

# Week 20 11.28

## 11.28 HD Wallet

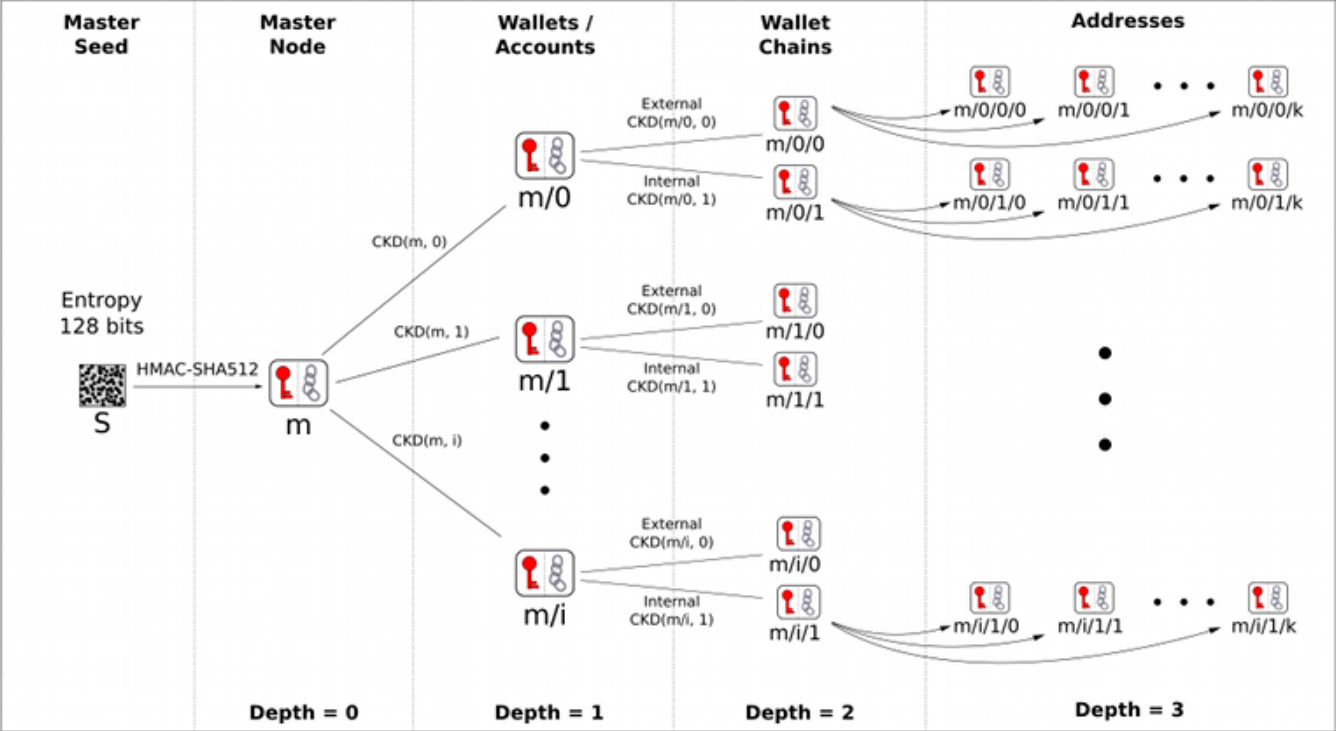
[BIP-32](#) HD Wallet / [BIP-44](#) Hierarchical Deterministic

m / purpose' / coin\_type' / account' / change / address\_index

coin\_type coin\_type 0 60 Conflux 503

HD Wallet [BIP-32](#) Master Seed 128bit 512bit

### BIP 32 - Hierarchical Deterministic Wallets



Child Key Derivation Function ~  $CKD(x,n) = \text{HMAC-SHA512}(x_{\text{Chain}}, x_{\text{PubKey}} || n)$

## 11.29 HD Wallet

HD HD Master Seed “ ” fluent, meta

```
DK = PBKDF2(PRF, Password, Salt, c, dkLen)
```

5 BIP39

- PRF BIP-39 HMAC-SHA512
- Password PBKDF2 BIP-39 Master Seed utf-8
- Salt mnemonic 123456 mnemonic + mnemonic123456
- c BIP-39 2048.
- dkLen BIP-39 512

HD Wallet Master Seed HD Master Seed

# 11.30

BIP-39

- 2048
- 12

nurse silk fiber machine jelly reduce coffee language fox forum cause team

204nurse 1212 10010111100 12 (12\*11=)132bit 132 128

1. ENT bit E 128<=ENT<=256 os.urandom python

2. ENT 56 ENT/32 ENT=128 4

3. 3/32\*ENT

## 12.1 Keystore

Keystore Keystore

```
{
  "version": 3,
  "id": "db029583- f1bd- 41cc- aeb5- b2ed5b33227b",
  "address": "1cad0b19bb29d4674531d6f115237e16afce377c",
  "crypto": {
    "ciphertext": "3198706577b0880234ecbb5233012a8ca0495bf2cfa2e45121b4f09434187aba",
```

```

    "cipherparams": {"iv": "a9a1f9565fd9831e669e8a9a0ec68818"},
    "cipher": "aes-128-ctr",
    "kdf": "scrypt",
    "kdfparams": {
      "dklen": 32,
      "salt": "3ce2d51bed702f2f31545be66fa73d1467d24686059776430df9508407b74231",
      "n": 8192,
      "r": 8,
      "p": 1,
    },
    "mac": "cf73832f328f3d5d1e0ec7b0f9c220facf951e8bba86c9f26e706d2df1e34890",
  },
}

```

[ciphertext](#)
[cipher](#)
[cipherparams](#)
[kdf](#)
[kdfparams](#)

[keystore](#)

[SDK](#)
[Keystore](#)
[Keystore](#)

## 12.2

[random](#)
[pyrandom.random](#)
[java.util.random](#)
[wintermute](#)

[SDK](#)
[/dev/urandom](#)
[/dev/random](#)

[Linux](#)

[SDK](#)

```

extra_key_bytes = text_if_str(to_bytes, extra_entropy)
key_bytes = keccak(os.urandom(32) + extra_key_bytes)

```

[/dev/urandom](#)
[urandom](#)
[u](#)
[/dev/random](#)
[/dev/urandom](#)
[/dev/urandom](#)
[/dev/random](#)

```

with open("/dev/random", 'rb') as f:
    print(f.read(32).hex())

```

Revision #10

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