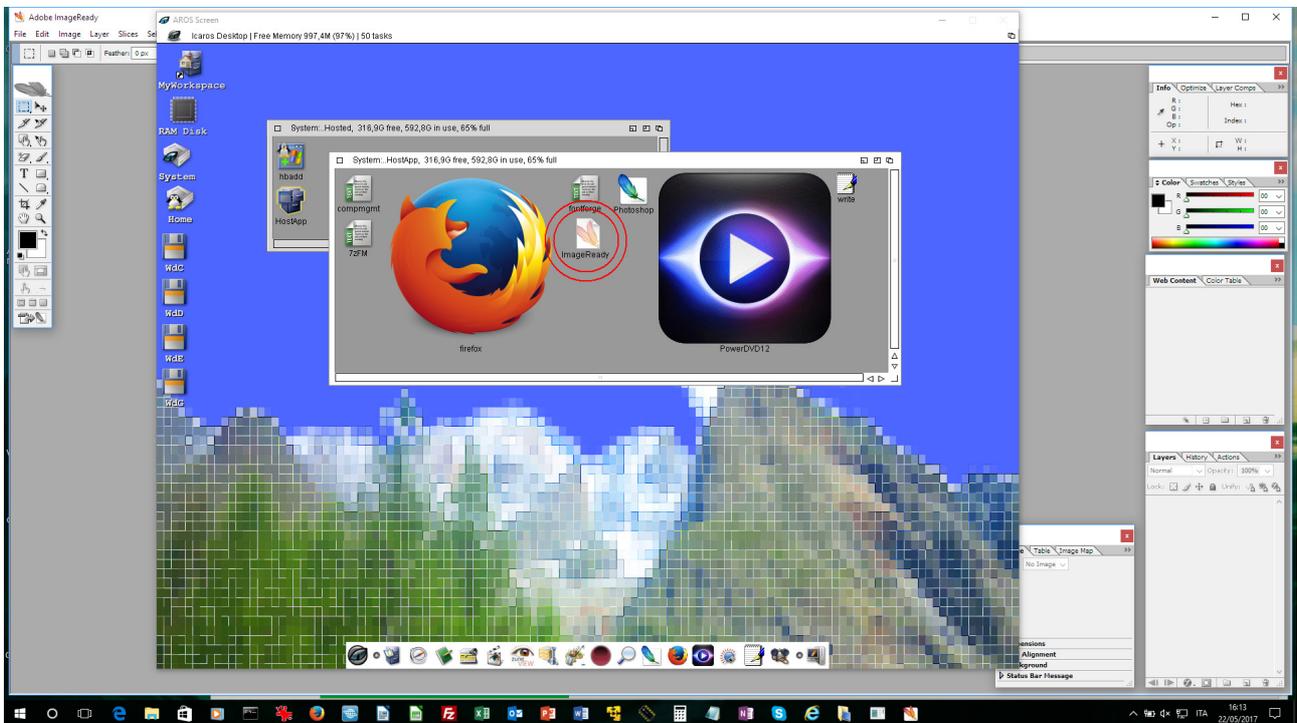
Icon packs in Extras

Starting with version 2.2.7, Icaros Desktop Live! (not Light) provides two double-state iconsets in Extras/Icons that can be suitable for HostBridge, called **Dark Glass** and **Logos_And_Brands**. They must be selected during Icaros installation, but can be added on a later time by extracting contents of **icons.zip** archive in the **Extras** directory of the installation media.

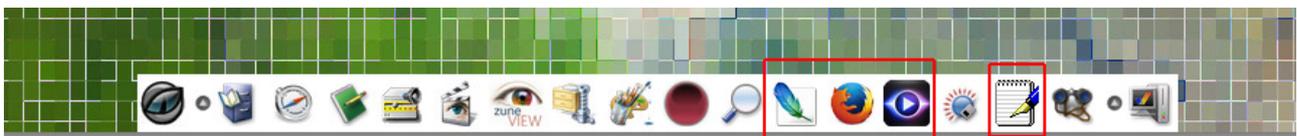
Once you'll have selected an icon, it will be associated to your imported application and copied as .info file in the HostApp subdirectory. You can now click on the "Done" button.



