XOpa

COLLABORATORS			
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Contents

Chapter 1

XOpa

1.1 main

```
             XOpa 1.96-documentation

This is the XOpa-documentation for Version 1.96 (15.1.2000)
It consists of the following chapters:

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               Introduction
                 II.
               Shareware & Copyright
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               The Authors
             Latest change of this document: 24.1.2000
(c)1994-2000 by Axel Dörfler and Alexander Bartz.
```

1.2 einführung

I. Introduction of XOpa

XOpa can be seen as a system monitor. It makes the intern
information of the Amiga visible for the user. It is
furthermore possible to manipulate this informations.

This manipulation can be dangerous because it may cause a
software failure if you delete objects which are still used
by other programs.

XOpa is very necessary if you need to close screens or
windows which are left open by (self-written?) programs.
It is also possible to terminate programs with XOpa.

The program needs at least AmigaOS 2.0 and supports lots
of features of the latest OS versions (white menu backgrounds,
ASL-screenmode-requester, ...). XOpa is font-sensitive which
means that it is using the system font without problems.

XOpa has got nearly all functions of similar programs.
With the user friendly interface and the mighty structure
mode it provides at least two huge features that other
programs don't have.

With the structure mode it is possible to surf throug the intern
structures. The available number of structures can be increased with
the help of an extern file called "XOpa.structs". This file should
be placed in the same drawer as the main program.

I should explain one word that is used more than once in this
text. By the word "object" normally an entry of the list is ment.
This can be a screen, a task or something like that.

This guide should also be placed in the same directory as XOpa.

1.3 share

                    II. shareware and copyright

XOpa is shareware. If you use it and like it and you would like to have
a fully functionally version please send us a shareware fee of 20 DM.
The unregistered version of XOpa is unable to read the file "XOpa.structs"
so that the
                    structur mode
                     only knows the implemented structures.

This version of XOpa is freely distributable on condition that

  · the following files are included:
     – XOpa and its icon
     – XOpa.guide
     – XOpa-Installation

  · the price of XOpa is not higher than 5 DM or an equal amount

        in a different currency.

If you want to get the registered Version of the program and you're
a lucky owner of a printer please use the program "XOpa-Registration".
There you get all further information.
If you don't have a printer you can find our addresses in the
registration-program.
Only a few days after we received your letter we'll send you the latest
and unrestricted Version of the program, the source code (Pascal) and
the file "XOpa.structs".
If you want XOpa to be expanded just tell us and if it isn't too
extensive we'll send you an expanded version.
After you became a registered user of XOpa you can get two free updates.

To get an update to a later version of XOpa just send us a self-addressed
envelop with lots of stamps on it. These updates will be free.

You're not allowed to give your registered version to anyone else!

The included indentiy-library is copyrighted by Richard Körber.

Please address your letters to:

        Alexander Bartz   Axel Dörfler
        Langenkamp 57   Heerstraße 53
        49082 Osnabrück   49492 Westerkappeln
        Germany   Germany

EMail: stimpleton@bigfoot.de   axeld@ax.Wetfalen.de

1.4 install

III. Installation of XOpa

Installing XOpa on your hard-disk is very simple: just doubleclick
on "XOpa-Intallation". The Commodore-Installer will be started and
will do the rest for you.
If you don't want to use the "Installer" just copy the following files
in one directory:

  · XOpa
  · XOpa.guide
  · XOpa.structs

The "amigaguide.library" must be placed either in "LIBS:" or in
the Kickstart-ROM if you want to use the online help of XOpa.

The identify.library (by Richard Körber) has to be in LIBS: or in
the same drawer as XOpa.

1.5 menus

IV. Menus

Here's an general view over the XOpa menus:

Project-Menu

                    Iconify   (I)

                    About   (?)

                    Quit   (Q)
                    Options-Menu

                    Flush memory

                    Print current list

                    Save list...

                    Speed-test...
                    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~

                    Task&Window-Relations

                    Security check

                    Sort list
                    Structure-Menu

                    Other structure   (O)

                    Node-structure
                    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~

                    Rescan   (R)

                    Back   (B)
                    Display-Menu
You find informations about the items in the
                    display-modes
                     chapter.

Help-Menu
 This menu only appears if the "amigaguide.library" is correctly
 installed.

