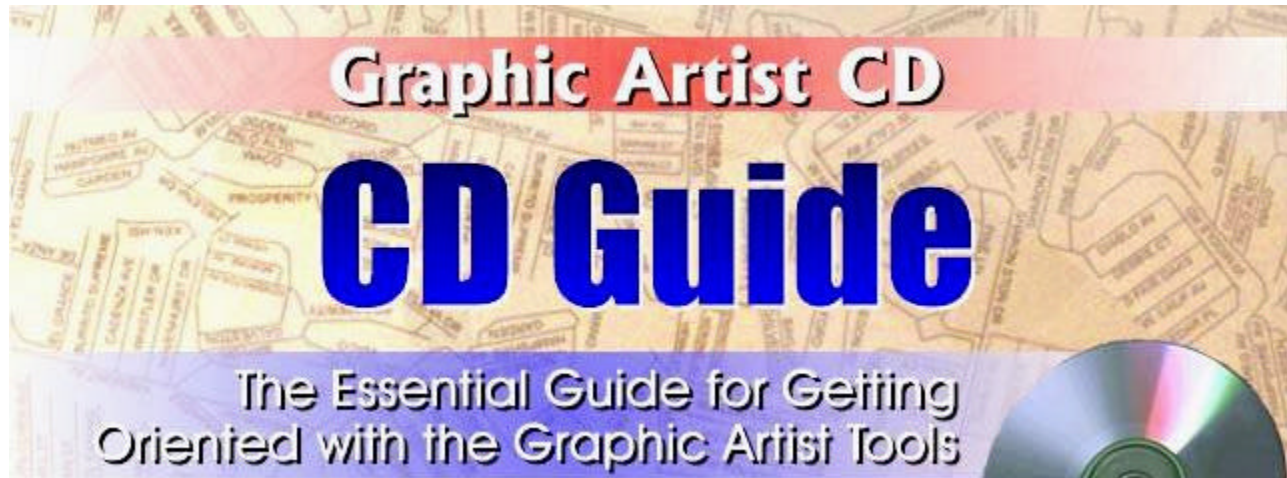

[[Welcome](#) | [What's New?](#) | [Installation](#) | [Technical Support](#)]
[[Overview of Tools on CD](#) | [Index of Tools On CD](#) | [Samples](#)]



What's On This CD?

Welcome to the Graphic Artist Tools CDROM 2.1 and to the world of PlayStation game development. With this version of the CD , you'll find a wealth of files that include software tools, 3rd party plug-ins, tutorials, and sample code for creating award winning -- and lucrative -- games. This HTML page is designed to be run from the CD, so please make sure the Graphic Artist CDROM is in the drive.

Warning: *The Graphic Artist CD is only meant to be used to help you install the software, but it is **not** the primary source for documentation. Use the Technical Reference CD for all of your documentation needs. The small amount of documentation that exists on the Graphic Artist CD is duplicated and is searchable on the Technical Reference CD.*

Within this CD you'll find the following:

- **Software for PlayStation game development.** It's all here -- graphics tools and file formatting converters, and many Windows based programs that are not included on the Programmer Tools CD, as well as tutorials, sprite software, and animation software. For an index to all of the software on this CD, read [\doc\content.pdf](#). To read more about the types of software on this CD (and where to find them), read the document [\doc\cat.pdf](#).



- **3rd Party Software** If you are working with 3rd Party software, you'll find information and relevant files for

- [PhotoShop](#) from Adobe ,
- [Power Animator](#) from Alias-Wavefront ,
- [3D Studio](#) from Kinetix,
- [LightWave](#) from Newtek, and

- [Silicon Graphics.](#)
-

Warning: Read this document from the CD: This document is designed to be read directly from the Programmer Tools CD, since some of the hyperlinks are hardcoded with directory paths that may differ from your computer's environment. So please point your browser to this document on the CD, not to a copy on your hard-drive. You can also read PDF versions of this file on this CD and on the *Technical Reference CD*.



Warning: Please Install Adobe Acrobat Some of the hyper-text links in our HTML documents point to Adobe Acrobat ".pdf" files. Therefore, you should have an Adobe Acrobat reader available on your system. If not, please follow the instructions [\doc\hadobe.pdf](#). For other information read the document [\acrobat\16bit\readme.txt](#) or [\acrobat\32bit\readme.txt](#).

