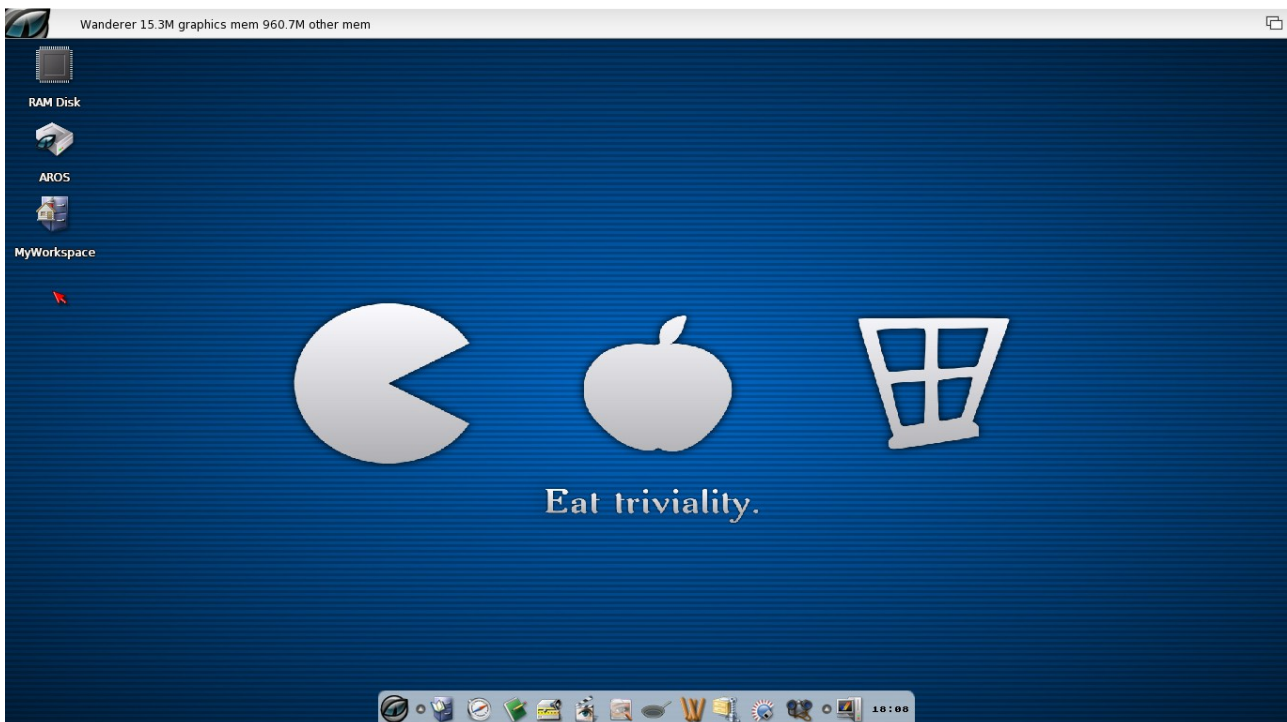




icaros desktop

V1.5



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 3.1 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 tiny application dimensions, far different from the 200 megs word processors we use today.

However, like many other young or 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** comes in. Icaros Desktop started in November 2007 as VmwaROS (VE), a pre-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 a icon. Since then, Icaros Desktop turned into a real distribution which can easily run on real hardware. It is now available in two different flavours:

- **Icaros Desktop LIVE!** is a pre-configured environment on a bootable live-DVD that runs on top of your real hardware, and can be installed onto the hard drive. It can also run in a pre-configured QEMU virtual machine, provided in the same archive.
- **Icaros Desktop LIGHT** is a reduced version of the LIVE! DVD, which provides the most important features of Icaros Desktop, but can be stored on a single CD instead of a DVD. Only the CD ISO is provided, there's no pre-configured QEMU virtual machine for it.

Other efforts had been made in order to let the user share files between the AROS virtual machine and the host operating system, being it **Linux**, **Windows** or **MacOS**. Icaros Desktop comes with YAFS, pre-installed and launched at boot time, which allows user to transfer files with any FTP client. Even the network is already configured to do this, and it is possible to surf the web, chat by IRC and so on. In order to make all these tasks even easier, newer versions of Icaros Desktop come with DHCP support.

This reference guide is targeted to both Icaros Desktop Light and Icaros Desktop Live! However, some of the procedure may vary depending on the version you're using. Most of the options can be accessed only after installing on a virtual machine or on a real hard drive. **Please remember AROS is still in alpha stage and might not fit your daily needs. There are still much more things you could do for AROS, than the ones AROS can do for you!** For any further information, visit [www.IcarosDesktop.org](http://www.IcarosDesktop.org) and [www.aros-exec.org](http://www.aros-exec.org).

## 1.1 What's new in this version?

Icaros Desktop 1.5 introduces a fair amount of new features:

- A new AROS kernel, backported from ABIv1 to ABIv0. In different words, this means that the core of the operating system has changed with a more advanced one. It should be fully compatible with your current applications and make them work better.
- A new installation procedure. The old one was long, very long. So we archived all Extras and Development stuff and made Icaros extracting them after installation. It will still take time, but lesser than in the past. You can now choose what to install, too.
- A full, consistent M68K environment for classic applications. Running Amiga programs is a mandatory task for Amigans and former Amigans, but it required original OS and KickStart™. This is not true anymore, since we can use AROS 68K both for playing games that hit the hardware and to run classic Workbench™ applications. But if you prefer, you can always integrate Amiga Forever as usual.

## 1.2 Two ways to use Icaros Desktop Live!

Icaros Desktop LIVE! comes in a package which includes these files

- **IcarosDesktop-pc-i386.iso**: the Icaros Desktop Live! ISO image you can burn into a physical DVD.
- **IcarosDesktop\_manual.pdf**: the manual you're reading
- **Emulator**: a drawer that contains the free virtual machine QEMU
- **Win32-START.bat**: a launch script for 32 bit Windows 2000, XP and Vista.
- **Win64-START.bat**: a launch script for 64 bit Windows XP and Vista.

You can either run Icaros Desktop Live! as a normal operating system for a real PC or simply “look at” it by running it into the included virtual machine. There are advantages and drawbacks in both cases.

### 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 eventually installed in 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 pendrive, 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 12 seconds on the average nowadays PC, 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 *dramatically* slower.

### 1.2.2 Using Icaros Desktop Live! in the QEMU virtual machine

*Icaros Desktop Live!* includes a free, open source virtual machine to let you “test” the OS even without installing it on your real hard drive. It can run inside Windows exactly as any other applications. Depending on your operating system version, just run the **Win32-** or **Win64-START** batch files to launch QEMU and the *Icaros Desktop Live!* DVD without the need of burning it on a physical DVD-R. You will be **almost** in the same conditions of 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 a Intel AC97 audio card emulator, which is loaded when starting Icaros under Windows using either the 32 or the 64 bit batch files. In order to hear sound from AROS, though, you'll have to set the "AC97" audio drivers in prefs/AHI for music, unit0 and unit1.

## Networking

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

## After Installation

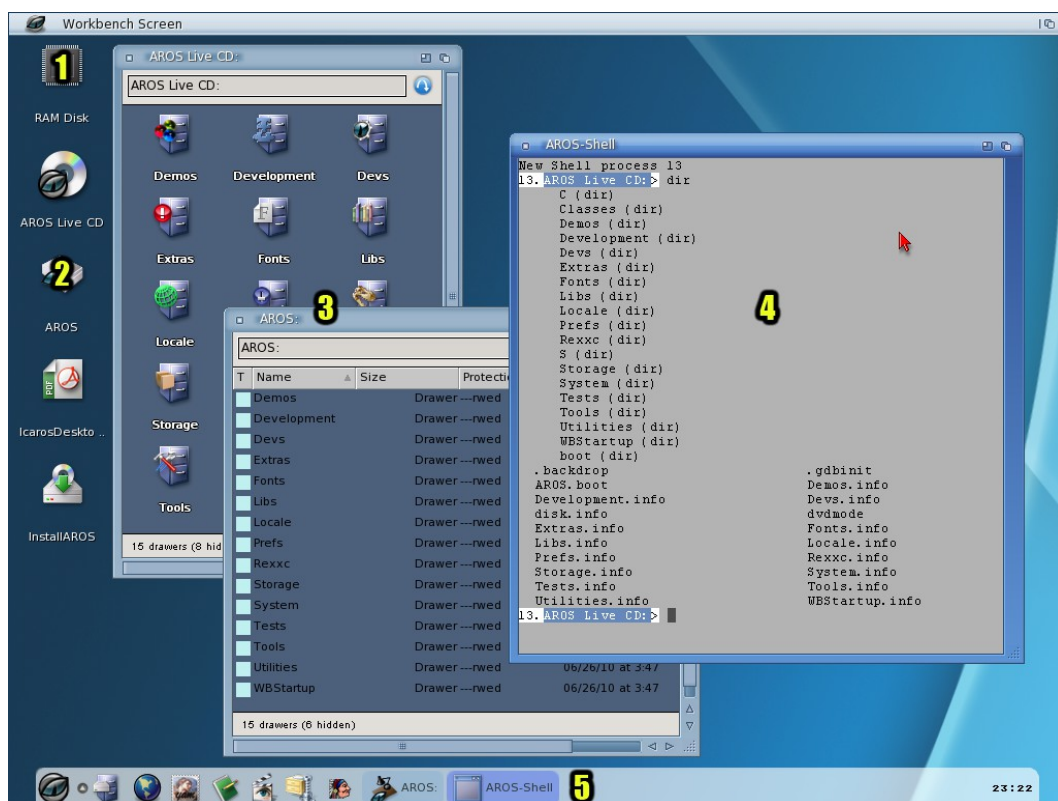
Once you'll have installed Icaros Desktop on your virtual machine (follow chapter 3 like it was on a real computer), you will need to edit your WinXX-START.bat with the notepad, in order to switch the boot peripheral from the virtual DVD drive to the virtual hard drive. In a nutshell, you must change the -d option from "-boot d" to "-boot c" and allow QEMU access to your real DVD drive, turning "-cdrom ..\Icaros Desktop-pc-i386.iso" to "-cdrom <drive\_letter>" (where <drive\_letter> could be D, E, F or whatever one your Windows is using for the DVD drive). Please do a safe copy of the original bat file.

## Gaining speed on 32 bit Windows

This version of QEMU includes the Kqemu driver for acceleration under 32 bit versions of Windows (2000 and later versions). Please run the `inskqemu.exe` file in the `\emulator\kqemu` drawer. Kqemu doesn't support 64 bit operating systems, hence it's not used in the 64 bit launch script for Icaros Desktop.

## 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. the **RAM Drive (RAM:)** is a volume mounted directly in your system 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;

2. **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;

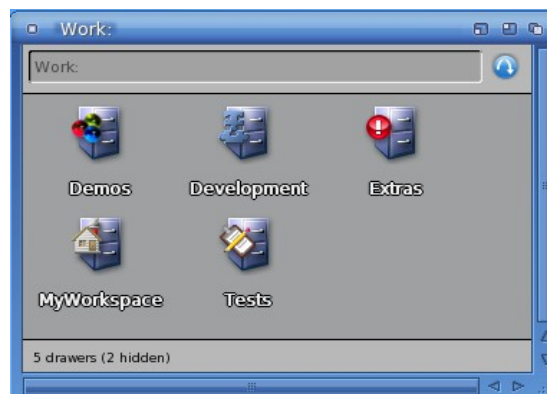
3. these are **Wanderer** windows, with icons inside. **Icons in AROS are meant to identify important files only**, and can be used to open the described file with a different tool, to set file properties and so on. They are mostly PNG files with the .info extension;

4. this is the **AROS shell**. AROS is not Linux so you won't use it all the time, however you'll find that using the shell can be far easier than clicking thousands times on the left mouse button;










5. 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 throwing them outside. 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.

## 1.4 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:



It has some tools you should understand to get handy with AROS:

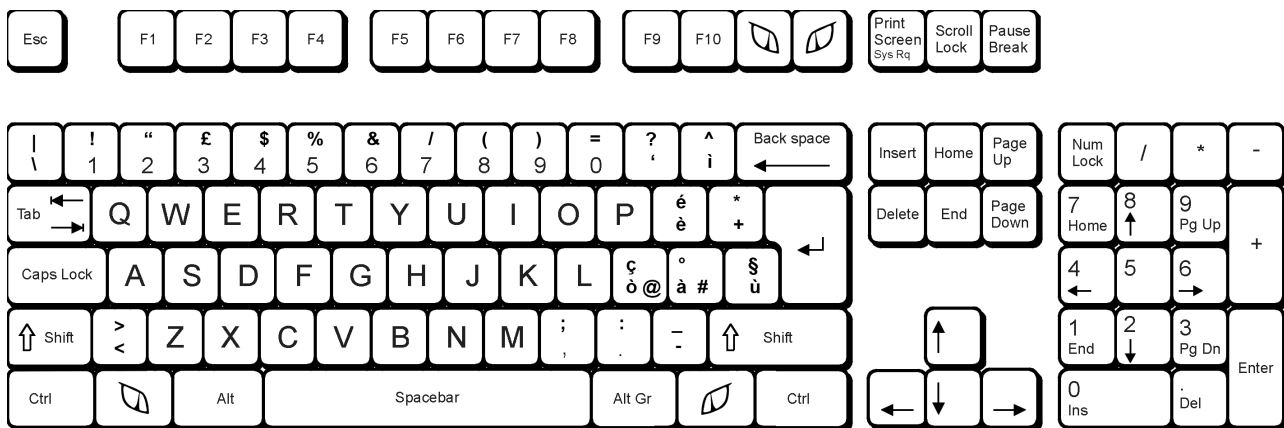
1. The close gadget (  ) is on the left side of the title bar, and closes the window.
2. The iconify button (  ) on the right turns the current window into a icon on the desktop.
3. The toggle dimensions button (  ) on the right allows either to reduce the window to the minimum size, or expand it again.
4. The depth gadget (  ) on the top right corner places the window before or after the others. AROS behaves quite differently from most operating systems: clicking on a window won't give it the focus immediately. You can hide a window under the others either if you're using them or not.
5. The scroll bars (  ) show hidden parts of the window contents.
6. The dimension gadget (  ) on the right bottom corner resizes the window as you like. This is the only active part of the boundaries which allow you to do so.
7. The parent button (  ) goes up in the directory tree, opening the parent one.
8. The path field (  ) shows the current path of the window. You can edit it to go wherever you want in the filesystem.
9. The title bar (  ) shows the window name. You can move windows wherever you want, handling them by their title bar, keeping the left mouse button pressed.

### **NOTE**

In this manual we'll often talk about directories calling them *drawers* instead of *folders*. That's an heritage from the Amiga age that AROS had proudly taken.



## 1.5 The AROS Keyboard



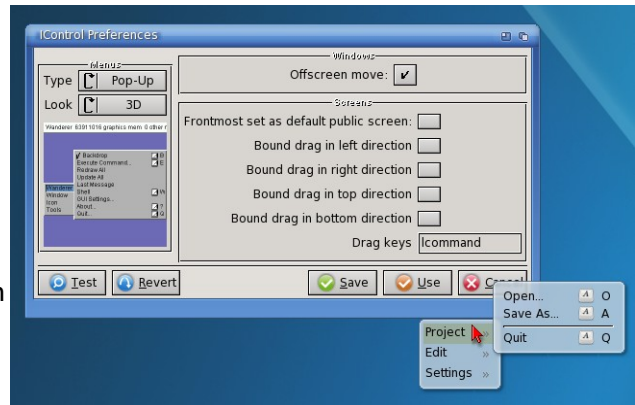
Please assume this convention: whenever you read about **lAros** and **rAros** keys on this manual, we mean the left and right *Aros keys* respectively. Since no keyboard manufacturer has decided yet to sell an AROS specific one, **lAros** corresponds to **left Windows** (*command* on Mac, *Amiga* on Amiga) key and **rAros** to the right one(s). Some keyboards, mainly compact, notebook and really old ones, may lack of them. 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:

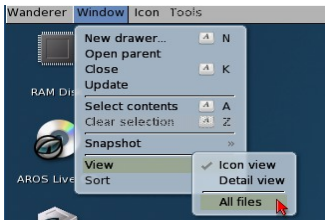
Keys	Action
<b>rAros + Q</b>	Quit wanderer (you don't want to do that)
<b>rAros + W</b>	Open a shell (you'll do that quite often)
<b>rAros + E</b>	Open a command window
<b>rAros + R</b>	Rename the selected icon
<b>rAros + I</b>	Display icon information
<b>rAros + O</b>	Open the selected icon
<b>rAros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

## 1.6 Right menu

AROS doesn't use context menus like Windows or Linux. So 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 1.5 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.




## 1.7 Icons and files



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

### Once Forever

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.

Default view mode  All files

### Warning!

Before Icaros Desktop 1.4, default view for volumes without a “disk.info” file in their root was “show all files” (mainly good for PC CD-ROMs and pendrives). This is not true anymore, but it can be changed using the **Default view mode** option as explained in the gray box above.

### 1.7.1 Details and Icon view

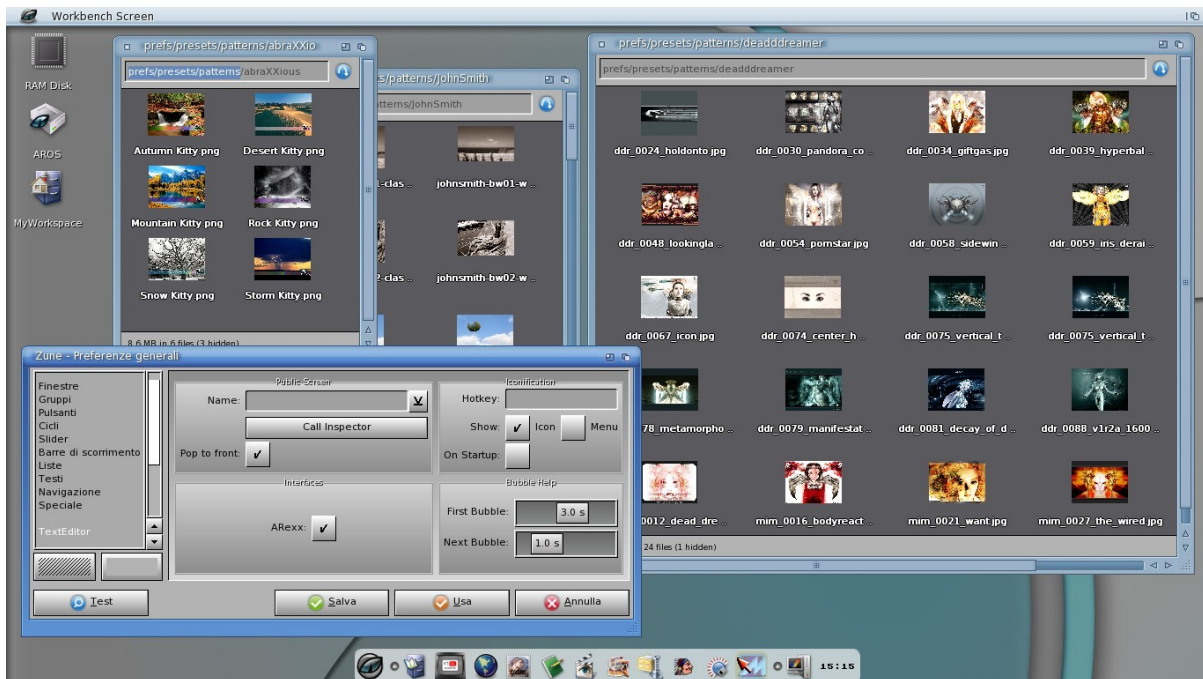
Icaros Desktop can now list files in windows showing their details. Please notice, however, that this option has been recently introduced and it is still being worked on. So you may encounter some issues using it. If you need it to better handle files in copy/move/delete operations, we strongly suggest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

### 1.7.2 Preview for image files

Unluckily *Wanderer* still doesn't support a “preview view” like many other operating systems, but Icaros provides a workarund 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.



### 1.7.3 Classic and modern view

The Wanderer program in Prefs drawer lets you customize the behavior of Wanderer. Icaros presets the modern view, chains icons to a 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 filesystem 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).

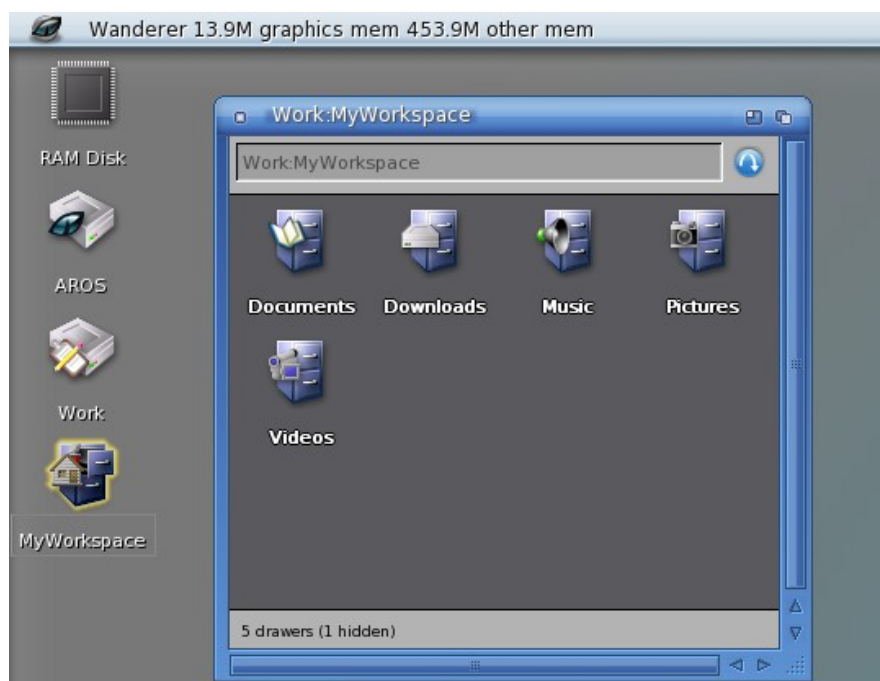


AmiStart behaves somehow like Windows' task bar. There is a *starting menu* placed on the left, a dock section to *quick launch* your favorite applications, a *task list* on the right and a *digital clock* on the right. The dock section is really easy to customize. To delete a icon, just grab it with 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 from 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 pendrives. 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 applauncher. You can choose your profile using the Services program in Prefs.

## 1.9 MyWorkspace



Starting from Icaros Desktop 1.2.5, a new 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 pendrive. 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, is really easy to understand. 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 MyWorkspaces:**

