

Hedera Discord Activity Report

**2929 Relevant Comments Captured between
2020 and 2023**



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I have been working hard on my website and finally i was able to run it. I put my localhost into hashpack, the app comes up, i pair my wallet + the pairing string pops up, i can authenticate the account (uses a jwt token as advised here i believe), and then they can play the game. The winner gets their winnings and loser loses their coins properly. My questions on this are,

It seems the game plays just fine when i only do pairing and do not move on to auth. Do i need to only pair the wallet? Why would I want to auth an account vs just pairing it?

I am using just a regular TransferTransaction right now, which I understand is improper and i need to make a smart contract call for the game to start. I have a few contracts set up already for my backend for the treasury and permissions, and a relay contract intended to act as a mid point between my treasury and the frontend /player playing the game.

To do this correctly, would I make a function within the contract that requests to start the game, the contract calls the game function and the game is played, and then within the contract itself I would transfer the winnings to the proper winner? Never using transfertransaction again. Thank you for helping me with this.

2. By Pathorn#7333 in the Developer General Channel on 03/12/2023

You can use Hether.js to interact with smart contract but it's kind of an old method. Since we have JSON RPC relay, you can basically use any traditional web3 tooling like EtherJS, Hardhat, Truffle, Web3.JS to interact with Hedera. Please take a look at this article <https://hedera.com/blog/how-to-deploy-smart-contracts-on-hedera-using-truffle>

3. By ALeSD#2148 in the Developer General Channel on 03/11/2023

hey there , I realized the I set as `OPERATOR_KEY_MAIN` the ECDSA key associated to my account. So my relay gives me signature error.

Actually I don't own the ED25519 of that account. Is there any way to set the ED25519 by the ethereum address associated ?

4. By ALeSD#2148 in the Developer General Channel on 03/10/2023

Hello, I am trying to configure my JSON-RPC relay . What

```OPERATOR\_ID\_ETH\_SENDRWTRANSACTION=

OPERATOR\_KEY\_ETH\_SENDRWTRANSACTION=``` are used for ?

### **5. By Houseonfire#5013 in the Developer General Channel on 03/01/2023**

Thank you for all the help. I was hoping you could point me in the right direction when it comes to the auth token. i followed the youtube video by jaycool on authing the wallet upon pairing. How can I determine a safe token that can be authenticated on the front and back end and be unique to the specific player that is connecting? I was thinking to take the receipt of the wallet pair and relaying it to the backend also? Ive been searching for how to do this and not finding much. Perhaps my search terms are wrong or i am just going about this all wrong I'm not sure now lol. I'm just trying to understand and demonstrate these concepts so i can expand in the future to other projects .

### **6. By Michael Garber#5033 in the Javascript Channel on 03/01/2023**

Arkhia implements swirls labs open-sourced version of the rpc relay on more dedicated hardware <https://github.com/hashgraph/hedera-json-rpc-relay>

Hashio also implements the rpc relay but its a community shared resource. Thats why I'd say it is more reliable in that sense

### **7. By Michael Garber#5033 in the Javascript Channel on 03/01/2023**

I would like to suggest considering a more specialized and robust service like the Arkhia relay for making these calls. While Hashio is a great community tool, it may not be the ideal choice for a production application. ~~Also it's in beta.~~

Relays like the one provided by Arkhia, for instance, are designed with advanced features and reliable infrastructure specifically for this purpose, making it more suitable for production applications.

### **8. By DeeJay#0076 in the Smart Contracts Channel on 02/28/2023**

Yes - queries cost (negligible - often a fraction of an hbar) amounts. Several routes available, events queried from the JSON-RPC relay using your favourite helper library (ethers/web3) or queried from mirror nodes. Eventually I believe we will see state exposed on mirror nodes (see mirror node release notes for direction of travel) to make queries free without needing network resources so no gas. As of today it depends on your usecase but a middleware layer to cache and an occasional query to the SC paid for by a separate project wallet can work if you wish to obfuscate the cost to the user and remove friction.

### **9. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/25/2023**

> Is it possible to deploy the open zeppelin exact code ?

Yes. Confirmed by the OZ team who have spent month/weeks integrating relayer, admin, sentinels and other functionality on Hedera.

If you run into issue please let us know

### **10. By DeeJay#0076 in the Smart Contracts Channel on 02/21/2023**

now there is a json-rpc relay probably would try and just use ethers/web3 vs hethers [just my thought] or indeed use ethers/web3 with SDK when easier (my route but that's because i got used to it before I saw hethers).

### **11. By AbsolutelyNot#3226 in the Developer General Channel on 02/18/2023**

It is more of the latter. While the service seems free, behind the scenes SwirlsLabs pays for all the eth\_calls and there is hBar spend limit - to ensure the costs are reasonable. HashIO was intended to provide community with a vehicle to test and work with ETH tooling. We are now seeing architectural patterns where these calls are submitted multiple times eg to check the balance which has not really changed - habit from ETH ecosystem where such calls are free. These are transitional pains as we work on few improvements to cache the results, improve query responses, enable higher TPS, improve relay economics etc. These should start rolling out in 8-10wks (see roadmap for details). Meanwhile, you can check out Arkhia (<https://www.arkhia.io/pricing/>).

### **12. By yongtaufoo123#9006 in the Developer General Channel on 02/17/2023**

hey team, can i check if the JSON/RPC relay (<https://hashio.io/>) is working fine now? Im using it with my metamask + ethers.js now but the network seems very unstable. For e.g., my imported hedera developer portal in my metamask displays 0 HBAR sporadically (when it should be displaying 10000 HBAR instead) and none of my transactions are going through (gas fees take a long long time to calculate + even after gas fees are calculated, the transaction gets stuck in pending forever, can't speed up or cancel). Would like to know if its something im doing wrong on my end or if its that the RPC URL is overloaded/rate limited, thus causing the delays. Thanks

### **13. By Greg Scullard#5365 in the Developer General Channel on 02/16/2023**

@Jaaaz Hedera has a JSON/RPC relay (<https://hashio.io/>), you should be able to use ethers now

**14. By Pathorn#7333 in the Developer General Channel on 02/13/2023**

Ok so you can do it through JSON RPC relay. I have some example code in this repo. You can use ether.js or web3.js to interact with Metamask and Hedera Smart Contract through JSON RPC relay. <https://github.com/pathornteng/hedera-relay-sample/>

**15. By Ashe Oro#8558 in the Developer General Channel on 02/09/2023**

what do you mean "switched the node on the network"? Which JSON RPC node are you using in Metamask?

**16. By Ed Marquez#6403 in the Javascript Channel on 02/01/2023**

@cryptorush not that I'm aware of... took a quick look at the docs about utilities (<https://docs.hedera.com/hethers/application-programming-interface/utilities>) and didn't find much.

hethers is an adaptation of ethers.js, and those properties/concepts of `adminKey`, `autoRenewalAccount`, `autoRenewPeriod`, and `expirationTime` are not a thing in other chain and tools.

**\*\*The only way that I'm aware of to pay rent for those contracts is from the balance of the contracts themselves\*\*** (e.g. transfer HBAR to the contract OR make the contract charge a fee per operation to accumulate an HBAR balance). That may be the same case for contracts deployed using things like `CREATE2` and a JSON-RPC relay with EVM libraries.

**17. By zcstarr#7166 in the Developer General Channel on 01/13/2023**

@AbsolutelyNot awesome! just pinged ya a dm with couple more questions . But I'm excited about this relay service, been scrolling through the github this morning!

**18. By AbsolutelyNot#3226 in the Developer General Channel on 01/13/2023**

True. Same goes for the RPC Relay (HashIo) - no single point of failure.  
Also as @bugbytes was saying, Swirls w/ access to some nodes is also not decentralized. We are very aware and working under the guidance from the council to address these. No one is sleeping at the wheel

**19. By mantihs#9402 in the Smart Contracts Channel on 01/10/2023**

What about json rpc relay?





**2. By magecnion#0432 in the Developer General Channel on 12/09/2022**

yes sorry, I meant when you do view calls through relay json-rpc queries have a cost, is there some way of saving that cost (maybe having my own mirror node?), or maybe that's just not possible

**3. By alexrp#0334 in the Smart Contracts Channel on 11/30/2022**

Hi everyone!

When I do a tx through a Hedera Json RPC relay and receive the tx hash in Ethereum format (e.g. 0x9339e00a309eb7e59d969d332c3e3d3da1e0aca12b683f2a471414b3c61b3192), how can I find or convert its value to Hedera version? I had to search in the "Recent Transaction" section in Hashscan to find the corresponding tx to discover its corresponding transactionId is 0.0.902@1669817009.045492805.

**4. By alexrp#0334 in the Developer General Channel on 11/30/2022**

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**5. By Greg Scullard#5365 in the Javascript Channel on 11/25/2022**

1. Do you mean `web3.js` ? If so, we are working on a JSON-RPC relay (<<https://hashio.io>>) which is also open source in our github repo. Hedera's api isn't JSON/RPC so the relay adds the necessary api support for common ethereum libraries and tooling. It's work in progress, but the goal is to create parity as much as possible to ease the transition from other EVM compatible networks to Hedera.

In the mean time, you can use the Hedera SDKs to deploy and call contracts.

2. Not at the moment no, on Ethereum you can either run your own node to run queries against (which has a cost), or query third party services up to a point (they're usually freemium services with gas limits). When you query a consensus node, it's fair that the node should be paid for the CPU/memory it's using to respond to your query, otherwise it would be an easy attack vector (just keep spamming nodes with free queries).

We are working to enable this via mirror nodes which would mimic the third parties you're used to using (freemium/limited model).

**6. By alberto-IoBuilders#0345 in the Smart Contracts Channel on 11/24/2022**

Hi @Giuseppe Bertone , thank you very much for your reply. If I understood correctly, contracts deployed from other contracts and contracts deployed through the Relay node (Ethereum transactions in both cases) will always have an Admin = None. If that is the case, would it be possible to set such contracts as Token Admin keys and/or Treasury Accounts? If my understanding is correct, in order to set a contract as a Token admin key/treasury, you need the contract's admin to sign the transaction, but these contracts would not have admins....

**7. By Michael Garber#5033 in the Developer General Channel on 11/15/2022**

You've set your default rate limit to 1 as well as your relaxed rate limit which effectively means you reach your limit at one request. Increase those and that should resolve that.

HBAR\_RATE\_LIMIT\_DURATION

The relay pays the cost of submission and all the funds for calls to read state info.

These params are used to limit number of requests in a short amount of time

`Rate-limiting based on spent HBAR budget for a duration of time. Use to limit execution of queries and transactions.`

<https://github.com/hashgraph/hedera-improvement-proposal/discussions/new>

**8. By alexrp#0334 in the Developer General Channel on 11/15/2022**

```
{
 "CHAIN_ID": "0x128",
 "DEFAULT_RATE_LIMIT": "1",
 "DEV_MODE": "false",
 "ETH_GET_LOGS_BLOCK_RANGE_LIMIT": "1000",
 "HBAR_RATE_LIMIT_DURATION": "6e+08",
 "HBAR_RATE_LIMIT_TINYBAR": "5e+09",
 "HEDERA_NETWORK": "testnet",
 "LIMIT_DURATION": "180000",
 "LOCAL_NODE": "true",
 "MIRROR_NODE_URL": "https://testnet.mirrornode.hedera.com",
 "RATE_LIMIT_DISABLED": "false",
 "SERVER_PORT": "7546",
 "TIER_1_RATE_LIMIT": "1000",
 "TIER_2_RATE_LIMIT": "1000",
 "TIER_3_RATE_LIMIT": "1"
}
```

Hi Michael, this is the current configuration parameters . First doubt is that we don't know when the different tier rate limits are being used (`TIER\_3\_RATE\_LIMIT` is set to 1 because we wanted to see how each parameter was affecting the relay) and the second one is we also aren't sure about what `HBAR\_RATE\_LIMIT\_DURATION` parameter is doing.

**9. By alexrp#0334 in the Developer General Channel on 11/15/2022**

Hi there!

Can someone please explain to me what the "Hbar rate limit exceeded" really means (returned by the JSON RPC relay)? I deployed my own Hedera JSON RPC relay and started tweaking the configuration values to really understand all of them but I'm getting this error and I'm not sure to know the reason. I read this README to understand what each parameter is doing <https://github.com/hashgraph/hedera-local-node#json-rpc-relay-settings>. Thanks in advanced!

**10. By Tosh Velaga#6953 in the Developer General Channel on 10/31/2022**

ahhh i see, but so to get a full picture if they used the json-rpc relay i would also need to use etherscan in addition to hashscan right?

**11. By nube#7126 in the Developer General Channel on 10/31/2022**

ahh that might be due to testing of the json-rpc relay?

**12. By Pathorn#7333 in the Javascript Channel on 10/28/2022**

Yes if you get the tx receipt, it's considered final and can't be rolled back because the transaction reaches consensus on Hedera network no matter via JSON RPC relay or gRPC

**13. By alexrp#0334 in the Javascript Channel on 10/27/2022**

Hi everyone!

Can someone please help me to solve the following doubt?

On Hedera, once you receive a tx receipt it means that it has reached finality, so the tx can't be rolled back. My doubt is, when doing a transaction using the web3js library through the JSON RPC relay, is the tx also considered finalized as soon as I get the tx receipt (I mean, could this tx be rolled back)?

Sorry if I shouldn't ask this question here, but I'm not sure where I should be asking questions related to the JSON RPC relay.

Thanks!

**14. By alexrp#0334 in the Developer General Channel on 10/27/2022**

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Sorry if I shouldn't ask this question here, but I'm not sure where I should be asking questions related to the JSON RPC relay.

Thanks!

**15. By Ed Marquez#6403 in the Javascript Channel on 10/24/2022**

These two resources may be close to what you're trying to achieve:

- <https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/multi-sig-offline.js> - this example shows how you can sign a transaction offline (locally) and submit it after all necessary signatures have been collected. I think you're already there, but sharing for awareness.

- <https://docs.hedera.com/guides/docs/sdks/transactions/modify-transaction-fields> - from this documentation page, you can choose which node you submit a transaction to with the native SDKs. This could work if you don't need to use the JSON RPC Relay. Basically, when you're forming the transaction, use the `setNodeAccountIds` method to specify the node you want to send the tx to. I will say, that's not necessarily a best practice because if the node you chose is down, so is your application - the SDK handles

this node selection automatically for you but you can still customize. After tx creation and signing, you can simply `execute` with a `client` or `signer`.

### **16. By Ed Marquez#6403 in the Javascript Channel on 10/24/2022**

Feel free to specify a bit more about the meaning of the question...

Hashio (see URLs for testnet/mainnet: <https://swirldslabs.com/hashio/>) is an instance of the Hedera JSON RPC Relay. That relay supports smart contract transactions (I don't believe HCS and HTS are).

Perhaps this article can help\: <https://hedera.com/blog/leveraging-ethereum-developer-tools-on-hedera>

### **17. By bugbytes#0817 in the Developer General Channel on 10/24/2022**

you can see that it can use a web-grpc relay.

### **18. By bugbytes#0817 in the Developer General Channel on 10/24/2022**

I thought the javascript SDK could use a WEB-GRPC relay, would that solve the problem?

### **19. By alexrp#0334 in the Smart Contracts Channel on 10/11/2022**

Hi everyone!

I'm interacting with an EVM-smart contract through the JSON RPC relay, and there is an aspect that I can't figure out.

Calling a simple setter in the smart contract works great, as proven by calling the corresponding getter. However, DragonGlass & HashScan do not show the Settter TX at all (they do show other TXs if I use the native SDK). Any idea why?

### **20. By Ed Marquez#6403 in the Smart Contracts Channel on 10/03/2022**

Well, minor wording edit, the network (Hedera) and SDKs support working with both ED25519 and ECDSA keys.

The JSON RPC Relay that makes it possible to use Truffle with Hedera is where the limitation exists with the type of accounts supported.

See this text from the article "Currently, the JSON RPC Relay only supports Hedera accounts with an alias set (i.e. public address) based on its ECDSA public key."

### **21. By jeflyer1234#8780 in the Developer General Channel on 09/30/2022**

Hello, is there any available way to connect Metamask using the Json-RPC relay?

### **22. By Ed Marquez#6403 in the Smart Contracts Channel on 09/19/2022**

You can find the RPC URLs for the different networks (Mainnet/Testnet) here: <https://swirldslabs.com/hashio/>

This tutorial shows how you can use the instance of JSON RPC hosted by Swirls Labs (Called HASHIO) to deploy contracts using truffle <https://hedera.com/blog/how-to-deploy-smart-contracts-on-hedera-using-truffle>

### **23. By Ed Marquez#6403 in the Smart Contracts Channel on 09/13/2022**

The best way is subjective and relative

<https://github.com/hashgraph/hedera-smart-contracts-libraries> This repo has examples showing how to use EthersJS and Web3JS with Hedera to do things like unit testing and decode things like function results, events, etc.

For deployment of contracts with those libraries, consider using Hashio as your RPC URL (Hashio is just a JSON-RPC Relay instance hosted by Swirlds Labs, so those two terms are very similar, not interchangeable though).

<https://hedera.com/blog/how-to-deploy-smart-contracts-on-hedera-using-truffle> This article gives you an idea of the workflow with Truffle (don't have one for Ethers yet, but it's coming). Looking at the truffle config file in the repo of the article can help.

### **24. By tess3rac7#3820 in the Smart Contracts Channel on 09/12/2022**

thinking i'll just try to set up my own relay in the meanwhile

### **25. By Bart#1307 in the Smart Contracts Channel on 09/12/2022**

Hi all, does anyone know why `eth\_call`'s on the hashio relay are failing on testnet, I'm getting back:

```
{
 error: {
 code: -32603,
 message: "[Request ID: ...] Unknown error invoking RPC",
 name: "Internal error"
 },
 id: 45,
 jsonrpc: "2.0"
}
```

### **26. By Pathorn#7333 in the Developer General Channel on 09/07/2022**

Hi @JRuffer, if you want to integrate your app with HashPack, I recommend using HashConnect instead. <https://www.npmjs.com/package/hashconnect>. Hethers, which is the clone of EtherJS, might not be a good option at the moment since we have launched the JSON RPC relay that makes EVM tooling including EtherJS compatible with the chain.

### **27. By Greg Scullard#5365 in the Smart Contracts Channel on 09/07/2022**

Yes, the challenge with estimating gas is that the node doing the estimation has to actually spend the CPU/Memory/Storage cycles to perform the estimate (it has to run the contract) meaning that it's spending the "gas" twice and only being paid once (when you actually make the call for real).

We're working to make gas estimations possible via mirror nodes for free (up to the mirror operator), in the mean time it's trial and error.

Note: hashio.io is a JSON/RPC relay which will use the last gas used value for the same contract/function to respond to estimateGas, it's not perfect but it's a start.

### **28. By nube#7126 in the Developer General Channel on 08/30/2022**

\*The Hashio JSON-RPC relay implementation is in beta, offers limited functionality today, and is only available to developers.\*

### **29. By JRuffer#0566 in the Developer General Channel on 08/30/2022**

There is a JSON RPC relay project, but I am not sure where it stands. How can we find out

more information on it?

<https://www.youtube.com/watch?v=0MSiaTtAvK8&t=37s>

### **30. By Ed Marquez#6403 in the Developer General Channel on 08/12/2022**

It's possible using the Hashio URL for testnet (see Hashio page in the Swirlds Labs website). Follow these steps: <https://github.com/hashgraph/hedera-json-rpc-relay/blob/main/docs/transfer-guide.md>

Note that there are some limitations. Atm, you can only import into MetaMask accounts with alias and ECDSA keys (same requirements for accounts supported by JSON RPC).

When it comes to performing the transfer, MetaMask doesn't enable transfers to Hedera account ids (0.0.12345). So you won't be able to send HBAR from MetaMask to accounts that don't have an alias/ECDSA keys.

You can transfer from all other accounts into you MetaMask account using the alias or the account ID. You can also transfer between you accounts in MetaMask. You just can't transfer from your MetaMask accounts to non-aliased/non-ECDSA accounts. We're exploring ways to bridge that gap in the near future.

### **31. By Ed Marquez#6403 in the Javascript Channel on 08/11/2022**

Well, keep in mind that at the moment the Hashio implementation of the JSON RPC Relay is in Beta, so you may find some unexpected behavior. Here's a link to some notes from testing the team has done and where differences may be expected: <https://github.com/hashgraph/hedera-json-rpc-relay/pull/427/files>

As long as you have a user account to sign/authorize transactions, you should be able to perform testing. Make sure you use a Hedera account that has an alias and ECDSA keys (1st section in the article sent before).

### **32. By fg\_zr1#3276 in the Javascript Channel on 08/11/2022**

If I'll configure my metamask to web3 relay (custom or from swirldslabs for example), and contracts have been deployed to hedera network, do I even need to change something in my frontend app? Referring to <https://hips.hedera.com/hip/hip-410> I may assume I'm able to use regular contracts interfaces with `ethers`, is that correct?

I mean to the definition "The above diagram proposes an alternative flow where the application itself does not know about Hedera and the transaction is submitted by the wallet to the relay directly" tells us exactly about having ability to use regular Ethereum interface? And in this case I won't need to change something at all.

And also let me ask you about this:

"The user that signs the transaction has an account on Hedera, and the relay has an account on Hedera, but the application itself does not."

Is that relevant for testnet?

### **33. By Ed Marquez#6403 in the Javascript Channel on 08/11/2022**

Hey, here's a tutorial on deploying contracts on Hedera using Truffle and the JSON RPC Relay. Step 3 has the specifics for using the JSON RPC Server hosted by Swirlds Labs. <https://hedera.com/blog/how-to-deploy-smart-contracts-on-hedera-using-truffle>

**34. By fg\_zr1#3276 in the Javascript Channel on 08/10/2022**

@Ed Marquez are you able to refer me to someone who may know more about that scenario I've mention? Or just have any clarifications about using jrpc relay with hethers and all that stuff. I'd be very grateful.

**35. By Greg Scullard#5365 in the Smart Contracts Channel on 08/02/2022**

It does, running a contract query results in gas being used, it could be tiny if you're reading a variable and returning it, or lots if you run a complex calculation in your query. Free queries mean someone could just ping the network with high consuming functions for nothing, preventing others from executing their functions.

The json/rpc relay will fund queries to an extent and we're looking to implement queries via mirror nodes too.

In the mean time, queries to contracts have a cost. note that unlike transactions, the amount you specify for your query is 100% consumed and charged for.

**36. By VR#1587 in the Smart Contracts Channel on 07/06/2022**

isnt 32 a relay of some sort, p sure every transaction I make goes to 32 as one of 3 addr

**37. By Lt Ramen#6172 in the Smart Contracts Channel on 06/25/2022**

I am seeing the unhealthy status for the json rpc relay container as well.. i'll bring it up with the devs and then get back to you.

**38. By reg.cs#2829 in the Smart Contracts Channel on 06/24/2022**

@Supremax67 @Deleted User Maybe this whole off-topic discussion could be moved to a thread? Don't want to stop the discussion, but this channel is not ideal for it.

@Deleted User Regarding your initial question: Can't you just host one json rpc relay yourself? The original answer you responded to with your question stated that anyone could host one of these.

**39. By AbsolutelyNot#3226 in the Smart Contracts Channel on 06/14/2022**

Sharing earlier response from Richard:

> I expect that people who host a JSON-RPC relay will publish their URL far and wide :-). At this point the relay we show is a demo instance I setup based on the code in GitHub: <https://github.com/hashgraph/hedera-json-rpc-relay>. Anyone can host one of these.

**40. By 0xYash | Mesh Finance#0480 in the Smart Contracts Channel on 06/10/2022**

In recent update it shows that it support json rpc, but couldn't find these details anywhere

**41. By KaffinPX#0001 in the Developer General Channel on 06/08/2022**

So companies just a ``fee collector`` and ``network relayer``

**42. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

@Bart I will raise this with our team and get back to you in a day or so

for small queries I think the upcoming JSON RPC "relay" will ease the pain, since I \*believe\* the Swirlds Labs deployment will initially make `eth\_call` free (c.f. [https://github.com/hashgraph/hedera-improvement-proposal/blob/a333b746381db9d679acd72bcfb73dbfd13f113d/HIP/hip-482.md#eth\\_call](https://github.com/hashgraph/hedera-improvement-proposal/blob/a333b746381db9d679acd72bcfb73dbfd13f113d/HIP/hip-482.md#eth_call))

but I'm not 100% sure on that, and as you said, it would be rate-limited in any case

**43. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

Hi @Bart ...that's a reasonable proposition; but 0.26 is actually going to head the opposite direction, and standardize all `gas` prices at a slightly higher 1 `gas` = `\$0.000\_000\_0852` while removing all non-`gas` fees from `ContractCall` (see the end of the release notes <https://github.com/hashgraph/hedera-services/releases/tag/v0.26.0>)

The reasoning is that we want to incentivize moving all query-type activity off the main nodes and onto mirror nodes and the JSON-RPC relay (which will have free `ContractCallLocal` equivalents)

**44. By Bart#1307 in the Smart Contracts Channel on 06/07/2022**

I see, have you tried making your SC function payable and having the buyer set an amount payable and then having the SC transfer that Hbar to the seller? I'm not sure if that'll work as the Hbar is being relayed to the seller by the SC and not directly by the buyer

**45. By Greg Scullard#5365 in the Java Channel on 05/27/2022**

This is because of the JSON/RPC relay we're building to enable metamask users to sign transactions and developers to use off the shelf web3 libraries easily. These all depend on block numbers and block hashes to work, so we're introducing them in the API.

**46. By HbarMaxi#7970 in the Smart Contracts Channel on 05/19/2022**

Anyone knows about this JSON RPC relay ?

**47. By B ħ abadook(GrelfMy401k)#5575 in the Developer General Channel on 05/19/2022**

Not sure where to ask this but where would I derive a json rpc relay value to input into MetaMask



Comments in 2021

sdk . smart  
mirror  
calls  
herdera  
contract  
function  
node relayed

**1. By AD1312#8261 in the Smart Contracts Channel on 12/14/2021**

Is herdera sdk function calls for smart contract relayed to the mirror node?

## Comments in 2023



**1. By Pathorn#7333 in the Developer General Channel on 03/14/2023**

Hashpack will never pass private keys to any app in any cases. The allowance transaction must be approved manually by the owner.

## 2. By Houseonfire#5013 in the Developer General Channel on 03/13/2023

I had set up an allowance transaction. I feel its odd that the transaction goes through without directly asking the player if its ok to set up an allowance. More than likely its the way i coded it (wrong) but i thought it would pop up and ask the player if they are ok with assigning an allowance, the same way it pops up and asks to authorize the account

in hashpack.

So instead, i am going to modify it so that when the player goes to the site, they do not need to pair or auth. They click the start game button, the request to start the game is initialized, a popup should come up and ask the player if they are ok with pairing and a contract call for the amount they had bet and if they hit yes, then the game runs, a winner is determined and it is paid out.

I have already built all of this in javascript, would it be a bad idea to make the contract call do the acceptance of the game being started, log that the contract call was made ( maybe move the randomization to solidity) and have the contract process the payout so its proper, but keep the game play logic in JS? My script is a mess but id be happy to send it to whomever to get a better idea of what im doing. I've over complicated this for myself for sure, im 2 mins away from starting over on this project

My mistake it seems i am passing in the private key from the hashpack pair and then approving it on the backend, because i was following <https://hedera.com/blog/how-to-approve-hbar-allowances-on-hedera-using-the-sdk> on how to do it.

ive over engineered this thing by so much lol. I feel like im so close to finishing this and moving on to something more complicated if i can just wrap my head around this part.

### **3. By kantorcodes#3716 in the Developer General Channel on 03/13/2023**

Good morning, noticed a function called `wipeTokenAccountNFT` in the HTS precompile.

Is this different from `burnToken` in that it only works with a Wipe Key? Or is the specificity simply around an extra check of the Account ID?

<https://github.com/ed-marquez/hedera-example-allowances-solidity-precompiles/blob/main/hts-precompiles/HederaTokenService.sol#L565>

### **4. By Houseonfire#5013 in the Developer General Channel on 03/13/2023**

I see. My mistake. I have been working on this for so long lol, i forgot i set up the allowance transaction part in order to figure out how to even do that. I'll remove that and go from there

### **5. By Pathorn#7333 in the Developer General Channel on 03/13/2023**

Hi @Houseonfire , no worries, the process is a bit complicated. Pairing with Hashpack is just a way to allow your application to interact with the wallet like sending transactions to the wallet to sign. It does not give the application the permission to move funds out of the wallet, unless the users explicitly approve allowance transaction that allow the application to move the fund out of their wallet.

### **6. By Greg Scullard#5365 in the Smart Contracts Channel on 03/10/2023**

Maybe the process would be to remove the allowance first, check if the spender has spent anything and only re-approve the delta (or nothing) ?

### **7. By alberto-IoBuilders#0345 in the Smart Contracts Channel on 03/10/2023**

if instead of approving 5, I "decrease" the allow balance by 5, worst case scenario you can only spend 10 (the initial allowance), my transaction decreasing the allowance will fail...

**8. By Greg Scullard#5365 in the Smart Contracts Channel on 03/10/2023**

as far as I know, approve doesn't increase the existing allowance, it replaces it with the new allowance, so if the allowance is 10 and you approve 5, the allowance becomes 5 (I could be wrong)

**9. By alberto-IoBuilders#0345 in the Smart Contracts Channel on 03/10/2023**

I did not find any "increaseAllowance" or "decreaseAllowance" methods on the HTS precompiled contract (maybe I am missing something). If we need to change a spender's allowance the only option is to "reset" it using "approve()", but in the meantime (time for the reset transaction to be added to the DLT) the spender can spend his/her current allowance, which means that he/she will eventually have had the possibility to spend the original allowance plus the new one

**10. By alberto-IoBuilders#0345 in the Smart Contracts Channel on 03/09/2023**

The Hedera HTS precompiled contract uses an "approve()" method to set the allowance for a spender. Isn't a "Approve Race Condition" vulnerability?

**11. By ipconfig#3828 in the Smart Contracts Channel on 03/07/2023**

Do you know of an example where I can grant the contract an HBAR allowance and then pull from it later?

**12. By DeeJay#0076 in the Smart Contracts Channel on 03/07/2023**

contracts can use approval spends indeed. As a generic comment on hbar/FT/NFT - if using HTS methods from the precompile you have to remember to flag isApproved (or used the approval version of the method). When you cast to an IERC20/721 then it handles the use of an allowance automatically under the covers.

**13. By ipconfig#3828 in the Smart Contracts Channel on 03/06/2023**

Can a contract spend an HBAR allowance? For example...

Client A approves an allowance of 10 Hbar for a contract to use

--- Client A -> 10 Hbar Allowance -> Contract

Contract gets called and transfers/uses the Hbar allowance

--- Client B -> Contract -> Client A -> 3 Hbar -> Client B

--- Client C -> Contract -> Client A -> 7 Hbar -> Client C

[https://docs.hedera.com/hedera/sdks-and-apis/sdks/cryptocurrency/approve-an-allowance#:~:text=Description-,approveHbarAllowance,-\(%3CownerAccountId%3E%2C%3CspenderAccountId%3E%2C%20%3Camount](https://docs.hedera.com/hedera/sdks-and-apis/sdks/cryptocurrency/approve-an-allowance#:~:text=Description-,approveHbarAllowance,-(%3CownerAccountId%3E%2C%3CspenderAccountId%3E%2C%20%3Camount)

**14. By Pathorn#7333 in the Token Service Channel on 03/01/2023**

Hello, if you want to collect multiple signatures for your transaction, scheduled transaction might be useful. Scheduled transaction is a special transaction recorded on chain waiting for required signatures before it can be executed. <https://docs.hedera.com/hedera/sdks-and-apis/sdks/schedule-transaction/create-a-schedule-transaction>

If you are building some kind of marketplace, the custodian model, where the seller let marketplace sell tokens on their behalf (you can do this through allowance transaction), might be a better choice for application usability.

**15. By phoenix#6938 in the Developer General Channel on 03/01/2023**

@Pathorn I see.

This is my front code to buy nft.