Warning: These HTML documents are best viewed with **HTML 3.0** compatible viewers (or later versions) that can process tables. You can download the latest and greatest browsers from [Netscape](#) (look for the *Netscape Navigator*) and [Microsoft](#) (look for the *Internet Explorer*). (Free browsers are available all over the 'Net, but for legal reasons, we cannot bundle them with this CD.)

Internet Explorer 3.0 and Hyperlink problems with CD

Internet Explorer 3.02 suffers from a bug that prevents it from being able to parse some of the hyperlinks in this document correctly. Internet Explorer 4.0 has fixed this bug, so you may want to download it from <http://www.microsoft.com>.

Internet Explorer and PDF file problems

Some versions of Microsoft's Internet Explorer (prior to version 3.02) may have difficulty in showing the ".pdf" files. To see the PDF's, make sure you install Adobe Acrobat and do the following with Adobe Acrobat:

1. Choose File > Open, then click Browse.
2. Choose All Files from the Files Of Type pop-up menu.
3. Choose the Programmer Tools CD's drive letter, then select the document that is indicated by the hyperlinked name.
4. Click Open. Now you should be able to read the PDF file.

If you still have problems, problems could include a damaged PDF viewer or a full browser cache. In any event, read the document [\acrobat\16bit\readme.txt](#) or [\acrobat\32bit\readme.txt](#) or just contact [Technical Support](#).

Netscape Navigator and PDF file problems.

If you click on a PDF file link, and Adobe Acrobat doesn't launch, you may need to re-configure your system to use Acrobat. The following instructions are for Netscape Navigator 3.0, but they may apply to later versions of Navigator. First check to see what Plug-Ins are already available:

1. Choose "Help > About Plug-Ins".
2. Search for Adobe Acrobat. If it doesn't exist, you'll need to install it using the steps given below. If it does exist, make sure the file listed as the "File Name" itself exists.

3. If it doesn't exist, click on the menu item "Options > General Preferences".
4. Select the "Helpers" tab.
5. Select "Create New Type...".
6. For "Mime Type", type "Adobe/pdf". For "Sub Type", type "PDF". For "File Extensions", type "PDF".
7. For the "Action" field, choose the "Action" field and click on the "Browse" button. Click down the directory structure to the appropriate Acrobat Reader which you installed -- for example, a default installation may have placed the reader in "c:\Acroread\Acroread.exe".
8. Click on "OK".

Again, if you still have problems, problems could include a damaged PDF viewer or a full browser cache. In any event, read the document [\acrobat\16bit\readme.txt](#) or [\acrobat\32bit\readme.txt](#) or just contact [Technical Support](#).

How do I install the software?



If you have Windows 95, you can simply run "setup.exe" in the root directory of the CD. Just click on its icon within the Windows 95 explorer. Alternatively, you can install the files **manually** by following the installation instructions in [\doc\install.pdf](#).

Technical Support, Web Sites, and Addresses

If you're having problems, we highly recommend that you first search the Technical Reference CD -- it's the same tool we use at Technical Support when we attack a problem. Chances are that somebody has had your problem before, and it's been solved and documented on the Technical Reference CD. But don't bang your head against the wall! If (*and only if*) you are a licensed developer, you can reach technical support for your region at the following addresses and telephone numbers. For more information and for a set of bug report forms, refer to the Technical Reference CD.



SN Systems. *These chaps write the compilers for the standard PlayStation development kits, as well as develop the CD-Emulator and their own Windows debuggers for all of the development boards. All licensees of SCEA and SCEE are welcome to email bug reports or ask questions about the compilers. They are super friendly, and as many developer will attest, super helpful.*

E-mail: support@snsys.com.

Web Site: <http://www.snsys.com>.

Sony Computer Entertainment America Inc. *SCEA is available to licensees who have signed an agreement with Sony Computer Entertainment America Inc.*

E-mail: DevTech_Support@playstation.sony.com

Web Site: <http://www.scea.sony.com/dev>

Developer Support Hotline: 650-655-8181, Monday through Friday, 8am to 5pm, Pacific Standard Time.

