

How much influence does the life cycle of Filecoin network sectors have on miners?

FileCoin (<https://learnblockchain.cn/tags/FileCoin>) IPFS (<https://learnblockchain.cn/tags/IPFS>)

Distributed storage

(<https://learnblockchain.cn/tags/%E5%88%86%E5%B8%83%E5%BC%8F%E5%AD%98%E5%82%A8>)

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01.

What is a sector?

A sector is the basic unit of storage on Filecoin. It has a standard size and a clear commitment time period. It provides digital storage services like containers in global freight. The size of the sector balances security and availability.

According to the white paper "Creating the Filecoin Economy", the life cycle of a sector is determined by the storage market, and the period promised by the sector is specified (that is, if there is a real order, it will be determined according to the requirements of the real order) .

If we compare sectors to containers, containers filled with data (sectors that have been encapsulated) together build a huge Filecoin storage market.

So, what does a sector failure mean?

When the data in the container full of data disappears, the container has no data stored. Analogous to the Filecoin network, that is, when the data originally stored in the sector disappears, the sector becomes invalid, and the sector invalidation means that The computing power corresponding to the sector disappeared.

02.

Thinking about the life cycle of sectors

The sector of the Filecoin network is 540 days by default, but miners can modify the sector time. Therefore, the **sector life cycle of the Filecoin network can be automatically set to any value between 180-540 days** (the more common ones are 180 days, 360 days, 540 days), because the Filecoin space race and the mainnet are seamlessly connected, the start of the Filecoin sector life cycle is 06:00 on August 25, 2020, Beijing time, which is the time when the Filecoin space race starts.

Calculated on August 25th, a sector with a 180-day sector life cycle has been set. In fact, it has already expired on February 21, 2021.

Why do some miners set a 180-day sector life cycle?

We all know that the disappearance of sectors means the disappearance of computing power, and the disappearance of computing power means that the income of miners is drastically reduced. After all, in the Filecoin network, miners obtain block rewards with effective computing power. No more, where does the block reward come from?

Therefore, **from the perspective of miners obtaining block rewards, the sector period must be as long as possible** .

Then why do miners set a 180-day sector period?

Because the sector expires, it also means that the ** pledged coins will be returned to the miners at one time, so the miners will have more FIL.



Does setting a 180-day sector life cycle have more advantages than disadvantages?

For the old miners, most of the sectors are encapsulated during the space race, and the gas fee and pledge coins during the space race are almost zero. Now, the cost of adding 1TiB of effective computing power to the 32GiB sector requires about 20 FIL. .

Obviously, for miners, although the life cycle of a sector can be arbitrarily selected between 180-540 days, but the life cycle of the sector is as long as possible, and the high probability is the best choice, because compared to space Competition, the cost of newly packaged 1TB effective computing power is too high!

03.

Can the Filecoin sector be renewed?

Combining the above, we clearly know that it may be more cost-effective to maintain the original computing power to obtain block rewards than to repackage the computing power of 1TiB.

So, can the Filecoin sector life cycle be renewed?

The sector encapsulated on November 24, 2020 (November 24, UTC time, November 25, Beijing time), that is, the sector of V1, cannot be renewed.

Sectors encapsulated after November 28, that is, V1.1 sectors, can be renewed.



jennijuju 1:39 AM

!! 🚀 Lotus v1.2.0 is live and [available for download](#)! This is a mandatory release, and if you haven't upgraded since v1.1.2, then you will be happy to see many exciting improvements for all stakeholders, including node operators, miners and clients! 🙌

This is a consensus-breaking update, so it is **NOT OPTIONAL**. You must upgrade before epoch 265200 (Tuesday Nov 24 at ~11:55PM UTC | 3:55pm PDT | 7:55am CST on Wednesday Nov 25), or you will lose sync with the chain. 🙌🙌

Despite 1.2.0 being a consensus-breaking release, you do NOT need to delete your Lotus repo. Simply shut down your node (both miner & daemon), get the latest code, and build afresh! (See [Upgrade in Place](#) for instructions on how to upgrade safely.)

Note: You **SHOULD** update your Go version to v1.15.5.

