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There are so many files that it can become confusing to determine what is exactly on this CD, and it's very difficult for us to know how to present the information to you. Therefore, we're trying to provide you with several ways of finding the files.

This document describes all of the categories of software provided by SCE, its subsidiaries, and its tool partners. For ease of maintenance, this file is on both the Programmer Tools CD and Graphic Artist Tools CD, therefore some hyperlinks will not work if the wrong CD is placed in the CD-ROM drive:

- Sections that are relevant only to the Programmer Tools CD are indicated as **Available only on the Programmer Tools CD**.
- Sections that are relevant only to the Graphic Artist Tools CD are indicated as **Available only on the Graphic Artist Tools CD**.
- The remaining files can be found on both CD's.

This list should be read in conjunction with the "Family Type" column of the Tool Index in [\doc\content.pdf](#).

2D Artist Tools

Directory: \psxgraph\bin

2D artist tools are intended to help you work with sprites or any 2D bitmap. Generally, these tools are used to convert to the PlayStation's TIM format, and to position the image and its clut on the PlayStation's VRAM.

On the Programmer Tools CD, these tools are expected to be run in an MS-DOS window.

The Graphic Artist Tools CD contains the MS-DOS based tools plus Windows based converters, as

well as Adobe PhotoShop plug-ins.

For more information, refer to the Overview Manual and the 3D Artist Tools manual on the Technical Reference CDRom. If you are a programmer, you should study the graphics samples in "`\psx\sample\graphics\tuto`" and "`\psx\sample\graphics\2D`". Many of the TIM images are stored in header files as arrays of type "unsigned long";

timtool.exe is a useful tool that allows the placement of Playstation TIM files within the Playstation Frame Buffer, and supports conversion of the following formats: Windows BMP, JPEG, TIFF, PCX, and PNG. **Contributed by Malachy Duffin and Mark Breugelmans**, SCEE. Refer to the document [\psxgraph\bin\timtool.txt](#) for release information. A Windows .HLP file is included which describes some of the other features of the tool.

3D Artist Tools

Directory: `\psxgraph\bin`

3D Artist Tools help you work with 3D dimensional data, such as the DXF format, and the text-file based PlayStation RSD format. Converters in this category can then create a PlayStation TMD formatted file, which can be read by routines in libgs.

3D Studio Plug-ins

Directory: `\3rdParty\3DS`

These tools, written at SCE (Japan), are used with 3D Studio. They are provided in the directory `\psxgraph\bin` for backwards compatibility, but we have also placed them in a separate directory in `\3rdParty\3DS`. Full information and instructions can be found in the directory "`\psx\3rdParty\3DS`" on the Programmer Tools CD and the Graphic Artist Tools CD:

- For **installation** instructions, read [\3rdParty\3DS\3DStod.txt](#).
- For **release note** information, read [\3rdParty\3DS\release.txt](#)

Warning: Remove the SN-Dongle, and attach the 3D Studio dongle before progressing with a modeling session that uses the 3D Studio plug-in. Do not remove or add dongles while the PC is powered ON.

Warning: Always remove dexbios, cdbios, and mess1 (if they are already installed) before starting a 3D Studio plug in session.

Adobe PhotoShop Plug-Ins

Available only on the Graphic Artist Tools CD

Directory: `\3rdParty\Adobe`

Adobe PhotoShop plug-ins allow you to use the power of PhotoShop to create TIM files. The plug-in can import and export TIM format files, and preview the image directly on the television screen

through the Graphic Artist Board (DTL-H201A). There are plug-ins for the following versions of PhotoShop:

- PhotoShop 2.5
- PhotoShop 3.0
- PhotoShop 4.0.

For more information, refer to the document [\psx\3rdParty\Adobe\readme.txt](#).

Alias-Wavefront Plug-Ins

Directory: \3rdParty\AliasWav

The Alias-Wavefront 8.0 plug-in is stored as \3rdParty\alias\alias8_0\AliasTar.gz. This file was created on a PC using WinZip and contains a compressed tar archive file. You should download this from a PC, unzip it with WinZip, then transfer it to your Unix workstation. From there, run "uncompress alias.tar", then "tar xvf alias.tar".

Then you need to install it.