Mail: Sony Computer Entertainment America Inc., 919 East Hillsdale Blvd., 2nd Floor, Foster City CA 94404

Sony Computer Entertainment Europe. *SCEE is available to those licensees who have signed an agreement with Sony Computer Entertainment Europe.*

E-mail: dev_support@interactive.sony.com

Web Site: <https://www-s.playstation.co.uk>

Developer Support Hotline: +44 (0) 171 390 1680

Mail: Waverley House 7-12 Noel Street London W1V 4HH

The Technical Reference CD. The companion CD, the **Technical Reference CD** included in your software kit, is an indispensable tool which you will use over and over again. It is **the** definitive resource for programmers. It contains every document, technical note, and manual written for this release of the PlayStation software and hardware, in pre-indexed Adobe Acrobat format, including dumps of the BBS's from SCE in Japan, SCEA in America, and SCEE in Europe, as well as this HTML document. With its powerful search engine, you can quickly locate the information you need. The Adobe Acrobat Reader is already included on the Technical Reference CD. Just click on the installation icon to set it up on your Macintosh or PC. For more information, read [\doc\hadobe.pdf](#).



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.

[[Welcome](#) | [What's New?](#) | [Installation](#) | [Technical Support](#)]
[[Overview of Tools on CD](#) | [Index of Tools on CD](#) | [Samples](#)]



Installing and Using Adobe Acrobat

Why do I need Adobe Acrobat for PlayStation programming?

Because all of the documentation is in the ".pdf" format on the **Technical Reference CDROM** and all of the documents have been pre-indexed to allow for rapid searching on keywords. The **Technical Reference CD-ROM** is your primary documentation source. The Programmer Tools CD-ROM and the Graphic Artist CD-ROM are primarily used *only* for installation of your software. *All documentation that exists on the Programmer Tools CD-ROM and the Graphic Artist CD-ROM, including HTML documentation, is duplicated and is searchable on the Technical Reference CD-ROM.*

Where can I get a copy?

All Adobe acrobat files for both Windows 3.1 and Windows 95 are in the directory [\acrobat](#).

To install Acrobat, run the "setup.exe" program in the directory [\acrobat\16bit\install](#) (for Windows 3.1 users) or [\acrobat\32bit\install](#) (for Windows 95 users).

Alternatively, you can hunt around on the Web for the latest version at <http://www.adobe.com>.

How do I use the Adobe Acrobat reader to perform searches in multiple documents?

1. Make sure Adobe Acrobat is installed on your system.
2. Read the document [\acrobat\16bit\help\search.pdf](#)

Now you can use these two buttons:



Step 1. Click here to enter the text you're looking for.

Step 2. Click here to see the list of search results..



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.

Windows 95 Installation

Double-click on the "setup95.exe" program in the root directory of the CD-ROM. Then follow the on-screen instructions to install the tools you need.

Windows 3.1 Installation

Using the File Manager, copy the contents of the \psxgraph directory to your hard-drive, preferably in something like c:\ps\psxgraph. Alternatively, you can open an MS-DOS prompt and type the following command:

```
xcopy /s d:\psxgraph c:\ps\psxgraph.
```

Some of the Windows-based programs can only be executed by clicking on their icons. Windows 3.1 does not automatically associate them with their icons; you must do this manually. Refer to the table and instructions below to associate the programs with their icons.

Application	Description Field	Suggested Command Line Field
Aboard.exe	Aboard Utility	c:\ps\psxgraph\bin\aboard.exe
Animatio.exe	Animation Tool	c:\ps\psxgraph\bin\animatio.exe
Dxf2rsdw.exe	DXF2RSDW	c:\ps\psxgraph\bin\dxf2rsdw.exe
meditor.exe	Materials Editor	c:\ps\psxgraph\bin\meditor.exe
mimewave.exe	MIMewave Editor	c:\ps\psxgraph\bin\mimewave.exe
sprite.exe	Sprite Editor	c:\ps\psxgraph\bin\sprite.exe
timutil.exe	TIM Utility	c:\ps\psxgraph\bin\timutil.exe
movconv.exe	Movie Converter	c:\ps\psxgraph\bin\movconv.exe
movpack.exe	Movie Pack	c:\ps\psxgraph\bin\movpack.exe

For each **Application** in the table above, do the following:

1. Select the name of the **Application** you want to install, such as "aboard.exe".
2. In the Windows 3.1 Program Manager, select the menu item "**File:New**" button.
3. Select **Program Item**; press **OK**
4. A Program Item Properties dialog will pop up. Fill in the "Description field" with the contents of the **Description Field** above, such as "Aboard Utility".
5. Use the Browse, to identify the name of the executable to be placed in the "Command Line" field, such as "c:\ps\psxgraph\bin\aboard.exe" in the table above.
6. Click Ok.

