

Raise `:exc:'IndentationError'` instead of `:exc:'SyntaxError'` for a bare `except` with no following indent. Improve `:exc:'SyntaxError'` locations for an un-parenthesized generator used as arguments. Patch by Matthieu Dartiaillh.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 7); [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) 3.11.0a7.rst, line 7); [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) 3.11.0a7.rst, line 7); [backlink](#)

Unknown interpreted text role "exc".

Replace `:opcode:'JUMP_IF_NOT_EG_MATCH'` by `:opcode:'CHECK_EG_MATCH'` + jump.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 19); [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) 3.11.0a7.rst, line 19); [backlink](#)

Unknown interpreted text role "opcode".

Emscripten builds cannot handle signals in the usual way due to platform limitations. Python can now handle signals. To use, set `Module.Py_EmscriptenSignalBuffer` to be a single byte `SharedArrayBuffer` and set `Py_EMSCRIPTEN_SIGNAL_HANDLING` to 1. Writing a number into the `SharedArrayBuffer` will cause the corresponding signal to be raised into the Python thread.

Replace `:opcode:'JUMP_IF_NOT_EXC_MATCH'` by `:opcode:'CHECK_EXC_MATCH'` + jump.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 42); [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) 3.11.0a7.rst, line 42); [backlink](#)

Unknown interpreted text role "opcode".

Replace the absolute jump opcode `:opcode:'JUMP_NO_INTERRUPT'` by the relative `:opcode:'JUMP_BACKWARD_NO_INTERRUPT'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 51); [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) 3.11.0a7.rst, line 51); [backlink](#)

Unknown interpreted text role "opcode".

Avoid unnecessary allocations when comparing code objects.

Fix a crash when using a named unicode character like `"\N{digit nine}"` after the main interpreter has been initialized a second time.

WebAssembly cannot deal with bad function pointer casts (different count or types of arguments). Python can now use call trampolines to mitigate the problem. Define `:c:macro:'PY_CALL_TRAMPOLINE'` to enable call trampolines.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 80); [backlink](#)

Unknown interpreted text role "c:macro".

Some Windows system error codes (≥ 10000) are now mapped into the correct errno and may now raise a subclass of `exc:OSError`. 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) 3.11.0a7.rst, line 91); [backlink](#)

Unknown interpreted text role "exc".

Improve error messages in f-string syntax errors concerning empty expressions.

Fix a crash if we fail to decode characters in interactive mode if the tokenizer buffers are uninitialized. Patch by Pablo Galindo.

Speed up calls to c functions with keyword arguments by 25% with specialization. Patch by Kumar Aditya.

Replaced `:opcode: JUMP_ABSOLUTE` by the relative jump `:opcode: JUMP_BACKWARD`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 131); [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) 3.11.0a7.rst, line 131); [backlink](#)

Unknown interpreted text role "opcode".

`:c:func: PyFrame_FastToLocalsWithError` and `:c:func: PyFrame_LocalsToFast` are no longer called during profiling nor tracing. C code can access the `f_locals` attribute of `:c:type: PyFrameObject` by calling `:c:func: PyFrame_GetLocals`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 141); [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) 3.11.0a7.rst, line 141); [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) 3.11.0a7.rst, line 141); [backlink](#)

Unknown interpreted text role "c:type".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 141); [backlink](#)

Unknown interpreted text role "c:func".

Improve performance of `array_inplace_repeat` by reducing the number of invocations of `memcpy`. Refactor the `repeat` and `inplace_repeat` methods of `array`, `bytes`, `bytearray` and `unicodeobject` to use the common `_PyBytes_Repeat`.

Reduce de-optimization in the specialized `BINARY_OP_INPLACE_ADD_UNICODE` opcode.

Remove the `f_state` field from the `_PyInterpreterFrame` struct. Add the `owner` field to the `_PyInterpreterFrame` struct to make ownership explicit to simplify clearing and deallocating frames and generators.

Check for the existence of the "sys/auxv.h" header in `mod: faulthandler` to avoid compilation problems in systems where this header doesn't exist. Patch by Pablo Galindo

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 186); [backlink](#)

Unknown interpreted text role "mod".

