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# Contents

# Chapter 1

# Default

## 1.1   Osiris documentation

```
              Osiris – an MPEG-Player for Amiga computers

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   Written by André Osterhues



         Disclaimer
             Please read this first

         Introduction
             What is Osiris? And what is MPEG?

         Requirements
             Which Hard- and Software is required?

         Installation
             How to install Osiris?

         Usage
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         History
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         Future
             What will be supported in the future?

         Thanks
             Thanks to...

         Author
             The one who...
```

## 1.2  Disclaimer

```
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==========

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```

## 1.3  Introduction

```
                 Introduction
============

Osiris is an
                MPEG
               -Player for Amiga computers.

Some Features:

- Starts from
                Workbench
                as well as from
                CLI
                 - Display in 8 Bit on Workbench or any Public-Screen

- Display in 15, 16 and 24 Bit on CyberGraphX-Screens

- Usage of Video-Overlays in combination with the CyberVision64/3D

-
                Control-Panel
                 - Automatic resizing at window size change

- Supports
                Video CDs
```

## 1.4  MPEG

```
                MPEG
====


The name MPEG refers to the Moving Pictures Experts Group,
a consortium of digital video and audio processing experts.
In the year 1993, the draft of this group was published by
the ISO (International Organization for Standards) and thus
declared a standard.


There is a distinction between
            MPEG video
        ,
         MPEG audio
          and
         MPEG system
             One of the goals has been to reach as good picture and sound
quality as possible using as few storage memory as possible.
As an upper bound for storage memory usage, 192 KByte per
second was defined.
For comparison: Without data compression, just the video data
would consume over 3700 KByte per second. Additionally, there
would be about 172 KByte per second for sound in stereo CD
quality.
```

## 1.5  MPEG video

```
                MPEG video
==========


In MPEG video, an animation is divided into single pictures,
called "frames". There are three different types of frames:
I-, P- and B-frames

  I-frames (intra):
  -----------------
  These frames are compressed similar to the well-known JPEG
  pictures. Data is stored independantly from previous or
  following frames.

  P-frames (predictive):
  ----------------------
  Here, only changes concerning the previous I- or P-frame are
  stored. To display P-frames, data from the previous I- or P-
  frame must be decoded and available.

  B-frames (bidirectionally predictive):
  --------------------------------------
  In B-frames, a steady motion of single picture parts between
  the previous and the following frame is being searched. In
  the best case, just the motion itself is coded and stored.
  B-frames require fewest memory, but can only be decoded after
```

```
   the previous and the following(!) frame has been decoded.

A typical sequence of MPEG-frames would be (in order of display):

  I  B  B  P  B  B  P  B  B  I...
  1  2  3  4  5  6  7  8  9 10

They would be ordered like this in the MPEG video file:

  I  P  B  B  P  B  B  I  B  B...
  1  4  2  3  7  5  6 10  8  9
```

With the two parameters NOB and NOP, you can control which types
of frames will be decoded and displayed (see
                Usage
                ).


## 1.6  MPEG audio

```
MPEG audio
==========
```

In MPEG audio, we distinguish Layer-I, Layer-II and Layer-III.
Together with the number in the term, also the complexity of
the Layer increases; while Layer-I and -II are quite easily
comprehensible (and can be played in real-time on 68060-equipped
Amigas), Layer-III is very complex.

In practise, however, Layer-II is used almost exclusively
(e.g. by Video CDs).

Osiris today does not support playback, because the computational
requirements are very high without additional hardware.
Only the MPEG extension for the CyberVision64/3D will enable
simultaneous Playback of MPEG video and MPEG audio in real-time.


## 1.7  MPEG system

```
                MPEG system
===========
```

Here,
                MPEG video
                and
                MPEG audio
                data are stored
together in a single file. This method is used mainly for Video CDs.

Osiris is right now the only Amiga-MPEG-Player capable of processing
MPEG system files. Unfortunately, sound can only be saved to a file
rather than played back (Option "SAVEAUDIO", see

```
                    Usage
                  ).
```

```
Please note also the hints concerning
                  Video CDs
                  .
```

## 1.8  Video CD

```
                  Video CDs
=========
```

```
Recently, more and more Video CDs became available.
You can recognize them e.g. by the label "Video CD" or "MPEG-CD"
or by hints like: "This disc can only be used on players with
Video CD/MPEG capability."
```

```
Because some error correction was dropped, it is possible to
store about 730 MByte of data on such a Video CD (normal CD-ROM:
about 650 MByte).
```

```
Unfortunately, there is currently no Amiga CD-ROM-filesystem
supporting these CDs. Some (like e.g. AsimCDFS) can read in the
directory, but not the proper data.
(Resp. these are read in a wrong way, which may lead into serious
problems.)
```