- For quick **installation** instructions, read the directions in [\3rdParty\AliasWav\Alias8_0\install.txt](#).
- Alias 8.0 and later are not supported on Irix 5.3; running Alias 8.0 and the PlayStation translator on an Irix 5.3 machine may cause a Fatal Error in Alias. This has been fixed in Alias 8.1, but you may want to read [this](#) for more information.
- A full users manual can be found [here](#).

A *beta* plugin for Alias 8.2 exists in the directory [\3rdParty\AliasWav\Beta](#). Transfer this file to your SGI machine, rename it with `mv alias82.tgz alias82.gz`, use `gzip -d alias82.tgz` to decompress it, then run `tar -xvf alias82.tar` to unpack it.

Artist Board and the Materials Editor

Available only on the Graphic Artist Tools CD

Directory: \psxgraph\bin

The Material Editor is a tool that edits surface attributes (materials) of polygons, such as colors, textures (patterns), and method of shading of 3D models.

In order to use the Materials Editor, set the I/O address to access the artist board (DTL-H201A) using the Windows tool, "aboard.exe".

Refer to the Developer Reference Series, *3D Graphics Tool User's Manual* on the Technical Reference CD, for additional information on "aboard.exe".

Bug note for Aboard.exe: The address settings list in this program does not allow you to set the address to be 0x1360 even though the board may be set to that.

Batch Files

Directory: \psx\bin

These example batch files usually consist of a one or two line command, and are written merely to help ease the pain of typing long path names. For example, rather than typing

```
run c:\ps\pssn\bin\selcd
```

(which allows the development boards to access their own CD-ROM drives), you could place the same command in a batch file called "runselcd.bat".

These files are not machine generated, and the correct paths will vary depending on your development system setup. Therefore, please use them only as examples.

Beta Software

Directory: \betaa

This directory contains a number of software development tools (and sometimes library files) that are considered to be in beta. Read [\betaa\readme.txt](#) for more information.

Brief Editor

Directory: \psx\bin

These files are useful for the Brief Editor, the "Programmer's Editor", according to some. They consist of the macro source and a compiled version of the macros.

For more information, refer to the "SDevTC Development Environment" manual on the Technical Reference CD.

CD Generation Tools

Available only on the Programmer Tools CD

Directory: \CdGen

"CDGEN.exe" is an application that allows you to create PlayStation gold disks. However, CDGEN is sold separately.

In the Programmer Tools CD, we've provided the licensing files, which are required when you make a PlayStation CD that you can play on your blue debugging stations. The licensing files are in the directory \CdGen\LcnsFile.

You can use the utility MCheck to verify your mastering information. The Windows 3.1 and Windows 95 versions of MCheck are in the directory \CdGen\MCheck and \CdGen\MCheck95.

Here's a quick summary of the steps you need to do to make a debug station CD:

1. Remove PCRead(), pollhost(), and other PC file system calls from your code.
2. Link with 2mbyte.obj. For library versions 3.1 and later, the 2mbyte.obj and 8mbyte.obj are no longer required. With versions 3.1 and later, the heap sector for SP initial values or at the start up can be set by defining the two variables of _ramsize and _stacksize in the program. If you are defining two variables, please make sure that both are defined. If only one of the two is being defined, an error occurs at the time of establishing a link. `int _ramsize = 0x00200000; /* RAM SIZE */ int _stacksize = 0x00008000; /* STACK SIZE */`
3. Execute cpe2x.exe /C[area] on the .cpe file.
4. Add files to CDGEN. Choose the correct file type for XA items.
 - Use Mode 2 Form 1 for game data.
 - Use Mode 2 Form 2 for XA files.
 - Select both Form 1 and Form 2 for a combined audio and video file.
 - Use the file type button to set the type for each file.
 - Standard file is Mode 2 Form 1.
5. Using the additional dialog button in the volume panel of CDGEN, set the System Area File to the path of your company's licenseX.dat file. For example c:\cdgen\licenseA.dat
6. Using the master dialog button in the layout panel of CDGEN, set the License Area to :

```
J if you have a Japanese debug station.
A if you have an American debug station.
E if you have a European debug station.
```

7. Set the minutes to 74 minutes. However, you should use 71 minue media. A 74 minutes media might work, but we do not support it. You must use the CD-R71PS for the mastering process for submissions to SONY.
8. In CDGEN, press the record (REC) button.
9. Always verify the completed disk.

For more information, please consult the Technical Reference CD.