If an icon is not directly suitable, a standard one will be added instead. Why should you add an icon? Because host apps can be launched as commands in the AROS shell, but without icon you wouldn't be able to run them from Wanderer, Magellan, AmiStart or any other AROS file manager/dock launcher. Just click twice on your app, and Windows/Linux will start it!

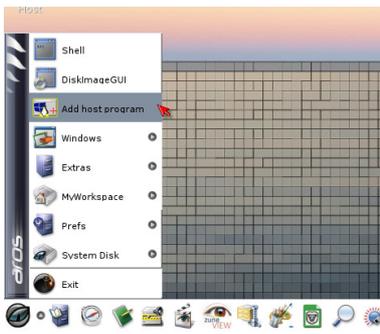


Yes, it's right: you can add them to AmiStart as well...



...and they will start like any AROS program would. But this is not everything HostBridge does. See "Running imported apps from the shell" for further explanations.

NOTE: starting with Icaros Desktop 2.3, a convenient shortcut to HostBridge has been placed in hosted start menu:



just click on “Add host program” to call hbrun from AmiStart.

Hbrun <executable path>

if you don't need to integrate an application, because you need it just once, you can run it with the **hbrun** command. Once again, you don't need to remember the Windows or Linux exact path for your application. Hbrun uses standard AROS paths and supports all kind of directly executable programs. This means binary programs and executable scripts on Linux, and .exe, .bat, .cmd and .msc files on Windows. A program must be provided or hbrun will fail with a error message

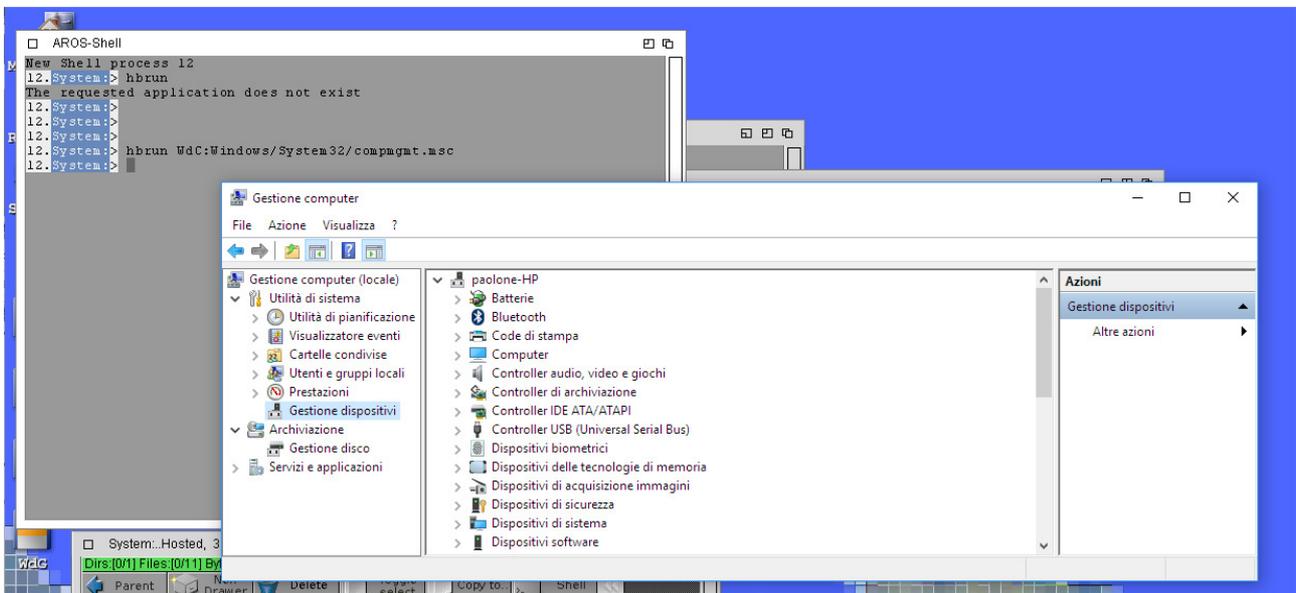
Example:

hbrun WdC:Windows/System32/compmgmt.msc

will start C:\Windows\System32\compmgmt.msc.

Exe files now run straightforward

Starting with version 2.3 Magellan is able to hbrun Windows programs simply double-clicking on them.