                    Genaral   (H)

                    Short summery   (K)

                    Current list   (Help)

1.6 men00

                  Iconify

This function closes the main-window and displays an icon on
the workbench-screen. If you doubleklick on this icon the XOpa
window will appear immediatly.
If you want XOpa to be started iconified you can do that with the
help of the
                  ToolTypes
                     .

1.7 men01

About

This displays a very very informative text in the XOpa window.
It's about the same text you see everytime you start the program.

1.8 men02

Quit

This is the worst function of XOpa: it quits the program.
(what else?!?)
There's no nasty requester that asks you if you really want to
quit the program, because we think it is absolutely senceless.

1.9 men10

Flush memory

This function forces the operating system to remove unused
objects that are still in memory. Theese objects can be libraries,
fonts or things like that.

1.10 men11

Print current list

If you have a printer connected to your Amiga you can print
the curent list with the help of this function.

1.11   men12

Save list...

This function gives you the possibility to save the display in a
file you have chosen.

1.12   men13

Speed-test...

The results of the XOpa speed-tests are not comparable with the
results of other programs.
After you have selected this menu-item, a requester will appear
on your screen. Now you have the possibility to select all tests
that should be made.

Comparison with other computers and the ←↩
   .... ←↩
   pentium-pc

	Amiga 4000/030 (DBLPal)	Amiga 2000C (Pal)	Amiga 4000/030 (Cybervision64)	Pentium-PC*
Pixel:	25842.7	2765.7	57163.3	19.5
Kreise:	123.9	13.0	4251.5	1.4
OpenWindow:	33.4	7.9	37.6	0.1
Fast-Ram:	17.705	3.053	17.804	0.031

1.13   men15

                   Task&Window-Relations

If this function is activated (see also:
                ToolTypes
                ),
the program tries to close all windows of a task if you remove
a task.

1.14   men16

                   Security check

This function allows you to turn the nasty(?) security checks
on and off.
See also:
                ToolTypes
                .

1.15 men17

sort list

After selecting this option some lists will be sorted in
alphabetical order.
See also:
ToolTypes
.

1.16 men20

Other structure

After selecting this item you can select an different structure for the
current address. In this window you also have the possibility to change
the current address.
In the listview-gadget you can choose the structure to be displayed. If
don't select an entry the memory will be shown in the form of the XOpa-
memory-viewer.

1.17 men21

Node-Structure

If, in
structuremode
, you select an Entry called Node it is not
clear what structure XOpa has to show. So, in this window you can select what
structure should be shown for the different Node-Types.

1.18 men23

Rescan

This menuitem can only be used in
structuremode
.
The displayed structure will be read out again (rescanned).

1.19 men24

```
                 Back
```

This menuitem can only be used in
```
                 structuremode
                 .
```
If possible, the previous shown structure will be shown.

It's the same function as
```
                 Back
                  of the function bar in the main
```
window.

1.20 men40

```
                 General
```

After selection of this item this AmigaGuide will be opened at
```
                 mainmenu
                 .
```

1.21 men41

```
                 Short summery
```

This item displays the chapter
```
                 Short summery
                  of this AmigaGuide.
```

1.22 men42

```
                 Current List
```

When you choose this item, XOpa atempts to show a chapter of the documentation
that has something to do with the current
```
                 displaymode
                 . The same happens
```
if you press the help-key.

1.23 anzeige

V. Displaybar

Here you can find explanations about all display-modes that can
be activated by using gadgets or menus. You should find
all informations shown in these modes.

Currently, there are the following modes:

Tasks

Screens

Ports

Libraries

Resources

Devices

System

Interrupts

Assigns

Residents

Fonts

Struktur
    --

Locks

Volumes

Monitors

Classes

Catalogs

1.24 anz1

Tasks

In this mode all running tasks and processes (Programs) will be displayed.
Every Program running in the system consists at least of one task or process.
The following informations will be displayed:

   · Address   - The address of the task

· Pri   – The priority. See also
            «priority»
                · Stack   – The tasks memory used for variables
· Signals   – Signals used by the task
· State   – Shows the current state of the task. For example run, wait,
            frozen (See also
            Freeze
            ), ...
· Code   – Some attributes of the task
· Type   – Task or Process. A process is a program runnig from DOS
· Name   – Name of the Task. If the task was run from the shell also the ←
    process-number
            will be shown

After a doubleclick on the entry further information will appear.
This mode supports the following functions:

            Remove
            ,
            Signal
            ,
            Priority
            ,
            Freeze
             und
            Window