For more information on associating programs with icons, consult a good Windows manual. And if you actually are programming under Windows 3.1, please send us email at DevTech_Support@interactive.sony.com. We need to know if there are any Windows 3.1 developers out there!



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.

[[Welcome](#) | [What's New?](#) | [Installation](#) | [Technical Support](#)]
 [[Overview of Tools on CD](#) | [Index of Tools on CD](#) | [Samples](#)]



There haven't been many changes to the Graphic Artist Tools since the previous CD Release, other than the following:

- **NEW** [Adobe Photoshop 4.0](#) plug-ins are now available.
- **NEW** A beta version of plug-in for [Alias-Wavefront](#) version 8.0 is now available.
- **NEW** Check the [\beta\readme.txt](#) for new tools now in beta production, including new sound tools.
- Read the Overview and the Index. Look for the "**NEW**" label in the following :
 - Read [\doc\cat.pdf](#) for an overview of all of the files on the CD (this was formerly known as the "CATagories" document).
 - Read [\doc\content.pdf](#) for an index of all the tools sorted by name.

In addition, tools that were updated (relative to the previous CD release) are marked by the "**UPDATED**" label. Obsolete tools are marked by the "**DELETED**" label.



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.

[[Welcome](#) | [What's New?](#) | [Installation](#) | [Technical Support](#)]
[[Overview of Tools on CD](#) | [Index of Tools on CD](#) | [Samples](#)]



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. **NEW**

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](#).

NEW 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: \beta

This directory contains a number of software development tools (and sometimes library files) that are considered to be in beta. Read [\beta\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 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 is 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.

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 Metrowerks CodeWarrior for PlayStation. The directories are as follows:

- **NEW 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 (*debugpsx*), 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

UPDATED 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.

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

NEW 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.

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!



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.

[[Welcome](#) | [What's New?](#) | [Installation](#) | [Technical Support](#)]
[[Overview of Tools on CD](#) | [Index of Tools on CD](#) | [Samples](#)]

Samples

Sample data that is used in the Tutorial section of the "3D Graphics Tools" manual (in the Technical Reference CD) can be found in the directory [\psxgraph\tutorial](#).



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.

[[Welcome](#) | [What's New?](#) | [Installation](#) | [Technical Support](#)]
 [[Overview of Tools on CD](#) | [Index of Tools on CD](#) | [Samples](#)]



This CD contains a wealth of tools for the PlayStation graphic artist:

- 16-bit and 32-bit DLLs and statically linked [libraries](#) for communicating with the Graphic Artist Board.
- Tools for [MIME animation](#).
- All source for the tutorial in the 3D Graphics Tools manual, in the directory \psxgraph\tutorial.
- A wide variety of MS-DOS and Windows utilities, listed in the table below.

In addition, this CD contains software and instructions for the following 3rd party hardware and software:

- [Adobe PhotoShop](#)
- [Alias-Wavefront](#)
- [3D Studio](#)
- [LightWave 4.0](#)
- [SGI](#).

Full information and instructions on the running the tools is available in the *Technical Reference CDROM*. The listing below is an alphabetized list of all of the tools. You may need to refer to this table to get version numbers.

File name	Version	Description	Family Type	Location
aboard.exe	1.00e	Sets I/O address to access Graphic Artist Board DTL-H201A	ArtistBoard	\psxgraph\bin
aiff2vag.exe	UPDATED 3.1	AIFF to VAG sound format conversion utility	Sound Tools	\psxgraph\bin
Alias_82.tgz	NEW Beta	Alias-Wavefront 8.2 plug-in	Alias-Wavefront Plug-In	\3rdParty\Alias\Be
aliaspsx.8.0.tar.gz	8	Alias-Wavefront converter from PlayStation formats (TMD, MIME, and others).	Alias-Wavefront Plug-In	\3rdParty\Alias\Al

