Creating and Playing Movie Data

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About This Manual

This is the Runtime Library Release 2.4 version of the *Creating and Playing Movie Data* manual.

Changes Since Last Release

New

Related Documentation

The *Programming Tips* manual describes a variety of programming techniques for the PS2.

Note: the Developer Support Web site posts current developments regarding the Libraries and also provides notice of future documentation releases and upgrades.

Typographic Conventions

Certain Typographic Conventions are used throughout this manual to clarify the meaning of the text:

Convention	Meaning
`courier`	Indicates literal program code.
italic	Indicates names of arguments and structure members (in structure/function definitions only).
medium bold	Indicates data types and structure/function names (in structure/function definitions only).
blue	Indicates a hyperlink.

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Stream Data

Video Streams

Two video-data formats are supported for video streaming: MPEG2 and IPU. MPEG2 offers better video quality, but requires more processor overhead for decoding. IPU provides image quality equivalent to MPEG2 I-Picture, while requiring less overhead for decoding. STR data cannot be played on the PlayStation.

Audio Streams

Two audio-data formats are supported for audio streaming: straight PCM (48 KHz, 16 bit, 2 channel) and ADPCM (ADPCM stream). ADPCM that is compatible with CD-ROM XA is not supported.

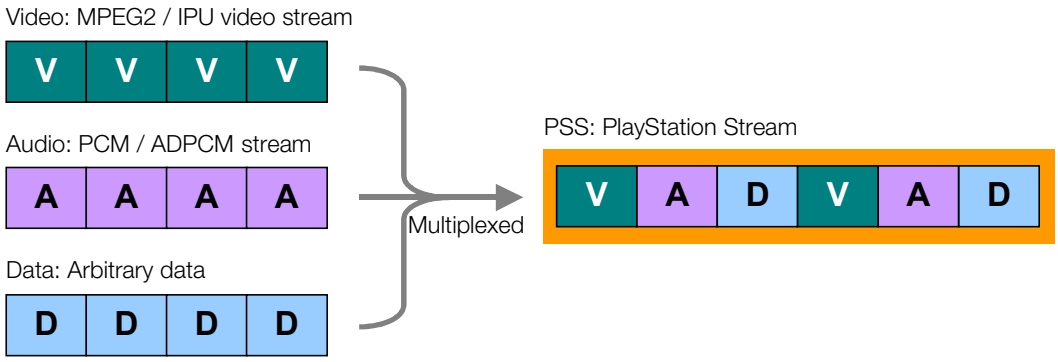
Arbitrary Data Streams

In addition to video and audio streams, arbitrary data content can be handled as a stream.

Multiplexed Streams

The PSS format uses the MPEG2 system layer to group (multiplex) video, audio, and arbitrary data, so as to ensure synchronization.

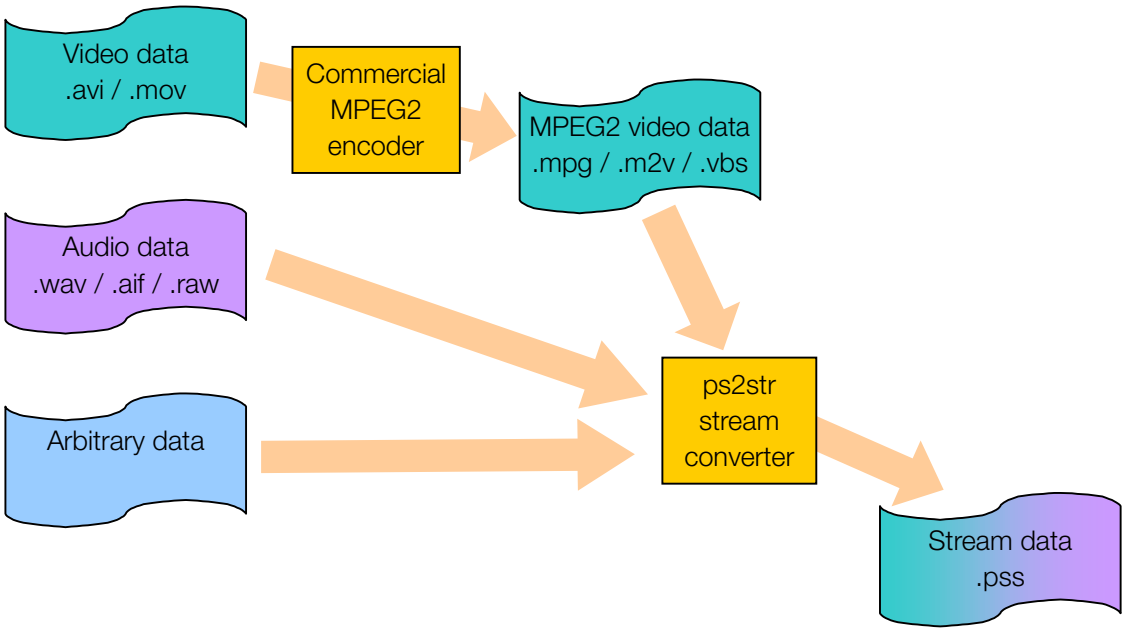
Figure 1: Multiplexed Streams



Creating Stream Data

To create PSS-format streaming data, first create the various video, audio, and data stream components. The video should be encoded as MPEG2 using a commercially-available MPEG2 encoder. The components can then be multiplexed using the ps2str stream converter.