Compilers

Available only on the Programmer Tools CD

Directories: \gnu, \pssn\bin, and \pssn\windebug

The SDevTC development environment consists of SN System's rapid assembler and the Gnu compiler. These tools are MS-DOS commands and should be run in an MS-DOS console window.

The assembler and linker components are in \pssn\bin, and the compiler components are in the \gnu directory of the Programmer Tools CDROM. Two versions exist:

- 16-bit compiler. The GNU portions exist on the Programmer Tools CD in the directory \gnu\dos, and the assembler and linkers appear in \pssn\bin\dos. Follow the instructions in the section "INSTALLATION FOR WINDOWS 3.1" in the document [README.TXT](#) at the root of this CD-ROM. In your makefiles, change the usual references of "ccpsx" to "ccpsxd", "psylink" to "psylinkd", and "psylib" to "psylibd". Set your paths as discussed in the document ["\doc\instsoft.pdf"](#).
- 32-bit compiler. The GNU portions exist on the Programmer Tools CD in the directory \gnu,

and the assembler and linkers appear in \pssn\bin. These are the default versions that are installed using the "setup.exe" utility of the Programmer Tools CD. Naturally, they only operate under 32-bit operating systems.

Note: The important file "sn.ini" (formerly known as "psyq.ini") resides in \pssn\bin, and allows you to specify which libraries need to be linked into your program. *With each CD-ROM release, this file will **change** to accomodate new libraries.*

To install these tools, you can simply run "setup.exe" on the Programmer Tools CD in Windows 95, and choose the "SDevTC Tools" and the "C-Compiler" options.

If you don't have Windows 95, or if you need more information, refer to the following:

- The installation manuals in [\psx\bin\DTLH2000](#) or [\psx\bin\DTLH2500](#).
- *Psy-Q Development Environment*, on the Technical Reference CD-ROM.

In addition, a new Windows 95 debugger for the DTL-H2000 system from SN is included on this CD, in the directory \pssn\windebug.

HMD

Directory: \psxgraph\bin

The Hierarchical Mesh Definition file format allows LIBGS based programs to manipulate complex hierarchical models with animation. Refer to the directory (on the Programmer Tools CD only) [\psx\sample\hmd](#) for samples that demonstrate how to process the objects. In addition, in the \psx\sample\hmd\data directory are a number of models, each with a "readme.txt" that describes how they were made.

NewTek's LightWave

Directory: \3rdParty\LightWav

Support for LightWave can be found in the directory \3rdParty\LightWav. Read the document [\3rdParty\LightWav\readme.txt](#) for more information.

The following plug-ins can be found in \3rdParty\LightWav\Plugins:

- **UPDATED** The **RSD** plug-in's have been updated. Read [\3rdParty\LightWav\Plugins\rsd\readme.txt](#) for more details.
- **NEW** The **HMD** plug-in's are available. Read the document [\3rdParty\LightWav\Plugins\hmd\docs\readme.htm](#) for more details, and read [\3rdParty\LightWav\Plugins\hmd\docs\history.htm](#) for its history.

Metrowerks Files

Available only on the Programmer Tools CD

Directory: \3rdParty\Metrower

Within this directory are a number of subdirectories that contain PlayStation libraries and executables associated with the Metroworks CodeWarrior for PlayStation. The directories are as follows:

Lib. This archive contains CodeWarrior formatted files from Library 3.5 to Library 4.1. In directory is a subdirectory called "patches", which contains the library and header files for revisions to that library. For more information, refer to [\3rdParty\Metrower\Lib\readme.txt](#). •

DECI. Contains installation information in its subdirectories for patching the DTL-H2000 CodeWarrior and the firmware for the DTL-H2500. For installation instructions on the DTL-H2500 firmware upgrade, refer to [3rdParty/Metrower/deci/flash25/readme.txt](#).

Mime Tools

Available only on the Graphic Artist Tools CD

Directory: \psxgraph\src\preview

MIME is an animation technique unique to the PlayStation, and can be configured to be a form of polygonal morphing. For an in depth discussion on generating MIME files, refer to the *3D Graphics Tools* manual in the Technical Reference CD.

In addition, there is source code for a mime-wave previewer, in [\psxgraph\src\preview\](#).

Movie Tools

Directory: \psxgraph\bin

These movie tools are a collection of programs used in handling streaming on the PlayStation. The movie tools contain tools to convert between other movie formats and the PlayStation streaming format, and tools to pack created streaming data.