1.25 anz2

            Screens

In this mode all opened screens will be listed.
The following informations will be listed:

· Address   – Address of the screen
· Pos(x,y) – Shows the monitor-relative position of the screen
· Size(x,y) – Width and height of the screen
· Dep   – Screen's color-depth (for example 2 for 4 colors)
· Mode   – Shows the ModeID (exists since OS2.0). Further information
            will come with a doubleclick
· Type   – At the moment there are three different types of screens:
                    – "wbench" stands for the workbench-screen
                    – "public" this is a screen where any program
                      can open a window
                    – "custom" is the private Screen of one program
· Titel   – Hmmm... I think it's the screen's current title

After a doubleclick on the entry further information will appear.
This mode supports the following functions:

            Add
            ,
            Close

                        und
                        Window

1.26 anz3

                   Ports

In this mode the system's list of ports will be displayed.
The following information will be listed:

   · Address   - Address of the port
   · Pri   - Priority of the port. See also
                 «Priority»
                     · Flags   - Some attributes of the port will be displayed ←
                         here, normally
                  the of message to be received.
   · SBit   - The signalbit set for the Wait() function
   · Type   - Not really needful. It is always "mgport"
   · Portname   - This is the real name of the port
   · Taskname   - The name of the task to which the port belongs

After a doubleclick on an entry the
                  Strukturemode
                   will be activated.
A MsgPort-Structure with the address of the port will be shown.
This mode supports the following functions:

                   Remove
                    und
                   Priority

1.27 anz4

                   Libraries

In this mode you can see all opened libraries
The following informations will be listed:

   · Address   - Address of the library
   · Pri   - Priority of the library. See also
                 «Priority»
                     · Version   - The library's version - what else?
   · OpenC   - This value shows how often programs have opened the library.
                  If it's 0 the library can be removed from the system.
   · Neg   - The size of the libraries offset range
   · Pos   - Amount of bytes after the library structure
   · Typ   - In this case maybe "library" ?!?
   · Name   - The libraries name

After a doubleclick on an entry the
                  Strukturemode

```
                       will be activated.
A Library-Structure with the address of the Library will be shown.
This mode supports the following functions:


                  Remove
                   und
                  Priority
```

1.28   anz5

```
                  Resources

In this mode the system's recource will be listed. Theese regulate
the low level access to parts of the amiga hardware.
The following informations will be listed.

   · Address    - Address of the resources
   · Pri        - Priority of the resources. See also
                  «Priority»
                      · Version   - The Version of the resources. What else?
   · OpenC      - This value shows how often programs have opened the resource.
                  If it's 0 the resource can be removed from the system.
   · Neg        - The size of the resources offset range
   · Pos        - Amount of bytes after the resource structure
   · Typ        - In this case maybe "resource" ?!?
   · Name       - The resources name

After a doubleclick on an entry the
                  Strukturemode
                   will be activated
and the structure chosen in
                  «Node-Structures»
                   will be shown.
The following functions are supported:


                  Remove
                   und
                  Priority
```

1.29   anz6

```
                  Devices

In this mode a list of all active devices wil be listed. Devices regulate the high ←
     level
access to parts of the Amiga hardware.
The following informations will be shown:

   · Address    - The device's address in the system
   · Pri        - The priority of the device. See also
```

                    «Priority»
                        · Version   – The device's version.
    · OpenC   – This shows how often the device was opened by programs. If it is
                   0 the device can be removed from the system.
    · Neg   – the size of the offset area of the device
    · Pos   – Amount of bytes after the library structure
    · Typ   – In this case maybe "device"
    · Name   – The device's name

With a doubleclick on the entry XOpa switches to structure-mode. A device- ↩
   structure
will be displayed.

This mode supports the following functions:

                    Remove
                     und
                    Priority

1.30   anz7

                    System

In this mode the following data will be displayed:

  · the CPU (central processing unit)
  · the activated caches

  · the mathematical co-processor
  · your chipset

  · availebility of a MMU
  · your OS-version
  · the latest Guru meditation
  · the memory blocks
  · the expansions (processor-card, graphics-card,...)

    the following information are shown:

    · Address   – Address of the board
    · Size   – Memory on the board
    · Bus   – Supported bus-type
    · Product   – This shows what type of board it is
    · Type   – The manufacturer-specific ID
    · Flags   – The Boards attributes
    · Manufacturer – The manufacturers ID and his name (if possible)

In the memoryblocklist you can activate an entry by clicking on it
in order to change it's
                    priority
                        afterwards.