animatio.exe	1.1.5	Animation tool library DLL	Windows Art Tool	\psxgraph\bin
between.dll	1.0.3	Animation tool library DLL	Windows Art Tool	\psxgraph\bin
bmp2tim.exe	2.2	Converts Windows image data (BMP) format to PlayStation TIM format.	2D Art Tool	\psxgraph\bin
dx2rsd.exe	2.81	Converts DXF file to PlayStation 3D Model file format (RSD).	3D Art Tool	\psxgraph\bin
dx2rsdw.exe	1.10e	Windows application to convert DXF format file to PlayStation RSD format.	Windows Art Tool	\psxgraph\bin
dx2rsdw.hlp	-	Windows Help file for dx2rsd.	Windows Art Tool	\psxgraph\bin
gauge.vbx	-	Visual Basic file. (Movie Converter)	System Files	\psxgraph\system
hmd.def	NEW 1.10	C language preprocessor format definition file for HMD	3D Art Tool	\psxgraph\bin
labp	NEW 1.10	Labp is a simple assembler that is designed to create HMD data. In this version the bug in the version 1.00 has been fixed, and its function has been enhanced. For Win 32 MS-DOS prompts. Used with hmd.def.	HMD Tools	\psxgraph\bin
lib3d.dll	1.1.2	Animation tool library DLL	Windows Art Tool	\psxgraph\bin
libdata.dll	1.1.5	Animation tool library DLL	Windows Art Tool	\psxgraph\bin
Lightwave Plug-Ins		Light-Wave plug-ins for Alpha, SGI, and Intel platforms.	LightWave Plug-Ins	\3rdParty\LightWa
lw2rsd.exe	NEW Final Version	Light-Wave "lws" to enhanced RSD format converter. For more information, refer to /3rdParty/LightWav/Lws2rsd/readme.txt .	LightWave Plug-Ins	\psxgraph\bin
mc32.exe	NEW Beta 3.0	A 32-bit version of "MovConv.exe"		Movie Tools
mcnvsgi2tar.z	-	Compressed tar file of movie-converter utilities for IRIX 5.3. Unsupported	SGI Utility	\3rdParty\SGI\extr
meditor.exe	2.01ae	Materials Editor Tool.	ArtistBoard	\psxgraph\bin
meditor.hlp	-	Windows help for Material Editor.	ArtistBoard	\psxgraph\bin
meshconv.exe	UPDATED 1.1	For HMD use. Meshconv scans mesh structure in specified new-RSD file and creates extended-RSD file (.msh). In this version, the bug in the version 1.0 has been fixed, and IRIX version has been added. Warning: This application runs only under Win32.	HMD Tools	\psxgraph\bin
mimefilt.exe	1.51	Program to convert MIME difference files.	MIME Utility	\psxgraph\bin
mimesort.exe	2.1	TMD Vertex information sorting tool	3D Art Tool	\psxgraph\bin
mimesort.exe	2.1	TMD Vertex information sorting tool	MIME Utility	\psxgraph\bin