MovConv handles the formats shown in the list below for input and output.

- **Input format:**
 - avi (Uncompressed)
 - tim series (name-ordered tim files)
 - rgb series (name-ordered rgb files)
 - yuv series (name-ordered yuv files)
 - wav
- **Output format:**
 - str (MDEC)
 - str (24Bit Direct)
 - bs series (name-orderd bs files)
 - avi (Uncompressed)
 - rgb series (name-orderd rgb files)

- xa

MovPack is a tool which interleaves streaming data or XA-ADPCM sound data created by MovConv, and assigns channel numbers to this data.

For more information, consult the "Overview Manual" on the Technical Reference CD-ROM, and the Windows based help files "movpack.hlp" and "movconv.hlp".

Note that these tools have been updated to

- MovConv 2.2E
- MovPack 1.6E.
- MC32.exe 3.0 (beta), found in the directory [\beta\MC32](#).

Obsolete Files

These files existed in previous versions of the CD-ROM and are no longer required. They have been deleted, or are scheduled to be deleted, in subsequent releases. They are marked obsolete, or deleted, within the tables such as the one in the document [doc\content.pdf](#).

Performance Analyzer (DTL-H2700)

Available only on the Programmer Tools CD

Directory: \PA

For the first time, Performance Analyzer files are being distributed on the Programmer Tools CD. These files include the "PA32.exe" program, flash utilities for the DTL-H2700, and instructions on installing the DTL-H2700. For more information, read [\PA\readme.txt](#). After using these flash utilities, you can use the SDevTC tools in order to compile and debug your program.

SCE Tools

Available only on the Programmer Tools CD

Directory: \psx\bin

These are MS-DOS tools provided by SCE (Japan). For more information, refer to the Technical Reference CD.

SCE Tools: DTL-H2000

Available only on the Programmer Tools CD

Directory: \psx\bin\DTLH2000

These files were created by SCE (Japan) for running programs on the DTL-H2000 ISA card. For information on using them, refer to the directory [\psx\bin\DTLH2000](#).

SCE Tools: DTL-H2500

Available only on the Programmer Tools CD

Directory: `\psx\bin\DTLH2500`

These files were created by SCE (Japan) for running programs on the DTL-H2500 PCI card. For information on using them, refer to the document [\psx\bin\DTLH2500](#). They are incompatible with the software driver *h25bios.com* in the SDevTC development environment, but are needed for diagnostic purposes and run with the *h25drv.exe* driver.

SDevTC Tools

Available only on the Programmer Tools CD

Directory: `\pssn\bin`

These files were created for the SDevTC development environment, and can work with the DTL-H2000 ISA card, the DTL-H2500 PCI card, and the DTL-H2700 ISA card (the Performance Analyzer). Such files include the debugger (*dbugpsx*), utilities to dump the contents of various files (*dumpcpe.exe*, *dumpexe.exe*, *dumpobj.exe*, and *dumpsym.exe*), and a "printf" message handler (*mess1.com*).

Some brief release notes for these utilities can be found in [\pssn\version.txt](#).

For more information on using the tools, refer to the document "Psy-Q Development Environment" in the Technical Reference CD. You can also refer to either of the directories [\psx\bin\DTLH2000](#) or [\psx\bin\DTLH2500](#), which have the installation documents that contain tutorials on how to install the boards and use them with SCE Tools and SDevTC Tools.

Source code for the utility *symmunge* and *libs.n.lib* can be found in the directory `\pssn\src`.

SDevTC Tools: DTL-H2500

Available only on the Programmer Tools CD

Directory: `\pssn\bin\DTLH2500`

These files were created for the SDevTC development environment for the DTL-H2500 PCI board in order to initialize its flash BIOS. For more information, refer to the directory [\pssn\bin\DTLH2500](#).

SDevTC Tools:CD

Available only on the Programmer Tools CD

Directory: `\pssn\bin`

These files enable you to switch between the CD Emulator or the development system's CD-ROM drive (the DTL-H2010 or the DTL-H2510). For example, with the *h25bios.com* (or the *dexbios.com*) driver running, *resetps* your system, then type the following:

- `run c:\ps\pssn\bin\selemu.cpe`, to run your program from the emulator.
- `run c:\ps\pssn\bin\selcd.cpe`, to run your program from the CD-ROM.

