What is AROS

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. The source code is available under an open source license, which allows anyone to freely improve upon it.At present AROS is alpha quality software. It's usable in its current form although still lacking in some areas. AROS is 99.9% written in GNU C for portability between processors. Also it was the first of the AmigaOS family to introduce HIDD (Hardware Independent Device Drivers), which allow a total abstraction layer regarding hardware it's running.

Distributions

Distributions are preconfigured and tested versions of AROS. They contain a lot of useful user applications that don't come with the main AROS.org binaries and will be of great interest to users. They may not have the latest core system, but their stability and user-friendliness is much greater than those of the nightly builds. If you are a user interested in checking what AROS has to offer, use the distributions to get the most complete AROS experience.

Icaros Desktop LIVEI

Icaros Desktop LIVEI is a complete distribution of the AROS desktop operating system. It comes on a bootable live DVD-ROM or CD-ROM that runs

Why Use ARIX

We leveraged the hardware support of linux kernel while the users can still enjoy the simplicity and design of Aros.

Advantages:

- Low memory usage
- Expanded hardware support
- Simplistic design

Reference Links

Facebook Page:
https://www.facebook.com/pages/Arix-OS/414578091930728

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Reference Sites

AROS web site:
http://www.aros.org/
AROS-EXEC community
http://www.aros-exec.org/
AROSworld
http://www.arosworld.org/
Power2People
http://power2people.org/
Icaros Desktop
http://www.icarosdesktop.org/
AspireOS
https://sites.google.com/site/arosaspireone/home
BinaryDoodles Blog
http://binarydoodles.wordpress.com/

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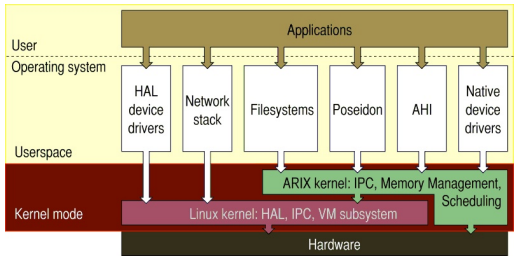
What is ARIX

ARIX is nothing more than a hosted flavor of AROS meant to run as a process of the host operating system. The underlying operating system is meant to interact with the bare hardware and provide basic functionality used by AROS internals, like memory management, basic IO operations and signal routing between threads of AROS kernel.



The difference between ARIX and e.g. a typical hosted AROS run on linux, is the approach the underlying hardware. While regular AROS is meant to be run as one of many processes on the host OS, ARIX is meant to be the only process in the system. Besides AROS process, there is no other active process in the system.

Not only AROS is the only process run on top of the kernel, it also tries to hide as much of the internals as possible from the user. When the system boots, there is no information shown by the kernel, the screen remains black or shows a boot logo until the Wanderer screen appears.

directly on your PC (its hardware components must already be supported by AROS) or in a virtual machine such as VMWare or VirtualBox. It can be installed on the hard drive and can coexist with installed OSes such as Microsoft Windows, in a dedicated partition. A quick reference guide and some AROS PDF manuals are included.

AspireOS

AspireOS is a lightweight distribution, originally designed for netbooks such as the Acer Aspire One. It tries to keep things as simple as possible. The programs included are well tested.

AROS Broadway

AROS Broadway is the native AROS distribution made for the ARES Computer but also working on every AROS compatible PC.

AROS Vision

AROS Vision is a distribution for M68k Amigas. To run well, it requires a powerful Amiga or an emulator such as WinUAE.

Snapshots

Snapshots are non-periodic, non-automated builds of AROS. They are done by developers who can't set up a nightly build for some reason.
These ports are not unmaintained, so please use the bug tracker to report bugs.

Nightly Builds

Nightly builds are done, as the name implies, every night, directly from the Subversion tree, and they contain the latest code. However, they have not been tested in any way and may contain bugs. Most of the time, though, they work just fine.
Please report bugs you may discover while using these builds through the bug tracker. For any other necessity, please feel free to contact us through the AROS-Exec forums.

Nightly Builds (ABIv1)

AROS is currently transitioning to a new ABI. An extra set of nightly builds is made based on this experimental source tree, but these builds are only useful for developers who want to check the progress of the ABI transition. They are not compatible with existing AROS distributions or with the AROS software available from The AROS Archives or Aminet. Users wishing to try new features or bug fixes that are not yet available in distributions should only use the normal nightly builds.

Contribute

Being AROS an open source Operating system advances on volunteer work. And while C/C++ knowledge is good to contribute directly, other task are accessible to most users such as translating, documenting, promoting, blogging, or even donate to the power2people.org web site, that organizes bounties for extending functionalities.

Features

The underlying linux system is extremely tiny - it fits within one few MB large single initrd image loaded together with the kernel. It consists basic libraries (like libc) which will be eventually replaced by a single library interfacing with system calls of linux kernel

No x11 is used. ARIX interacts with frame buffer directly. Sound will be provided through ALSA.

Networking is actually in the works. The network design is a wrapper between the linux kernel's built in tcp stack and the bsdsocket.library on the Aros side.

Filesystems are used on ARIX/AROS side, the filesystem used by the few tools around linux kernel on the linux side is inaccessible from AROS and vice versa - linux kernel cannot access files maintained by ARIX filesystems

Some internals of ARIX try to take advantage of SMP systems, e.g. host disk device manages the /dev/ access of linux device tree in separate threads

ARIX has access to whole memory visible in userspace, unused memory is used as buffers

It is possible to write hardware drivers (interacting with bare metal) on AROS/ARIX directly. Currently only routing of IRQs from kernel to user space is missing (this issue will be worked on)

Storage and Media

The access to the storage, such as hard drives or CD drives, is provided on AROS side through a hostdisk.device. The device maps all requested IO operations to reads and writes from raw block devices accessed through the /dev/ virtual filesystem of the kernel. All read and write requests go through the underlying caching mechanism, utilizing the available memory as much as possible. In order to avoid any potential data loss due to e.g. power outage or reboot, the host caches are automatically flushed few seconds after the last successful write operation. In order to avoid unnecessary cache flushes, the pending flush operation is cancelled if new write request arrives before the time is due.

In order to improve the performance of AROS, each physical drive handled by the hostdisk.device is handled in a separate kernel thread, utilizing as many CPU cores as possible on any SMP system supported by the underlying kernel.

All threads of hostdisk.device share the same AROS address space and use the host signaling features to communicate with each other. Such approach is far form any SMP support in AROS (yet!), but still it improves the performance of ARIX significantly.

Memory management
dynamic mmap from linux kernel + tlsf…
Multithreading
host kernel threads using more than one CPU core, basic API will be provided…