```
const buyNFT = async (sellerId_, hbarAmount_, nftInfo_) => {
 const _buyerId = saveData.accountIds[0];
 const _provider = hashConnect.getProvider(netWork, saveData.topic, _buyerId);
 const _signer = hashConnect.getSigner(_provider);
 const _sellerId = AccountId.fromString(sellerId_);

 const sendBal = new Hbar(hbarAmount_);
 const _nft = new NftId(TokenId.fromString(nftInfo_.token_id), nftInfo_.serial_number);

 const allowanceTx = new TransferTransaction();
 allowanceTx.addApprovedHbarTransfer(_buyerId, sendBal.negated())
 allowanceTx.addHbarTransfer(_sellerId, sendBal)
 allowanceTx.addApprovedNftTransfer(_nft, _sellerId, _buyerId);

 const allowanceFreeze = await allowanceTx.freezeWithSigner(_signer);
 if (!allowanceFreeze) return false;
 const allowanceSign = await allowanceFreeze.signWithSigner(_signer);
 if (!allowanceSign) return false;
 const allowanceSubmit = await allowanceSign.executeWithSigner(_signer);
 if (!allowanceSubmit) return false;
 const allowanceRx = await
 _provider.getTransactionReceipt(allowanceSubmit.transactionId);

 if (allowanceRx.status._code === 22)
 return true;
 return false;
}
```

But this does not work.

**16. By Pathorn#7333 in the Developer General Channel on 03/01/2023**

@phoenix here is the flow, there are three parties (buyer, seller, and marketplace)

1. The seller send an allowance transaction allowing marketplace to transfer NFT out of its account.
2. The buyer browse NFT listed on marketplace and then decide to buy one
3. The buyer click `Buy` and then the frontend will create a transaction sending hbar to the seller and moving NFT from the seller to the buyer.
4. The marketplace then also signs the transaction.
5. the transaction is completed, the seller gets the money, the buyer gets the NFT.

Please note that, the seller does not need to sign the swap transaction. Only buyer and marketplace need to sign the transaction (marketplace is allowed to move NFT out of seller's wallet from the allowance transaction)

**17. By phoenix#6938 in the Developer General Channel on 03/01/2023**

@Pathorn This means the seller create the transaction that transfer nft from buyer to seller.

I think it's impossible. I think this transaction would be failed.

Because, the seller does not have the allowance with this nft.

**18. By phoenix#6938 in the Developer General Channel on 02/28/2023**

Hi.

I am a beginner of Hedera.

I am developing NFT marketplace.

And I have trouble with implement buy nft function in marketplace.

Now, I have implemented listing nft function.

How can I implement buy nft function in marketplace with hashgraph/sdk?

How can I receive nft without nft allowance?

Please help me.

**19. By Pathorn#7333 in the Developer General Channel on 02/28/2023**

Ok so I am assuming you are building a simple gambling game where users can bet money, play the game, and then have a chance to win or lose money. The first step is that the user must transfer/deposit token to the smart contract or send allowance transaction which allows smart contract to transfer tokens out of their wallet. Then the user can now play the game (before the smart contract allows the user to play game, it has to make sure that the user deposits the tokens or already allows the contract to transfer tokens out of the account). Then the user plays the game. If the user wins, the smart contract will then transfer the token to the user. If the user loses, then transfer tokens from his wallet (if not done already) to the treasury account.

**20. By DeeJay#0076 in the Smart Contracts Channel on 02/27/2023**

@Jaaaz

right now a SC based marketplace for native HTS tokens - sadly - does not work until the `cryptoTransfer()` [v3] method as specified is implemented / turned on as you can't handle royalties **\*\*if there is a fallback fee\*\*** other than in certain defined corner cases. Until then it's variants of centralized custody (allowance spends / escrow, both requiring trust of the counterparty).

of course you could aim to start a movement deploying ERC721/1155 contracts but that would be an uphill struggle (and in my opinion a sub standard outcome) given all the tooling of the network has built up on the native Hedera Token Service tokens instead.

**21. By Pathorn#7333 in the Developer General Channel on 02/27/2023**

You will need a smart contract to achieve this. The first step is that the smart contract should be able to transfer hbar from/to treasury account. When users want to play the game, he/she should sent an allowance transaction to the smart contract so the smart contract can transfer hbar out of his account if he lose.

**22. By Houseonfire#5013 in the Developer General Channel on 02/24/2023**

Hey guys, i am working on a simple game using hashconnect and javascript with the hashgraphSDK. I am trying to make a simple 50 / 50 simulation . What i need to do is make it so in one case, i pay out to the user using the treasury contract and in another

case, the player would pay out the same value to the contract. Would i use an allowance for this? Or can i make it so that the user would just allow the transaction when the game is played?

```
``` if ([game results]) {
  //pay the player
  const transaction = await new TransferTransaction()
    .addHbarTransfer(playerAddress, betAmount)
    .addHbarTransfer(treasuryContractAddress, -betAmount)
    .execute(client);
  const transactionReceipt = await transaction.getRecord(client);
  const receipt = transactionReceipt.receipt;
  setPayoutReceipt(receipt);
  //set the game phase to payout
  setGamePhase("Payout");
  //Create the transaction
} else {
  //if the player loses
  const transaction = await new TransferTransaction()

    .addHbarTransfer(playerAddress, -betAmount)
    .addHbarTransfer(treasuryContractAddress, betAmount)

    .execute(client); //need to set player values here
  const transactionReceipt = await transaction.getRecord(client);
  const receipt = transactionReceipt.receipt;
  setPayoutReceipt(receipt);
  //set the game phase to payout
  setGamePhase("Payout");```
```

23. By nonsense#5906 in the Token Service Channel on 02/21/2023

```
contract B function approve(
  address token,
  address spender,
  uint256 amount
) public returns (bool result) {
  (bool success, ) = token.delegatecall(
    abi.encodeWithSelector(IERC20.approve.selector, spender, amount)
  );
  return success;
}
```

24. By DeeJay#0076 in the Token Service Channel on 02/17/2023

@nonsense the clarification is useful, did not realise you were trying to do it in Solidity [the #-smart-contracts channel can be better for those queries). This article covers much of what you are trying to do: <https://hedera.com/blog/how-to-approve-allowances-on-hedera-part-3-erc-standard-calls>

Couple of notes:

- * HTS FT / NFT can be (broadly) treated as IERC20/IERC721 objects
- * Transfer using the IERC20.transfer() method does not need to you state it is an approval spend (the native HTS method does)
- * Delegatecall (not call) must be used for approvals to preserve the correct account for execution to grant the approval

25. By nonsense#5906 in the Token Service Channel on 02/17/2023

Also, Can I approve an Contract Addr as owner and spender of any Account ?

26. By nonsense#5906 in the Token Service Channel on 02/17/2023

```
(bool success, bytes memory result) = precompileAddress.delegatecall(
    abi.encodeWithSelector(IHederaTokenService.approve.selector,
        token, spender, amount));
```

27. By nonsense#5906 in the Token Service Channel on 02/17/2023

```
(bool success, bytes memory result) = precompileAddress.call(
    abi.encodeWithSelector(IHederaTokenService.approve.selector,
        token, spender, amount));
```

28. By nonsense#5906 in the Token Service Channel on 02/17/2023

function approve(address token, address spender, uint256 amount) internal returns (int responseCode)

```
{
    (bool success, bytes memory result) = precompileAddress.call(
        abi.encodeWithSelector(IHederaTokenService.approve.selector,
            token, spender, amount));
    responseCode = success ? abi.decode(result, (int32)) :
HederaResponseCodes.UNKNOWN;
}
```

29. By Michael Garber#5033 in the Developer General Channel on 02/08/2023

You may find this helpful

```nonce:```

> The identifier for an internal transaction that was spawned as part of handling a user transaction. (These internal transactions share the transactionValidStart and accountID of the user transaction, so a nonce is necessary to give them a unique TransactionID.) An example is when a "parent" ContractCreate or ContractCall transaction calls one or more HTS precompiled contracts; each of the "child" transactions spawned for a precompile has a id with a different nonce.

<https://hashgraph.github.io/hedera-protobufs/#:~:text=Scheduled%20or%20no-,nonce,-int32>

<https://docs.hedera.com/hedera/sdks-and-apis/sdks/transactions/transaction-id#:~:text=The%20nonce%20value%20for%20the%20parent%20transaction%20ID%20is%2000>

```is\_approval:```

> (indicating allowance) -

> If true then the transfer is expected to be an approved allowance and the accountID is

expected to be the owner. The default is false (omitted).
[https://hashgraph.github.io/hedera-protobufs/#:~:text=or%20receives\(positive\)-,is_approval,-bool](https://hashgraph.github.io/hedera-protobufs/#:~:text=or%20receives(positive)-,is_approval,-bool)

<https://docs.hedera.com/hedera/sdks-and-apis/sdks/cryptocurrency/approve-an-allowance>

30. By Ashe Oro#8558 in the Token Service Channel on 02/02/2023

there's also another active mirror node issue related to NFT Allowances that i'd love your feedback on.

31. By Justyn#3610 in the Token Service Channel on 02/02/2023

I've just discovered via @Ashe Oro a proposal here: <https://github.com/hashgraph/hedera-mirror-node/issues/3245> which I think is what would solve the issue for me at least for discovering allowance NFTs. Can we re-energise this proposal?

32. By Ed Marquez#6403 in the Token Service Channel on 02/01/2023

@AdrianMsM91 {KBL} @Justyn @Deejay

- I agree with you on the benefit of being able to see information about allowances for NFTs, just like for HBAR and FTs. I'd encourage adding an issue to the mirror node repo to start that conversation with the engineering team.

- Adrian, `AccountAllowanceDeleteTransaction` does work. However, this one is tricky for NFTs because the implementation in the SDK follows the ERC-721 standard. Because of that standard not all scenarios are covered; for instance, if you approve ****all NFT****s for a spender, then you can't remove the allowance for ****individual serials****. From doc (<https://docs.hedera.com/hedera/docs/sdks/cryptocurrency/adjust-an-allowance#methods>), you see that this only has one method (`deleteAllNftAllowance()`). So, what works is to approve serials 1 by 1 and remove them 1 by 1.

Here are a few tutorials on allowances: <https://docs.hedera.com/hedera/resources/tutorials#accounts-keys-and-hbar>

Here's one on allowances for tokens with the SDKs: <https://hedera.com/blog/how-to-approve-fungible-token-and-nft-allowances-on-hedera-part-1-using-the-sdk>

33. By Justyn#3610 in the Token Service Channel on 01/31/2023

Is there a HIP anywhere in the pipeline yet that you know of to address these allowance issues? I think it would benefit a lot of people to get them resolved.

34. By AdrianMsM91 {KBL}#9999 in the Token Service Channel on 01/31/2023

Also, when we use `approveTokenNftAllowanceAllSerials()` where I can see this in the mirror node? xD

35. By Deejay#0076 in the Token Service Channel on 01/31/2023

@AdrianMsM91 {KBL} see above ... we have all been having these same challenges on allowances

36. By Justyn#3610 in the Token Service Channel on 01/31/2023

I only ask as the timestamp property in the allowance payload suggests this might be

possible:

```
{
  "allowances": [
    {
      "owner": "0.0.1792",
      "spender": "0.0.2669",
      "timestamp": { "from": "1675171133.316335530", "to": null },
      "amount_granted": 20000000000
    }
  ],
  "links": { "next": null }
}
```

Maybe it's a placeholder for future functionality. Thanks for your help on this though.

37. By Ed Marquez#6403 in the Token Service Channel on 01/31/2023

I'm not aware of a time component in allowances, so no expiration. It's valid until the allowance is spent or removed by the owner (afaik).

38. By Justyn#3610 in the Token Service Channel on 01/31/2023

Thanks for clarifying @Ed Marquez While I'm on the subject, do you know if allowances ever expire if not spent by the spender? I couldn't see a way to set an expiry on an allowance.

39. By Ed Marquez#6403 in the Token Service Channel on 01/31/2023

Hi Justin - that is correct. The existing mirror node API endpoints only show info for hbar and FT allowances.

NFT allowance info is provided individually at the NFT serial # level.

I agree that an endpoint for NFTs may be useful. I remember having this conversation with the team a while back and I believe there was a technical implication that made providing an endpoint for NFTs difficult. Feel free to share your feedback with the team via an issue in the mirror node repo: <https://github.com/hashgraph/hedera-mirror-node/issues>

40. By Justyn#3610 in the Token Service Channel on 01/31/2023

For Non Fungible Tokens, looks like the only way to do it is via <https://testnet.mirrornode.hedera.com/api/v1/accounts/0.0.1792/nfts?token.id=0.0.15634&order=asc> and look at the `spender` prop. This seems to only be set if you use the `approveTokenNftAllowance` and specify a specific NFT serial. If you use the `approveTokenNftAllowanceAllSerials` the `spender` is still null for all the nfts.

```
{
  "account_id": "0.0.1792",
  "created_timestamp": "1674830941.579589980",
  "delegating_spender": null,
  "deleted": false,
  "metadata":
```

```
"aXBmczovL2JhZnlyZWlja3FqM2dkZWZ4M2dpcWF5b2gzM2Z1czMzYmlsYnBmYmw0ZjZuN3
B4eW1xdm8zM3dtbGhlL21ldGFkYXRhLmpzb24=",
  "modified_timestamp": "1675176777.602280003",
  "serial_number": 5,
  "spender": "0.0.2669",
  "token_id": "0.0.15634"
}
...
```

Would be useful to have an endpoint for `.../allowances/nfts`

41. By Justyn#3610 in the Token Service Channel on 01/31/2023

Thanks @AbsolutelyNot, that is a fungible token. I think I see part of the issue. `.../allowances/tokens` is for fungible tokens only and not NFTs.

So I just need to find out where I can get this same info for NFTs.

`.../allowances/crypto` is for Hbar

`.../allowances/tokens` if for fungible tokens

`.../???` is for non-fungible tokens

42. By AbsolutelyNot#3226 in the Token Service Channel on 01/31/2023

Seems to be working for me

<https://mainnet-public.mirrornode.hedera.com/api/v1/accounts/0.0.107630/allowances/tokens?limit=20&order=desc>

43. By Justyn#3610 in the Token Service Channel on 01/31/2023

How would you check the token allowance for an account?

I assumed it would be this but no luck for me

<https://testnet.mirrornode.hedera.com/api/v1/accounts/0.0.1792/allowances/tokens>

If we allow an Hbar crypto allowance like this:

...

```
let transaction = new AccountAllowanceApproveTransaction()
  .approveHbarAllowance(
    ownerAccountId,
    spenderAccountId,
    new Hbar(200, HbarUnit.Hbar)
  )
  .freezeWith(client);
...
```

then this can be checked here:

<https://testnet.mirrornode.hedera.com/api/v1/accounts/0.0.1792/allowances/crypto>

and we see the allowance:

...

```
{
  "allowances": [
    {
```

```
"owner": "0.0.1792",
"spender": "0.0.2669",
"timestamp": { "from": "1675171133.316335530", "to": null },
"amount_granted": 20000000000
}
],
"links": { "next": null }
}
...

```

However, when using the nft equivalent:

```
...
let transaction = new AccountAllowanceApproveTransaction()
    .approveTokenNftAllowanceAllSerials(
        tokenToAllow,
        ownerAccountId,
        spenderAccountId
    )
    .freezeWith(client);
...

```

I would expect to see the allowance here:

<https://testnet.mirrornode.hedera.com/api/v1/accounts/0.0.1792/allowances/tokens>

but I only get an empty array

```
...
{"allowances":[],"links":{"next":null}}
...

```

which is strange as I am able to successfully transfer the NFT using the spender account like so:

```
...
const transferTransaction = new TransferTransaction()
    .addApprovedNftTransfer(
        new NftId(tokenToAllow, 3),
        ownerAccountId,
        customerAccountId
    ).freezeWith(client);
...

```

Am I missing something here or is the mirror node endpoint broken for the listing of account allowance tokens?

44. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

Same goes on the marketplace side - there is no protection once you set the allowance for your NFT to get the amount you wanted to list it for - you must rely on the (proprietary)

code. the economic incentive is to play nice for longevity, but if compromised a bad actor could do bad things (not a new story/pointing fingers!)

45. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

actually, let me take that back if there is an allowance i can revoke any time

46. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

the segregation / proxy is what i was alluding to. the end user is not signing the SC interaction but you can have an allowance to the 'middle man' that is

47. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

you can't but you can take the hbar under the allowance so net/net close enough?

48. By reg.cs#2829 in the Consensus Service Channel on 01/27/2023

Okay. And the allowance is limited to spending, right? So I cannot create a transaction with the second account and make the allowance-granting account the payer for that?

49. By reg.cs#2829 in the Consensus Service Channel on 01/27/2023

For the payment part between buyer and seller, I can easily imagine a smart contract escrow with a deposit/withdrawal mechanism. However, for the bidding part a SC is not ideal. Partially due to price, partially due to the polling issue. A HCS topic would be better for the bidding. The best scheme I can come up with is:

- a user has its actual funds in a dedicated wallet app which they register with a smart contract for fund withdrawal/deposit (that way the dapp has no private key for the user funds)
- dApp creates a separate Hedera account for the user upon registration which handles the automated calls like bidding

The dapp then would handle only the private key for the second account, which at least increases security. The remaining issue is, that the second account would still need enough HBAR to pay for the bidding process and other transactions. It would be nice if the user could set up an allowance for the second account to pay all transaction fees for the second account from the users primary account (in the best case: The user could define in the allowance exactly which topics and smart contracts they allow spending for) . But that seems to be impossible, right?

If so, the user would need to transfer some hbar to the second account every few days leaving the risk for the dapp being hacked and the money allocated for the fees of the automated calls to be stolen. I think this scheme is good, except for the latter part. And I am trying to resolve this without sacrificing any of the decentralization.

50. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

did not mean to suggest allowances do not exist - but that's not the same as calling a SC.

51. By rhysied#6748 in the Consensus Service Channel on 01/27/2023

the main limitation seems to be an account based one where you are limited to 100 approvals so for your ebay-style dapp that would limit the number of items you could bid on (presuming you dont just set one master allowance and manage the individual limits in the dapp)

52. By rhyised#6748 in the Consensus Service Channel on 01/27/2023

allowances do exist on Hedera mind: <https://docs.hedera.com/hedera/docs/sdks/cryptocurrency/approve-an-allowance>

53. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

i believe there is no easy way to achieve what you want. I agree 100% that it's not a great idea to ask a user to put their key somewhere (and hopefully, as we transition to hardware wallets in the space, it would prevent such a solution). Currently, I am not aware of a 'permanent approval' option for topic/SC interaction - in general I would argue this is a risky proposition for a user. I guess it depends on the use case of what you are trying to do? if it is just to get the user to pay for the automated calls then an allowance would suffice of course but i sense you want to do more than that given your framing?

54. By DeeJay#0076 in the Smart Contracts Channel on 01/27/2023

GM All, has anyone been doing SC work in testnet post-reset? I was trying to redeploy our test environment as running into a weird error:

```
...  
-getAllowanceWhitelist Query  
{  
  "message": "query cost of 0.01392272 ¢ HBAR exceeds max set on client: 200 ¢ HBAR",  
  "name": "MaxQueryPaymentExceededError",  
  "queryCost": {  
    "_valueInTinybar": "1392272"  
  },  
  "maxQueryPayment": {  
    "_valueInTinybar": "200000000000"  
  }  
}  
} MaxQueryPaymentExceeded [MaxQueryPaymentExceededError]: query cost of  
0.01392272 ¢ HBAR exceeds max set on client: 200 ¢ HBAR  
  at ContractCallQuery._beforeExecute (C:\Users\signu\github\hedera-SC-LAZY-FT-  
implementation\node_modules\@hashgraph\sdk\lib\query\Query.cjs:333:15)  
  at process.processTicksAndRejections (node:internal/process/task_queues:95:5)  
  at async ContractCallQuery.execute (C:\Users\signu\github\hedera-SC-LAZY-FT-  
implementation\node_modules\@hashgraph\sdk\lib\Executable.cjs:549:5)  
  at async getAllowanceWL (C:\Users\signu\github\hedera-SC-LAZY-FT-  
implementation\scripts\adjustWL.js:130:24)  
  at async main (C:\Users\signu\github\hedera-SC-LAZY-FT-  
implementation\scripts\adjustWL.js:114:3) {  
  queryCost: Hbar { _valueInTinybar: BigNumber { s: 1, e: 6, c: [Array] } },  
  maxQueryPayment: Hbar { _valueInTinybar: BigNumber { s: 1, e: 10, c: [Array] } }  
}  
...
```

55. By reg.cs#2829 in the Consensus Service Channel on 01/27/2023

This is a more general question about handling accounts in a Dapp, but I need to post it somewhere, so I use this channel. If my dApp needs to make frequent **automated calls**, it would be inconvenient to ask the user to sign each transaction via Hashpack/Metamask/etc. One way to circumvent this, is to store the private key of the user's dApp

account in an encrypted keystore and hold the key in memory as long as the app is running (and the user provided his password to decrypt the file at app launch). The user then only needs to transfer HBAR to this dApp account from his primary account to pay for fees.

However, since this comes with security risks and I wonder if there is a better way for a dApp developer that would not require an internal key handling?

For example, is there something like a CryptoAllowance which makes it possible to grant a secondary account (i.e. the dApp) the right to make transactions only to ****specific topics and smart contracts**** and make the primary account pay for it? Or is there another way to handle the issue above, which does not involve managing the user's private key within the dApp?

56. By DeeJay#0076 in the Smart Contracts Channel on 01/22/2023

if you have the ABI it's easy enough using web3.js (other methods available), if not you are stuck on decompiling / guesswork. The tools to make source code verification etc., more available are on their way per the roadmap. Excited to get them.

```
...
/**
 * Helper method to return the array of addresses in the WL
 */
async function getAllowanceWL() {
  // generate function call with function name and parameters
  const functionCallAsUint8Array = encodeFunctionCall('getAllowanceWhitelist', []);
  // query the contract
  const contractCall = await new ContractCallQuery()
    .setContractId(contractId)
    .setFunctionParameters(functionCallAsUint8Array)
    .setMaxQueryPayment(new Hbar(2))
    .setGas(100000)
    .execute(client);

  const results = decodeFunctionResult('getAllowanceWhitelist', contractCall.bytes);
  const wlAccountsEVM = results.wl;

  return wlAccountsEVM;
}

/**
 * Decodes the result of a contract's function execution
 * @param functionName the name of the function within the ABI
 * @param resultAsBytes a byte array containing the execution result
 */
function decodeFunctionResult(functionName, resultAsBytes) {
  const functionAbi = abi.find(func => func.name === functionName);
  const functionParameters = functionAbi.outputs;
  const resultHex = '0x'.concat(Buffer.from(resultAsBytes).toString('hex'));
```

```
const result = web3.eth.abi.decodeParameters(functionParameters, resultHex);
return result;
}

/**
 * Helper method to encode a contract query function
 * @param {string} functionName name of the function to call
 * @param {string[]} parameters string[] of parameters - typically blank
 * @returns {Buffer} encoded function call
 */
function encodeFunctionCall(functionName, parameters) {
  const functionAbi = abi.find((func) => func.name === functionName && func.type === 'function');
  const encodedParametersHex = web3.eth.abi.encodeFunctionCall(functionAbi,
    parameters).slice(2);
  return Buffer.from(encodedParametersHex, 'hex');
}
...

```

57. By DeeJay#0076 in the Javascript Channel on 01/19/2023

I think there may be a bug in Hedera JS SDK 2.19.1

`AccountAllowanceApproveTransaction().approveTokenAllowance()`

you pass in token, owner, spender and amount.

If the spender is a `ContractId` it fails -> `INVALID_ALLOWANCE_SPENDER_ID`

If I create an `AccountId` instead (`const ctrcttAsAccount = AccountId.fromString(spenderAcct.toString());`) then it is fine.

My gut feel is that was not intentional.

58. By DeeJay#0076 in the Smart Contracts Channel on 01/10/2023

are you using HTS method from the precompile `.transferrFrom(token, sender, reciever, amount)` ? or `IERC20(token).transferFrom(sender, reiceiver, amount);` ? or trying to do it via a call with `.cryptoTransfer()` where you have to flag it is allowance spend in the `AccountAmount` struct as @bugbytes mentions?

59. By hemant#4832 in the Smart Contracts Channel on 01/10/2023

I do have the allowance given from 0.0.49241790 to 0.0.34190287

60. By hemant#4832 in the Smart Contracts Channel on 01/10/2023

Allowance Transaction

[https://hashscan.io/testnet/transaction/1673361114.687793004?](https://hashscan.io/testnet/transaction/1673361114.687793004?tid=0.0.49241790-1673361104-796737576)

[tid=0.0.49241790-1673361104-796737576](https://hashscan.io/testnet/transaction/1673361114.687793004?tid=0.0.49241790-1673361104-796737576)

Transfer Transaction

[https://hashscan.io/testnet/transaction/1673361006.686707820?](https://hashscan.io/testnet/transaction/1673361006.686707820?tid=0.0.49226051-1673360995-147223526)

[tid=0.0.49226051-1673360995-147223526](https://hashscan.io/testnet/transaction/1673361006.686707820?tid=0.0.49226051-1673360995-147223526)

61. By bugbytes#0817 in the Smart Contracts Channel on 01/10/2023

double checking, did you set the "is allowance" flag on the xfer out of the account in the TransferList?

62. By hemant#4832 in the Smart Contracts Channel on 01/10/2023

I have given allowance using SDK, and even when i try to fetch the allowance it does show me 5000, but transfer wont work

63. By RaphaelM#1144 in the Smart Contracts Channel on 01/10/2023

Hey @hemant can you share your code ?

When you want to do an approved transfer first you have to approve the amount and the account that can spend your tokens.

The allowance function is only to check how many tokens you can spend.

64. By hemant#4832 in the Smart Contracts Channel on 01/10/2023

Hi Everyone, i am trying to do a approved transfer from smart contract

But this gives me error that spender does not have enough allowance.

I double checked we do have allowance

[https://hashscan.io/testnet/transaction/1673338881.922853773?](https://hashscan.io/testnet/transaction/1673338881.922853773?tid=0.0.49226051-1673338870-448339260)

tid=0.0.49226051-1673338870-448339260

Can someone help me what i am doing wrong

Comments in 2022



1. By elosant#9171 in the Developer General Channel on 12/21/2022
allowances?

2. By johnda98#4728 in the Smart Contracts Channel on 12/11/2022

tee hee... old bud of mine from the old wild west days back in 2018/19.. tuneFM.. aka Herofm .. sharp indian chap called Rahul .. project ran into the 1024k state store limit and yes with the balances and the allowances mappings kinda limits the number of wallets.. soooooooo. solution was to index/ nest the erc20s

pre-HTS of course.

3. By turbomaster#2074 in the Developer General Channel on 12/03/2022

Hi from whose account transaction fee will deduct i.e. treasury account or spender

account if we transfer fungible token from owner account to other account through spender account ?

