分润方案

方案一

1 查询每个区块所有验证人数据，累加总股份。
2 根据区块产量计算社区的 2%。
3 计算剩下的 98%里的 20%按实际验证人状态平均分配具体产量
4 计算剩下的 98%里的 80%所有验证人按股份分配具体产量
5 查询每个区块给验证人投票的委托人股份，计算每个委托人区块产量
6 累加每个区块每个委托人和验证人区块产量
7 对委托人和验证人产量结算
8 风控提现

方案二

1 启动节点打印每个区块产量日志，包含社区 2%，验证人 98%的具体产量
2 通过 flume 采集验证人区块链产量日志清洗数据输入数据库
3 查询每个区块给验证人投票的委托人股份，计算每个委托人区块产量
4 累加每个区块每个委托人和验证人区块产量
5 对委托人和验证人产量结算
6 风控提现

用到的 API 和日志数据

所有验证人

请求方式 GET
http://{ip}:26659/exchain/v1/staking/validators?status=all&height={number}
请求参数

number 区块高度，不加参数 height 参数表示最新高度

返回

```
[
    {
        "operator_address": "fvaloper1qg3pkkuw7zuz8h39h36ttt4xq6nhx3a043svlz",
        "consensus_pubkey":
"fvalconspub1zcjduepqn7wscltrcjfv82z97fczgfyzjzf5chdtd2564al2669my87vz9wsgxykg4",
```

            "jailed": false,
            "status": 2,
            "tokens": "0",
            "delegator_shares": "14691663.875493595097213985",
            "description": {
                "moniker": "node14",
                "identity": "22logo|||http://mywebsite/pic/logo.jpg",
                "website": "http://mywebsite",
                "details": "90"
            },
            "unbonding_height": "494960",
            "unbonding_time": "2022-04-13T23:28:24.973922257Z",
            "commission": {
                "commission_rates": {
                    "rate": "1.000000000000000000",
                    "max_rate": "1.000000000000000000",
                    "max_change_rate": "0.000000000000000000"
                },
                "update_time": "1970-01-01T00:00:00Z"
            },
            "min_self_delegation": "30000.000000000000000000"
        },......]

返回参数

验证人地址 operator_address
验证人股份 delegator_shares
验证人是否监禁 jailed
验证人分配比例 details
验证人质押币量 min_self_delegation
验证人状态 status ，0   Unbonded，1 Unbonding，2 Bonded

某一高度验证人未提取挖矿收益

请求方式 GET
http://{ip}:26659/exchain/v1/distribution/validators/{operator_addr}/validator_commission?height={number}

请求参数

operator_addr 验证人地址
number 区块高度，不加参数 height 参数表示最新高度

返回

```
[
    {
        "denom": "fax",
        "amount": "3977.969379928995934395"
    }
]
```

返回参数

验证人未提取挖矿收益 amount

委托人给验证人投票地址以及股份

请求方式 GET
http://{ip}:26659/exchain/v1/staking/validators/{operator_addr}/shares?height=669620
请求参数

operator_addr 验证人地址
number 区块高度，不加参数 height 参数表示最新高度
返回

```
[
    {
        "delegator_address": "f1pj3uy4r9nspydpshqfvxv78v8c0ptqhedwsg3y",
        "shares": "51914003.093616943806409840"
    },
    {
        "delegator_address": "f1lfypqp04zlg07xhczv0p07lq992frydthervwq",
        "shares": "39903169.274274982511997224"
    }
]
```

返回参数

委托人地址 delegator_address
委托人股份 shares

每个区块分配明细

启动 exchaind 节点时加上参数 --log_level main:info,state:info,distr:debug,auth:info,mint:debug
可以开启每个区块分配明细打印
参数解释
每个区块产量 AllocateTokens
扣除社区奖励后 23 个超级节点每个分配的 20%奖励 allocate by equa

监禁地址不能出块不参与挖矿奖励地址

validator fvaloper1nd8ce76l4tdczfe9fen46gjurl5qkq6qeev4sq is jailed, not allowed to get reward by shares weight modu

所有验证人按股份分配 80%奖励 allocate by shares

扣除社区奖励后社区地址分配 2%奖励 Send fees to community pool

next block to update minted per block <10519200>,   module=mint

D[2022-03-30|02:35:02.677][592]   AllocateTokens module=distr TotalFee=0.481975815651380333fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1uymxn65jawauvfew394zrz3ad64w4fd5z75rdq=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1r5wjusay3wfxvcuwd7hseqmp7mu046qcduhfmy=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1dccpf7gzmh30j8yrvhyzpj2vutltk93sxhqc8k=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1yt9vy3hxt6lyvumwmanlq4a433273mue87yrt5=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1qg3pkkuw7zuz8h39h36ttt4xq6nhx3a043svlz=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper13p43jqc04xay5qfa0qu64d3pe43z2hx9gt54dv=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1duktvh8604rnuxfm3u3s4h3rmdk9yznqdkgmhj=0.004723362993383527fax