Use low bit of `LOAD_GLOBAL` to indicate whether to push a `NULL` before the global. Helps streamline the call sequence a bit.

Quickened bytecode in-place by storing it as part of the corresponding `PyCodeObject`.

Speed up iteration of `:class:'bytes'` and `:class:'bytearray'` by 30%. Patch by Kumar Aditya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 217); [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) 3.11.0a7.rst, line 217); [backlink](#)

Unknown interpreted text role "class".

Improved the performance of `:meth:'list.append()'` and list comprehensions by optimizing for the common case, where no resize is needed. Patch by Dennis Sweeney.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 227); [backlink](#)

Unknown interpreted text role "meth".

Improve performance of `bytearray_repeat` and `bytearray_irepeat` by reducing the number of invocations of `memcpy`.

Deprecate passing a message into `:meth:'asyncio.Future.cancel'` and `:meth:'asyncio.Task.cancel'`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 248); [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) 3.11.0a7.rst, line 248); [backlink](#)

Unknown interpreted text role "meth".

Speed up `:class:'bytearray'` creation from `:class:'list'` and `:class:'tuple'` by 40%. Patch by Kumar Aditya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 258); [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) 3.11.0a7.rst, line 258); [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) 3.11.0a7.rst, line 258); [backlink](#)

Unknown interpreted text role "class".

Removed the `__len__()` call when initializing a list and moved initializing to `list_extend`. Patch by Jeremiah Pascual.

Speed up throwing exception in generator with `:const:'METH_FASTCALL'` calling convention. Patch by Kumar Aditya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 278); [backlink](#)

Unknown interpreted text role "const".

Modify `:opcode:'STORE_SUBSCR'` to use an inline cache entry (rather than its `oparg`) as an adaptive counter.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 288); [backlink](#)

Unknown interpreted text role "opcode".

Use inline caching for `:opcode:PRECALL` and `:opcode:CALL`, and remove the internal machinery for managing the (now unused) non-inline caches.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 298); [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) 3.11.0a7.rst, line 298); [backlink](#)

Unknown interpreted text role "opcode".

Statically allocate and initialize the latin1 characters.

Improve syntax errors for incorrect function definitions. Patch by Pablo Galindo

Fix docstrings of `:attr:~property.getter`, `:attr:~property.setter`, and `:attr:~property.deleter` to clarify that they create a new copy of the property.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 327); [backlink](#)

Unknown interpreted text role "attr".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 327); [backlink](#)

Unknown interpreted text role "attr".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 327); [backlink](#)

Unknown interpreted text role "attr".

Make grammar changes required for PEP 646.

Allow vendors to override `:const:CTYPES_MAX_ARGCOUNT`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 347); [backlink](#)

Unknown interpreted text role "const".

`:mod:re` module: fix memory leak when a match is terminated by a signal or memory allocation failure. Patch by Ma Lin.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 356); [backlink](#)

Unknown interpreted text role "mod".

Allow overriding a future compliance check in `:class:asyncio.Task`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 366); [backlink](#)

Unknown interpreted text role "class".

When subprocess tries to use `vfork`, it now falls back to `fork` if `vfork` returns an error. This allows use in situations where `vfork` isn't allowed by the OS kernel.

Convert the `:mod:re` module into a package. Deprecate modules `sre_compile`, `sre_constants` and `sre_parse`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 386); [backlink](#)

Unknown interpreted text role "mod".

Add `meth:ZipFile.mkdir`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 396); [backlink](#)

Unknown interpreted text role "meth".

Fix `meth:asyncio.loop.sock_connect` to only resolve names for `:const:socket.AF_INET` or `:const:socket.AF_INET6` families. Resolution may not make sense for other families, like `:const:socket.AF_BLUETOOTH` and `:const:socket.AF_UNIX`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 405); [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) 3.11.0a7.rst, line 405); [backlink](#)

Unknown interpreted text role "const".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 405); [backlink](#)

Unknown interpreted text role "const".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 405); [backlink](#)

Unknown interpreted text role "const".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 405); [backlink](#)

Unknown interpreted text role "const".