Icaros 1.5 should have solved this issue, however, if you reinstall Icaros without formatting the partitions, it may happen that MyWorkspace's alias on the desktop might be shown twice. 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
```

## 2. 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.

### 2.1 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 in an obsolete machine. If your old 400 MHz K6-II computer didn't play DivX movies full screen and full framerate 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 standardised hardware platfors, while AROS needs hardware abstraction layers (which introduce overheads) 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 derivates

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

### 2.2 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.**

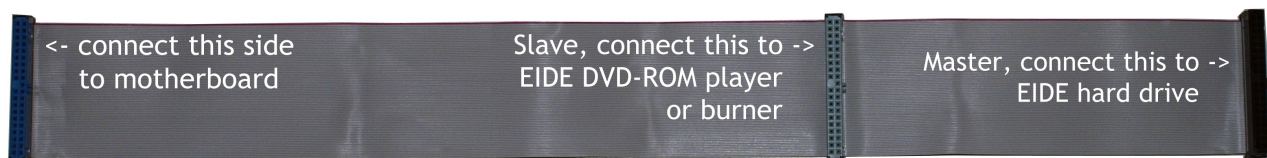
## 2.3 Drives

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

### 2.3.1 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.

## 2.4 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 most Nvidia cards (GeForce FX to GeForce GT200 series, and maybe some beyond) thanks to the Nuveau/Gallium 2D and 3D driver. Working models are

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

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

**Nuveau 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.

## 2.5 Sound

Many AC97 and HDAudio integrated codecs already work with AROS, but there are much many others 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.** There are some models, like the "Value" ones, that don't use it but a cheaper solution. They don't work. Someone suggest to place the SB card in the first PCI slot under the video one.

## 2.6 Network

Any PCI network card based on RTL 8029, Etherlink 3, AMD Pcnnet 32, Nvidia Nforce, intel Pro-100, RTL 80139, RTL 8168/9 (also 8110 and others), SiS 900, Via Rhine will work. Using one of those is the only way to get networking run on AROS. No modems supported yet.

**Note:** if you have a RTL8168 or compatible network card, and issues with the RTL8168 driver, please choose the RTL8169 instead!

## 2.7 Virtual Machines

Starting from Icaros 1.2.4, the VE version of the distribution has been dismissed. This should not be a issue at all, since 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. So choose SB128 driver under VMware, but please don't use HIFI modes. On other VT like VirtualBox and Qemu, choose the AC97 adapter for your virtual sound board.

**Network:** choose a "Pcnnet-PCI II (NAT)" virtual network adapter under VirtualBox to allow networking. Both Vmware emulated Pcnnet and e1000 are working.

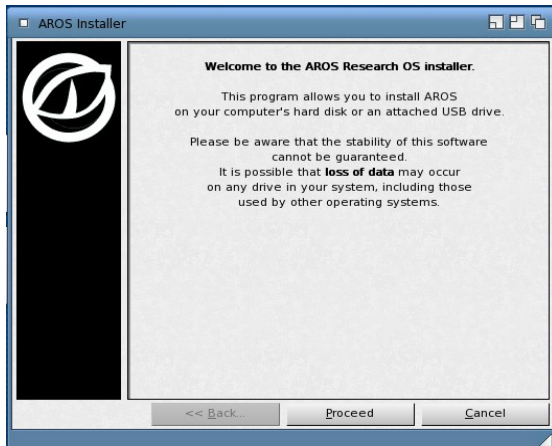
**Video:** even though a preliminary driver for Vmware SVGA exists, all VT should run in VESA mode only. Vmware already provides support for widescreen resolutions, but maybe it will be a good idea to limit the SVGA resolution size to the one of your monitor. Otherwise, Icaros will start in a giant 2560x1600 resolution and you'll have to scroll the workbench window every time. VirtualBox doesn't provide widescreen 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 2 GB for the system partition only, and a minimum of other 4 GB for the work one.

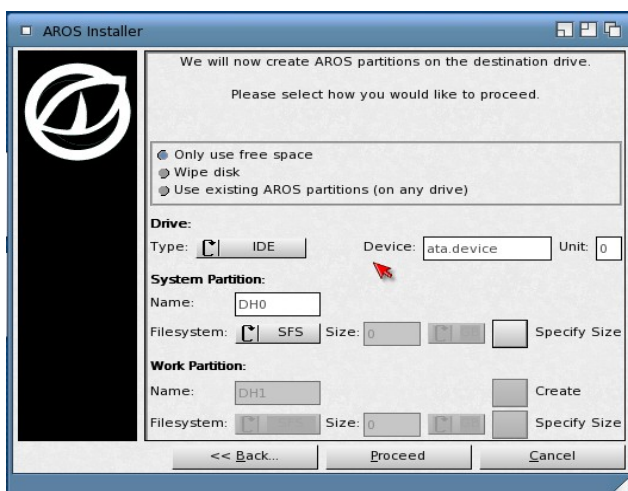
**Pendrives:** USB peripherals work very well under Vmware, but some issues were reported using VirtualBox. Setting up USB ports to work with Qemu is really tricky, but it works.

### 3. Installation

Installation on the hard drive is recommended in order to use AROS programs and save their files. However, AROS is still alpha code and may be **dangerous for any operating system already installed on your hard drive**. Keep in mind that **Icaros Desktop discourages installation on production machines with important data on them**: please, use only an old drive, possibly clean and with no other partitions.



1. Open Icaros Desktop Live CD-ROM by double clicking on its workbench icon, then open your **Tools** drawer
2. Launch **InstallAROS** and read carefully 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 pendrive, be sure it's a USB device. See chapter 3.1 for informations.

4. Check the **Specify Size** option on the right.
5. Select an amount of **megabytes** 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.

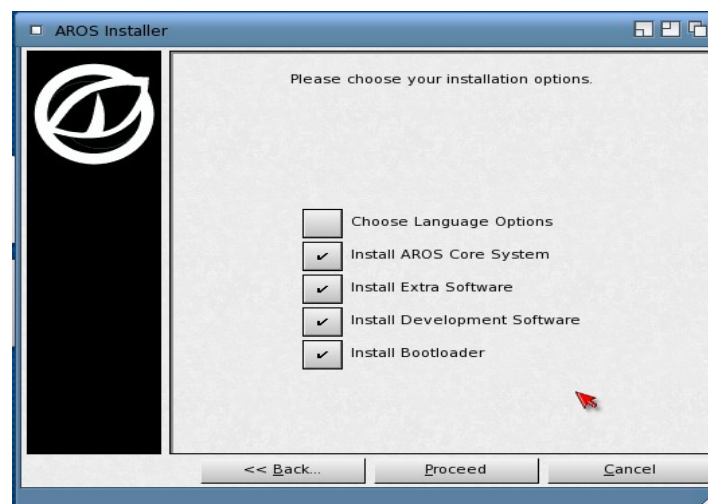
### The correct size:

Bare AROS system needs less than 100 MB to install. However Icaros Desktop comes with a huge amount of software, which require a minimum of 2800 MB. 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 filesystem 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 **HDDToolBox**.

### Virtual DVD drive requisites:

AROS allows storing ISO files and mounting them everywhere in the filesystem, but Icaros Desktop prefers to use a fixed location for them, which is now SYS:DiskImages directory. This drawer is **created or cleaned** at every startup, so you will have to repeat the mounting procedure every time you reset AROS. Since you need the space to store the temporary ISO file in the DiskImages directory, you need to reserve at least 900 MB of free space for CDs and at least 4.70 GB for DVDs. In a nutshell, **you need to create at least a 5 GB system partition to allow mounting of DVD ISOs**.

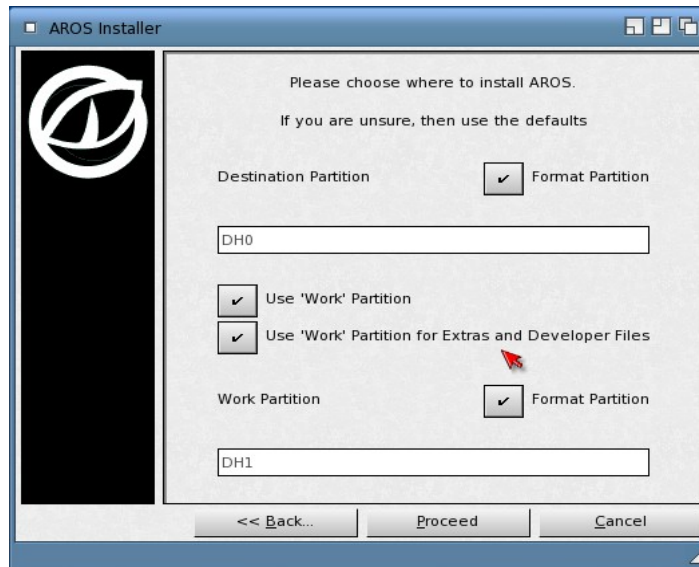
6. Unless there are good motivations not to do so (for instance, your hard drive is just too small or you're installing on a USB pendrive - in this case please read the apposite section of this chapter), please create a Work Partition by checking the **Create** option in the right bottom corner.
7. Just leave the **Specify Size** unchecked to let AROS use all the available space for the work partition. This will be formatted with the faster SFS filesystem.
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 above. 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:

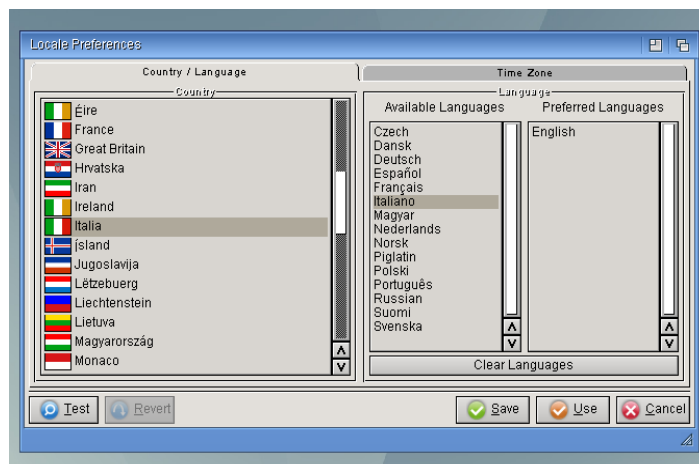
Development software is really important for many AROS tasks, like compression and decompression in tar.gz format, and some applications that need executables from the Development:bin directory won't work if Development has not been installed. To prevent this, **if the user has chosen not to install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

11. **This is really important:** if you're planning to take advantage of SFS' major speed and improvements, you'll need to install **Extras and Developer Files**. In order to make this happen, leave the "Choose language" option unchecked and just check **all** the other options here:



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 made 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 be selected also later, by opening the **Locale** panel of the **Prefs** drawer.

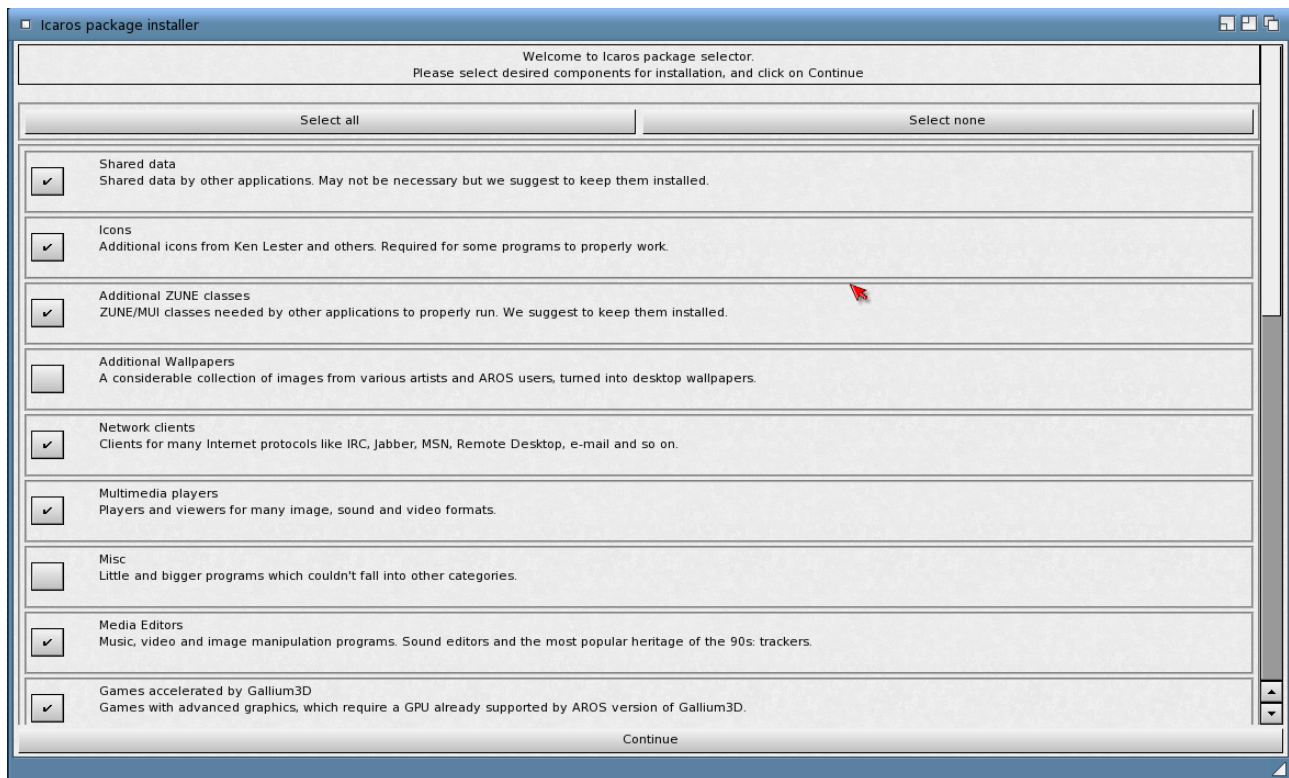


14. Files will be copied. Please wait until the installation program has completed its task. It should take a few minutes, depending on your hardware.

15. After installation, you will be prompted to perform either a Full or a Custom installation. The full installation will install all the components provided with your version of Icaros. The Custom one 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 new 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.

16. Files will be extracted. Please wait until the installation program has completed its task. It may take from few minutes to 2 hours, depending on your hardware. When finished, just remove Icaros Desktop cd-rom and reset your PC, to boot AROS from the hard drive.

### **IMPORTANT!**

Icaros Desktop will extract thousands of files, but you won't see it happening. The installer will look like frozen, but it will be working instead (you can see it with the HDD led light, and hearing the drive spinning and working hard). Please don't reset or shut down the system at this stage, or you'll severely damage installation. In this case, you'll need to repeat all passages to to fix it.



### 3.1 Installing Icaros Desktop on a USB pendrive

Starting from Icaros Desktop 1.2.2, AROS can be installed on a USB pendrive. 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 pendrive must be formatted using the SFS filesystem. 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 pendrive 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 pendrive for Icaros is at least 4 GB big.** This will allow the whole Icaros environment to be installed on the pendrive, 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 pendrive only usable by AROS. Moreover, any time you'll plug your Icaros pendrive in a Windows machine, you will be prompted to format it: please pay attention not to do so.

#### 3.1.1 what you need

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

1 GB or more → for the Icaros Desktop Light installation

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

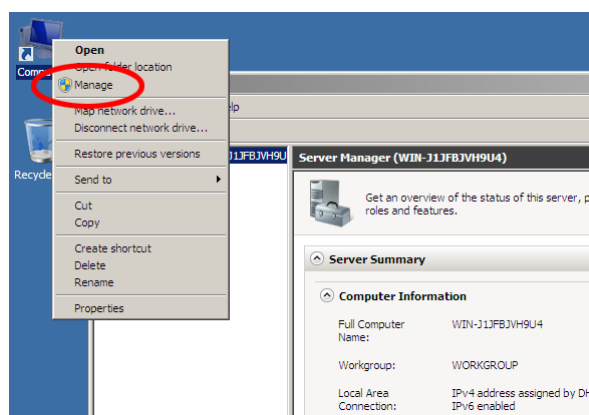
...And a Windows computer to clean pendrive partitions, or a tool to do that on other operating systems.

#### 3.1.2 Prepare your pendrive

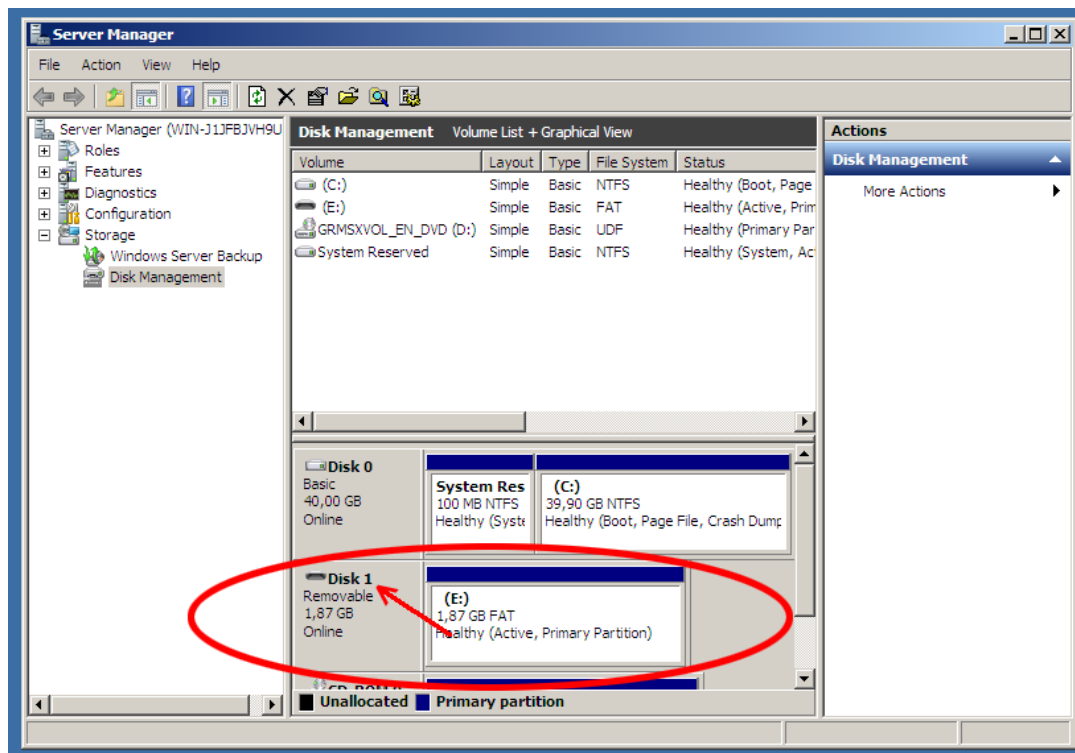
Almost all USB pendrives are sold already formatted, with a single FAT partition or with a hidden partition with security programs for Windows. To ensure the maximum degree of compatibility, you should choose a value USB stick without all those nice features, and with a single partition only. The second partition may be difficult to remove and might create issues with AROS. In this case, please delete all partitions with **gParted** or any other tool like this. **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 pendrive 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 pendrive and write down the drive number, as shown in the following picture:



This time our pendrive 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 as administrator, please log off your Windows session and log in with an administrator account, then go further. On Vista and Windows 7, 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 pendrive 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 pendrive, and you won't have them back.

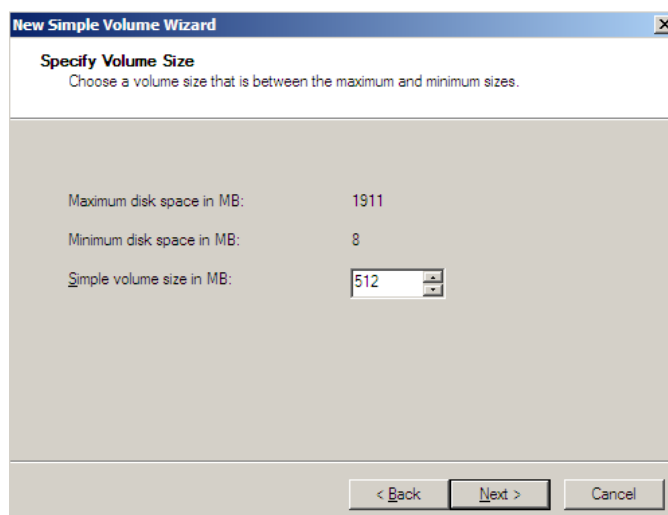
### **3.1.3 Setting up the FAT partition**

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

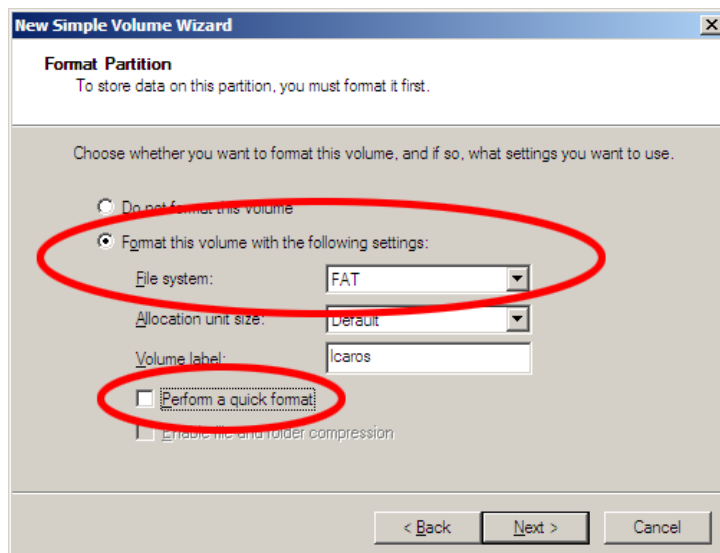
Go back to the *Disk Management* window and right click on the now-grayed-out area on the right:



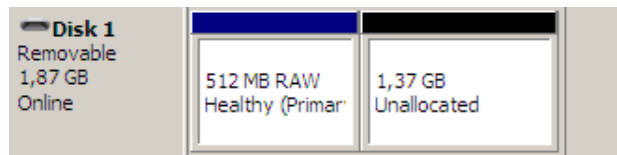
The **New simple volume wizard** will appear. Other versions of Windows might ask to initialize the drive: in this case, do that. Just remember to create a FAT partition enough large to keep your data, but also enough small to leave at least 1.1 or 1.2 GB of free space for AROS.



Assign any drive letter you like, it doesn't absolutely matters, and click NEXT. Now we have to choose the right filesystem. Windows allow formatting partitions with three options: NTSC, FAT and FAT32. NTFS is only for big drives, and AROS can't access it yet. So please don't use it. 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 pendrive will look like this in the Disk Management window:



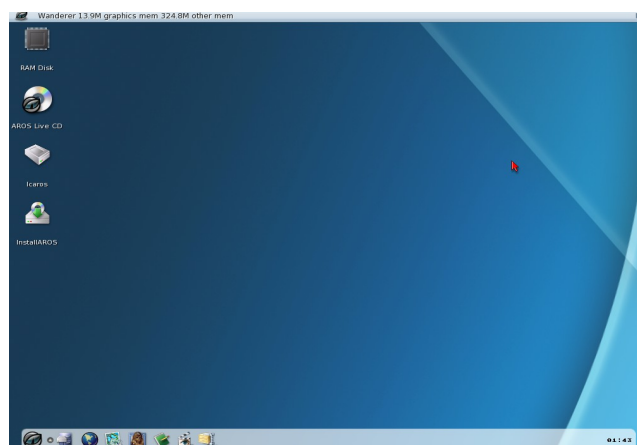
This means you are now ready to install AROS on the “Unallocated” space on the right. You can now turn off Windows and boot your computer using the Icaros 1.2.2 update DVD (or any next point release of Icaros Desktop, obviously).

#### **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 pendrive as they were both physical devices on a real computer, and you'll be OK as well (this manual has been written using a real pendrive connected to a **Vmware Server** virtual machine, for instance).

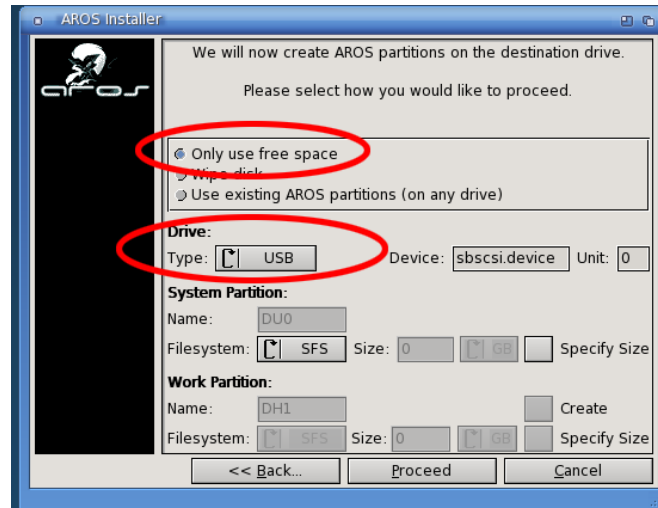
### **3.1.4 Installing AROS on the pendrive**

Boot your computer using the **Icaros update DVD 1.2.2** or later point release of Icaros Desktop Live, and plug your pendrive. 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. Installation on the pendrive won't be so different from the usual one. You just need to correctly follow these steps:

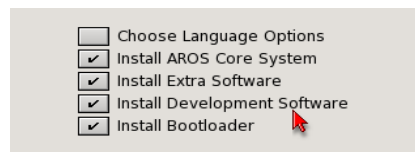
1. When partitioning, choose the **USB** option instead of IDE/SATA at the *type* voice:



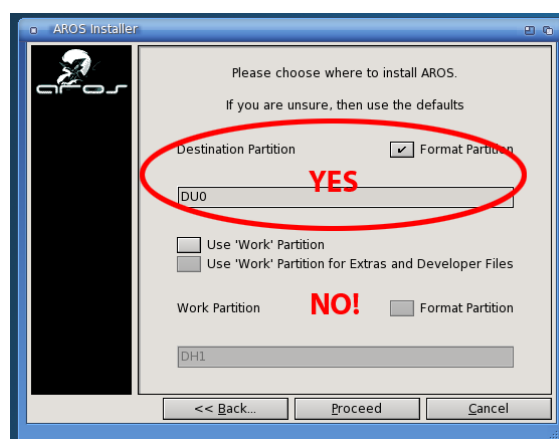
do **NOT** create the work partition, just use a **SINGLE SFS PARTITION ONLY!** If you have problem, try changing 0 to 1 in the “Unit” option on the middle-right of this window.

2. reboot when prompted to do so. Plug the pendrive again if needed. Run InstallAROS again and choose to use the existing AROS partitions. If you have also a 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 pendrive might not work and, anyway, it will prevent you from installing AROS on a hard drive using your USB pendrive as boot-live-drive.



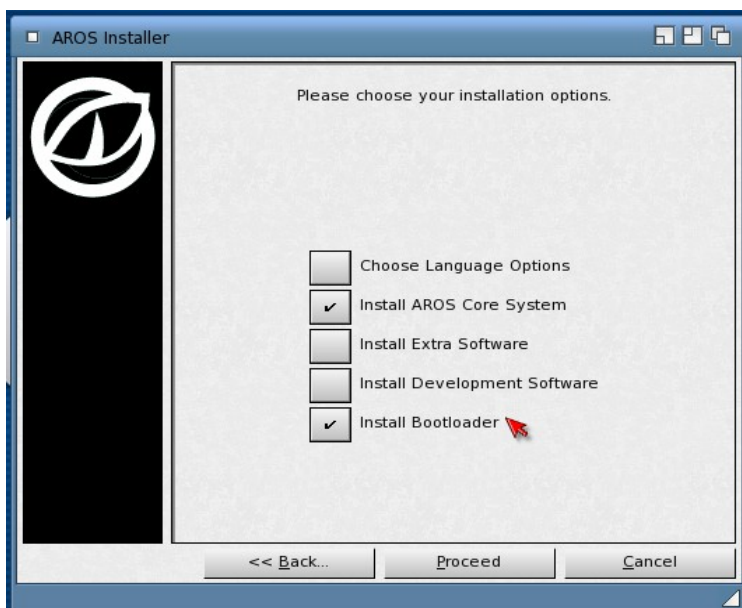
5. Proceed. Choose either the graphic or the text-only GRUB menu for your pendrive. Wait for all the files to be copied.

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

### 3.1.5 Create a “installation Pen-drive”

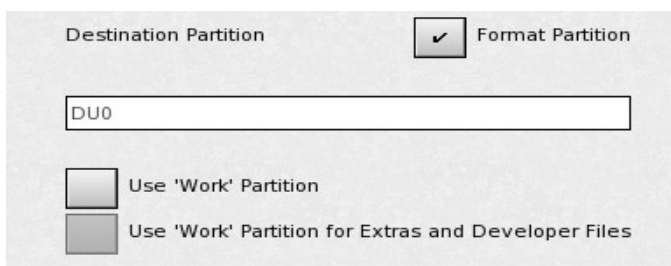
Icaros 1.5 installations on pendrives can't be directly used to install Icaros again onto a hard drive, using the pendrive themselves as boot devices. This is, obviously, a side effect of the new installation procedure, which expects Extras and Development stuff to be archived. So, what to do if you need to install Icaros on a hard drive, starting with a pendrive? The solution is building a pendrive 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 pendrive, but in this case it's better avoiding to create the FAT partition. Just use the whole space of a 2 GB USB pendrive, wiping all existing partitions and creating just the AROS SFS one.
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 pendrive and not on the hard drive



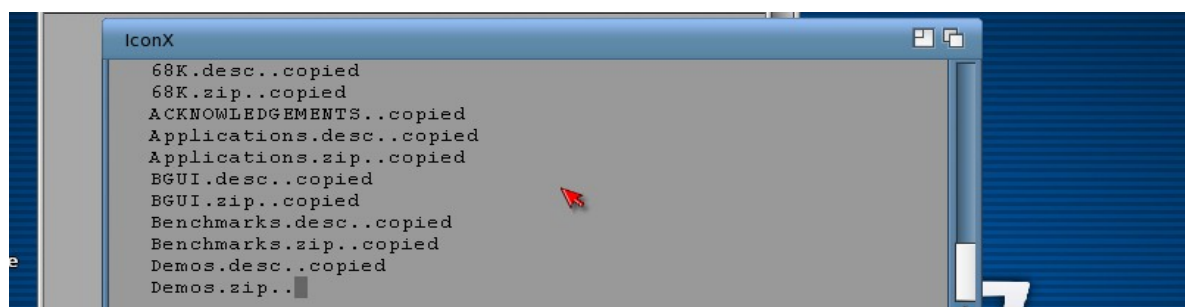
6. When finished, click Proceed. Do not reboot and do not remove the pendrive from the system.

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 Pendrive” script.

9. Wait for it to finish:

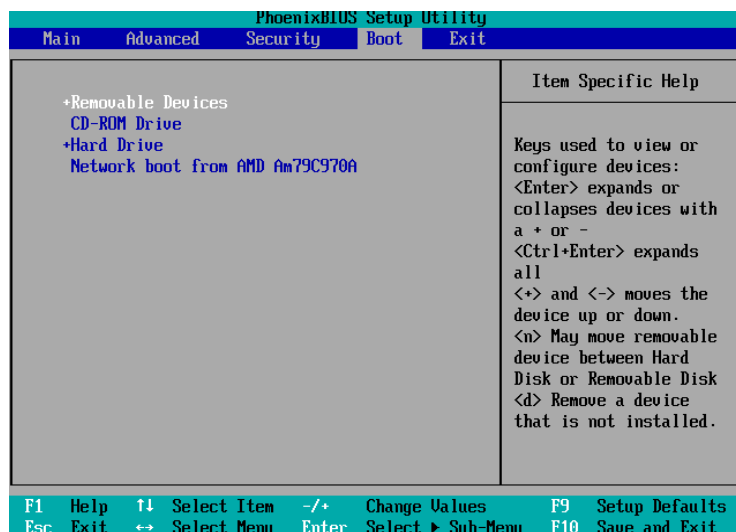


10. When finished, you will have a USB pendrive which will act like a Icaros DVD/CD, with packaged Extras and Development stuff. You won't be able to use these contents directly like in common installations, but you will still be able to customize your installation pendrive changing system settings with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

### **Warning:**

Do not apply the “Create Installation Pendrive” script to a pendrive 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 loose them permanently! This procedure is meant to create installation pendrives only!

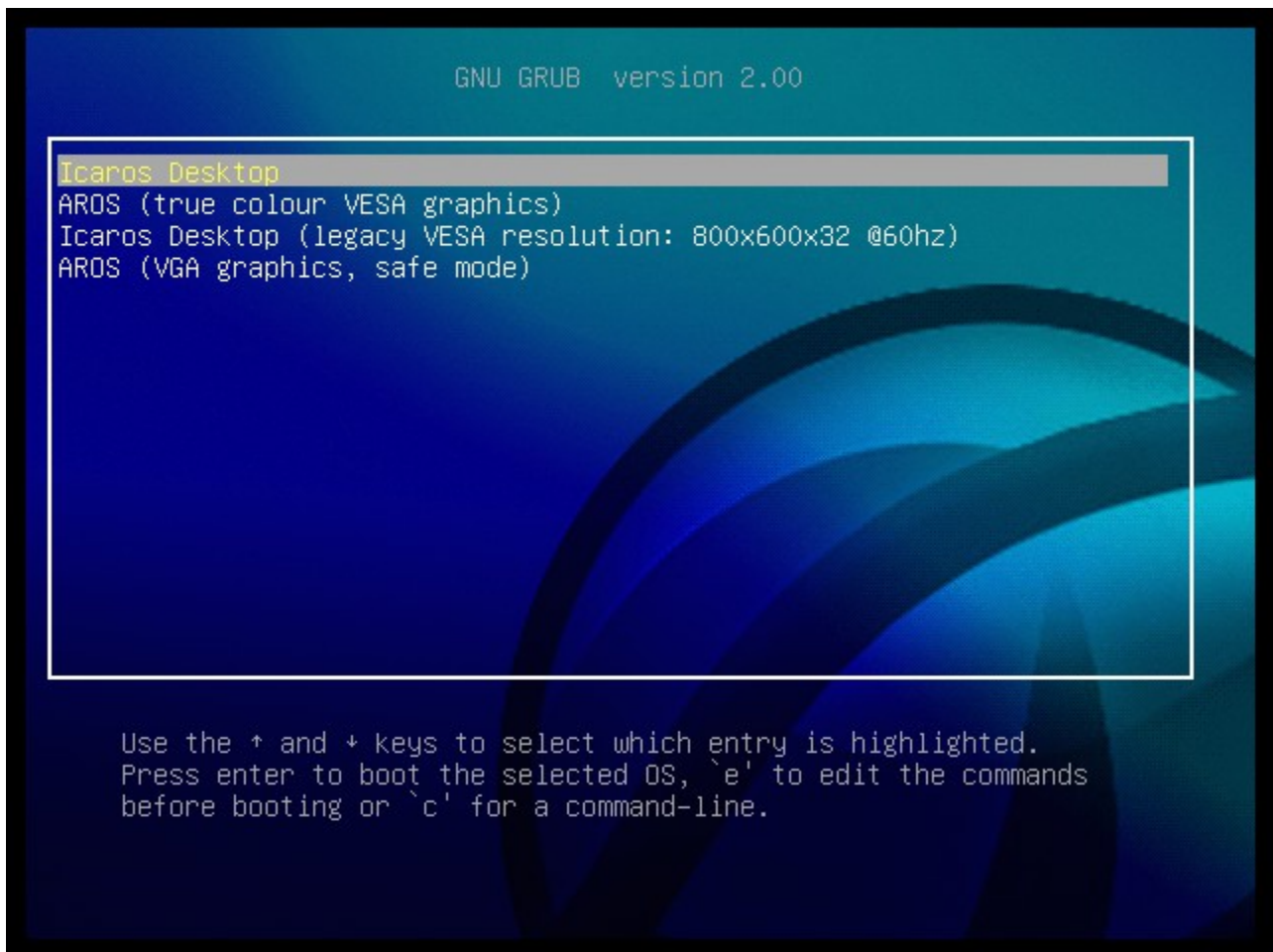
11. Now you can remove the installation media (CD or DVD), turn off your computer, remove the USB pendrive and use it to install Icaros Desktop on the same computer, or on others. Remember you'll need to set the USB peripheral as boot drive, to allow booting the system into Icaros Desktop.





## 4. First boot (Icaros Desktop LIVE! only)

Starting from Icaros Desktop 1.2.6, the initial boot menu has changed a lot, with a few but self-explained options.



Here is a more detailed explanation of our boot options:

### 4.0.1 Icaros Desktop

Icaros Desktop 1.4 dramatically simplifies AROS' boot menu, proposing just three boot options. The first one provides automatic selection of drivers: VESA driver is started at boot but may be replaced by a native one if a supported card is detected on the system. 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**

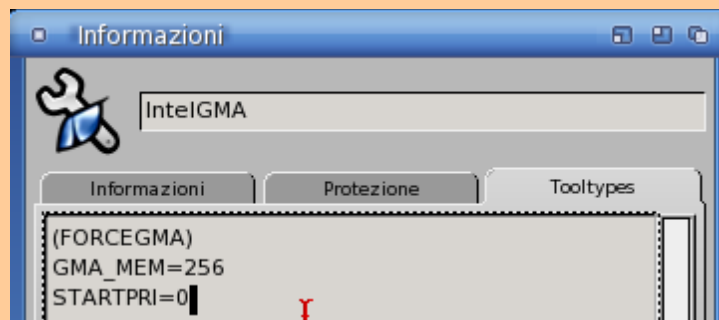
Choose this one if you have a supported ATI Radeon card. AROS driver supports all AGP Radeon cards from the first one to the 9800 series. PCI Express support is limited to X300, X550 and X600 models. If you notices glitches or dirt while moving windows contents, please replace the official radeon.hidd 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 drive, 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+I). Go to the ToolTypes section and uncomment the GMA\_MEM=<MB> line, then enter the needed valude in MB. 256 MB should be enough for any current AROS 3D game or application.



### **VMware virtual video card driver**

A 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.

### **4.0.2 VESA modes**

If no native drivers is 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 in the last months. We can now 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 automatism, however, might not work on every card/motherboard produce weird results (for instance, opening a 2560x1600 screen on some VMware versions...), we kept a "legacy resolutions" like 800x600 and at 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 provides also screen-dragging feature.

### 4.0.3 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**.

### 4.0.4 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=disabled
```

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?

