

`mod:uid` no longer uses `mod:ctypes` to load `file:libuuid` or `file:rpcrt4.dll` at runtime.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 7); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 7); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 7); [backlink](#)

Unknown interpreted text role "file".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 7); [backlink](#)

Unknown interpreted text role "file".

Correctly generate annotations where parentheses are omitted but required (e.g. `Type[(str, int, *other)]`).

Fixed `meth:str.identifier` for non-canonicalized strings containing non-BMP characters on Windows.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 27); [backlink](#)

Unknown interpreted text role "meth".

Improved syntax errors for invalid characters in source code.

Fixed a bug when using `func:codeop.compile_command` that was causing exceptions to be swallowed with the new parser. Patch by Pablo Galindo

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 46); [backlink](#)

Unknown interpreted text role "func".

Apply [PEP 573](#) to `mod:abc`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 56); [backlink](#)

Unknown interpreted text role "mod".

Initialize `n->n_col_offset`. (Patch by Joannah Nanjeyke)

Fix command line argument parsing: no longer write errors multiple times into stderr.

Port `mod:errno` to multiphase initialization ([PEP 489](#)).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 84); [backlink](#)

Unknown interpreted text role "mod".

Add pass-throughs for `func:hash` and `func:reversed` to `class:weakref.proxy` objects. Patch by Pablo Galindo.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 93); [backlink](#)

Unknown interpreted text role "func".

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

main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 93); [backlink](#)

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 93); [backlink](#)

Unknown interpreted text role "class".

Port `mod:'syslog'` to multiphase initialization ([PEP 489](#)).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 103); [backlink](#)

Unknown interpreted text role "mod".

Reporting a specialised error message for invalid string prefixes, which was introduced in `issue:'40246'`, is being reverted due to backwards compatibility concerns for strings that immediately follow a reserved keyword without whitespace between them. Constructs like `bg="#d00" if clear else "#fca"` were failing to parse, which is not an acceptable breakage on such short notice.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 112); [backlink](#)

Unknown interpreted text role "issue".

Fix `imp` module deprecation warning when `PyImport_ReloadModule` is called. Patch by Robert Rouhani.

Fixed support of nested type variables in `GenericAlias` (e.g. `list[list[T]]`).

Port `_stat` module to multiphase initialization ([PEP 489](#)).

Enable implicit exception chaining when calling `meth:'generator.throw'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 155); [backlink](#)

Unknown interpreted text role "meth".

Add tools for generating mappings headers for CJKCodecs.

Setting `frame.f_lineno` is now robust w.r.t. changes in the source-to-bytecode compiler

Added the ability to list interpreters associated with channel ends in the internal subinterpreters module.

Improve performance of `c:func:'PyLong_FromDouble'` for values that fit into `c:type:'long'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 193); [backlink](#)

Unknown interpreted text role "c:func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 193); [backlink](#)

Unknown interpreted text role "c:type".

Fixed `func:'ast.get_source_segment'` for `ast` nodes that have incomplete location information. Patch by Irit Katriel.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 203); [backlink](#)

Unknown interpreted text role "func".

Convert `mod:'bisect'` to use Argument Clinic.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 213); [backlink](#)

Unknown interpreted text role "mod".

Added the `:func:`~zoneinfo.available_timezones`` function to the `:mod:`zoneinfo`` module. Patch by Paul Ganssle.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 222); [backlink](#)

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 222); [backlink](#)

Unknown interpreted text role "mod".

The `:class:`hmac.HMAC`` exposes internal implementation details. The attributes `digest_cons`, `inner`, and `outer` are deprecated and will be removed in the future.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 232); [backlink](#)

Unknown interpreted text role "class".

The internal module `_hashlib` wraps and exposes OpenSSL's HMAC API. The new code will be used in Python 3.10 after the internal implementation details of the pure Python HMAC module are no longer part of the public API.

Builtin hash modules can now be disabled or selectively enabled with `configure`

`--with-builtin-hashlib-hashes=sha3,blake1` or `--without-builtin-hashlib-hashes`.

The `:mod:`hashlib`` module can now use SHA3 hashes and SHAKE XOF from OpenSSL when available.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 265); [backlink](#)

Unknown interpreted text role "mod".

The `:mod:`hashlib`` now compiles with OpenSSL 3.0.0-alpha2.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 275); [backlink](#)

Unknown interpreted text role "mod".

Revert changes to `:func:`inspect.getdoc``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 284); [backlink](#)

Unknown interpreted text role "func".

When cancelling a task due to timeout, `:meth:`asyncio.wait_for`` will now propagate the exception if an error happens during cancellation. Patch by Roman Skurikhin.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 293); [backlink](#)

Unknown interpreted text role "meth".

Fix edge cases in `SyntaxError` formatting. If the offset is ≤ 0 , no caret is printed. If the offset is $>$ line length, the caret is printed pointing just after the last character.

If text content lines are longer than `policy.max_line_length`, always use a content-encoding to make sure they are wrapped.

Added `functools.cache()` as a simpler, more discoverable way to access the unbounded cache variant of `lru_cache(maxsize=None)`.

