

Avoid overriding `:exc:AttributeError` metadata information for nested attribute access calls. Patch by Pablo Galindo.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 7); [backlink](#)

Unknown interpreted text role "exc".

Include the type's name in the error message for subscribing non-generic types.

Support vectorcall for `super()`. Patch by Ken Jin.

Fix incorrect handling of inline cache entries when specializing `:opcode: BINARY_OP`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 36); [backlink](#)

Unknown interpreted text role "opcode".

Use an oparg to simplify the construction of helpful error messages in `:opcode: GET_AWAITABLE`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 46); [backlink](#)

Unknown interpreted text role "opcode".

Make sure that str subclasses can be used as attribute names for instances with virtual dictionaries. Fixes regression in 3.11 alpha

Add more detailed specialization failure stats for `:opcode: COMPARE_OP` followed by `:opcode: EXTENDED_ARG`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 66); [backlink](#)

Unknown interpreted text role "opcode".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 66); [backlink](#)

Unknown interpreted text role "opcode".

Fix bug introduced during 3.11 alpha where subclasses of `types.ModuleType` with `__slots__` were not initialized correctly, resulting in an interpreter crash.

Use inline caching for `:opcode: LOAD_ATTR`, `:opcode: LOAD_METHOD`, and `:opcode: STORE_ATTR`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 87); [backlink](#)

Unknown interpreted text role "opcode".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 87); [backlink](#)

Unknown interpreted text role "opcode".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 87); [backlink](#)

Unknown interpreted text role "opcode".

Use inline cache for `:opcode: BINARY_SUBSCR`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 97); [backlink](#)

Unknown interpreted text role "opcode".

Use inline caching for `:opcode: COMPARE_OP`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 106); [backlink](#)

Unknown interpreted text role "opcode".

Deprecate `PyBytesObject.ob_shash`. It will be removed in Python 3.13.

Use inline caching for `:opcode:'UNPACK_SEQUENCE'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 124); [backlink](#)

Unknown interpreted text role "opcode".

Reduces dict size by removing hash value from hash table when all inserted keys are Unicode. For example, `sys.getsizeof(dict.fromkeys("abcdefg"))` becomes 272 bytes from 352 bytes on 64bit platform.

Use inline cache for `:opcode:'LOAD_GLOBAL'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 144); [backlink](#)

Unknown interpreted text role "opcode".

Rename the private undocumented `float.__set_format__()` method to `float.__setformat__()` to fix a typo introduced in Python 3.7. The method is only used by `test_float`. Patch by Victor Stinner.

Remove the undocumented private `float.__set_format__()` method, previously known as `float.__setformat__()` in Python 3.7. Its docstring said: "You probably don't want to use this function. It exists mainly to be used in Python's test suite." Patch by Victor Stinner.

Fix regression that `dict.update(other)` may don't respect iterate order of other when other is key sharing dict.

Share global string identifiers in deep-frozen modules.

Fix memory leak in interned strings of deep-frozen modules.

Store `:opcode:'BINARY_OP'` caches inline using a new `:opcode:'CACHE'` instruction.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 204); [backlink](#)

Unknown interpreted text role "opcode".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 204); [backlink](#)

Unknown interpreted text role "opcode".

Specialize `LOAD_METHOD` for instances with a dict.

Reduce the memory usage of specialized `:opcode:'LOAD_ATTR'` and `:opcode:'STORE_ATTR'` instructions.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 223); [backlink](#)

Unknown interpreted text role "opcode".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 223); [backlink](#)

Unknown interpreted text role "opcode".

Add number of sub-exceptions to `:meth:'BaseException.__str__'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 233); [backlink](#)

Unknown interpreted text role "meth".

Don't un-adapt `:opcode:'COMPARE_OP'` when collecting specialization stats.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 242); [backlink](#)

Unknown interpreted text role "opcode".

Fix specialization stats gathering for `:opcode:'PRECALL'` instructions.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 251); [backlink](#)

Unknown interpreted text role "opcode".

Bump up the libexpat version into 2.4.6

Implement a specialized combined opcode `LOAD_FAST__LOAD_ATTR_INSTANCE_VALUE`. Patch by Dennis Sweeney.

Fix parsing a numeric literal immediately (without spaces) followed by "not in" keywords, like `in not in x`. Now the parser only emits a warning, not a syntax error.

