

## :mod:`http.cookies` --- HTTP state management

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

Unknown directive type "module".

```
.. module:: http.cookies
   :synopsis: Support for HTTP state management (cookies).
```

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 7)

Unknown directive type "moduleauthor".

```
.. moduleauthor:: Timothy O'Malley <timo@alum.mit.edu>
```

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 8)

Unknown directive type "sectionauthor".

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

**Source code:** `:source:`Lib/http/cookies.py``

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 10); [backlink](#)

Unknown interpreted text role "source".

The `:mod:`http.cookies`` module defines classes for abstracting the concept of cookies, an HTTP state management mechanism. It supports both simple string-only cookies, and provides an abstraction for having any serializable data-type as cookie value.

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 14); [backlink](#)

Unknown interpreted text role "mod".

The module formerly strictly applied the parsing rules described in the [RFC 2109](#) and [RFC 2068](#) specifications. It has since been discovered that MSIE 3.0x doesn't follow the character rules outlined in those specs and also many current day browsers and servers have relaxed parsing rules when comes to Cookie handling. As a result, the parsing rules used are a bit less strict.

The character set, `:data:`string.ascii_letters``, `:data:`string.digits`` and `!#$%&'*+-.^_`|~:` denote the set of valid characters allowed by this module in Cookie name (as `:attr:`~Morsel.key``).

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 25); [backlink](#)

Unknown interpreted text role "data".

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 25); [backlink](#)

Unknown interpreted text role "data".

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-

main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 25); [backlink](#)

Unknown interpreted text role "attr".

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 29)

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.3
   Allowed ':' as a valid Cookie name character.
```

#### Note

On encountering an invalid cookie, `:exc:'CookieError'` is raised, so if your cookie data comes from a browser you should always prepare for invalid data and catch `:exc:'CookieError'` on parsing.

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 35); [backlink](#)

Unknown interpreted text role "exc".

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 35); [backlink](#)

Unknown interpreted text role "exc".

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 40)

Unknown directive type "exception".

```
.. exception:: CookieError

   Exception failing because of :rfc:`2109` invalidity: incorrect attributes,
   incorrect :mailheader:`Set-Cookie` header, etc.
```

This class is a dictionary-like object whose keys are strings and whose values are `:class:'Morsel'` instances. Note that upon setting a key to a value, the value is first converted to a `:class:'Morsel'` containing the key and the value.

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 48); [backlink](#)

Unknown interpreted text role "class".

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 48); [backlink](#)

Unknown interpreted text role "class".

If *input* is given, it is passed to the `:meth:'load'` method.

**System Message: ERROR/3** (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 52); [backlink](#)

Unknown interpreted text role "meth".

This class derives from `:class:'BaseCookie'` and overrides `:meth:'value_decode'` and `:meth:'value_encode'`. SimpleCookie supports strings as cookie values. When setting the value, SimpleCookie calls the builtin `:func:'str()'` to convert the value to a string. Values received from HTTP are kept as strings.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 57); [backlink](#)**

Unknown interpreted text role "class".

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 57); [backlink](#)**

Unknown interpreted text role "meth".

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 57); [backlink](#)**

Unknown interpreted text role "meth".

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 57); [backlink](#)**

Unknown interpreted text role "func".

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 62)**

Unknown directive type "seealso".

```
.. seealso::

Module :mod:`http.cookiejar`
    HTTP cookie handling for web *clients*. The :mod:`http.cookiejar` and
    :mod:`http.cookies` modules do not depend on each other.

:rfc:`2109` - HTTP State Management Mechanism
    This is the state management specification implemented by this module.
```

## Cookie Objects

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 78)**

Unknown directive type "method".

```
.. method:: BaseCookie.value_decode(val)

Return a tuple ``(real_value, coded_value)`` from a string representation.
``real_value`` can be any type. This method does no decoding in
:class:`BaseCookie` --- it exists so it can be overridden.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 85)**

Unknown directive type "method".

```
.. method:: BaseCookie.value_encode(val)

Return a tuple ``(real_value, coded_value)``. *val* can be any type, but
``coded_value`` will always be converted to a string.
This method does no encoding in :class:`BaseCookie` --- it exists so it can
be overridden.

In general, it should be the case that :meth:`value_encode` and
:meth:`value_decode` are inverses on the range of *value_decode*.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 96)**

Unknown directive type "method".

```
.. method:: BaseCookie.output(attrs=None, header='Set-Cookie:', sep='\\r\\n')

Return a string representation suitable to be sent as HTTP headers. *attrs* and
*header* are sent to each :class:`Morsel`'s :meth:`output` method. *sep* is used
to join the headers together, and is by default the combination ``\\r\\n``
(CRLF).
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 104)**

Unknown directive type "method".

```
.. method:: BaseCookie.js_output(attrs=None)

Return an embeddable JavaScript snippet, which, if run on a browser which
supports JavaScript, will act the same as if the HTTP headers was sent.

The meaning for *attrs* is the same as in :meth:`output`.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 112)**

Unknown directive type "method".