Adds the fully qualified test name to unittest output

Deprecate the aifc module.

Handle Ctrl+C in asyncio programs to interrupt the main task.

`:const:hashlib.algorithms_available` now lists only algorithms that are provided by activated crypto providers on OpenSSL 3.0. Legacy algorithms are not listed unless the legacy provider has been loaded into the default OSSL context.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 444); [backlink](#)

Unknown interpreted text role "const".

All `:exc:URLError` exception messages raised in `:class:urllib.request.URLopener` now contain a colon between ftp error and the rest of the message. Previously, `:func:~urllib.request.URLopener.open_ftp` missed the colon. Patch by Oleg Iarygin.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 456); [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) 3.11.0a7.rst, line 456); [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) 3.11.0a7.rst, line 456); [backlink](#)

Unknown interpreted text role "func".

Exception chaining is changed from `:func:`Exception.with_traceback`` to `:func:`sys.exc_info`` to PEP 3134. Patch by Oleg Iarygin.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 469); [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) 3.11.0a7.rst, line 469); [backlink](#)

Unknown interpreted text role "func".

`:mod:`hashlib``'s internal `_blake2` module now prefers `libb2` from <https://www.blake2.net/> over Python's vendored copy of `blake2`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 480); [backlink](#)

Unknown interpreted text role "mod".

The Keccak Code Package for `:mod:`hashlib``'s internal `_sha3` module has been replaced with `tiny_sha3`. The module is used as fallback when Python is built without OpenSSL.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 490); [backlink](#)

Unknown interpreted text role "mod".

Implement `:data:`typing.LiteralString``, part of PEP 675. Patch by Jelle Zijlstra.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 501); [backlink](#)

Unknown interpreted text role "data".

Optimize `:func:`re.search``, `:func:`re.split``, `:func:`re.findall``, `:func:`re.finditer`` and `:func:`re.sub`` for regular expressions starting with `\A` or `^`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 511); [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) 3.11.0a7.rst, line 511); [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) 3.11.0a7.rst, line 511); [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) 3.11.0a7.rst, line 511); [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) 3.11.0a7.rst, line 511); [backlink](#)

Unknown interpreted text role "func".

Protect the `:func:`re.finditer`` iterator from re-entering.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 522); [backlink](#)

Unknown interpreted text role "func".

Optimize calling `GenericAlias` objects by using [PEP 590](#) `vectorcall` and by replacing `PyObject_SetAttrString` with `PyObject_SetAttr`.

Add the `metadata_encoding` parameter in the `:class:`zipfile.ZipFile`` constructor and the `--metadata-encoding` option in the `:mod:`zipfile`` CLI to allow reading zipfiles using non-standard codecs to encode the filenames within the archive.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 541); [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) 3.11.0a7.rst, line 541); [backlink](#)

Unknown interpreted text role "mod".

Make `:func:`io.text_encoding`` returns "utf-8" when UTF-8 mode is enabled.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 553); [backlink](#)

Unknown interpreted text role "func".

Fix thread safety of `:meth:`zipfile._SharedFile.tell`` to avoid a "zipfile.BadZipFile: Bad CRC-32 for file" exception when reading a `:class:`ZipFile`` from multiple threads.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 562); [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) 3.11.0a7.rst, line 562); [backlink](#)

Unknown interpreted text role "class".

Fix `:func:`binascii.crc32`` when it is compiled to use `zlib.crc32` to work properly on inputs 4+GiB in length instead of returning the wrong result. The workaround prior to this was to always feed the function data in increments smaller than 4GiB or to just call the `zlib` module function.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 573); [backlink](#)

Unknown interpreted text role "func".

We also have `:func:`binascii.crc32`` release the GIL when computing on larger inputs as `:func:`zlib.crc32`` and `:mod:`hashlib`` do.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 578); [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) 3.11.0a7.rst, line 578); [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) 3.11.0a7.rst, line 578); [backlink](#)

Unknown interpreted text role "mod".

This also boosts performance on Windows as it now uses the zlib crc32 implementation for `:func:`binascii.crc32`` for a 2-3x speedup.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 581); [backlink](#)

Unknown interpreted text role "func".