4. By Michael Garber#5033 in the Java Channel on 12/02/2022

I believe this article will help you <https://hedera.com/blog/how-to-approve-hbar-allowances-on-hedera-using-the-sdk>

5. By Michael Garber#5033 in the Java Channel on 12/02/2022

Allowance means giving the ability to spend, not transferring ownership. You can authorize the spender account with the amount passed in the function you referenced. Bob always has access to the same amount of hbar he had before calling that function. The scenario is more like

Bob has 100 hbar

Bob allows Alice to spend 30

Hbar stays in bobs wallet

As long as Bob has at least 30 hbar + .0001 USD hbar for fees, Alice has access to 30 hbar in Bobs account

6. By Danik#6464 in the Java Channel on 12/02/2022

ownerAccount Bob and spenderAccountId Alice, Alice only can withdraw 30 Hbar?

7. By Danik#6464 in the Java Channel on 12/02/2022

AccountAllowanceApproveTransaction transaction = new

AccountAllowanceApproveTransaction()

.approveHbarAllowance(ownerAccount, spenderAccountId, Hbar.from(30))

8. By Ed Marquez#6403 in the Consensus Service Channel on 11/29/2022

Hi, @farukterzioglu - yes, it is possible for one of the transactions to fail when another has been successful.

In this example: <https://hashscan.io/testnet/transactionsById/0.0.2520793-1663271927-338384845>

you can see a contract call (parent tx) that occurs successfully, while the allowance approval (child tx) fails.

9. By Ed Marquez#6403 in the Java Channel on 11/29/2022

<https://docs.hedera.com/guides/resources/tutorials/accounts-keys-and-hbar>

@Danik - yes, see the 3 tutorials at the bottom of this page for examples of working with allowances (HBAR, HTS with SDK, and HTS with Solidity)

10. By Danik#6464 in the Java Channel on 11/25/2022

Do you have example allowances example?

11. By DeeJay#0076 in the Smart Contracts Channel on 11/24/2022

other ways of doing it using approval/allowance spends but this is the most direct route and I tend to like simplicity.

12. By mo5#5957 in the Token Service Channel on 11/19/2022

Is there a way to approve custom fee allowance in HEDERA ?

13. By Ed Marquez#6403 in the Java Channel on 11/16/2022

In this case, both Alice and Bob sign the transaction because a balance is being deducted from both accounts.

As a general rule, accounts for which a balance is being deducted have to sign that tx. Options like offline signing, scheduled transactions, allowances give you ways to collect all required signatures or approve a third party to spend your balance

14. By Ed Marquez#6403 in the Smart Contracts Channel on 10/05/2022

Probably done intentionally, but I can see how this feels like user-experience bug (I would also expect an auto-association to be sufficient).

Interestingly, auto-associations are sufficient for approving token allowances...

Tagging @tinkerm for input (and @Ashe Oro as it may be of interest)

15. By Ed Marquez#6403 in the Token Service Channel on 10/03/2022

Lost track of this particular thread, but I believe this is in reference of allowances for FT/NFT via precompiles...

If that's the topic, yes, I was able to resolve the issue.

Solution:

- in the `test` contract (https://github.com/ed-marquez/quick-contract-examples/blob/master/0_test.sol), see lines 12, 34, and 58 - basically, had to use `delegatecall`
- When using the `ContractExecuteTransaction` in the JS files, the token owner (treasury) must be the client so that it's the `msg.sender` calling the precompile (because of delegatecall)

Why the issue occurs:

- When you call the `approve` precompile, the precompile works with the sender of the transaction (the `test` contract in this case)
- `test` contract is not associated to the token, and this is why the error is received

16. By piyush16#5845 in the Javascript Channel on 09/21/2022

Thank you for this.

Just small question: Can we give allowance to smart contract and using that we can transfer tokens?

17. By Ed Marquez#6403 in the Javascript Channel on 09/20/2022

Very timely question See this example: <https://github.com/ed-marquez/hedera-example-allowances-sdk>

See the different index files to see how you can approve HBAR, FT, and NFT allowances for other accounts using the SDK.

I'm making a guided tutorial out of this example, but this should help for now.

The key thing to keep in mind with allowances using the SDK is that when you're doing the allowance transfer, the spender has to ****generate the transaction id **OR **be the client****.

18. By piyush16#5845 in the Javascript Channel on 09/20/2022

I am trying to give allowance to an account and try to transfer tokens and Hbar
I have given allowance to account, but when i am transferring it, it is giving error as
SPENDER_DOES_NOT_HAVE_ALLOWANCE

Though i can see allowance transaction give success code and on hedera explorers
(dragonglass and hashscan) the transaction entry is there.

Here is my code link:

<https://ctxt.io/2/AAAQCj1wFQ>

19. By Ed Marquez#6403 in the Smart Contracts Channel on 09/15/2022

Not worries at all, @Deejay.

I detailed in [this GH issue](<https://github.com/hashgraph/hedera-smart-contracts/issues/67>) what I'm running into and the errors that I'm getting. Basically, even though an account and token are already associated, the contract can't approve the allowance because it doesn't think the association has happened.

Running into `contract revert` can be frustrating indeed. We're working on improving the troubleshooting for those cases. If that happens, that may mean that more gas is needed, an parameter is being passed incorrectly, or a function is called incorrectly, or something like that.

20. By Deejay#0076 in the Smart Contracts Channel on 09/15/2022

following up on this once more (will stop the pings there for tonight I promise)

"However, my issue with the precompiles had to do with associations (couldn't grant the allowance due to missing association, but the spender and token were associated). "

I read the above with interest - how can you see that's the error? I just have the unhelpful 'contract reverted' so would love to be able to get more detailed error information rather than my blunderbuss try things and hope it fixes a problem. Specifically, in my case the owner/deployer of the SC is the one making the call to approve() to setup a new allowance - in this case to itself (ideally of course to any account or SC) - on the token created by the SC and associated to the SC (treasury) and the calling account too.

21. By Deejay#0076 in the Smart Contracts Channel on 09/15/2022

thanks - i will take a read through.

my attempted use case is to issue a HTS FT using a smart contract as treasury deployed by a multisig wallet. I am hoping to leave the bulk of the token in SC account and set allowance spend(s) to the faucet(s) (which I hope can be other accounts or indeed another SC). Clearly other ways around this if I am using it wrong however with limited allowances, a whitelist of places that can have allowances set and a threshold key account owning the contract I had hoped to lock it down as much as is sensible.

22. By Ed Marquez#6403 in the Smart Contracts Channel on 09/15/2022

With the SDK, probably the main "gotcha" has to do with this line (which is currently not documented in docs - I created an issue to document that):

<https://github.com/hashgraph/hedera-sdk-js/blob/>

925603118e0db7b96b472afa8f69c48acd7b83ff/examples/account-allowance.js#L110
That means that the spender has to generate the tx ID or be the client.

I have a strong suspicion that this same issue affects working with the precompiles....
However, my issue with the precompiles had to do with associations (couldn't grant the allowance due to missing association, but the spender and token were associated).
Let me look into this a bit more
and I'll create some issue in the repository so we can keep track of this. Feel free to create issues too if you find other issues :<https://github.com/hashgraph/hedera-sdk-js/issues>

23. By DeeJay#0076 in the Smart Contracts Channel on 09/15/2022

Has anyone here tried to use the HederaTokenService.approve() function? I have everything else I want working well but that call ends in a contract revert looking up the error I only get:

```
```  
Error is Error
Parameter (string) = allowance approval - failed
```
```

24. By Greg Scullard#5365 in the Smart Contracts Channel on 08/30/2022

Unfortunately the precompile for the contracts don't support allowances (the api requires that you explicitly state the transfer is approved), the team is aware.
You should on the other hand be able to invoke `transferFrom` on the token itself. The address of the token in the EVM is the tokenId.toSolidityAddress A native token looks and feels like an ERC20/721 to other contracts on Hedera...

25. By hemant#4832 in the Token Service Channel on 08/26/2022

Hi Everyone, i am giving allowance for all NFTs from my account A to a smart contract C. Now when i try to transfer the NFT from my contract it still requires me to sign from account A. I am using transferNFTs method from hip 336

26. By hemant#4832 in the Smart Contracts Channel on 08/26/2022

Hi Everyone, i am giving allowance for all NFTs from my account A to a smart contract C. Now when i try to transfer the NFT from my contract it still requires me to sign from account A. I am using transferNFTs method from hip 336

27. By Ed Marquez#6403 in the Token Service Channel on 08/11/2022

@cryptorush <https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>

See *****approve***** and *****allowance***** in the link above. Atm those functions don't have precompiles, but you can use those supported ERC standard calls on HTS tokens (that was HIP-218).

See line 103 onward (https://github.com/ed-marquez/quick-contract-examples/blob/master/5_1_HIP218_FungibleTok.js#L103) here for an example using those ERC calls on an HTS token.

28. By Ed Marquez#6403 in the Token Service Channel on 07/29/2022

The timeline ultimately depends on the team driving the issue (could be at the service

level or SDK level). In this case, this is most likely an SDK issue.

I posted an update to this GitHub issue. I was able to get an allowance approval and transfer to run successfully by** changing the client for the *allowance transfer *to be the spender**. IMO that seems to be the cause of the bug. See details:
<https://github.com/hashgraph/hedera-sdk-js/issues/1202>

Basically, the allowance approval goes through successfully (no issues there) and can be verified via mirror node (not SDK query - likely another bug that I'll report). The `TransferTransaction()` is what requires the client change when you use `addApprovedHbarTransfer()`.

Now, I simplified this problem to isolate the issue. I believe you (or maybe another user?) were trying to do this for an HTS token and via the precompile... If possible and urgent, it may be worth trying this workaround. Otherwise, it may be good to add a comment for the team via that GitHub issue

29. By tak#7499 in the Token Service Channel on 07/29/2022

Hi @Ed Marquez any idea when this can be fixed? HederaTokenService.approve (and allowance/approvals in general) is a pretty fundamental operation so hopefully it can be prioritized higher by the Hedera dev team. Thanks for looking into this!

30. By Eli Azev#9456 in the Token Service Channel on 07/25/2022

Another question: The only delete allowance for NFT tokens is `DeleteAllTokensNftAllowances` in which there is no place to input which account to be disallowed. Therefore I assume that all allowance will be deleted. Right?

31. By Eli Azev#9456 in the Token Service Channel on 07/25/2022

Mates, what would be the difference between `ApproveTokenNftAllowanceAllSerialsWithDelegatingSpender` and `AddAllTokenNftApprovalWithDelegatingSpender`? Both have the same description in SDK

32. By Ed Marquez#6403 in the Token Service Channel on 07/25/2022

Just fyi on allowances.... <https://github.com/hashgraph/hedera-sdk-js/issues/1202>
I was running into that when investigating @cryptorush 's issue. Have you been able to set any other type of allowances successfully?

@Blheson that's the same issue you were running into before with NFTs.

33. By Ed Marquez#6403 in the Token Service Channel on 07/25/2022

@cryptorush I'm taking a look. So far the allowance is not going through for me either with a contract or with the SDK.

34. By Ed Marquez#6403 in the Token Service Channel on 07/21/2022

Is the token treasury different from owner, sender, and receiver? One thing that comes to mind that the treasury has the the spender may not is being associated with the token ID. I'd suggest double checking that the spender is associated. Another quick thing to try is testing the code for HBAR. That test would take out the uncertainty around the token association.

35. By Blheson#3329 in the Token Service Channel on 07/18/2022

Sure I can

```
` ``const tokenId = '0.0.34197206';
const serial = '9';

const currentOwner = '0.0.15645164';

const spenderAccount = '0.0.15645176';

const receiverAccount = '0.0.15818643';

const convReceiverPrivateKey = PrivateKey.fromString(process.env.receiverPrivate);
const convSpenderPrivateKey = PrivateKey.fromString(process.env.spenderPrivate);
const convOwnerPrivateKey = PrivateKey.fromString(process.env.currentOwnerKey);
const [prop, realm, num] = tokenId.split('.');

const nftId = new NftId(new TokenId(Number(prop), Number(realm), Number(num)),
Number(serial));

let tokenTransferTx = await new TransferTransaction().addApprovedNftTransfer(nftId,
currentOwner, receiverAccount)

let transactionId = TransactionId.generate(receiverAccount);

tokenTransferTx.setNodeAccountIds([new AccountId(3)]);
tokenTransferTx.setTransactionId(transactionId);

tokenTransferTx = await tokenTransferTx.freeze();

//Signed externally
const sig = await convSpenderPrivateKey.signTransaction(tokenTransferTx);

const pubKey = convSpenderPrivateKey.publicKey;

tokenTransferTx = tokenTransferTx.addSignature(pubKey, sig);

const sig2 = await convReceiverPrivateKey.signTransaction(tokenTransferTx);

const receiverPublicKey = convReceiverPrivateKey.publicKey;

tokenTransferTx = tokenTransferTx.addSignature(receiverPublicKey, sig2);

let tokenTransferSubmit = await tokenTransferTx.execute(client);
```



```
let tokenTransferRx = await tokenTransferSubmit.getReceipt(client);``
```

This throws "SPENDER_DOES_NOT_HAVE_ALLOWANCE"

36. By Blheson#3329 in the Token Service Channel on 07/18/2022

Hello Guys,

I have a question on allowance.

I successfully used

AccountAllowanceApproveTransaction to set a spender for an nft

<https://testnet.mirrornode.hedera.com/api/v1/tokens/0.0.34716278/nfts/4>

however, when I try to transfer using

```
(await new TransferTransaction()).addApprovedNftTransfer(nftId, currentNftOwner, receiverId)
```

I get SPENDER_DOES_NOT_HAVE_ALLOWANCE.

Note: The transaction is signed with the spender key and receiver key.

I doubled checked the spenderKey to ensure it is correct.

I have not quite figured out where I might be going wrong

37. By Greg Scullard#5365 in the Javascript Channel on 07/04/2022

Just run a test on the allowance deletion and I'm experiencing the same - will report

38. By bugbytes#0817 in the Javascript Channel on 07/04/2022

``

```
7/4/2022 3:02:19 PM TX BODY { "transactionID": { "transactionValidStart": { "seconds": "1656946939", "nanos": 934954400 }, "accountID": { "accountNum": "11495" } }, "nodeAccountID": { "accountNum": "5" }, "transactionFee": "6000000000", "transactionValidDuration": { "seconds": "120" }, "cryptoDeleteAllowance": { "nftAllowances": [ { "tokenId": { "tokenNum": "47540756" }, "owner": { "accountNum": "47540750" }, "serialNumbers": [ "1" ] ] } } }
7/4/2022 3:02:19 PM └─ SIG → { "sigPair": [ { "pubKeyPrefix": "iw==", "ed25519": "19zgOzqEaPJD3iVaCj0NDerKCLCjpFHix5IFG0IbMI313iLORQW2JFVMrMeozA4SfliLqnSai5LSNHQEGKVvDg==" }, { "pubKeyPrefix": "Ag==", "ECDSASecp256k1": "FgDaDA26R8qWcTCGlifs9Tbt832EUoX/6ShmAxlHILzfZFQC1L2IsGpnSRO4mc5ySOBVj2hWq6wNXUbQcBwtbA==" } ] }
```

```
7/4/2022 3:02:20 PM RX:(00) { "nodeTransactionPrecheckCode": "BUSY", "cost":  
"117451713" }
```

...

```
7/4/2022 3:04:04 PM RX:(45) { "nodeTransactionPrecheckCode": "BUSY", "cost":  
"117451713" }
```

```
7/4/2022 3:04:09 PM RX:(46) { "nodeTransactionPrecheckCode": "BUSY", "cost":  
"117451713" }
```

```
7/4/2022 3:04:13 PM RX:(47) { "nodeTransactionPrecheckCode":  
"TRANSACTION_EXPIRED" }  
` ``
```

39. By bugbytes#0817 in the Developer General Channel on 06/21/2022

specifically `and granting approval on an NFT serial to another spender` this means something more than just being able spend, it looks recursive....and dangerous quite honestly.

40. By Greg Scullard#5365 in the Developer General Channel on 06/21/2022

I believe you can approve a single nft at a time to another spender, or approve all your NFTs (for a given token Id) to a spender in the event you hold several and want to approve them all at once.

41. By bugbytes#0817 in the Developer General Channel on 06/20/2022

@Greg Scullard I'm trying to figure out what this really means:

```
` ``  
/**  
 * The account ID of the spender who is granted approvedForAll allowance and granting  
 * approval on an NFT serial to another spender.  
 */  
AccountID delegating_spender = 6;  
` ``
```

Ideas?

42. By hemant#4832 in the Smart Contracts Channel on 06/16/2022

Hey Everyone i have given allowance to my contract for all serials for a token, but when i try to transfer tokens it only transfers 1st serial and gives error on other serials

43. By hemant#4832 in the Smart Contracts Channel on 06/15/2022

Hi Everyone ! Is it possible to give token allowance to a contract, so that it could transfer the nft for me

44. By johnda98#4728 in the Smart Contracts Channel on 05/16/2022

of wallets x balance and allowance mapping sizes. yup.

45. By Ed Marquez#6403 in the Token Service Channel on 05/16/2022

Hey, Approve and Allowance are live on Mainnet as of Friday May 13. I had been on testnet for a few weeks prior to that. See the release notes for details: <https://docs.hedera.com/guides/docs/release-notes/services#v0.25>

Here are the docs for it: <https://docs.hedera.com/guides/docs/sdks/cryptocurrency/approve-an-allowance>

46. By GameBully2K#8850 in the Token Service Channel on 05/16/2022

Hi Guys I have some questions regarding NFT Allowance

- 1- is there a nonfungible allowance API or is it coming soon?
- 2- when are the sdk allowance functions like `addApprovedNftTransfer(<nftId>,<sender>,<receiver>)`, add an allowance, delete an allowance coming to mainnet?
- Thank you!

47. By Ed Marquez#6403 in the Smart Contracts Channel on 05/15/2022

thanks for sharing more details about your workflow. Here are a few clarifications about Hedera and its services that may help:

- You can create tokens on Hedera in three different ways:
 - With Hedera Token Service (HTS) using the SDKs, without writing a smart contract (see <https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token>)
 - With HTS using a smart contract - you would have to use the `**TokenCreate precompile**` (see <https://docs.hedera.com/guides/docs/sdks/smart-contracts/hedera-service-solidity-libraries>)
 - ERC 20 contract - like @littletarzan said, this works fine, but keep in mind what the ecosystem supports

- My understanding is also that USDC is a native token on Hedera.

- This page (<https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>) means that if you have an HTS token, you can interact with it as if it was an ERC token for the supported functions you see there.

-- When we spoke about approve / allowance not being supported in that page, all that means is that you can't do those operations for HTS tokens as if they were ERC.

-- However, `**you can do approve and allowance via the SDK**`. See (<https://docs.hedera.com/guides/docs/sdks/cryptocurrency/approve-an-allowance>). So you can authorize accounts or contracts to spend hbar and tokens on behalf of other accounts/ contracts

hope that helps

48. By Ed Marquez#6403 in the Smart Contracts Channel on 05/14/2022

Yes pretty much. We just introduced approve and allowance for HBAR and tokens in the base SDK in the last release. It's likely that in the near future those operations will be supported for HTS tokens via those ERC standards

49. By bugbytes#0817 in the Javascript Channel on 05/11/2022

Yes, this feature has been implemented from the beginning. It protects an account from unwanted drops of crypto. If it is set on an account, that account's key must also sign any transaction receiving crypto/tokens (as well as the spender of course).

50. By Ed Marquez#6403 in the Smart Contracts Channel on 05/10/2022

I was able to reproduce this and running into the same issue as well with version 2.13.1 of

the SDK. May be worth trying another version that includes allowance to test. Please open an issue in the SDK (<https://github.com/hashgraph/hedera-sdk-js/issues>) so the team can look into it and fix if needed

51. By miron#7369 in the Smart Contracts Channel on 05/10/2022

```
`` `const contractId = "0.0.34734935";
const tokenAddress = AccountId.fromString("0.0.34735451");
const serialNumber = Long.fromNumber(1);
const tokenId = new TokenId(0, 0, tokenAddress.num);
const myNft = new NftId(tokenId, serialNumber);

const info = await new TokenNftInfoQuery().setNftId(myNft).execute(client);
console.log("Owner accountId");
const owner = info[0].accountId;
console.log("owner");
console.log(owner);
const approveTx = await new
AccountAllowanceApproveTransaction().approveTokenNftAllowance(myNft, owner,
contractId).execute(client);
console.log(` - RECEPIT`, approveTx); `` `
```

52. By Any | dvt#8961 in the Smart Contracts Channel on 05/10/2022

can i deploy this contract to hedera ? `` `pragma solidity =0.6.8;

```
contract WETH9 {
    string public name = "Wrapped HBAR";
    string public symbol = "WHBAR";
    uint8 public decimals = 18;

    event Approval(address indexed src, address indexed guy, uint256 wad);
    event Transfer(address indexed src, address indexed dst, uint256 wad);
    event Deposit(address indexed dst, uint256 wad);
    event Withdrawal(address indexed src, uint256 wad);

    mapping(address => uint256) public balanceOf;
    mapping(address => mapping(address => uint256)) public allowance;

    function() public payable {
        deposit();
    }

    function deposit() public payable {
        balanceOf[msg.sender] += msg.value;
        emit Deposit(msg.sender, msg.value);
    }

    function withdraw(uint256 wad) public {
        require(balanceOf[msg.sender] >= wad, "");
        balanceOf[msg.sender] -= wad;
    }
}
```

```
    msg.sender.transfer(wad);
    emit Withdrawal(msg.sender, wad);
}

function totalSupply() public view returns (uint256) {
    return address(this).balance;
}

function approve(address guy, uint256 wad) public returns (bool) {
    allowance[msg.sender][guy] = wad;
    emit Approval(msg.sender, guy, wad);
    return true;
}

function transfer(address dst, uint256 wad) public returns (bool) {
    return transferFrom(msg.sender, dst, wad);
}

function transferFrom(
    address src,
    address dst,
    uint256 wad
) public returns (bool) {
    require(balanceOf[src] >= wad, "");

    if (src != msg.sender && allowance[src][msg.sender] != uint256(-1)) {
        require(allowance[src][msg.sender] >= wad, "");
        allowance[src][msg.sender] -= wad;
    }

    balanceOf[src] -= wad;
    balanceOf[dst] += wad;

    emit Transfer(src, dst, wad);

    return true;
}
}
```

53. By Ed Marquez#6403 in the Token Service Channel on 05/09/2022

1. Typically that wouldn't need an HBAR balance in the contract involved. The only HBAR balance needed would have to be in the account paying for the tx (to cover the associated gas fees, just like an account needed eth in Ethereum to cover fees)
2. It depends. Generally, no. It wouldn't need an allowance if the sender own the tokens being sent. It would need the allowance if someone else is doing the transfer on behalf of the sender
3. Yes, it does. See line 61 in this example: <https://github.com/ed-marquez/quick-contract->

[examples/blob/master/0_transferHbar2Contract_viaCryptoTransfer.js](#)

4. It should be possible (haven't tried it with a contract). Here's an example for approving and transferring with an allowance: <https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/account-allowance.js> (lines 77 and 93)

54. By 7671#7251 in the Token Service Channel on 05/09/2022

1. Does `HederaTokenService.transferToken` need hbar balance?
2. Does `HederaTokenService.transferToken` need allowance to move tokens?
3. `TransferTransaction().addHbarTransfer()` doesn't accept contract id. How can we transfer hbars to contract?
4. `AccountAllowanceApproveTransaction.approveTokenAllowance()` doesn't accept contract id as operator. How can we set allowance for contract operator?

55. By Ed Marquez#6403 in the Javascript Channel on 04/27/2022

It means `No allowances have been specified in the approval transaction.` according to: https://github.com/hashgraph/hedera-protobufs/blob/main/services/response_code.proto

56. By kjwook#6746 in the Javascript Channel on 04/27/2022

<https://docs.hedera.com/guides/docs/sdks/cryptocurrency/approve-an-allowance>

57. By kjwook#6746 in the Javascript Channel on 04/27/2022

EMPTY_ALLOWANCES what is mean?

58. By bugbytes#0817 in the Developer General Channel on 04/25/2022

Unfortunately, I can't seem to express concisely enough that this is a *policy* that has changed as the result of some technical issues that have become problematic. The HAPI is no longer symmetric. You can't get out what you put in [fees/not]. When you combine that with the foreseeable future of the economics of mirror nodes, it is possible that account holders could have difficulty discerning the full state of their account. This opacity could even lead to a big-short kind of scenario. Granted there layers to how that could manifest, but its the kind of things we need to think about before it happens.

How do I as an account holder (non super admin user, not < 0.0.59 account) discover what allowances have been set on my account if I do not have access to a mirror node?

How can I if tell someone who is collateralizing the value of their account is not at risk of a 3rd party pulling that collateralized value from the account?

.

59. By bugbytes#0817 in the Developer General Channel on 04/22/2022

Up until now, the Hedera network has been open and query-able of any information held in state by the ledger. Anyone can query the details of their own account to get the exact state of what the ledger knows about their (or others) account. **However, this change breaks this openness:**

<https://github.com/hashgraph/hedera-protobufs/pull/182>

Now the ledger (gossip nodes) will not let you know what allowances you have created.

For those who don't know what an allowance is, it is a grant you create that allows other parties to withdraw crypto and tokens from your account. There is no way for an account owner (unless they have the backdoor superadmin account) to query the network for what other parties are permitted to withdraw from your account.

Hedera's answer "go query a mirror node". While keeping historical state off-chain seems to be a reasonable choice for a network such as hedera, I do not believe this acceptable with state/information currently held by the network.

60. By kjwook#6746 in the Javascript Channel on 03/31/2022

I raise issue about AccountAllowanceAdjustTransaction.js
<https://github.com/hashgraph/hedera-sdk-js/pull/1031>

61. By shemnon#2321 in the Smart Contracts Channel on 03/29/2022

Approve/Allowance and transferFrom currently are not implemented. HIP-376 should cover that.

62. By simihunjan#3005 in the Smart Contracts Channel on 03/29/2022

hi @you_ate_my_food . @shemnon would be better equipped to address the how we did questions . Here is an example that shows how we handle signatures. It is applied to a transaction on the Hedera side calling the solidity function from the contract <https://docs.hedera.com/guides/getting-started/try-examples/deploy-a-contract-using-the-hedera-token-service>. Let me know if that helps answer the second part of your question. Also, there is a HIP to add support for approve/allowance <https://hips.hedera.com/hip/hip-376>.

63. By you_ate_my_food#4494 in the Smart Contracts Channel on 03/29/2022

2. I noticed `HTS.transferToken()` works in a similar way to transferFrom (since there are sender and receiver address params) in Ethereum land. But there is no approve/allowance. So how do you handle signatures?

64. By kjwook#6746 in the Token Service Channel on 03/26/2022

I have question about 'AccountAllowanceApproveTransaction' usage.

65. By Marl#4072 in the Developer General Channel on 03/24/2022

Hey all. I'm working on a use case but don't want to have to make allowances for when the Hedera network is down for monthly updates. Is the (realistic) expectation that updates will be in a rolling fashion, with zero-downtime for dapps? Or that there will be some update downtime, no matter how few minutes that may last?

66. By ENIAC#7501 in the Smart Contracts Channel on 03/08/2022

Can we provide allowance for a smartcontract from a token which is created with HTS ?

67. By Greg Scullard#5365 in the Token Service Channel on 03/07/2022

not quite, so you set the serial to be negative to remove the allowance

...

The NftAllowance message is used to modify the NFT serial number list for a spender. If the NFT serial number is positive then the NFT will be added to the approved list. Conversely if the serial number is negative the NFT will be removed from the approved list.