1.31 anz8

Interrupts

In this mode the running interrupts are shown in the window. An interrupt
is a kind of program that is called up at special situations e.g. when
the monitor's beam has reached a special position.

The following informations will be shown:

- · Address   – the interrupt's address in the system
- · Pri   – the interrupt's priority. See also
             «priority»
               · Data   – a pointer to the data
- · Code   – a pointer to the programm
- · Nr   – the interrupt's number (shows which channel is used)
- · Interrupt – the type of interrupt
- · Ctrl   – Control: handler/server
- · Type   – can be "interrupt" or "unknown"
- · Name   – the interrupt's name

This mode supports the following functions:

Remove
 und
Priority

1.32 anz9

Assigns

In this mode a list of assigns will be listed.
The following informations are displayed:

- · Address   – the system's address of the assign
- · Assign-Name – The name of the assign e.g. LIBS:
- · Path   – the complete path of the assign

This mode supports the following functions

Add
 and
Remove

1.33 anz10

Residents

In this list you can find all parts of the OS that are in the
Kickstart-ROM.

The following informations will be shwon:

    · Address   – Address of the object in ROM
    · Pri   – priority. See also
                   «priority»
                        · Version   – Version of the object
    · Flags   – Flags in the resident-structur
    · Type   – The object's type e.g. "library"
    · Name   – The objects name

1.34 anz11

                 Fonts

In this list all opened fonts will be displayed.
Therefor the following informations will be shown:

    · Addess   – the font's address
    · Width   – normal width of the font (in pixels)
    · Hight   – the font's hight
    · BaseLine   – the font's baseline
    · LoChar   – character with the lowest ASCII-Number in the font's bitmap
    · HiChar   – character with the highes ASCII-Number in the font's bitmap
    · OpenC   – how the font was opened (open-counter)
    · CharData   – pointer to the font's bitmap
    · Name   – the font's name

With a doubleclick on an entry you tell XOpa to open a window and to display
the font there.
This mode supports the following functions:

                 Add
                  and
                 Close

1.35 anz12

                 Structure

In this mode you can see the system-data in the correct system-structures.
(See
                 Structure-mode
) For safety-reasons it is not
possible to change the data here.

This mode supports (if possible) the following functions:

                 Back

1.36 anz16

Locks

In this list all current accesses to files are shown. A lock can
prevent a file from beeing deleted or even accessed.

The following informations will be displayed:

    · Address   – the lock's address
    · Mode   – Type of access (reading/wrinting)
    · Name   – complete path and name

This mode supports the following functions:

Remove

1.37 anz17

Volumes

This list shows all available volumes.

The following informations will be displayed:

    · Address   – address of the object in memory
    · Pri   – priority. See also
                  «Priority»
                        · Name   – the objects name
    · Unit   – the volumes unit-number
    · Handler   – name of the volumes handler
    · Device   – name of the device for the volume

1.38 anz18

Monitors

This list displayes the monitor-drivers of your system.

The following informations will be shown:

    · Address   – the MonitorSpec-Structure's address
    · totrows   – maximum amount of Rows
    · totclks   – Colorclocks
    · Name   – the monitor's name

1.39 anz19

Classes

This list shows all of system's public BOOPSI classes.

The following informations will be displayed:

- · Address   – the structures address
- · Superclass – the superclass
- · Obj.   – the amount of object-intances
- · Sub.   – the amount of diverted classes
- · Name   – the name of the class

1.40 anz20

                Catalogs

This list shows all opened catalogs that are used by different
programs.
Attention: since the solution of collecting these does not rely on
undocumented features of the OS, it will not work if "English" is
the first language to be used.