It's important to understand that hbrun can't open also files. Do not try **hbrun irfanview mypicture.jpg**, for instance, because it won't work. Hbrun doesn't know anything about host's PATH variables as well. If you don't enter a full path, hbrun will look into the current folder.

Hbscript <path of your script>

Like hbrun, hbscript is tailored to bash (on Linux) and Powershell (on Windows) scripts, which generally need a command to start parsing. When installing, hosted Icaros sets the proper command in a variable, `envarc:icaros/hosted-cmd` (“sh” for Linux, “powershell -File” on Windows). If you need a different command to launch your host scripts, just set this variable accordingly. Some examples

hbscript home:MyScripts/shutdown.sh

will execute the Linux script “shutdown.sh” in `/home/username/MyScripts` (equal to: `sh /home/username/MyScripts/shutdown.sh`)

pathconv <AROS path>

pathconv is the path conversion tool the other scripts call to convert paths, from AROS to hosted system notation. Users are not supposed to actively use it, but understanding how it works might explain why a command you gave didn’t work as you expected.

Starting with Icaros 2.3, pathconv supports ASSIGNs, but they need to target a directory on a physical drive connected to the AROS system. For obvious reasons, pathconv won’t be able to convert paths from the AROS RAM Drive (which is a unreachable virtual filesystem, unmounted by your host OS) so please don’t use them with HostBridge. Pathconv, anyway, can detect files on T: and RAM: so it will warn the user with an error message.

It also understands `http:` and `ftp:` which won’t get converted. Pathconv does not output anything but its result can be read in the `T:winpath` file. To “explicit” the result, just type **more t:winpath** after a conversion. If you don’t enter any fixed path, pathconv starts counting the source path from the current folder. Some examples

pathconv host:usr/bin/chrome

on Linux → `/usr/bin/chrome`

on Windows → not applicable (there’s no “host:” volume in Windows hosted AROS)

pathconv home:Screenshots/Doom3/screen001.jpg

on Linux → `/home/username/Screenshots/Doom3/screen001.jpg`

on Windows → `C:\Users\username\Documents\Screenshots\Doom3\screen001.jpg`

pathconv sys:Tools/LUPD/LiveUpdater

on Linux → `/<path to your Icaros installation>/Tools/LUPD/LiveUpdater`

on Windows → `<path to your Icaros installation>\Tools\LUPD\LiveUpdater`

pathconv wdc:Program Files(x86)/Adobe/Photoshop/Photoshop.exe

on Linux → not applicable (there is no drive C, or D, etc on Linux)

on Windows → `“C:\Program Files(x86)\Adobe\Photoshop\Photoshop.exe”`

Dotdesktop <application.desktop>

Starting with Icaros Desktop 2.3, HostBridge can handle Linux `.desktop` files, used by system GUIs to create shortcuts to applications. At first startup, HostBridge searches for `.desktop` files in the system and imports all Linux applications it can. Dotdesktop allows to do it manually, you just need to provide a suitable `.desktop` file. Please notice that current implementation does not handle arguments.

Dotlnk <application.lnk>

Starting with Icaros Desktop 2.3, HostBridge can handle Windows `.lnk` files, used by Start Menu to create

shortcuts to applications. At first startup, HostBridge searches for .lnk files in the system and imports all Windows applications it can. Dotlnk allows to do it manually, you just need to provide a suitable .lnk file. Please notice that current implementation does not handle arguments.

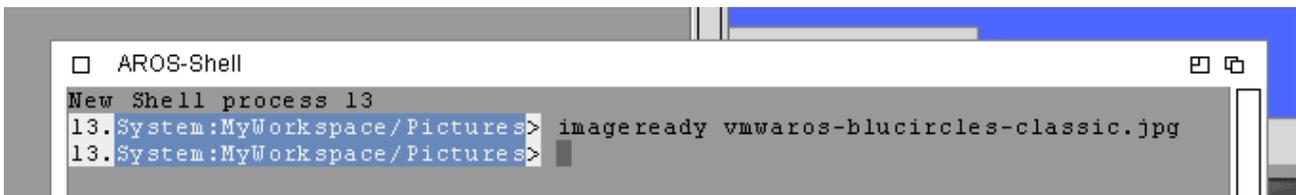
About Windows shortcuts

Windows lnk files are encoded in binary form and need a Windows tool to parse them, Mark Woan's Inkanalyser. Dotlnk uses HostBridge to call a Windows script in S: called create_hostapp.cmd, which does the parsing job. Problem with these .lnk files is that... they are somehow uncoherent, with many of them placing the target application in a field, and some of them in others. Icaros' first implementation of create_hostapp.cmd will look only in the 'relative path' field for a valid .exe file. If it can't find any, it will abort the job, and dotlnk will warn the user about this.