(These examples assume the files exist in `c:\ps\pssn\bin`.) Now your program can access the files on the CD. To boot from the CD, just type `run c:\ps\pssn\bin\cdexec.cpe`.

For more information, refer to the instruction manual that comes with the CD Emulator system (sold separately).

SGI Utilities

Directory: `\3rdParty\SGI`

SCE ported a number of 2D and 3D graphic utilities for SGI workstation operating under IRIX 5.3, including the movie converter, mimefilt, and mktod. They are in the directory `\3rdParty\SGI`. These utilities are stored in a compressed-tar format. Follow the instructions [\3rdParty\SGI\readme.txt](#) for instructions on how to install them. Some of the utilities are unsupported. **Note:** *The Japanese documents that are inside the compressed archives have been translated and incorporated into the "Data Converters" book in the Technical Reference CD. We apologize for the confusion this may cause.*

Sound Tools

Directory: `\psxgraph\bin`

These files are DOS versions of similar files existing for the Sound Artist Board development system on the Apple(R) Macintosh. They allow you to create MIDI music and create PlayStation sequencing files, and convert from AIFF format into PlayStation's VAG and VAB formats.

Check the [\beta](#) directory for new sound tools!

Check the [\psx\utility](#) directory for a new sound library!

For more information, refer to the Technical Reference CD.

Sprite Editor

Available only on the Graphic Artist Tools CD

Directory: `\psxgraph\bin`

The sprite editor is an image data tool dedicated to the PlayStation. It provides the capability to create data interactively with sprite and BG picture components on Windows. For more information, read the *Sprite Editor* manual on the Technical Reference CD.

Note: In order to use the Sprite Editor the user must set their windows display drivers to 256 colors (an 8-bit palette).

System Files

These files should be placed in your \windows\system directory. The Windows 95 "setup.exe" of the Programmer Tools CD will place them for you. They are so designated in the tables such as the one in [\doc\content.pdf](#)

Utilities

Available only on the Programmer Tools CD

Directory: \psx\utility

This directory contains various utilities that are useful for PlayStation development. Refer to the document [\psx\utility\readme.txt](#) for more information.

Windows Art Tools

Available only on the Graphic Artist Tools CD

Directory: \psxgraph\bin

The Graphic Artist CD provides you with the same art tools found on the Programmer Tools CD -- and more. Windows based GUI utilities allow you to work with your tools much more easily than with the MS-DOS based commands. They include the following:

- **Animatio.exe.** The Animation Tool of the 3D Graphic Artist Tools.
 - **DXF2RSDW.exe.** A tool that converts from DXF format files (which can be produced by a variety of modelers) into the PlayStation RSD format.
 - **meditor.exe.** A tool that, with the Graphic Artist Board, allows you to edit the surface attributes (materials) of 3D polygon meshes, such as colors, textures (patterns), and the type of shading.
 - **mimewave.exe** A tool used to create waveform data for MIMe animation. The tool is specific for the PlayStation system. The PlayStation development board is only needed for previewing, but not needed for editing.
 - **sprite.exe** An image data editing tool dedicated to the PlayStation unit.
 - **timutil.exe.** A tool that allows the placement of Playstation TIM files within the Playstation Frame Buffer, and supports conversion among the following formats: TIM, Windows BMP, Macintosh PICT, and general purpose RGB.
 - **timtool.exe** . A tool that allows the placement of Playstation TIM files within the Playstation Frame Buffer, and supports conversion of the following formats: Windows BMP, JPEG, TIFF, PCX, and PNG. **Contributed by Malachy Duffin and Mark Breugelmans, SCEE.** Refer to the document [\psxgraph\bin\timtool.txt](#) for release information. A Windows .HLP file is included which describes some of the other features of the tool.
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Windows-based GPU libraries

Available only on the Graphic Artist Tools CD

Directory \psxgraph\wingpu

In the directory \psxgraph\wingpu are the statically linked libraries and a DLL that enable you to write your own Windows applications that can communicate with the Graphic Artist Board, making it possible to write your own Material Editor! The contents of the sub-directories are as follows:

- Wingpu16. Contains the 16-bit statically linked library and 16-bit DLL. For more information, read [\psxgraph\develop\wingpu16\readme.txt](#).
- Wingpu32. Contains the 32-bit statically linked library. For more information, read [\psxgraph\develop\wingpu32\readme.txt](#). **Note:** No 32-bit DLL is available!



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