The following informations will be displayed:

- · Address   – address of the catalog-structure
- · Version   – the catalogs version
- · Language – Language
- · OpenC   – open counter of this catalog
- · Name   – the catalogs name

The following function can be used:

                Remove

1.41 funks

                VI. Function gadgets

Below you have the explanation of the function gadgets. Please notice that
not every function can be called up from any display mode. (See
                Display
)
Many functions can olny be called after selecting an entry.
The following functions are implementated:

                Add

                        Remove

                        Signal

                        Priority

                        Close

                        Freeze

                        Windows

                        Back

1.42 funk1

                        Add

This functions can be used in the modes
                        Screens
                        ,
                        Assigns
                         and
                        Fonts
                        .
The object you add depends on the current display mode:

    – in the
                        Screen-Mode
                         a requester will be opend where you can define the
      outlook of the public screen that will be opened. (See requester
                        Open screen
)
    – in the
                        Assign-Mode
                         a requester with two string-gadgets will be opened.
    In the first you enter the name of the assign (without ":"). In the second ←
        gadget
    you enter the complete Path to which the assign points. (e.g. "SYS:Fonts" for ←
         the
    assign "Fonts:"). To confirm your actions click "OK" if not click "Cancel" or ←
        the
    close-gadget of the window.
    (See also
                        Assign for dirctory
)
    – in the
                        Fonts-Mode
                         the normal Amige Font requester will be opened.
    Notice that automatically all fonts that are displayed in the requester will ←
       be
    opened.

This function needs no selected entry.

1.43 funk2

Remove

This function can be called up from lots of
display-modes
. It is used
in order to remove the selected entry from the systems lists and the memory.
If you have activated the
Security-checs
you will be asked if you are
 shure to remove the object. For some modes there are additional options
 (e.g.
Task-Window-Relations
 for tasks).

!! This function must be used very carefully because the system !!
!! or a program could still need the object you want to close.   !!
!! So don't be surprised if your Amiga crashes down!   !!

1.44 funk3

Signal

After pressing «signal» in the
task-displaymode
 the requester «send signal»
appears, at least if you have selected an entry before.
In the upper field you can enter number of the hexadecimalsystem (could anyone
who speaks english please tell me right translation for that word ?!? German:
"Hexadezimalsystem"). That number (signal) will be send to the intern port of the
selected program.
The "radio-buttons" on the window's left side let you choose to either send your
entered signal or to send "quit"-signals.

1.45 funk4

Priority

With this function you're able to change an object's priority. In the string-
gadget you may enter values between -128 and +127. Changing priority has different
effects depending on the type of object you had selected.
If you increase the priority of a
task
 for example, is gets more often and more processor-time.

1.46 funk5

```
Close
```

This gadget does the same as the function remove. The olnly
difference is that you use this button for windows and screens.

1.47 funk6

```
                Freeze
```

This function can only be called up from the
```
                task-mode
```
                .
After clicking this button, the selected task will be removed from the list of
tasks that are called up from exec. That means that the programm is still there
but it can't do anything.

If you try to freeze an already frozen task you will activate it again.

1.48 anz14

```
                Windows
```

This function is available in the display-modes
```
                tasks
                 and
                screens
```
                .
After pressing this gadget all windows of the selected task or screen will be ←
   displayed.
You can press the gadget severral times to update the list. The following ←
   informations
will be listed:

    · Address   – The window's address in the system
    · Pos(x,y) – The window's position on the screen
    · Size(x,y) – Width and height of the window
    · IDCMP   – The IDCMP-flags specify the type of messages the window
                   receives from Intuition. After a doubleclick on an entry
                   the flags will be displayed in a readable form.
    · Flags   – this flags specify the window's outlook. They also will
                   become readable if you click'em
    · Titel   – The current window-title

With a doublecklick on an entry you get further informations about the
window. From there you can go back with the
```
                back-gadget
```
                .

1.49 funk8

Back

Normally this is a special function for the
structure-mode
, but it
is also used for windows. (See
windows
)

The structure-mode always keeps you latest actions in mind so you can use the back ←
-gadget
as a kind of undo-function. This gadget has the same function as the menu-item
Back
of
the
structure-menu
.

1.50 req1

Open screen

This requester appears if you press
New
in
display-mode screens
.
Here you can define the options of a new screen. That new screen is always a ←
public screen.
In the string-gadget you enter the name for the new screen.

If you use OS2.1 or higher you can also defin a screen-mode with the standard ←
Amiga
screenmode-rquester here (Mode-gadget). If you click on OK athe new screen will be ←
opened,
if you click on cancel the requester will be closed without opening a new screen.

1.51 req2

Assign for directories

You call this requester if you press New in
assign-mode
.
To make a new assign please enter the assign's name into the upper string-gadget. ←
A colon
is not needed here. In the gadget below you should enter the complete path of the ←
assign's
directory. Instaed of entering the path manually you can simply click "Choose..." ←
to call

up a ASL-filerequester.