That the stdlib has a crc32 API in two modules is a known historical oddity. This moves us closer to a single implementation behind them.

Global inline flags (e.g. `(?i)`) can now only be used at the start of the regular expressions. Using them not at the start of expression was deprecated since Python 3.6.

A warning about inline flags not at the start of the regular expression now contains the position of the flag.

Add support of atomic grouping `((?>...))` and possessive quantifiers `(*+, ++, ?+, {m,n}+)` in `:mod:`regular expressions <re>``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 615); [backlink](#)

Unknown interpreted text role "mod".

Implement `:class:`asyncio.Runner`` context manager.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 625); [backlink](#)

Unknown interpreted text role "class".

`:func:`~dataclasses.dataclass` slots=True` now correctly omits slots already defined in base classes. Patch by Arie Bovenberg.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 634); [backlink](#)

Unknown interpreted text role "func".

Use FASTCALL convention for `FutureIter.throw()`

Deprecate the various modules listed by [PEP 594](#):

`aifc`, `asynchat`, `asyncore`, `audioop`, `cgi`, `cgitb`, `chunk`, `crypt`, `imghdr`, `msilib`, `ntplib`, `nis`, `ossaudiodev`, `pipes`, `smtpd`, `sndhdr`, `spwd`, `sunau`, `telnetlib`, `uu`, `xdrlib`

Remove passing coroutine objects to `:func:`asyncio.wait``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 666); [backlink](#)

Unknown interpreted text role "func".

Normalize `repr()` of `asyncio` future and task objects.

Fix bug where doctests using globals would fail when run multiple times.

Add `:func:`hashlib.file_digest`` helper for efficient hashing of file object.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 693); [backlink](#)

Unknown interpreted text role "func".

Made `cumttime` the default sorting key for `cProfile`

Fix `:class:`asyncio.Semaphore`` re-acquiring FIFO order.

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

main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 711); [backlink](#)

Unknown interpreted text role "class".

The `:mod:`asynchat``, `:mod:`asyncore`` and `:mod:`smtpd`` modules have been deprecated since at least Python 3.6. Their documentation and deprecation warnings and have now been updated to note they will be removed in Python 3.12 (PEP 594).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 720); [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) 3.11.0a7.rst, line 720); [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) 3.11.0a7.rst, line 720); [backlink](#)

Unknown interpreted text role "mod".

Fix a crash when closing transports where the underlying socket handle is already invalid on the Proactor event loop.

`:func:`select.select`` now passes `NULL` to `select` for each empty fdset.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 742); [backlink](#)

Unknown interpreted text role "func".

Apply bugfixes from `importlib_metadata 4.11.3`, including bugfix for `EntryPoint.extras`, which was returning match objects and not the extras strings.

Allow subclassing of `:class:`typing.Any``. Patch by Shantanu Jain.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 763); [backlink](#)

Unknown interpreted text role "class".

Deprecate missing `:meth:`asyncio.Task.set_name`` for third-party task implementations, schedule making it mandatory in Python 3.13.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 772); [backlink](#)

Unknown interpreted text role "meth".

Accept explicit contextvars.Context in `:func:`asyncio.create_task`` and `:meth:`asyncio.loop.create_task``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 782); [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) 3.11.0a7.rst, line 782); [backlink](#)

Unknown interpreted text role "meth".

`typing.get_args(typing.Tuple[()])` now returns `()` instead of `((),)`.

Add `os.sysconf_names['SC_MINSIGSTKSZ']`.

Upgrade pip wheel bundled with ensurepip (pip 22.0.4)

`:mod:`faulthandler``: On Linux 5.14 and newer, dynamically determine size of signal handler stack size CPython allocates using `getauxval(AT_MINSIGSTKSZ)`. This change allows for Python extension's request to Linux kernel to use `AMX_TILE` instruction set on Sapphire Rapids Xeon processor to succeed, unblocking use of the ISA in frameworks.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 820); [backlink](#)

Unknown interpreted text role "mod".

The `:data:`math.nan`` value is now always available. Patch by Victor Stinner.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 833); [backlink](#)

Unknown interpreted text role "data".

