

What's new in Python 3.8

About me

- Backend engineer using Python and Django.
- Part of triager team.
- Contributed around 30 patches upstream from July 2018.
- Primarily interested in unittest.mock and security.

New features in 3.8

- Assignment expressions
- Syntax for positional only arguments
- `multiprocessing.shared_memory`

Assignment expressions (PEP 572)

- Assignment operation can now be used as an expression using the walrus operator `:=`
- Works with conditional clauses, list comprehensions, etc.
- Top level assignment needs paranthesis.

```
name = person.get("name")  
if name:  
    print(f"Hello, {name}")
```

```
if name := person.get("name"):  
    print(f"Hello, {name}")
```

Syntax for positional only arguments (PEP 570)

- Arguments preceding / are now treated as positional only arguments.

```
def process_data(data, /, clean=True):  
    pass
```

```
process_data(data="foo") # error  
process_data("foo") # works
```

multiprocessing.shared_memory

- Provides shared memory for direct access across processes.
- Supports numpy out of the box.

Optimisations in Python 3.8

Argument clinic optimizations

- Optimisations made to argument clinic for parsing functions with positional only arguments and keyword arguments. [bpo 35582](#)
- Made functions like str.replace, getattr, etc. around 30% faster.
- dict.pop is now 35% faster. [bpo 20180](#)

miscellaneous optimizations

- namedtuple attribute access is now around 2x faster. [bpo 32492](#)
- IPAddress checks in large networks is around 3x faster [bpo 25430](#)

Python 2 EoL

- No bug fixes.
- No security updates. CVE vulnerabilities needs to be patched by vendors providing commercial support.
- No optimizations were backported to 2.7.
- Support from core team ends with January 2020.

Support CPython development.

- Everything is done on volunteer time with no corporation.
- #3 popular language only few people work on CPython full time.
- Organizations can help in donating money or volunteer work.
- Contributions not only come in code. Documentation, testing, triaging, discussions etc. are all important.