```
Therefore, the SCSITRACK option was implemented into Osiris to
enable you to play back Video CDs even without a proper CD-ROM-
filesystem (see
                  Usage
                  ).
```

```
Nevertheless, these Video CDs are played back only without sound
and very slowly (even on 68060-equipped systems!).
To get the enjoyment of watching Video CDs in real-time, you have
to acquire the MPEG extension for the CyberVision64/3D.
```

```
Basically, you need to possess an XA-capable CD-ROM drive.
XA is an abbreviation for eXtended Architecture; except for Video CDs,
also Photo CDs require this technology.
To put in other words: If your CD-ROM drive supports Photo CDs, you
should be able to playback Video CDs.
```

```
The CD-ROM drive must be connected to your Amiga via the SCSI-Port.
In order to let Osiris recognize it, two environment variables have to
be set:
      CDROM_DEVICE              for the SCSI device
      CDROM_UNIT               for the unit number
```

```
E.g., if you use an Amiga 4000 with the Cyberstorm MKII SCSI module
and the CD-ROM drive has SCSI-ID 3, type:
      setenv CDROM_DEVICE "cybscsi.device"
      setenv CDROM_UNIT 3
```

```
Then you can playback a track using the SCSITRACK option. Track 1
usually contains no MPEG files, because the file directory of the
Video CD is stored there.
So choose a value of at least 2 as parameter.
If value 1 is being chosen, the first track will be scanned for an
MPEG file. This may take a considerable amount of time!
```

## 1.9   Requirements

```
Requirements
============

Minimal configuration:
- an Amiga with 68020 CPU
- AmigaOS 2.0
- a graphic card with CyberGraphX support
- at least 2 MB RAM, preferable FAST-RAM

For Playback of Video CDs:
- an XA-capable CD-ROM drive at the SCSI-Port
  (single speed is sufficient)

Ideal configuration:
- a 68060 CPU
- AmigaOS 3.0 oder 3.1
- a CyberVision64 or CyberVision64/3D
- at least 8 MB RAM
```

## 1.10   Installation

```
Installation
============

Copy the file Osiris into a directory of your choice.

Ensure that the following libraries are in the LIBS: drawer:
      - asl.library
      - cybergraphics.library and sublibraries
      - cgxvideo.library, if you want to use the overlay of the CyberVision64/3D
```

## 1.11   Usage

```
              Usage
=====

Osiris can be started from
              Workbench
              as well as from
```

```
             CLI

             .
```

If the option NO_DISPLAY is not used, a control panel with the
following elements will appear:

```
    – Play                  The MPEG film is played back
    – Pause                 The MPEG film is paused, continue with clicking  ←
       Play or
                            once again clicking Pause
    – Step                  The Step mode is activated, after each click
                            the next picture is displayed
    – Quit                  Quits Osiris
```

The elements in the control panel can be also be controlled by the keyboard:

```
    – the space key and the 'P' key toggles between Play and Pause
    – the dot key ('.') enables the Step mode
    – the Escape key 'Esc' and the 'Q' key quit Osiris
```

After exiting some statistic results will be displayed.

## 1.12 Workbench

```
Workbench
=========
```

The following Workbench Tooltypes are supported:

```
NAME=<MPEG filename>        The name of the MPEG file (with path)
WORKBENCH                   Display on Workbench (8bit)
CYBERGFX                    Display on a 15/16/24bit screen
SCREEN                      Display on a 8bit screen
PUBSCREEN                   Display on a public screen (8bit)
NO_DISPLAY                  No display (e.g. for speed testing purposes)
OVERLAY                     Display in an overlay window (only possible with  ←
   the
                            CyberVision64/3D)
SCSITRACK=<track>           Playback directly from Video CD. Track 2 is mostly
                            the first useful track.
                            For this option, an XA-capable CD-ROM drive  ←
                               connected to the
                            SCSI-Port is required. Also, two Env-Variables  ←
                               have to be set.
                            Attention: Please remove your CD-ROM filesystem  ←
                               before
                            using this Option! (e.g. with assign REMOVE CD0:)
SAVEAUDIO=<filename>        Storage of the MPEG audio part of an MPEG system  ←
   stream.
                            The audio file can be played back afterwards, e.g.  ←
                                with the
                            PD program DeliTrackerII.
LOOP                        The MPEG film will be repeated after the last  ←
   frame has been
```

```
                                 displayed
START=<start frame>              The MPEG film is played beginning with frame  ←
     number <start frame>
END=<end frame>                  The MPEG film is played ending with frame number < ←
     end frame>
NOB                              Only I- and P-frames are displayed
NOP                              Only I-frames are displayed
```

## 1.13   CLI