Expose `:class:`asyncio.base_events.Server`` as `:class:`asyncio.Server``. Patch by Stefan Zabka.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 842); [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) 3.11.0a7.rst, line 842); [backlink](#)

Unknown interpreted text role "class".

The `:mod:`signal`` module no longer assumes that `:const:`~signal.SIG_IGN`` and `:const:`~signal.SIG_DFL`` are small int singletons.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 852); [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) 3.11.0a7.rst, line 852); [backlink](#)

Unknown interpreted text role "const".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 852); [backlink](#)

Unknown interpreted text role "const".

Update bundled libexpat to 2.4.7

The `:mod:`pwd`` module is now optional. `:func:`os.path.expanduser`` returns the path when the `:mod:`pwd`` module is not available.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 871); [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) 3.11.0a7.rst, line 871); [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) 3.11.0a7.rst, line 871); [backlink](#)

Unknown interpreted text role "mod".

PEP 680, the `:mod:`tomllib`` module. Adds support for parsing TOML.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 881); [backlink](#)

Unknown interpreted text role "mod".

`:func:`asyncio.timeout`` and `:func:`asyncio.timeout_at`` context managers added. Patch by Tin Tvrtković and Andrew Svetlov.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 890); [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) 3.11.0a7.rst, line 890); [backlink](#)

Unknown interpreted text role "func".

Added raw datagram socket functions for asyncio: `:meth:`~asyncio.AbstractEventLoop.sock_sendto``, `:meth:`~asyncio.AbstractEventLoop.sock_recvfrom`` and `:meth:`~asyncio.AbstractEventLoop.sock_recvfrom_into``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 900); [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) 3.11.0a7.rst, line 900); [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) 3.11.0a7.rst, line 900); [backlink](#)

Unknown interpreted text role "meth".

No longer require valid typeforms to be callable. This allows `:data:`typing.Annotated`` to wrap `:data:`typing.ParamSpecArgs`` and `:data:`dataclasses.InitVar``. Patch by Gregory Beauregard.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 912); [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) 3.11.0a7.rst, line 912); [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) 3.11.0a7.rst, line 912); [backlink](#)

Unknown interpreted text role "data".

Brings `:class:`ParamSpec`` propagation for `:class:`GenericAlias`` in line with `:class:`Concatenate`` (and others).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 923); [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) 3.11.0a7.rst, line 923); [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) 3.11.0a7.rst, line 923); [backlink](#)

Unknown interpreted text role "class".

Define `posix_venv` and `nt_venv` [ref: sysconfig installation schemes <installation_paths>](#) to be used for bootstrapping new virtual environments. Add `venv` sysconfig installation scheme to get the appropriate one of the above. The schemes are identical to the pre-existing `posix_prefix` and `nt` install schemes. The `mod:venv` module now uses the `venv` scheme to create new virtual environments instead of hardcoding the paths depending only on the platform. Downstream Python distributors customizing the `posix_prefix` or `nt` install scheme in a way that is not compatible with the install scheme used in virtual environments are encouraged not to customize the `venv` schemes. When Python itself runs in a virtual environment, `func:sysconfig.get_default_scheme` and `func:sysconfig.get_preferred_scheme` with `key="prefix"` returns `venv`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 933); [backlink](#)

Unknown interpreted text role "ref".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 933); [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) 3.11.0a7.rst, line 933); [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) 3.11.0a7.rst, line 933); [backlink](#)

Unknown interpreted text role "func".

Implement support for PEP 646 in `typing.py`.

Allow unpacking types.GenericAlias objects, e.g. `*tuple[int, str]`.

Warnings captured by the logging module are now logged without a format string to prevent systems that group logs by the msg argument from grouping captured warnings together.

`func:typing.get_type_hints` now supports evaluating strings as forward references in [ref: PEP 585 generic aliases <types-genericaliases>](#).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 982); [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) 3.11.0a7.rst, line 982); [backlink](#)

Unknown interpreted text role "ref".