PEP 615, the `:mod:`zoneinfo`` module. Adds support for the IANA time zone database.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 335); [backlink](#)

Unknown interpreted text role "mod".

Removed attributes `__args__` and `__parameters__` from special generic aliases like `typing.List` (not subscripted).

Convert `posixmodule.c` ("posix" or "nt" module) to the multiphase initialization (PEP 489).

Add a `msg` argument to `:meth:`Future.cancel`` and `:meth:`Task.cancel``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 365); [backlink](#)

Unknown interpreted text role "meth".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 365); [backlink](#)

Unknown interpreted text role "meth".

Added an optional `counts` parameter to `random.sample()`.

The `:mod:`ssl`` and `:mod:`hashlib`` modules now actively check that OpenSSL is build with thread support. Python 3.7.0 made thread support mandatory and no longer works safely with a no-thread builds.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 383); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 383); [backlink](#)

Unknown interpreted text role "mod".

When a `:class:`asyncio.Task`` is cancelled, the exception traceback now chains all the way back to where the task was first interrupted.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 394); [backlink](#)

Unknown interpreted text role "class".

`:func:`functools.lru_cache`` objects can now be the targets of weakrefs.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 404); [backlink](#)

Unknown interpreted text role "func".

Fix possible memory leak in the C implementation of `:class:`asyncio.Task``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 413); [backlink](#)

Unknown interpreted text role "class".

`fnmatch.fnmatch()` could take exponential time in the presence of multiple `*` pattern characters. This was repaired by generating more elaborate regular expressions to avoid futile backtracking.

`:mod:`compileall`` is now able to use hardlinks to prevent duplicates in a case when `.pyc` files for different optimization levels have the same content.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 433); [backlink](#)

Unknown interpreted text role "mod".

The `ssl` module now support OpenSSL builds without TLS 1.0 and 1.1 methods.

Improve error reporting in `:func:`ast.literal_eval`` in the presence of malformed `:class:`ast.Dict`` nodes instead of silently ignoring any non-conforming elements. Patch by Curtis Bucher.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 453); [backlink](#)

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 453); [backlink](#)

Unknown interpreted text role "class".

Deprecated the optional *random* argument to *random.shuffle()*.

:func:`platform.win32_ver` now produces correct *ptype* strings instead of empty strings.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 473); [backlink](#)

Unknown interpreted text role "func".

The first argument of :func:`pickle.loads` is now positional-only.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 483); [backlink](#)

Unknown interpreted text role "func".

Update :mod:`nntplib` to merge :class:`nntplib.NNTP` and :class:`nntplib._NNTPBase`. Patch by Dong-hee Na.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 492); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 492); [backlink](#)

Unknown interpreted text role "class".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 492); [backlink](#)

Unknown interpreted text role "class".

Update :mod:`dbm.gnu` to use `gdbm_count` if possible when calling :func:`len`. Patch by Dong-hee Na.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 502); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 502); [backlink](#)

Unknown interpreted text role "func".

Add `isolated=True` keyword-only parameter to `_xxsubinterpreters.create()`. An isolated subinterpreter cannot spawn threads, spawn a child process or call `os.fork()`.

Remove `_random.Random.randbytes()`: the C implementation of `randbytes()`. Implement the method in Python to ease subclassing: `randbytes()` now directly reuses `getrandbits()`.

Added default arguments to :meth:`difflib.SequenceMatcher.find_longest_match()`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 534); [backlink](#)

Unknown interpreted text role "meth".

Fix a race condition in `concurrent.futures._ThreadWakeup`: access to `_ThreadWakeup` is now protected with the shutdown lock.

`Process.shutdown(wait=True)` of `mod: concurrent.futures` now closes explicitly the result queue.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 554); [backlink](#)

Unknown interpreted text role "mod".

Add a new `meth: multiprocessing.SimpleQueue.close` method to the `class: multiprocessing.SimpleQueue` class to explicitly close the queue.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 564); [backlink](#)

Unknown interpreted text role "meth".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 564); [backlink](#)

Unknown interpreted text role "class".

Revert bpo-25597. `class: unittest.mock.MagicMock` with `wraps` set uses default return values for magic methods.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 574); [backlink](#)

Unknown interpreted text role "class".

Added `files()` function to `importlib.resources` with support for subdirectories in package data, matching backport in `importlib_resources 1.5`.

`meth: imaplib.IMAP4.unselect` is added. Patch by Dong-hee Na.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 595); [backlink](#)

Unknown interpreted text role "meth".

`repr()` now returns `typing.Optional[T]` when called for `typing.Union` of two types, one of which is `NoneType`.

Add support for `CAN_J1939` sockets (available on Linux 5.4+)

`class: types.MappingProxyType` is now reversible.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 623); [backlink](#)

Unknown interpreted text role "class".

The repr for `class: types.SimpleNamespace` is now insertion ordered rather than alphabetical.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 632); [backlink](#)

Unknown interpreted text role "class".

On AIX, `func: time.thread_time` is now implemented with `thread_cputime()` which has nanosecond resolution, rather than `clock_gettime(CLOCK_THREAD_CPUTIME_ID)` which has a resolution of 10 milliseconds. Patch by Batuhan Taskaya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 642); [backlink](#)

Unknown interpreted text role "func".

