

ixprefs

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Contents

1	ixprefs	1
1.1	ixprefs user's guide	1
1.2	Introduction	1
1.3	Installation	2
1.4	Recompiling	2
1.5	The ixprefs window	2
1.6	Allow AmigaOS-style wildcards	3
1.7	Case sensitive pattern matching	3
1.8	Translate /	4
1.9	Do not flush library	4
1.10	Enable stack watcher	4
1.11	Red zone size	4
1.12	Ignore global environment	4
1.13	Generate Enforcer hit when a trap occurs	5
1.14	Suppress the 'Insert volume in drive' requester	5
1.15	Membuf size	5
1.16	Networking support	5
1.17	Physical blocks to build one logical block (for stdio)	5
1.18	Save	5
1.19	Use	6
1.20	Cancel	6
1.21	The ixprefs menu	6
1.22	CLI usage	6
1.23	About	8
1.24	Quit	8
1.25	Reset to defaults	8
1.26	Last saved	8
1.27	Restore	9
1.28	Program history	9
1.29	Author	11
1.30	Distribution	11
1.31	Requirements	12
1.32	Acknowledgments	12

Chapter 1

ixprefs

1.1 ixprefs user's guide

```
IXPREFS
A configuration program for ixemul.library v.42+
Version 2.2
```

```
Introduction
Distribution
Requirements
Installation
Recompiling
The ixprefs window
The ixprefs menu
CLI usage
Program history
Author
Acknowledgments
```

1.2 Introduction

Back when version of 41.0 of ixemul.library was released, it came with numerous new configuration options, one of which I wanted to use. By playing with ixconfig, the configuration program that accompanied that version of the library, I saw that this program had two deficiencies:

- a. It had almost as many command line options as UNIX ls, which are hard to

remember.

- b. Making the new configuration persistent was done using a horrible kludge, namely the `-s` option of `ixconfig`, which instructed `ixconfig` never to return, to make `ixemul.library` unflushable. Even if one had memory to burn, permanently allocating 120+ Kbytes, just to remember the handful of bits that define the configuration of `ixemul.library`, was a terrible waste.

Having a bit of spare time, I decided to try addressing these two points: By writing a graphical configuration program, I believe I addressed the first, and by not supporting the equivalent of the `-s` option, I hoped to give the maintainers of `ixemul.library` the incentive to read, at library startup, the configuration from a file similar to the one that `ixprefs` maintains, so that `ixemul.library` would not have to stay permanently in memory if it is to remember its configuration.

Starting with `ixemul.library` version 42.0 this functionality has been implemented.

1.3 Installation

Simply copy `ixprefs` (and, optionally, `ixprefs.info`) somewhere on your disk.

If you are upgrading from version 1.x, delete the old configuration file `S:ixprefs`.

If you are upgrading from version 2.0 beta 1, rename `ENVARC:ixprefs` to `ENVARC:ixemul.prefs` and `ENV:ixprefs` to `ENV:ixemul.prefs`.

1.4 Recompiling

`Ixprefs` is now integrated into the `ixemul.library` source distribution.

The makefile patches the C code generated by GadToolsBox (`ixprefs.c`) using a sed script, to add support for AmigaOS 3.0 features. This script should work for other programs generated by GadToolsBox, so you might want to use it in other projects as well.

When creating C source code, you will create files `ixprefs.c` and `ixprefs_temp.c`. The latter contains templates for all functions called to handle gadgets and menus. If you have not added any new gadgets or menus, you can discard this file, otherwise cut the templates for the new functions and paste them to `functions.c`.

1.5 The `ixprefs` window

Allow Amiga wildcards

Case sensitive pattern matching

Translate /

Do not flush library

Enable stack watcher

Ignore global environment (ENV:)

Suppress the "Insert volume in drive" requester

Membuf size

Create Enforcer hit on trap

Red zone size
<type>

Network support

Physical blocks build one logical block (for stdio)

Save

Use

Cancel

1.6 Allow AmigaOS-style wildcards

The `ixemul.library` startup code expands wildcards in the command line. If this option is set, AmigaOS-style wildcards are recognized, in addition to UNIX-style wildcards which are always recognized. Thus, if this option is set, you can use either `*.c` or `#?.c` to specify all C source files, while if this option is not set, you can only use `*.c`.

1.7 Case sensitive pattern matching

If this option is set, pattern matching in UNIX-style wildcard expansion is case sensitive, i.e., `*.c` expands to all files ending in `.c` (lower case), while `*.C` expands to all files ending in `.C` (upper case). If this option is not set, UNIX-style wildcard expansion is case insensitive (e.g., `*.c` expands to files ending in both `.c` and `.C`).