Add `exc:DeprecationWarning` to `class:LegacyInterpolation`, deprecated in the docstring since Python 3.2. Will be removed in Python 3.13. Use `class:BasicInterpolation` or `class:ExtendedInterpolation` instead.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 992); [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) 3.11.0a7.rst, line 992); [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) 3.11.0a7.rst, line 992); [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) 3.11.0a7.rst, line 992); [backlink](#)

Unknown interpreted text role "class".

`mod:pydoc` now excludes `__future__` imports from the module's data items.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1003); [backlink](#)

Unknown interpreted text role "mod".

Add `func:typing.assert_type`. Patch by Jelle Zijlstra.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1012); [backlink](#)

Unknown interpreted text role "func".

Fix a unittest issue where if the command was invoked as `python -m unittest` and the filename(s) began with a dot (`.`), a `ValueError` is returned.

Add optional parameter `dir_fd` in `func:shutil.rmtree`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1032); [backlink](#)

Unknown interpreted text role "func".

`meth:~unittest.TestProgram.usageExit` is marked deprecated, to be removed in 3.13.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1041); [backlink](#)

Unknown interpreted text role "meth".

Improve the error message when you try to subclass an instance of `class:typing.NewType`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1051); [backlink](#)

Unknown interpreted text role "class".

Fix supporting generic aliases in `mod:pydoc`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1061); [backlink](#)

Unknown interpreted text role "mod".

Fix inconsistency with uppercase file extensions in `meth:MimeTypes.guess_type`. Patch by Kumar Aditya.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1070); [backlink](#)

Unknown interpreted text role "meth".

Add `LOCAL_CREDS`, `LOCAL_CREDS_PERSISTENT` and `SCM_CREDS2` FreeBSD constants to the socket module.

Fix `.write()` method of a member file in `ZipFile`, when the input data is an object that supports the buffer protocol, the file length may be wrong.

Fix handling of the `stacklevel` argument to logging functions in the `mod:logging` module so that it is consistent accross all logging functions and, as advertised, similar to the `stacklevel` argument used in `meth:~warnings.warn`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1101); [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) 3.11.0a7.rst, line 1101); [backlink](#)

Unknown interpreted text role "meth".

Fix bug where `mod:unittest` sometimes drops frames from tracebacks of exceptions raised in tests.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1113); [backlink](#)

Unknown interpreted text role "mod".

Raise more accurate and [PEP 249](#) compatible exceptions in `mod:sqlite3`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1123); [backlink](#)

Unknown interpreted text role "mod".

- Raise `exc:~sqlite3.InterfaceError` instead of `exc:~sqlite3.ProgrammingError` for `SQLITE_MISUSE` errors.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1125); [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) 3.11.0a7.rst, line 1125); [backlink](#)

Unknown interpreted text role "exc".

- Don't overwrite `exc:BufferError` with `exc:ValueError` when conversion to BLOB fails.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1127); [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) 3.11.0a7.rst, line 1127); [backlink](#)

Unknown interpreted text role "exc".

- Raise `exc:~sqlite3.ProgrammingError` instead of `exc:~sqlite3.Warning` if user tries to `meth:~sqlite3.Cursor.execute()` more than one SQL statement.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1129); [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) 3.11.0a7.rst, line 1129); [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) 3.11.0a7.rst, line 1129); [backlink](#)

Unknown interpreted text role "meth".

- Raise `:exc:`~sqlite3.ProgrammingError`` instead of `:exc:`~ValueError`` if an SQL query contains null characters.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1131); [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) 3.11.0a7.rst, line 1131); [backlink](#)

Unknown interpreted text role "exc".

Add missing terminated NUL in sockaddr_un's length

This was potentially observable when using non-abstract AF_UNIX datagram sockets to processes written in another programming language.

Add `:meth:`~sqlite3.Connection.serialize`` and `:meth:`~sqlite3.Connection.deserialize`` support to `:mod:`~sqlite3``. Patch by Erlend E. Aasland.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1153); [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) 3.11.0a7.rst, line 1153); [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) 3.11.0a7.rst, line 1153); [backlink](#)

Unknown interpreted text role "mod".

Added `:class:`~ctypes.BigEndianUnion`` and `:class:`~ctypes.LittleEndianUnion`` classes, as originally documented in the library docs but not yet implemented.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1164); [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) 3.11.0a7.rst, line 1164); [backlink](#)

Unknown interpreted text role "class".