10.2.5 Running imported apps from the shell

Why should I "integrate" applications, when hbrun and hbscript already allow to run them with ease? Because integrated applications can be called from the shell with their name and can be used to open AROS files. Let's assume you've already integrated Adobe ImageReady into Hostbridge, and that you need this program to modify a picture inside your MyWorkspace/Pictures drawer (that's an example: the image can be stored in any part of the filesystem except, for obvious reasons, the RAM drive). If you open the same file directly from Windows, you must remember that the "Pictures" drawer is stored on the drive you've installed Icaros Desktop on, in a subfolder of the MyWorkspace directory. But if you simply run an AROS shell from the Pictures directory, all you have to do is entering...

imageready <filename>



That's because every imported application is, from Icaros standpoint, an AROS script which accepts a project name as parameter, exactly like hbrun and hbscript accept an application or a script name. In a nutshell: every host app script is based on the same logic and behaves like hbrun and hbscript commands. Once you've imported the right apps, you may do what follows:

gedit S:startup-sequence

edit AROS startup sequence using Linux Gnome Editor

photoshop Pictures:MrsFly.png

use PhotoShop to add mustaches to your old teacher's photo

firefox http://www.icarosdesktop.org

use Mozilla Firefox to open the coolest operating system's website

write Sys:temp/That Damn Word Document I couldn't open.docx

open that damn MS Word document you couldn't open in AROS, with LibreOffice write

and many, many others. What you can't do, at least with HostBridge alone, is setting HostApp scripts as default tool for spare projects or file types, since AROS can not pass parameters to shell scripts when running from the Workbench. Luckily, a brilliant solution already exists: for this scope, you can use a tool called **wbXcli**, already provided by Icaros Desktop.

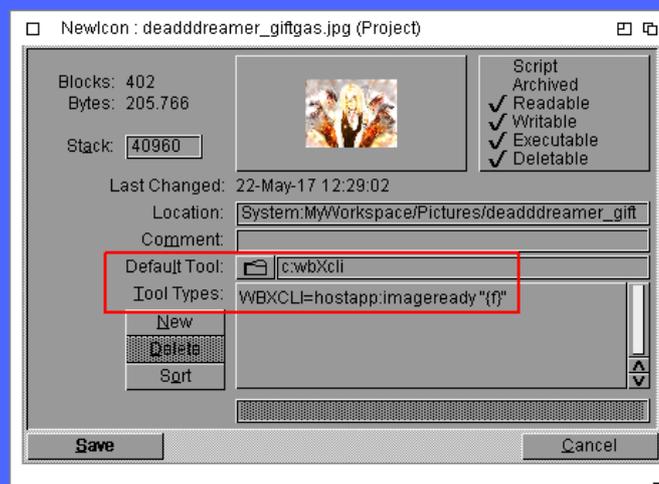
10.2.6 Setting a host app as default tool with wbXcli

This part might look tricky, but it works “like a charm”. Migario’s wbXcli is a Workbench tool which must be used from Wanderer or Magellan to pass parameters to a program while starting it. In our case, it allows to pass a project name and its path to HostBridge’s launch scripts. In the end, the result will be starting a host application and make it open the file we need. All we have to do is selecting the project icon, open its information box, and make these two changes:

1. set **C:wbXcli** as default tool
2. create a new tooltype, and insert a string like **WBXCLI=hostapp:<programname> “{f}”**