```
.. method:: BaseCookie.load(rawdata)

If *rawdata* is a string, parse it as an ``HTTP_COOKIE`` and add the values
found there as :class:`Morsel`'s. If it is a dictionary, it is equivalent to::

    for k, v in rawdata.items():
        cookie[k] = v
```

## Morsel Objects

Abstract a key/value pair, which has some [RFC 2109](#) attributes.

Morsels are dictionary-like objects, whose set of keys is constant --- the valid [RFC 2109](#) attributes, which are

- expires
- path
- comment
- domain
- max-age
- secure
- version
- httponly
- samesite

The attribute `attr:'httponly'` specifies that the cookie is only transferred in HTTP requests, and is not accessible through JavaScript. This is intended to mitigate some forms of cross-site scripting.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 144); [backlink](#)**

Unknown interpreted text role "attr".

The attribute `attr:'samesite'` specifies that the browser is not allowed to send the cookie along with cross-site requests. This helps to mitigate CSRF attacks. Valid values for this attribute are "Strict" and "Lax".

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 148); [backlink](#)**

Unknown interpreted text role "attr".

The keys are case-insensitive and their default value is ''.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 154)**

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.5
   :meth:`~Morsel.__eq__` now takes :attr:`~Morsel.key` and :attr:`~Morsel.value`
   into account.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 158)**

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.7
   Attributes :attr:`~Morsel.key`, :attr:`~Morsel.value` and
   :attr:`~Morsel.coded_value` are read-only. Use :meth:`~Morsel.set` for
   setting them.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 163)**

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.8
   Added support for the :attr:`~samesite` attribute.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 167)**

Unknown directive type "attribute".

```
.. attribute:: Morsel.value

   The value of the cookie.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 172)**

Unknown directive type "attribute".

```
.. attribute:: Morsel.coded_value

   The encoded value of the cookie --- this is what should be sent.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 177)**

Unknown directive type "attribute".

```
.. attribute:: Morsel.key

   The name of the cookie.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 182)**

Unknown directive type "method".

```
.. method:: Morsel.set(key, value, coded_value)

   Set the *key*, *value* and *coded_value* attributes.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 187)**

Unknown directive type "method".

```
.. method:: Morsel.isReservedKey(K)
```

Whether *\*K\** is a member of the set of keys of a :class:`Morsel`.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 192)**

Unknown directive type "method".

```
.. method:: Morsel.output(attrs=None, header='Set-Cookie:')
```

Return a string representation of the Morsel, suitable to be sent as an HTTP header. By default, all the attributes are included, unless *\*attrs\** is given, in which case it should be a list of attributes to use. *\*header\** is by default ``"Set-Cookie:"``.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 200)**

Unknown directive type "method".

```
.. method:: Morsel.js_output(attrs=None)
```

Return an embeddable JavaScript snippet, which, if run on a browser which supports JavaScript, will act the same as if the HTTP header was sent.

The meaning for *\*attrs\** is the same as in :meth:`output`.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 208)**

Unknown directive type "method".

```
.. method:: Morsel.OutputString(attrs=None)
```

Return a string representing the Morsel, without any surrounding HTTP or JavaScript.

The meaning for *\*attrs\** is the same as in :meth:`output`.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 216)**

Unknown directive type "method".

```
.. method:: Morsel.update(values)
```

Update the values in the Morsel dictionary with the values in the dictionary *\*values\**. Raise an error if any of the keys in the *\*values\** dict is not a valid :rfc:`2109` attribute.

```
.. versionchanged:: 3.5
   an error is raised for invalid keys.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 226)**

Unknown directive type "method".

```
.. method:: Morsel.copy(value)
```

```
Return a shallow copy of the Morsel object.
```

```
.. versionchanged:: 3.5
   return a Morsel object instead of a dict.
```

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 234)**

Unknown directive type "method".

```
.. method:: Morsel.setdefault(key, value=None)
```

```
Raise an error if key is not a valid :rfc:`2109` attribute, otherwise
behave the same as :meth:`dict.setdefault`.
```

## Example

The following example demonstrates how to use the `mod:'http.cookies'` module.

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 245); [backlink](#)**

Unknown interpreted text role "mod".

**System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)http.cookies.rst, line 247)**

Unknown directive type "doctest".

```
.. doctest::
   :options: +NORMALIZE_WHITESPACE

   >>> from http import cookies
   >>> C = cookies.SimpleCookie()
   >>> C["fig"] = "newton"
   >>> C["sugar"] = "wafer"
   >>> print(C) # generate HTTP headers
Set-Cookie: fig=newton
Set-Cookie: sugar=wafer
   >>> print(C.output()) # same thing
Set-Cookie: fig=newton
Set-Cookie: sugar=wafer
   >>> C = cookies.SimpleCookie()
   >>> C["rocky"] = "road"
   >>> C["rocky"]["path"] = "/cookie"
   >>> print(C.output(header="Cookie:"))
Cookie: rocky=road; Path=/cookie
   >>> print(C.output(attrs=[], header="Cookie:"))
Cookie: rocky=road
   >>> C = cookies.SimpleCookie()
   >>> C.load("chips=ahoy; vienna=finger") # load from a string (HTTP header)
   >>> print(C)
Set-Cookie: chips=ahoy
Set-Cookie: vienna=finger
   >>> C = cookies.SimpleCookie()
   >>> C.load('keebler="E=everybody; L=\\"Loves\\"; fudge=\012;"')
   >>> print(C)
Set-Cookie: keebler="E=everybody; L=\\"Loves\\"; fudge=\012;"
   >>> C = cookies.SimpleCookie()
   >>> C["oreo"] = "doublestuff"
   >>> C["oreo"]["path"] = "/"
   >>> print(C)
Set-Cookie: oreo=doublestuff; Path=/
   >>> C = cookies.SimpleCookie()
   >>> C["twix"] = "none for you"
   >>> C["twix"].value
'none for you'
   >>> C = cookies.SimpleCookie()
   >>> C["number"] = 7 # equivalent to C["number"] = str(7)
   >>> C["string"] = "seven"
   >>> C["number"].value
'7'
   >>> C["string"].value
```

```
'seven'  
>>> print(C)  
Set-Cookie: number=7  
Set-Cookie: string=seven
```