If the caller wants to remove all serial numbers from the approved list the `approvedForAll` field should be set to false. If the `approvedForAll` field is set to true, the serial number list for the spender will also be purged as the spender is granted access to all NFT instances and an enumeration is not required.

```

from the HIP: <https://github.com/hashgraph/hedera-improvement-proposal/blob/e2f8926060e7378446d3c939d0eff5259b7390ee/HIP/hip-336.md>

### **68. By Greg Scullard#5365 in the Token Service Channel on 03/07/2022**

I haven't tried it yet, but I think you can specify a negative number to rescind an allowance.

### **69. By bugbytes#0817 in the Token Service Channel on 03/06/2022**

@Greg Scullard With the new `**Allowances**` functionality, you're able to adjust allowances for hBars and Tokens, but how are you to rescind an allowance on an NFT with a particular serial number without moving it to a different account?

### **70. By Greg Scullard#5365 in the Token Service Channel on 02/15/2022**

```

```
/**
 * If true then the transfer is expected to be an approved allowance and the
 * accountID is expected to be the owner. The default is false (omitted).
 */
bool is_approval = 3;
```
```



## Comments in 2021



### 1. By Greg Scullard#5365 in the Smart Contracts Channel on 12/08/2021

(Assuming the token service supported allowances, otherwise you'd have to do it all in-contract, ERC-20 and ERC-721 implement these allowances).

### 2. By Greg Scullard#5365 in the Smart Contracts Channel on 12/08/2021

@Rocket the notion of sharing is somewhat different I think. It means that I can delegate the authority to someone else to transfer my token, while retaining the ability to revert that authorisation should I want to.

In the context of a fungible token, it means allowing another account to sign a transaction to transfer up to  $n$  tokens (or several transactions totalling  $n$  tokens or less).

In the context of a non fungible token, it's the same except the quantity is 1.

I guess in your context, this could be implemented with a smart contract that has

approval to debit your token balance by a determined amount at a given frequency, you'd allow the contract to spend and therefore renew the subscription every so often. If the allowance is insufficient, the subscription would lapse. If you no longer wanted the subscription (and had left over allowed balance in the contract), you'd revoke the allowance.

### **3. By Greg Scullard#5365 in the Smart Contracts Channel on 12/07/2021**

And response posted in the other channel which may not be open to all or permanent.

So the challenge with any royalty is that two people are involved in the operation, the token holder (Alice) sending the token to someone (Bob) who's paying Alice for the token and also paying the token issuer (Carol) a royalty.

It is necessary for both Alice and Bob to sign the transaction, Alice to approve the transfer of the token to Bob and Bob to approve the payment to Alice + Carol.

Whether this is done natively with the token service or a smart contract doesn't change the fact that both parties need to approve the operation.

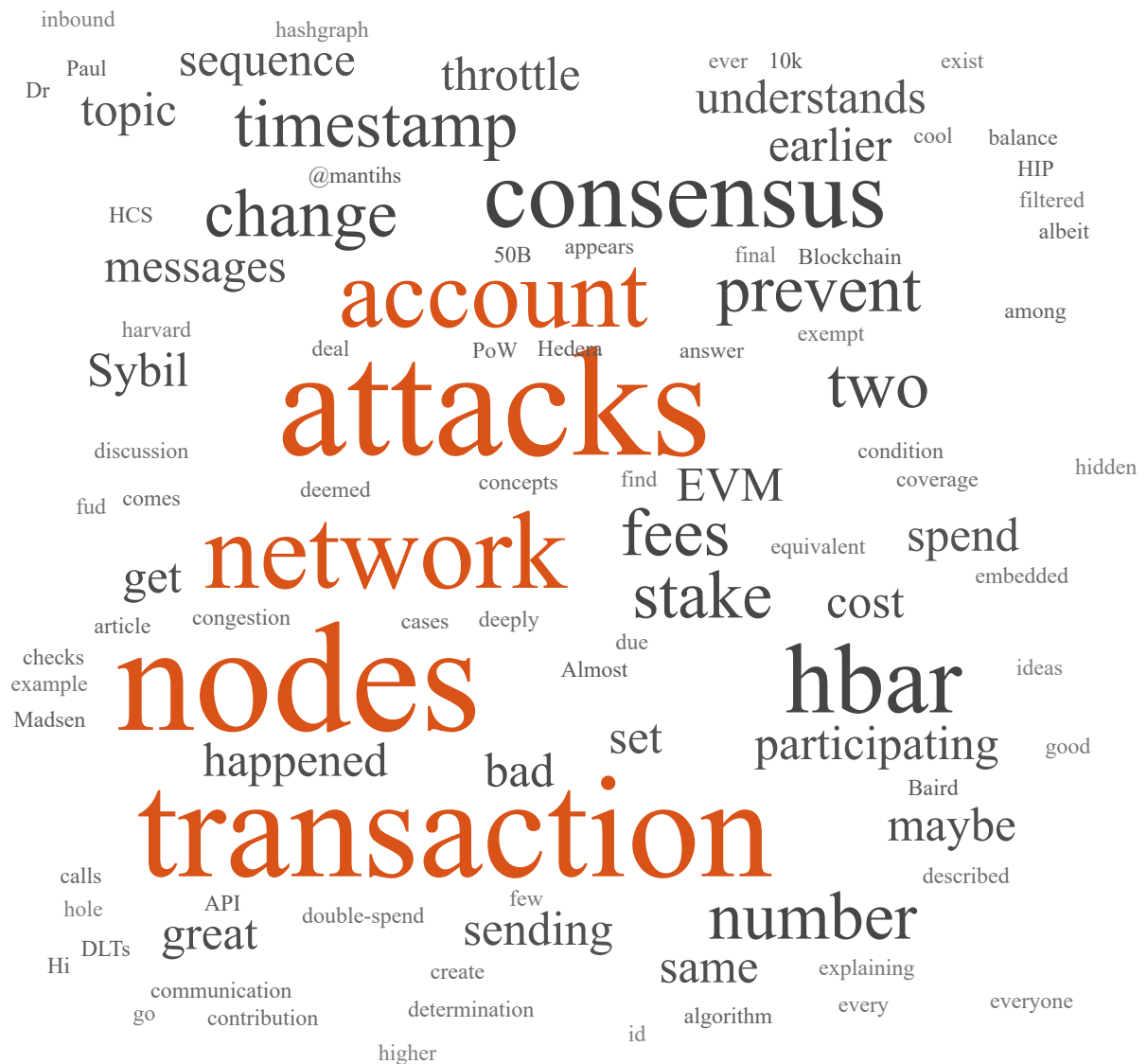
In a P2P scenario it's challenging... we need support from wallets for scheduled transactions or the ability to notify someone of a transaction they need to sign.

Marketplaces help to some extent, but not entirely since you need to transfer "ownership" of your token to a marketplace so that they can sell it on your behalf (they can better manage the signature collection process), however, in transferring the token to the marketplace, you're back to the P2P scenario in that the simple act of transferring the token to the marketplace (in escrow) incurs a royalty payment. This is particularly important if the royalty payment has a fixed component, even transferring the token to the marketplace for free would result in the fixed royalty being paid to the issuer...

We should create a HIP to add support for an allowance feature called Approve on HTS meaning you can "share" control of the token with someone else (and as the owner, revoke that control). The someone else (a marketplace) would then be able to sell the token on your behalf, but it would never have been transferred to them in the first place, just granted the ability to transfer it on your behalf.



## Comments in 2023



**1. By teacoat#2092 in the Developer General Channel on 03/10/2023**

<https://hedera.com/blog/analysis-remediation-of-the-precompile-attack-on-the-hedera-network>

**2. By bugbytes#0817 in the Token Service Channel on 02/18/2023**

Other accounts sending \*inbound\* to the treasury are \*not\* exempt from fees, there was some discussion (and maybe a HIP) to change that shortly after one of the ransom-token attacks happened.

**3. By Michael Garber#5033 in the Consensus Service Channel on 02/07/2023**

That sequence number is the number of messages on a topic. If it has 3 sequence numbers, then it has 3 messages. There is no possibility of a race condition and no two transactions get the same consensus timestamp. This article by Paul Madsen: <https://medium.com/hedera/finality-of-consensus-you-can-take-it-to-the-bank-db0a75593d50>) provides a great deal of coverage on the topic you may find interesting

> There is no equivalent risk of double-spend in hashgraph as described above for PoW. If an attacker simultaneously sends two transactions into the network that together spend more hbars than in the balance of the account — both will receive a consensus timestamp and order. One will be deemed to have occurred earlier than the other. The later transaction will be rejected by all nodes as spending hbars that the account doesn't have. The timestamps for the two transactions won't change, and so neither will the determination of which transaction was earlier and valid.

**4. By Hbarian#0631 in the Developer General Channel on 01/29/2023**

Hi everyone

I was reading about the EVM and can't get an answer to some questions that I have. This maybe irrelevant now with the nodes being run only by trustees. But what will happen if a node uses a rogue version of EVM.? Are there any security checks in place to prevent such attacks?

**5. By bono95zg#3849 in the Consensus Service Channel on 01/24/2023**

It would be cool if someone who deeply understands the algorithm could make a video to visualize how a bad transaction would not be included in the final state. For example, a simulation of communication between n nodes and then a red (bad) transaction appears and is replicated among nodes and is filtered out. I have a few ideas for attacks and cant work out how HCS would solve it.

**6. By Michael Garber#5033 in the Consensus Service Channel on 01/23/2023**

No no not like that, I just didnt understand if you were leading me into a fud hole or something. Blockchain concepts are not all trivial. Dr. Baird does a great job explaining how all DLTs are subject to this 34% attack in his harvard talk its really good <https://youtu.be/IjQkag6VOo0?t=3666>

**7. By Greg Scullard#5365 in the Consensus Service Channel on 01/23/2023**

Each node participating in consensus has to "stake" its hbar, that stake represents the relative weight of the node when it comes to consensus. If the account being staked to the node has 1000 hbar, it's participation is 50B / 1000.

Now, if the same account wants to create 100 nodes, it will have to spread its 1000 hbar across 100 nodes, the overall contribution to consensus doesn't change, there can't be a Sybil attack.

**8. By Michael Garber#5033 in the Consensus Service Channel on 01/20/2023**

When the network reaches the throttle, congestion prices set in to thwart this type of attack. The throttle is set at 10k tps for most of our services and can be lifted to go much higher if (wen) there is ever a need

**9. By bono95zg#3849 in the Consensus Service Channel on 01/20/2023**

And how does network prevent Sybil attacks?

**10. By bugbytes#0817 in the Developer General Channel on 01/19/2023**

No, due to the nature that the transaction id (0.0.0@0.0) is embedded in the transaction that is signed, this prevents replay attacks.

**11. By Supremax67#5749 in the Smart Contracts Channel on 01/10/2023**

@mantihs Almost every API calls on the Hedera network has fees, albeit very small in some cases. As for why do they exist?

1. You are using network resources
2. A network without fees suffers both from inflationary hidden cost and is susceptible to no cost spam attacks.



**3. By Grand Architect Yggsmark Von Pop#1045 in the Token Service Channel on 12/07/2022**

are there any work arounds? I was operating on the assumption that I could delete the keys once I'd finished distribution. that'll be a headache as it'll be an easy avenue of attack

**4. By Greg Scullard#5365 in the Token Service Channel on 11/29/2022**

right now, it's trial and error via the SDK, gas estimates require execution by a node and have an inherent cost in terms of CPU/Memory, if estimates are provided for free, they're a potential attack vector on the consensus nodes...

We're working on making this available via mirror nodes (which may be subject to limits on gas/s and subscription for higher limits on some mirror operators)

I'm not 100% sure, but it may also be possible to get some estimates via hashio.io if you're more familiar with ethereum transactions and tooling.

**5. By Greg Scullard#5365 in the Javascript Channel on 11/25/2022**

1. Do you mean `web3.js`? If so, we are working on a JSON-RPC relay (<<https://hashio.io>>) which is also open source in our github repo. Hedera's api isn't JSON/RPC so the relay adds the necessary api support for common ethereum libraries and tooling. It's work in progress, but the goal is to create parity as much as possible to ease the transition from other EVM compatible networks to Hedera.

In the mean time, you can use the Hedera SDKs to deploy and call contracts.

2. Not at the moment no, on Ethereum you can either run your own node to run queries against (which has a cost), or query third party services up to a point (they're usually freemium services with gas limits). When you query a consensus node, it's fair that the node should be paid for the CPU/memory it's using to respond to your query, otherwise it would be an easy attack vector (just keep spamming nodes with free queries).

We are working to enable this via mirror nodes which would mimic the third parties you're used to using (freemium/limited model).

**6. By Liebenfiels#7895 in the Developer General Channel on 11/21/2022**

You should not be sharing you account ID if not needed, screen shot has it. It is your privacy- scammer sees your Hbar balance and goes for attack

**7. By Liebenfiels#7895 in the Developer General Channel on 11/21/2022**

Ignore what wallet displays and hashcan updates pending reward every 48h, do the calculation yourself and the hashscan website calculates value correctly under Staking. Do not ever reply to any messages, even scammer will mislead you saying dont click there but dm me and will give you another scam link. Some work together it is orchestrated attack.

**8. By michielswirlds#1775 in the Token Service Channel on 11/16/2022**

Yes, the receiver has to sign the transaction because he's the one sending the value in return for the NFT. In case they don't sign, no fallback fee drain attack can be installed correct



**9. By Liebenfiels#7895 in the Developer General Channel on 11/02/2022**

Reality, cyber-crime- if one attack the network the law enforcement is notified- this happens in other networks when miners are anonymous, police is notified.

In Hedera no such thing possible all nodes are known- if malicious as you suggested, injection can be done in hours. No such thing as malicious is possible in reality in Hedera. Negligence absolutely as shown already not attending council meetings etc

**10. By Liebenfiels#7895 in the Developer General Channel on 11/02/2022**

Not even that, no such thing possible as malicious (law-cyber-crime, they not allowed to attack the network it is against the law), and would be kicked from council by majority even if tried.

Negligence is the only possible problem here, not investing in infrastructure for scaling etc- not be ready when needed & no problem solve on time, but even then no chance for second term and lesson for other members.

**11. By johnda98#4728 in the Token Service Channel on 10/21/2022**

sounds somewhat 'centralized'.. bit of a sad analogy .. finreg, gov, old legacy central 'authority' banking that is.. Supreme Max.. if I may kindly suggest.

soooo.. 'dedicated treasury account'... dedicated by whom and whom holds the keys ? and whom pays for it ? and does this 'treasury account' have itself held in consensus and therefore if so.. who pays the renewal fees ? .... Max.. its not a zero sum 'issue' .. and be sure to, like I know you do.. do not assume that all issues raised are some sort of 'nice attack'.. ok good.. agreed..

nubes @nube 's initial point is highly serious.. if Contracts hold multiple HTS Assets and then become ready for remove due to 0 hbar bal and autorenew fail.. and @bugbytes is right .. if Assets get 'returned'.. returned to whom ? Treasury of the TokenID ... errrr nope.. unethical.. and even if so.. 'who' does the returning ? HH's protocol ? .. errrr no... its not Nanny Bank FinReg of Contract Assets.

my later point is that if the Contract knows it is going to fail ie be removed then it can/ could return all the Assets to all the orig sendings Accounts prior to removal... how ? it needs gas and there is none as thats why the autorenew fail was tripped ie 0 balance and it needs self awareness and to pay gas to store such tran records..mappings/arrays.. unfeasible.

read my last msg.. its a core architecture issue .. whomever came up with last year this 'rented immutability' .. which is misnomered... has to re-wrestle how Assets can be held safe to ABFT immutably .. not rented.. immutable.. see it ?

ELSE .. contracts holding Token assets have to inform their Customers that if the hbar bal = 0 and autorenew is up... then withdraw or request return of Assets, or will be lost.. ie a no-nanny approach.

**12. By Ponc h o.hbar#6743 in the Developer General Channel on 10/20/2022**

Fix the money. Fix the world. The technology has always been imperfect to solve the Byzantine Generals problem. We don't want to be martyrs. We want to be winners. The great achievement of Satoshi Nakamoto is the decentralized network distributed to

billions of people. No one person controls the network - only together can it be governed. No one entity owns the data so the network continues to run if nodes are removed or under DDoS attack. These nodes operate globally. These users benefit from these networks and are able to transcend the constraints of a CEO, a corporation, company, a country, ect. A philosophically empowered computer network run on cryptography. A machine with a mechanical advantage....it becomes billions or trillions of times harder to break the code than create the code resulting in Web 3 technology having a quadrillion to one advantage. For thousands of thousands of years the technology finance has been imperfect. The technology of gold to separate power from state doesn't work when you can just be murdered and robbed. The technology of crops, or, livestock or fiat currency, or buildings, they don't work that well to separate economics from the state. For humanity this movement has always been an aspiration, however we have lacked the technology to realize it. Crypto enables one to transfer value through space without a trusted third party, or manifest something without a trusted third party. For the first time in the human race a freedom virus has been released. A truth virus. A sovereignty virus. A monetary virus. At some point the majority of people will realize they have more to fear by not adopting this technology than by ignoring it. . That means we're still early. Success requires courage, clarity, and commitment. Stay strong frens

**13. By Liebenfiels#7895 in the Developer General Channel on 10/14/2022**

phones are cheap, attacker will go first with exploits for more expensive models as these are mainly used by many and they would expect bigger funds to be there. Buy cheaper phone from known provider. It is like having badly beaten up sleeper car that smokes expensive good looking cars. Stay under radar that way.

**14. By Liebenfiels#7895 in the Developer General Channel on 10/14/2022**

I don't know and I don't use ledger and never will- single company single point of failure to me, some say is the most secure way, but other experts in security strongly disagree. I prefer mobile phone with wallet- that is turned off and used for crypto only not social apps. There is tons of mobile phone providers and even models per each- very low chance of any attack as they cannot exploit cover all these phones. Where you have single device that you have to trust that is not a security for me. Phone you can connect to WiFi streamed from other phone mobile internet, that is more secure that using home WiFi as you may have many devices using it including security cameras, WiFi sockets etc.

**15. By Supremax67#5749 in the Developer General Channel on 09/28/2022**

@AviatorSea You need a slow release of token to prevent a single party of accumulating all the tokens. If you released all the tokens at once, you risk compromising security as 1 single group of bad actors could acquire enough to affect the consensus mechanism. All Proof of Stake chains follows a similar release pattern to prevent a Sybil attack. The public ledgers that don't, usually ends up compromised or/and centralized.

**16. By Supremax67#5749 in the Developer General Channel on 07/09/2022**

All the fees, even though small, exist to mitigate network attacks. If it was completely free, it could be spammed until the network crashes.

**17. By VR#1587 in the Smart Contracts Channel on 07/05/2022**

The implementation depends on multiple points :

- how are operations done
- how fair/uncontrollable you want to be with your game mechanics

- how cost effective do you have to be

Lets say your game has dice rolls but the players are playing in lobbies. In this case, what is the issue of making per lobby roll storage? So lets say you have dice rolls array and in `diceroll[room3]` you have stored uint256 which you will use for next 10 steps. Now this means that theres a contract read attack hanging there, meaning potentially if Im really really smart and have very powerful PC and network is very public I can figure out `diceroll[room3]` value.

HOWEVER, if your game logic is 4 people in lobbies are playing in rotation then it just means that I know RNG for current lobby is "28653404855184049371" and I know Im third in queue so the 04 falls on me if each player gets 2 digits of a "roll" can I do something with it? not really if I have to roll in sequence.

If your game is asynchronous then its whole other story, I could wait for someone to use 04 and then go for it. In which case yes, I personally would use it for every dice roll.

In both cases Im talking about on chain roll usage. response time is well... Im not even sure such thing exists between smart contracts.

Now if I want to use diceroll logic off chain... oh boy, I dont think Id use anything like this at all bcs the question then becomes can I trust implementation of diceroll between SC response and whatever is player usage.

Does it make sense?

**18. By Supremax67#5749 in the Developer General Channel on 06/18/2022**

Some networks have nodes with special statuses often call validators, unfortunately, if you know who the validator is, you can keep attacking it all day and shutdown the network permanently. Because Hedera doesn't care which node it gossips to, once the gossip starts, you can't stop it.

**19. By benmoktr#3852 in the Developer General Channel on 06/17/2022**

except in the unlikely case of an attack right?

**20. By Supremax67#5749 in the Developer General Channel on 06/17/2022**

Nothing on Hedera takes a long time, finality is achieved within a couple of seconds. But, in the event the network gets severely attack, which mind you, hasn't happen yet and they have already processed more than 2 billions transactions; then not making assumptions on when finality occurs is how you protect transactions.

**21. By benmoktr#3852 in the Developer General Channel on 06/17/2022**

Hmm i guess in that case im not really clear how it is superior to say DLTs that are BFT but not ABFT. Is there an example scenario where ABFT will succeed where BFT fails? I saw something about leader based systems where an attacker could ddos the leader is that it? Is ETH leader based?

**22. By benmoktr#3852 in the Developer General Channel on 06/17/2022**

My current understanding is that the message needs to be gossiped to all the nodes so if

the message originator node is attacked then all transactions from that node are held up indefinitely?

**23. By benmoktr#3852 in the Developer General Channel on 06/17/2022**

Hi I am a bit confused on what abft means. I know it is supposed to protect against ddos attacks because messages can be lost indefinitely. Does that mean that consensus can be achieved but it will take indefinitely long?

**24. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

honestly, i'm not judging not attacking anyone here, i just hope we can find a common point of view

**25. By Bart#1307 in the Smart Contracts Channel on 06/07/2022**

I see, the issue I see is that the Hedera mirror node service is free and hence rate limited, and more susceptible to attacks and comparably unreliable to Hedera core. Hence I still think it makes sense to introduce a cheaper gas price for `ContractCallLocal` that apps can use as a fallback(albeit paid) in the event that the mirror node service is down, etc

**26. By xylan#7882 in the Javascript Channel on 06/04/2022**

more context:

the secrets itself will be stored inside expo-secure-store which uses keychain in ios and encrypted shared preferences in android behind the curtains, the `salt` is to make user's app's password (which will be used as the key) safer against attacks.  
now where should I store that added `salt` locally?

**27. By Supremax67#5749 in the Developer General Channel on 06/01/2022**

The best you can do in any network is 33.3% malicious actors, not 51% and certainly not 80%. Please be careful if anyone states they can do better, they are not being honest to all form of attacks.

**28. By volbasor asd2021#5293 in the Developer General Channel on 06/01/2022**

i have a question pls does hereda have 80% resistance to sibil attack? in terms of nodes collusion?

**29. By Supremax67#5749 in the Developer General Channel on 05/30/2022**

@VAClemor Other chains doesn't have it free, they have it through hidden costs. If you query a server, that server is expending resources to give you that response. If you are not paying that cost, I guarantee someone else is. It is the hidden fees that are dangerous to the crypto space, often leads to hyper cost inflation of usage fees. (There was a time where an Eth transaction was less than 3 cents)

There's also the downside that if queries were free, an attacker could send a million queries and shutdown the server.

Your questions should be more for the #-mirror-node channel, as this is where you are trying to collect the data and you are trying to find a way that is the most cost effective.

**30. By Blockchic#9248 in the Smart Contracts Channel on 05/10/2022**

I've never heard of depositing into a contract... However ya never know that might be a thing.

I like to think of asynchronous Byzantine Fault Tolerance as the Sergio Leone of smart systems:

"The fact that hashgraph is asynchronous Byzantine Fault Tolerant (ABFT) means that as long as an attacker has less than 1/3 of the total stake, they will be unable to either stop consensus from proceeding, or cause an inconsistent consensus, or inappropriately skew the consensus order and consensus timestamps that hashgraph delivers. The more honest actors that commit their tokens as stake, the more secure the overall security of the network will be - as honest stake raises the bar for a malicious actor to be able to reach the 1/3 threshold."

<https://hedera.com/blog/proxy-staking-on-hedera>

**31. By vic.a#4499 in the Smart Contracts Channel on 05/01/2022**

well ... it depends on how thoroughly you think of all the possible attack vectors ... but, yes, I am saying that there could be greater risk in going down that not-so-charted path. It all depends upon your use-case, of course

**32. By Greg Scullard#5365 in the Developer General Channel on 04/20/2022**

Leemon talked about a possible attack on Bitcoin whereby an attacker splits the network into three partitions A, B and C such that A and B think they're a whole network as do B and C. But A and C can't see each other. This would potentially enable the attacker to issue transactions from B that would be validated by both A and C leading to a double spend until such a time as the partitions are removed. Is this better than compromising liveness ?

**33. By chet#8211 in the Developer General Channel on 04/19/2022**

So now my follow up question is «what are the measures taken to ensure the lowest probability possible for a successful liveness attack? » (optimal decentralized distribution of HBAR staked)

**34. By chet#8211 in the Developer General Channel on 04/19/2022**

Thank you @gehrig. Those articles were quite interesting and indeed confirm what I was saying. Especially the second article and the point on liveness attack. Some can be successful if they statically partition the network. So if more than 1/3 of the HBAR staked goes offline for whatever reason (regulation, internet shutdown regionally etc...) then the liveness IS compromised. In that sense it is not as resilient as the Bitcoin network. To me this is a clear issue is HBAR stakes end up highly concentrated geographically. Because any serious event shutting down a large part of the network render it unusable.

**35. By Supremax67#5749 in the Developer General Channel on 04/15/2022**

There's a video about the simple explanation on Hashgraph on Youtube. Let me know if you need the link.

As for Bitcoin continuing without a hitch goes under the assumption that no one took advantage of it and didn't brute force attack. If the Bitcoin network were ever to go down in hashing power, even for 20 mins; this would be enough for an illicit enterprise or government to fork the blockchain. More than a decade of chains could be gone in a matter of mins. This is why PoW is not viable, it requires constant power dump into it to assure its security. Proof of stake is the way forward as a PoS could go down and come

back up without losing a beat. More and more chains are moving on to Proof of Stake or trying to (see Ethereum 2.0).

#### **36. By nube#7126 in the Developer General Channel on 02/20/2022**

Hedera is yes, that's one way the network will be secured

> The votes of Hedera nodes in the virtual voting algorithm are weighted by the stake of that node, that is, the amount of tokens in the accounts that the nodes have designated as staked.

>

> Weighting the votes by the stake of the corresponding node serves to mitigate Sybil attacks because, while an attacker will eventually (after we transition to a permissionless model) be able to create thousands of nodes under their control, these malicious nodes will only have a combined influence equal to the hbar balance of the attacker - this necessarily divided amongst the Sybil nodes.

>

> Should an attacker attempt to buy up enough tokens to expand their stake, and so influence towards consensus, the expectation is that the price of the tokens will increase, making the attack more and more expensive.

#### **37. By Eidorb#6456 in the Developer General Channel on 02/16/2022**

Yer I would image you would need a mechanism in place like this to help stop DDoS attacks and manage the network efficiently

#### **38. By Supremax67#5749 in the Developer General Channel on 02/09/2022**

If 1/3 of the network was malicious, you wouldn't be able to reach consensus. The math theorem says you can't do better than 1/3. Yes, there are people who says 51% attack, but that's not actually true. Dr. Leemon explained it well of why you can't do better than less than 1/3 malicious, this is true of any network.

#### **39. By Greg Scullard#5365 in the Smart Contracts Channel on 02/03/2022**

There is a mechanism (congestion pricing) which will gradually increase transaction fees if the throttles are sustained to prevent DDoS by means of flooding the network with transactions.

The purpose isn't to enable those transactions to run at higher fees, (the bulk of transactions below the throttle will remain priced the same), but to de-incentivise DDoS attacks by way of cheap transactions.

#### **40. By Bart#1307 in the Smart Contracts Channel on 02/02/2022**

I didn't delve into the specificities of how it would be implemented, but Hedera nodes at current utilization aren't even making sufficient fee revenue to break even, which is fine since all nodes are council operated and subsidized, but even if it weren't you could have a minimum fee boundary, however there shouldn't be a maximum fee threshold, but even then the increase to the fee would be limited say a maximum increase of 12.5% per round when the previous round utilization exceeds a given threshold say 80% which is similar to Ethereum, this would significantly mitigate sustained spam attacks

#### **41. By Greg Scullard#5365 in the Smart Contracts Channel on 02/02/2022**

@Bart so I can query cost for a getter and a setter contract function, however I get a cost back in hbar which doesn't tell me the underlying gas costs - I've asked the engineering

team for input.

@bugbytes the problem with contracts is that they're a "how long is a piece of string" problem. The state of the contract, how much the code writes to the state, how many CPU cycles, memory the call will use isn't deterministic (unless the contract doesn't make any changes which wouldn't be very useful). The only way to know the cost for sure is to actually execute the call...

The game theory is to avoid opening the network to attacks, you'd be surprised what people come up with to try and break a network and that includes some pretty sophisticated "gas attacks".

**42. By Supremax67#5749 in the Consensus Service Channel on 01/23/2022**

@Eidorb Well, Hedera is unforkable, worse case scenario, no one is doing transactions doing the attack.

In the case of Bitcoin, someone splits the ledger and liquidates everything.

**43. By Eidorb#6456 in the Consensus Service Channel on 01/23/2022**

Yes, my understanding is you basically have to assume attack cases can not happen in order to claim 51% (if you consider the same cases HBar is compared to then Bitcoin would also be 1/3 malicious node dependent also.

Do you know under what cases a 1/3 malicious node attack would cause issues for Hedera and Bitcoin and what would happen in each?

**44. By Supremax67#5749 in the Consensus Service Channel on 01/23/2022**

Hence why it is aBFT. You can't stop it even if you attack less than 1/3 of the network. You can't do better than 1/3 malicious nodes (I realized many ledgers say 51%, but that is not the full story)





#### **4. By Cody (Swirlds)#4217 in the Developer General Channel on 10/27/2021**

Until your transaction has been gossiped, the node to whom you send your transaction has the unilateral ability to delay that transaction, or even to stop it from being transmitted at all.

This would likely fall under the definition of "malicious behavior". The network is designed to survive an arbitrary attack as long as nodes representing less than 1/3 stake are malicious. But there is no guarantee that a transaction submitted to a malicious node will reach consensus.

There are a number of different actors that could do the same thing. Your router, your ISP, the people who control the pipes into data centers. Basically, until your transaction is gossiped and becomes known to the network, it is just a few packets on a wire with no guarantees.

What recourse do you have against this?

- You are free to choose which node you send your transaction. If a node isn't processing your transactions fast enough or if you suspect intentional front running you are free to choose any other node in the network.
- You can submit the transaction to more than one node with a duplicate transaction ID. The first one that reaches consensus will be processed, the remainder will be rejected as duplicate transactions. Note that you will pay slightly higher fees for this transaction than for regular transactions that you send to a single node.
- When anonymous nodes become available, you (or somebody you trust) can stand up a node to submit transactions to the network.

#### **5. By Supremax67#5749 in the Developer General Channel on 09/17/2021**

Once the price of HBAR becomes too expensive to own a large share, a Sybil attack will become virtually impossible to execute.

#### **6. By Supremax67#5749 in the Developer General Channel on 09/17/2021**

It is a proof of stake model, like any proof of stake model, you want to have a slow release of token to mitigate the risk of Sybil attacks. ( An attack within the network because an illicit party acquired a large amount of crypto)

#### **7. By Murko#0459 in the Developer General Channel on 09/16/2021**

@dotat I would think the other way - what would be the purpose to bring down, so blatantly easily as you think, the whole platform and its users in such rogue attack? If that ever would happen, **\*\*everybody\*\*** would loose, rogue hacker included. Also bear in mind - I cant see any potential logic, why to create something which will have such flaw. IMHO you are overstretching that matter.

#### **8. By Cody (Swirlds)#4217 in the Developer General Channel on 09/03/2021**

But better chance that you use the head start to get an unfair advantage when mining the next block.

<https://bitcoinmagazine.com/technical/selfish-mining-a-25-attack-against-the-bitcoin-network-1383578440>

**9. By Cody (SwirlDs)#4217 in the Developer General Channel on 09/03/2021**

One attack is to hold on to a block when you mine it, and begin mining the block that follows it

**10. By Cody (SwirlDs)#4217 in the Developer General Channel on 07/29/2021**

It's a security thing. Anything that is free is an attack vector. Each account requires some memory on each node in the network. So if accounts are free, it becomes quite easy for an attacker to create millions and billions of them, which could severely impact network performance.

**11. By Rocket#2012 in the Developer General Channel on 07/20/2021**

if you assume that an attacker is sufficiently wealthy to buy thousands of nodes in a situation with no staking minimums, then you have to assume that they'd be sufficiently wealthy to buy thousands of nodes in a situation where there are staking minimums because the hardware is a trivial cost

**12. By Rocket#2012 in the Developer General Channel on 07/20/2021**

it just means that an attacker needs to be sufficiently wealthy

**13. By Supremax67#5749 in the Developer General Channel on 07/20/2021**

Without a minimum to a node, I can think of a dozen ways to attack the network.

**14. By Supremax67#5749 in the Developer General Channel on 07/20/2021**

I could attack a network by enabled disabling proxy staking to a node, forcing that node to disconnect and reconnect to a different shard, every 15 seconds for as long as I wish it so.

**15. By Rocket#2012 in the Developer General Channel on 07/20/2021**

in order to be able to realistically attack enough nodes to reduce the staking level on the shard

**16. By Rocket#2012 in the Developer General Channel on 07/20/2021**

seems like a reasonable attack vector given the above assumptions

**17. By Rocket#2012 in the Developer General Channel on 07/20/2021**

that reduces the number of nodes needed to be attacked

**18. By Supremax67#5749 in the Developer General Channel on 07/20/2021**

Staking maximum won't address the issue since there is no minimum. Those high stakes nodes are still attack vectors.

**19. By Supremax67#5749 in the Developer General Channel on 07/20/2021**

This is assuming you have a shard that has this setup. The other problem with this is Sybil attacks. If only a few nodes have heavy stakes, you could shutdown consensus of that shard DDOS just those very few ones.

**20. By Supremax67#5749 in the Developer General Channel on 06/30/2021**

Last I check, Algorand is a blockchain. Any blockchain suffers from the same issues, there's a dedicated leader even for a fraction of a second, is considered an attack vector. A leader can also decide to sort transactions any way they wish. Blockchains lacks one of the most fundamental property needed for markets, fairness.

**21. By Gambaru#4041 in the Developer General Channel on 06/27/2021**

if you don't use PoS or PoW then your nodes need to be permissioned to prevent Sybil attacks. <https://hedera.com/blog/proxy-staking-on-hedera>

**22. By BroManTech#2938 in the Developer General Channel on 06/26/2021**

because there are no leaders and transactions are processed asynchronously, in parallel, the algorithm is highly resilient to different types attacks in the network layer. Messages can be arbitrarily dropped, delayed, reordered, etc and the algorithm will neither arrive at an inconsistent state nor stop making progress

**23. By BroManTech#2938 in the Developer General Channel on 06/26/2021**

"To defend against attackers who can control the internet, there are periodic coin rounds where witnesses can vote pseudorandomly. This means that even if an attacker can control all the messages going over the internet to keep the votes carefully split, there is still a chance that the community will randomly cross the  $2n/3$  threshold, and so agreement is eventually reached, with probability one."