Figure 2: Creating Stream Data



MPEG2 Encoder

You can use any suitable commercial MPEG2 encoder. If you plan on ultimately creating IPU video, the encoder needs to be able to encode I-Pictures. Otherwise, there are no particular restrictions or requirements on the encoder.

Stream Converter (ps2str)

Both Linux (ps2str) and Windows (ps2strw) versions of the stream converter are available through the developer support website. While they differ somewhat in their operation, they are functionally equivalent. The main functions of this tool are illustrated below.

Figure 3: Multiplexing and demultiplexing video, audio, and data

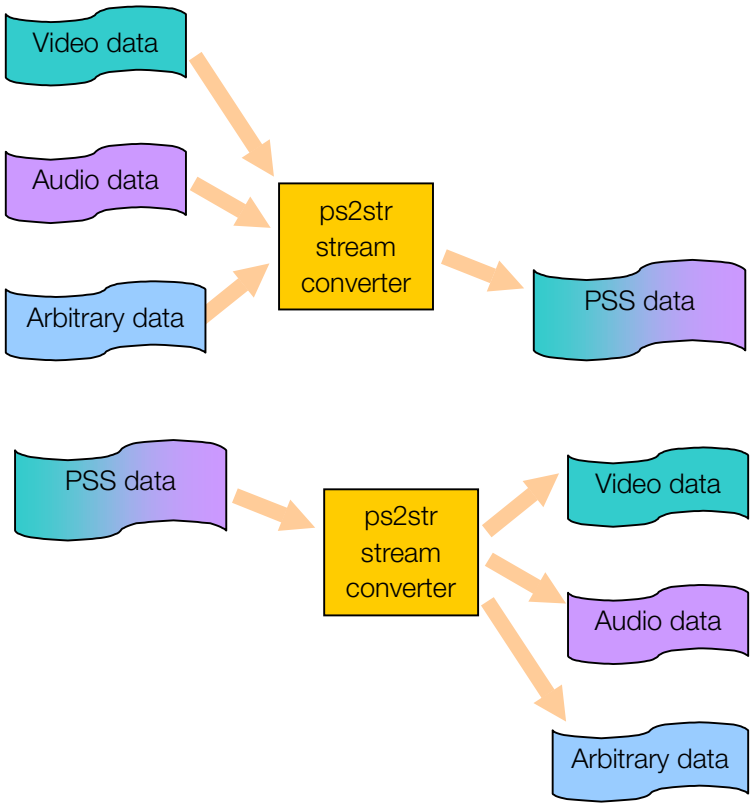


Figure 4: ADPCM compression of audio data

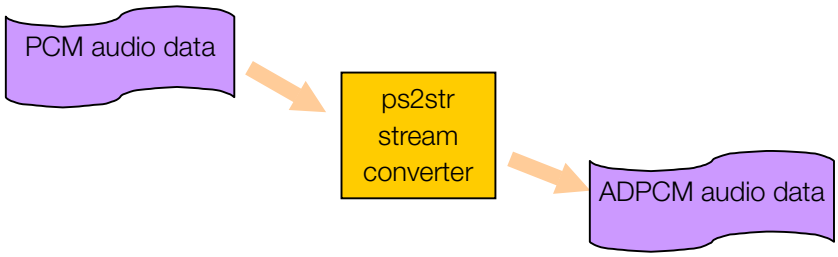
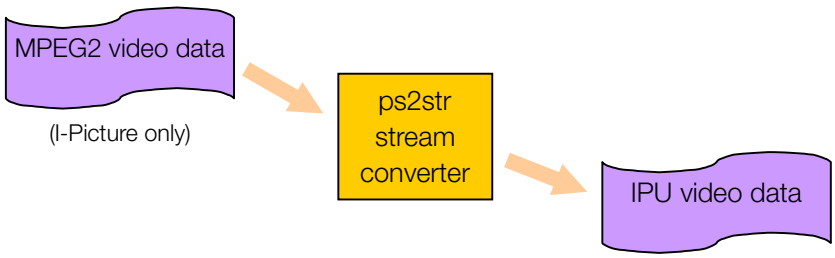


Figure 5: Conversion from MPEG2 to IPU video



Streaming-related Libraries

The following lists the streaming-related libraries that are available. For more details, refer to the individual documentation for each library.

IPU library (libipu)

libipu is used for controlling the IPU. Functions that support the IPU can be called as-is from an application. These functions can also be used to decode IPU video.

MPEG2 library (libmpeg)

libmpeg is used for decoding MPEG2 video using the IPU, and can also handle PSS demultiplexing. In other words, it can divide a stream into video, audio, and arbitrary data, then play back the components synchronously. The library provides a flexible architecture that allows playback of each component stream to be handled by a separate callback function, while buffering operations are left to the application.

CSL lineout (liblout)

liblout is used for the playback of PCM streams.

CD/DVD-ROM library (libcdvd)

libcdvd provides functions that support streaming. For example, the library can be used to set up a ring buffer in IOP memory. It also provides a function group that supports background reading of data.