With clicking "OK" the assing will be made, by clicking on "Cancel" you leave the ←
   window
without making an assign.

1.52 tooltypes

                    VII. Tool-Types

XOpa supports some tooltypes to let you make some little configuration.

The following tooltypes are supperted:

    · STRUCTS   - use path and name as parameter for an extern
                        structure-definition file for the structur-mode.
    · TASKWINDOWS   - The menuitem
                task-window relations
                 is
                    choosen as standard.
    · SECURITYCHECK - The menuitem
                «security-check»
                 is choosen
                    as standard
    · SORTLIST   - The menuitem
                «sort list»
                 is choosen as
                    standard.
    · DISPLAY   - this tooltype supports the following parameters:
                        TASKS, SCREENS, PORTS, LIBRARIES,
                        RESOURCES, DEVICES, SYSTEM, INTERRUPTS,
                        ABOUT, ASSIGNS, FONTS, RESIDENTS,
                        LOCKS, VOLUMES, MONITORS.
                    With this tooltype you can choose the
                display-mode
                                    that XOpa shows on startup.
    · WINDOW   - this tooltype needs four parameters: the x and the y
                        position of the window and the width and the height.
                        Example: WINDOW=0/42/1000/420
                        It is also possible to let out some parameters.
    · ICONIFY   - causes XOpa to start up iconifyed. When you quit XOpa it
                        will become iconifyed.
    · ICONXY   - defines the x and y position of the iconify-icon.
                        Example: ICONXY=42/42

Of course the tooltypes only work if you start XOpa from the Workbench.

1.53 struktur

                    VIII. XOpa's structure-mode

With the help of the structure-mode you are able to take a look at the inside of

the system.
After choosing the structure-mode XOpa lists the known libraries. With a ←
   doubleclick
on one entry the librarie's intern structure will be displayed. If you doubleclick
a pointer or a pointer to a structure XOpa either displayes the pointed structure ←
   or
switches to memory-display.

With the back-gadget you can go back to the structure shown before.

Furthermore you have the possibility to display any structure or memory-address.
To do that you need to choose
                Other structure
                 from the menu in structure-mode.

The structure-display looks like this:

In the first row you see the current address and the current displayed structure. ←
   Than you
see the name of the entry on the left side and on the right side the data and the ←
   type.
If there's a structure in another structure it will be shifted.

Some of the structure definitions are built in, others are in the extern file " ←
   XOpa.structs".
If you want to choose any other file you can do this with the XOpa-
                tooltypes
                .
Making use of that feature you have the possibility to use the structures of your ←
   own programs
 so you can see what your program is filling in it's structures.

XOpa can only read that file if you use a registrated version of the program.
(see
                Registration
)

The structure of the structure-definition-file (ahh, what?!?)

To tell XOpa that your file is a structure-definition-file it has to begin with:

  # --==*⋆> XOpa-Strukturdefinition

For the definitions there are the following keywords:

  #libraries – After that follows a list of libraries with structure-
                definitions. First there has to be the name of the library that
                should be used.
  #structs   – After that follows a list of structure definitions.
  #end   – completes a part (e.g. #structs)
  @struct   – within the structuredefinitions this keyword stands at the
                beginning of a new structure. The name has to follow after a "=".
                In the following definitions there first has to be the name and
                then, after a colon, the type.

A short example:

```
# --==*⋆> XOpa-Stukturdefinition

#libraries
intuition.library=IntuitionBase

#structs
@struct=IntuitionBase
LibNode        :Library
...
```

With a ";" at the beginning of a row you start a comment.

The following types can be used:

- BYTE,UBYTE,FLGBYTE – 1 byte long
- WORD,UWORD,FLGWORD – 2 bytes long
- LONG,ULONG,FLGLONG – 4 bytes long
- PTR,"^Struktur"   – also 4 bytes long; with doubleclick you jump to data
                         of the pointer
- BPTR   – similar to "PTR", this is BCPL-pointer. That means
                         that the address is multiplyed by 4 before jumping.
- STR   – pointer to a string (4 bytes)
- STRING[x]   – dieser für Programmierer (Ansehen eigener Strukturen)
                         eingeführte Typ entspricht einem String von x Byte(s)
                         Länge.
- "Struktur"   – depends on the length of the named structure. That
                         structure has to be defined before!