Add an Barrier object in synchronization primitives of *asyncio* Lib in order to be consistant with Barrier from *threading* and *multiprocessing* libs*

`:mod:`~re`` module, fix a few bugs about capturing group. In rare cases, capturing group gets an incorrect string. Patch by Ma Lin.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1186); [backlink](#)

Unknown interpreted text role "mod".

Document internal `mod: 'asyncio'` API.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1196); [backlink](#)

Unknown interpreted text role "mod".

Update PEP URLs to [PEP 676](#)'s new canonical form.

Clarified the old Python versions compatibility note of `:func: 'binascii.crc32'` / `:func: 'zlib.adler32'` / `:func: 'zlib.crc32'` functions.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1214); [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) 3.11.0a7.rst, line 1214); [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) 3.11.0a7.rst, line 1214); [backlink](#)

Unknown interpreted text role "func".

Clarify `for` statement execution in its doc.

Adjust inaccurate phrasing in `:doc: './extending/newtypes_tutorial'` about the `ob_base` field and the macros used to access its contents.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1234); [backlink](#)

Unknown interpreted text role "doc".

Document that in some circumstances `:exc: 'KeyboardInterrupt'` may cause the code to enter an inconsistent state. Provided a sample workaround to avoid it if needed.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1244); [backlink](#)

Unknown interpreted text role "exc".

Link the `errno`s referenced in `Doc/library/exceptions.rst` to their respective section in `Doc/library/errno.rst`, and vice versa. Previously this was only done for `EINTR` and `InterruptedError`. Patch by Yan "yyyyyyan" Orestes.

Skip test for `:func: '~os.sched_getaffinity'` and `:func: '~os.sched_setaffinity'` error case on FreeBSD.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1267); [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) 3.11.0a7.rst, line 1267); [backlink](#)

Unknown interpreted text role "func".

Restore 'descriptions' when running tests internally.

Rewrite `:func: 'asyncio.to_thread'` tests to use `:class: 'unittest.IsolatedAsyncioTestCase'`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1286); [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) 3.11.0a7.rst, line 1286); [backlink](#)

Unknown interpreted text role "class".

The test suite is now passing on the Emscripten platform. All fork, socket, and subprocess-based tests are skipped.

Skip `strptime("%4Y")` feature test on Windows. It can cause an assertion error in debug builds.

Skip tests if platform's `strptime` does not support non-portable glibc extensions.

A test case for `func.os.sendfile` is converted from deprecated `mod:asyncore` (see [PEP 594](#)) to `mod:asyncio`. Patch by Oleg Iarygin.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1326); [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) 3.11.0a7.rst, line 1326); [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) 3.11.0a7.rst, line 1326); [backlink](#)

Unknown interpreted text role "mod".

Add configure option `option:--enable-wasm-dynamic-linking` to enable `dlopen` and `MAIN_MODULE / SIDE_MODULE` on `wasm32-emscripen`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1336); [backlink](#)

Unknown interpreted text role "option".

`makesetup` now detects and skips all duplicated module definitions. The first entry wins.

Add SOABI `wasm32-emscripen` for Emscripten and `wasm32-wasi` for WASI on 32bit WASM as well as `wasm64` counter parts.

Ensure Windows install builds fail correctly with a non-zero exit code when part of the build fails.

Update OpenSSL to 1.1.1n for macOS installers and all Windows builds.

The `mod:tkinter` package now requires Tcl/Tk version 8.5.12 or newer.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1385); [backlink](#)

Unknown interpreted text role "mod".

Add `regen-configure` make target to regenerate configure script with Christian's container image `quay.io/tiran/cpython_autoconf:269`.

Building Python now requires support of IEEE 754 floating point numbers. Patch by Victor Stinner.

`configure` now verifies that all SQLite C APIs needed for the `mod:sqlite3` extension module are found.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1414); [backlink](#)

Unknown interpreted text role "mod".

Update `zlib` to v1.2.12 to resolve CVE-2018-25032.

Enables installing the `file:py.exe` launcher on Windows ARM64.