mimewave.cpe	Sep.	MimeWave previewer program	MIME Utility	\psxgraph\bin
mimewave.exe	1.0e	MIME Wave Form Editor	MIME Utility	\psxgraph\bin
mimewave.hlp	Sept	Windows help for Mime wave form editor	MIME Utility	\psxgraph\bin
mkmime.exe	NEW 1.10	Mkmine is a Win32 MS-DOS prompt command to create HMD data that contains MIME. In this version the bug in the version 1.00 has been fixed.	MIME Utility	\psxgraph\bin
mktod.exe	1.4	Reads project files and creates layout files.	3D Studio Plug-In	\psxgraph\bin
mkvab.exe	2	Utility to build sound source bank	Sound Tools	\psxgraph\bin
movconv.exe	UPDATED 2.2e	Compress movie data into PlayStation movie data format. Compress sound data into CD-ROM XA ADPCM format. Convert movie data among some movie formats.	Movie Tools	\psxgraph\bin
movconv.hlp	DELETED	Windows help file for Movie Converter. This has been deleted.	Movie Tools	\psxgraph\bin
movconv.scr	UPDATED	Sample script for Movie Converter	Movie Tools	\psxgraph\bin
movpack.exe	UPDATED 1.6e	Interleave multiple xa data. Interleave multiple str data.	Movie Tools	\psxgraph\bin
movpack.hlp	DELETED	Windows help file for Movie Pack	Movie Tools	\psxgraph\bin
movpack.scr	UPDATED	Sample script for Movie Packer	Movie Tools	\psxgraph\bin
patch.bat	-	Patch batch file	3D Studio Plug-In	\psxgraph\bin
patchw.exe	-	DTL-H2000 patch program (non Japanese version)	3D Studio Plug-In	\psxgraph\bin
pci_snd.exe	NEW 1.0 Beta	PCI_SND is 'Windows' PC program which previews VAB sound files on the PCI Sound Artist under Windows 95.	beta	\beta\pci_snd
pict2tim.exe	3.1	Converts MAC image data (PICT) to a PlayStation image data file (TIM).	2D Art Tool	\psxgraph\bin
psbload.exe	-	Communication program between DTL-H2000 and PC	3D Studio Plug-In	\3rdParty\3DS
psboard.ini	-	DTL-H2000 port address configuration file.	3D Studio Plug-In	\3rdParty\3DS
psrun.exe	-	Communication program between DTL-H2000 and PC (run program)	3D Studio Plug-In	\3rdParty\3DS
rgb2tim.exe	2.1	Converts RGB image data to a corresponding PlayStation image data file (TIM).	2D Art Tool	\psxgraph\bin
rsd2dxf.exe	1	Converts RSD file to DXF format	3D Art Tool	\psxgraph\bin
rsd2hmd.exe	UPDATED 1.3	Converts RSD format files to HMD format. Rsd2hmd converts RSD format into HMD format. In this version, the bug in the version 1.1 has been fixed, Warning: This application runs only	HMD Tools	\psxgraph\bin

		under a Win32 MS-DOS prompt.		
rsdcat.exe	UPDATED 1.06	Links multiple RSD files into one	3D Art Tool	\psxgraph\bin
rsdform.exe	1.81	Changes and moves 3D modeling data	3D Art Tool	\psxgraph\bin
rsdlink.exe	3.72	Converts 3D model data (RSD) to 3D model format (TMD)	3D Art Tool	\psxgraph\bin
rsdtool	NEW Beta 0.8	RSD manipulation and texture mapping tool from SCEE.	3D Art Tool	\beta\RSDTool
rsdup.exe	NEW 1.0	Rsdup converts the former RSD format into the new RSD format that corresponds to the HMD format.	HMD Tools	\psxgraph\bin
seq2sep.exe	-	Conversion utility for SEQ to SEP	Sound Tools	\psxgraph\bin
sgitar.z	-	Port of many of the graphics utilities in \psxgraph\bin to work on SGI IRIX OS.	SGI Utility	\3rdParty\SGI
Sky32v3c.dll	UPDATED	32-bit DLL for the TIMTOOL (1.x)	2D Art Tool	\psxgraph\bin
sky32v3c.dll	UPDATED	32-bit DLL for the TimTool (1.x)	Windows Art Tool	\psxgraph\bin
smf2seq.exe	2	Conversion utility for SMF to SEQ	Sound Tools	\psxgraph\bin
sndtool.cpe	NEW 1.0 Beta	SNDTOOL is a program which previews VAB sound files on the PlayStation Development Kit. It supports both mouse and PAD controllers.	Beta Software	\beta\sndtool
sprite.exe	1.7e	Windows Sprite Editor tool	Windows Art Tool	\psxgraph\bin
threed.vbx	-	Visual Basic file. (meditor & Movie Converter)	System Files	\psxgraph\system
tim2bmp.exe	1.1	Converter from TIM to BMP	2D Art Tool	\psxgraph\bin
timhelp.hlp	UPDATED	Window help file for TimTool.	2D Art Tool	\psxgraph\bin
timhelp.hlp	UPDATED	Windows help file for TimTool.	Windows Art Tool	\psxgraph\bin
timpos.exe	1.1	Changes the VRAM coordinates of a TIM file's image data and CLUT.	2D Art Tool	\psxgraph\bin
timposw.exe	1.1	Interactive Windows program for changing the VRAM address of images and color tables (similar to the "TIM layout" feature of the "timutil.exe" application).	2D Art Tool	\psxgraph\bin
timposw.hlp	-	Windows Help file.	2D Art Tool	\psxgraph\bin
timtool.exe	UPDATED 2.0a	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.	Windows Art Tool	\psxgraph\bin
		A tool that allows the placement of		