Move `KW_NAMES` before `PRECALL` instruction in call sequence. Change operand of `CALL` to match `PRECALL` for easier specialization.

Remove the `NEXT_BLOCK` macro from `compile.c`, and make the compiler automatically generate implicit blocks when they are needed.

Add `PUSH_NULL` instruction. This is used as a prefix when evaluating a callable, so that the stack has the same shape for methods and other calls. `PRECALL_FUNCTION` and `PRECALL_METHOD` are merged into a single `PRECALL` instruction.

There is no change in semantics.

Fix an assert failure in debug builds when a '<', '>', or '=' is the last character in an f-string that's missing a closing right brace.

Message of `AttributeError` caused by getting, setting or deleting a property without the corresponding function now mentions that the attribute is in fact a property and also specifies type of the class that it belongs to.

Make sure that all backwards jumps use the `JUMP_ABSOLUTE` instruction, rather than `JUMP_FORWARD` with an argument of `(2**32)+offset`.

Correct the docstring for the `:meth:'__bool__'` method. Patch by Jelle Zijlstra.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 355); [backlink](#)

Unknown interpreted text role "meth".

Add more detailed specialization failure statistics for `:opcode:'BINARY_OP'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 365); [backlink](#)

Unknown interpreted text role "opcode".

Avoid potential exponential backtracking when producing some syntax errors involving lots of brackets. Patch by Pablo Galindo.

`:mod:'ctypes'` now allocates memory on the stack instead of on the heap to pass arguments while calling a Python callback function. 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) 3.11.0a6.rst, line 384); [backlink](#)

Unknown interpreted text role "mod".

Add a quickened form of `:opcode:'RESUME'` that skips quickening checks.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 395); [backlink](#)

Unknown interpreted text role "opcode".

Specialize `:opcode:'UNPACK_SEQUENCE'` for `:class:'tuple'` and `:class:'list'` unpackings.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 404); [backlink](#)

Unknown interpreted text role "opcode".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 404); [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) 3.11.0a6.rst, line 404); [backlink](#)

Unknown interpreted text role "class".

Opcode pair stats are now gathered with `--enable-pystats`. Defining `DYNAMIC_EXECUTION_PROFILE` or `DXPAIRS` no longer has any effect.

Allow more than 16 items in a split dict before it is combined. The limit is now 254.

Add a missing call to `va_end()` in `Modules/_hashopenssl.c`.

Use `:c:func:'PyObject_Vectorcall'` while calling ctypes callback function. 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) 3.11.0a6.rst, line 443); [backlink](#)

Unknown interpreted text role "c:func".

When iterating over sets internally in `setobject.c`, acquire strong references to the resulting items from the set. This prevents crashes in corner-cases of various set operations where the set gets mutated.

The bytecode compiler now attempts to apply runtime stack manipulations at compile-time (whenever it is feasible to do so).

Fixed a minor portability issue in the implementation of `:c:func:'PyLong_FromLong'`, and added a fast path for single-digit integers to `:c:func:'PyLong_FromLongLong'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 474); [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) 3.11.0a6.rst, line 474); [backlink](#)

Unknown interpreted text role "c:func".

Fixed a file leak in `:func:'xml.etree.ElementTree.iterparse'` when the iterator is not exhausted. Patch by Jacob Walls.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 485); [backlink](#)

Unknown interpreted text role "func".

Export `:func:'unittest.doModuleCleanups'` in `:mod:'unittest'`. Patch by Kumar Aditya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 495); [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) 3.11.0a6.rst, line 495); [backlink](#)

Unknown interpreted text role "mod".

For performance, use the optimized string-searching implementations from `:meth:'~bytes.find'` and `:meth:'~bytes.rfind'` for `:meth:'~mmap.find'` and `:meth:'~mmap.rfind'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 505); [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) 3.11.0a6.rst, line 505); [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) 3.11.0a6.rst, line 505); [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) 3.11.0a6.rst, line 505); [backlink](#)

Unknown interpreted text role "meth".

`:class:`~http.server.SimpleHTTPRequestHandler`` now uses HTML5 grammar. 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) 3.11.0a6.rst, line 516); [backlink](#)

Unknown interpreted text role "class".