**24. By Supremax67#5749 in the Consensus Service Channel on 06/22/2021**

@Dmitry1987#8353 I believe you are referring to this... As an addition to our positive results, in Section H we introduce the Fork Bomb – a spam attack scenario that affects most known DAG-based protocols. In this attack, malicious nodes force honest nodes to download exponential amounts of data and thus likely crash their machines.

**25. By Dmitry1987#8353 in the Consensus Service Channel on 06/22/2021**

one of the competitor papers mentions that hashgraph is prone to fork bomb attack (<https://arxiv.org/pdf/1908.05156.pdf> page 34) , is this the reason why no permissionless mode is available and only 'legally approved' nodes are able to join the network?

**26. By BroManTech#2938 in the Developer General Channel on 06/18/2021**

I'm just thinking social networks are vulnerable to sybil attacks because there's no cost, so why not adopt a more rigorous security model?

**27. By Rocket#2012 in the Developer General Channel on 05/12/2021**

I mean your whole point sfsfs is that there is <some property of hashgraph's network> and it's BAD, don't you guys see it's so bad, why don't you agree with me, you must <personal attack>

**28. By Greg Scullard#5365 in the Developer General Channel on 05/12/2021**

The "a" in aBFT stands for asynchronous and means the algorithm makes no assumption on the time it takes for an event to be propagated to the network. Other algos will discard events that are too old, making them susceptible to attacks hashgraph is immune to.

**29. By Cody (Swirlids)#4217 in the Developer General Channel on 05/07/2021**

There is actually a network security problem we have to consider with account creation. Each account requires a small amount of memory on each node in the network (on the order of 100 bytes I think). If accounts are created by spammers in exceptionally large numbers, those accounts could negatively impact the performance of the network as

a whole. So to compensate we require a fee that is small enough as to not financially burden "real" users, but expensive enough as to make large scale denial of service attacks not cost effective.

Free = DOS vulnerability, unfortunately

As the ecosystem grows, my hope is that we will see a variety of 3rd party on-ramps that make it easy for new users to get started.

**30. By MikeG#0508 in the Developer General Channel on 05/03/2021**

and I noticed you didn't tell "Wiseguy" not to make ad hominem attacks against people on this platform as he did in his comment above. So your version of civility does not include ad hominem attacks? We're free to unload on others here with personal attacks? Is that correct?

**31. By Myridium#8284 in the Developer General Channel on 04/26/2021**

4chan's talking about it now? Look it up on CoinGecko and it will tell you some exchanges that are selling it.

There are numerous strengths of Hedera, but perhaps the most interesting is that the creator (Leemon Baird) discovered a communication protocol (gossip-about-gossip) which allows historic proofs regarding Byzantine resistance to be applied, meaning that there is a mathematical guarantee of Asynchronous Byzantine Fault Tolerance. This is also mathematically the strongest kind of Byzantine resistance possible; Hedera Hashgraph is an optimal solution in this regard. I am not aware of any other DLTs with this property.

There are no 'slot leaders' or 'block leaders' or whatever; no node has a special place at any point during consensus. As you can imagine, this makes the network very robust to certain attacks. Again, I don't know of any other DLT with this property, maybe IOTA and Ripple have this but I haven't researched them.

Apart from that, Hedera splits its services into a few categories:

- Token Service (which achieves token exchange almost as fast as HBAR exchange); I'm pretty sure this part of the network is 10,000 TPS or close to it. However this is a throttled number, and also without any sharding! The actual TPS possible for a global network is probably far higher, but I can't say for sure. Leemon seems to think the network wouldn't have trouble with even 1 million TPS if it became a global network.
- Hedera Consensus Service lets developers utilise the extremely fast hashgraph consensus algorithm to develop custom decentralised applications!! My understanding is that this allows non-Turing complete programs (there must be some limitations) to operate blazingly fast. Ethereum dApps have no choice but to use full-fledged Turing-complete Smart Contracts which update a state machine (the EVM). Hedera can do this too, but the HCS is far more attractive because it's orders of magnitude faster.

**32. By Cody (SwirlDs)#4217 in the Developer General Channel on 04/15/2021**

@discordion There is actually a very important reason why this is necessary, and it's not "we want money mwua ha ha ha".

"Free" is a security risk. If anything is free, an attacker can spam that operation to slow

down or even destabilize the network. If account creation was free, a malicious entity could create billions and billions of them. Each account requires a little bit of space on each node (perhaps on the order of 100 bytes), and with enough of them there would be non-trivial burden on each node. The available memory on a node is finite, and so if the number of accounts grows too large then eventually

To combat this, a small fee is required to create an account. This fee is sufficiently small as to not hurt regular users (~\$0.05 USD if I recall correctly), but quite expensive if you are creating millions of them for no reason. And that fee has to come from somewhere... hence the requirement that an existing user scans the QR code and pays the fee.

#### **33. By Supremax67#5749 in the Developer General Channel on 03/19/2021**

As for proxy staking, there will be a max per node, but no minimum that I am aware. Again, to reduce the chance of a Sybil attack a max is set on how much staking a node can receive. No numbers has been disclosed, way too early in the project for those specifics.

#### **34. By Cody (Swirls)#4217 in the Developer General Channel on 03/11/2021**

> To lie about balances would require subverting consensus in the first place which takes us back to a  $2/3 + 1$  attack needing to happen before what you're proposing could happen.

That's correct. You don't just take a node's word that it has a stake of X.

#### **35. By Greg Scullard#5365 in the Developer General Channel on 03/11/2021**

@siem The assumption on the number of nodes is incorrect, this applies in the event you're not running POS on Hashgraph and allocate 1 vote to each node (this is clearly not the case with Hedera), Emin's comment is out of context. With POS there is no need to know the number of nodes, only their individual stake.

Node anonymity means that we would not know who's running the node, but the node needs to have a valid Hedera account in order to participate in consensus (this is also how rewards are paid back to the node for consensus participation). That account has a balance (+ proxied stake) which is used to determine the voting weight of the node. If you had 100 nodes, each nodes' voting weight would be divided by 100 since you'd have to distribute your stake amongst the 100 nodes (or 1 node would have all the stake and the others none, thereby adding nothing to consensus).

A node cannot lie about its stake since the rest of the network knows of all the account balances, the nodes' stake isn't communicated in a gossip about gossip event, there is no way for a node to tell others how much its balance is, the ledger has all the balances.

To lie about balances would require subverting consensus in the first place which takes us back to a  $2/3 + 1$  attack needing to happen before what you're proposing could happen.

#### **36. By brady#5265 in the Developer General Channel on 03/11/2021**

Hey Siem, to answer your question, you cannot perform a Sybil attack the way you've described. The network is proof-of-stake, and someone would need to stake  $n+1$  ( $n=1/3$  of all hbars) hbars to all of those nodes in order for them to have enough voting power to overwhelm honest nodes.

**37. By Supremax67#5749 in the Developer General Channel on 03/08/2021**

@SethV Keep in mind, Hedera doesn't have special nodes, all nodes are equal throughout its network which makes it hard for an malicious actor to shutdown the network. Anytime a node becomes special (i.e. validator, producer, etc.), it risks being the target of an attack vector.

**38. By Supremax67#5749 in the Developer General Channel on 03/05/2021**

By design. Sybil attacks are a real danger to Proof of Stake models, so they won't release more than what they need to until they know for sure no single entity can't acquire more than 1/3

**39. By Bart#1307 in the Developer General Channel on 02/28/2021**

I understand, the security issue isn't necessarily with a widely known entity such as the Hedera where IP addresses and SSL certificates/public keys are hardcoded into applications/browsers or even the OS, but with lessor known entities on the internet where DNS requests are necessary, which opens up a whole host of attacks, privacy concerns etc, with multiple potential solutions such as DANE, DNSSEC, DNS over HTTPS/TLS, however these systems are still centralised and more susceptible to attacks in its chain of trust in comparison to a decentralised distributed ledger such as Hedera which implements decentralised equivalents of those services. In addition existing DNS and PKI suffer from issues that could easily be resolved by a similar implementation on Hedera such as near instant domain registration and updates(in comparison to 24+ hours), near instant CA revocation, etc.

**40. By Greg Scullard#5365 in the Developer General Channel on 02/28/2021**

@Bart you can send over https, however, whatever you send ends up on a mirror unencrypted (unless you send an encrypted hcs message or file content). The only benefit to https that I can see is avoiding mitm attacks preventing your tx reaching a node. Modifying tx data would not pass signature checks.

**41. By SethV#8086 in the Consensus Service Channel on 02/23/2021**

they also claim to be resistant to quantum computation attacks

**42. By Robbie#5743 in the Developer General Channel on 02/18/2021**

Gotcha. Two years out is about the amount of time required to turn some hardware. If I were to make a public node capable of potentially hosting a decentralized internet and more, I would make a node that people could buy off the shelf and ensure that the hardware, software, and firmware fingerprints were added to the distributed ledger for authentication in addition to bio-metric data for the user to ensure that one person per node is allowed to help prevent attacks.

Is security the main reason behind the wait for public nodes? Because it seems like a hardware system with controls like mentioned above would solve a lot of that.

One of my concerns with Hedera Hashgraph is lack of accessibility to the people. I get that it isn't just a crypto but half of the excitement behind crypto and this field is in the mining and feeling like you are part of something. If Amazon, Google, and Microsoft jump on board and all of a sudden there is never a need for public nodes it seems like the whole point of decentralization and community is missed because the system is controlled by a few key players which kind of goes against the whole spirit of

decentralization and crypto currencies.

I've read the Hashgraph white paper along with other block chain technologies and this one seems to be the technology front runner by a long shot and I want to do what I can to support it but in this industry the best technology solution doesn't always win and I would hate for this tech to lose to something like Dogecoin over lack of accessibility and community.

I'm certainly up for future discussion if the hardware path is something you want to do in the future. Let me know and I'll private message you my contact info.

**43. By Cody (Swirls)#4217 in the Developer General Channel on 02/17/2021**

If the network throttled down for the slowest node with no limit, an attacker could launch a denial of service attack against a single node to sabotage the network as a whole. The way it is now, you can only slow down the system as a whole if you manage to slow down enough nodes such that it is impossible to form a quorum without a slow node (i.e. slowing down 1/3 or more of the network)

**44. By IvS#1125 in the Developer General Channel on 02/07/2021**

I understand, but this is exploitable, as an attack can just send thousand upon thousand of "create account" POST requests, since the Client is responsible for the POST request this can be exploited.

**45. By Cooper#2101 in the Developer General Channel on 02/06/2021**

To my knowledge Hedera accounts will always require a transaction fee when being created, primarily to prevent spam and DDoS attacks. You can sign up at <https://portal.hedera.com> and it'll make an account for you on the testnet that's connected to our "faucet" which will automatically distribute testnet hbars. For mainnet you can use one of the wallets at <https://hedera.com/wallets> that allows you to export keys and get a "genesis" account, then use that with the SDK to make others, if you'd like.

**46. By rhysied#6748 in the Developer General Channel on 01/29/2021**

Caveat with the amount of tokens btw in that it may be easier for an attacker to get 1/3rd of 500 tokens than 500 trillion

**47. By KenTheJr#6963 in the Developer General Channel on 01/20/2021**

yeah... 1/3 can compromise just about any network with partitions. The selfish mining attack is just an attack that has a chance of success over time at 25%, but no guarantee.

**48. By KenTheJr#6963 in the Developer General Channel on 01/20/2021**

to be extra clear, 1/3 compromise stops consensus, 2/3 compromise corrupts consensus (controller of 2/3 can steal money). With blockchain, selfish mining attacks show that as little as 25% compromise can corrupt consensus.

**49. By Supremax67#5749 in the Developer General Channel on 01/20/2021**

All DLTs are susceptible to a 1/3 attack, not just the 51% attack people have been spreading around. I blame the bad education in the space for that misinformation.

**50. By yezzzer#8110 in the Developer General Channel on 01/20/2021**

New to hedera. I may have some dumb questions.

First up, is hedera susceptible to a 51% attack?

**51. By Greg Scullard#5365 in the Developer General Channel on 01/11/2021**

@M Quimby no, a transaction to pay for the account to be created needs to be signed by a hBar holder, else we end up with millions of dormant accounts = dust, or it's an attack vector.

Most of the mobile wallets will seamlessly create accounts now, not sure the entry ramp is that awkward (it was before we had many wallets supporting hBar I'll give you that).



#### Comments in 2020



#### 1. By Greg Scullard#5365 in the Developer General Channel on 12/17/2020

On process, fair point, will raise internally.

The valid duration of a transaction is also the duration for which a record/receipt is available. If that window is increased from 3 minutes, there is a corollary increase in memory requirements on the nodes to store the data for a longer period of time. At high TPS this is a significant increase in memory hence the 3 minutes.

Valid start exists to prevent replay attacks (a transaction that was generated in the past can't be re-used) - storing transaction hashes as an alternative isn't viable (again, memory).

There is no issue with continuing to use the current multi-sig method (this will continue to work), there are use cases however that need to independently sign a transaction without

having someone first generate it, then passing it around for signature. For example: If an appnet needs to perform a crypto transfer, all the participants can deterministically generate the same scheduled crypto transfer transaction (scheduled as opposed to duplicate), and sign it. Once all the participants have sent their transaction to Hedera, the crypto transfer will take place.

Note: The `ScheduleCreate` is sort of idempotent in that it won't fail if it's called twice, the scheduled transaction that already exists will have a signature added to it with the second `create` (sort of idempotent because there is an actual change to data).

#### **2. By Qota#7952 in the Developer General Channel on 11/16/2020**

Maybe! That's why I'm asking! It has been an attack going on on different crypto projects last weeks ! That's why I ask mostly!

#### **3. By Qota#7952 in the Developer General Channel on 11/15/2020**

Is it any attack on the network going on ?

#### **4. By rhyssied#6748 in the Consensus Service Channel on 07/21/2020**

also, thinking about it, if you have an open topic that multiple users can submit to and you cannot submit any messages while a chunked message is "open" could that be an attack vector? (almost like a table lock)

#### **5. By Greg Scullard#5365 in the Consensus Service Channel on 07/20/2020**

-We can't check the transactionId in chunkInfo for the simple reason that you could send each chunk an hour apart meaning the network would have to keep hold of the data for a very long time, consuming huge amounts of memory. This could become a cheap attack vector.

We could have implemented a check within the valid duration of the transaction but that would have meant checks aren't there all the time, felt it was best to be consistent with not checking.

#### **6. By Supremax67#5749 in the Developer General Channel on 07/03/2020**

@IronGuards 51% attack is 1 form of attack, however it is that combination of a 51% + control network firewall that you can bring down any network by only owning 1/3 of the mining network or in a staking model, tokens.

#### **7. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 07/03/2020**

Also perhaps noteworthy that NO network can hope to do better than the 1/3 +1 attack. The 51% attack is apparently a myth, but I'm no mathematician.

#### **8. By Cody (Swirls)#4217 in the Developer General Channel on 06/29/2020**

@roderick I can't speak to business use cases, I'm just a code monkey. I read the white paper, here are a few of my observations.

- Reported 4,500 TPS. This is lower than the 10,000 TPS that Hedera can achieve.
- Consensus algorithm is completely different, basically no similarity. Avalanche consensus algorithm is probabilistic, whereas Hedera is not.
- The Avalanche white paper claims "it can be parameterized to tolerate more than a third of the Byzantine nodes by trading off liveness." This sounds misleading to me... you can be trivially correct in the presence of byzantine attackers if you simply do no work, but

you can't be byzantine fault tolerant (having correctness & liveness) with  $> 1/3$  byzantine nodes

**9. By Fluli#2701 in the Developer General Channel on 05/02/2020**

I have a question. In hedera the smart contract calls get processed not in order who offers the most gas, but which call was first. In that "old" model, where it was processed after who offered most, it was possible to attack someone by reading their call and sending the same one, but with higher gas. Is it still possible for hackers to catch a call and send a faster one?

**10. By Cody (SwirlDs)#4217 in the Developer General Channel on 03/13/2020**

There is an important reason why accounts are done this way, and it goes to the principal that anything that is free can be leveraged to perform denial of service attacks. That is why things like account creation have a fee which must be paid by an existing user. Now, that isn't to say that these fees can't be extremely small (and we try to keep them that way!), just that a fee of 0 can be exploited

**11. By Craig Drabik#8023 in the Developer General Channel on 03/13/2020**

Not sure there's really an impact on a spam attack - a single account could generate a spam attack. I guess it might be easier to close one spam account than ten thousand

**12. By Supremax67#5749 in the Developer General Channel on 03/08/2020**

@Fluli Without renewal fees, someone could and can attack the network from within, spamming new accounts opening until the network can't afford it anymore.

**13. By Supremax67#5749 in the Developer General Channel on 03/07/2020**

@revenga69 Actually, ethereum has been under attack several times, and soft and a hard fork has actually happened. It only takes a bad moment in downtime for Bitcoin to be exploited the same way. Did you forget that more than  $1/3$  of Bitcoin mining power sits in a country that wants their own currency and that same government has full control over what is being sent through their country internet.

**14. By Johnda98#0683 in the Consensus Service Channel on 03/02/2020**

I think the VM state store limit is a 'law of nature' natural 'take it easy' sign.. the price of the true (ABFT'd) truth is not free.. in TIME(TPS) or hbar\$ ... Nature (math) says you have to pay a price for truth.. so consensus and its mostly paid in Time or Speed.. I asked the General's runners before he attacked the city. ok thanks 4 your mind.. ok back to work here..

**15. By 0xjepsen#5735 in the Developer General Channel on 02/28/2020**

@Greg Scullard @Cooper-Kunz I had a thought and am curious about the network architecture related to hedera. For context I work in cyber security, to which I believe DLT's to be a massive asset. However there are known attacks on DLT's one of which raised a question for me. The such attack is called an Eclipse Attack in which a would be bad actor attempts to isolate a specific user or group of users rather than attack the whole network (which is of course incredibly difficult but has been demonstrated as in a Sybil Attack(which does depend on the permissions of the DLT and it's consensus algorithm)). So an Eclipse attack is made possible because of the scenario in which nodes are not connected to every other node. For example bitcoin has 8 outgoing node connections, Ethereum 13. An attacker would only have to only need to hijack all of these

connections in order to isolate a user. Once isolated an attacker can then carry out a 0 confirmation double spend attack. There are measures that can be taken to prevent these sorts of exploits such as implementing a Random Node Selection function. However I was curious how many out going connections do hedera Nodes have?

**16. By Supremax67#5749 in the Developer General Channel on 02/11/2020**

@UnknownSoul Hasgraph does not use proof of work so a 51% attack by cloud mining is not possible. Not saying it isn't susceptible to an attack, but being proof of stake makes it less susceptible through brute force.

**17. By UnknownSoul#0545 in the Developer General Channel on 02/11/2020**

Can hashgraph be 51% attacked like ETC or BTG? <https://twitter.com/hosseeb/status/1082815549132816384>

**18. By KenTheJr#6963 in the Developer General Channel on 01/29/2020**

@bugbytes you hit the nail on the head. It takes some thinking through. In your scenario, you might lose a few tinybar if someone spams you with transfers (but the tx fee is higher so it is an expensive "attack"). At the same time, receive sig requirement is a cool feature if you don't even want the small amount coming out automatically. There are scenarios where it makes a lot of sense. With mirror node APIs now there is yet another option...no threshold records and just toss a coin to your favorite API ;p

**19. By bugbytes#0817 in the Developer General Channel on 01/29/2020**

Oh, it was me setting the threshold to 1tb limit, because I was testing something else and wanted to quickly generate records manually (but I forgot about the problem and second guessed myself for a moment or two, funny, I even have some unit tests confirming this so at some time if they change their mind I'll know right away).....

what bothers me is you can set it so low, which if under 271ish without the receive signature requirement, you set yourself up for an attack. I know the network can't prevent all ways for shooting ourselves in the foot, I'm just surprised the transfer succeeds while failing to create a record.

**20. By bugbytes#0817 in the Developer General Channel on 01/28/2020**

I also just noticed, it cost the attacker account less th than the victim account lost.

**21. By Craig Drabik#8023 in the Javascript Channel on 01/23/2020**

yeah, gonna have to disagree on that The native cryptography features have gotten at-best a "meh" from the security community, and any key that's in a place that's accessible to the browser is, well, accessible to the browser. Susceptible to attack by SQL injection or just poor security practices.

**22. By Cody (SwirlDs)#4217 in the Developer General Channel on 01/17/2020**

@UnknownSoul Ordering is deterministic and once consensus on ordering is reached it never changes. If an attacker withholds a transaction then the network will not know about it and will not assign it a timestamp until it is released. If/when the network finds out about the transaction it will assign it a timestamp based on the time when it was discovered, NOT when the transaction was first created. The only effect the attacker has had was to delay the processing of that transaction. Delaying a single transaction is not something to be scared about, if an attacker cut the internet to your house they could

delay your transactions that way too, but this still doesn't compromise the integrity of the network. :)

For those interested in delving into the technical details page 80 of the whitepaper discusses how ordering and timestamps are determined. <https://www.hedera.com/hh-whitepaper-v2.0-17Sep19.pdf>

**23. By Vikdo#4957 in the Developer General Channel on 01/06/2020**

I hope this is the relevant sub for this. Can anyone answer me, does the value of the HBAR-tokens mean anything? Fees to use the network are pegged to USD.

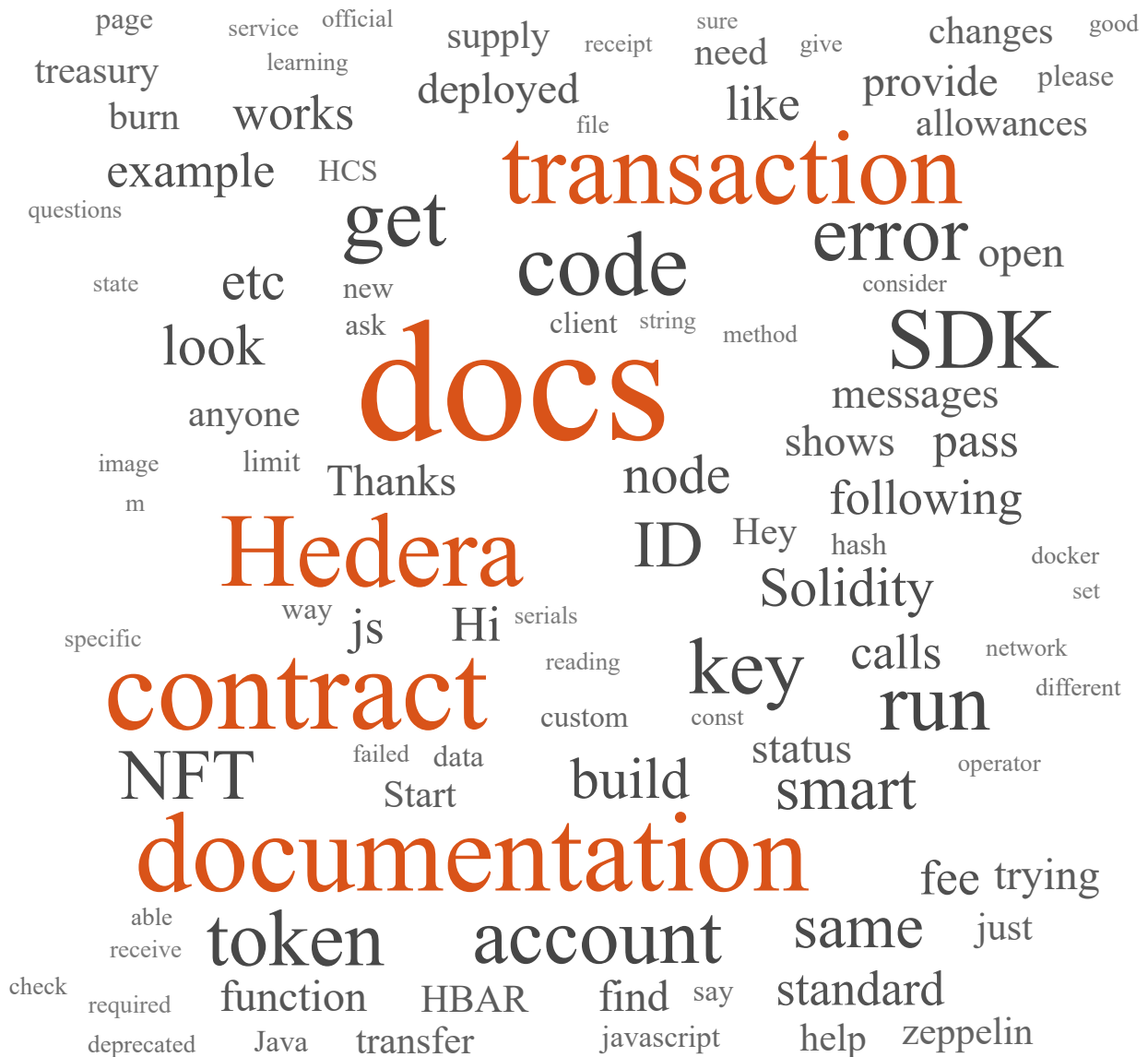
Was selling HBAR-tokens simply a smart way of funding Hedera(the business)?

I understand the value of the token acts as a security against 1/3 attacks, but the token doesn't have to be valued much higher than now, for it to be secure when the supply is fully dilluted.

How will Hedera incentivize people to invest in HBARs to keep the price at a respectable level, if price has no effect on ability to use the network? You are then relying on speculators to maintain market-cap?



## Comments in 2023



**1. By Deejay#0076 in the Developer General Channel on 03/14/2023**

@kv it sounds like you have a lot of design decisions to make. To the extent it helps I have tried to answer a few questions below:

### 1) Need a Smart Contract?

-> No. You don't have to have one. You can implement easily using Hedera SDK of your choice and native calls or using Solidity. It comes down to how you build trust. Both options have pros/cons.

2) NFT the same

-> yes it will be the same. if you don't put appropriate metadata it will show without an image (personally a stock 'ticket' image would be better but up to you)

3) Burn NFT

-> both SDK and Solidity have access to burn/wipe methods. Assuming you have the supply key you can burn from treasury, if you have a wipe key you can burn from everywhere. Harder to build trust on the later - my opinion - but you can wrap in Solidity to prove you have restricted what the wipe key can do.

4) Documentation:

The Hedera documentation is pretty good. If you run into specific quirks ask away and hopefully someone else who has done something similar can help.

<https://docs.hedera.com/hedera/core-concepts>

**2. By kv#8239 in the Developer General Channel on 03/14/2023**

Hi Devs, please help me.

I want to let users buy passes for my game and if the user has that particular pass, then I want to give user an advantage in my game.

Imagine I have silver pass for 100 Hbars, gold pass for 200 Hbars.

These passes supply are unlimited and each pass is one time use only (they will be burned after their use).

How should approach these passes? Is it nfts? If so, please suggest any documentation.

**3. By formula\_38#9628 in the Java Channel on 03/13/2023**

Anyone have success building a docker image for Hedera Java SDK Spring Maven build?

**4. By DeeJay#0076 in the Smart Contracts Channel on 03/12/2023**

not sure exactly what you are after, not sure there is a consolidated 3rd party resource. ask away is specific questions. in general the hedera docs get the job done I find.

**5. By Harut#8853 in the Smart Contracts Channel on 03/12/2023**

Thanks a lot. Can you provide any resources for learning platform specifications? (Except hedera docs)

**6. By Harut#8853 in the Smart Contracts Channel on 03/11/2023**

Can anyone provide sources for learning token creation flow(except hedera docs) and router for liquidity providing... Thanks in advance

**7. By johnda98#4728 in the Smart Contracts Channel on 03/07/2023**

ok.. was kidding.. try its bigger brother 'Liquidity'... kidding again.. . just hop to solidity -google up the docs.. learn by example.. learn more about reentrancy and weaknesses - write for DApp AND native call applicability.



**8. By yongtaufoo123#9006 in the Developer General Channel on 03/07/2023**

Hi team, can i check if there's been any recent changes made to the hashgraph javascript SDK? I run into this error `contained error status TOKEN\_ALREADY\_ASSOCIATED\_TO\_ACCOUNT` when trying to associate a token with an account (the same code could run without any errors a month ago). I tried the code example (<https://docs.hedera.com/hedera/tutorials/token/create-and-transfer-your-first-fungible-token>) provided in the hedera docs but it runs into the same error as well. Anyone knows the solution?

**9. By king4198#5262 in the Token Service Channel on 03/03/2023**

<https://docs.hedera.com/hedera/tutorials/token-service/create-and-transfer-an-nft-using-a-solidity-contract>

I am using this doc for HTS using solidity contract but when I try to call the contract function then it shows "CONTRACT\_REVERT\_EXECUTED" error.

This is my code: <https://github.com/sumit-oneto11/hts-smart-contract>

**10. By DeeJay#0076 in the Smart Contracts Channel on 03/01/2023**

<https://docs.hedera.com/hedera/sdks-and-apis/rest-api>

The docs will set you free.

**11. By Juan "Cosm0"#5053 in the Java Channel on 03/01/2023**

Hey, sorry I do not wanna bother at all but I have been following the "How to Start Developing on Hedera: Back to the Basics" docs. What do I have to do to run it?

**12. By DeeJay#0076 in the Developer General Channel on 03/01/2023**

.setPayableAmount(amountHbar)

and the next statement I mean with nothing but , you may benefit from spending some time reading some solidity examples out on the broader web to understand the concepts (passing of value, payable functions etc.) and cross referencing with the Hedera docs after that, asking in #-smart-contracts channel where nuances get in the way of progress.

**13. By Juan "Cosm0"#5053 in the Developer General Channel on 03/01/2023**

Hey, sorry I do not wanna bother at all but I have been following the "How to Start Developing on Hedera: Back to the Basics" docs but Im having issues when running the code. I think Im missing any package or something like that since Im having problems with the imports

**14. By jaycool#5616 in the Token Service Channel on 02/28/2023**

I cant seem to get anything valuable from the gRPC docs besides "It offers the ability to subscribe to HCS topics and receive messages for the topic subscribed"... which your able to do without client.setMirrorNetwork(). How would I use it to get account balances etc

**15. By DeeJay#0076 in the Developer General Channel on 02/28/2023**

Per docs: [/api/v1/transactions?timestamp=gte:1565779209.711927001](#)

**16. By McNeil#6761 in the Developer General Channel on 02/27/2023**

under the token docs you could do tokenId&account id filter at the same time but I'm not sure it returns the info you need, haven't messed with the api much myself



**23. By teacoat#2092 in the Token Service Channel on 02/18/2023**

hey all - can anyone confirm the following:

In the hedera docs it states, "A token's treasury account is exempt from paying any custom transaction fees when the token is transferred."

Does this mean the treasury account id denoted in the token metadata, or is it the fee collector account defined in the custom fee?

ie, if i am sending a token with a fee from the treasury but the fee collector account id is a different account id than the treasury, does the fee get charged?

**24. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/18/2023**

Haye - welcome. Let me see what doc and examples we may have. We have not don't a particularly astounding job in for this particular pattern.

**25. By akihiko#7334 in the Developer General Channel on 02/18/2023**

These docs are the same from what I follow on their npm page

**26. By Tahlil#4174 in the Developer General Channel on 02/18/2023**

I am a bit confused about the file size limit...in the docs it says the file size limit is 1 Mb...but in this discord channel I am seeing people saying it's 6 kb

**27. By Tahlil#4174 in the Javascript Channel on 02/17/2023**

For Hedera file service I am seeing in some places the max limit is 6 kb...but why is the max limit 1024 kb on the official doc?

**28. By Michael Garber#5033 in the Smart Contracts Channel on 02/17/2023**

May I ask where you saw this in the documentation that the operator was not being set?

**29. By jane31#6440 in the Smart Contracts Channel on 02/17/2023**

@Deejay Thank you! This did it for me. However, I find it strange that there was nothing about this error or approach in discord, stack overflow or documentation

**30. By Alban#1567 in the Developer General Channel on 02/15/2023**

Morning all. Hedera dev noob here looking to start with a usecase of rent payment by using a stablecoin on Hedera? Busy reading up on some docs and tutorials and i'm deciding on which language to use. I have some python experience but I see this is only a wrapper so I might considering diving into Go. Tips and tricks or opinions on which SDK is the best are welcome.

**31. By Tahlil#4174 in the Smart Contracts Channel on 02/14/2023**

Reason I asked because when I develop for Ethereum I do not care about gas optimization for `pure` and `view` function cause those functions are free to call but since for Hedera what I am assuming from the doc even those functions would incur cost...so I have to think about gas optimization for `pure` and `view` function as well writing custom smart contract.

**32. By johnda98#4728 in the Smart Contracts Channel on 02/14/2023**

yes.. try 30K tbars for contractquery calls.. for Executes - state changes 4M tbar maxgas and excess gets returned to payer... expect to setquerypayment for any contractquery

calls to String primitives. ie public string getter..(should use bytes32 chunks instead of strings really) in \$ or indeed ETH terms.. its fractionally small costs. gas estimates etc.. all there in the 'Dev' docs. evms like 32b word lengths

**33. By johnda98#4728 in the Smart Contracts Channel on 02/13/2023**

@AbsolutelyNot frwr to whomever maintains the docs.. help the noobs.. should read as 'that calls' or 'that uses the'. <https://docs.hedera.com/hedera/tutorials/smart-contracts-service/deploy-a-contract-using-the-hedera-token-service>

**34. By enchil.ada#0001 in the Javascript Channel on 02/11/2023**

I was following this video, and also the docs, in the video shows to use the close but in the docs no.

No matter if I put it or not, when I run my `node index.js` the process keeps open instead of shutting down

<https://youtu.be/Skx6b8uK9ks?t=300>

**35. By Michael Garber#5033 in the Javascript Channel on 02/10/2023**

Hello! Do you mind showing me the page you are talking about? I've never seen calling `close` on the client in the docs.

**36. By JeromeK#0064 in the Developer General Channel on 02/10/2023**

check out the docs there you find the official ones

**37. By Miguel Ángel- ioBuilders#5464 in the Javascript Channel on 02/09/2023**

Hi, @teacoat!

The only way to change the net\_of\_transfers is using the setAssessmentMethod, which receives a FeeAssessmentMethod object parameter, as stated in the documentation you refer.

**38. By will.yijinin#9079 in the Developer General Channel on 02/08/2023**

Hello, could someone tell me what is the meaning of `nonce` and `is\_approval`? Or better yet, post a link to the documentation?

**39. By RaphaelM#1144 in the Javascript Channel on 02/08/2023**

Hey @Tahlil I think MirrorClient is deprecated now.

You can find here

<https://docs.hedera.com/hedera/sdks-and-apis/hedera-consensus-service-api-1> some documentation to build a mirror node client.

**40. By rhysied#6748 in the Javascript Channel on 02/06/2023**

its under the REST API (although the Swagger docs are a bit better at showing you the different parameters)

<https://docs.hedera.com/hedera/sdks-and-apis/rest-api>

**41. By FLORIST#8279 in the Javascript Channel on 02/06/2023**

no problem there, where the heck is this listed in the primary docs though?

**42. By DeeJay#0076 in the Developer General Channel on 02/06/2023**

<https://www.hashgraph.name/>

<https://web23.io/>

<https://kabuto.sh/?network=mainnet>

A few options to get one and various documentation available for them.

**43. By Greg Scullard#5365 in the Developer General Channel on 02/03/2023**

You can indeed, you'd essentially use HCS to send your transaction in the first place, and computers on your appnet would listen to the stream of transaction data from the TopicId you use for those transactions and interpret/execute them independently.  
Given your appnet nodes run the same code and they receive transactions from HCS in the same order, at a given consensus time T, they should all have exactly the same state.

Note, the computers in the appnet don't necessarily have to run smart contracts, they could be running java/javascript/.... code. The smart contract could be a docker image for example.

**44. By nube#7126 in the Token Service Channel on 02/01/2023**

You can see which are required in the SDK section of the docs, shows examples for all transaction types

<https://docs.hedera.com/hedera/docs/sdks/tokens/define-a-token>