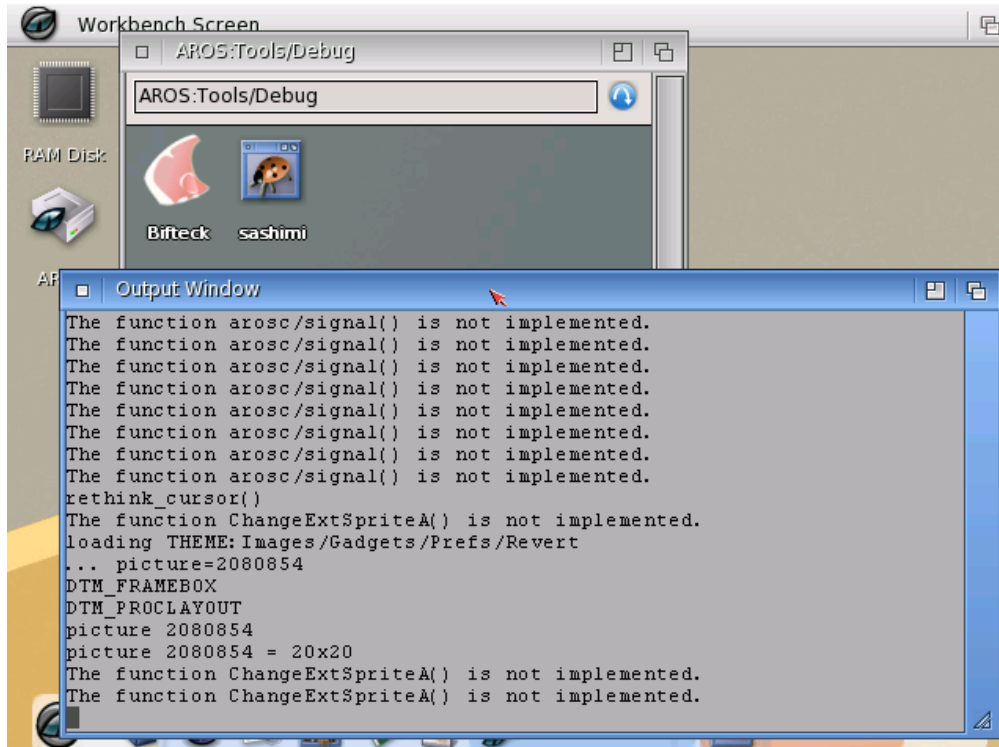
You can also choose screen refresh rate. This will be usefull to stop your monitor getting out of sync when booting AROS in VESA modes. You just have to add @75 to your favourite resolution. For instance, to force the driver running at 75Hz, you may edit the line this way:

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.

#### 4.0.5 Icaros Desktop (safe debug mode with USB kernel support)

Safe mode allow booting AROS with enhanced compatibility settings. They might be slower, and they will slowdown AROS access to files, but at least they will run. Please notice that in Safe Mode there is also a debugger enables: AROS developers are trying to spot all the issues and fix them, but to do so they need your help and your bug reports. Debugger messages are automatically sent to memory, and you will be able to read them with a tool called Bifteck. You can run it from a shell and drive the debug log to a file, and then send it to the AROS bug tracker.



#### **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=nopci**. Press **Ctrl+X** to continue booting. If one among the two works for you, follow the next chapter to learn how to modify Grub's menu file, and make these settings permanent.

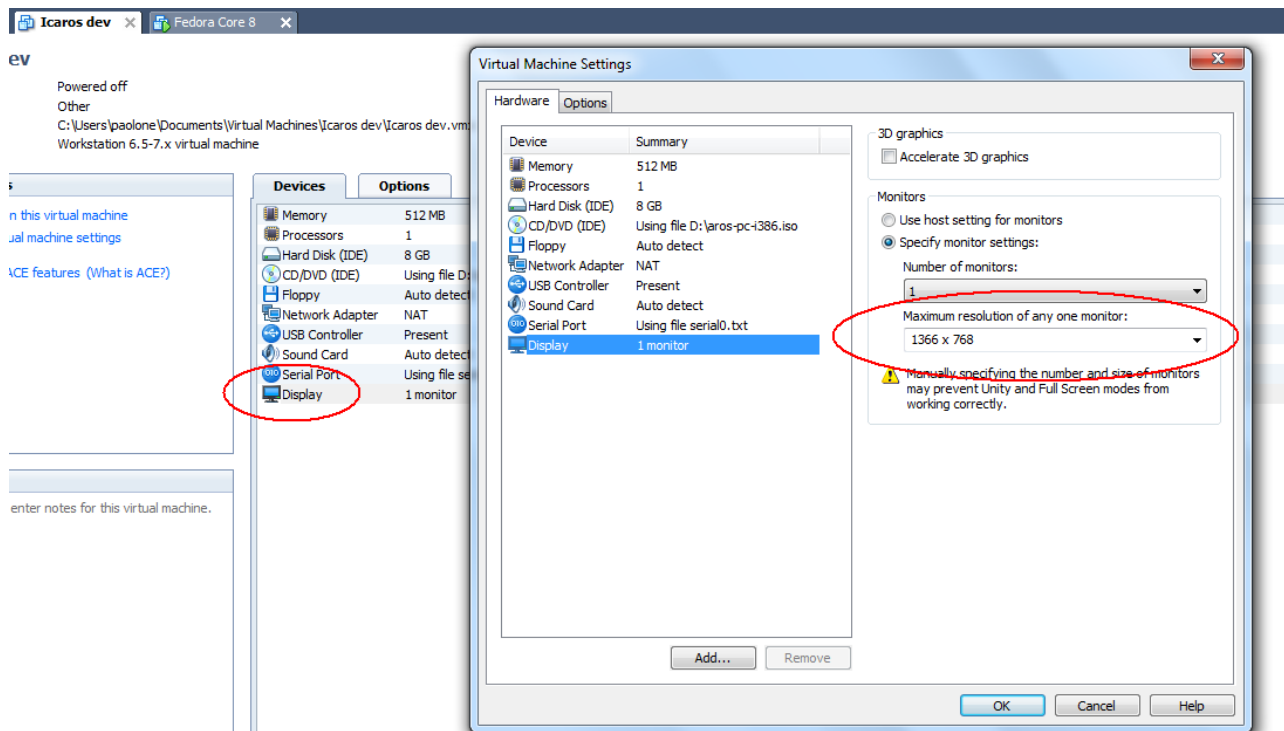
**Note:** disabling DMA will reduce considerably AROS speed when accessing drives (like from 5 MB/sec to about 750 KB/sec). Since Icaros updates don't modify the Grub.cfg file to keep your changes, please try booting with **ATA=32bit** when a new release of Icaros Desktop is installed. AROS' ata.device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

#### 4.0.6 Where are 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 favourite ones deleting the sharp (#) characters at the beginning of the lines.

#### 4.0.7 Fixing highest resolution on VMware

Leaving 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.

#### 4.0.8 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" "CustomVideoModel" "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" "CustomVideoModel" "1366x768x32"
```

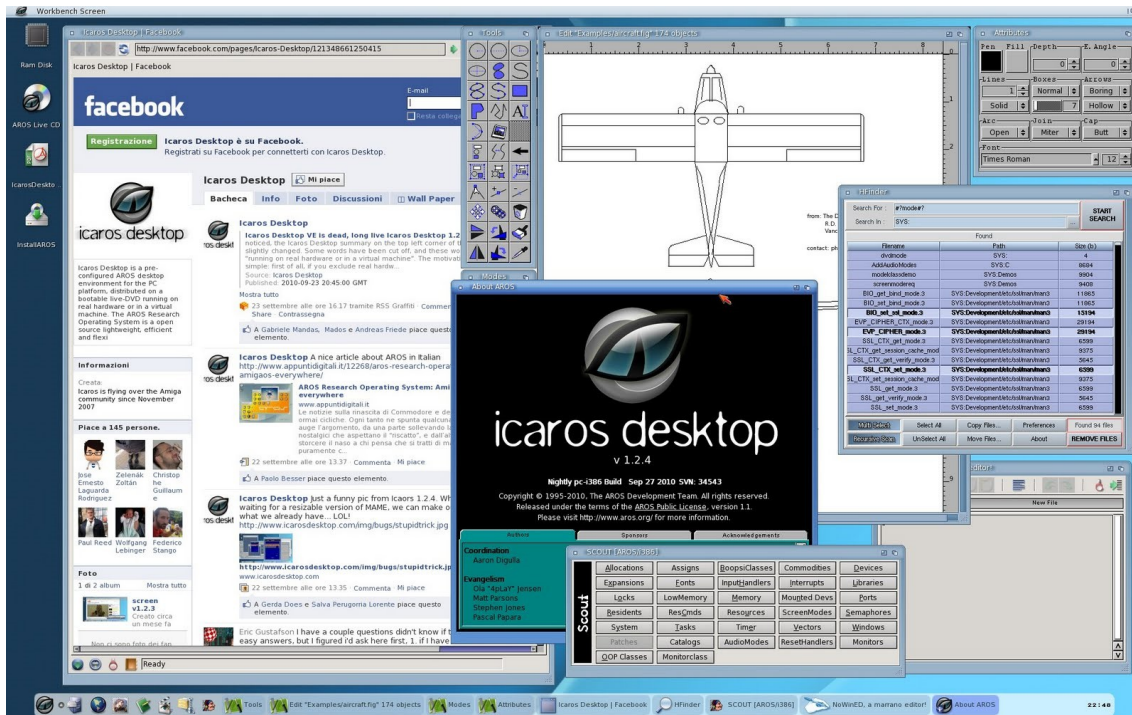
4. Once done, launch VirtualBox and, at GRUB menu, move the selection bar to the standard *VESA best-fit* resolution (the default selection if you haven't changed it) and press **E** (see chapter 4.0.4)
5. modify "*VESA=32bit*" to the same resolution you've set at point #3. In our case, for instance,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



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

### Before starting

The `grub.cfg` file in `/boot/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:boot/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



and load the `grub.cfg` file located in the `/boot/grub` directory. You'll find something like this:



```
# Timeout for menu
set timeout=5

# Set default boot entry as VESA Gfx @ 1024x768-16bpp
set default=3
```

followed by groups of lines like these:

```
menuentry "AROS with VESA Gfx @ 1024x768-32bpp" {
    serial --speed=9600
    multiboot /boot/aros-pc-i386.gz vesa=1024x768x32 ATA=32bit
}
```

well, every one of these will manage an entry of the early startup menu. Just 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. For example, a script like this:

```
# Timeout for menu
set timeout=8

# Set default boot entry as VESA Gfx @ 1024x768-16bpp
set default=1

if font /boot/grub/unifont.pff ; then
    insmod /boot/grub/vbe.mod
    .....etc.....
    background_image /boot/grub/splash.png
fi

menuentry "AROS with NVIDIA Gfx" {
    serial --speed=9600
    multiboot /boot/aros-pc-i386.gz gfx=hidd.gfx.nv lib=DRIVERS:nvidia.hidd
    ATA=32bit
}

menuentry "AROS with ATI Gfx" {
    serial --speed=9600
    multiboot /boot/aros-pc-i386.gz gfx=RadeonDriver lib=DRIVERS:radeon.hidd
    ATA=32bit
}

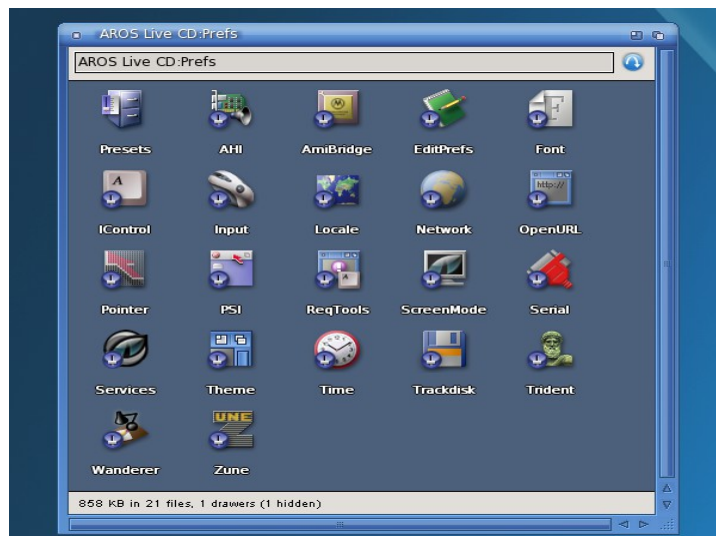
menuentry "AROS with VMWareSVGA Gfx" {
    serial --speed=9600
    multiboot /boot/aros-pc-i386.gz gfx=hidd.gfx.vmwaresvga lib=vmwaresvga.hidd
    ATA=32bit
}
```

will keep only 3 choices, the hardware accelerated ones. Let's assume we wish to boot AROS using always the Nvidia GeForce driver. We should just set the *default* value to 1.

## **Enabling USB**

Starting from Icaros Desktop 1.2, USB support has been automatically turned on.

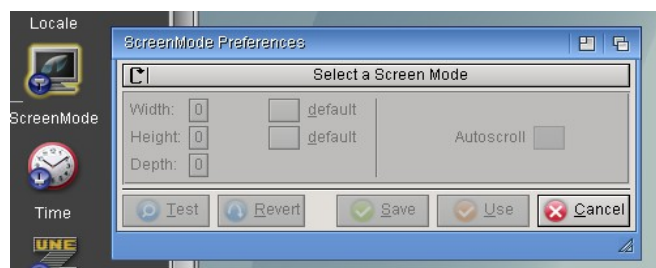
## 4.2 Customizing AROS



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.

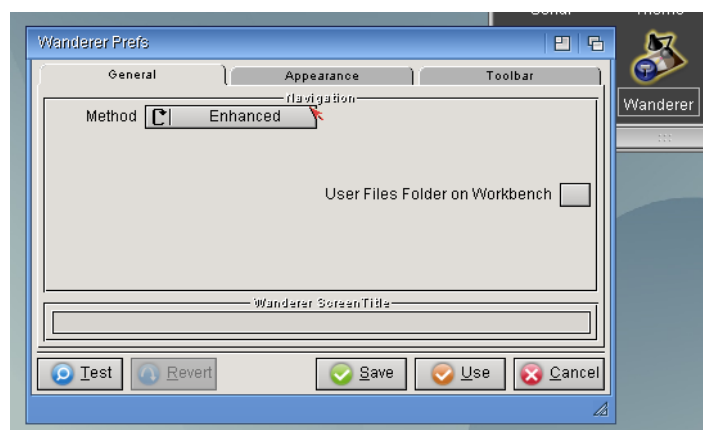
### 4.2.1 Changing screen resolution

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.



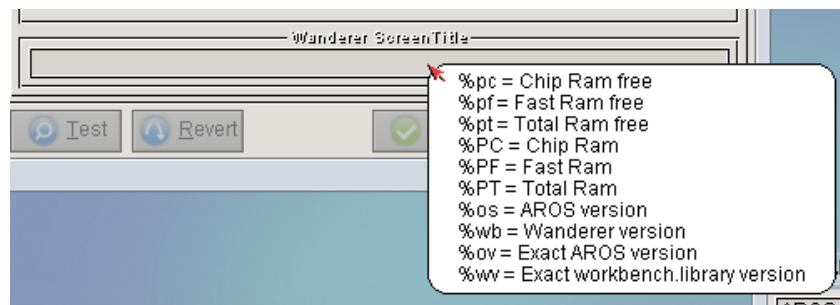
### 4.2.2 Changing desktop appearance

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

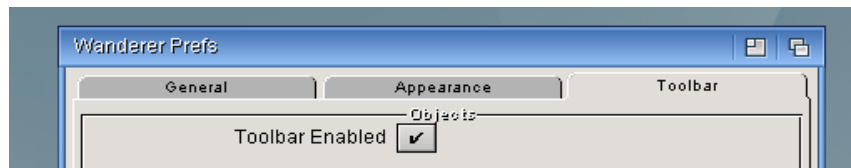


The General tab allow switching between the *Enhanced* (default) Wanderer behaviour and the *Classic* one. The former opens new drawers in the same window, the latter in a new one, exactly as AmigaOS 3.x.

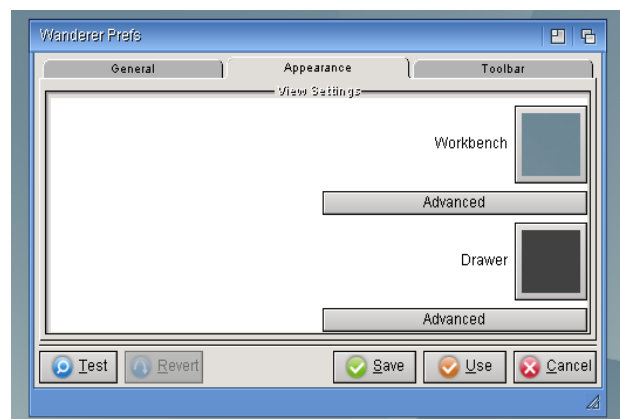
Please notice the **Wanderer Screen Title** option in the bottom of the page: it changes the default message on the top title bar of the screen (normally *Wanderer %pc graphics mem %pf other mem*).



Now the **Toolbar** tab:

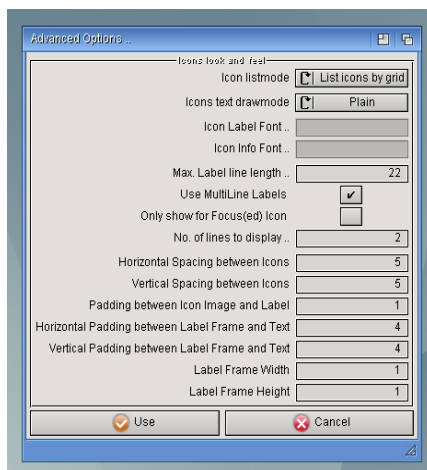


The **Toolbar Enabled** selector decides whether showing the path bar in every window or not. Eliminating it, you get more "old Amiga feeling". You will prefer enabling it again.



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 colour 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.

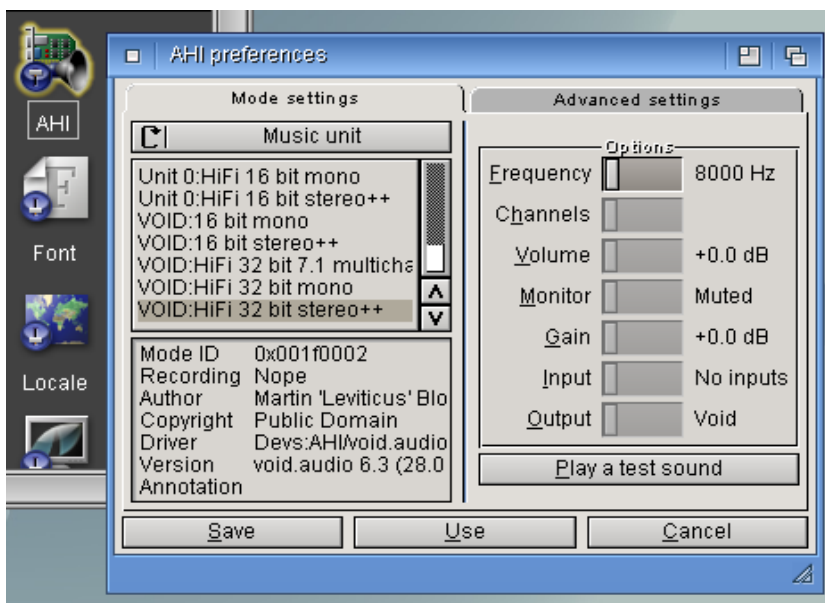


### 4.3 Enabling sound

Sound will be normally disabled by default. Only few audio chipsets are currently supported. VMware one is not one of them, unluckily. But maybe your computer's one is. 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 informations 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 cycling 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

Sound in VMware is now available. Please choose a SoundBlaster PCI128 sound card in AHI prefs for units 0-3 and Music, and save. Drivers included in Icaros Desktop may have issues playing sound in HI-FI modes, so please choose the normal ones.

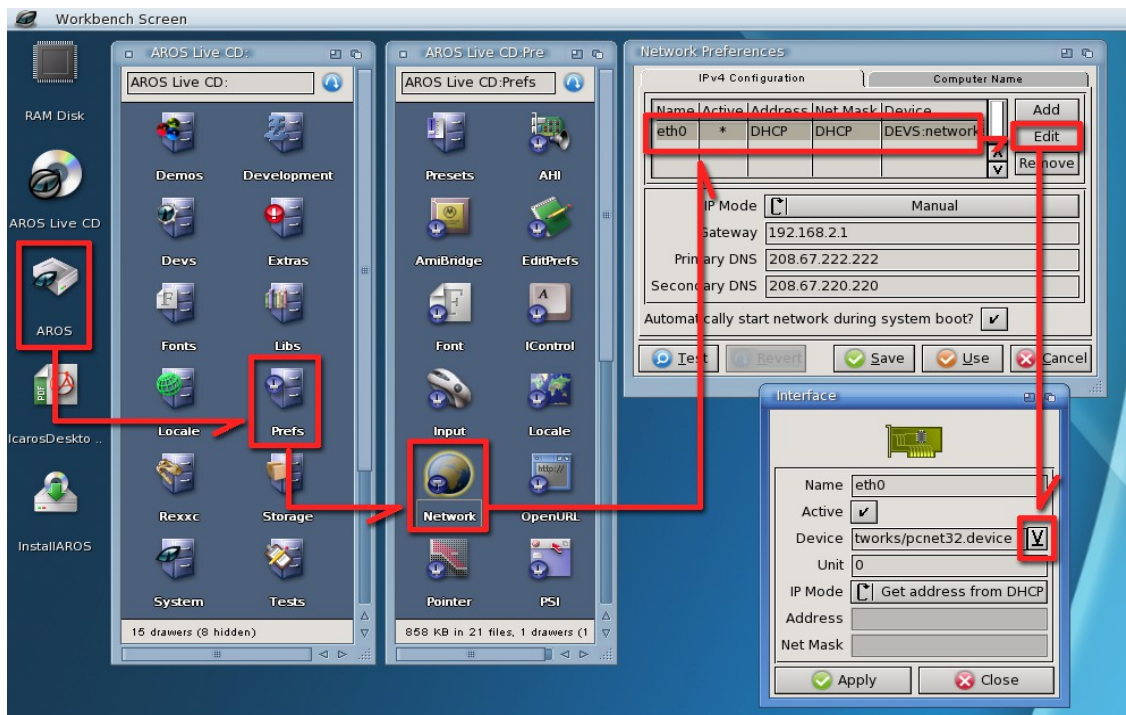
### 4.4 Configuring the network

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.

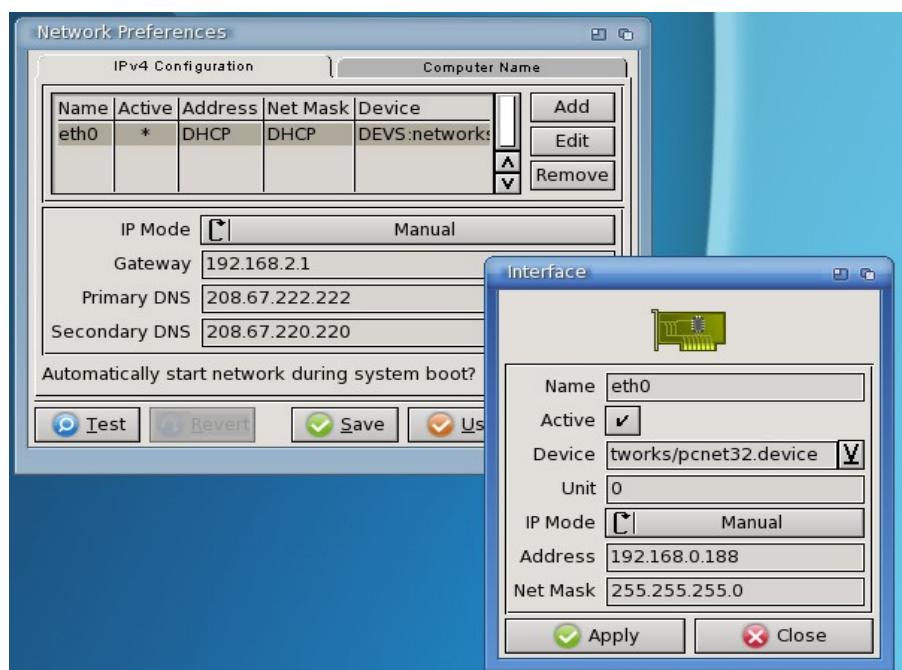
In order to configure the network, you need to have Icaros Desktop Live! already installed on your hard drive (configuration files must be saved and system rebooted). When ready, just launch **Network** from the **Prefs** drawer.



#### 4.4.1 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.**

#### 4.4.2 Manual configuration



Configuring the network by hand might be useful for people that often transfer 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](http://www.opendns.com) for any update about them.

#### 4.4.3 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**. An output like this will be shown:

```
lo0: flags=9<UP,LOOPBACK> mtu 1536
      inet 127.0.0.1 netmask 0xff000000
eth0: flags=863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX>
      address: 00:0c:29:05:2e:af
      inet 192.168.2.211 netmask 0xfffff00 broadcast 1
```

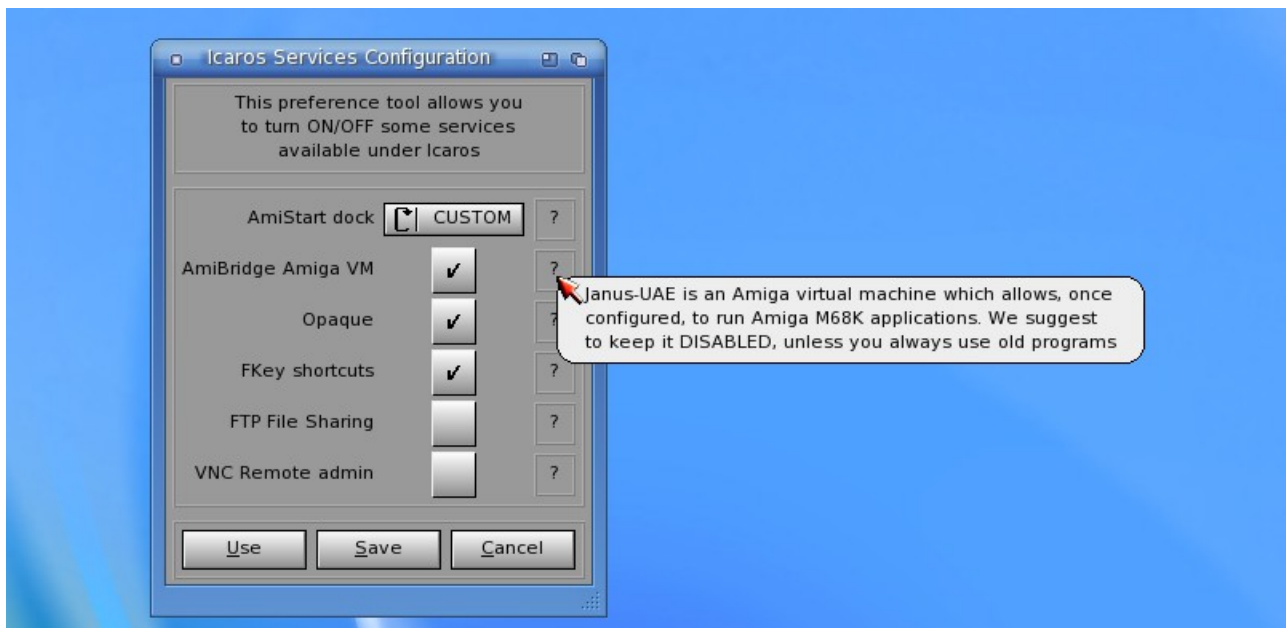
just look at the last line, after **inet**: this is your current IP address. If you don't see any **eth0**: entry, it means your network is not completely up and running.

#### 4.4.4 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.

### 4.5 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 1.3, the old Services script has been replaced by a proper tool. You can recall a bubble hint by placing the pointer over the question marks, and wait for a few seconds.

#### 4.5.1 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.

#### 4.5.2 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).

#### 4.5.3 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.

#### 4.5.4 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. However, AmiStart seldom create glitches and little compatibility issues with other applications (for example, **DirectoryOpus** and **PoorPDF**), so maybe you'd like to disable it. Users of Icaros Desktop using old hardware will prefer disabling AmiStart, since it needs memory to run, and can slowdown the AROS experience while opening its menus.

#### 4.5.5 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.

#### 4.5.6 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.

#### 4.5.7 Enabling AmiBridge Amiga™ Virtual Machine

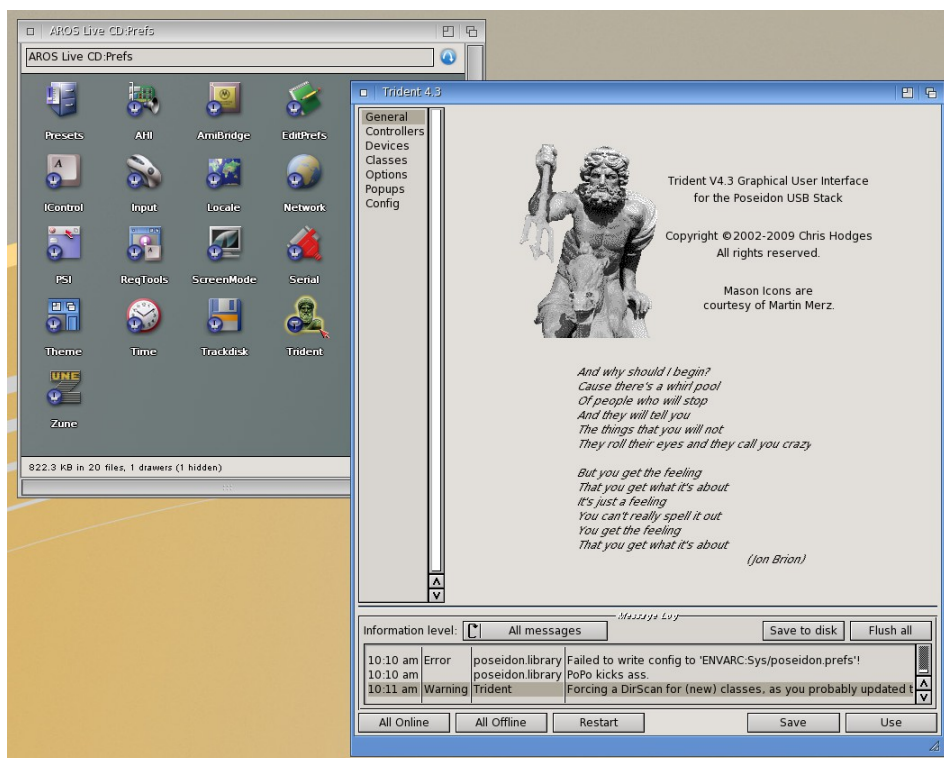
Icaros Desktop can now run the Janus-UAE Emulator in coherency mode at startup (see chapter 7 of this guide). This way, people that heavily use old AmigaOS M68K applications can now run them immediately after bootstrap. This option lets now choose between AROS M68K and AmigaOS 3.x for legacy applications.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

### 4.6 Configuring USB peripherals

Icaros Desktop 1.1.3 and afterwards come with the **Poseidon USB stack** already included and enabled at startup. Starting from Icaros Desktop 1.1.5, Poseidon is now 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.



#### 4.6.1 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:

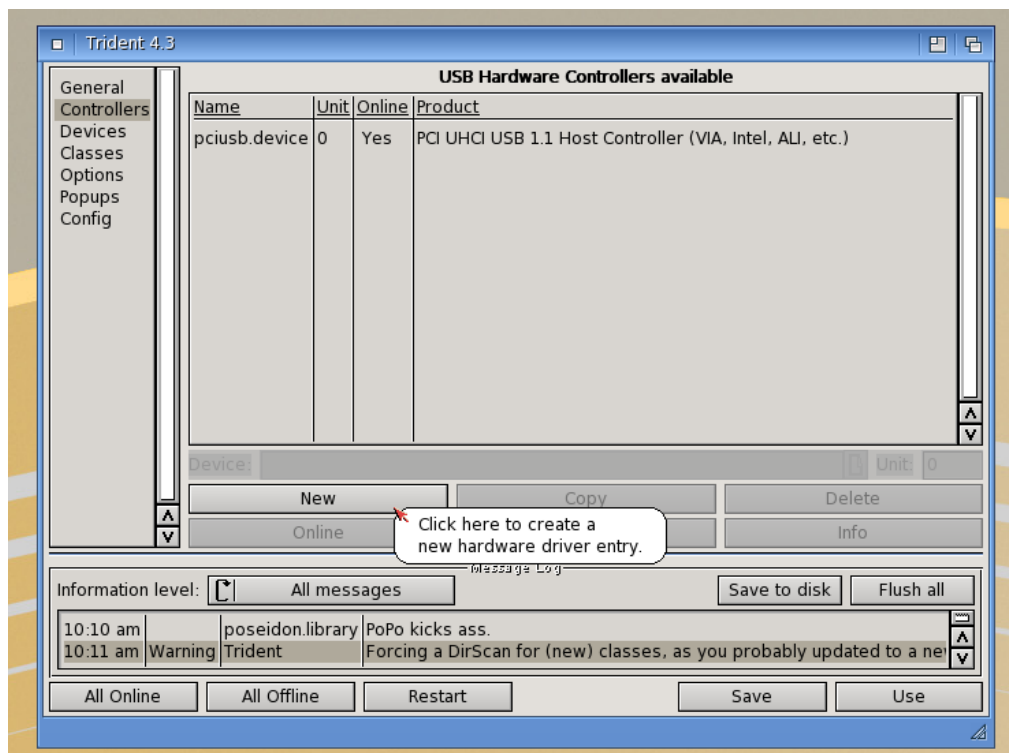


- A *full speed* USB 1.1 controller, being it a UHCI or a OHCI one
- A *hi speed* USB 2.0 controller, being a EHCI one

in future, something will change with the introduction of the new USB 3.0 standard, but for now we will concentrate only on existing and most popular solutions. 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. Vice-versa, 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.

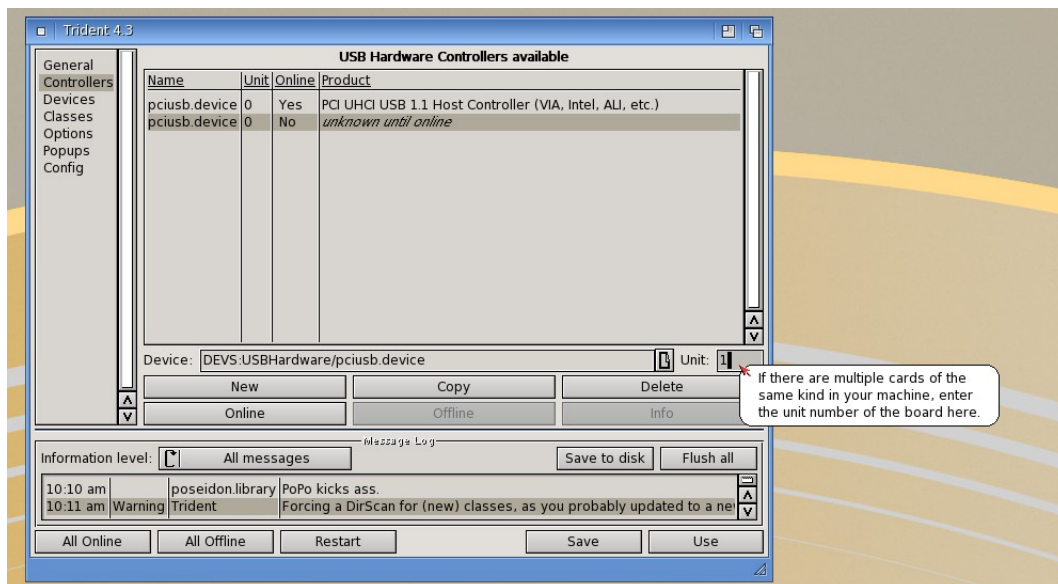
#### 4.6.2 Adding new controllers to Trident

Icaros Desktop should detect and load all USB controllers available at startup. If a port shouldn't work, however, the most probable thing 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.

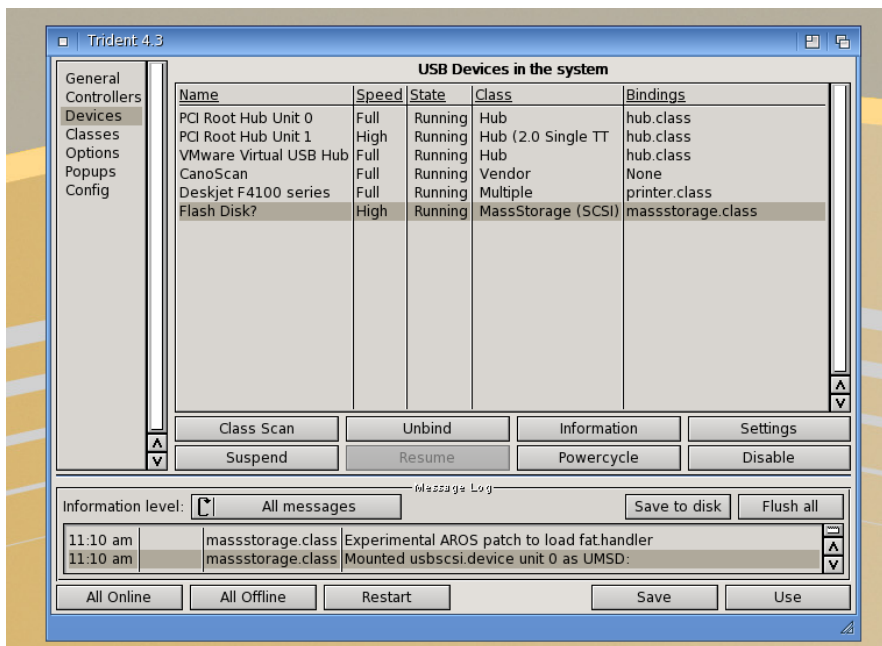
#### 4.6.3 Adding and removing devices

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

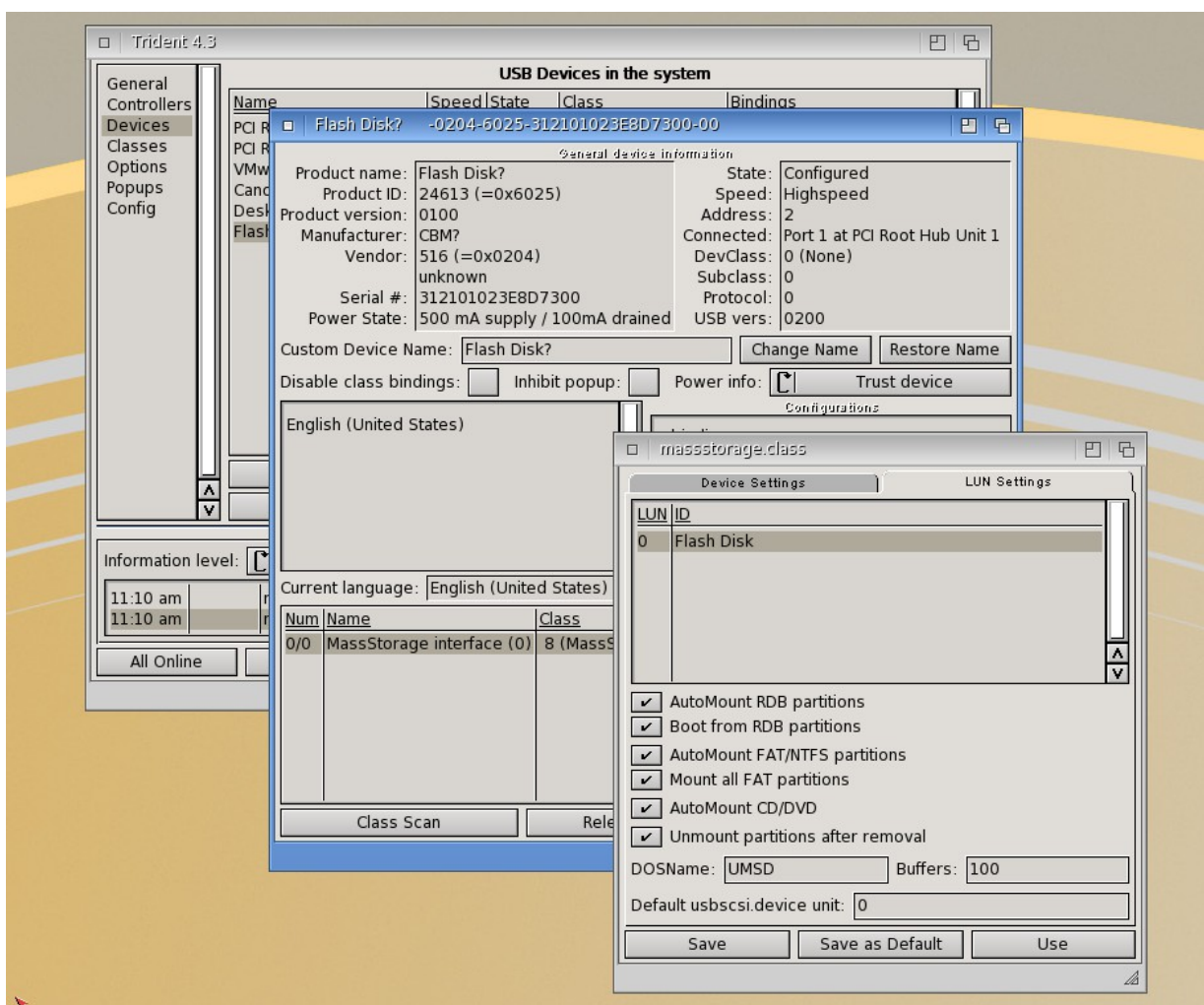


As you can see, a *multifunction printer* from *HP* has been correctly detected and bound to the proper class. When you're done adding peripherals, your Device list in **Trident** might look like this:





Clicking on the **Settings** button you can access any deeper option. 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 pendrives, 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 has still some flaws. Although every USB pendrive 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 pendrive, 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.

## 5. Icaros and other computer 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:

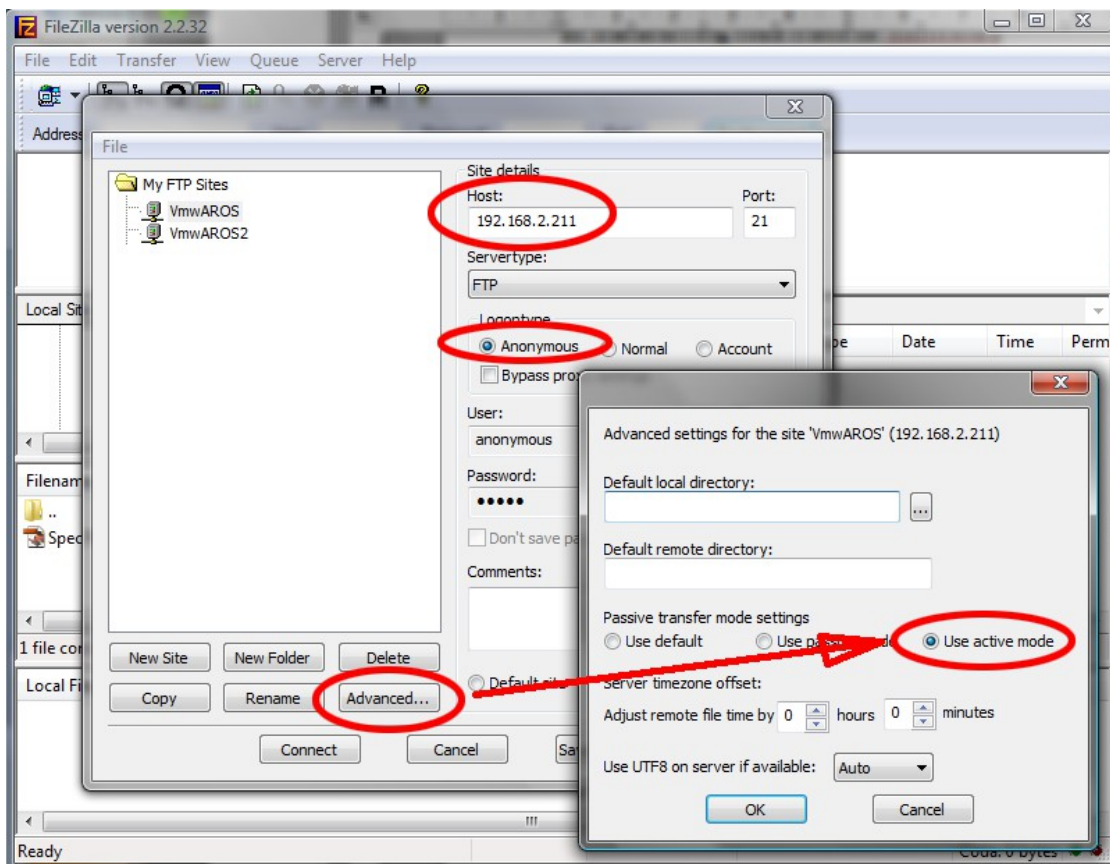
**FTP site:** *your AROS machine IP address*

**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 XP

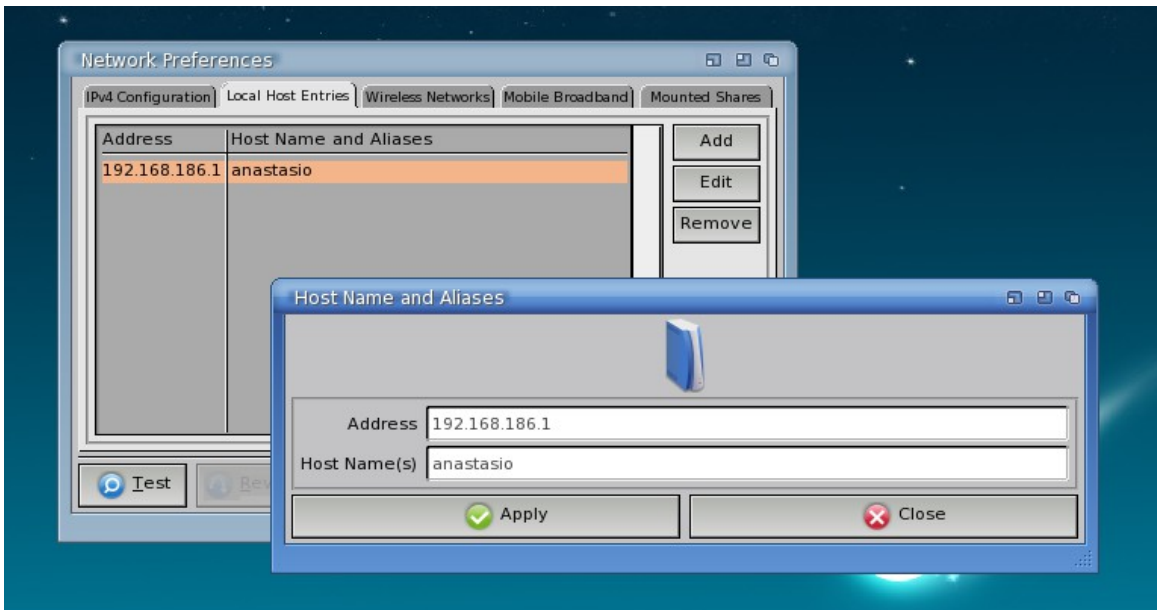
A new, recently introduced feature of Icaros Desktop is support to Windows XP SMB shares (or 'shared folders' as you like). Please notice **only Windows XP will work for now**: adding newer revisions of the

protocol used by *Windows Vista*, *7* and *Server* editions is planned, but for now it is not yet available. To enable Windows shares, you must know some details of the machines in the local network:

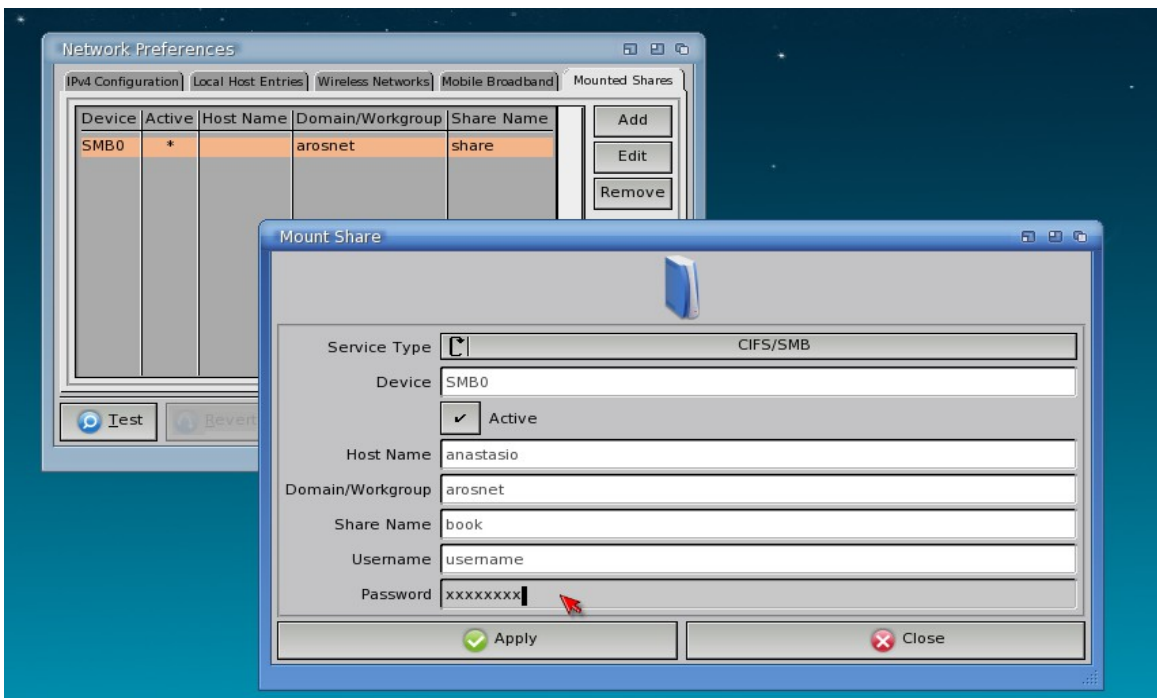
- IP address of the Windows host (get it using **ipconfig /all** command in a Windows shell)
- hostname of the Windows PC (right click on computer icon, Properties)
- share name(s) of the folder(s) you're sharing

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.



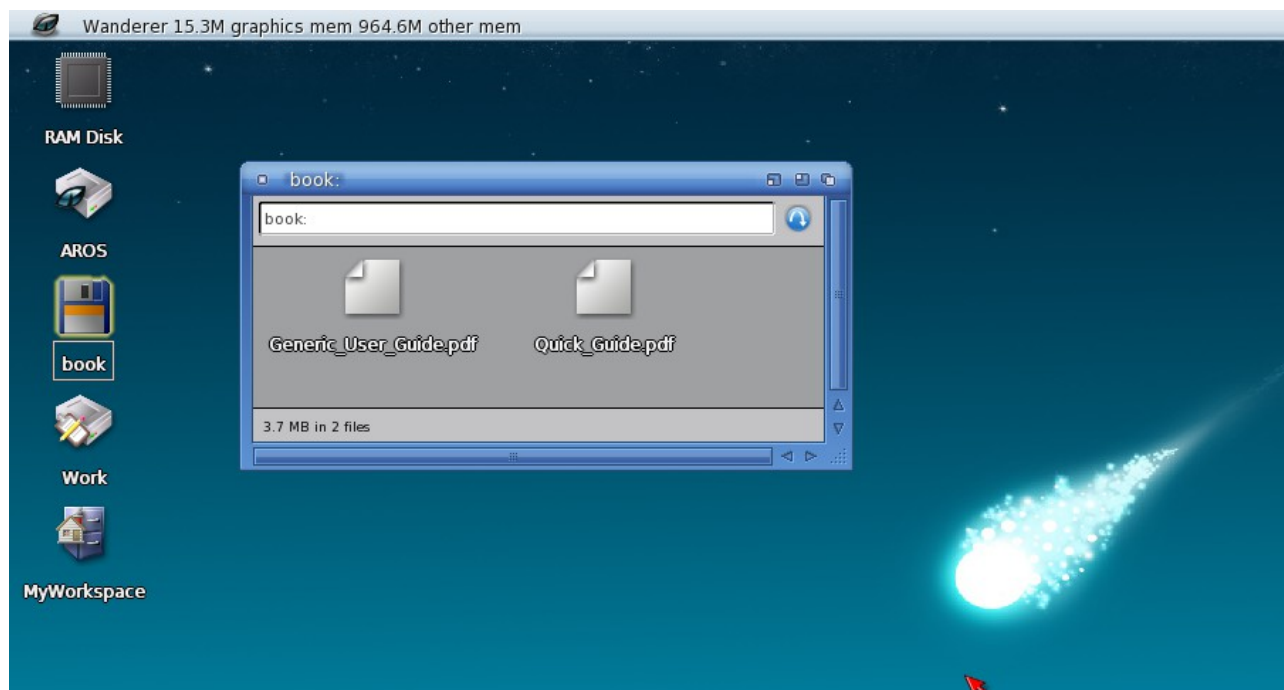
2. Do not click on **USE** or **SAVE** for now. Move on the **Mounted Shares** panel instead and click on **ADD**.



A new **SMB0** device will appear in the first column. Enter Windows **host** name (the same you've entered before), the windows **share** name, the **username** 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-verse, 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 slow?**

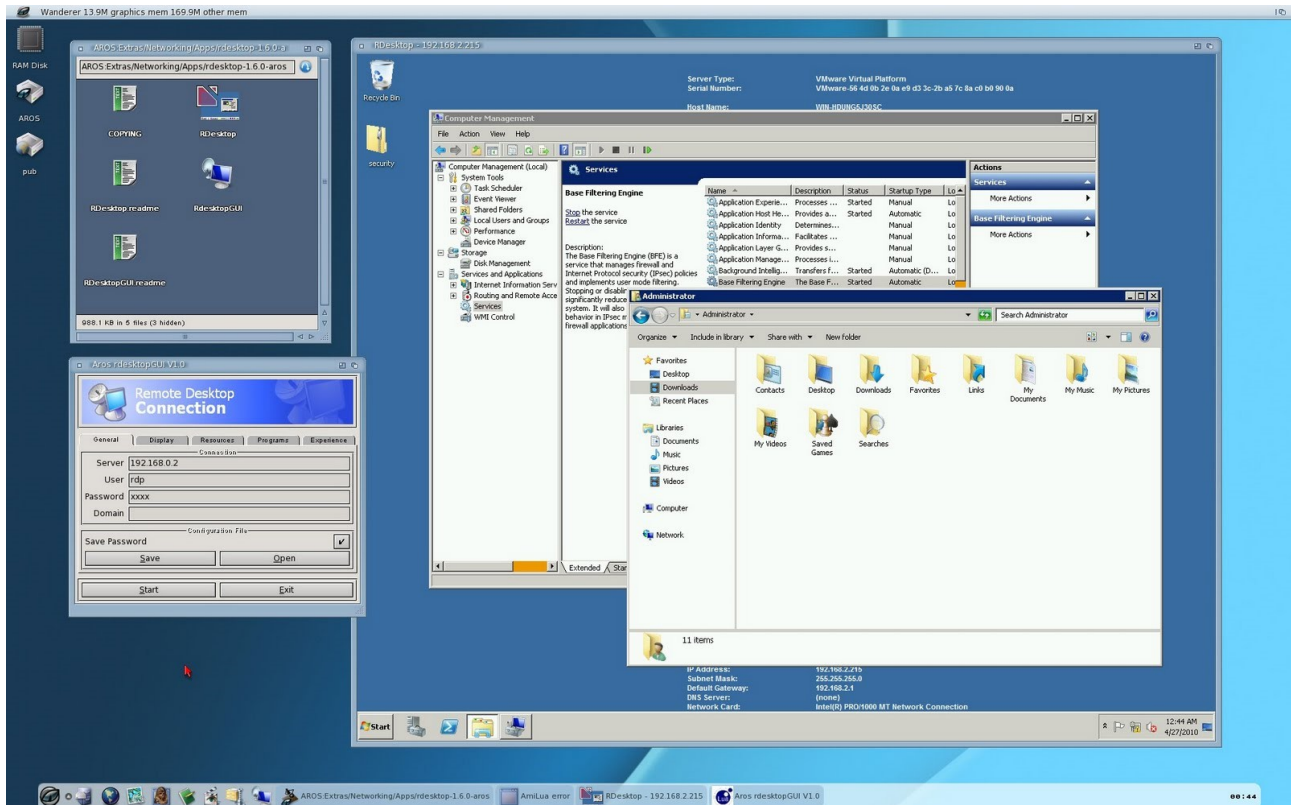
Wrong settings for Windows shares can make boot times loooooooooonger. If you get noticeable slowdowns booting Icaros when Windows shares are active, you can disable them cleaning the Active checkmark for the offending share service. This typically happens when a DHCP server manages the IP addresses 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.

### **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 don't see any **eth0:** entry, it means your network is not completely up and running.

## 5.2 Administrate remote computers using rDesktop and ArosVNC

Icaros Desktop provides two ways to administrate 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. Pre-requisites are that Windows machines must have Remote Control enabled, and other operating systems a VNC server running, and adequately configured, on the host. Please refer to Windows, Linux and MacOS X documentation to learn how to meet those pre-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.