Inherit `asyncio.proactor.datagram` transport from `:class:`asyncio.DatagramTransport``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 526); [backlink](#)

Unknown interpreted text role "class".

Support UDP sockets in `:meth:`asyncio.loop.sock_connect`` for selector-based event loops. Patch by Thomas Grainger.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 536); [backlink](#)

Unknown interpreted text role "meth".

Make test suite support Expat >=2.4.5

Raise `:exc:`TypeError`` if `:class:`ssl.SSLSocket`` is passed to transport-based APIs.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 555); [backlink](#)

Unknown interpreted text role "exc".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 555); [backlink](#)

Unknown interpreted text role "class".

Fix libexpat symbols collisions with user dynamically loaded or statically linked libexpat in embedded Python.

The HTML serialisation in `xml.etree.ElementTree` now writes `embed`, `source`, `track` and `wbr` as empty tags, as defined in HTML 5.

`:func:`shutil.rmtree`` can now work with VirtualBox shared folders when running from the guest operating-system.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 585); [backlink](#)

Unknown interpreted text role "func".

Propagate `:exc:`asyncio.CancelledError`` message from inner task to outer awaiter.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 595); [backlink](#)

Unknown interpreted text role "exc".

Fix a bug in `meth:'urlib.request.HTTPPasswordMgr.find_user_password'` and `meth:'urlib.request.HTTPPasswordMgrWithPriorAuth.is_authenticated'` which allowed to bypass authorization. For example, access to URI `example.org/foobar` was allowed if the user was authorized for URI `example.org/foo`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 605); [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) 3.11.0a6.rst, line 605); [backlink](#)

Unknown interpreted text role "meth".

`func:'random.gauss'` and `func:'random.normalvariate'` now have default arguments.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 618); [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) 3.11.0a6.rst, line 618); [backlink](#)

Unknown interpreted text role "func".

Add task groups to `asyncio` (structured concurrency, inspired by Trio's nurseries). This also introduces a change to task cancellation, where a cancelled task can't be cancelled again until it calls `.uncancel()`.

Fix `mod:'dis'` behavior on negative jump offsets.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 639); [backlink](#)

Unknown interpreted text role "mod".

The `meth:'__repr__'` method of `class:'typing.ForwardRef'` now includes the `module` parameter of `class:'typing.ForwardRef'` when it is set.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 648); [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) 3.11.0a6.rst, line 648); [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) 3.11.0a6.rst, line 648); [backlink](#)

Unknown interpreted text role "class".

In `func:'typing.get_type_hints'`, support evaluating stringified `ParamSpecArgs` and `ParamSpecKwargs` annotations. Patch by Gregory Beauregard.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 658); [backlink](#)

Unknown interpreted text role "func".

When the `mod:tarfile` module creates a pax format archive, it will put an integer representation of timestamps in the ustar header (if possible) for the benefit of older unarchivers, in addition to the existing full-precision timestamps in the pax extended header.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 669); [backlink](#)

Unknown interpreted text role "mod".

Deprecate kwargs-based syntax for `:class:typing.TypedDict` definitions. It had confusing semantics when specifying totality, and was largely unused. Patch by Jingchen Ye.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 681); [backlink](#)

Unknown interpreted text role "class".

Make `:data:typing.ParamSpec` args and kwargs equal to themselves. Patch by Gregory Beauregard.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 692); [backlink](#)

Unknown interpreted text role "data".

`ctypes.CFUNCTYPE()` and `ctypes.WINFUNCTYPE()` now fail to create the type if its `_argtypes_` member contains too many arguments. Previously, the error was only raised when calling a function. Patch by Victor Stinner.

Fix `NameError` in `:func:asyncio.gather` when initial type check fails.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 713); [backlink](#)

Unknown interpreted text role "func".

The `:class:calendar.LocaleTextCalendar` and `:class:calendar.LocaleHTMLCalendar` classes now use `:func:locale.getlocale`, instead of using `:func:locale.getdefaultlocale`, if no locale is specified. Patch by Victor Stinner.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 722); [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) 3.11.0a6.rst, line 722); [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) 3.11.0a6.rst, line 722); [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) 3.11.0a6.rst, line 722); [backlink](#)

Unknown interpreted text role "func".