Upgrade Highlights:

- Includes [FIP-5](#): This change removes the expensive calculation of miner reward vesting from the `PreCommitSector` and `ConfirmSectorProofsValid` methods, leaving it to the deadline cron. This will reduce the gas consumption of these methods substantially, freeing up chain bandwidth and reducing costs. 🚀
- Updates to spec-actors [v2.3.2](#)
- Updates to proofs [v5.4.0](#)
- [Retuning gas costs](#): This reduces cost of WindowPoSt by up to 200M gas.
- Not picking invalid(terminated, removed..) sectors for winning PoSt, [#4770](#).

Why is November 24 the demarcation line for renewal?

Because there is an important version upgrade on November 24, that is, Lotus upgrade to v1.2.0 version. The upgrade of this version requires the miners to upgrade before the 265200 altitude. The upgrade content includes:

- FIP-5, removes expensive miner reward attribution calculations from `PreCommitSector` and `ConfirmSectorProofsValid`, which helps reduce gas consumption, release chain bandwidth and reduce miner costs;
- Upgrade Specs-actors to v2.3.2 version;
- Upgrade proofs to v5.4.0;
- Re-adjust the gas cost, and the main reduction is in `OnVerifyPostBase`;

The upgrade of this version fixes certain bugs. Therefore, Filecoin officially sets that before the bug is fixed, the sectors of the Filecoin network cannot be renewed. After the bug is fixed, the sectors of the Filecoin network can be renewed.

How to renew the sector life cycle?

Just send `ExtendSectorExpiration` to the network to renew.

Currently, Space-Time Cloud has successfully renewed some sectors.

04.

What are everyone still discussing in the community?

Filecoin officially opened a FIP proposal, which mainly discusses whether the sector (V1) before November 24 can be renewed.

Proposal on the extension of the V1 proof sector life cycle #56



deltazxm opened this issue on 23 Dec 2020 · 41 comments



deltazxm commented on 23 Dec 2020 · edited

Summary

It is currently not possible to extend the life cycle of the V1 proof sectors. This has caused a huge loss to the miners who sealed the V1 proof sectors in early days. Sealed sectors should only take windowPoSt challenges, security issues would not be involved. So we propose the V1 proof sectors' life cycle could be extended.

If the life cycle of these sectors cannot be extended, there will be a lot of sealing computation resources wasted to seal these sectors again. If miners have to seal sectors again, it will take much more collaterals and gas. More messages will make the chain congested, and other miners will have to pay more high gas fees too.

If the life cycle of V1 proof sectors is set to 180 days, miners would experience horrible loss and may cause even greater losses due to gas fee issues.

Improvement Goal

Allow the life cycle of V1 proof sectors to be able to extend like v8 proof sectors. Please see the detailed improvement plan: [\[https://github.com/filecoin-project/specs-actors/pull/1310\]](https://github.com/filecoin-project/specs-actors/pull/1310)



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Official members stated in the proposal:

According to the existing code, some sectors that previously used V1 proof cannot be extended at all. For miners who encapsulate this part of the sector, if the sector cannot be extended, it will cause significant losses, and will cause calculations and calculations. Waste of storage resources. Because miners re-encapsulate these sectors, more mortgage and gas consumption will be required.

In other words, the official consideration is that although the sector of V1 has some bugs, if the sector of V1 cannot be renewed, then the gas fee, pledge currency and network congestion that the miner needs to repackage the sector need to consume, It is very wasteful of resources. Therefore, Filecoin officially wants to listen to the community's opinions on whether the V1 sector can be renewed.

So, in the community discussion on whether the V1 sector can be renewed, what is your opinion?

Now, there are more and more proposals related to the Filecoin network. In fact, the Filecoin network belongs to the community and is a manifestation of everyone of us. The Filecoin network will definitely become more and more under the support and efforts of all of us. it is good!

Investors who want to learn more about IPFS and Filecoin, please contact the IPFS China Community Operations Officer (**WeChat ID: chuanzhang129**) or the IPFS China Community official website: <http://ipfs.cn> (<http://ipfs.cn>)

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