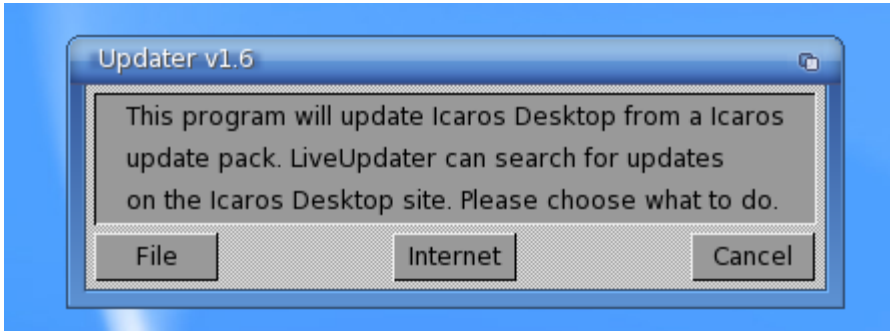
You need a VNC client running to reach Icaros' desktop. Please notice that not everything can be remotely displayed. You can't run MESA applications over the network, for instance, and in order to gain decent speeds over the internet might be necessary to reduce video quality to the minimum available.



## 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 in 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.

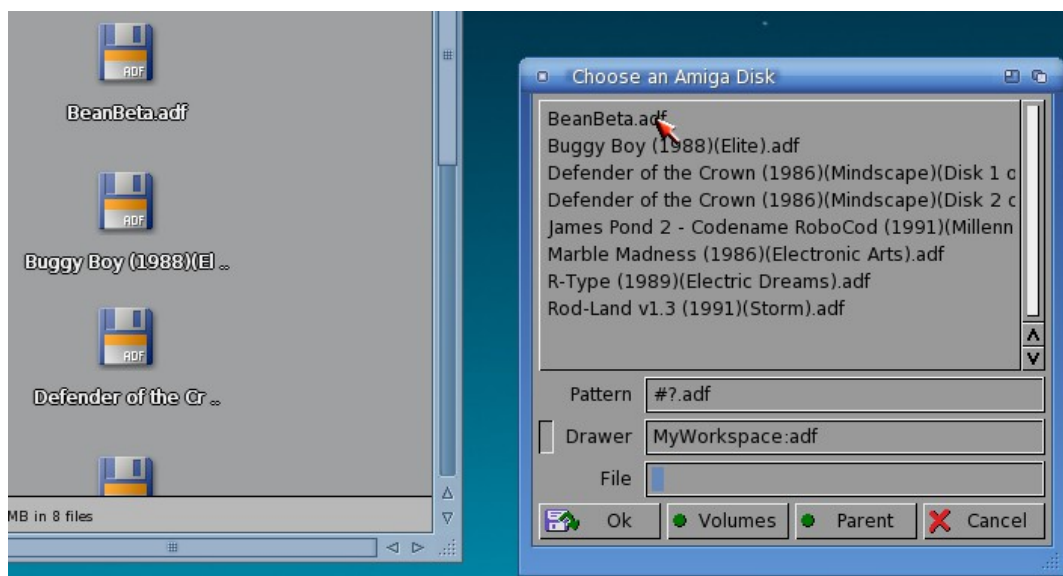
Every time you add a new ADF disk to AmiBridge, two files will be created in the *AmigaApps* directory: a launch script, with a custom name you'll be prompted for, and a setting (.urc) one with the same name of the ADF file, but with the .urc extension added automatically. For instance, if you decide 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

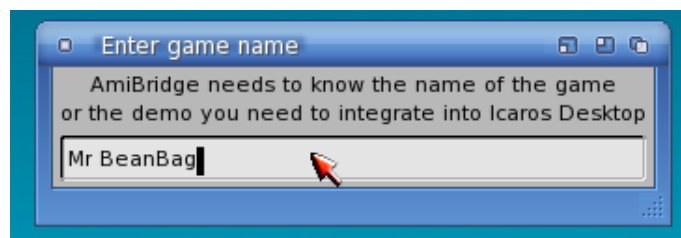
A different .urc file is used for every ADF added, so people can easily tweak emulator settings for that ADF file only.

#### 7.1.1 Adding a single disk game/demo

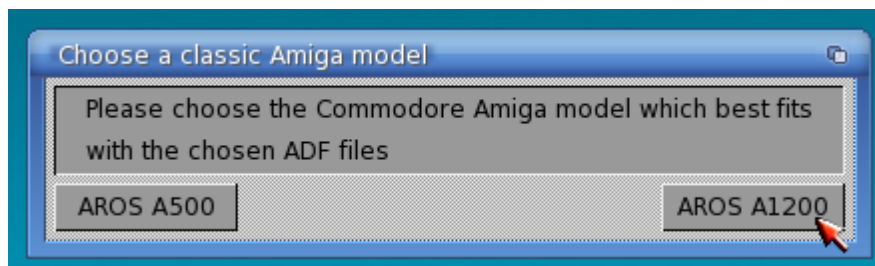
You can add ADF files to AmigaApps menu as well, either running the new **ADD\_ADF-GAME** script from AmiStart's **My Software > AmigaApps** menu, or by double clicking on the icon of an ADF file. In the former case, a file requester will ask you to locate the ADF file. Let's add, for instance, Mr Beanbag,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



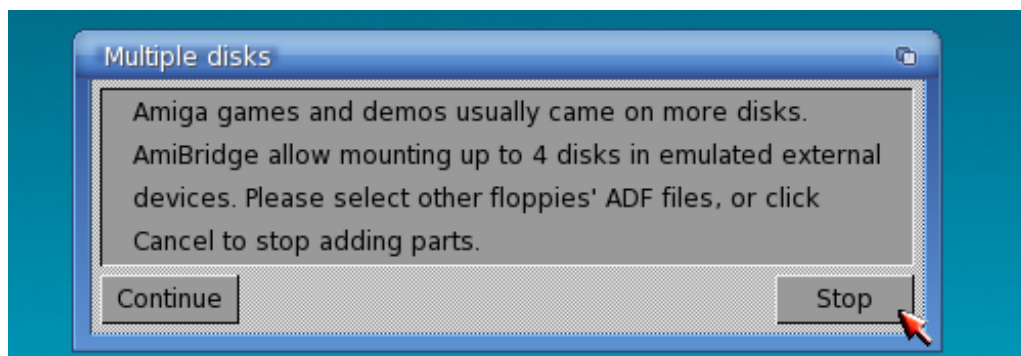
Choose the “beanbeta.adf” file. Enter the clean name of the game this way:



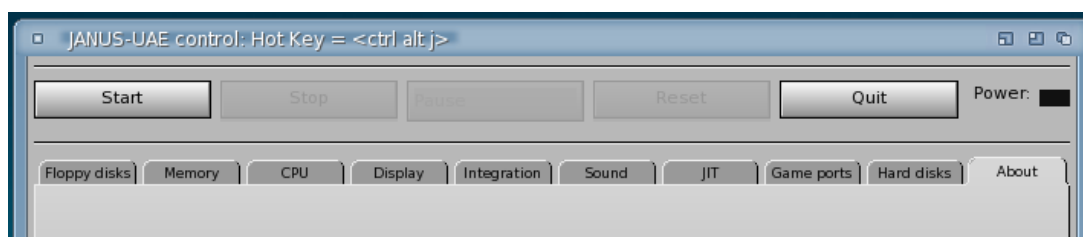
And now choose the right Amiga model to run it. Mr BeanBag runs best on an **Amiga 1200**. Since Icaros Desktop uses AROS KickStart ROMs instead of Amiga™ ones by default, old OCS/ECS machines are indicated by the **AROS A500** option, while AGA ones by **AROS A1200**. In this case, we must choose **AROS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

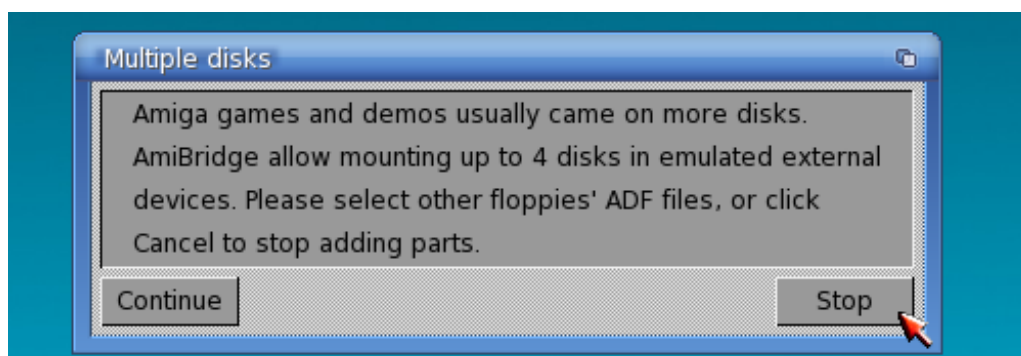


### 7.1.2 Adding a multiple disks game/demo

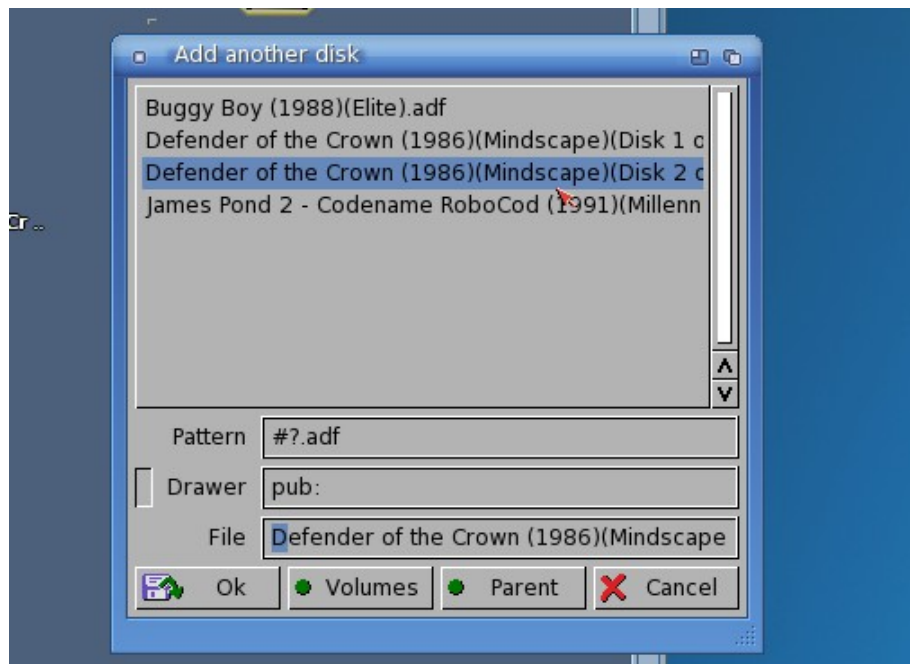
You can use multiple ADF files if necessary, just start adding a game using the **first disk** (as explained before), either running the new **ADD\_ADF-GAME** script from AmiStart's **My Software > AmigaApps** menu, or by double clicking on the icon of the **first disk's** ADF file. For instance, if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

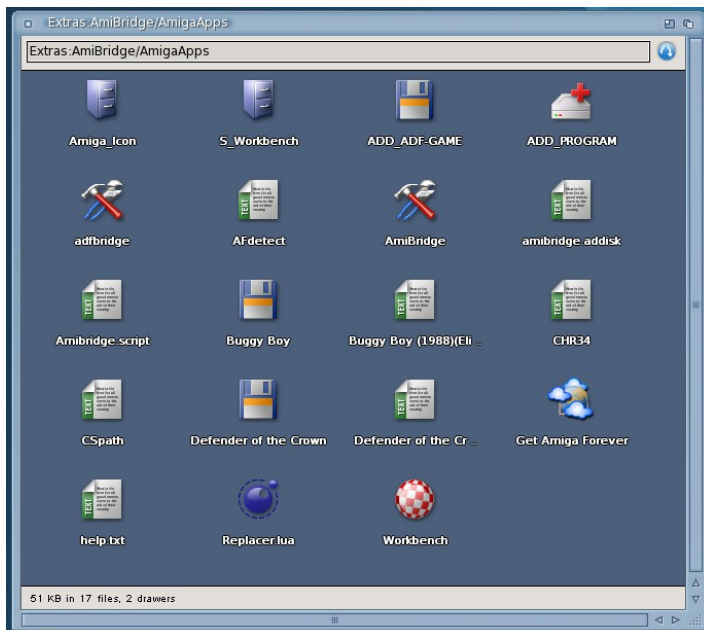


Click on **Continue** instead. You will be prompted for the second (third and fourth) drive until you click on Cancel. But for now, enter the second disk's ADF. Then press **Cancel** next time. **AmiBridge supports up to 4 disks**. Games coming on more than 4 disks should be installed somehow on a hard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



### 7.1.3 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.

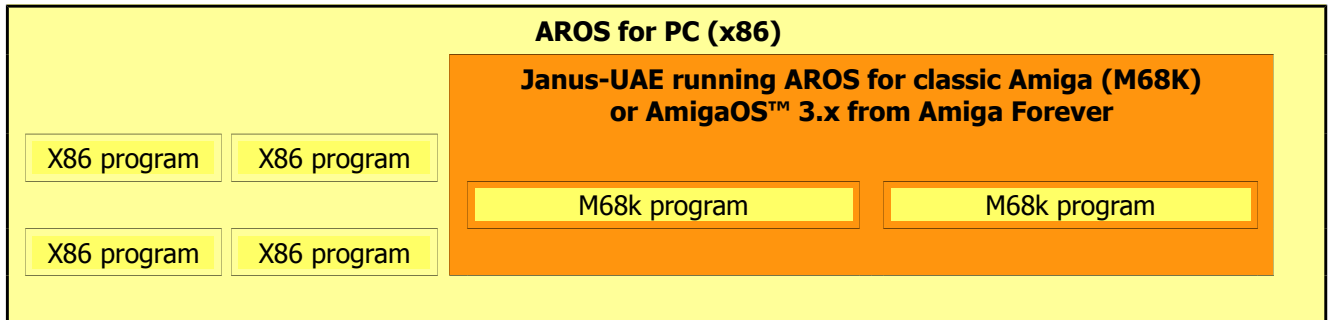
You can also use Janus-UAE GUI to do so. Just load the configuration file you need to edit, change the options as you wish, and save it again. Please refer to the Janus-UAE documentation in the *AmiBridge/emulator* directory to learn how to use UAE settings.

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 classic M68K applications

### 8.1 AmiBridge's M68K environment

Starting from version 1.4.4, AmiBridge system had been extended to use 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 furtherly extended this concept, 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

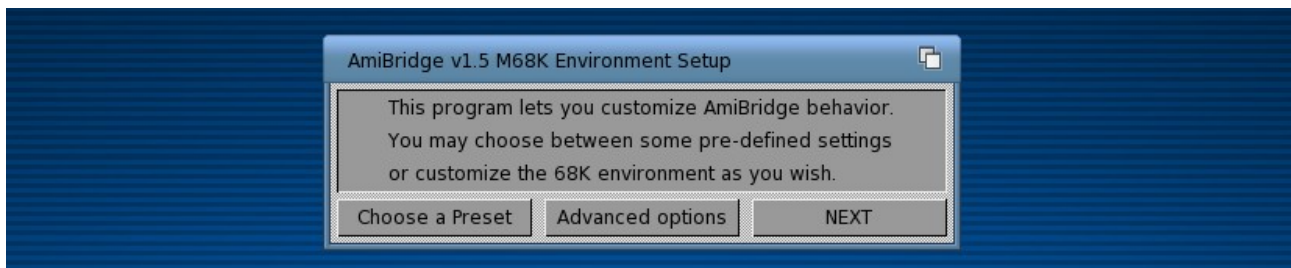
**Work:** → partition for Amiga software, located at host's extras:68K/Work

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 sto to Extras:68K. This is due to Icaros 1.5's different drawers 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.

### 8.2 Setting up the 68K environment

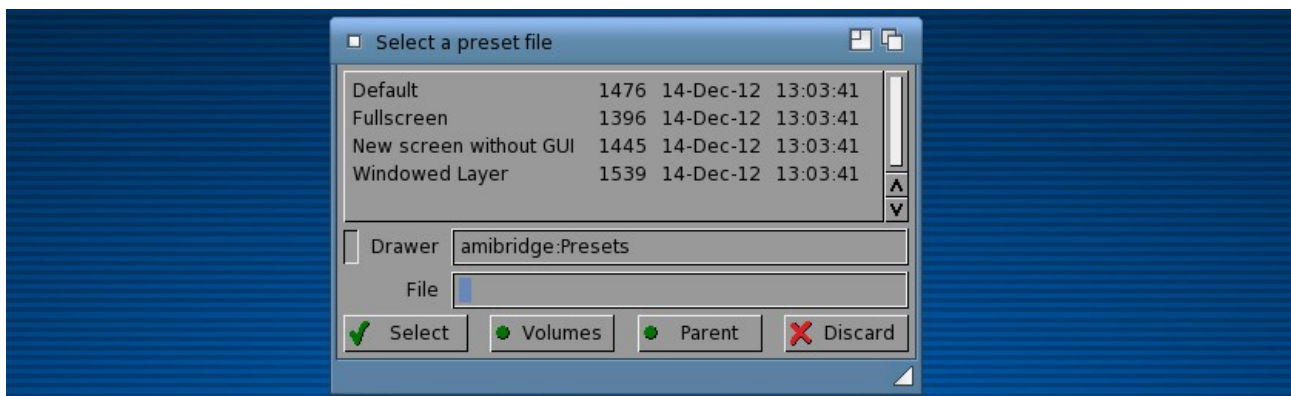


A new preferences script for **AmiBridge** has been introduced in the /Prefs drawer. You may decide to use one of new AmiBridge presets, like default integration, full screen Wanderer/Workbench, compatibility layer in a new screen and emulation-in-a-window at a fixed resolution. Presets, however, are not the only choice and you can handle settings for many aspects of emulation.

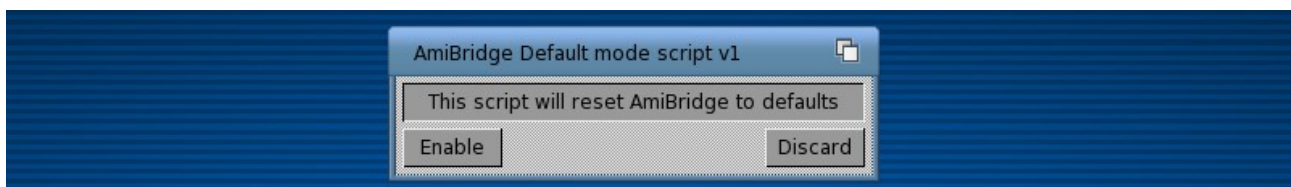


### 8.2.1 Presets

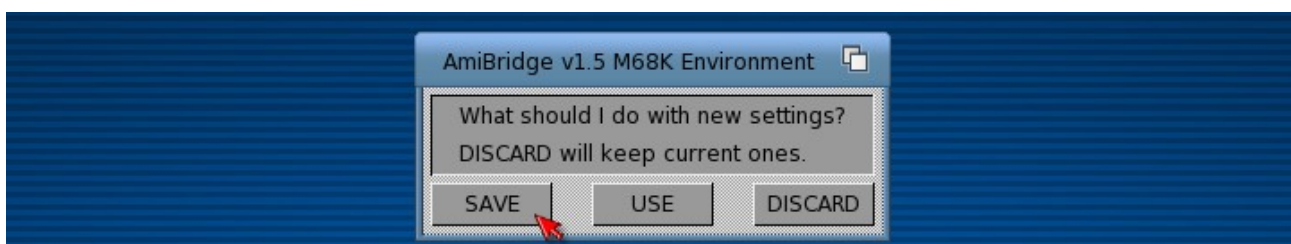
AmiBridge can now behave in many ways. Icaros Desktop comes with a few presets, covering the most common user needs. Presets are meant to be expandable, so new presets may be available in the future and users can easily learn how to create new presets as well. Anyway, when clicking **Choose a Preset**, 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!**

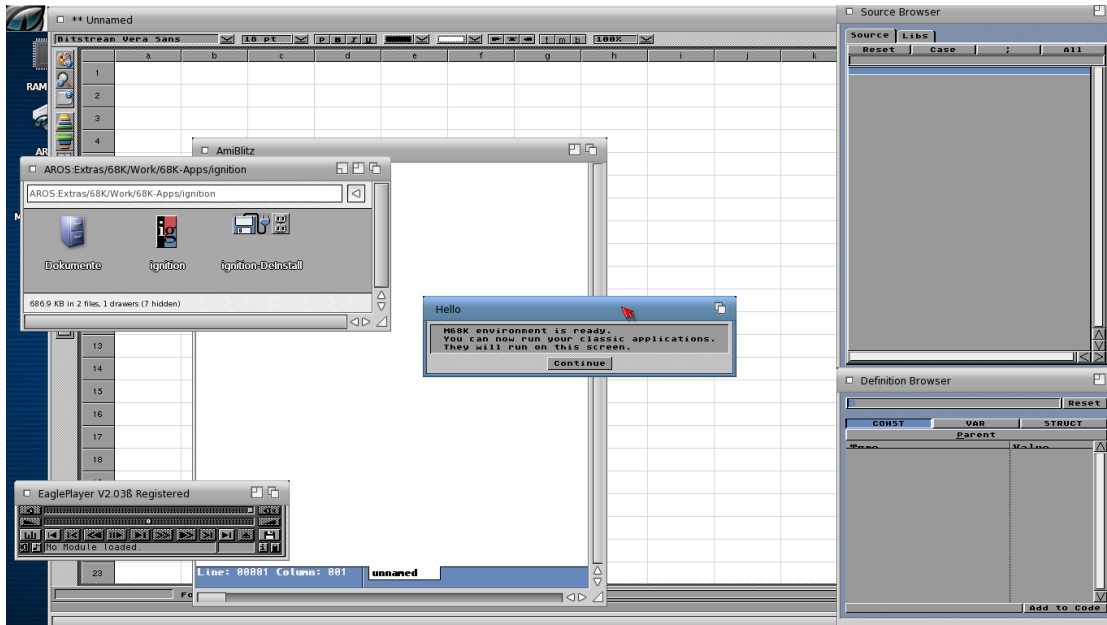
Presets are shell script that may modify Janus-UAE settings. Once enabled, they will be permanent even if you choose just the USE option afterwards. You can disable them using Janus GUI or choosing a different Preset which does a completely different thing. **Be careful about 3<sup>rd</sup> party Presets,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



## Default integration

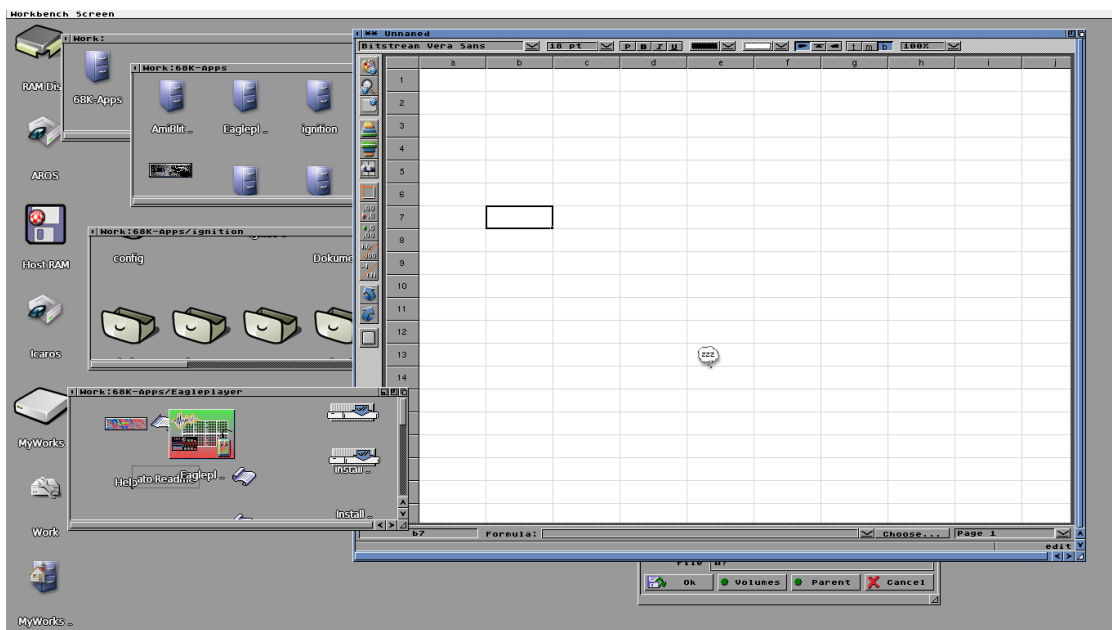
AmiBridge will try to integrate classic applications as much as it can. Classic applications will appear on the screen as AROS x86 windows, and to make them look as much integrated as they can, some host's preferences like (global settings for) Zune. Fonts, Pointer, locale, iconcontrol and input will 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

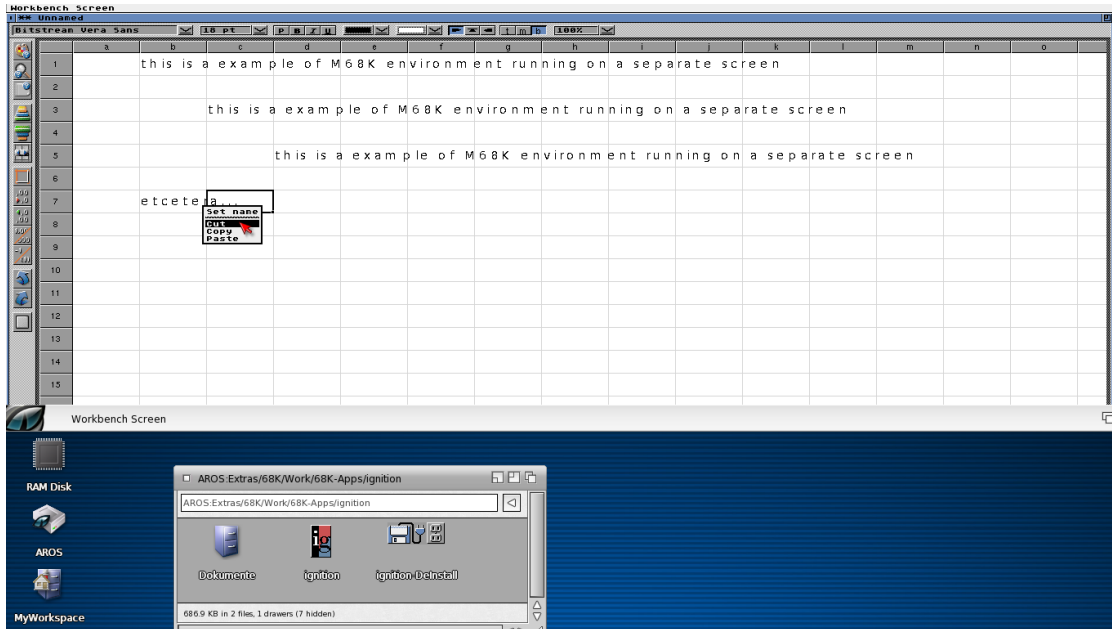
With this Preset, the M68K environment will be opened in a new screen, keeping the OS GUI active. This means that you may have a full 68K Wanderer or Amiga™ Workbench on top of AROS x86 (classic emulation). Fullscreen mode is generally faster than default integration, especially for AROS M68K, and can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