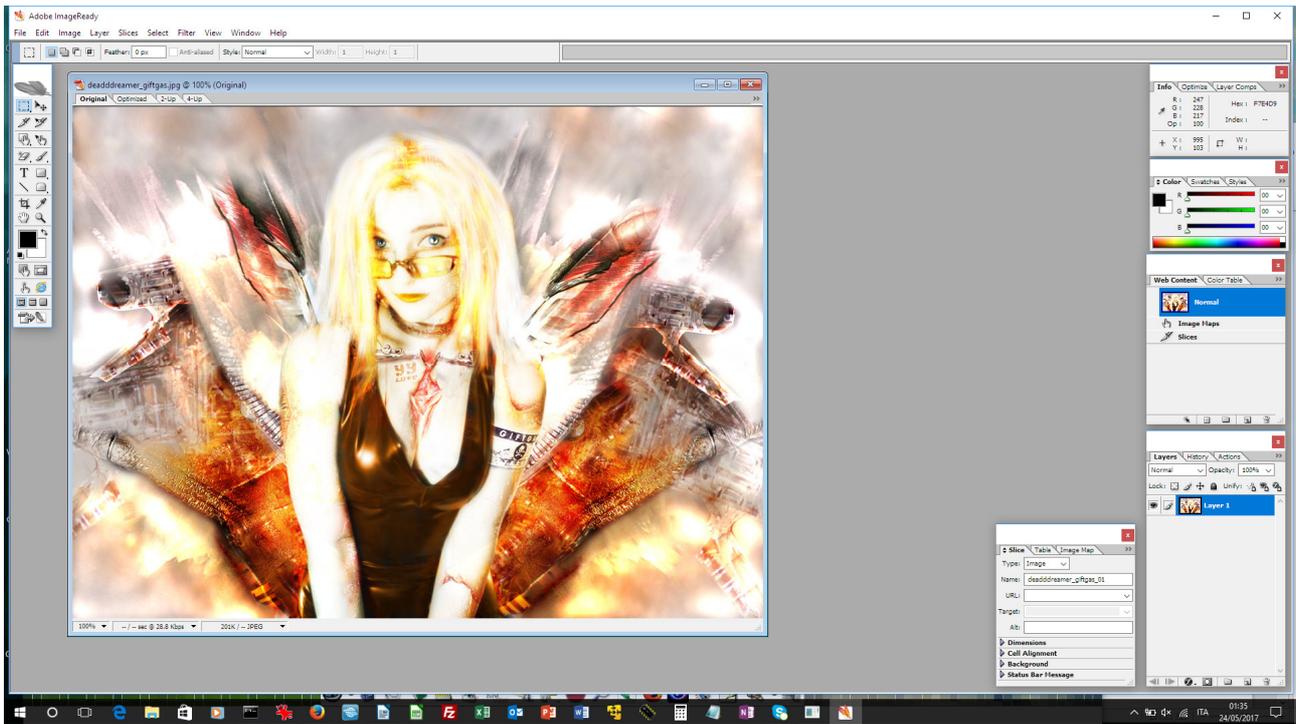
For instance, if we already integrated Adobe’s ImageReady among our host applications, and we want to use it to open a specific image (we have used `deaddreamer_giftgas.jpg` in Pictures: for this test) all we have to do is setting default tool and tool types as follows:

Default tool: **C:wbXcli**
Tool Types: **WBXCLI=hostapp:imageready “{f}”**



let's **Save**, double click on icon to check... *et voilà*:





The same approach works for def_*.info files in Envarc:SYS, so we can set a host application as default tool for a whole file type. It may be very useful, for instance, if you wanted to open all PDF files with Acrobat Reader instead of ArosPDF. Please notice, however, that this will change only the behavior in Wanderer: Magellan has its own way to manage file types and may be harder to configure. To work around this, right click on files and choose “Wbrun” to force Magellan starting a file exactly like Wanderer would do.