The `:func:locale.getdefaultlocale` function is deprecated and will be removed in Python 3.13. Use `:func:locale.setlocale`, `:func:locale.getpreferredencoding(False)` <locale.getpreferredencoding> and `:func:locale.getlocale` functions instead. Patch by Victor Stinner.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 734); [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) 3.11.0a6.rst, line 734); [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) 3.11.0a6.rst, line 734); [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) 3.11.0a6.rst, line 734); [backlink](#)

Unknown interpreted text role "func".

In `:func:`typing.get_type_hints``, support evaluating bare stringified `TypeAlias` annotations. Patch by Gregory Beauregard.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 746); [backlink](#)

Unknown interpreted text role "func".

Fixed a discrepancy in the C implementation of the `:mod:`xml.etree.ElementTree`` module. Now, instantiating an `:class:`xml.etree.ElementTree.XMLParser`` with a `target=None` keyword provides a default `:class:`xml.etree.ElementTree.TreeBuilder`` target as the Python implementation does.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 756); [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) 3.11.0a6.rst, line 756); [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) 3.11.0a6.rst, line 756); [backlink](#)

Unknown interpreted text role "class".

Expose Linux's `IP_BIND_ADDRESS_NO_PORT` option in `:mod:`socket``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 769); [backlink](#)

Unknown interpreted text role "mod".

Fix a bug in the `:mod:`codeop`` module that was incorrectly identifying invalid code involving string quotes as valid code.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 778); [backlink](#)

Unknown interpreted text role "mod".

Improve `:func:`typing.no_type_check``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 788); [backlink](#)

Unknown interpreted text role "func".

Now it does not modify external classes and functions. We also now correctly mark classmethods as not to be type checked.
expat: Update libexpat from 2.4.1 to 2.4.4

Deprecate undocumented support for using a `:class:`pathlib.Path`` object as a context manager.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 809); [backlink](#)

Unknown interpreted text role "class".

Implement [PEP 673](#) `:class:`typing.Self``. Patch by James Hilton-Balfé.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 819); [backlink](#)

Unknown interpreted text role "class".

Make various module `__getattr__` `AttributeErrors` more closely match a typical `AttributeError`

Add `:data:`typing.Never`` and `:func:`typing.assert_never``. Patch by Jelle Zijlstra.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 838); [backlink](#)

Unknown interpreted text role "data".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 838); [backlink](#)

Unknown interpreted text role "func".

The `:meth:`__eq__`` and `:meth:`__hash__`` methods of `:class:`typing.ForwardRef`` now honor the `module` parameter of `:class:`typing.ForwardRef``. Forward references from different modules are now differentiated.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 848); [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) 3.11.0a6.rst, line 848); [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) 3.11.0a6.rst, line 848); [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) 3.11.0a6.rst, line 848); [backlink](#)

Unknown interpreted text role "class".

Add missing `__slots__` to `importlib.metadata.DeprecatedList`. Patch by Arie Bovenberg

The `:mod:`ssl`` module now handles certificates with bit strings in DN correctly.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 870); [backlink](#)

Unknown interpreted text role "mod".

`:func:`typing.get_type_hints`` no longer adds `Optional` to parameters with `None` as a default. This aligns to changes to PEP 484 in <https://github.com/python/peps/pull/689>

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 880); [backlink](#)

Unknown interpreted text role "func".

Add `:class:~re.RegexFlag` to `re.__all__` and documented it. Add `:data:~re.RegexFlag.NOFLAG` to indicate no flags being set.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 891); [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) 3.11.0a6.rst, line 891); [backlink](#)

Unknown interpreted text role "data".

`mod:ctypes` no longer defines `ffi_type_*` symbols in `cfield.c`. The symbols have been provided by `libffi` for over a decade.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 901); [backlink](#)

Unknown interpreted text role "mod".

Calling `operator.itemgetter` objects and `operator.attrgetter` objects is now faster due to use of the `vectorcall` calling convention.

Fix an issue with `:meth:~tarfile.is_tarfile` method when using `fileobj` argument: position in the `fileobj` was advanced forward which made it unreadable with `:meth:tarfile.TarFile.open`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 921); [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) 3.11.0a6.rst, line 921); [backlink](#)

Unknown interpreted text role "meth".

Reimplement SSL/TLS support in `asyncio`, borrow the implementation from `uvloop` library.