Raise `TypeError` when `_generate_next_value_` is defined after members. Patch by Ethan Onstott.

In the `argparse` module, the repr for `Namespace()` and other argument holders now displayed in the order attributes were added. Formerly, it displayed in alphabetical order even though argument order is preserved the user visible parts of the module.

The `isocalendar()` methods of `:class:`datetime.date`` and `:class:`datetime.datetime`` now return a `.term` named tuple`` instead of a `:class:`tuple``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 676); [backlink](#)

Unknown interpreted text role "class".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 676); [backlink](#)

Unknown interpreted text role "class".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 676); [backlink](#)

Unknown interpreted text role "term".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 676); [backlink](#)

Unknown interpreted text role "class".

Add version of removal for explicit passing of coros to `asyncio.wait()`'s documentation

Provide docstrings for webbrowser open functions.

Mention that `:func:`asyncio.wait`` requires a non-empty set of awaitables.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 706); [backlink](#)

Unknown interpreted text role "func".

Tutorial example for `sorted()` in the Loop Techniques section is given a better explanation. Also a new example is included to explain `sorted()`'s basic behavior.

Fix an incorrect signature for `:func:`pickle.loads`` in the docs

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 726); [backlink](#)

Unknown interpreted text role "func".

`distutils.tests` now saves/restores warnings filters to leave them unchanged. Importing tests imports `docutils` which imports `pkg_resources` which adds a warnings filter.

`test_gdb` and `test.pythoninfo` now check `gdb` command exit code.

Move `_dimameW` out of `HAVE_SYMLINK` to fix a potential compiling issue.

Add `--with-experimental-isolated-subinterpreters` build option to `configure`: better isolate subinterpreters, experimental build mode.

Include `winsock2.h` in `pytime.c` for `timeval`.

Increase reserved stack space to prevent overflow crash on Windows.

Add IPv6 support to `:mod:`asyncio`` datagram endpoints in `ProactorEventLoop`. Change the raised exception for unknown address families to `ValueError` as it's not coming from Windows API.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 792); [backlink](#)

Unknown interpreted text role "mod".

When building Python on macOS from source, `_tkinter` now links with non-system Tcl and Tk frameworks if they are installed in `/Library/Frameworks`, as had been the case on older releases of macOS. If a macOS SDK is explicitly configured, by using `--enable-universalsdk=` or `--sysroot=`, only the SDK itself is searched. The default behavior can still be overridden with `--with-tcltk-includes` and `--with-tcltk-libs`.

Expose RFC 3542 IPv6 socket options.

Update multissltest helper to test with latest OpenSSL 1.0.2, 1.1.0, 1.1.1, and 3.0.0-alpha.

Fix a syntax typo in `turtledemo` that now raises a `SyntaxError`.

Fix `multissltest` tool. OpenSSL has changed download URL for old releases. The `multissltest` tool now tries to download from current and old download URLs.

Remove the `_PyUnicode_ClearStaticStrings()` function from the C API.

Add `PyCFunction_CheckExact()` macro for exact type checks now that we allow subtypes of `PyCFunction`, as well as `PyCMethod_CheckExact()` and `PyCMethod_Check()` for the new `PyCMethod` subtype.

Declare `_PyErr_GetTopmostException()` with `PyAPI_FUNC()` to properly export the function in the C API. The function remains private (`_Py`) prefix.

Nullify `inittab_copy` during finalization, preventing future interpreter initializations in an embedded situation from crashing. Patch by Gregory Szorc.

The `:c:func:'PyThreadState_GetFrame'` function now returns a strong reference to the frame.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 899); [backlink](#)

Unknown interpreted text role "c:func".

Remove the following functions from the C API. Call `:c:func:'PyGC_Collect'` explicitly to free all free lists.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 909); [backlink](#)

Unknown interpreted text role "c:func".

- `PyAsyncGen_ClearFreeLists()`
- `PyContext_ClearFreeList()`
- `PyDict_ClearFreeList()`
- `PyFloat_ClearFreeList()`
- `PyFrame_ClearFreeList()`
- `PyList_ClearFreeList()`
- `PySet_ClearFreeList()`
- `PyTuple_ClearFreeList()`

New `:c:func:'PyFrame_GetBack'` function: get the frame next outer frame.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 928); [backlink](#)

Unknown interpreted text role "c:func".

New `:c:func:'PyFrame_GetCode'` function: return a borrowed reference to the frame code.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 937); [backlink](#)

Unknown interpreted text role "c:func".

Ensure that instances of types created with `:c:func:'PyType_FromSpecWithBases'` will visit its class object when traversing references in the garbage collector (implemented as an extension of the provided `:c:member:'~PyTypeObject.tp_traverse'`). Patch by Pablo Galindo.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 947); [backlink](#)

Unknown interpreted text role "c:func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.9.0b1.rst, line 947); [backlink](#)

Unknown interpreted text role "c:member".

Module `C` state is now accessible from C-defined heap type methods ([PEP 573](#)). Patch by Marcel Plch and Petr Viktorin.