:mod:`sunau` --- Read and write Sun AU files

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst`, **line 1**); *backlink*

Unknown interpreted text role "mod".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst`, **line 4**)

Unknown directive type "module".

```
.. module:: sunau
   :synopsis: Provide an interface to the Sun AU sound format.
   :deprecated:
```

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Unknown directive type "sectionauthor".

```
.. sectionauthor:: Moshe Zadka <moshez@zadka.site.co.il>
```

Source code: :source:`Lib/sunau.py`

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Unknown interpreted text role "source".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst`, **line 12**)

Unknown directive type "deprecated".

```
.. deprecated:: 3.11
   The :mod:`sunau` module is deprecated (see :pep:`594` for details).
```

The :mod:`sunau` module provides a convenient interface to the Sun AU sound format. Note that this module is interface-compatible with the modules :mod:`aifc` and :mod:`wave`.

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Unknown interpreted text role "mod".

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Unknown interpreted text role "mod".

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Unknown interpreted text role "mod".

An audio file consists of a header followed by the data. The fields of the header are:

Field	Contents
magic word	The four bytes `.snd`.
header size	Size of the header, including info, in bytes.

Field	Contents
data size	Physical size of the data, in bytes.
encoding	Indicates how the audio samples are encoded.
sample rate	The sampling rate.
# of channels	The number of channels in the samples.
info	ASCII string giving a description of the audio file (padded with null bytes).

Apart from the info field, all header fields are 4 bytes in size. They are all 32-bit unsigned integers encoded in big-endian byte order.

The :mod:`sunau` module defines the following functions:

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Unknown interpreted text role "mod".

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Unknown directive type "function".

```
.. function:: open(file, mode)

   If *file* is a string, open the file by that name, otherwise treat it as a
   seekable file-like object. *mode* can be any of

   ``'r'``
      Read only mode.

   ``'w'``
      Write only mode.

   Note that it does not allow read/write files.

   A *mode* of ``'r'`` returns an :class:`AU_read` object, while a *mode* of ``'w'``
   or ``'wb'`` returns an :class:`AU_write` object.
```

The :mod:`sunau` module defines the following exception:

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Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst, **line 68)**

Unknown directive type "exception".

```
.. exception:: Error

   An error raised when something is impossible because of Sun AU specs or
   implementation deficiency.
```

The :mod:`sunau` module defines the following data items:

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Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst, **line 76)**

Unknown directive type "data".

```
.. data:: AUDIO_FILE_MAGIC
```

An integer every valid Sun AU file begins with, stored in big-endian form. This
is the string ``.snd`` interpreted as an integer.

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Unknown directive type "data".

```
.. data:: AUDIO_FILE_ENCODING_MULAW_8
          AUDIO_FILE_ENCODING_LINEAR_8
          AUDIO_FILE_ENCODING_LINEAR_16
          AUDIO_FILE_ENCODING_LINEAR_24
          AUDIO_FILE_ENCODING_LINEAR_32
          AUDIO_FILE_ENCODING_ALAW_8

   Values of the encoding field from the AU header which are supported by this
   module.
```

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Unknown directive type "data".

```
.. data:: AUDIO_FILE_ENCODING_FLOAT
          AUDIO_FILE_ENCODING_DOUBLE
          AUDIO_FILE_ENCODING_ADPCM_G721
          AUDIO_FILE_ENCODING_ADPCM_G722
          AUDIO_FILE_ENCODING_ADPCM_G723_3
          AUDIO_FILE_ENCODING_ADPCM_G723_5

   Additional known values of the encoding field from the AU header, but which are
   not supported by this module.
```

AU_read Objects

AU_read objects, as returned by :func:`.open` above, have the following methods:

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Unknown interpreted text role "func".

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Unknown directive type "method".

```
.. method:: AU_read.close()

   Close the stream, and make the instance unusable. (This is  called automatically
   on deletion.)
```

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Unknown directive type "method".

```
.. method:: AU_read.getnchannels()

   Returns number of audio channels (1 for mono, 2 for stereo).
```

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```
.. method:: AU_read.getsampwidth()

   Returns sample width in bytes.
```

```
.. method:: AU_read.getframerate()

   Returns sampling frequency.
```

```
.. method:: AU_read.getnframes()

   Returns number of audio frames.
```

```
.. method:: AU_read.getcomptype()

   Returns compression type. Supported compression types are ``'ULAW'``, ``'ALAW'``
   and ``'NONE'``.
```

```
.. method:: AU_read.getcompname()

   Human-readable version of :meth:`getcomptype`.  The supported types have the
   respective names ``'CCITT G.711 u-law'``, ``'CCITT G.711 A-law'`` and ``'not
   compressed'``.
```

```
.. method:: AU_read.getparams()

   Returns a :func:`~collections.namedtuple` ``(nchannels, sampwidth,
   framerate, nframes, comptype, compname)``, equivalent to output of the
   :meth:`get\*` methods.
```

```
.. method:: AU_read.readframes(n)

   Reads and returns at most *n* frames of audio, as a :class:`bytes` object.  The data
   will be returned in linear format.  If the original data is in u-LAW format, it
   will be converted.
```

```
.. method:: AU_read.rewind()

   Rewind the file pointer to the beginning of the audio stream.
```

The following two methods define a term "position" which is compatible between them, and is otherwise implementation dependent.

```
.. method:: AU_read.setpos(pos)

   Set the file pointer to the specified position.  Only values returned from
   :meth:`tell` should be used for *pos*.
```

```
.. method:: AU_read.tell()

   Return current file pointer position.  Note that the returned value has nothing
   to do with the actual position in the file.
```

The following two functions are defined for compatibility with the :mod:`aifc`, and don't do anything interesting.

```
.. method:: AU_read.getmarkers()

   Returns ``None``.
```

```
.. method:: AU_read.getmark(id)

   Raise an error.
```

AU_write Objects

AU_write objects, as returned by :func:`.open` above, have the following methods:

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Unknown interpreted text role "func".

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst`, **line 206**)

Unknown directive type "method".

```
.. method:: AU_write.setnchannels(n)

   Set the number of channels.
```

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Unknown directive type "method".

```
.. method:: AU_write.setsampwidth(n)

   Set the sample width (in bytes.)

   .. versionchanged:: 3.4
      Added support for 24-bit samples.
```

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Unknown directive type "method".

```
.. method:: AU_write.setframerate(n)

   Set the frame rate.
```

System Message: ERROR/3 (`D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]sunau.rst`, **line 224**)

Unknown directive type "method".

```
.. method:: AU_write.setnframes(n)

   Set the number of frames. This can be later changed, when and if more  frames
   are written.
```

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Unknown directive type "method".

```
.. method:: AU_write.setcomptype(type, name)

   Set the compression type and description. Only ``'NONE'`` and ``'ULAW'`` are
   supported on output.
```

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Unknown directive type "method".

```
.. method:: AU_write.setparams(tuple)
```

The *tuple* should be ``(nchannels, sampwidth, framerate, nframes, comptype,
compname)``, with values valid for the :meth:`set\*` methods. Set all
parameters.

Note that it is invalid to set any parameters after calling :meth:`writeframes` or :meth:`writeframesraw`.