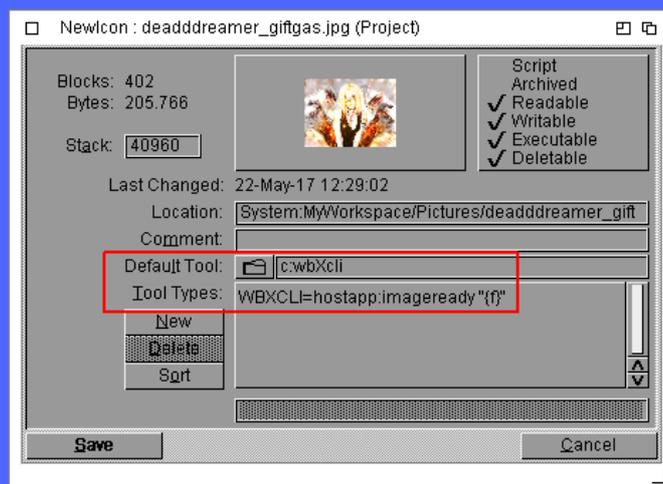
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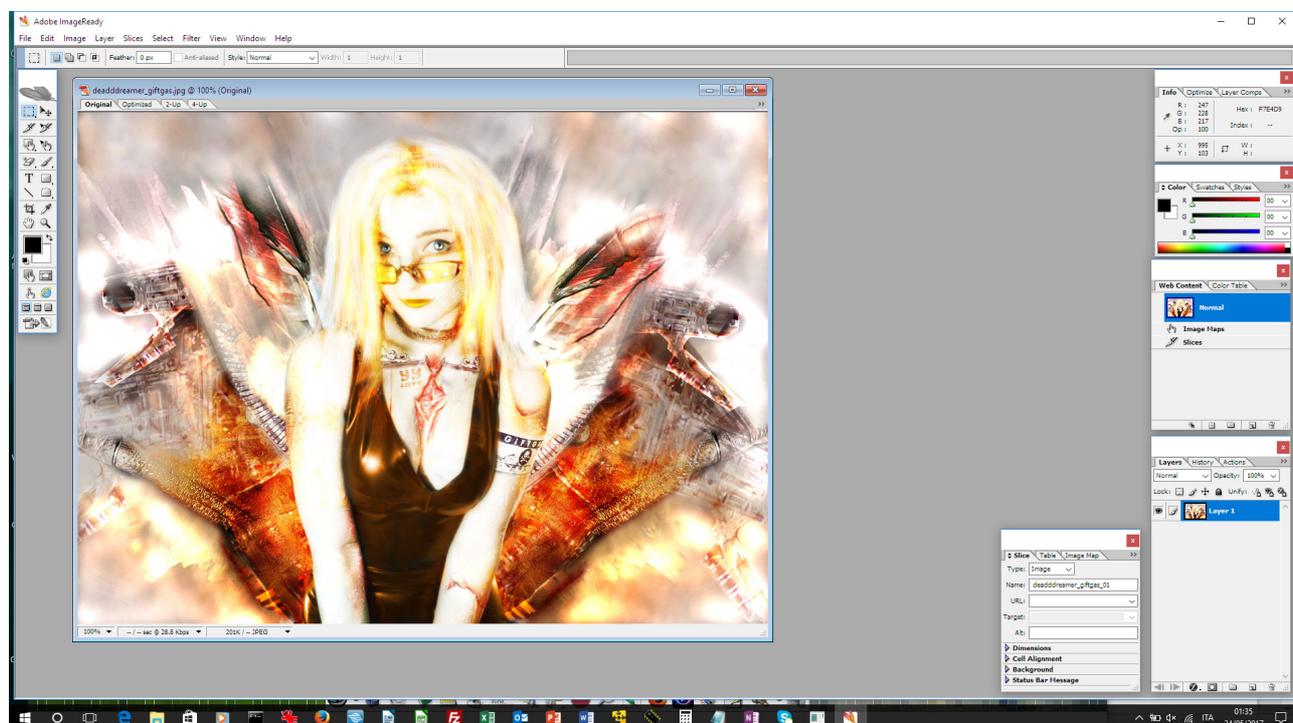
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 Tool Types: **WBXCLI=hostapp:imageready “{f}”**



let's Save, double click on icon to check... *et voilà*:



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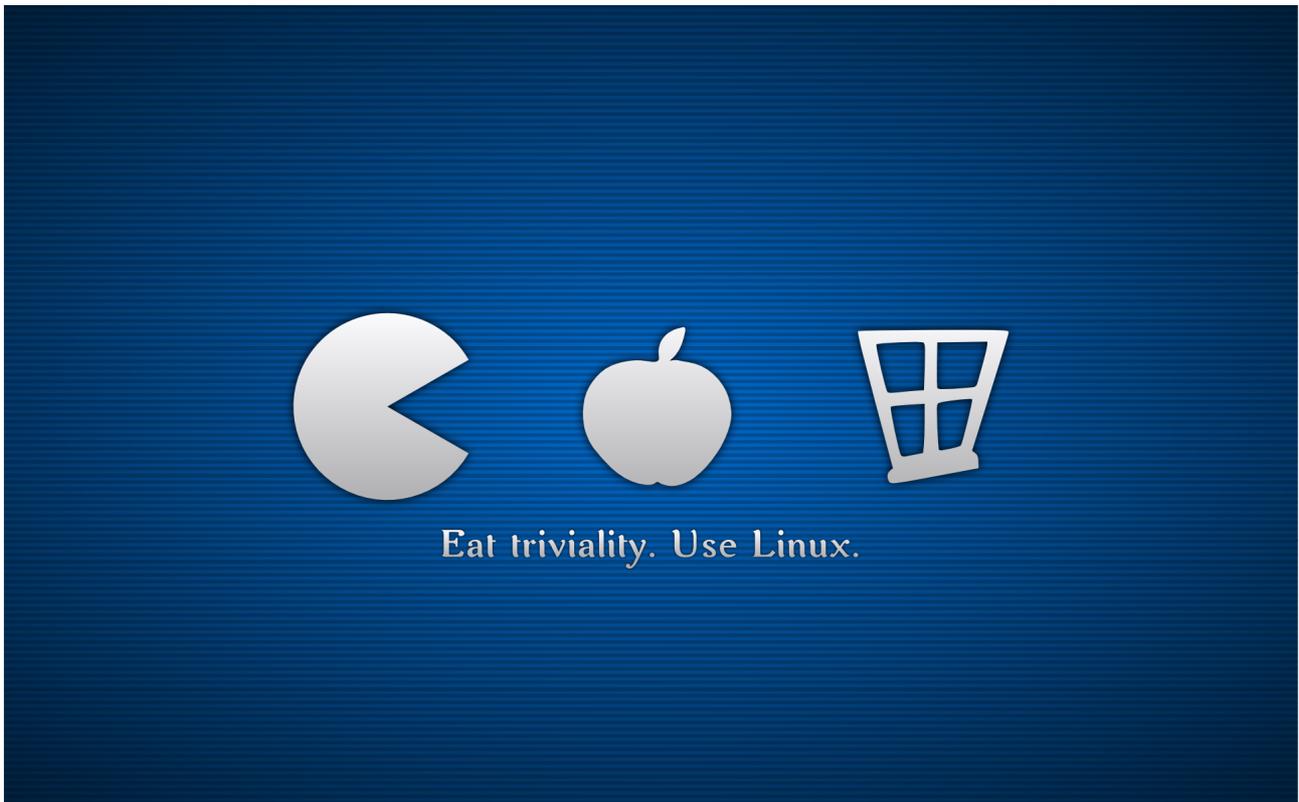
11. Credits

Icaros Desktop includes work from various artists, musicians and coders, which has been used free-of-charge under written permission. We'd kindly like to thank them for their contribution, because they made our distribution better and more complete. In particular, we'd like to mention

Andrea Lazzarotto

He's the author of "Eat Triviality", the amusing image we used as desktop wallpaper in Icaros 1.5. Originally his image was about Linux, but he kindly gave us permission to use it and he personally modified it to better fit our "AROS needs". :-)

Here's the original. Find him and his blog here, <http://andrealazzarotto.com>.



Paolo Brini

Dear friend of Icaros Desktop and Amiga fan, Paolo has economically helped us with very kind donations to our project, actually speeding up development for some Icaros 2.1.3 and 2.2 components. Thank you!

Delta Nine

He's the author of "Magic Falls", the wonderful picture used as desktop wallpaper in Icaros 1.4. You can see other works from him at <http://delta909.deviantart.com>.



Mark Sheeky

Back in the 90s, he's been a prolific author of public domain games for the Amiga computers. He kindly allowed us to freely redistribute his games with Icaros Desktop. You can find them in the AmiBridge menu, in the Scorpius Games drawer. His website is <http://marksheeky.co.uk>.



Olaf Schönweiß

Olaf is the author and maintainer of AROS VISION, the first distribution of AROS M68K. Although we didn't include the whole distribution into our M68K environment, Olaf gave us many precious hints and solved many little problems we both met during integration. In the following screenshot, you will see his distribution running in coherency mode inside Icaros Desktop (the whole screenshot had been published on May 30th, 2012 on amiganews.it forum). http://www.natami-news.de/html/aros_vision.html



Poke53280

They are authors of Hurrigan, wonderful remake of the Amiga classic Turrigan. Meet them at this address, http://turrigan.gamevoice.de/hurrigan_site.