```
`setTokenName(<name>)`
`setTokenSymbol(<symbol>)`
`setTreasuryAccountId`
```

are required, rest are optional (probably should set initial supply or supply key though)

**45. By Ed Marquez#6403 in the Token Service Channel on 02/01/2023**

@AdrianMsM91 {KBL} @Justyn @Deejay

- I agree with you on the benefit of being able to see information about allowances for NFTs, just like for HBAR and FTs. I'd encourage adding an issue to the mirror node repo to start that conversation with the engineering team.

- Adrian, `AccountAllowanceDeleteTransaction` does work. However, this one is tricky for NFTs because the implementation in the SDK follows the ERC-721 standard. Because of that standard not all scenarios are covered; for instance, if you approve **all NFTs** for a spender, then you can't remove the allowance for **individual serials**. From doc (<https://docs.hedera.com/hedera/docs/sdks/cryptocurrency/adjust-an-allowance#methods>), you see that this only has one method (`deleteAllNftAllowance()`). So, what works is to approve serials 1 by 1 and remove them 1 by 1.

Here are a few tutorials on allowances: <https://docs.hedera.com/hedera/resources/tutorials#accounts-keys-and-hbar>

Here's one on allowances for tokens with the SDKs: <https://hedera.com/blog/how-to-approve-fungible-token-and-nft-allowances-on-hedera-part-1-using-the-sdk>

**46. By Ed Marquez#6403 in the Javascript Channel on 02/01/2023**

@cryptorush not that I'm aware of... took a quick look at the docs about utilities (<https://docs.hedera.com/hethers/application-programming-interface/utilities>) and didn't find much.

hethers is an adaptation of ethers.js, and those properties/concepts of `adminKey`, `autoRenewalAccount`, `autoRenewPeriod`, and `expirationTime` are not a thing in other chain and tools.

**\*\*The only way that I'm aware of to pay rent for those contracts is from the balance of the contracts themselves\*\*** (e.g. transfer HBAR to the contract OR make the contract charge a fee per operation to accumulate an HBAR balance). That may be the same case for contracts deployed using things like `CREATE2` and a JSON-RPC relay with EVM libraries.

#### **47. By nube#7126 in the Token Service Channel on 01/31/2023**

They have a good written guide in the docs for Java, JavaScript & Go  
<https://docs.hedera.com/hedera/getting-started/environment-set-up>

#### **48. By JeromeK#0064 in the Javascript Channel on 01/31/2023**

Hey

Have a look at the docs there, who to retrieve the receipt of a transaction

<https://docs.hedera.com/hedera/docs/sdks/transactions/get-a-transaction-receipt>

So in a script it can look like this

```
```js
//Sign with client operator private key and submit the transaction to a Hedera network
const txResponse = await transaction.execute(client);

//Get the transaction ID
const transactionId = txResponse.transactionId;

//Get the account ID of the node that processed the transaction
const nodeId = txResponse.nodeId;

//Get the transaction hash
const transactionHash = txResponse.transactionHash;

console.log("The transaction ID is " +transactionId);
console.log("The transaction hash is " +transactionHash);
console.log("The node ID is " +nodeId);
```
```

#### **49. By Michael Garber#5033 in the Consensus Service Channel on 01/30/2023**

@Eileenie I was able to run the Hyperledger network with the HCS plugin in the tutorial. I messaged you what I had to do in order to get it working and I updated the docs with the information which will be available soon.

#### **50. By reg.cs#2829 in the Consensus Service Channel on 01/28/2023**

Sure, I would recommend having a look at the official docs as well as the Hedera blog:

<https://docs.hedera.com/hedera/getting-started/try-examples/submit-your-first-message>

#### **51. By krystal#1337 in the Developer General Channel on 01/27/2023**

check out our new docs landing page :computerparrot: <https://docs.hedera.com/hedera/>

**52. By jane31#6440 in the Consensus Service Channel on 01/26/2023**

Hi all, I am new here so apologize in advance if I am breaking the rules But, has anyone run this demo: <https://github.com/hashgraph/hedera-stable-coin-demo> ? Im having this beautiful error when running build.sh on docker folder:\*\* Ineffective mark-compacts near heap limit Allocation failed - JavaScript heap out of memory\*\*

**53. By Greg Scullard#5365 in the Smart Contracts Channel on 01/26/2023**

The team is looking into how to document it yes.

**54. By Ed Marquez#6403 in the Token Service Channel on 01/25/2023**

Hi @Ab-fredo , as @jaycool mentioned, you can have multiple adminKeys for a token. Keep in mind that keys can have different structures. Please see this doc page: <https://docs.hedera.com/hedera/core-concepts/keys-and-signatures>

For instance,

- if you specify a key list, then all keys m must sign the relevant transactions (m out of m)
- if you specify a threshold, then only a specific number of keys n must sign the tx (n out of m)
- Nested allow for more complex workflows that may require hierarchy using the concepts above

**55. By reg.cs#2829 in the Consensus Service Channel on 01/20/2023**

Not quite. The `ConsensusGetInfo` transaction is the `TopicInfoQuery` in the JS SDK. In order to get messages from a topic, you query a mirror node, as mentioned in the docs:

<https://docs.hedera.com/hedera/docs/sdks/consensus/get-topic-message>

**56. By samuelnihoul#9657 in the Smart Contracts Channel on 01/20/2023**

I still haven't figured out how to compile the example contract from the docs haha, now I have another error.

**57. By samuelnihoul#9657 in the Smart Contracts Channel on 01/19/2023**

I am trying to update this code from the doc because it's deprecated:

**58. By Entreken | Headwind.xyz#8500 in the Consensus Service Channel on 01/18/2023**

Thanks, that's helpful. I also just found this doc that specifies what goes into computing the running hash: <https://docs.hedera.com/hedera/docs/hedera-api/miscellaneous/transactionreceipt#topic-running-hash>

What I'm struggling with is, let's say an independent auditor for supply chain event records was to be given a set of data that included the input messages that were submitted to HCS and the corresponding running hashes and timestamp, etc for those messages.

What would the auditor need to do to verify the data checks out? Would they need to go to the effort of walking through the sequence of messages, recomputing hashes, etc.?

Or are you saying that because of the above proof, that it would be sufficient for the

auditor to just view and compare (simple string compare) the messages, timestamps, etc. of the data that they're verifying with data from the network?

**59. By soham.jadiya#4308 in the Developer General Channel on 01/18/2023**

Hello I am looking to setup a node on testnet. Kindly someone please help with a proper Documentation and Genesis file to get started with the Testnet node setup, Thanks.

**60. By Ed Marquez#6403 in the Token Service Channel on 01/11/2023**

Neither `TransferTransaction` or `addNftTransfer` not deprecated. See <https://docs.hedera.com/hedera/docs/sdks/tokens/transfer-tokens>

The documentation indicates that the `addNftTransfer` takes in an `nftId` object, and the account IDs of sender and receiver.

The blog article (not documentation) shows an alternative approach supported by the SDK to transfer NFTs, where the tokenID+serial are provided. When in doubt, follow the official documentation at <https://docs.hedera.com/>

**61. By vishaloneto11#5548 in the Token Service Channel on 01/11/2023**

@Michael Garber good morning sir , i did not see anything about deprecation of that function , i see a slightly change what given on blog documentation and what given in actually documentation !!!!!!!

**62. By Eileenie#8213 in the Consensus Service Channel on 01/09/2023**

Thank you and yes. Fixed by changing protection. Getting a new error for peer0.org1: "...chaincode install failed with status 500 - failed to invoke bacing implementation of 'InstallChaincode': could not build chaincode: docker build failed..."

**63. By juul#9144 in the Javascript Channel on 01/08/2023**

all other elements of my code are accounted for, I made the operator and treasury accounts the same because why not and it 10k hbars on it, I made accounts for bob and alice, everything is testnet. I had a custom script written to create NFTs that was working until recently I started getting transaction receipt errors (code 9 on my custom code) so I tried the documentation code to see if it was just me

**64. By juul#9144 in the Javascript Channel on 01/08/2023**

getting a weird error with transaction ids on javascript when trying to run the code I found on hedera's documentation here <https://github.com/ed-marquez/hedera-sdk-js/blob/main/examples/hts-nftP1-fee-create-mint-burn-associate-transfer.js#L1> gives ReceiptStatusError: receipt for transaction 0.0.47636669@1673183610.274181349 contained error status INSUFFICIENT\_TX\_FEE status: Status { \_code: 9 } and this other code I found in documentation gives a similar error; <https://docs.hedera.com/hedera/getting-started/try-examples/create-and-transfer-your-first-nft> ReceiptStatusError: receipt for transaction 0.0.47636669@1673182222.945957346 contained error status INVALID\_ACCOUNT\_ID (Status { \_code: 15 })

**65. By DeeJay#0076 in the Developer General Channel on 01/06/2023**

if you want to use it will need to DM me as I have to put your config into the DM.

I never bothered with documentation as I never expected tit to grow & I don't do this as a business. As I say we needed it for our project so i figured good to give back (and I wear



the hosting costs etc. which most people like ). I do have an honesty box if projects want to throw me some jpgs...most do, some do not, either way, that's life!

**66. By Neal.lop #1644 in the Developer General Channel on 01/06/2023**

@Deejay do you have any documentation ?

**67. By Daniel Gomes#4700 in the Smart Contracts Channel on 01/06/2023**

Hi , the Hedera Smart Contract Service docs say that Solidity 0.8.9 is supported. Should I compile the smart contract using only this version? Can I use the latest Solidity version, 0.8.17?

<https://docs.hedera.com/hedera/docs/sdks/smart-contracts/create-a-smart-contract>

**68. By Gaborn#9395 in the Smart Contracts Channel on 01/06/2023**

Please provide me the doc for using ethers.js

**69. By jaycool#5616 in the Token Service Channel on 01/05/2023**

So regarding my Q earlier about this error when building a CreateTokenTransaction: I've realised that it is because I am adding ECDSA type keys as the keys. On the docs it says that there is a PublicKey.fromStringECDSA() method but I think this has been deprecated as it is not in my sdk. Regardless, is there a way of converting it to its relevant Ed25519 key? The .fromString() method does work in correctly create it in the PublicKey type. Just doesn't allow me to build the transaction with it. I'm fetching the key from the mirrornode

**70. By SubparAtBest#5940 in the Token Service Channel on 01/04/2023**

New to hedera but I can't find anything in the docs. How can we get the different serials of an nft and which account they belong to? I am using the java sdk version 2.19.0

**71. By JeromeK#0064 in the Java Channel on 01/04/2023**

Hey Danik

About DID itself you can have a look at these docs: <https://www.w3.org/TR/did-core/>  
For the Java SDK here: <https://github.com/hashgraph/did-sdk-java>

**72. By vishaloneto11#5548 in the Token Service Channel on 01/03/2023**

following this document

**73. By Deejay#0076 in the Javascript Channel on 01/03/2023**

appears consistent indeed (and my read of documentation is that it should be).



If you use IPFS to host your metadata, your URL should be in the format  
ipfs://<hash>

For example, ipfs://QmTy8w65yBXgyfG2ZBg5TrfB2hPjrDQH3RCQFJGkARStJb

Arweave's equivalent is

ar://<hash>

For example, ar://jK9sR4OrYvODj7PD3czIAyNjalub0-vdV\_JAg1NqQ-o

explorer example :

<https://arweave.net/<hash>>

[https://arweave.net/jK9sR4OrYvODj7PD3czIAyNjalub0-vdV\\_JAg1NqQ-o](https://arweave.net/jK9sR4OrYvODj7PD3czIAyNjalub0-vdV_JAg1NqQ-o)

### **2. By teacoat#2092 in the Developer General Channel on 12/29/2022**

i suggest looking at the TokenBurn transaction in the hedera docs

### **3. By DeeJay#0076 in the Token Service Channel on 12/29/2022**

To answer my own question:

This is actually as expected. I forgot to add the context that these fees are being paid in the newly generated token. As a result, the network needs each collecting account to sign as it will need to associate the new token with their accounts (else you could never transfer the token as royalties would be rejected). Makes sense now I think it through. It would be good to update the notes on such things to get the logic out upfront (or add to the master signing requirements doc I suggested).

### **4. By nalus#8598 in the Javascript Channel on 12/27/2022**

Hey, got a question regarding burning. When I call TokenBurnTransaction with a list of 37 serials, it returns BATCH\_SIZE\_LIMIT\_EXCEEDED. I can't seem to find this limitation in the docs, so whats the max amount of serials I can burn in a single transaction?

### **5. By VR#1587 in the Javascript Channel on 12/23/2022**

ah, yeah I remember 15 min in docs somewhere, so its more of a legacy thing, niiice I'm currently putting requests with 5x repeat and 2500ms delays , should hit your timings in 100% cases then ?

### **6. By VR#1587 in the Javascript Channel on 12/23/2022**

speaking of mirror nodes, did I read docs correctly that <https://testnet.mirrornode.hedera.com> is throttled but if I set up <https://my-own-mirrornode> following those magical rpc or whatever instructions I'll be able to mirror blockchain with no throttling on my endpoints? And what about mirroring speed? Is it faster/slower/same as hedera provided one?

### **7. By Grand Architect Yggsmark Von Pop#1045 in the Developer General Channel on 12/21/2022**

hey guys, not sure where to drop this, but just going over the file service documentation. would it be feasible for Hedera to be used as an exobyte -range decentralised data storage solution?

**8. By Quark#2244 in the Developer General Channel on 12/18/2022**

@\$Shadow can you tell me how ? the wallets dont give me any multisig option, cant find any docs as well in hedera other than creating it via sdk.

**9. By FelixTheWhale#8788 in the Token Service Channel on 12/17/2022**

Is it possible to specify receiving wallet for TokenMintTransaction? Like by signing the transaction using non treasury wallet..? I believe this functionality should exist but apparently in docs it says only treasury wallet is receiving mints

**10. By FelixTheWhale#8788 in the Javascript Channel on 12/17/2022**

Is it possible to specify receiving wallet for TokenMintTransaction? Like by signing the transaction using non treasury wallet..? I believe this functionality should exist but apparently in docs it says only treasury wallet is receiving mints

**11. By Ludwig#5328 in the Developer General Channel on 12/17/2022**

Koinly is tax preparation software, it's not an exchange. They process tax documents from those exchange reports you called out. Currently they have no plan to expand capabilities for reporting Hedera transactions such as understanding the difference between providing liquidity vs. selling tokens at zero cost basis.

**12. By samuelnihoul#9657 in the Smart Contracts Channel on 12/16/2022**

I just copy-pasted the NFTCreator.sol contract from the 'learn by example' section in the docs. My imports are correct.

**13. By iantstaley#2550 in the Token Service Channel on 12/15/2022**

Can anyone share the documentation for the ServiceNow Hedera Connector API?

**14. By iantstaley#2550 in the Developer General Channel on 12/15/2022**

Can anyone share the documentation for the ServiceNow Hedera Connector API?

**15. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

maybe.. indeed.. I'll dig in docs when i get a chance see if it shows its purpose eh.

**16. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

@littletarzan so you guys don't use the Contract instance's 'proxy Account' ? than can be created upon Create. I'll re-read doc updates.. whats the proxy's purpose ? u know.. where any NFT/other assets can go if the Contract fails its auto-renew ? ... back to wrk.

**17. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

thats what my SCs do.. Account of same number as SC by default - reflecting the same balance as address(this).balance. .... I'll have to read up tho on what the SCs 'proxy account ' is. Not so easy to keep up with the doc updates and code at the same time... but of course any 'non-devs' would ask 'why not?' lol ;). talkers...

**18. By DeeJay#0076 in the Smart Contracts Channel on 12/14/2022**

@bobaT it's not running out of gas - don't worry we have all been there on that assumption - Hedera always spends 80% of gas offered per docs

**19. By VR#1587 in the Javascript Channel on 12/14/2022**

@Ed Marquez can u give me a hint? I've been wasting time for hours trying to figure out why "TransactionRecord" is returned as Object of 191 keys with numbers at the end, is it

bytes? is it some hexed hashed whatever the hell it is stuff?? There's no documentation on this what so ever...

**20. By VR#1587 in the Javascript Channel on 12/14/2022**

and official docs point to <https://github.com/theekrystallee/hedera-style-guide/blob/sdk-v1/deprecated/hedera-api/miscellaneous/broken-reference/README.md> 404 page , great

**21. By Ed Marquez#6403 in the Javascript Channel on 12/14/2022**

This previous response points to the documentation about the signer/provider interface that HashPack followed for implementation. <https://discord.com/channels/373889138199494658/616725732650909710/1052260039475335308>

Here's also the hip for additional detailed on the interface: <https://hips.hedera.com/hip/hip-338> - I don't remember if there's a way to get a tx record with this interface. So yes, the Client in the SDK is would be the way to get that record

iirc, I ran into a similar issue trying to perform paid queries with the HashPack signer a while back (see <https://github.com/Hashpack/hashconnect/issues/111>). I believe their recommendation was to use mirror node queries as they didn't have plans to add those type of paid queries.

**22. By michielswirlds#1775 in the Javascript Channel on 12/14/2022**

API docs are here for more details: <https://docs.hedera.com/guides/docs/mirror-node-api/rest-api>

There's also a swagger UI API spec if you prefer that: <https://testnet.mirrornode.hedera.com/api/v1/docs/>

**23. By reg.cs#2829 in the Consensus Service Channel on 12/13/2022**

Ok, thanks a lot for clarifying that with Leemon. Then I will look into the Eventfile mechanism in the documentation and will see, if that leads anywhere for my dApp.

**24. By Ed Marquez#6403 in the Javascript Channel on 12/13/2022**

@juul, you could use a tool like <https://cryptii.com/> to convert from/to bytes.

From this article <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>, you can use something like ``setMetadata([Buffer.from(URL)])``. Here's the doc on minting tokens for more info: <https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token>

**25. By DeeJay#0076 in the Smart Contracts Channel on 12/13/2022**

@vishaloneto11 based on what is shared it's hard to offer any real opinion. Do check out the hethers examples and documentation <https://hedera.com/blog/how-to-use-hethers-js-to-deploy-smart-contracts-on-hedera> and <https://docs.hedera.com/hethers/> also the repo Greg flagged in the pinned messages for this channel.

**26. By teria#9158 in the Javascript Channel on 12/12/2022**

Hi. How do I broadcast a transaction generated without setting a private key on the client? The tutorial sets the private key in the client and broadcasts using that client.

e.g.  
``

```
// Grab the OPERATOR_ID and OPERATOR_KEY from the .env file
const operatorId = AccountId.fromString(process.env.OPERATOR_ID);
const operatorKey = PrivateKey.fromString(process.env.OPERATOR_KEY);

// Build Hedera testnet and mirror node client
const client = Client.forTestnet();

// Set the operator account ID and operator private key
client.setOperator(operatorId, operatorKey);