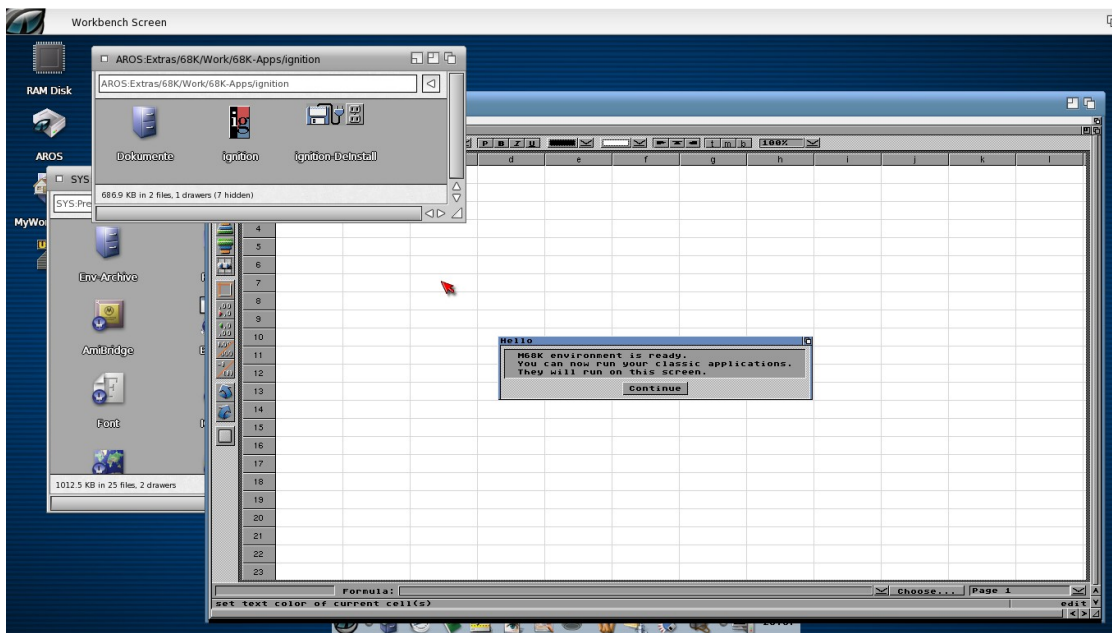
## New screen without GUI: a clean emulation screen for your classic apps

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 IARos+M or +Tab keyboard shortcuts. You can, however, drag the x86 AROS screen up and down revealing the 68K one behind:



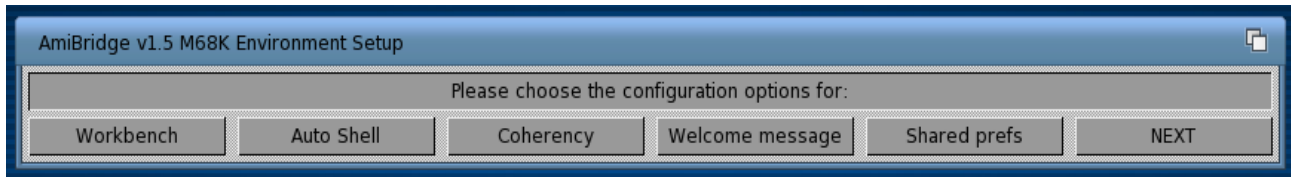
## Windowed layer: a 68K window on your Wanderer screen

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:



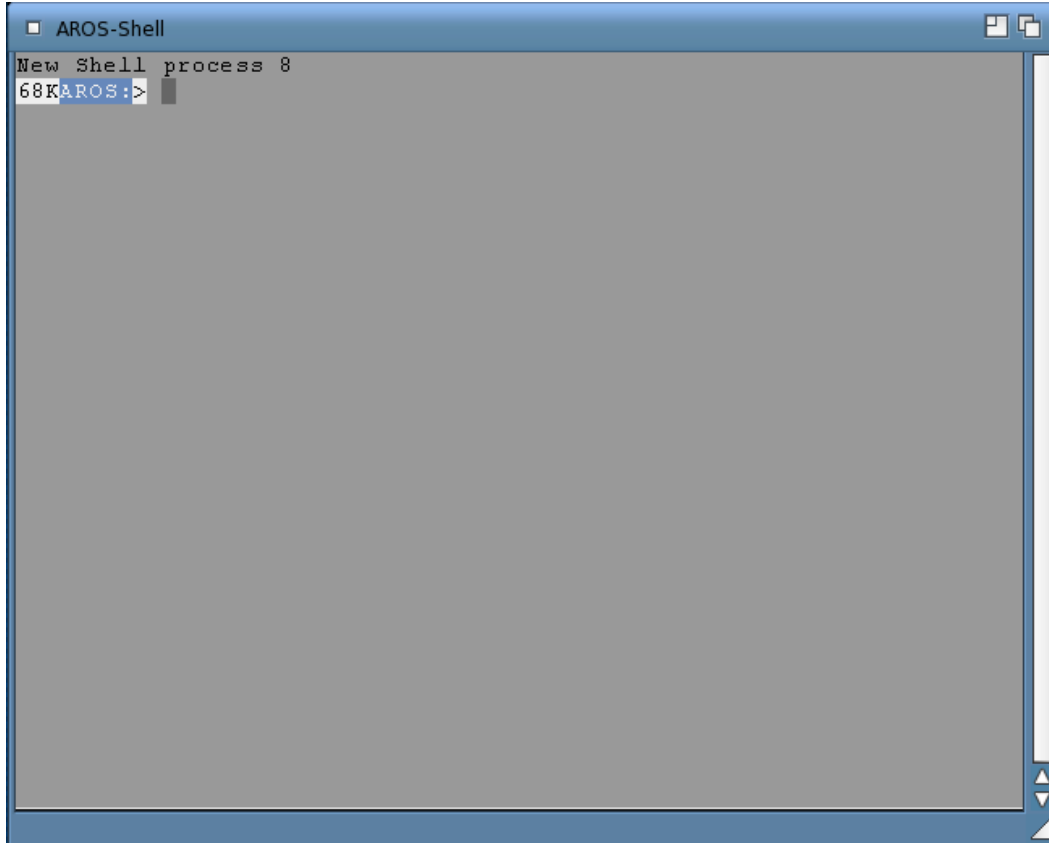
Once done with your settings, click on the **NEXT** button to use, save or cancel your choices.

### Workbench

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.

### Automatic 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.



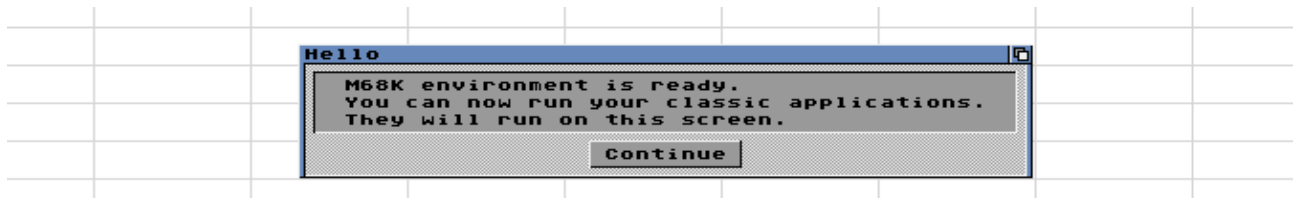
When using the AROS M68K shell, you can always recognize it by its different prompt: `68KAROS:>`.

## Coherency mode

AmiBridge will try running your applications in coherency mode as much as it can. But you may change this behavior by clicking on the **Coherency Mode** 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.

## Warning message

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



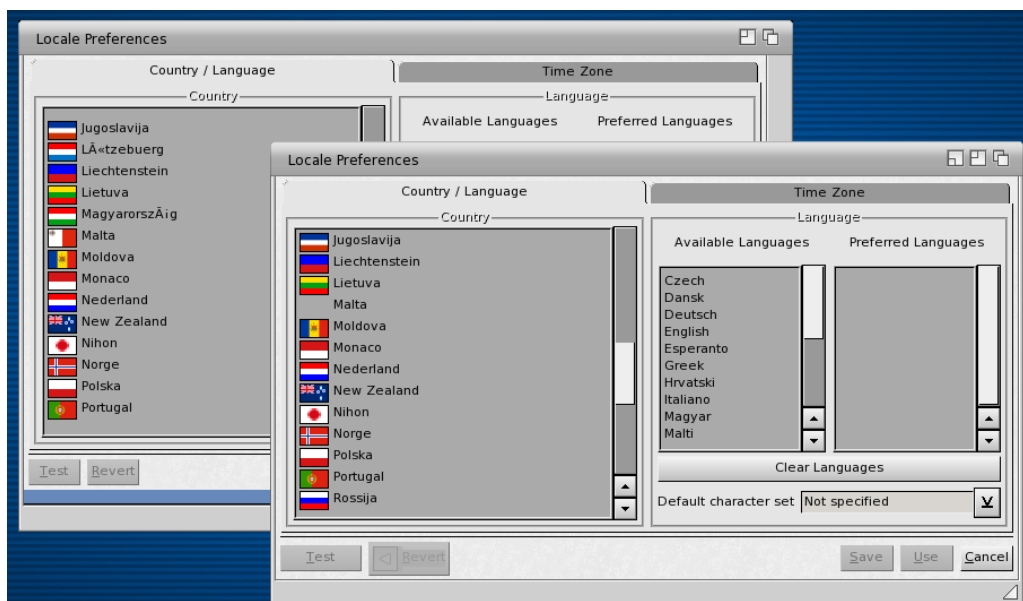
If you usually run AmiBridge as a service, you may prefer not to see this message every time you reboot the system. The Warning message button lets you decide whether showing or hiding it.

### 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. That was the behavior in Icaros 1.4.5.

## 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.



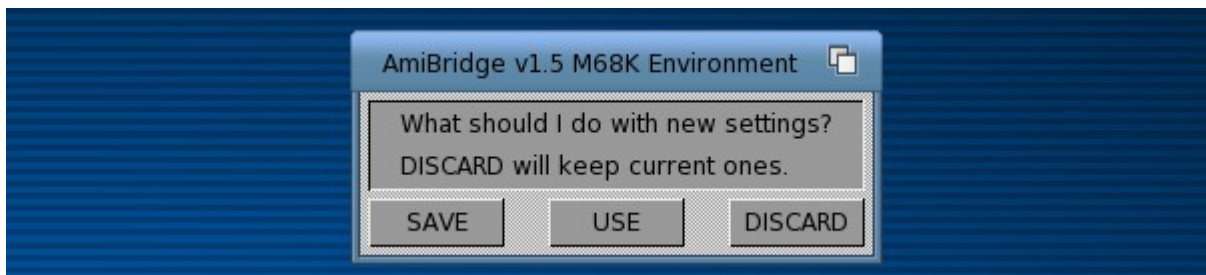
coherency mode: these are x86 and 68K locale prefs. Can you spot the differences?

### 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.

### 8.2.3 Use or Save

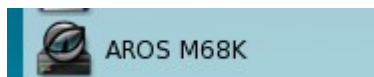
Once you've set up your AmiBridge behavior as you wish, please save or use your new settings. To do so, just click on the **NEXT** button. You will be prompted with a new request:



As usual, the **Save** button will make permanent your selection, while the **Use** button will make it valid just for the current session. You may also decide to discard all your changes with the **Discard** button.

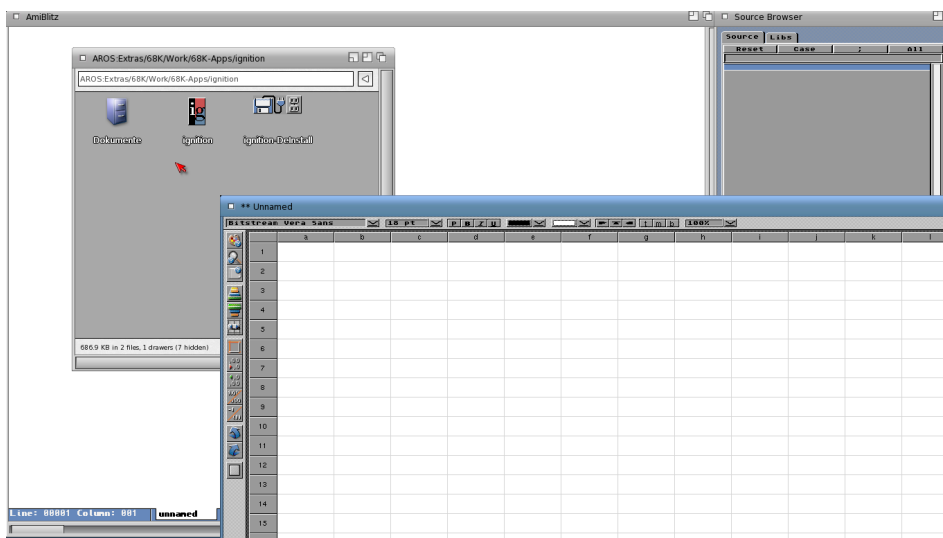
## 8.3 Running AROS 68K

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. Clipboard will be shared between host and guest, while parts of host filesystem 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:



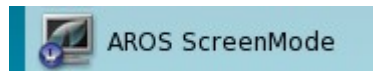
← **This script will launch AROS M68K environment**

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.

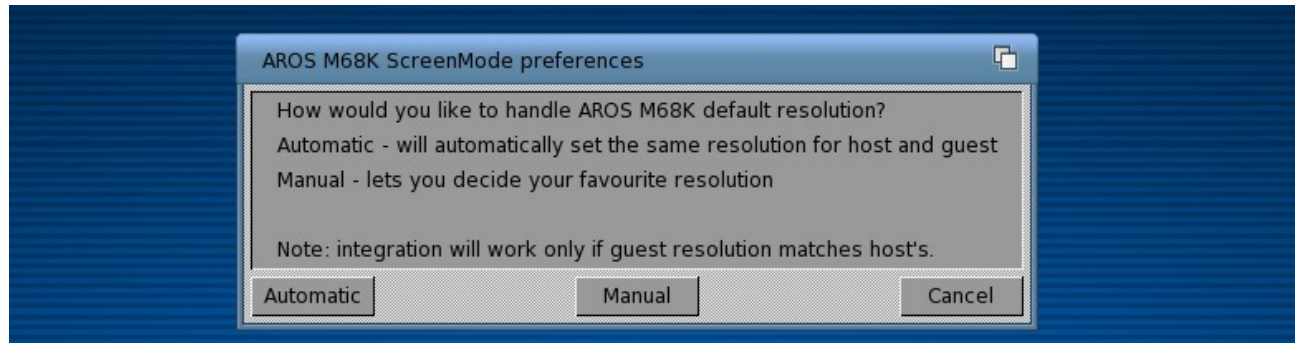


### 8.3.1 Legacy screen mode configuration and AROS Wanderer

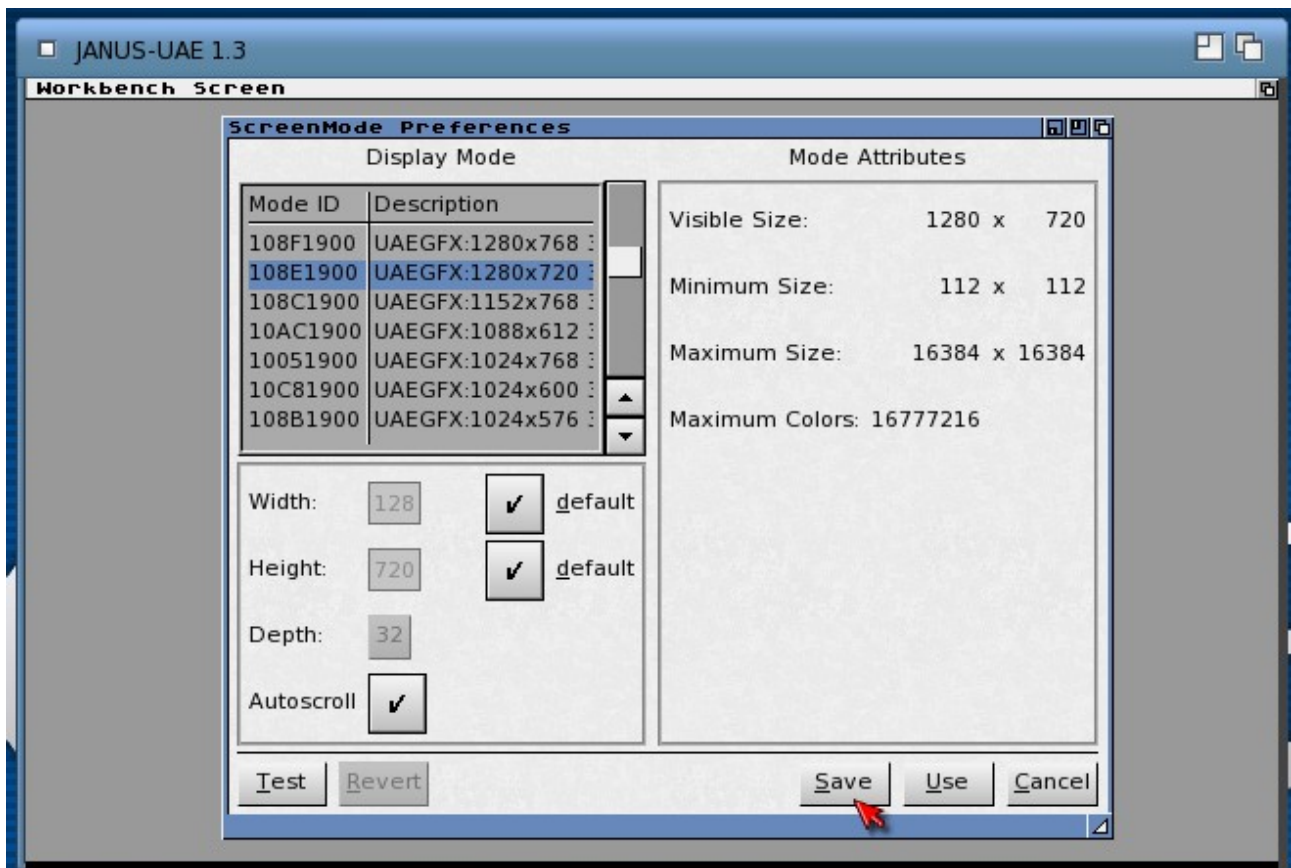
If, for any reason, you'd prefer to manually handle host and guest resolutions, you can run this other script, which has been modified to reflect the current situation:



This script will let you choose AROS M68K screen resolution



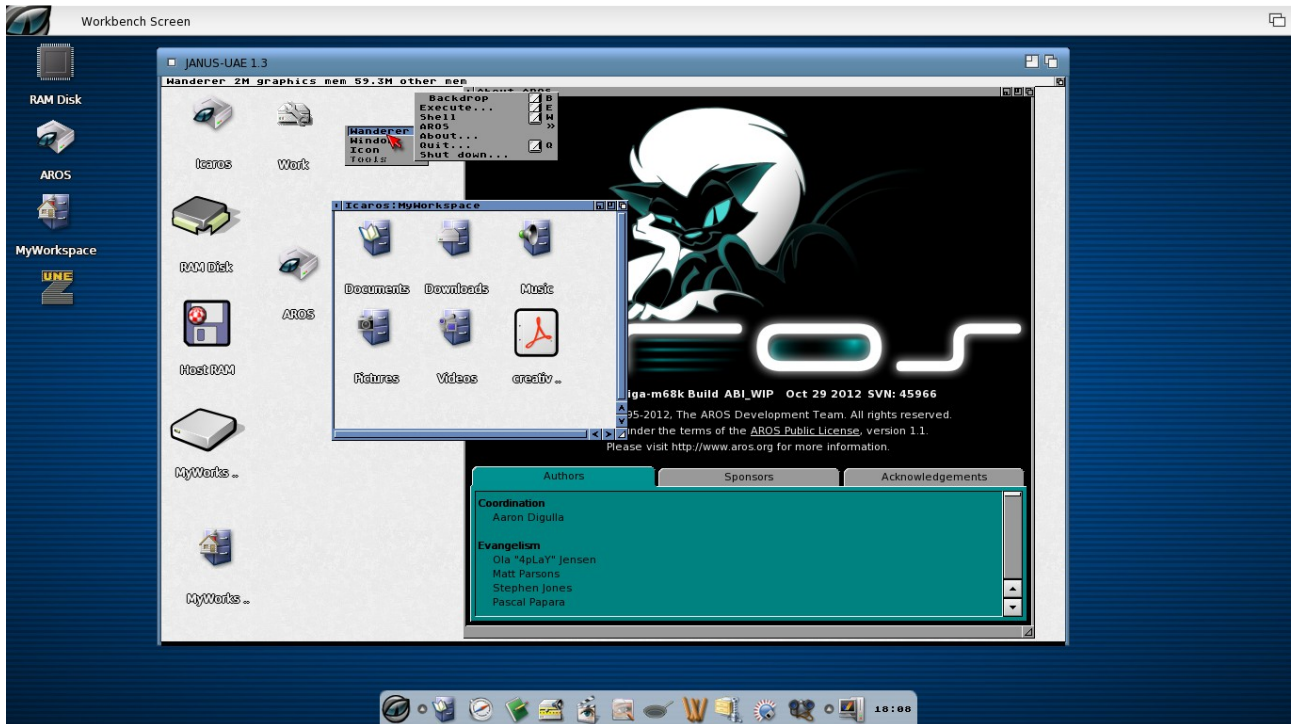
Once run, it will ask the user how to handle resolution: automatically or manually. By choosing Automatic, AROS M68K will normally choose resolution by itself. With Manual, you'll have to select the resolution the old way. After clicking on Manual, a session of Janus-UAE will run, allowing to select 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 favourite resolution. Janus will then close automatically.

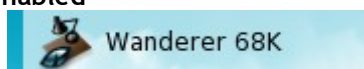
You can now run AROS m68k as if it was a normal UAE session. Please notice you can still run software in the AROS window using x86 Wanderer (as if it was a remote command to a tv-set). You double click on a M68K icon on the x86 side, and it will appear in the M68K window.



This combination has been reached with these settings:

AROS x86 screen: 1366x768x32  
AROS 68K screen: 1024x600x32  
Amibridge → Wanderer → enable  
Amibridge → Coherency mode → disable  
Amibridge → Warning message → disable  
Janus-UAE GUI → Integration → Coherency mode disabled  
Janus-UAE GUI → Integration → Mouse integration enabled

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



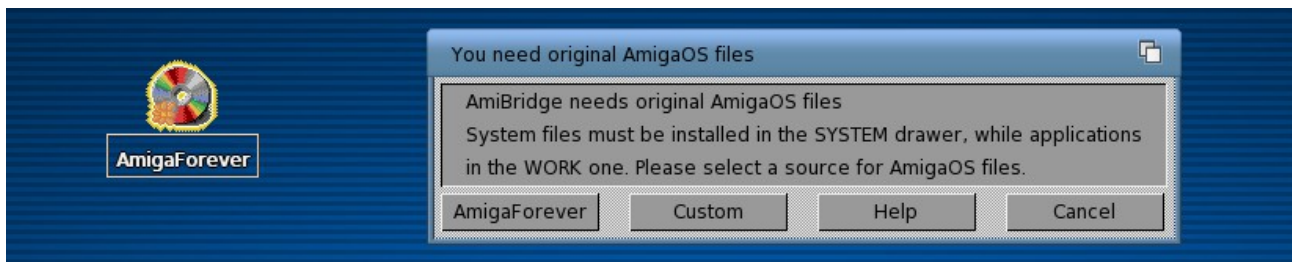
## 8.4 Running AmigaOS™ 3.X inside AmiBridge

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.

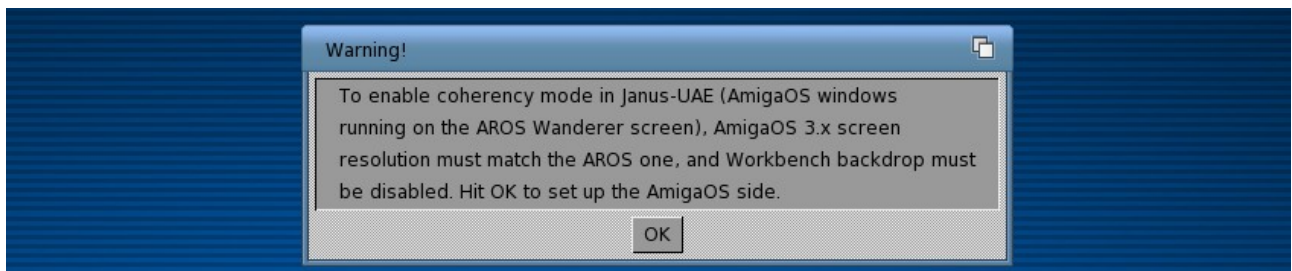
### 8.4.1 Integrating AmigaOS™ 3.X

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**.

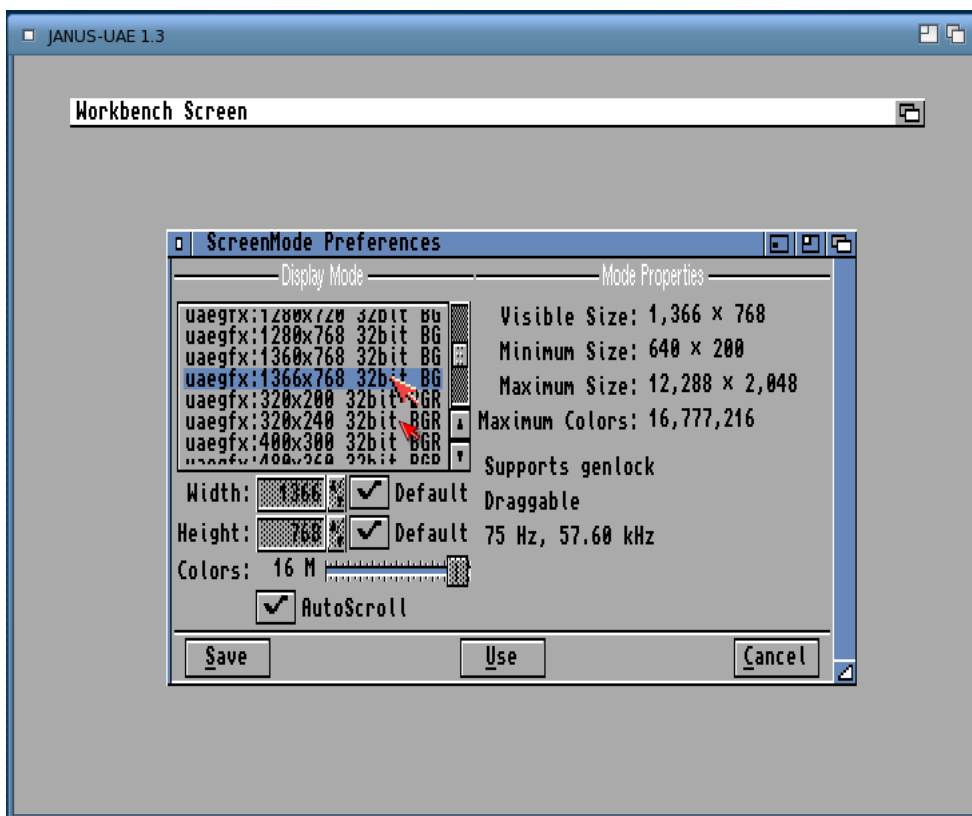




This will copy all needed rom, system and application files automatically. It will also add to AmigaOS' user startup files the necessary lines to run seamless integration of Amiga applications.



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.

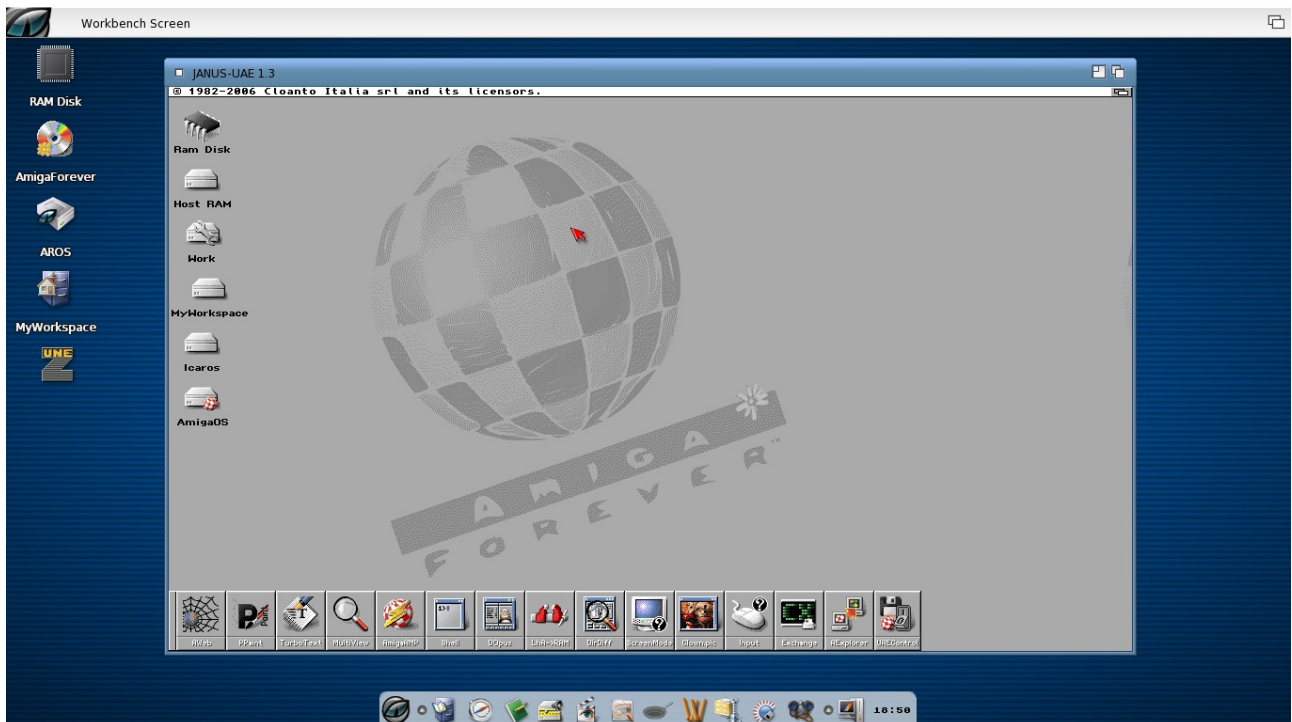
### 8.4.2 Running AmigaOS™ 3.X

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



**ScreenMode** → will run AmigaOS™ screen mode preferences without coherency mode. This will allow you changing 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.

#### AmiBridge at startup

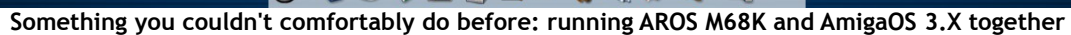
Normally, you are supposed to run the Amiga™ environment only when needed. However, if you heavily use M68K applications, you can run the whole AmiBridge thing at startup. Please see chapter 4.5 of this guide to learn about the 'Services' preference program. If the “AmiBridge Amiga VM” option is ticked,

Icaros will run Amiga Workbench at startup (and it will hide the Workbench window a few seconds after), making M68K applications immediately available after boot has completed.

## **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](http://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	Partial	Partial
Mouse synchronization	Some issues	Perfect
Set up phase	Not needed	Needed



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.

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.