```
CLI
===

The following CLI parameters are supported:

NAME=<MPEG filename>            The name of the MPEG file (with path)
WORKBENCH                       Display on Workbench (8bit)
CYBERGFX                        Display on a 15/16/24bit screen
SCREEN                          Display on a 8bit screen
PUBSCREEN                       Display on a public screen (8bit)
NO_DISPLAY                      No display (e.g. for speed testing purposes)
OVERLAY                         Display in an overlay window (only possible with  ←
     the
                                CyberVision64/3D)
SCSITRACK=<track>               Playback directly from Video CD. Track 2 is mostly
                                the first useful track.
                                For this option, an XA-capable CD-ROM drive  ←
                                    connected to the
                                SCSI-Port is required. Also, two Env-Variables  ←
                                    have to be set.
                                Attention: Please remove your CD-ROM filesystem  ←
                                    before
                                using this Option! (e.g. with assign REMOVE CD0:)
SAVEAUDIO=<filename>            Storage of the MPEG audio part of an MPEG system  ←
     stream.
                                The audio file can be played back afterwards, e.g. ←
                                     with the
                                PD program DeliTrackerII.
LOOP                            The MPEG film will be repeated after the last  ←
     frame has been
                                displayed
START=<start frame>            The MPEG film is played beginning with frame  ←
     number <start frame>
END=<end frame>                The MPEG film is played ending with frame number < ←
     end frame>
NOB                            Only I- and P-frames are displayed
NOP                            Only I-frames are displayed
```

## 1.14   Overlay

```
Overlay
=======
```

The CyberVision64/3D has a special feature compared to convential graphics cards ←
    : the overlay.
An Overlay is in priciple a rectangular part of the screen, which cannot be  ←
    hidden by windows
or other picture elements. To put it in other words: an overlay is always the  ←
    frontmost element
in the hierarchy.

Using the OVERLAY option has the following advantages:
1) The CPU doesn't have to perform a colour space conversion (the conversion  ←
    from YUV to RGB data
   is done by the graphics card).
2) The graphics processor also scales the output. That means that it (virtually) ←
    doesn't matter
   if the video is shown in a small window or on the whole screen.
So, with an overlay, the graphics output speed is increased strongly

Unfortunately, by using an overlay some parts of the original Amiga "look and  ←
    feel" get lost.
The screen on which an overlay is displayed cannot be dragged anymore. Further,  ←
    it sometimes looks
strange if one wants to drag another window on top of ther Osiris window and the ←
    Osiris output
covers that window.

## 1.15  History

```
History
=======


07.02.1997    V1.05   - die Overlay option is now possible with all MPEGs
04.02.1997    V1.04   - optimization of the overlay function
                      - the size gadget uses the bottom border now
29.01.1997    V1.03   - on virtual screens the Osiris window is centered
20.01.1997    V1.02   - CD-Writer are recognized correctly
                      - on virtual screens the screen is shifted to make the
                        Osiris window visible

17.12.1996    V1.0    First public version
```

## 1.16  Bugs

```
              Bugs
====

- Some MPEG movies do not conform to the standards and do not use a
  SEQUENCE_END_CODE. This can lead to errors like "Unexpected read errror".

- When using the video overlay (option OVERLAY), sometimes patterns appear on  ←
    the
  right hand side of the window. This is due to cgxvideo.library.
```

- The SCSITRACK function seems not to work with all CD-Writers (please note the whole output when reporting bugs).

- If you should discover further bugs, please contact the
                        author
                .

## 1.17  Future

```
Future plans
============
```

- Removal of bugs

- Support of the MPEG extension for the CyberVision64/3D

- Porting Osiris to the PowerPC platform

- 'Fast Forward' and 'Rewind' similar to video recorders

- Option for faster decoding with lower quality

- Usage of tapedeck gadgets

- Localization

- Active support of MPEG audio

## 1.18  Thanks

```
Thanks to
=========
```

- Frank Mariak, who gave me so much invaluable advice

- Robert Reiswig, for the CyberGraphX and Osiris support pages

- Stefan Haubenthal, for the documentation about CD-ROMs and many interesting ←
    conversations

- Michael van Elst, for the description of Video CD access

## 1.19  Author

```
Author
======
```

André Osterhues

```
Meitnerweg 13
D-44227 Dortmund
Germany

e-mail: osiris@develop.phase5.de

Check out the official CyberGraphX support page at:
http://www.best.com/~vgr/

... or the official Osiris Support page at:
http://www.best.com/~vgr/osiris/
```