D[2022-03-30|02:35:02.678][592]   allocate   by   equal module=distr fvaloper1lg9kumspu4q3j5le2297rayuuujwk540symq4m=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592]   allocate   by   equal module=distr fvaloper180a9v5xgzz35rlp5yu6ulh338tnedxyyyh7hn6=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592]   allocate   by   equal module=distr fvaloper1ac0a2qt6vajg0jh0el85e47f5jawemv3mmaeez=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592]   allocate   by   equal module=distr fvaloper1g2860u79a7r0ztafump5dn9d6ms5au6r53zy0y=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592]   allocate   by   equal module=distr fvaloper16j7rqeq2pvxtm468766hhm25ugsy4c2qmz9llx=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592]   allocate   by   equal module=distr fvaloper1u7znkwqnf047t7p5w4rqql32hkxu3mwm53fd65=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592]   allocate   by   equal module=distr fvaloper1r8h9z6p7v872nadfd76dmmtqn543twq9ypt9j4=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592] allocate by equal module=distr fvaloper1pj3uy4r9nspydpshqfvxv78v8c0ptqheuydlpa=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592] allocate by equal module=distr fvaloper1dkl2djussnp8nh5dtx4m4rmskyjdhpne5ecp5m=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592] allocate by equal module=distr fvaloper1lfypqp04zlg07xhczv0p07lq992frydtxn7m7e=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592] allocate by equal module=distr fvaloper1484cuazndeshy3r5vucknt2cs52q4yykawxe04=0.004723362993383527fax

D[2022-03-30|02:35:02.679][592] allocate by equal module=distr fvaloper1cr2mnfzmwasjj6g4juhtwuzhvg75vjqthxy5n7=0.004723362993383527fax

D[2022-03-30|02:35:02.680][592] allocate by equal module=distr fvaloper1jmdy3qvkkk2phzr6dlh2c3v0kve3ag66hlmlg3=0.004723362993383527fax

D[2022-03-30|02:35:02.681][592] validator fvaloper198yq9855d5s3cx07ry9kq2uuraxtwr8tynjq9p is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.681][592] validator fvaloper1xzmznga9f85j258nu3lrq8za46x92znd6ydqne is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.682][592] validator fvaloper10v328cwauam2u36nkwl9n5vsw839399n5w0l2w is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.682][592] validator fvaloper1nd8ce76l4tdczfe9fen46gjurl5qkq6qeev4sq is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.683][592] validator fvaloper1krh06t9ytensn57uxtn39tkz5pt6fumkxhx4zz is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.683][592] validator fvaloper1ewx789efvev2aw9wqfc86zg6tk5xqrnyq3r9al is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.684][592] validator fvaloper1a9yt4aenlfaegsg90m0cpuyrwdsasw3gt0hwre is jailed, not allowed to get reward by shares weight module=distr

D[2022-03-30|02:35:02.684][592] allocate by shares module=distr fvaloper1qg3pkkuw7zuz8h39h36ttt4xq6nhx3a043svlz=0.000202574345444450fax

D[2022-03-30|02:35:02.684][592] allocate by shares module=distr fvaloper1qt2uw9tchs5x8cjx4eeh52rphqnhewanvw6g8a=0.001217593434802398fax

D[2022-03-30|02:35:02.684][592] allocate by shares module=distr fvaloper1q093d89xcrruf9mdzts6q87snus7pnzxk5urqw=0.000000000013788386fax

D[2022-03-30|02:35:02.684][592] allocate by shares module=distr fvaloper1p28shuxxpq5dczxur8awllnctsf9cz6vnrp3rp=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592] allocate by shares module=distr fvaloper1pj3uy4r9nspydpshqfvxv78v8c0ptqheuydlpa=0.000021189976650100fax

D[2022-03-30|02:35:02.685][592] allocate by shares

module=distr fvaloper1z5s5zc0j56dsxqj03vtpzrq029qm8stncpqf3l=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr fvaloper1rz7uvswg76s755pzl9hrtc57gault80a4cy9ed=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr
fvaloper1r8h9z6p7v872nadfd76dmmtqn543twq9ypt9j4=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr fvaloper1r2hprw0wpr5rxqakf4gxtstz2r7q4urw8uv54a=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr
fvaloper1r5wjusay3wfxvcuwd7hseqmp7mu046qcduhfmy=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr fvaloper1r5aqg6gfu78tzf364mg07cq687z0talc9e27k7=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr fvaloper1y2te4fzmfsqun4pxc6uzk6nhy5ayvvkz3tc5rm=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr
fvaloper1yt9vy3hxt6lyvumwmanlq4a433273mue87yrt5=0.000021189976650100fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr fvaloper1y3t52jhrp643tppl4u6n2uahlpx4s5lcd3vlhe=0.000000000013788386fax