### **8.6.1 The main panel**

☐ JANUS-UAE control: Hot Key = <ctrl alt j>

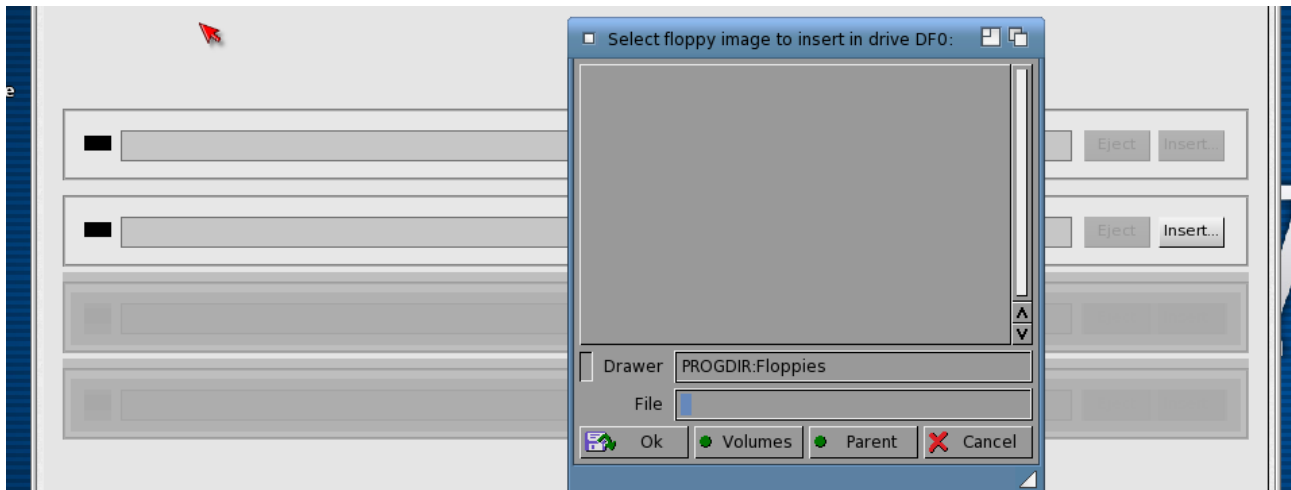
Start Stop Pause Reset Quit Power:

Floppy disks Memory CPU Display Integration Sound JIT Game ports Hard disks About

Click on Stop to shut down the Amiga virtual machine and Quit to end Janus-UAE and the AmiBridge session. You should always stop Janus when you don't need it, since running it in the background may hit your general performance very hard. 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 allow mounting floppies.

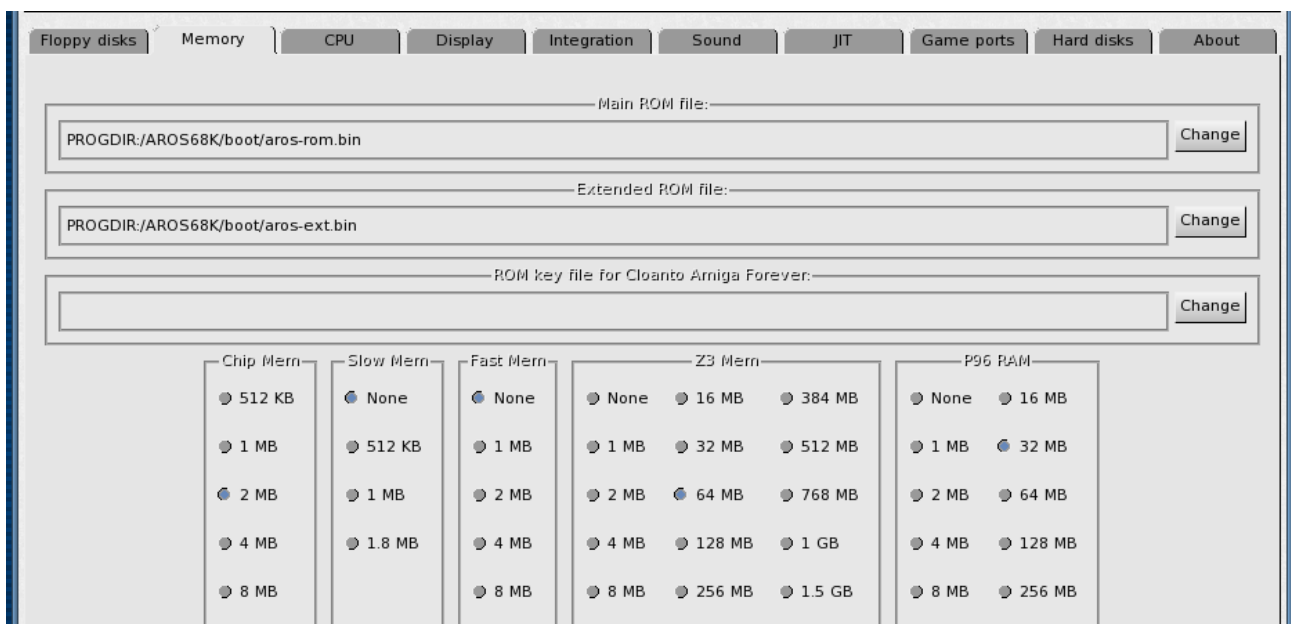


You can add an .adf floppy image file choosing the Floppy panel of Janus-UAE GUI and clicking on Insert. Use the file requester to seek for the desired floppy image and click OK to virtually place it in DF0: and DF1:. Original AmigaOS ROMs support 1 to 4 floppy units.

AROS 68K ROM replacement will allow using up to 2 drive for now.

### 8.6.3 ROMs and memory

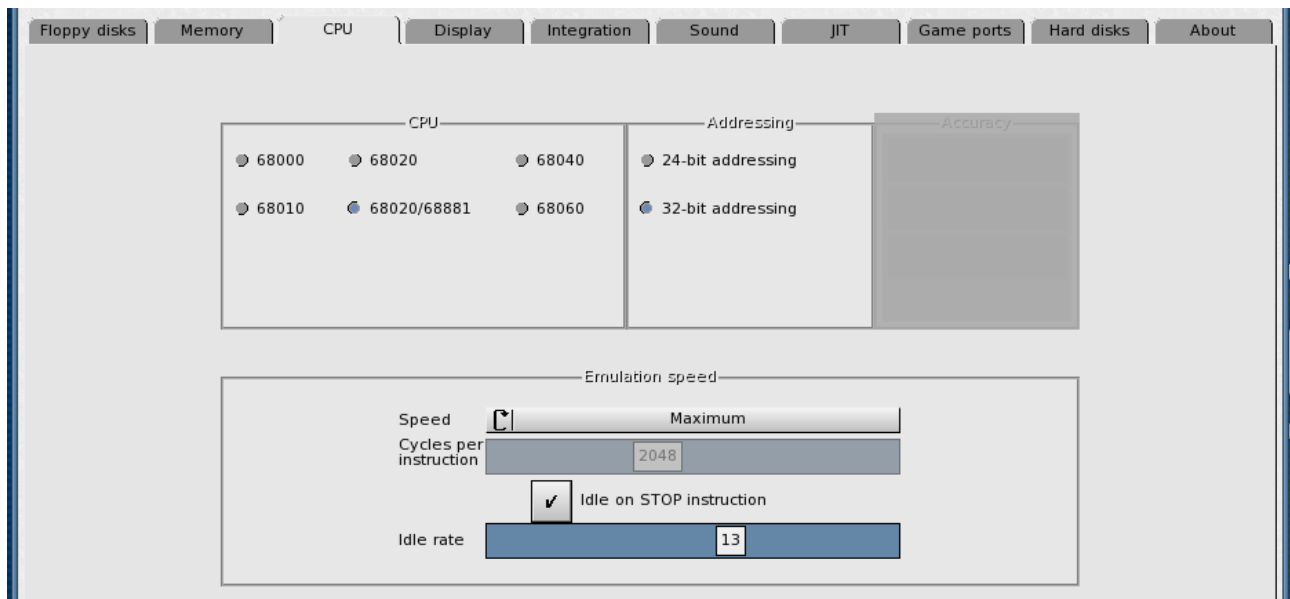
With the Memory panel you can select ROM files. AROS 68K ones are found in SYS:System/AmiBridge/AROS68K/boot, while original Amiga™ KickStart ROMs are available inside the Amiga Forever package from Cloanto. You may also grab them from your classic Amiga computers with the tools provided in SYS:System/AmiBridge/Emulator/Tools.



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 our virtual machine, but Z3 and P96 memory instead. The former for applications, the latter for graphics.

### 8.6.4 Main processor

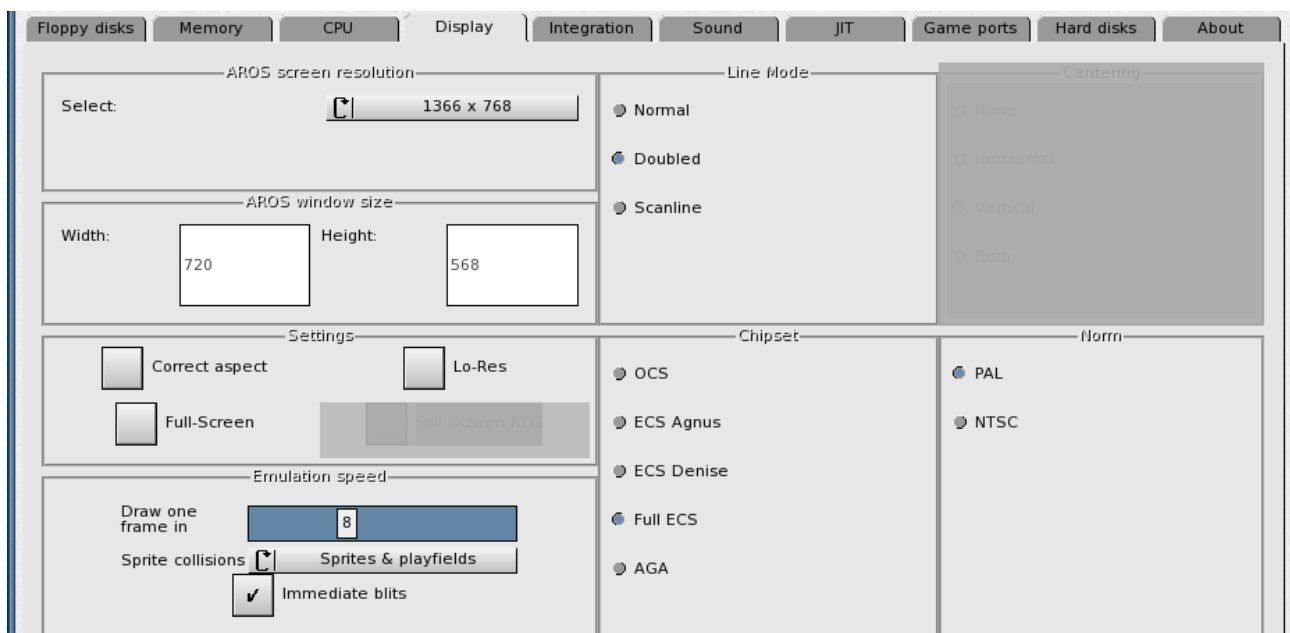
The CPU panel allow modifying processor model and specs:



68020/68881 allow the best degree of support, but you may choose also 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 videogames 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 are a PAL-friendly size.

**Settings** → allow to correct aspect, to use low resolution and to go fullscreen



**Emulation speed** → allow 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.

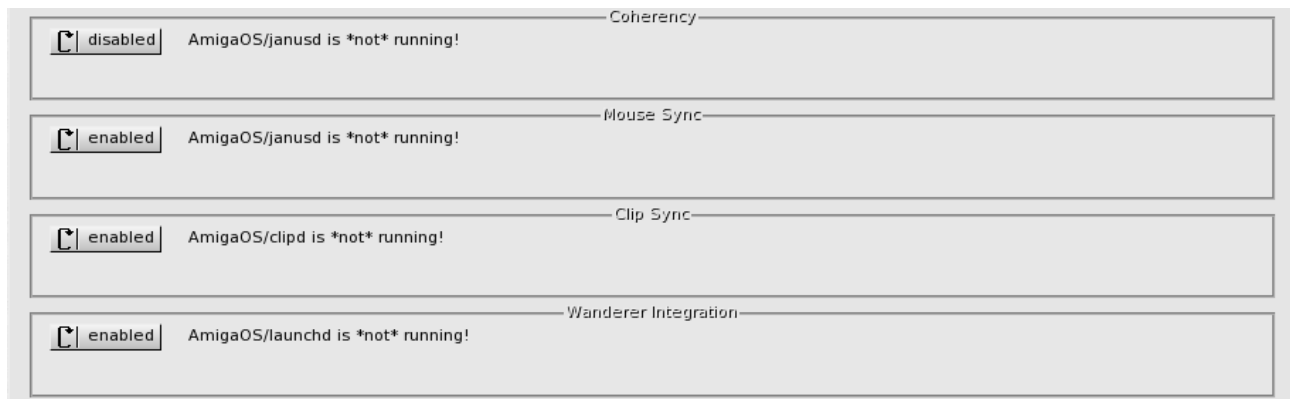
**Line mode** → allow to fix proportions with single/doubled scanline modes, and to emulate also the old scanline effect in PAL and NTSC modes. It won't work with RTG modes.

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

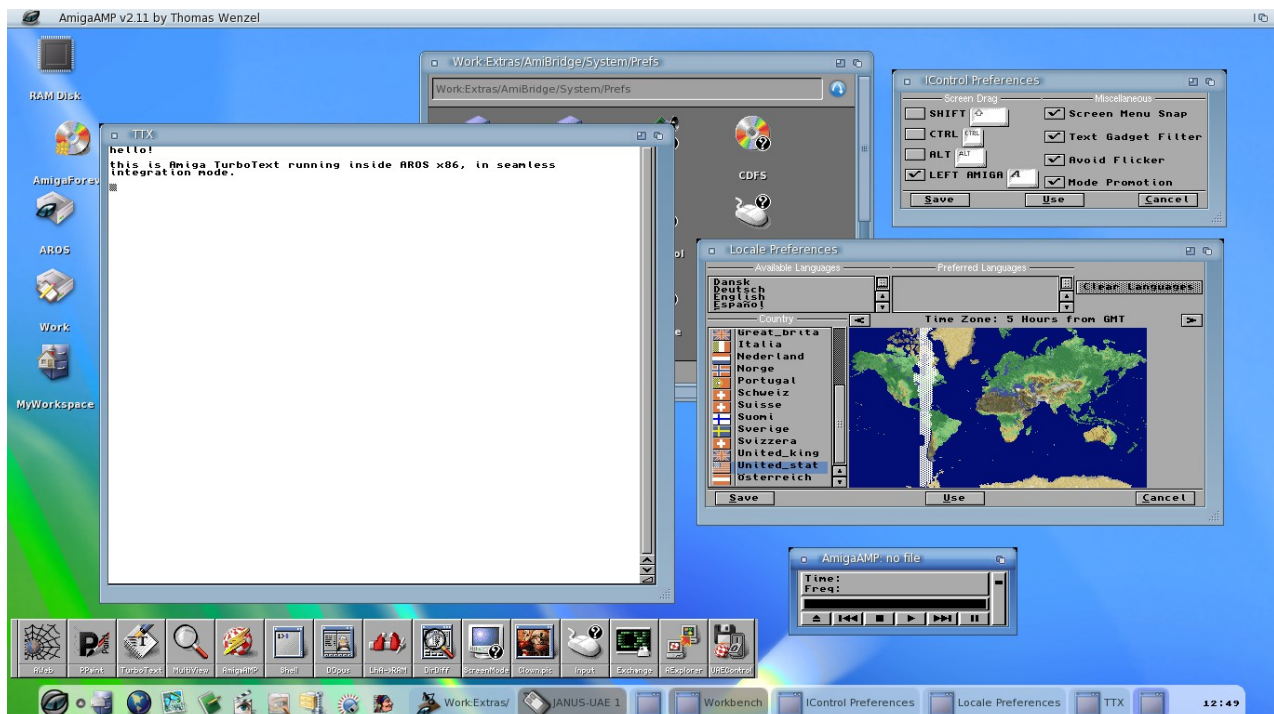
**Norm** → switch between the european PAL television format and the american NTSC one. Games were released to work either with the former or the latter. It doesn't matter with RTG/P96 modes.

### 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 a old screenshot of Icaros Desktop running some programs from Amiga Forever in coherency mode:



#### Right menus with AROS 68K in coherency mode

As we said before, compatibility between AROS and AmigaOS is good but not perfect yet. You may experience problems using right menus with AROS 68K because the way AROS and AmigaOS handle them is still somehow different. When using AROS 68K in coherency mode, right menus may not behave

correctly. You may need to click twice, and you'll see a second right menu appearing without decoration. Use that to select your desired option: it will work. You may workaround this disabling coherency mode (it will speed up things, anyway) and running the AROS 68K session in fullscreen mode. Original Gorilla icons have been kept for the M68K side of AROS to differentiate them from the x86 ones, so you won't run 68K prefs programs by mistake.

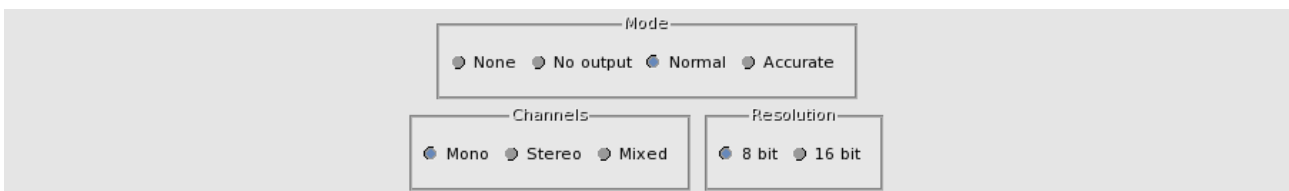
**Mouse sync** → both x86 and M68K environments will have their mouse pointers. This option allow syncing their position, so you will see a single pointer only (or, better, two overlapping pointers which seem one). Please use the Shared Setting option in Prefs/AmiBridge to be sure that both x86 and M68K 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



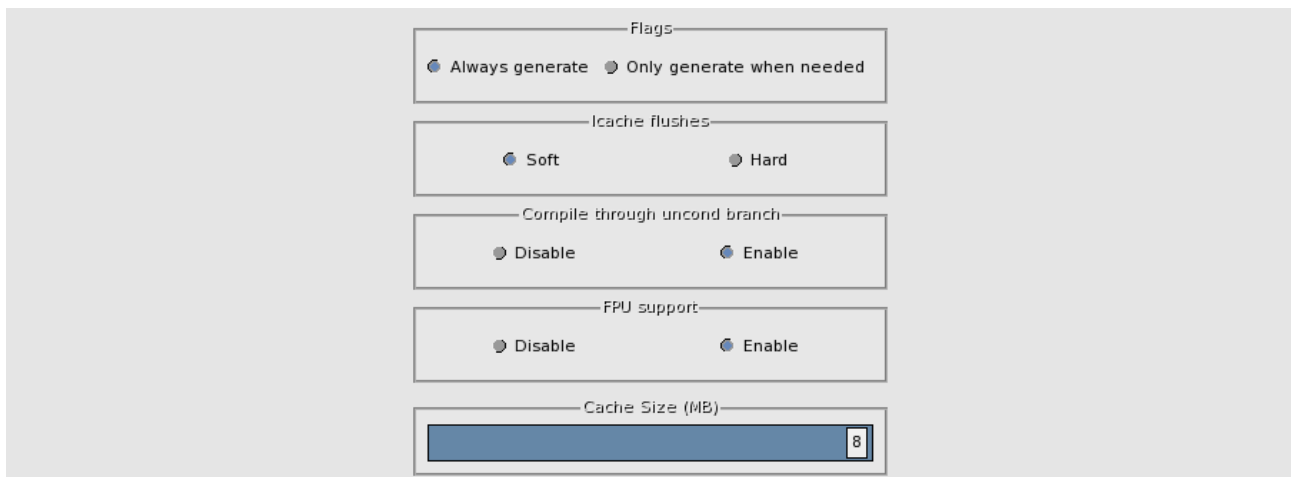
Sound is a critical aspect of emulation. It needs processor grunt to be performed with appreciable fidelity and may be a problem for AROS 68K in coherency mode. We strongly recommend users to prefer x86 native applications for sound. Icaros Desktop already provides players for many song and tracker formats, 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

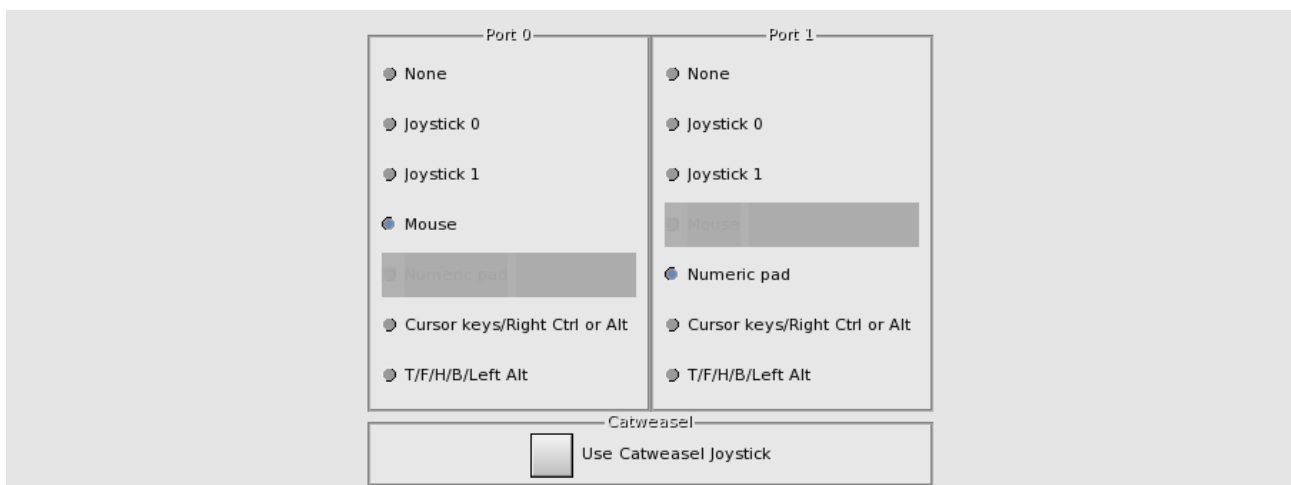
That's what makes emulation the right way to handle classic apps



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 filesystem.

Floppy disks Memory CPU Display Integration Sound JIT Game ports Hard disks About											
Device	Volume	File/Directory	R/O	Heads	Cyl.	Sec.	Rsrvd	Size	Blksize	Boot pri	
DH0	AROS	AmiBridge:AROS68K	N	N/A	N/A	N/A	N/A	N/A	N/A	0	
DH1	Icaros	SYS:	N	N/A	N/A	N/A	N/A	N/A	N/A	0	
DH2	MyWorkspace	MyWorkspace:	N	N/A	N/A	N/A	N/A	N/A	N/A	0	
DH3	Work	AmiBridge:Work	N	N/A	N/A	N/A	N/A	N/A	N/A	0	
RA1	Host RAM	RAM Disk:	N	N/A	N/A	N/A	N/A	N/A	N/A	0	

Add... Properties... Remove

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:

**Add a hard disk**

Mount host folder

Path  

As Amiga disk

Device name

Volume name  ☒ Read only

← use this section to add a new path from the x86 filesystem

← give a device name  
 ← choose a boot priority  
 ← give a volume name

← choose whether the new volume will be writable or read only

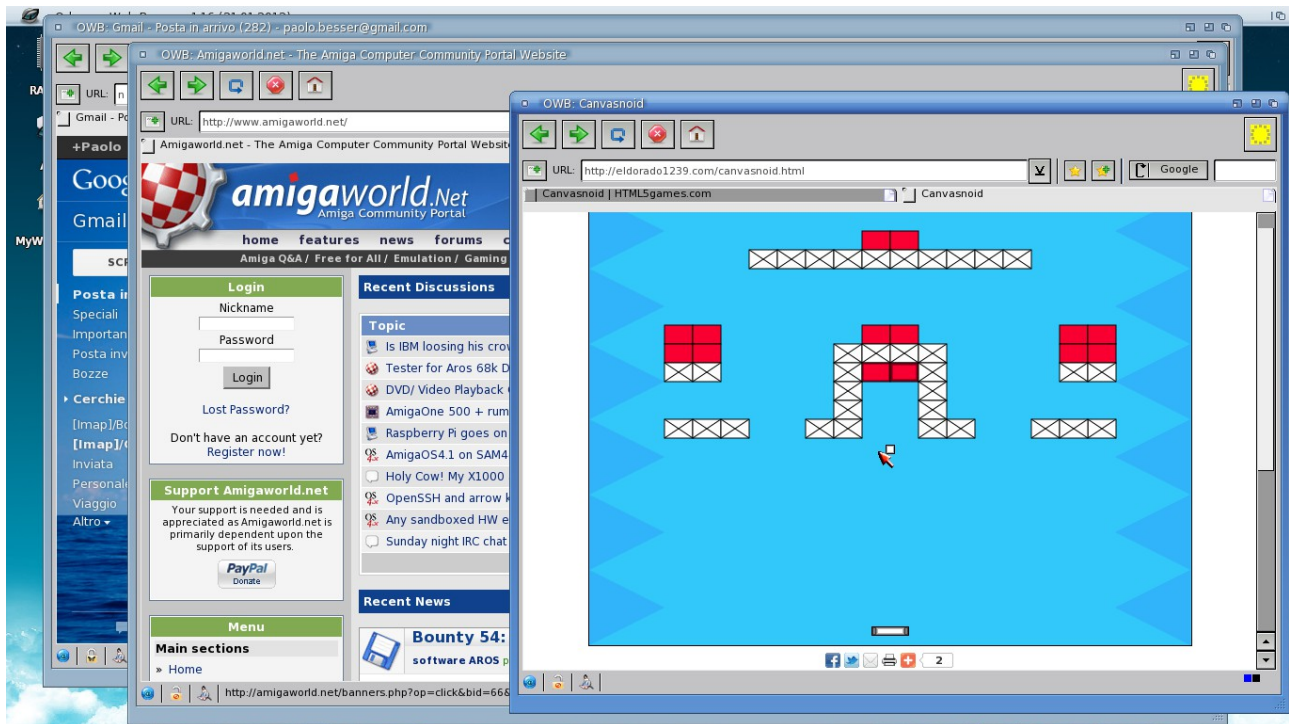
### Why the OK button does not appear?

It's a long standing "feature" of Janus GUI. To enlight 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.

## 9. Something you should know about applications

Ok, we have learnt 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 many things you can do.

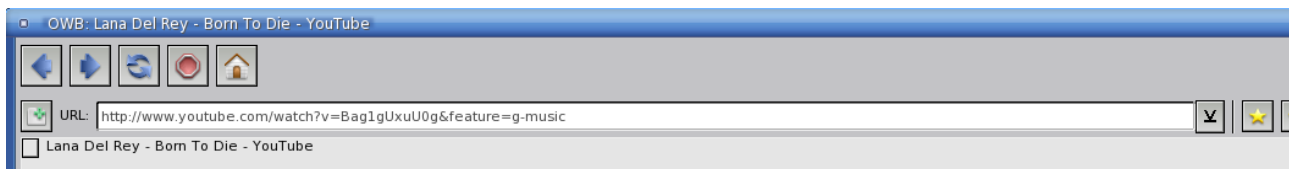
## 9.1 Browsing the web with Odyssey Web Browser



Odyssey Web Browser (OWB) is a powerful and modern web browser based on webkit, already available on many other platforms. Although being young, 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 supports also 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 movies or music, since codecs aren't supported yet. Maybe someday they will, so don't be sad. There's already an open bounty to encourage development.