"Struktur" must be replaced through the name of the structure. The prefix "U"
means "unsigned" (alsways positive). "FLG" lets XOpa display the data as ←
   hexadecimal.
All types (not strings) can be written as array, WORD[42] for example creats an ←
   array
from 0 to 42 of WORD.

If something is not clear you can use the file XOpa.structs LINK XOpa.structs/main ←
   } as an example.

The following structures are already implemented in XOpa:

- SysBase, MinNode, Node, MinList, List, Library, IntVector,
  SoftIntList, MsgPort, Device

Have fun with this mode...

1.54 kurz

                     IX. Quick overview
```

───────────────────────────────────────────────────────────────────────────────── ←


```
 1.Menus:


                     Project
```

───

Options

Structure

Help

Iconify

Flush memory

Other structure

General

About...

Print current display

Node-structures

Quick overview

Quit

Save display...
             ~~~~~~~~~~~~~~~
Current display

Speedtest

Read again
                      ~~~~~~~~~~~~~~~~~~~~~~~
Back

Task&window-relationes

Securitychecks

Sort list
  Notice: The
Display-menu
 is missing in the Quick overview

↩

2.Functionbar:

    New
Remove
 Signal
 Priority
Close
  Freeze
 Windows
 Back

3.Displaymodes:

                     Tasks
                  Screens
                   Ports
               Libraries
              Resources
               Devices

                 System
             Interrupts
              Assigns
             Residents
                Fonts
              Strukture

1.55 about

```
X. About the program
___\ \    / /
____\ \  / / ©©©  ©©©©   ©©©   Version 1.96
_____\ \/ / ©   © ©   © ©   ©      _____
_____\  / ©   © ©©©© ©©©©©        _____
_____ / \ ©   © ©      ©   ©        _____
____ / /\ \ ©©© ©      ©   ©    _____
___ / /  \ \ _____
__ /_/    \_\ _____
```


The mainpart of XOpa is written in Kickpascal 2.12 of Maxon-Computer GmbH. Some
smaller parts are written with the Maxon assembler.
XOpa can be started with OS2.0 or higher and it has been tested on several
different computers. We recommend using OS3.0 or higher.

For changements made in the previous releases, please consult the German
history, since this one is complete.

---------------- Version 1.93 (6.2.1998) ----------------------
· +/- buttons for a better handling in the priority-window
· Locks can be removed now
· removed left debug messages

---------------- Version 1.94 (22.7.1998) ----------------------
· new display modes: Catalogs, public Classes
· Enforcer-Hit at the window-display of a task removed
· non-binding assigns will be marked
· now Installation and Documentation (still not ready) in English included
· Documentation updated

---------------- Version 1.95 (7.10.1998) ----------------------
· An unnamed screen in the screens-list will not produce an Enforcer-Hit any ←
    longer

- The OS2.0 RawDoFmt() does not understand the %X-format which is not noted in ←
  the autodocs.

---------------- Version 1.96 (15.1.2000) -----------------------
- By removing a task its MsgPort(s) will be deleted, too.
- The "Mode..."-Button (add a public screen) works again.
- With V39 or higher, GetBitMapAttr() will be used to determine the screen's ←
  depth.
- Small changes in the detailled view of a screen's data.
- The display mode "System" shows now also the Workbench version.
- The caches of the processor are shown in an other way, CopyBack is now ←
  supported.
- You have now the possibility to send one of CTRL-C/D/E/F directly.
- Catalogs can be removed now, and you also see the "OpenCounter".
- "Structure/Other Structure" can now be used out of every mode in which case
  the address of the selected item will be used.
- a few optimisations.

1.56   bugs

XI. Known bugs

Since Version 1.94 you get an enforcer-hit by clicking "New" at displaymode ←
   screens.
This is due to a compiler error.

At the moment we see no possibility for a workaround, so we have to live with this ←
   ;
we hope you can also do this.

1.57   authors

XII. The Authors

XOpa was entirely written by Axel Dörfler and Alexander Bartz.
If you have any suggestions or if you find a bug, please feel
free and write to one of the following addresses:

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      axeld@bigfoot.de
      stimpleton@bigfoot.de

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      stimpleton@bigfoot.de

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          Heerstraße 53   Langenkamp 57
          49492 Westerkappeln   49082 Osnabrück

```
        Germany                 Germany
```

XOpa has now its own internet support page, which is really
very small but you'll find always the current release there:

http://www-lehre.informatik.uni-osnabrueck.de/~adoerfle/XOpa/