//Create the transfer transaction
const sendHbar = await new TransferTransaction()
 .addHbarTransfer(myAccountId, Hbar.fromTinybars(-1000)) //Sending account
 .addHbarTransfer(newAccountId, Hbar.fromTinybars(1000)) //Receiving account
 .execute(client);
`
```

This time, we want to sign the transaction by an external mechanism and send it without setting the private key to the client in the code.

I could not find in the documentation how to broadcast a private key without setting it on the client.

What code is feasible?

**27. By juul#9144 in the Javascript Channel on 12/12/2022**

Hi Raphaël (or any other developer advocates generous with their time), that is a very helpful answer, but would you know how i can check the bytes of my url? also how can i set it within my code. for the moment i have a CID array i use with the tokenMinterFcn Function I found and 're-appropriated' from hedera's documentation

**28. By Greg Scullard#5365 in the Consensus Service Channel on 12/11/2022**

As far as I know the event files are in public buckets. Docs on event and record stream files <https://docs.hedera.com/guides/docs/record-and-event-stream-file-formats#version-5-record-stream-file-format>

**29. By VR#1587 in the Smart Contracts Channel on 12/11/2022**

Yeah I read on docs today it says 10

**30. By reg.cs#2829 in the Consensus Service Channel on 12/07/2022**

According to documentation, the consensus nodes have a timestamp in the events during gossiping. So technically the mirror nodes could also know it, since they download the event files. But probably they don't expose it?

**31. By sagarvh#9071 in the Consensus Service Channel on 12/07/2022**

Thank you.. I will go through the documentation..

I read this in one of the documentation :

`Once the Hedera Governing Council has reached 39 members and up to hundreds of permissioned consensus nodes are live on the mainnet, the Hedera network will enter the final phase of decentralization and become a fully permissionless network.`

Any specific reason as to why the number is fixed only to 39 ?

**32. By reg.cs#2829 in the Consensus Service Channel on 12/07/2022**

Welcome! 2/3 of the nodes need to come to consensus. I can recommend the Hedera documentation and the videos on youtube to learn more about the network. Here are the docs including a video about the hashgraph algorithm:

**33. By Greg Scullard#5365 in the Token Service Channel on 12/05/2022**

I have raised it with the docs team.

**34. By Greg Scullard#5365 in the Token Service Channel on 12/05/2022**

This looks to be an error in the docs, the authoritative docs for the mirror rest api are here (generated from the api specification itself)  
<<https://testnet.mirrornode.hedera.com/api/v1/docs/>>

**35. By DeeJay#0076 in the Smart Contracts Channel on 12/05/2022**

Confirmed. Given there are no gas free operations connecting to a SC in Hedera (queries need very little gas but still a cost) I thought this might be useful for you. On hether.js specifically you are probably best starting <https://hedera.com/blog/how-to-use-hethers-js-to-deploy-smart-contracts-on-hedera> or the docs page <https://docs.hedera.com/hethers/>

**36. By Liebenfiels#7895 in the Developer General Channel on 12/04/2022**

Council documents states 24/7 support for nodes, council provides that- the problem is network cannot get them online and Hedera team confirmed it here they have an issue.

**37. By kantorcodes#3716 in the Token Service Channel on 12/04/2022**

hmm the docs seem to show there is such a filter

**38. By Laszlo Papp#4270 in the Developer General Channel on 12/03/2022**

Hi Hedera Community, I plan to develop a DApp and I was wondering whether there are some information resources or projects out there on how to realize a lightweight base framework for the AppNet nodes on the backend providing functionality like: management and integrity protection of permissionless nodes, managed and synced upgrade of the DApp code on these nodes, managing HCS Topics for the AppNet including an efficient mirror node based event stream filter for those relevant topics, and a way to package the whole bundle as a Docker container for easy deployment of such AppNet nodes by third parties. With leightweight solution I mean the utilization of the same mechanisms Hedera itself uses for the management of its consensus nodes and for the update of their codebase. So without a framework like Hyperledger Fabric. If you know any info resources or projects working towards such a base framework for DApp development, I would be happy to hear your feedback. Thanks a lot in advance. Laszlo

**39. By reg.cs#2829 in the Consensus Service Channel on 11/30/2022**

Ah, ok ... thank you for clarifying this! I misread the documentation on that point, sorry!

**40. By Giuseppe Bertone#0526 in the Developer General Channel on 11/30/2022**

Hi @turbomaster, there are many decentralized and centralized exchanges trading HBAR with fiat money. You can find a complete list here: <https://hedera.com/exchanges>

About fees, you pay them in HBAR. Still, you get the actual due amount using the current ratio between the fixed price in USD for each specific operation and the current value of HBAR. The exchange rate between fiat and HBAR is updated regularly to reflect current market rates.

You can find more details about fees for each type of transaction on the official documentation (<https://docs.hedera.com/guides/mainnet/fees>), and you can also simulate your preferred scenarios using the fee estimator on the Hedera's website (<https://hedera.com/fees>).

**41. By samuelnihoul#9657 in the Smart Contracts Channel on 11/29/2022**

What can be wrong? I am using the code from the Hedera docs to deploy my contract

**42. By farukterzioglu#1590 in the Consensus Service Channel on 11/25/2022**

Hey all  
have i nice weekend

I couldn't find an answer in Discord or in the docs (hope this is the right place to ask, otherwise please direct me to the right channel)

is it possible in Hedera that a transaction can partially fail, I mean one operation in the transaction succeed but one another failed. like I wanted to create an account and send some HBAR to that account at the same time, account created but HBAR couldn't be transferred (this case may not be possible at all, just an example)

or similar to this: since one transaction id can present multiple transactions, is it possible one of them succeeded but one failed?

thanks in advance

**43. By Grand Architect Yggsmark Von Pop#1045 in the Token Service Channel on 11/23/2022**

trying to build in docker

**44. By Thubisi#5886 in the Javascript Channel on 11/19/2022**

Strange, I am getting a permission error. I am running my terminal as admin. Am I missing another permission?

```
```
```

```
**\hedera-local-node>hedera restart  
Stopping the network...  
Stopping the docker containers...  
Cleaning the volumes and temp files...  
Applying local config settings...  
Access is denied.  
Failed to apply config**  
```
```

**45. By Thubisi#5886 in the Javascript Channel on 11/19/2022**

So here you will see that my docker containers are all down.



I am going to start them up again now and retest

**46. By Liebenfiels#7895 in the Developer General Channel on 11/18/2022**

In Hedera website under Resources -> Papers

THE HASHGRAPH PROTOCOL: EFFICIENT ABFT FOR HIGH-THROUGHPUT DISTRIBUTED LEDGERS page 6 graph (page number missing in document) "tradeoffs between throughout latency, number of nodes and geographical distribution"

**47. By Rishav#4313 in the Javascript Channel on 11/17/2022**

Hey Guys,

I have build a simple node.js script to query and push data to Hedera Testnet.

Now, I want to do those operation using a Frontend. I new to the Web3 ecosystem so I get confused sometimes.

How can I integrate that script with my React Application?

The React-boilerplate available on Hedera Docs is in Typescript and is giving the following error when I start the development server.

Please help

**48. By alexrp#0334 in the Javascript Channel on 11/17/2022**

Hi there!

I'm coding a script for deploying a list of smart contracts to Hedera using the Javascript SDK and I'm not being able to deploy one of the contracts. The error is the following "Error: Contents with size 47324 too long for 20 chunks", what is the source of this error? I saw in the docs <https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract> that the contract state size limit is 10 MB and my contract is way lighter (it's in KB). Thanks in advanced!

**49. By pextech#8952 in the Javascript Channel on 11/16/2022**

how to read if an account is associated with a tokenId, i can't find this in your documentation

**50. By Supremax67#5749 in the Developer General Channel on 11/15/2022**

Hashpack provides document and reference links, it is important you read it or you'll keep on thinking the network is not paying you, but they are.

**51. By Topachi#0454 in the Javascript Channel on 11/12/2022**

Hello team! Hope is all well. Where can I find documentation for staking an account from script?

**52. By Roofies#8439 in the Developer General Channel on 11/11/2022**

I didn't see in the docs where it talked about compounding daily vs weekly. Was that person referring to how often we claim and restake?

**53. By Roofies#8439 in the Developer General Channel on 11/11/2022**

From what I read in the docs, the rewards aren't based on where you stake, every active node that qualifies gets an equal share based on qty staked.

**54. By Roofies#8439 in the Developer General Channel on 11/11/2022**

All good, I read the docs in the last 15 mins. I think I'm used to more active discords where its faster to ask then go read the docs. What I got out of it : Staking is live, you can set and forget it but you have to claim the rewards at least once a year.

**55. By Ed Marquez#6403 in the Javascript Channel on 11/11/2022**

Provided an answer in the Java channel. Please try to keep questions limited to one channel to avoid duplication.

As mentioned in this doc page, the default is 1 hbar:

<https://docs.hedera.com/guides/docs/sdks/client#3.-additional-client-modifications>

Usually, creating tokens is above that limit so the field has to be increased.

**56. By king4198#5262 in the Developer General Channel on 11/11/2022**

@Supremax67 According to docs it means chain ID for mainnet is 290 right ?

**57. By 0xg4#4381 in the Smart Contracts Channel on 11/11/2022**

Because in the hedera docs it's not one of the supported erc

**58. By Michael Garber#5033 in the Java Channel on 11/10/2022**

Are you saying you need one token to have more than one treasury when you create it and then split the fee among them? If that is the case, the docs say to pass a single id for `setTreasuryAccountId`

<https://docs.hedera.com/guides/docs/hedera-api/token-service/tokencreate>

**59. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 11/10/2022**

Hello, one question, I want to specify different Nodes in my client, how can I know the Ips of each one? Following the documentation....

I guess the IP of `**Node 10**` would be ``34.94.106.61:50211`` , is that right?

```
```js
```

```
const nodes = {"34.94.106.61:50211": new AccountId(10)}
```

```
const client = Client.forNetwork(nodes);
```

```
```
```

**60. By AlexTaylor#3551 in the Token Service Channel on 11/10/2022**

Side note re ``setFreezeDefault`` in docs.. possible discrepancy? @simihunjan

<https://docs.hedera.com/guides/docs/sdks/tokens/get-token-info>

vs

<https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token>

maybe related <https://github.com/hashgraph/hedera-sdk-js/issues/292>

**61. By Greg Scullard#5365 in the Developer General Channel on 11/09/2022**

There is an issue created on the hedera-local-node repo for this to be made possible (<<https://github.com/hashgraph/hedera-local-node/issues/120>>).

Technically it's possible now, you'd have to tweak the docker-compose.yml to setup a second (or more) node VM, or spin them up in docker on separate servers, then modify the `config.txt` file to include additional nodes (<<https://github.com/hashgraph/hedera-local-node/tree/main/compose-network/network-node>>) for starters.

Then, you'd have to generate keys (I'm not sure how) for each of the nodes so they can verify each others' gossip (<<https://github.com/hashgraph/hedera-local-node/tree/main/compose-network/network-node/data/keys>>).

It certainly can be done, but likely not trivial.

### **62. By michielswirlds#1775 in the Token Service Channel on 11/09/2022**

@Peach-Flavored Snark here's the docs for it: <https://docs.hedera.com/guides/docs/sdks/tokens/custom-token-fees#royalty-fee>

Example in JS with custom fee for NFT and fallback fee:

```
``js
let nftCustomFee = new CustomRoyaltyFee()
 .setNumerator(5)
 .setDenominator(10)
 .setFeeCollectorAccountId(treasuryId)
 //the fallback fee is set to 1 hbar.
 .setFallbackFee(new CustomFixedFee().setHbarAmount(new Hbar(1)));

// IPFS CONTENT IDENTIFIERS FOR WHICH WE WILL CREATE NFTs
let CID = [
 "QmNPCiNA3Dsu3K5FxDPMG5Q3fZRwVTg14EXA92uqEeSRXn",
 "QmZ4dgAgt8owvnULxnKxNe8YqpavtVCXmc1Lt2XajFpJs9",
 "QmPzY5GxevjyfMUF5vEAjtyRoigzWp47MiKAtLBduLMC1T",
 "Qmd3kGgSrAwwSrhesYcY7K54f3qD7MDo38r7Po2dChtQx5",
 "QmWgkKz3ozgqtnvbCLeh7EaR1H8u5Sshx3ZJzxkcrT3jbw",
];

// CREATE NFT WITH CUSTOM FEE
let nftCreate = await new TokenCreateTransaction()
 .setTokenName("Fall Collection")
 .setTokenSymbol("LEAF")
 .setTokenType(TokenType.NonFungibleUnique)
 .setDecimals(0)
 .setInitialSupply(0)
 .setTreasuryAccountId(treasuryId)
 .setSupplyType(TokenSupplyType.Finite)
 .setMaxSupply(CID.length)
 .setCustomFees([nftCustomFee])
 .setAdminKey(adminKey)
 .setSupplyKey(supplyKey)
 .freezeWith(client)
 .sign(treasuryKey);
```

```
let nftCreateTxSign = await nftCreate.sign(adminKey);
let nftCreateSubmit = await nftCreateTxSign.execute(client);
let nftCreateRx = await nftCreateSubmit.getReceipt(client);
let tokenId = nftCreateRx.tokenId;
` ``
```

**63. By diana#9703 in the Developer General Channel on 11/09/2022**

Question. I'm already ask it, but anyone couldn't response to me. I know how hashgraph works with permissioned nodes, but I need to know, how the hashgraph going to work with permissionless nodes. I need algorithm explanation, maybe some docs.

**64. By Peach-Flavored Snark#4014 in the Token Service Channel on 11/08/2022**

I see it on hashscan but I'm not seeing any info on it from the hedera documentation on custom token fees

**65. By BlockchainManiac3454#3381 in the Javascript Channel on 11/08/2022**

hello i am reading the docs for creating first nft on testnet <https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-your-first-nft>

**66. By diana#9703 in the Developer General Channel on 11/08/2022**

Hello everyone, please help me with this. How the Hashgraph going to work with permissionless nodes? I can't find docs/specs wich explaine it.

**67. By nube#7126 in the Developer General Channel on 11/05/2022**

`setAutoRenewPeriod(<duration>)` in accountCreate or accountUpdate transactions according to the docs

**68. By nube#7126 in the Developer General Channel on 11/05/2022**

i just saw this in the docs

**69. By Wayne-Lab49#9321 in the Token Service Channel on 11/03/2022**

Hi, I'm new to the Hedera ecosystem and had a question. are we able to create token contracts similar to how Ethereum does (specify the fields in token standard where the ledger amount of users and transferring etc is handled by those fields/functions) or do we have to use HTS.createFungibleToken or the JS SDK? i haven't seen much in the docs and examples that indicate it would be possible

i want to create a token where rewards points users generate are stored in a mapping with their wallet addresses, and add a "redeem" function where tokens are sent to the user's wallet based on their reward count. i figured this could easily be done by creating a token contract with mappings for the user's reward points, and the user's token balance and updating both fields accordingly (how i would do it for Ethereum/ERC20)

i know i can just create a separate contract that does the mappings and utilizes the HTS to facilitate the token movement but I was wondering if i could keep everything contained within a single token contract as i described

**70. By nube#7126 in the Developer General Channel on 11/03/2022**

There's a good getting started guide for Hedera in the docs  
<<https://docs.hedera.com/>>

this is good too

<https://hedera.com/blog/how-to-develop-on-hedera-back-to-the-basics>

**71. By Shane McJelly#8909 in the Developer General Channel on 11/03/2022**

any good documentation or videos on how to make dapps?

**72. By johnsonb-oci#6673 in the Token Service Channel on 11/03/2022**

In the documentation for tokens, it brings up Default KYC Status (<https://docs.hedera.com/guides/docs/sdks/tokens/get-token-info>) which sounds like a token, if it is created with a KYC key, can be set to default all accounts to either REVOKED (false) or GRANTED (true), but I have not found any documentation that talks about setting the Default KYC Status.

Is there a way to set this, or am I misinterpreting that documentation, or is it a planned feature (to be able to default to GRANTED) but hasn't been implemented yet?

I am guessing it has just not been implemented (or else was removed), since `setFreezeDefault` (<https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token>) is available when you create the token

**73. By johnda98#4728 in the Smart Contracts Channel on 11/02/2022**

or .vy .. anything that compiles to the London EVM - to solc ver 0.8.13 - check docs for latest compatability.. I implement with 0.8.9

**74. By michielswirlds#1775 in the Javascript Channel on 10/27/2022**

Here's an example I had created where you have a multisig tx that requires multiple signatures. The expiration has been set to 24h instead of the default 30min. (it's similar to the example in the docs): <https://gist.github.com/michielmulders/98cf0fdbb3c5f8de4db06ed8fb8b7278>

**75. By BlockchainManiac3454#3381 in the Javascript Channel on 10/26/2022**

im still having issues setting up environment all my code is same as the docs but when i run `node index.js`

**76. By Ed Marquez#6403 in the Javascript Channel on 10/24/2022**

These two resources may be close to what you're trying to achieve:

- <https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/multi-sig-offline.js> - this example shows how you can sign a transaction offline (locally) and submit it after all necessary signatures have been collected. I think you're already there, but sharing for awareness.

- <https://docs.hedera.com/guides/docs/sdks/transactions/modify-transaction-fields> - from this documentation page, you can choose which node you submit a transaction to with the native SDKs. This could work if you don't need to use the JSON RPC Relay. Basically, when you're forming the transaction, use the `setNodeAccountIds` method to specify the node you want to send the tx to. I will say, that's not necessarily a best practice because if the node you chose is down, so is your application - the SDK handles this node selection automatically for you but you can still customize. After tx creation and signing, you can simply `execute` with a `client` or `signer`.

**77. By Geralt#6043 in the Developer General Channel on 10/24/2022**

You're right, here's the official docs. it's 8 decimals <https://docs.hedera.com/hethers/application-programming-interface/utilities/display-logic-and-input>

**78. By Geralt#6043 in the Developer General Channel on 10/24/2022**

- I didn't find the official number of HBAR decimals in the official Hedera documentation <https://github.com/trustwallet/wallet-core/pull/2570/files#diff-c1ccab6b761f7c3ef53302c329215f605bb24c73aa16fb75bc4da712926e972bR2755>

**79. By Slyris#2880 in the Developer General Channel on 10/24/2022**

Hello there, I'm Milerius, lead software developer at trust-wallet. We are starting integration of Hedera: <https://github.com/trustwallet/wallet-core/issues/2669> and I have a few technical questions:

- I didn't find a public rpc node url for native hedera (not evm interaction)
- At wallet-core, we only provide the necessary to build a transaction, and let end-user application broadcast it to the node.
- I didn't find the official number of HBAR decimals in the official Hedera documentation

**80. By JAX#6166 in the Token Service Channel on 10/22/2022**

I need some help understanding Royalty Fallback Fees

The docs don't really explain it as I'm new to Hedera

<https://docs.hedera.com/guides/docs/hedera-api/token-service/customfees/royaltyfee>

```\n

If present, the fixed fee to assess to the NFT receiver when no fungible value is exchanged with the sender

```\n

In terms of an NFT - in what circumstances would it take effect and should I be concerned about what value I use?

```\n

```
let nftCustomFee = await new CustomRoyaltyFee()
    .setNumerator(5)
    .setDenominator(10)
    .setFeeCollectorAccountId(treasuryId)
    .setFallbackFee(new CustomFixedFee().setHbarAmount(new Hbar(200)));
```

```\n

**81. By IceMan#2248 in the Developer General Channel on 10/22/2022**

Hi @Supremax67 Does Hedera provide an rpc endpoint just for broadcasting signed transactions?

I couldn't find something like that in the docs rpc section.

**82. By Liebenfiels#7895 in the Developer General Channel on 10/22/2022**

It will encourage people to have KYC from beginning and yes hence I said will be expensive as legal cost. Some will be easy cases (KYC) or where there is record people notified the community. Then there will be specialised people in law firms taking such cases.

Imagine there is partnership- one has Hedera account and don't tell other person, then loses keys ask for recovery and says he/she is only legal owner (lying to law firm he/she does not have partner). Gets funds recovered then in future partner founds in some documents left in house (after divorce) that partner had Hbar and there should be 50/50% split of ownership. In that case the law firm taking case did not do checks and the insurance company will have to cover if that partner sold also half of Hbar that did not belong to.

Nothing new it all happens all the time.

**83. By IceMan#2248 in the Javascript Channel on 10/21/2022**

start with the docs: <https://docs.hedera.com/guides/getting-started/environment-set-up>

**84. By IceMan#2248 in the Javascript Channel on 10/20/2022**

Heyy guys, is there a way to broadcast a signed transaction using an rpc on hedera? Been perusing the docs and the hedera-js-sdk for hours now, but couldnt find a section handling that.

**85. By simihunjan#3005 in the Smart Contracts Channel on 10/18/2022**

hey all! Apologies for sharing the same message across the channels. The product team is looking for feedback to help improve your experience on our docs site. If you have a few minutes please submit your feedback here <https://forms.gle/3cV1Y9AV8MGKx2xV9>. Really appreciate your time in advance!

**86. By Lt Ramen#6172 in the Token Service Channel on 10/13/2022**

Remember to initialize a node project, install the hashgraph sdk, and dotenv to follow that example.

Are you currently going through this doc?

<https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-your-first-nft>

**87. By Shane McJelly#8909 in the Token Service Channel on 10/13/2022**

how do i fix this error, Im currently going thorough the documentation for creating and transferring an NFT, and when i try get the token ID i get this error message

**88. By aseidma#2141 in the Token Service Channel on 10/13/2022**

Hello everyone,  
currently trying to implement a smart contract that creates a non fungible token for `msg.sender` and is afterwards able to mint NFTs for that sender as well (experiencing issues).

If I create the token with the contract as the treasurer, minting works fine. The issue comes up when I create a token with the sender as treasury and then try to mint via a separate function call.

This is the mint function on the SC:

```
```\n
```

```
function mintNft(address token, bytes[] memory metadata)
    external
    returns (int64)
{
```

```
(int256 response, , int64[] memory serials) = HederaTokenService
    .mintToken(token, 0, metadata);

if (response != HederaResponseCodes.SUCCESS) {
    revert("Failed to mint non-fungible token.");
}

return serials[0];
},
},
```

HTS returns error 327 ("The full prefix signature for precompile is not valid"). The documentation for HTS's `mintToken` states: "Mints an amount of the token to the defined treasury account".

What is the "defined treasury account"? The function does not accept it as a parameter and precompile is called using a delegatecall, meaning `msg.sender` should be the person who executed the contract, which in my case is the address assigned to `token.treasury` when creating the token.

Is it currently even possible to mint NFTs directly on the account of `msg.sender` via a smart contract using HTS?

89. By Shane McJelly#8909 in the Developer General Channel on 10/12/2022

when going thorough the youtube or the documented tutorial on minting NFT's i keep getting this error in the console Error: failed to parse entity id: undefined

90. By Liebenfiels#7895 in the Developer General Channel on 10/11/2022

People will hopefully remove stake from slowest nodes anyway in future that are within that 2/3 that play role in consensus. For now the performance is stated as below- but could be outdated info, and at scale sure will work bit different in permissionless system as stated in document.

"Currently, the Hedera mainnet will perform at a rate determined by the lowest-performing node. To ensure a common level of performance minimum hardware, connectivity and hosting requirements have been defined for the initial permissioned, Governing Council nodes."

<https://docs.hedera.com/guides/mainnet/mainnet-nodes/node-requirements>

91. By Iron#4548 in the Javascript Channel on 10/10/2022

Is there any existing documentation for this?

92. By Ed Marquez#6403 in the Smart Contracts Channel on 10/10/2022

@_BS_ <https://docs.hedera.com/guides/resources/tutorials/get-started-with-hedera-nfts#working-with-hts-tokens>

^ The tutorials section of the documentation has different examples grouped by topics (HTS, contracts, hbar, etc.).

The NFT and Fungible Tokens sub-section has some examples on sending and receiving fungible tokens and NFTs to contracts. That explains things like the association and transfer steps.

93. By Ed Marquez#6403 in the Consensus Service Channel on 10/10/2022

<https://docs.hedera.com/guides/docs/sdks/consensus/update-a-topic>

Hi @0x2448 - ^ I linked the documentation for updating topics.

The topic memo is not immutable as it can be updated or cleared. It does have a 100 bytes limit.

I believe Greg was only clarifying the separation of topics and messages.

Topics "collect" messages. A topic has a single memo, whereas the content of each message is usually different (<https://docs.hedera.com/guides/docs/sdks/consensus/submit-a-message> for more details).

94. By chetansk#3979 in the Developer General Channel on 10/10/2022

Hi Team, I was looking into Hedera EVM node. can i get any evm compatible public node or any reference document? I wanted to query few geth apis. Thanks
@simihunjan @Matt Woodward

95. By aseidma#2141 in the Smart Contracts Channel on 10/07/2022

Hello everybody,

I'm currently trying my hand at implementing my first SC on Hedera and am not sure about the best way to test my contracts locally. I want to implement a simple contract that utilizes HTS to create a token and mint an NFT for starters.

I've written the contract and have setup my environment using Truffle, however I'm not sure what the easiest way to connect to a testnet node is. I can specify the network I want to test with in the `truffle-config.js`, but the network settings don't seem to have an option for adding accounts along with their private keys. I'm looking for something similar to the hardhat config in this repo: <https://github.com/hashgraph/hedera-hardhat-hethers>, but using Truffle as Hardhat does not seem to be fully supported according to the docs.

Just running `truffle develop` works for executing the contract, but as HTS makes calls to `address(0x167)`, which is not available on truffle's develop network, I can't properly test HTS functionalities.

What is the easiest way to set up a local environment that allows testing contracts using HTS? Should I ditch Truffle and go with something else? I'd appreciate some pointers!

96. By Juliette#5639 in the Developer General Channel on 10/07/2022

Thank you so much for your answer!! I'll check the documentation!!

97. By bigKnightOut#0207 in the Javascript Channel on 10/05/2022

In the docs I see this ...`.setMaxTransactionFee(new Hbar(30));`

98. By Ed Marquez#6403 in the Smart Contracts Channel on 10/03/2022

You could do that via the SDK, but as DeeJay mentioned, starting in Nov that won't be available in the SDK because it could become a quite expensive query...

Mirror query is an alternative. If you want to query in Solidity, the supported ERC standard calls should work. See the documentation here (<https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>). Try `balanceOf``. Should work

for FT and NFT.

Here's an example using `balanceOf` for FT. That repo has a similar example for NFT.
https://github.com/ed-marquez/quick-contract-examples/blob/839277ed804e85d271e3dd8b56fa5172b5b98d52/5_1_HIP218_FungibleTok.js#L171

Note that the example is
for a regular account, not a contract... I suspect it should work, but haven't tested

99. By tafan#2970 in the Consensus Service Channel on 10/03/2022

Yeah but it's not simple to dive into a big codebase; I would have preferred something that just points out and explain the events part if such documentation existed.

100. By SmithDawg#4665 in the Javascript Channel on 10/01/2022

I was told you can sue the mirror nodes but when I try to access the mainnet mirror node linked on the hedera docs I get a 404

101. By tafan#2970 in the Consensus Service Channel on 09/29/2022

Hello, I'm trying to implement a very small prototype of the hedera's virtual voting and gossip-to-gossip protocol. Now I'm trying to understand how the two hashes of events work technically and how they allow every node to know the transaction's timestamp of the previous node until the tx has been shared through the network. I have been looking on current and old documentation, youtube, and even Reddit but can't find something fully detailed (always piece of indications). Would you have any link to give me that goes deep into technical indications?

102. By Ed Marquez#6403 in the Token Service Channel on 09/28/2022

@rhysied - seeing this q a little late. A possible workaround could be the wipe key (comes with caveats).

- This would enable transferring tokens to that account for which you don't have the keys and then wipe the tokens in that account with the wipe key.
- The caveat is that this could give unnecessary wiping power to an admin to wipe any account (which is necessary for certain use cases), but it would effectively do what you're trying to accomplish (based on what I understood from the question)

From docs: <https://docs.hedera.com/guides/docs/sdks/tokens/wipe-a-token>
`tokens are removed from the account and the total supply of the token is decreased by the wiped amount.`
and
`CANNOT_WIPE_TOKEN_TREASURY_ACCOUNT`

103. By rhysied#6748 in the Token Service Channel on 09/23/2022

So looking at CMC docs they just need it to be "verifiably burned" so not sure whether a specified burn account would qualify

104. By Ed Marquez#6403 in the Javascript Channel on 09/20/2022

Using the `ContractCreateFlow` class will simplify the process.

Otherwise, you will need to create an empty file, append the contents by chunk and then create the contract. ContractCreateFlow automates all that for you. If I'm doubtful,

see the documentation page for additional details: <https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract#contractcreateflow>

105. By Andrey.B#6650 in the Developer General Channel on 09/20/2022

@here I am announcing the immediate availability of the v2.4.2 hotfix release of Guardian. This is a hotfix release which adds pagination to DB queries to address performance issues originally reported by Tymlez (thank you):

- DocumentSource block performance #1239
- Allow change orderField & orderDirection for DocumentsSourceAddOn via UI/API #1272

Please review the full release information in Zenhub:

<https://app.zenhub.com/workspaces/guardian-618c27c08661c0001461263a/reports/release?release=Z2lkOi8vcmlkZy91LWVhcnVzUvODMxMjM>

and github:

<https://github.com/hashgraph/guardian/releases/tag/v2.4.2>

106. By Ed Marquez#6403 in the Javascript Channel on 09/19/2022

Hi Adrian, yes. The admin key of a token, if specified, has the authority to update the supply key as well.

I believe it may in fact be able to update all keys.

Thanks for flagging. Will flag for the team to address that doc page soon.

107. By Ed Marquez#6403 in the Smart Contracts Channel on 09/19/2022

Adding @simihunjan for the documentation issue.

@cheezcharmer could you please create an issue flagging this in the repo: <https://github.com/hashgraph/hedera-smart-contracts/issues>
That will help the team track and address the problem.

108. By Pathorn#7333 in the Consensus Service Channel on 09/19/2022

Hi @Arin

1. You can spin up a Hedera local node following this tutorial <https://github.com/hashgraph/hedera-local-node> but it's more for the development.

2. Both options you mentioned above are valid. I would also suggest another option where you only store the raw data off-chain and then only hashes of the data in HCS. Private blockchain is not needed but you probably need to find a way to share data among members.

3. This document is a good start for private design. https://hedera.com/HH_Web-3-Privacy-Architecture_20211111.pdf

I hope it helps. Let me know if you have more questions.