1.8 Translate /

If this option is set, `ixemul.library` interprets `"/foo"` as `"foo:"`, and `"foo//bar"` as `"foo/bar"`.

1.9 Do not flush library

If this option is set, then `ixemul.library` will always remain resident in memory, and will not be flushed when no programs are using it. This can be used to ensure that the library settings are not lost by flushing and then reloading the library, at the cost of making the memory occupied by the library unavailable to other programs. It is also slightly faster, because the library is loaded only once.

When this option is not set, then it will be possible to flush `ixemul.library` when no programs use it (e.g., by typing `"avail flush"` at the CLI prompt or by selecting the `Debug->flushlibs` item from the workbench menu).

1.10 Enable stack watcher

If this option is set, the library watches the stack, and if the ↵
 space left on
 the stack gets too low, it aborts the program. The minimum amount of stack
 space is set by filling in the
 red zone size
 .

If this option is not set, the library doesn't watch the stack.

1.11 Red zone size

Sets the minimum stack space that should remain unused when
 stack watching
 is
 on. (If
 stack watching
 is turned off, this setting is ignored.) Note: the
 stack is tested every time the task is about to become the current (active)
 task. Thus, this test is not very robust. The red zone size should therefore
 be set to a sufficiently large value (say 50,000 bytes or more).

1.12 Ignore global environment

If this option is set, the `getenv()` function returns local environment variables, i.e., those created by the AmigaOS `"set"` command. If this option is not set, the `getenv()` function returns global environment variables, i.e., those created by the AmigaOS `"setenv"` command, in addition to local ones. Local environment variables have precedence over global ones.

1.13 Generate Enforcer hit when a trap occurs

If this option is set then, whenever a trap (division by zero, bus error, etc.) occurs, `ixemul.library` writes the error code to the address `0xdeaddead`. Using the stack dump from Enforcer you can then try to find out where the problem occurred. If this option is not set, no Enforcer hit is generated.

1.14 Suppress the 'Insert volume in drive' requester

If this option is not set, whenever `ixemul.library` tries to access a non-existent volume, it will pop up a requester asking for the volume to be inserted. If this option is set, `ixemul.library` will not pop up this requester.

1.15 Membuf size

Files up to this size in bytes are cached in memory.

1.16 Networking support

This option allows the user to specify the kind of networking support they have:

0. Auto detect (default): `ixemul` tries to figure out what networking support the user has (none, AmiTCP, AS225).
1. No networking: all networking is turned off, regardless of whether the user has AmiTCP or AS225 or not.
2. AS225: set to AS225, if available. Otherwise no network support.
3. AmiTCP: set to AmiTCP, if available. Otherwise no network support.

Note that 'Auto detect' will check for AmiTCP first, and AS225 second. This is to circumvent problems when the `socket.library` emulation for AmiTCP is used.

1.17 Physical blocks to build one logical block (for stdio)

This number denotes the number of physical (usually 512-byte) blocks that `ixemul` treats as one block during I/O, for efficiency.

1.18 Save

Applies the user-specified configuration to `ixemul.library`, saves it in `ENV:ixemul.prefs` and `ENVARC:ixemul.prefs`, and exits.

1.19 Use

Applies the user-specified configuration to `ixemul.library`, saves it in `ENV:ixemul.prefs` and exits.

1.20 Cancel

Exits the program without making any changes to the configuration.

1.21 The ixprefs menu

```
Project Edit
Save
Reset to defaults
Use
Last saved
About
Restore
Quit
```

1.22 CLI usage

```
Type "ixprefs" without any arguments, to get the
ixprefs window
.
```

Alternatively, you can control the program from the CLI. You can use either short options, e.g., `-m 1024`, or long options, e.g., `--membuf-limit 1024`. If you use long options, you need only specify enough of the option name to disambiguate it from other option names, e.g., `--mem 1024`.

The following CLI options are available:

```
-a 1, --allow-amiga-wildcard
```

```
accept AmigaOS wildcard notation
-a 0, --no-allow-amiga-wildcard
```

```
do not accept AmigaOS wildcard notation
-s 1, --unix-pattern-matching-case-sensitive
```

```
use case sensitive UNIX pattern matching
```

```

do not      -s 0, --no-unix-pattern-matching-case-sensitive
            use case sensitive UNIX patter matching
            -/ 1, --translate-slash

            translate /foo -> foo: and a//b -> a/b
            -/ 0, --no-translate-slash

do not      translate /foo -> foo: and a//b -> a/b
            -m N, --membuf-limit N

            files up to N bytes are cached in memory
            -w 1, --watch-stack

enable      stack watcher
            -w 0, --no-watch-stack

disable     stack watcher
            -r N, --red-zone-size N

set         red zone size
            to N bytes

-b N, --fs-buf-factor N

            N physical blocks map into 1 logical (stdio) block
            -i 1, --ignore-global-env

            ignore global environment
            (ENV:)

-i 0, --no-ignore-global-env

            do not ignore global environment
            (ENV:)

-e 1, --enforcer-hit

            generate Enforcer hit
            when a trap occurs

-e 0, --no-enforcer-hit

            do not generate Enforcer hit
            when a trap occurs

-v 0, --insert-disk-requester

            suppress the 'Insert volume in drive' requester
            -v 1, --noinsert-disk-requester

            do not suppress the 'Insert volume in drive' requester
            -f 0, --flush-library

            prevent ixemul.library from being flushed from memory
            -f 1, --no-flush-library

            do not prevent ixemul.library from being flushed from memory
            -n 0, --auto-detect

set         networking support
            to auto detect