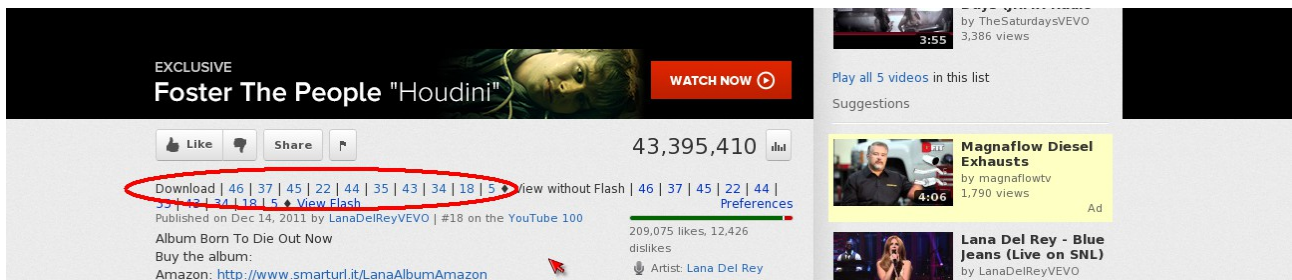
### 9.1.1 Watch YouTube videos with OWB and MPlayer

While waiting for better support of HTML5 multimedia features, we can call MPlayer to play video contents on YouTube and some other websites (have a look at OWB's *Window → Scripts* option). Icaros Desktop 1.4.2 comes already configured to do this, however this option will be available only once the operating system has been installed onto the hard drive or any other writable media. **You can't play YouTube videos in Live!-DVD mode.** The steps to do so are quite easy.



First of all, enter the URL of your favourite video as usual. You can also get to YouTube from a link placed on any popular website like Twitter, YouTube, Google and so on. In practice, do whatever you'd do on any other browser/operating system.



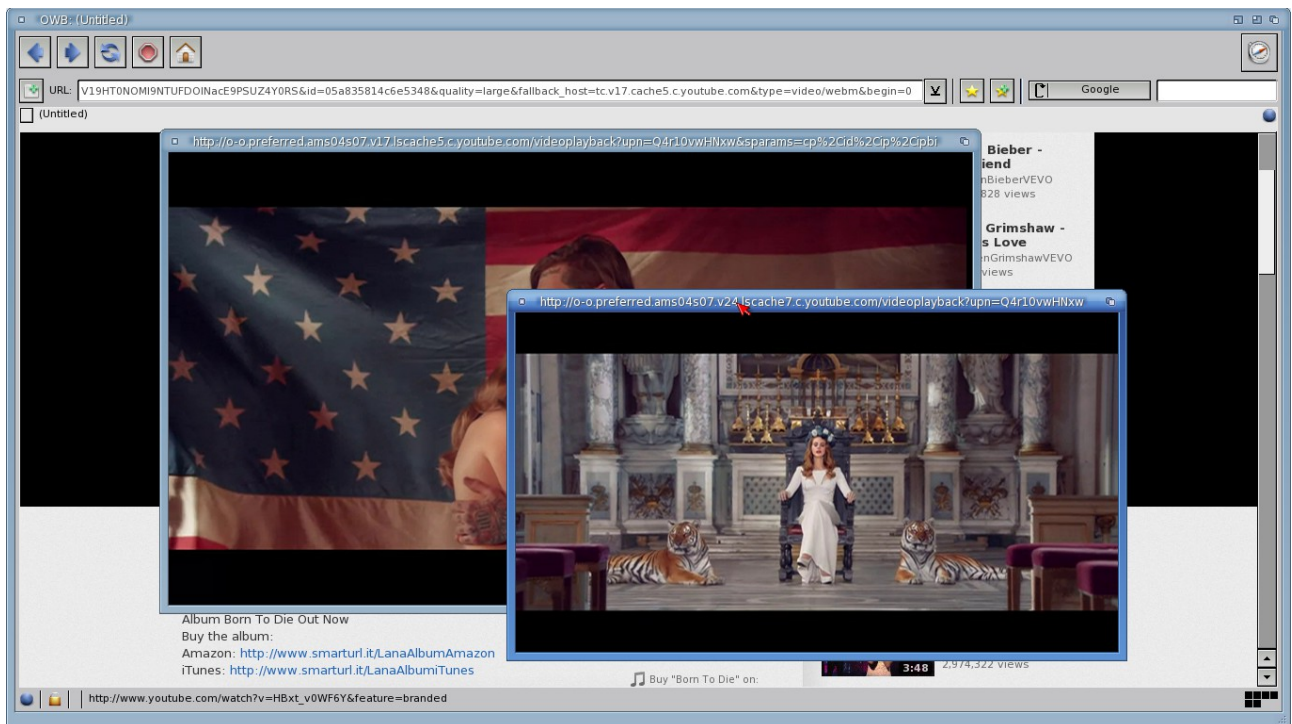


You may be prompted that your browser doesn't support HTML5 video. Ignore this message, since 1) it's true, and 2) it won't matter for now. In order to play movie, in fact, we won't be using HTML5 features, but a JavaScript which parses YouTube pages to turn main movie options (like change resolution and select HD) into plain HTML links.

Scroll down the page a little, and after some seconds you'll notice some new links that usually don't appear on other platforms. They are in the form *Download, some numbers, View without Flash, other numbers, View Flash*. The only part which interests are the numbers immediately after Downloads. They will vary from movie to movie, however the general rule is that numbers in the 40 range are different resolutions: the bigger the number, the higher the resolution. In this example...



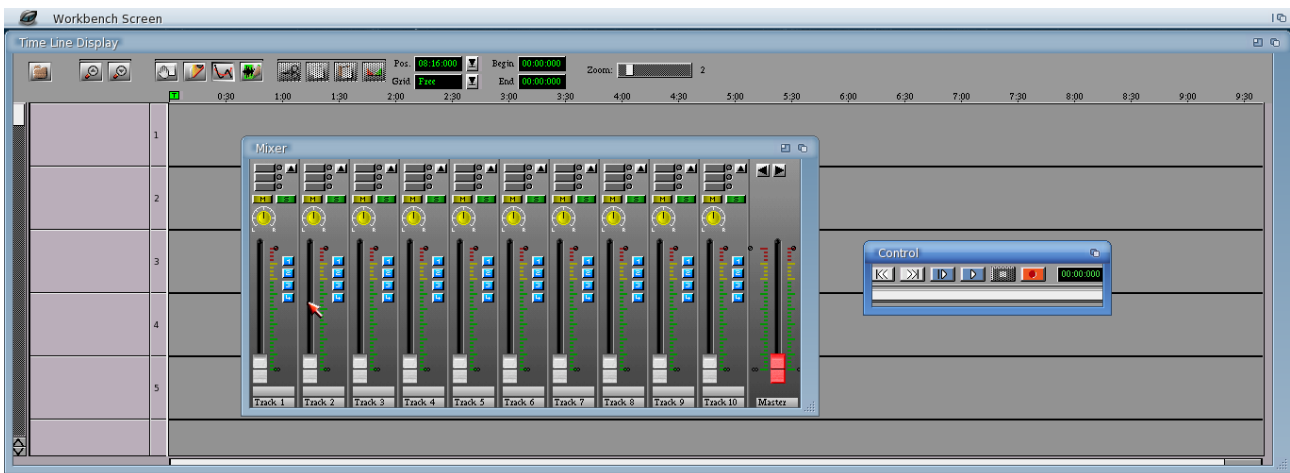
...46, 45, 44 and 43 are all different versions of the same movie, with 43 being the smallest available resolution and 46 the bigger. Obviously, ability to play each resolution will vary. The more complex and bigger will be the frames, the more CPU and GPU horsepower will be needed to play them smoothly. In the following screenshot, we have opened two different resolutions of the same video, 44 and 43, just to show you the differences:



In order to enable a similar technology for other media sites, you must edit javascript files in OWB directories, enable them with the Window → Scripts option and eventually add/modify MimeTypes in Settings → Preferences → MimeTypes to use an external viewer.

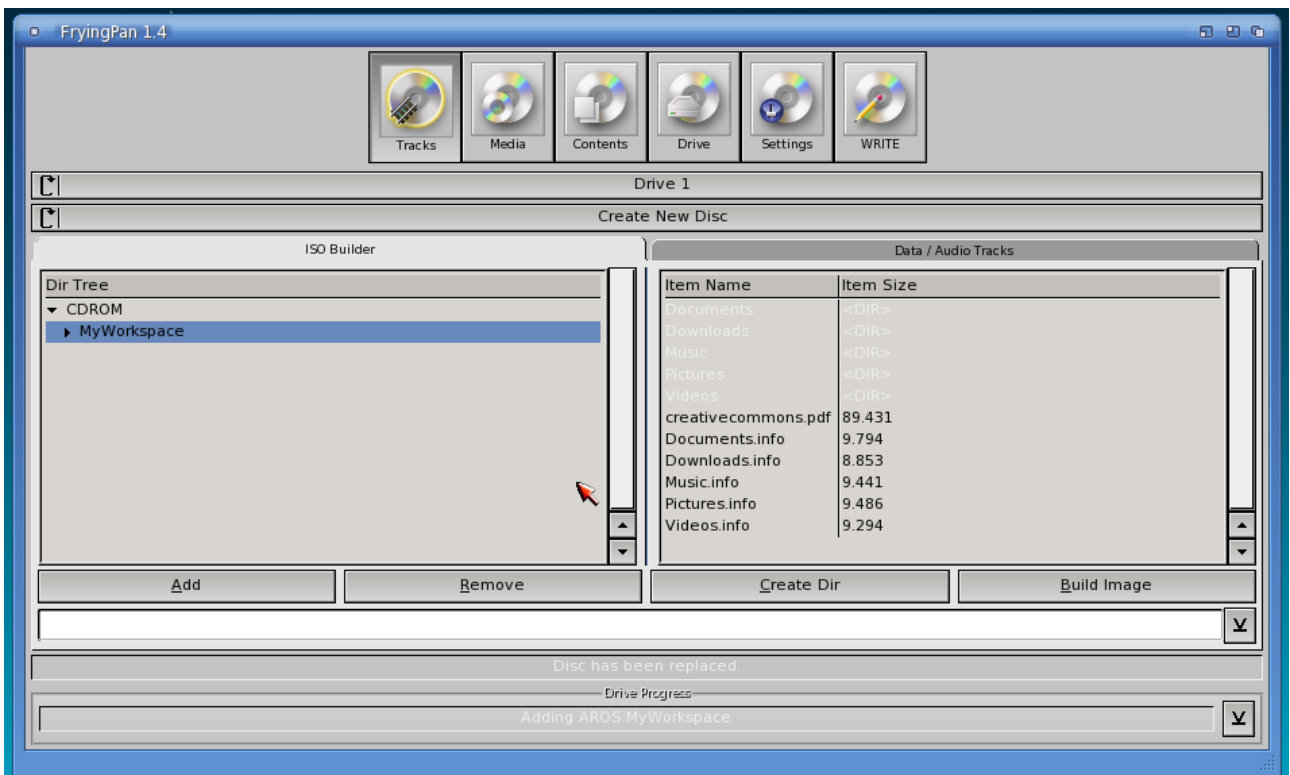


## 9.2 Record your music like professionals do, with AudioEvolution 4



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 a internal drive, you may choose the ata.device, while usbcsdi.device will be good for USB connected drives.

## 9.4 68K Applications

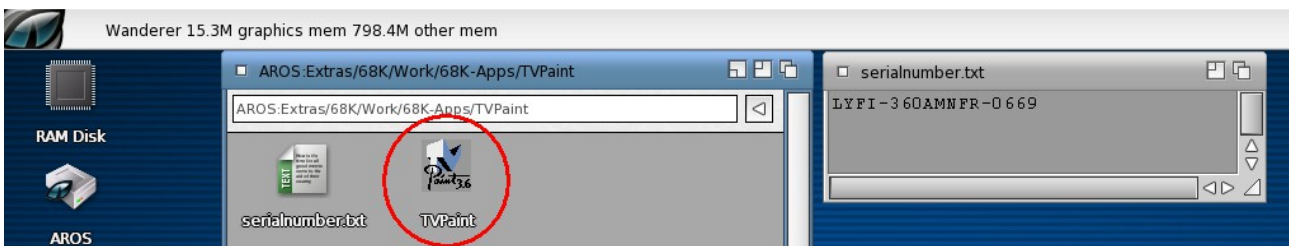
Icaros Desktop comes with a nice (and increasing) selection of programs originally written for the Commodore Amiga, whose distribution rights have been granted by the original authors either directly (under their written permission) or indirectly (redistribution allowed by a newer open source / public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

### 9.4.1 TVPaint

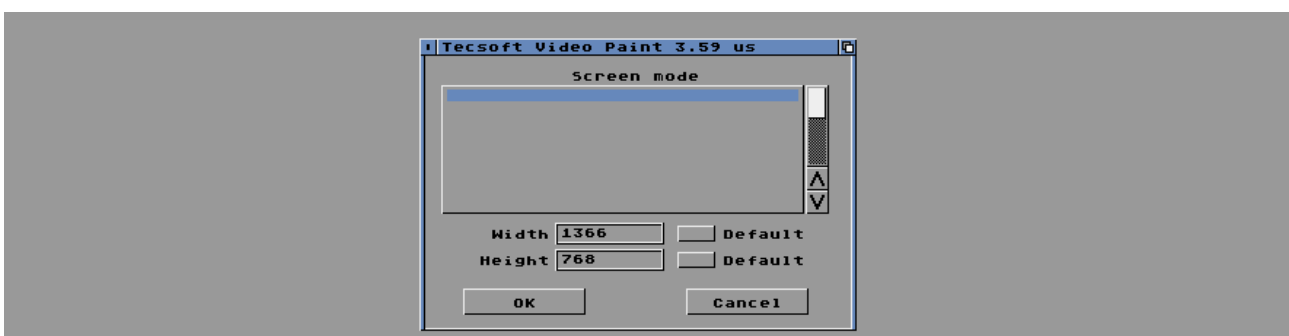
TVPaint is a glorious free-hand painting program written by french company TVPaint Développement SARL, which is still developed today on mainstream platforms. Version 1 of this application had been released for the Amiga in 1991 and we've been granted kind permission to add version 3.5.9 to our distribution. You can learn more about current and past TVPaint solutions at [www.tvpaint.com](http://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 favourite resolution:

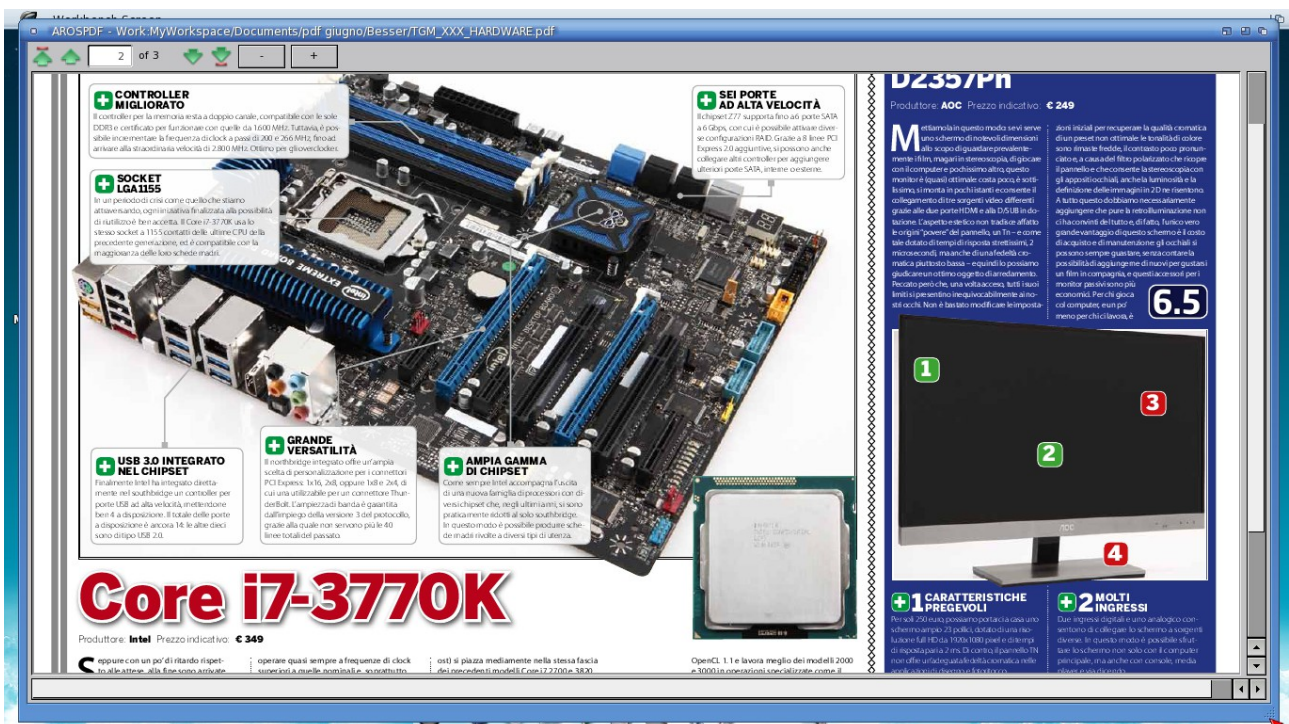


Enter your personal data and this registration key: **LYFI-360AMNFR-0699**



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).

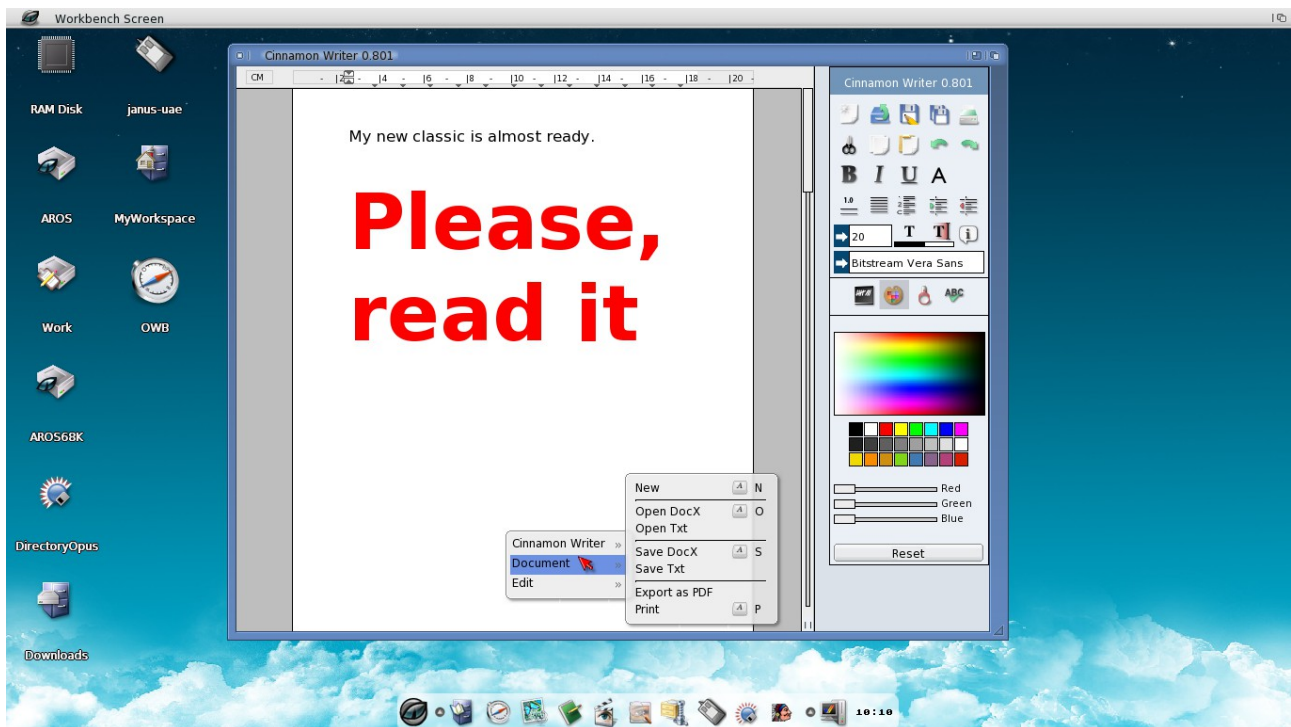
## 9.5 Read your PDF files with ArosPDF



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



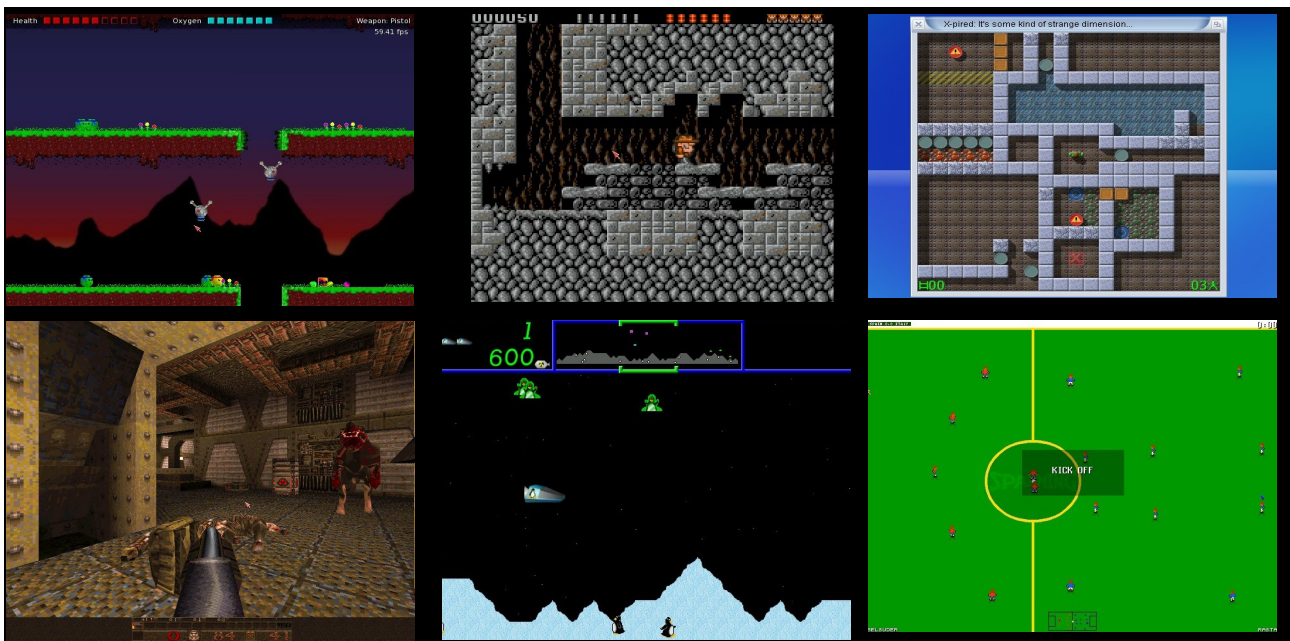
## 9.6 Write your best-seller with Cinnamon Writer



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 onto 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® had 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 it is not 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.

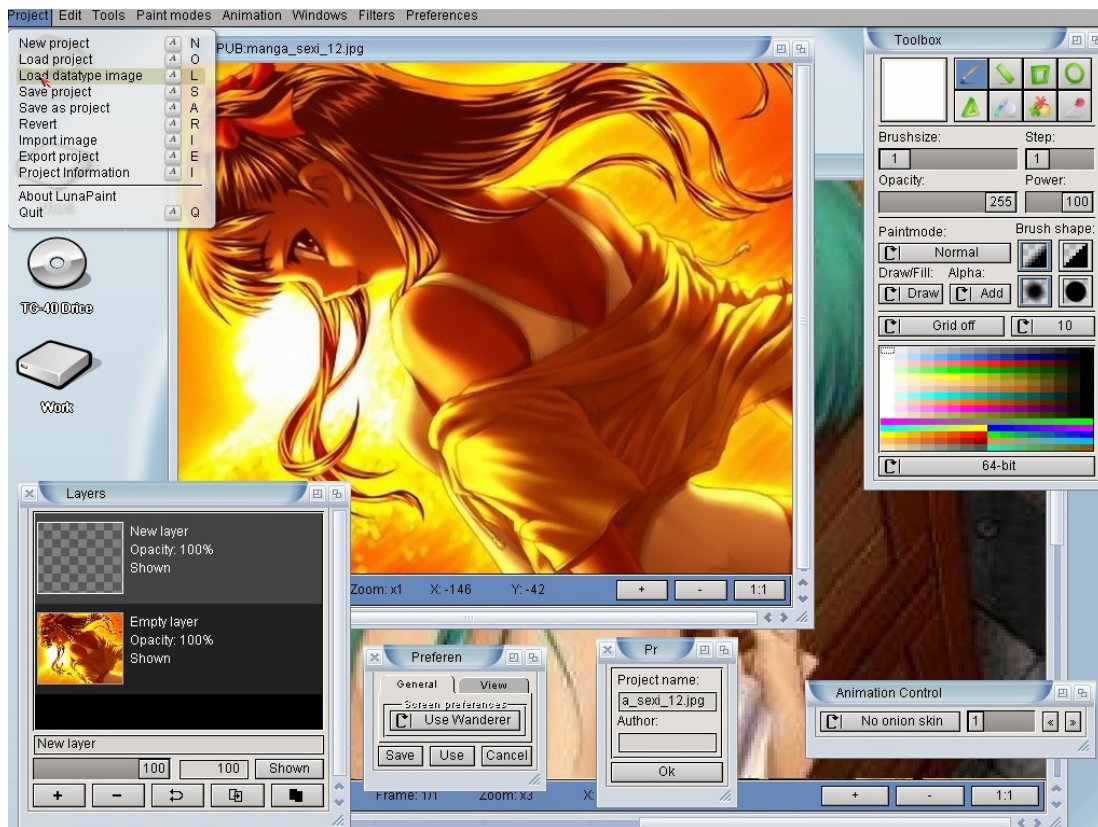




If you have problems running games and emulators with the ATI or Nvidia driver, please boot Icaros Desktop in VESA mode, with a 32 bit palette.

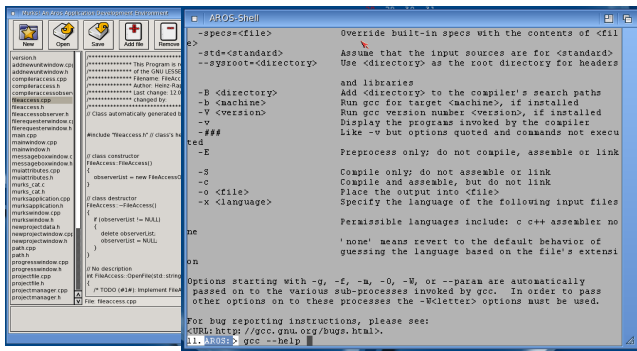
## 9.7 Paint your pictures with LunaPaint

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.



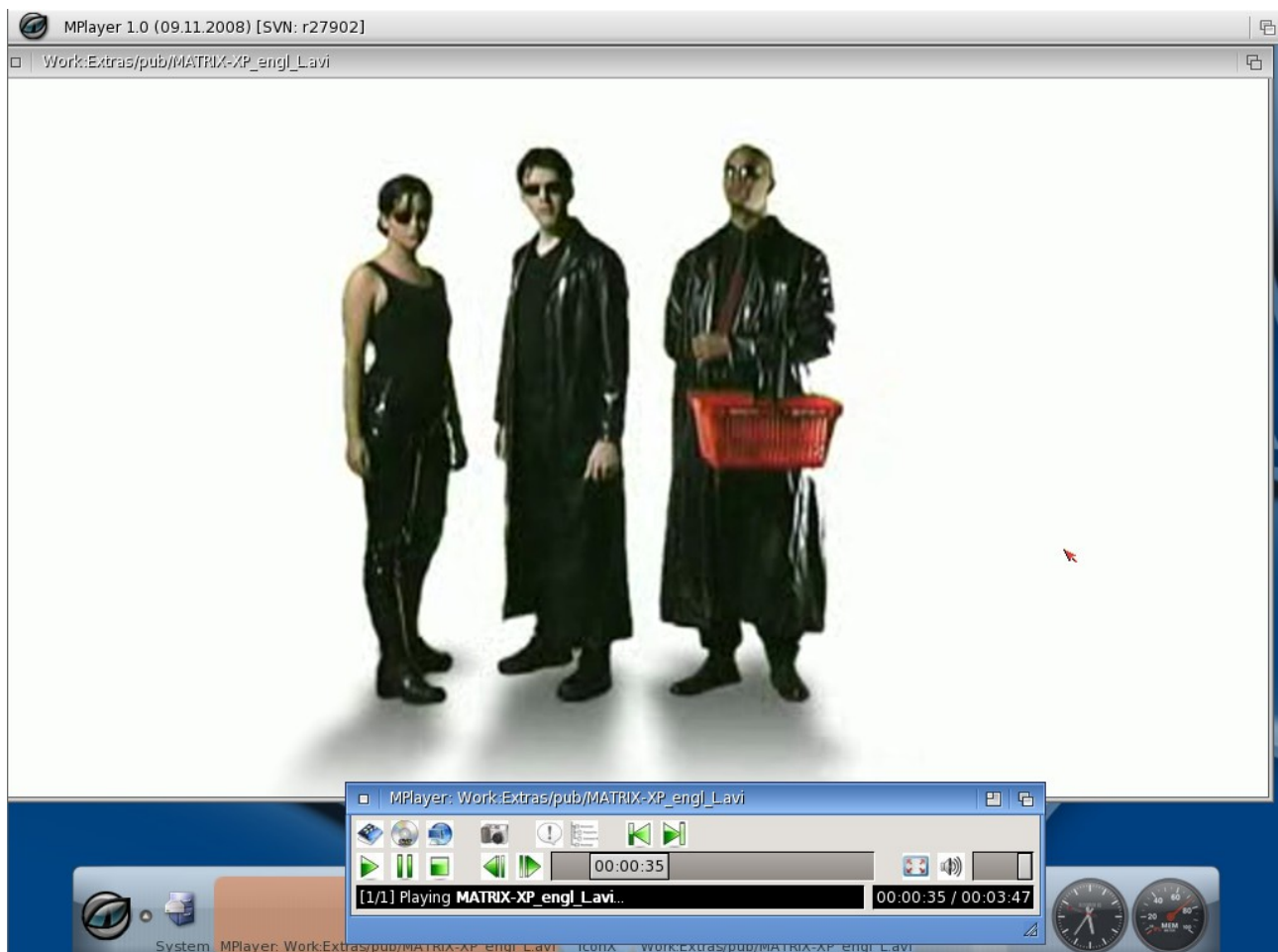
## 9.8 Develop your applications with GCC and Murks! IDE

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. Along with gcc, you can find also languages (python, perl, lua, PortableC, 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-feature multimedia player allowing 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.



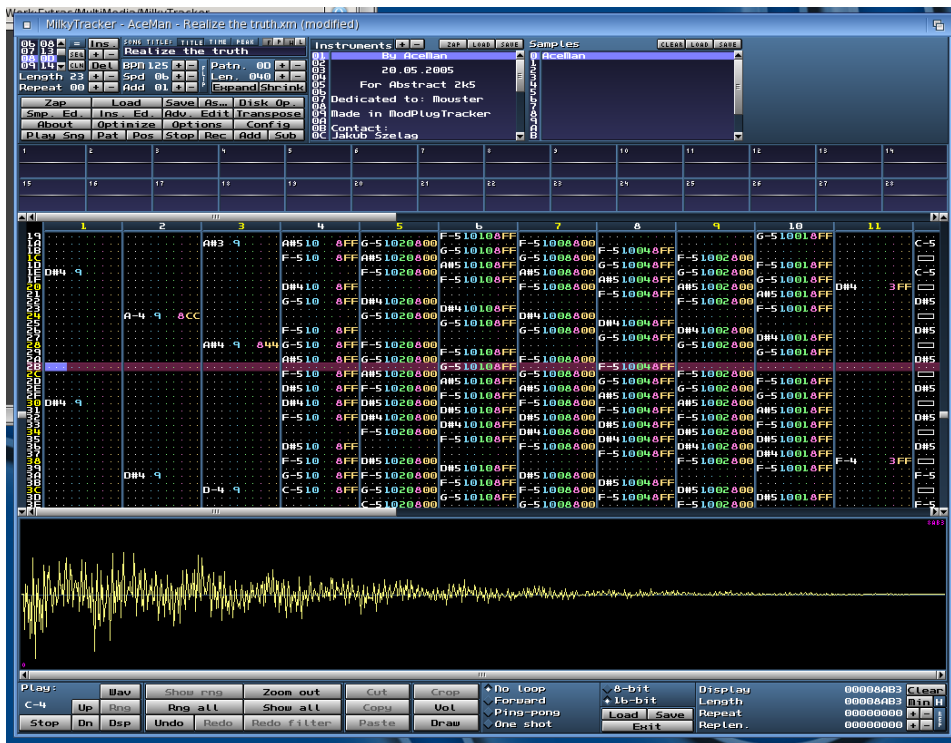
## 9.10 Locate your friends of Messenger with SabreMSN

Icaros Desktop provides a MSN client called SabreMSN. There are currently some minor issues regarding file transfers and using of international characters. They will be fixed soon.



## 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.



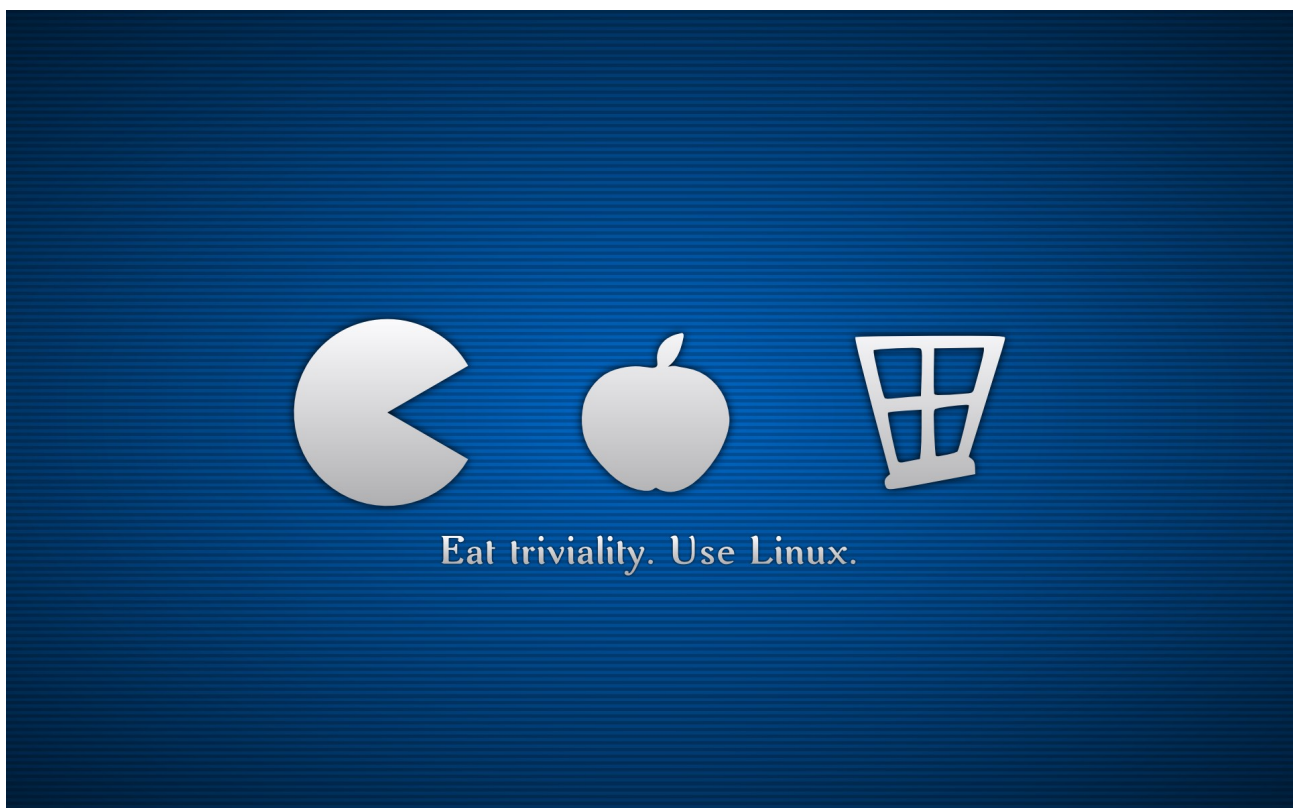
## 10. Credits

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>.



### 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>.



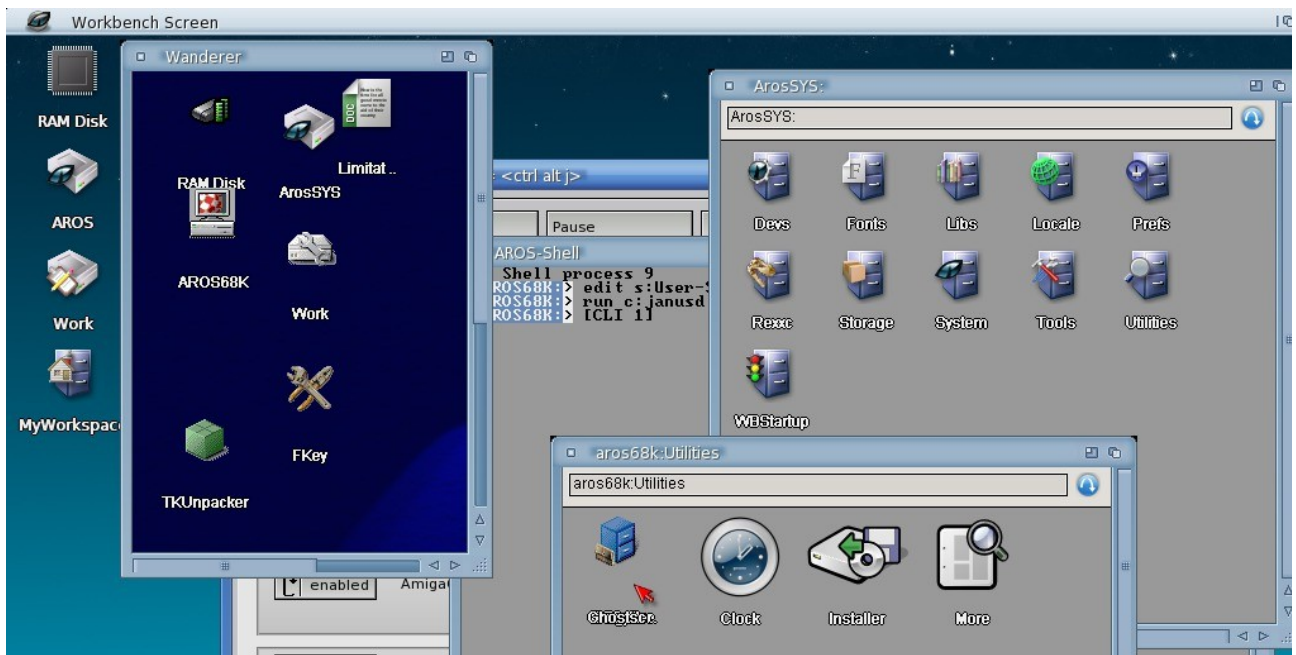
## Mark Sheeky

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 30<sup>th</sup>, 2012 on amiganews.it forum). [http://www.natami-news.de/html/aros\\_vision.html](http://www.natami-news.de/html/aros_vision.html)



## Poke53280

They are authors of Hurrican, wonderful remake of the Amiga classic Turrigan. Meet them at this address, [http://turrican.gamevoice.de/hurrican\\_site](http://turrican.gamevoice.de/hurrican_site).

