
eth-typing Documentation

Release 4.1.0

The Ethereum Foundation

Apr 01, 2024

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Common type annotations for ethereum python packages.

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1.1 Types

The following types are available from the `eth_typing` module.

i.e.

```
from eth_typing import TypeStr
```

1.1.1 ABI

TypeStr

String representation of a data type.

```
TypeStr = str
```

Decodable

Binary data to be decoded.

```
Decodable = Union[bytes, bytearray]
```

1.1.2 Enumerables

ForkName

Class that contains the different names used to represent hard forks on the Ethereum network.

```
class ForkName:
    Frontier = 'Frontier'
    Homestead = 'Homestead'
    EIP150 = 'EIP150'
    EIP158 = 'EIP158'
    Byzantium = 'Byzantium'
    Constantinople = 'Constantinople'
    Metropolis = 'Metropolis'
```

ChainId

IntEnum class defining EVM-compatible network name enums as their respective chain id *int* values.

To learn more about chain ids, see [CAIP-2](#) for details.

The list of chain ids is available from the [ethereum-lists/chains](#) repository.

```
class ChainId(IntEnum):
    # L1 networks
    ETH = 1
    EXP = 2
    ROP = 3
    RIN = 4
    GOR = 5
    # L2 networks
    OETH = 10
    GNO = 100
```

1.1.3 Discovery

NodeID

A 32-byte identifier for a node in the Discovery DHT

```
NodeID = NewType('NodeID', bytes)
```

1.1.4 EthPM

ContractName

Any string conforming to the regular expression `[a-zA-Z][a-zA-Z0-9_]{0,255}`.

```
ContractName = NewType('ContractName', str)
```

URI

Any string that represents a URI.

```
URI = NewType('URI', str)
```

1.1.5 EVM

Address

Any bytestring representing a canonical address.

```
Address = NewType('Address', bytes)
```

HexAddress

Any *HexStr* representing a hex encoded address.

```
HexAddress = NewType('HexAddress', HexStr)
```

ChecksumAddress

Any *HexAddress* that is formatted according to [ERC55](#).

```
ChecksumAddress = NewType('ChecksumAddress', HexAddress)
```

AnyAddress

Any of *Address*, *HexAddress*, *ChecksumAddress*.

```
AnyAddress = TypeVar('AnyAddress', Address, HexAddress, ChecksumAddress)
```

Hash32

Any 32 byte hash.

```
Hash32 = NewType('Hash32', bytes)
```

BlockNumber

Any integer that represents a valid block number on a chain.

```
BlockNumber = NewType('BlockNumber', int)
```

BlockIdentifier

Either a 32 byte hash or an integer block number

```
BlockIdentifier = Union[Hash32, BlockNumber]
```

1.1.6 Encodings

HexStr

Any string that is hex encoded.

```
HexStr = NewType('HexStr', str)
```

Primitives

Any of *bytes*, *int*, or *bool* used as the *Primitive* arg for conversion utils in [ETH-Utils](#).

```
Primitives = Union[bytes, int, bool]
```

1.2 Release Notes

1.2.1 eth-typing v4.1.0 (2024-04-01)

Features

- Add python3.12 support (#57)

Internal Changes - for eth-typing Contributors

- Merge template updates, adding build tests for all docs formats, add `blocklint` to lint tools (#57)

1.2.2 eth-typing v4.0.0 (2024-01-09)

Breaking changes

- Drop python 3.7 support (#55)

Internal Changes - for eth-typing Contributors

- Merge updates from the project template, notably: use `pre-commit` for linting and change the name of the master branch to `main` (#55)
- Fixed booleans in `pyproject.toml` and added a test for the presence of the `eth_typing.__version__` attribute (#56)

1.2.3 eth-typing v3.5.2 (2023-11-07)

Miscellaneous Changes

- #54

1.2.4 eth-typing v3.5.1 (2023-10-20)

Internal Changes - for eth-typing Contributors

- Add script to maintain Network constants listed in the networks module. (#51)
- Add types-setup tools to support pkg_resources and __version__ (#52)

1.2.5 eth-typing v3.5.0 (2023-09-29)

Features

- Borrowing from the typing in web3.py, open up BlockIdentifier to include BlockParams (e.g. “latest”, “finalized”, etc..) as well as other valid values. (#47)
- Add an IntEnum class, ChainId, defining EVM-compatible network name enums as their respective chain id int values. (#49)

Internal Changes - for eth-typing Contributors

- Add the tests/ directory to the distributed tarball (#46)
- Added build.os config for readthedocs (#48)
- Fix release command by checking the git remote upstream configuration and merge other minor template updates. (#50)

1.2.6 eth-typing v3.4.0 (2023-06-07)

Improved Documentation

- pull in ethereum-python-project-template updates (#44)

Features

- Add Cancun to ForkName enum. (#45)

Internal Changes - for eth-typing Contributors

- remove unused docs deps, bump version of remaining (#43)
- pull in ethereum-python-project-template updates (#44)
- For CircleCI builds, update pip and pip install tox under sys instead of --user to avoid virtualenv versioning issues. (#45)

1.2.7 v3.3.0 (2023-03-08)

Features

- Add Shanghai to ForkName enum. (#39)
- Add support for python 3.11. (#40)

Internal Changes - for eth-typing Contributors

- tox related updates for make docs to work properly. Remove some old references to python 3.5 and 3.6. (#39)
- Bump mypy version to 0.910 to avoid issues installing the “[dev]” extra on Python 3.10. Update test suite to require installing the full dependency suite to help catch these errors. (#41)

1.2.8 v3.2.0 (2022-09-14)

Features

- Add Merge to ForkName enum (#34)

Bugfixes

- Pin Python version to <4 instead of <3.11 (#37)
- Rename Merge to Paris in ForkNameEnum (#38)

1.2.9 v3.1.0 (2022-06-22)

Features

- Setup towncrier to generate release notes from fragment files to ensure a higher standard for release notes. (#16)
- Add new BLSPrivateKey type for BLS private key (#23)
- Add __all__ property to __init__.py with appropriate types to explicitly export (#28)
- Add GrayGlacier to ForkName enum (#30)

Miscellaneous changes

- [#32](#)

1.2.10 v3.0.0 (2021-11-15)

- Update ForkName enum to include Berlin, London, and ArrowGlacier
- Update Python support to include python 3.8-3.10
- Remove Python 3.5 support

1.2.11 v2.2.0 (2019-10-31)

- Update ForkName enum to include ConstantinopleFix and Istanbul

1.2.12 v2.1.0 (2019-10-31)

- Add BLS types

1.2.13 v2.0.0 (2019-10-31)

- Expose Type Hints as per PEP 561

1.2.14 v1.0.0 (2018-06-08)

- Added annotations from py-evm.

1.2.15 v0.3.1 (2018-06-07)

- Removed eth-utils requirement.

1.2.16 v0.3.0 (2018-06-07)

- Updated eth-utils requirement.

1.2.17 v0.2.0 (2018-06-07)

- Launched repository, claimed names for pip, RTD, github, etc.

INDICES AND TABLES

- `genindex`
- `modindex`