```

```

-n 1, --no-networking
  turn off
      networking support
-n 2, --as225
  use AS225
      networking support
-n 3, --amitcp
  use AmiTCP
      networking support
-d, --default
  reset settings to defaults (other options are ignored)
-L, --last-saved
  reset settings from ENV:ixemul.prefs
  (other options, including --default, are ignored)
-S, --save
  save new configuration
-R, --report
  display configuration
-V, --version
  displays information about the
  program
  and its
  author
  (other options, including --default and --last-saved are ignored ←
  )
-h, --help
  display the various ixprefs options

```

1.23 About

```

  Displays information about the
  program
  and its
  author
  .

```

1.24 Quit

Exits the program without making any changes to the configuration.

1.25 Reset to defaults

Resets the various options to their default values.

1.26 Last saved

Reads the configuration stored in ENVARC:ixemul.prefs.

1.27 Restore

Sets the various options to the values that are currently being used by `ixemul.library`.

1.28 Program history

Version 1.0 June 23, 1995

First public release.

Version 1.1 June 26, 1995

- * Made the following enhancements, suggested by Kamil Iskra (`iskra@student.uci.agh.edu.pl`):
 - + Ixprefs window is now font adaptive.
 - + Ixprefs window is now activated when opened.
 - + GZZ adjust flag in GadToolsBox turned off.
 - + CheckBox gadgets are now scalable under AmigaOS 3.x.
 - + NewLook menus under AmigaOS 3.x
 - + Use `OpenFont()` rather than `DiskFont()` to access system font, as this font is always in memory.
 - + Slightly rearranged window layout to avoid problems with sizable gadgets.
- * Updated the documentation.

Version 1.2 July 3, 1995

- * Added a UNIX-style CLI interface using `getopt_long()`.
- * Modified `showrequester()` to print messages on `stderr` if the `ixprefs` window is not open, so that no requesters pop up when the CLI interface is used.
- * Updated `ixemul.library` version check, so that the program now runs under both version 41.0 and 41.1 without producing a warning.
- * Fixed the dates in this section. Not that anyone cares, but the previous versions of this program were written in June, not May!
- * Updated the documentation.

Version 1.3 (not released)

- * Made a very minor modification in gadget placement (some gadgets were off by one pixel).
- * Fixed a bug where if AmigaOS notation is turned off, it was impossible to load or save the configuration file. Remaining bug: if neither AmigaOS notation nor / translation is allowed, there is no way to access `S:ixprefs`, and loading/saving is impossible. This could be fixed by temporarily twiddling the flags. However, as the "allow AmigaOS notation" flag has been made obsolete in version 41.3, I don't plan to fix this.
- * Modified Makefile to remove `ixprefs.c.orig`.

Version 2.0

beta 1, July 12, 1995

- * Made the following modifications in preparation for the integration of `ixprefs` with the forthcoming cleaned-up version of `ixemul.library`:
 - + Dropped support for `ix_unix_pattern_matching`, `ix_no_ces_then_open_console`, `ix_ignore_global_env`, `ix_translate_dots`, `ix_force_translation`, and `ix_translate_symlinks`. These settings will no longer be honored by `ixemul.library`, as their values will be fixed.
 - + Added support for the new `ix_allow_amiga_wildcard` setting.
 - + Rearranged the GUI accordingly.