timtool.exe	UPDATED 2.0a	PlayStation TIM files within the PlayStation Frame Buffer, and supports conversion of the following formats: Windows BMP, JPEG, TIFF, PCX, and PNG.	2D Art Tool	\psxgraph\bin
timutil.exe	1.36	Windows utility that converts among TIM, Windows BMP, Macintosh PICT, and general-purpose RGB. Allows placement of TIM files on PlayStation VRAM. Exports images through the Graphic Artist Board to a television screen.	2D Art Tool	\psxgraph\bin
timview.exe	1.2	TIM viewer. Now only released on the Graphic Artist Tools CDROM.	2D Art Tool	\psxgraph\bin
tmd2pmd.exe	1.14	Converts TMD file to a PMD format	2D Art Tool	\psxgraph\bin
tmd2pmd.exe	1.14	Converts TMD file to a PMD format	2D Art Tool	\psxgraph\bin
tmdinfo.exe	1.25	Displays contents of the 3D model data TMD file	3D Art Tool	\psxgraph\bin
tmdsort.exe	1.25	Sorts 3D model data file (TMD) by packet type.	3D Art Tool	\psxgraph\bin
tod_i.kxp	4.0f	Plug-in program for the Autodesk 3D Studio (3DS).you can save 3DS object or animation data in PlayStation format (RST,TOD) while using 3DS. You can also preview animation while using 3DS by sending animation data to PlayStation board (DTL-H2000).	3D Studio Plug-In	\3rdParty\3DS
todexp.dll	1.0.2	DLL for TOD export	Windows Art Tool	\psxgraph\bin
todv.bat	-	TOD previewer batch file (no patch)	3D Studio Plug-In	\psxgraph\bin
todview5.exe	-	TOD previewer.	3D Studio Plug-In	\3rdParty\3DS
todview5.exe	-	TOD previewer.	3D Studio Plug-In	\psxgraph\bin
todvj.bat	-	TOD previewer batch file (Japanese version)	3D Studio Plug-In	\3rdParty\3DS
todvj.bat	-	TOD previewer batch file (Japanese version)	3D Studio Plug-In	\psxgraph\bin
todvw.bat	-	TOD previewer batch file (non Japanese version)	3D Studio Plug-In	\3rdParty\3DS
todvw.bat	-	TOD previewer batch file (non Japanese version)	3D Studio Plug-In	\psxgraph\bin
vabsplit.exe	2	Utility to split VAB into an attribute and wave data section.	Sound Tools	\psxgraph\bin
vabtool.exe	NEW 1.0 beta	This is a windows program to construct/edit VAB files	Beta Software	\beta\vabtool
		This is a windows program that allows		

vag_Play	NEW 1.0 beta	you to preview programs in a VAB file on the PC using a standard 16bit PC sound card.	Beta Software	\beta\vabtool
ver11tar.Z	-	Contains a library for accessing the MDEC encoding routines. A sample file is included. Unsupported.	SGI Utility	\3rdParty\SGI\extr
vh2spu.exe	NEW 1.0 beta	Transforms vabheader (.VH) file into 2 files: an ".SPU" file (contains keyon data for libspu) and an ".OFF" file(contains waveform data start address offsets)	Beta Software	\beta\vh2spu
wav2vag.exe	NEW 1.0 beta	This is a simple program which strips off the header from Windows format '.wav' files and then shells the Aiff2Vag program with the correct options. It requires 16bit mono It runs as a DOS program with command line parameters..	Beta Software	\beta\vabtool
wavlink.exe	June	Converts waveform ".wvf" files output by MIMWave into corresponding binary data for execution on the PlayStation.	MIME Utility	\psxgraph\bin
xhmd	NEW 1.10	Xhmd is a HMD dis-assembler. In this version, the bug in the version 1.00 has been fixed, and the output format. specifications have been changed.	HMD Tools	\psxgraph\bin



We appreciate your comments and suggestions about our HTML documentation project. Contact us at DevTech_Support@interactive.sony.com

Copyright © 1997 Sony Computer Entertainment America Inc. All Rights Reserved.

PlayStation and PlayStation logos are trademarks of Sony Computer Entertainment Inc. All other trademarks are property of their respective owners and/or their licensors.