Make the `:class:configparser.ConfigParser` constructor raise `:exc:TypeError` if the `interpolation` parameter is not of type `:class:configparser.Interpolation`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 942); [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) 3.11.0a6.rst, line 942); [backlink](#)

Unknown interpreted text role "exc".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 942); [backlink](#)

Unknown interpreted text role "class".

Implement `:func:inspect.ismethodwrapper` and fix `:func:inspect.isroutine` for cases where `methodwrapper` is given. Patch by Hakan Åkelik.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 953); [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) 3.11.0a6.rst, line 953); [backlink](#)

Unknown interpreted text role "func".

argparse.FileType now supports an argument of '-' in binary mode, returning the .buffer attribute of sys.stdin/sys.stdout as appropriate. Modes including 'x' and 'a' are treated equivalently to 'w' when argument is '-'. Patch contributed by Josh Rosenberg

Doc/tools/rstlint.py has moved to its own repository and is now packaged on PyPI as sphinx-lint.

Fix test_faulthandler.test_sigfpe() if Python is built with undefined behavior sanitizer (UBSAN): disable UBSAN on the faulthandler_sigfpe() function. Patch by Victor Stinner.

Remove bytecode offsets from expected values in test.test_dis module. Reduces the obstacles to modifying the VM or compiler.

Prevent default asyncio event loop policy modification warning after test_asyncio execution.

The function make_legacy_pyc in Lib/test/support/import_helper.py no longer fails when PYTHONPYCACHEPREFIX is set to a directory on a different device from where tempfiles are stored.

Skip test_pair() and test_speech128() of test_zlib on s390x since they fail if zlib uses the s390x hardware accelerator. Patch by Victor Stinner.

Respect --with-suffix when building on case-insensitive file systems.

Building Python now requires a C11 compiler without optional C11 features. Patch by Victor Stinner.

Building Python now requires support for floating point Not-a-Number (NaN): remove the Py_NO_NAN macro. Patch by Victor Stinner.

Building Python now requires a C99 <math.h> header file providing a NAN constant, or the __builtin_nan() built-in function. Patch by Victor Stinner.

Exclude marshalled-frozen data if deep-freezing to save 300 KB disk space. This includes adding a new is_package field to c:struct: 'frozen'. Patch by Kumar Aditya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 1077); [backlink](#)

Unknown interpreted text role "c:struct".

Fix wasmb2-emscripten test failures and platform issues. - Disable syscalls that are not supported or don't work, e.g. wait, getrusage, prlimit, mkfifo, mknod, setres[gu]id, setgroups. - Use fd_count to count open fds. - Add more checks for subprocess and fork. - Add workarounds for missing _multiprocessing and failing socket.accept(). - Enable bzip2. - Disable large file support. - Disable signal.alarm

Intern strings in deep-frozen modules. Patch by Kumar Aditya.

The default all users install directory for ARM64 is now under the native Program Files folder, rather than Program Files (Arm) which is intended for ARM (32-bit) files.

Adds Tcl and Tk support for Windows ARM64. This also adds IDLE to the installation.

Ensures registry virtualization is consistently disabled. For 3.10 and earlier, it remains enabled (some registry writes are protected), while for 3.11 and later it is disabled (registry modifications affect all applications).

Make query dialogs on Windows start with a cursor in the entry box.

Apply IDLE syntax highlighting to .pyi files. Patch by Alex Waygood and Terry Jan Reedy.

Python's public headers no longer import <stdbool.h>, leaving code that embedd/extends Python free to define bool, true and false.

Move the c:type: 'PyFrameObject' type definition (struct _frame) to the internal C API pycore_frame.h header file. Patch by Victor Stinner.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 1173); [backlink](#)

Unknown interpreted text role "c:type".

Rename Include/buffer.h header file to Include/pybuffer.h to avoid conflicts with projects having an existing buffer.h header file. Patch by Victor Stinner.

Remove the HAVE_PY_SET_53BIT_PRECISION macro (moved to the internal C API). Patch by Victor Stinner.

Added function c:func: 'PyType_GetModuleByDef', which allows access to module state when a method's defining class is not available.

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

main\Misc\NEWS.d\cpython-main) (Misc) (NEWS.d) 3.11.0a6.rst, line 1204); [backlink](#)

Unknown interpreted text role "c:func".