- + Applied Kamil Iskra's modifications for AmigaOS 3.0 to the resulting `ixprefs.c`, and created a new `ixprefs.c.diff`.
- + Changed the save format from human-readable to machine-readable (struct settings). I know many people will disagree with this decision, but it was necessary for easier parsing of the configuration by `ixemul.library`.
- + Added struct settings to `ixemul.h`.
- + Modified the definition of the `ixemul` flags in `ixemul.h` from a bitfield to a long word, with a set of `#define`'s for the various flags.
- + Changed the location of the save file from `S:ixprefs` to `ENVARC:IXPREFS`. The "save" and "use" options also save the configuration in `ENV:IXPREFS`.
- * Modified `main.c` to call `ixprefsrestore()` to load the `ixprefs` settings from `ixemulbase` instead of duplicating `ixprefsrestore()`'s code.
- * Updated the documentation.
 - beta 2, September 16, 1995
- * Saved configuration now includes values for obsolete flags, so that `ixprefs` may work with earlier versions of `ixemul.library`.
- * Cleaned up the code by compiling with `-Wall` and eliminating the warnings.
- * Changed the name of the configuration file from `IXPREFS` to `ixconfig.prefs`, to avoid a clash with the `ixprefs` executable in the unlikely case that someone might have `ENV:` or `ENVARC:` in their path.
- * Fixed a typo ("upto" instead of "up to") in the text printed by the `--help` option.
- * Added a version string to `main.c`.
- * Added support for the new `ix_do_not_flush_library` setting.
- * Applied Kamil Iskra's modifications for AmigaOS 3.0 to the new version of `ixprefs.c`, and created a new `ixprefs.c.diff`.
- * Updated the documentation.
 - beta 3, October 25, 1995
- * Corrected the punctuation of the configuration report in CLI mode.
- * Updated private copy of `ixemul.h` to reflect the changes in the official version (41.4).
- * Added two paragraphs that were missing from the GPL notice in the source files, `Makefile`, and documentation.
- * Changed the method of modifying `ixprefs.c` to add support for AmigaOS 3.0 features: instead of applying a diff file to `ixprefs.c` (clumsy, as the diff file does not work if the GUI is changed) I now use a sed script that modifies `ixprefs.c` on the fly (this should work even if the GUI changes, and should work for other projects, too). Kept a copy of `ixprefs.c.diff` around, just in case...
- * Recompiled using `-fbaserel`. The resulting executable is almost 2K smaller.
- * Added back support for `ix_ignore_global_env`. Support for this option will not be dropped from future versions of `ixemul.library`.
- * Made minor modifications in the help text in `cli.c` (s/don't/do not/).
- * Updated the documentation.
 - beta 4, October 25, 1995 (not distributed)
- * `ix_do_not_flush_library` and `ix_ignore_global_env` were not being restored when doing a "last saved".

Version 2.1 November 14, 1995

Adapted for `ixemul.library` 42.0 by Hans Verkuil:

- * Independently applied a similar fix to that of version 2.0 beta 4.
 - * Finished merging `ixprefs` into the main distribution.
 - * Changed several things because all library base changes (such as the config settings) now go through library calls.
 - * Removed another setting (`fibcache`, was never used).
 - * Added a new cycle gadget for future networking support. The library accepts it, but currently ignores it.
-

- * Rearranged the gadgets in the GUI, and changed the wording in the ixprefs window and the output of the --report option, for a more aesthetically pleasing appearance.
- * Updated the version check in main.c to check for version 42 of ixemul.library, as ixprefs is now incompatible with version 41.0.
- * As ixprefs is now incompatible with versions prior to 42.0, ixprefs no longer stores default values for obsolete flags.
- * Switched back to compiling without -fbaserel, as we had a manifestation of the infamous "spilled register" problem.

- * Threw away ixprefs.c.diff, as the sed script proved capable of handling the massive rearrangement of the GUI that occurred.
- * Removed the various tooltypes from ixprefs.info, which I had forgotten to delete when copying the icon from sys:prefs.
- * Updated the documentation.

Version 2.2 March 17, 1996

- * Adapted for ixemul.library 43.0 by Hans Verkuil (added support for ix_create_enforcer_hit).
- * Minor cleanup (updated version to 2.2).
- * Updated the documentation.

1.29 Author

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"Officially, I am here quite unofficially!"

1.30 Distribution

Ixprefs v.2.2--ixemul.library configuration program

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modify

it under the terms of the GNU General Public License as published by
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along with this program; if not, write to the Free Software
Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

GUI designed using GadToolsBox 2.0c by Jan van den Baard

1.31 Requirements

Ixprefs requires version 42.0 or higher of ixemul.library. It will refuse to run under previous versions, as they had fewer configuration options, maintained in a different order in the ixemul library base.

1.32 Acknowledgments

Kamil Iskra (iskra@student.uci.agh.edu.pl) made several ↔
enhancement
suggestions and contributed code for adapting ixprefs to AmigaOS 3.0
(see program
history
).

Hans Verkuil (hans@wyst.hobby.nl) was kind enough to consider integrating ixprefs with ixemul.library, and to let me know in advance of the changes he planned to make to the library, so that I could adapt ixprefs on time. Hans also updated ixprefs from version 2.0 beta 4 to 2.1, and from version 2.1 to 2.2.