D[2022-03-30|02:35:02.685][592]   allocate   by   shares
module=distr fvaloper193shradepv2kjf23j68g2xdkhxyk7z88d9sj29=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr fvaloper18ptpfqw04h4xl3myaeezgd3j20svm75332znzn=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr fvaloper180a9v5xgzz35rlp5yu6ulh338tnedxyyyh7hn6=0.000120076470004766fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr
fvaloper1g2860u79a7r0ztafump5dn9d6ms5au6r53zy0y=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr
fvaloper1gmxcms5r8ke84yfcgnlwq5vkpy7rrm5zvj3mq3=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr fvaloper1f795nxr4z5pd32jhfc8tmv6e299sw7gg3hdglc=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr
fvaloper1vgwxdyy2fh6dgkhsh7ks2h9m3cnm8dxy6xm9mn=0.000550200349529719fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr fvaloper1vvjm6y42d9qrj9f0l970afu87w2jl0gpjs8aue=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr
fvaloper1dkl2djussnp8nh5dtx4m4rmskyjdhpne5ecp5m=0.000000000013788386fax

D[2022-03-30|02:35:02.686][592]   allocate   by   shares
module=distr fvaloper1dccpf7gzmh30j8yrvhyzpj2vutltk93sxhqc8k=0.000000000013788386fax

D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr
fvaloper1duktvh8604rnuxfm3u3s4h3rmdk9yznqdkgmhj=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper1wr22m5a7y6llmze3qvufnyk9zrafdm96xegd95=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper10yjcg6zkyl0mfws0qu0ea7sj5cuqnyll7hrcse=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper10h9re7ts7ff0kgc4h0f7xgsetta5n50dwylm0d=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper10as5wsgtdqty2p3dqzv3ynhg8ch80r5kjd2yg7=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper1snml6dksgyfn69jc6cz5ez3dz5v0c2faqkwfpl=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper13p43jqc04xay5qfa0qu64d3pe43z2hx9gt54dv=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper1jmdy3qvkkk2phzr6dlh2c3v0kve3ag66hlmlg3=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper1ngad962adu6pqyvk6g275xuzzujyzaplqfgaag=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper1n25ljdm5n8lpj6gg97ac0hgyj93tzqnqtudty0=0.000000000013788386fax
D[2022-03-30|02:35:02.687][592]   allocate   by   shares
module=distr fvaloper1nj82axsrl605rx5sdcvdl8tuntzyvvy3e5c39d=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr fvaloper1n7gyk3py3jnx58h86dnghyxr8hz0nqrx7s2kxd=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr
fvaloper15cv7qtsjn45y7qhgxnqk0hzfam6m3s7ss6ywhq=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr
fvaloper14xhem669222kwn0e4adsspaqu3s78kacdq2cfs=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr fvaloper1484cuazndeshy3r5vucknt2cs52q4yykawxe04=0.367124349713593586fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr fvaloper1kcc3t68srecuft32mxux7gr69tzswrlgtkty2n=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr fvaloper1kayzvsp7e6qptaqc646jk9zecw7rreuwqumx09=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr fvaloper1h8lq0qaqjnerl73j8hnzcv3kw2jp80mdlzs36z=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr
fvaloper1h52atv83j9f266m7ckqdyvmhggkfkmw79f4cyn=0.000000000013788386fax
D[2022-03-30|02:35:02.688][592]   allocate   by   shares
module=distr fvaloper1cr2mnfzmwasjj6g4juhtwuzhvg75vjqthxy5n7=0.007345853805849283fax

D[2022-03-30|02:35:02.688][592] allocate by shares module=distr fvaloper1c93z3rnav23pqrs953kufqya4aalqmkkyrpadr=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1cwhl037smkedvla2tnu7k5d3v0un2mstcmv8e8=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1cu6k8sekq9atdta3rd7zcaaz95h76fe6egjce5=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper16rw9up0cj7ug0neg0upf7gsrvve40dwlkqeles=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper16j7rqeq2pvxtm468766hhm25ugsy4c2qmz9llx=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper16k0qv22fxaz7xyts7fnmfzmd2pj43wnfqwlcke=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1m9dwrdluf38fw4rcqs39y6r40xpsawtaqfv4xr=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1uymxn65jawauvfew394zrz3ad64w4fd5z75rdq=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1u0spkudsyefqzn48f75uv4rn39whxtjcrkcfag=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1u7znkwqnf047t7p5w4rqql32hkxu3mwm53fd65=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1awksm34nft6q3gd9pley6m3tuan900g688p522=0.000000000013788386fax

D[2022-03-30|02:35:02.689][592] allocate by shares module=distr fvaloper1ac0a2qt6vajg0jh0el85e47f5jawemv3mmaeez=0.000000000013788386fax

D[2022-03-30|02:35:02.690][592] allocate by shares module=distr fvaloper174yy59gan27pp00yqvdjtjh3jzzl3u3jn2pw2m=0.000000000013788386fax

D[2022-03-30|02:35:02.690][592] allocate by shares module=distr fvaloper1lg9kumspu4q3j5le2297rayuuujwk540symq4m=0.000000000013788386fax

D[2022-03-30|02:35:02.690][592] allocate by shares module=distr fvaloper1lfypqp04zlg07xhczv0p07lq992frydtxn7m7e=0.001266010708738427fax

D[2022-03-30|02:35:02.690][592] Send fees to community pool module=distr community_pool=0.009639516313027664fax