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

main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1433); [backlink](#)

Unknown interpreted text role "file".

Upgraded `:ref:launcher` to support a new `-V:company/tag` argument for full PEP 514 support and to detect ARM64 installs. The `-64` suffix on arguments is deprecated, but still selects any non-32-bit install. Setting `:envvar:PYLAUNCHER_ALLOW_INSTALL` and specifying a version that is not installed will attempt to install the requested version from the Microsoft Store.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1442); [backlink](#)

Unknown interpreted text role "ref".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1442); [backlink](#)

Unknown interpreted text role "envvar".

The installer for Windows now includes documentation as loose HTML files rather than a single compiled `:file:.chm` file.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1456); [backlink](#)

Unknown interpreted text role "file".

Update Windows installer to use SQLite 3.38.1.

Update bzip2 to 1.0.8 in Windows builds to mitigate CVE-2016-3189 and CVE-2019-12900

Prevent CVE-2022-26488 by ensuring the Add to PATH option in the Windows installer uses the correct path when being repaired.

Fix a regression in the setting of `sys._base_executable` in framework builds, and thereby fix a regression in `:mod:venv` virtual environments with such builds.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1495); [backlink](#)

Unknown interpreted text role "mod".

Update macOS installer to SQLite 3.38.1.

Replace Emscripten's limited shell with Katie Bell's browser-ui REPL from python-wasm project.

Add `PyFrame_GetBuiltins`, `PyFrame_GetGenerator` and `PyFrame_GetGlobals` C-API functions to access frame object attributes safely from C code.

Move the private `_PyFrameEvalFunction` type, and private `_PyInterpreterState_GetEvalFrameFunc()` and `_PyInterpreterState_SetEvalFrameFunc()` functions to the internal C API. The `_PyFrameEvalFunction` callback function type now uses the `_PyInterpreterFrame` type which is part of the internal C API. Patch by Victor Stinner.

Move the private undocumented `_PyEval_EvalFrameDefault()` function to the internal C API. The function now uses the `_PyInterpreterFrame` type which is part of the internal C API. Patch by Victor Stinner.

Remove the private undocumented function `_PyEval_CallTracing()` from the C API. Call the public `:func:sys.call_tracing` function 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) 3.11.0a7.rst, line 1561); [backlink](#)

Unknown interpreted text role "func".

Remove the private undocumented function `_PyEval_GetCoroutineOriginTrackingDepth()` from the C API. Call the public `:func:sys.get_coroutine_origin_tracking_depth` function 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) 3.11.0a7.rst, line 1572); [backlink](#)

Unknown interpreted text role "func".

Remove the following private undocumented functions from the C API:

- `_PyEval_GetAsyncGenFirstiter()`
- `_PyEval_GetAsyncGenFinalizer()`
- `_PyEval_SetAsyncGenFirstiter()`
- `_PyEval_SetAsyncGenFinalizer()`

Call the public `:func:`sys.get_asyncgen_hooks`` and `:func:`sys.set_asyncgen_hooks`` 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) 3.11.0a7.rst, line 1591); [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) 3.11.0a7.rst, line 1591); [backlink](#)

Unknown interpreted text role "func".

Remove private functions `_PySys_GetObjectId()` and `_PySys_SetObjectId()`. Patch by Dong-hee Na.

Add new functions to pack and unpack C double (serialize and deserialize): `:c:func:`PyFloat_Pack2``, `:c:func:`PyFloat_Pack4``, `:c:func:`PyFloat_Pack8``, `:c:func:`PyFloat_Unpack2``, `:c:func:`PyFloat_Unpack4`` and `:c:func:`PyFloat_Unpack8``. Patch by Victor Stinner.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Misc\NEWS.d\ (cpython-main) (Misc) (NEWS.d) 3.11.0a7.rst, line 1611); [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) 3.11.0a7.rst, line 1611); [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) 3.11.0a7.rst, line 1611); [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) 3.11.0a7.rst, line 1611); [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) 3.11.0a7.rst, line 1611); [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) 3.11.0a7.rst, line 1611); [backlink](#)

Unknown interpreted text role "c:func".