109. By cheezcharmer#5634 in the Smart Contracts Channel on 09/18/2022

@Greg Scullard the instructions on the website only work for hedera-smart-contracts commit 7bc4b3b and below. It's impossible now to follow the website documentation and create an nft contract because the steps are obsolete. New contract takes int64 while instructions mention uint32. Even if you change the function parameter to int64 , the create nft contract will execute revert .

Will the documents on the website be updated?

110. By cheezcharmer#5634 in the Smart Contracts Channel on 09/18/2022

Hey, is there any hedera developer here?

Seems like your documentation on the website no longer works for hedera smart contracts after the latest commits(from bed45d4) to GitHub smart contract repo. The documentation on the website is obsoleted as of aug 26 2022

111. By rhysied#6748 in the Developer General Channel on 09/18/2022

Yes you can send it to more than one account. All explained in the docs: <https://docs.hedera.com/guides/docs/sdks/tokens/custom-token-fees>

112. By rhysied#6748 in the Token Service Channel on 09/17/2022

No, you can't sign an association for the user, the user must do it.

What you'd need to do is after the user clicks you would create the token and then prompt the user to sign the association using hashpack (I'd recommend reading the hashpack docs or asking in the hashpack discord if there are tutorials to show you how to do this).

After the user has associated you could then either send them the token/s without them having to sign anything or if they are supposed to pay you'd generate another transaction for them to sign in hashpack

113. By Supremax67#5749 in the Developer General Channel on 09/16/2022

Dr. Leemon Baird was giving us a sneak peak about decentralized recovery. Often when they do these announcements, it is the first time we hear of it and no documentation has yet been published. Early stage (concept stage)

If Leemon can think of it, they can usually build it. I would say to keep an ear to the space.

114. By DeeJay#0076 in the Smart Contracts Channel on 09/16/2022

GM GM - so adding more gas (the shame is real) & taking onboard the need for the approved account to generate the Tx ID I now have it working.

I thought that was me done but I am having issues with
HederaTokenService.transferToken**s**() [the singular version works for me .transferToken()]

I get a INVALID_ACCOUNT_AMOUNTS (<https://hashscan.io/#/testnet/transaction/>

[illegible]

With the SDK, probably the main "gotcha" has to do with this line (which is currently not documented in docs - I created an issue to document that):

925603118e0db7b96b472afa8f69c48acd7b83ff/examples/account-allowance.js#L110

However, my issue with the precompiles had to do with associations (couldn't grant the allowance due to missing association, but the spender and token were associated).

and I'll create some issue in the repository so we can keep track of this. Feel free to create issues too if you find other issues :<https://github.com/hashgraph/hedera-sdk-is/issues>

I can't speak to the specifics of how HashPack implemented that feature.

- <https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#gas-fees>
(formula for EVM gas)

- <https://hedera.com/fees>

My guess is that you could implement some sort of lookup based on the tx type...

From documentation: <https://docs.hedera.com/guides/docs/sdks/smart-contracts/update-a-smart-contract>

• A transaction that allows you to modify the smart contract entity state like admin keys, proxy account, auto renew period and memo. This transaction does not update the contract that is tied to the smart contract entity. The contract tied to the entity is immutable. The contract entity is immutable if an admin key is not specified.

Basically, it's possible to update properties of the entity containing a contract (e.g.

Contract with ID 0.0.xxxxx), but not the contract tied to the entity.

My understanding is that you would need to redeploy an updated version of the contract logic itself.

118. By Kiril#8850 in the Javascript Channel on 09/14/2022

Hello folks, can you help point me to the way one can calculate the cost of transaction (network fee) before it is executed?

I can't find this in the docs or SDK examples, how it is done in apps, like HashPack has it for instance. How to implement this nice functionality?

119. By Ed Marquez#6403 in the Javascript Channel on 09/08/2022

With respect to gas estimation, from: <https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#gas-reservation-and-unused-gas-refund>

`It is impossible to know the actual evaluated gas pre-consensus because network state can directly impact the flow of the transaction, which is why pre-consensus uses the gasLimit field and will be referred to as the gas reservation`

With this tool, however, you can estimate fees for native services: <https://hedera.com/fees>
And then this same doc page gives you the formula to **estimate** gas: <https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#gas-fees>

After consensus you can get a transaction **record** and look at fees and gas paid there. Hashscan also gives you that info: <https://hashscan.io/#/testnet/transaction/0.0.26087912-1662650064-662225240> which means you can probably query mirror nodes via the REST API as well to get that same info in your application

120. By michielswirlds#1775 in the Javascript Channel on 09/08/2022

From the docs: "Transactions have a 6,144 bytes size limit. This includes the signatures on the transaction. The estimated single signature size is about 80-100 bytes." So you can set the chunk size to 4 Kb to be safe and upload it in 20 chunks? Would that work?

121. By Greg Scullard#5365 in the Developer General Channel on 09/07/2022

I've asked the Blade wallet team for the location of their developer docs.

122. By JRuffer#0566 in the Developer General Channel on 09/07/2022

We are trying to sign a message then call the method <https://docs.hedera.com/hethers/application-programming-interface/signers#signer.signmessage-message-promise-...jsignature-greater-than-greater-than> with hashpack wallet but its not working. Who is the best person to talk with at hashpack? The other wallet blade is missing public documentation.

123. By Supremax67#5749 in the Developer General Channel on 09/07/2022

No need to pin, all of this is well documented if people would read the material.

124. By Greg Scullard#5365 in the Developer General Channel on 09/06/2022

It does look that way indeed, I've notified the docs team.

125. By Ashok#8933 in the Smart Contracts Channel on 09/06/2022

@Greg Scullard I could not get how "Hedera itself is like a giant ERC-1155 with all the

native tokens inside the same" could you please elaborate or provide me any ref doc please?

126. By Greg Scullard#5365 in the Javascript Channel on 09/05/2022

It may be best check the Hashpack documentation, they have a library to enable integration with Hedera.

They also have a discord here (valid 7 days): <https://discord.gg/Djt77HCq>

127. By cryptoalfredo#0222 in the Javascript Channel on 09/05/2022

On the docs, in step 4.

Do you have any Idea where we are to paste the code?

128. By kingofkings#5311 in the Token Service Channel on 09/05/2022

m trying to build a token on hadera as a beginner developer, please how do i go about it..

PS: Ive read the documentations

how do i access the IDE used for hadera, thats my main question

129. By kingofkings#5311 in the Developer General Channel on 09/05/2022

Im trying to build a token on hadera as a beginner developer, please how do i go about it.. PS: Ive read the documentations

130. By CERETRON#0851 in the Javascript Channel on 09/01/2022

The bug is not pointing to any line of my code, but where the error is pointing at is the hex.cjs documents in the node_modules/@hashgraph

131. By littletarzan#5253 in the Smart Contracts Channel on 08/31/2022

u dont need smart contracts for this on hedera, check the docs and examples for Hedera Token Service

132. By rhysied#6748 in the Token Service Channel on 08/31/2022

unfortunately I dont think it is. As per the docs metadata is immutable, and unless the docs are out of date there isnt a way to specify the serial number when minting so you wouldn't even be able to delete it and re-mint: <https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token>

133. By nap#7656 in the Token Service Channel on 08/30/2022

hey all! I have a question regarding the creation of fungible Tokens. Is it possible to add an image or general metadata to a fungible token? I know it's possible for nfts, but also for fts? And if so, what would be the best approach? didn't find anything in the documentation. Thanks in advance! ❤️

134. By nambi#5309 in the Developer General Channel on 08/25/2022

Is there documentation on connecting the deployed contract to UI? (Especially looking for how to link Testnet accounts at a wallet with the UI)

135. By Evan.tedesco#3062 in the Javascript Channel on 08/24/2022

Can anyone point me to a concrete example of how to create a nested transaction on Hedera(preferably with the javascript SDK)? I have read the docs and I think I understand conceptually but it would be helpful if I could see a concrete example of how they are created in code. Thanks in advance.

136. By Greg Scullard#5365 in the Smart Contracts Channel on 08/24/2022

There are a few blogs here that may help you
<https://hedera.com/blog>

Also our docs: <https://docs.hedera.com>

And a few examples here: <https://github.com/hashgraph/hedera-json-rpc-relay/tree/main/dapp-example>

137. By nube#7126 in the Developer General Channel on 08/23/2022

<https://www.coingecko.com/en/api/documentation>

138. By Francesco Coacci#2822 in the Javascript Channel on 08/22/2022

hey @gavraz | NR150! You are right, I'll change the docs right now. You need to specify the topic ID. Btw you always need to sign using the admin key if you update a field of your topic. There's a script on how to update a topic here: https://github.com/cisc0f/hedera/blob/main/src/019_topic_update/index.js

139. By gavraz | NR150#1432 in the Javascript Channel on 08/22/2022

Hi all. Trying to update a Consensus Topic Memo in JS. The instructions are not clear as I can't see where the Topic ID is provided? How does the client know which topic to update when there are multiple topics created and signed by the same admin key? here is the example from the docs: `const transaction = await new TopicUpdateTransaction()`

```
.setSubmitKey(submitKey)
.freezeWith(client);
```

```
//Sign the transaction with the admin key to authorize the update
const signTx = await transaction.sign(adminKey);
```

```
//Sign with the client operator private key and submit to a Hedera network
const txResponse = await signTx.execute(client);
```

```
//Request the receipt of the transaction
const receipt = await txResponse.getReceipt(client);
```

```
//Get the transaction consensus status
const transactionStatus = receipt.status;
```

```
console.log("The transaction consensus status is " +transactionStatus);
```

140. By s7#7018 in the Javascript Channel on 08/19/2022

in the example code in hedera docs they had the private key but they generate the `supplyKey`. its ok when you create a token then mint the nfts in one run, i mean in one js file. but if you want to create the token, save the token id and mint later. you need to save the `supplyKey` too then use it for minting. also you should use this method : `let tokenId = TokenId.fromString("0.0.12345678")`; to set the token id.

141. By generatedart#1079 in the Developer General Channel on 08/19/2022

Hey,

I would like to operate a validator node, where can I find documentation on hardware requirements, minimum stake for validators and setting up a testnet/mainnet node?

Thank you in advance

Regards,
Guillaume

142. By shopsky#5180 in the Java Channel on 08/15/2022

Thanks johnda98!

I started with that document and a couple other videos.

It has been more than a decade when I last worked on Java and Eclipse. The issue I am having is including the sdk in my gradle or maven project.

143. By johnda98#4728 in the Java Channel on 08/15/2022

well you could try reading the Docs.. & whats cradle ? ... u mean gradle. <https://docs.hedera.com/guides/getting-started/environment-set-up>
<https://github.com/hashgraph/hedera-sdk-java>

144. By rhysied#6748 in the Javascript Channel on 08/14/2022

I'd double check which version of the JS SDK you are using and make sure the documentation/examples are using the same version

145. By rhysied#6748 in the Javascript Channel on 08/14/2022

Not sure where you saw the example you mentioned but the site I sent you is the official Hedera docs site. It could be out of date but I doubt it as it follows the same logic as v2 Golang SDK too

146. By Ed Marquez#6403 in the Javascript Channel on 08/12/2022

See the HashConnect documentation for details (<https://hashpack.github.io/hashconnect/>).

Here's this example JS file as well: <https://github.com/ed-marquez/hedera-dapp-days/blob/main/src/components/hedera/walletConnect.js#L27>

147. By Eli Azev#9456 in the Developer General Channel on 08/09/2022

Guys I could not find in documentation what is the maximum available length for topic message. Anyone knows that information?

148. By frank132#8057 in the Token Service Channel on 08/08/2022

this is what the docs say, how can I get the current consensus time?

149. By Aby | Hedera Tower#2742 in the Javascript Channel on 08/07/2022

I'm new to the world of web3 and learning with the documentation

I'm practicing doing a minting app on Hedera with Hashpack for the wallet.

I managed, to mint NFTs, connect the account with Hashpack, but I'm stuck at the signing part when I need to associate the account with the token.

I get this error : contained error status INVALID_SIGNATURE

I have this block

```
const provider = hashConnect.getProvider('testnet', topic, operatorId);

const signer = hashConnect.getSigner(provider);

//Create the associate transaction and sign with Alice's key
let associateAliceTx = await new TokenAssociateTransaction()
  .setAccountId(accountId)
  .setTokenIds(["0.0.41853058"])
  .freezeWith(client)
  .signWithSigner(signer);

//Submit the transaction to a Hedera network
let associateAliceTxSubmit = await associateAliceTx.execute(client);

//Get the transaction receipt
let associateAliceRx = await associateAliceTxSubmit.getReceipt(client);
```

When I try putting the private key manually for 'Alice' instead of signer It works fine, the association with the token works fine, the transaction and transfer too.

I tried getting the privateKey like so also, but nothing too, when I try with .sign instead of .signWithSigner

```
let initData = await hashConnect.init(appMetadata);
  saveData.privateKey = initData.privKey;
Thank you for the help and advices
```

150. By rhyised#6748 in the Javascript Channel on 08/04/2022

recommend you have a look through the docs:

```
`https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees`
`https://docs.hedera.com/guides/core-concepts/smart-contracts/hyperledger-besu-
evm#gas-schedule`
```

151. By Aslam#9563 in the Javascript Channel on 08/04/2022

Can you share with me a doc which suggest how to calculate estimated gas before executing transaction?

152. By Aslam#9563 in the Smart Contracts Channel on 08/04/2022

you do not have to do it manually ... its already included in those steps... you should get contract ID at end of the step 3 provided in that doc. It means your contract is deployed and you can further use that contract id for further interaction..

153. By Tomachi Anura#8370 in the Consensus Service Channel on 08/02/2022

but problem is while developing i have more than 10 docker containers running our smart-node engine in a decentralised way

154. By Tomachi Anura#8370 in the Consensus Service Channel on 08/02/2022

yeah...months ago i've read there was a max 5 connections from same accountID allowed when subscribing a topic, but i can't find this info anymore in the docs

155. By Tomachi Anura#8370 in the Consensus Service Channel on 08/02/2022

and again, it happens just after some development time using docker containers, and the error disappear if i create a new topic

156. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 08/02/2022

Also this doc is wrong right? as second param would be the serialNumber, in total 4 params

157. By bugbytes#0817 in the Smart Contracts Channel on 08/02/2022

I've been looking for that for years, can you point me to where that is in the documentation?

158. By Juliette#5639 in the Javascript Channel on 08/02/2022

Thank you @rhysied , I'll check the documentation!!!

159. By Juliette#5639 in the Javascript Channel on 08/01/2022

Hi, any documentation that explains how to send your newly created tokens into your hashgraph wallet (testnet), please.... .. thank you !!!

160. By Juliette#5639 in the Javascript Channel on 08/01/2022

Good afternoon, first, thank you for your documentation!!

Then, when I enter the tokenId of my fungible token or Nft in my HashPack wallet, it confirm the transfer has been done but the NFT tab stay empty and the fungible token stays at 0... is there any documentation that could help??? Thank you

161. By Tomachi Anura#8370 in the Consensus Service Channel on 08/01/2022

i created a new topic and it's working just fine, but i don't find anything in the docs related to those limits, or if there is any timeout/reset on that

162. By Tomachi Anura#8370 in the Consensus Service Channel on 08/01/2022

i think there is a kind of limit of connection, so while developing every time i reboot a docker, feels like it stays connected to HCS

163. By Ed Marquez#6403 in the Javascript Channel on 07/29/2022

@michiel - that information can be obtained from a mirror node query like this one:
<https://testnet.mirrornode.hedera.com/api/v1/tokens/0.0.47757667/balances>

Here's the documentation on the mirror node rest API for additional info on all the queries you can perform: <https://docs.hedera.com/guides/docs/mirror-node-api/rest-api>

And here's an article with background info on mirror nodes and how to use them:
<https://hedera.com/blog/how-to-look-up-transaction-history-on-hedera-using-mirror-nodes-back-to-the-basics>

164. By Ed Marquez#6403 in the Smart Contracts Channel on 07/29/2022

This is a dev channel. Your question was recently posted...
You may expect a response in 72 hours or less.

- `ContractCreateFlow` has the method `.setConstructorParameter`. You can pass constructor arguments that way if you need to do things like initialize state variables during contract deployment. For instance:

```
`const contractInstantiateTx = new ContractCreateFlow()
.setBytecode(bytecode)
.setGas(100000)
.setConstructorParameters(
  new ContractFunctionParameters().addAddress(tokenAddress)
);`
```

See details in documentation: <https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract>

- The fileID being null seems like an SDK issue. I'll create an issue in the GitHub repo. In the future, feel free to create issues for bugs in the SDK for the team to track and fix here: (<https://github.com/hashgraph/hedera-sdk-js/issues>)

You can still get the file ID by doing mirror node queries (like <https://testnet.mirrornode.hedera.com/api/v1/contracts/0.0.47774680>) or checking a mirror node explorer like hashscan. If you search the account that paid for the tx, that shows all the steps that `ContractCreateFlow()` performs for you, so FileCreate, FileAppend, ContractCreate, FileDelete

165. By AlexTaylor#3551 in the Javascript Channel on 07/27/2022

in case it helps anyone getting this same error `TypeError: Cannot read property '_toProtobuf' of undefined` Ed's advice may help - use 4 parameters instead (at least for SDK v2.8.0) The docs shows only the 3 parameter method so this might not be clear.

166. By Sebastien-Michaud#2442 in the Smart Contracts Channel on 07/27/2022

In my case I think the bytecode may be too large.

When I use remix, my solidity file compiles fine and the file is created on the network, and I can create contract instances and execute their getter functions, which return the expected data. All that from remix.

Using the java sdk however, I can create the file by appending to it multiple times since it is large. But when I try to create the contract with the sdk, by passing it the file id as per the documentation, I get the CONTRACT_REVERT_EXECUTED error. I tried with a small contract and do not get the error when running the same java sdk code.

How do I create a contract from a large file, please?

167. By Michael Garber#5033 in the Javascript Channel on 07/26/2022

From the docs:

*Treasury Account is receiving the initial supply of tokens as-well as the tokens from the Token Mint operation once executed. The balance of the treasury account is decreased

when the Token Burn operation is executed.*

<https://docs.hedera.com/guides/docs/hedera-api/token-service/tokencreate>

168. By Deleted User#0000 in the Developer General Channel on 07/26/2022

i was so close to be actually surprised that someone can release documentation that works but, well I guess not

169. By Deleted User#0000 in the Developer General Channel on 07/26/2022

please fix this documentation

it doesnt say what to import

<https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-your-first-nft>

170. By Deleted User#0000 in the Developer General Channel on 07/26/2022

Im about to test everything in the documentation, however I always see suggestions to use test net but I assume everything works on mainnet, is that correct?

171. By johnda98#4728 in the Smart Contracts Channel on 07/26/2022

of course you can use remix .. ganache testRPC .. to unit test ... but yes no injectable web3 (yet).. so you have to copy bytecode of the flattened code and bytestream it into a Hedera .. get FileId and use that as reference to create a instance using ContractCreate.. in SDKs ... or use HETHERS .. js lib .. see the docs.. see Ed's comments above also - pertinent.

read docs. EVM flavor is up to 0.8.9 last time i looked.. solc ver.

172. By Ed Marquez#6403 in the Smart Contracts Channel on 07/25/2022

@Sebastien-Michaud thanks for the feedback. In most cases, someone in our team provides input in 24 to 72 hours. It's also valuable to have the help of the developer community, which is what john did in this case. Here's some additional information for reference:

If you have feedback on specific issues in documentation, please capture them in the issues section of the docs repository so the team can track and address them:

<https://github.com/hashgraph/hedera-docs/issues>

I would suggest looking into using `ContractCreateFlow()` for contract deployment with the SDK. In a single call, it takes care of `FileCreateTransaction`,

`FileAppendTransaction`, and `ContractCreateTransaction()`

<https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract>

Finally, for additional info with issues and errors, here are details that can help with troubleshooting:

https://github.com/hashgraph/hedera-protobufs/blob/main/services/response_code.proto

173. By Ed Marquez#6403 in the Consensus Service Channel on 07/25/2022

Hi @Iron !

- As stated in the documentation, the limit for the topic memo is 100 bytes. As you point out, there are other places where the limit may be 100 characters, and those are correctly

listed as well.

- To the best of my knowledge, the renewal fees for consensus topics haven't been determined yet. Rent on Hedera will be introduced first for smart contracts, then it will be introduced for other entities (like consensus topics, accounts, tokens, etc.).

- For the mirror node question, what @Supremax67 is correct. Hedera operates a mirror node that provides free queries for testing that are throttled at 100 requests per second. For production applications, we suggest looking into mirror nodes operated by the community members - so options like DragonGlass and Kabuto. Those mirror node operators set their own pricing

174. By Sebastien-Michaud#2442 in the Smart Contracts Channel on 07/25/2022

@johnda98 as mentioned a direct copy-paste of their code works partially and crashed on line: `TransactionReceipt receipt = txResponse.getReceipt(client);`

I would expect the code in their documentation to actually work but it does not.

Keeps crashing is not blanket, it is a fact. It keeps crashing.

Unhelpful error message is also a fact. What am I to do with an error message that simply says UNAUTHORIZED??

The documentation (<https://docs.hedera.com/guides/docs/sdks/consensus/errors>) shows that this error corresponds to: 'An attempted operation was not authorized (ie - a deleteTopic for a topic with no adminKey)'

As already mentioned and as per the hedera java sdk documentation there is no method to pass a key when getting a TransactionReceipt object. As per the code in the documentation. The key is passed to the TransactionResponse object before running the execute method of that object.

My getter function is returning a string memory, just like in the examples provided in the hedera java sdk documentation.

The documentation is inaccurate. There are also errors in it where the wrong object is being referenced, for example:

```
//Create the transaction
FileAppendTransaction transaction = new FileAppendTransaction()
    .setFileId(newFileId)
    .setContents("The appended contents");
```

```
//Change the default max transaction fee to 2 hbars
FileCreateTransaction modifyMaxTransactionFee = transaction.setMaxTransactionFee(new
Hbar(2));
```

It should be:

```
FileAppendTransaction modifyMaxTransactionFee =  
transaction.setMaxTransactionFee(new Hbar(2));
```

Because 'transaction' is defined as an instance of FileAppendTransaction on the first line. IntelliJ highlights that error and won't run the code until the correct object type is being used.

This leads me to believe that the code in the documentation was never tested.

175. By Sebastien-Michaud#2442 in the Smart Contracts Channel on 07/25/2022

@johnda98 The code is a direct copy-paste from the hedera java sdk documentation at the link mentioned. Does that code not work then?

There is no method to pass a key when getting a TransactionReceipt object. As per the code in the documentation, the key is passed to the TransactionResponse object before running the execute method of that object.

This code is from the hedera documentation and I would expect it to work.

I have been trying to resolve the issue of getting a value from a getter function of a smart contract for over a month now and have constantly run into issues where the code from the hedera sdk doc does not work and keeps crashing with unhelpful error messages. I wish the documentation was accurate and that the example codes in it would actually work, so I could get on with my work and use the hedera network.

I wish someone from hedera would actually help with this.

176. By Iron#4548 in the Consensus Service Channel on 07/25/2022

Okay the document confused me as it told me to use the hedera fee calculator to calculate costs to get token messages.

177. By Iron#4548 in the Consensus Service Channel on 07/24/2022

Some docs reads 100 bytes and some read 100 chars. Which one is the correct one?

178. By Iron#4548 in the Consensus Service Channel on 07/24/2022

Furthermore for the memo field the doc specifies UTF-8 encoding max 100 bytes. Is that 25 UTF-8 characters only? (Since a UTF-8 character is 4 bytes long). Or are we talking about 100 UTF-8 characters = 400 bytes?

179. By Allen#2484 in the Javascript Channel on 07/23/2022

Hi guys, trying to discover and play with the Hedera SDK following the initial steps of the docs, I'm facing an issue. Even tried to switch to Wallet instead of Client.

Here is the issue that I'm facing:

```
\node_modules\@hashgraph\sdk\lib\EntityIdHelper.cjs:183  
  throw new Error(`failed to parse entity id: ${text}`);  
    ^
```

```
Error: failed to parse entity id: 302[OperatorID_hidden_for_sharing]f08  
  at Object.fromStringSplitter (\node_modules\@hashgraph\  
[24m\-sdk\lib\EntityIdHelper.cjs:183:11)
```

key/id are correctly defined in the env. file. Line where it fails is `const wallet = new Wallet(...)`

It fails to parse the public key whilst it's showing it (correctly) in the error logs ?!

Thanks in advance

180. By Fenrir#0048 in the Developer General Channel on 07/21/2022

How does it work? Is there a document that has it?

181. By Dracos69#8544 in the Token Service Channel on 07/21/2022

Hello,

Kindly elaborate what is the difference between Hedera Service and Hedera Token Service and which one is used to deploy a third party(custom solidity smart contract using byte code, not Hedera Token as in documentation)!

Can anyone also guide me is it possible to deploy a token(solidity smart contract not Hedera Token Service) and associate another solidity smart contract(ICO) to it, like we add ICO as minter to Token in EVM?

182. By Dracos69#8544 in the Smart Contracts Channel on 07/21/2022

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Kindly elaborate what is the difference between Hedera Service and Hedera Token Service and which one is used to deploy a third party(custom solidity smart contract using byte code, not Hedera Token as in documentation)!

Can anyone also guide me is it possible to deploy a token(solidity smart contract not Hedera Token Service) and associate another solidity smart contract(ICO) to it, like we add ICO as minter to Token in EVM?

183. By johnda98#4728 in the Smart Contracts Channel on 07/21/2022

you'll find that majority of the open zeppelin implementations of all the ERCs/ EIPs are fine as they are for direct compile (to the current solc compiler for hedera EVMs(derivative).. 8.9 last time i looked) ...

but.. some like ERC 777 for example, use `msg.data` and other special variables that hedera doesnt support as of yet.. and of course the well documented non-executing fallback/receive funcs. `block.timestamp` gives node consensus time .. not last block create timestamp of course.. so yes, dont try and expect to copy/paste deploy say.. example.. WETH as-is, as WHBAR.. you wont get any WHBAR when you send in HBAR to the fallback BUT the contract balance will reflect the deposit. In that example- modify it so deposits are valid when sent in via a contract method via a execute call.

so the whitelisting and all the usual patterns .. vesting.. private sale etc and whitelisting for interaction with token contracts etc.. all good.

184. By philipp#4139 in the Token Service Channel on 07/20/2022

Hi @Lyz you have first to associate the token to a new Account. I added a link to the documentation:

<https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-your-first-fungible-token#2.-associate-user-accounts-with-token>

185. By Topachi#0454 in the Token Service Channel on 07/19/2022

And also if I would be able to send a custom token amount to different accounts for each child txn. The docs are very vague about the use case of this

186. By Ed Marquez#6403 in the Smart Contracts Channel on 07/18/2022

Hi @yonac1 - This previous response points to an example that shows how to connect your application to HashPack

<https://discord.com/channels/373889138199494658/768621337865486347/998338628788965449>

You can also check the HashConnect source code, doc, and example here:

<https://hashpack.github.io/hashconnect/>

As suggested the HashPack Discord is a good

place for technical questions and supports with issues you may run into using this tool.

187. By Michael Garber#5033 in the Smart Contracts Channel on 07/18/2022

Can you show how you are doing it? Here is the doc example for getting the message back

```
//Contract call query
const query = new ContractCallQuery()
    .setContractId(contractId)
    .setGas(600)
    .setFunction("greet");
```

```
//Sign with the client operator private key to pay for the query and submit the query to a Hedera network
```

```
const contractCallResult = await query.execute(client);
```

```
// Get the function value
```

```
const message = contractCallResult.getString(0);
```

```
console.log("contract message: " + message);`
```

188. By Ed Marquez#6403 in the Token Service Channel on 07/17/2022

<https://docs.hedera.com/guides/docs/sdks/tokens/custom-token-fees>

<https://docs.hedera.com/guides/docs/sdks/cryptocurrency/transfer-cryptocurrency>

<https://docs.hedera.com/guides/docs/hedera-api/cryptocurrency-accounts/cryptotransfer>

<https://docs.hedera.com/guides/docs/hedera-api/token-service/customfees>

<https://github.com/hashgraph/hedera-sdk-js/tree/main/src/token>

@Topachi, included a few links in docs relevant to the specific topic you mentioned, in case you haven't gone through those.

The last one I added is a link to the source files in the JS SDK. I'd suggest checking the files for fees and for tokenNftTransfer for details.

189. By Supremax67#5749 in the Token Service Channel on 07/16/2022

I see. I am not a developer, best I can do is general guidance. I do know everything you need is in the Hedera docs. However, you can wait for Monday as most Hedera devs not on during the weekend.

190. By Topachi#0454 in the Token Service Channel on 07/16/2022

Is there more documentation about sending NFTs(with fallback) from a non-treasury account to any other account? How did you guys set the structure for that? @Greg Scullard @Ed Marquez @Justin Atwell

191. By Wallie#1061 in the Developer General Channel on 07/14/2022

hi, how much is the staking rewards from staking HBAR? based on this doc it seems like no reward is given out yet <https://docs.hedera.com/guides/core-concepts/staking>

If so , then what is the incentive of staking rather than just holding it ?

192. By ReV#3781 in the Developer General Channel on 07/13/2022

Greetings all. We have a token on a Layer 2 right now - but we're extremely frustrated with one aspect of it, which is being required to go through some unseen group of people on -----scan just to get a logo updated, which completely contradicts the intent. Thus we are investigating for another option that doesn't have this requirement and lets us independently serve.

And so, we come to Hedera.

We've reviewed all documentation but can't find a source for one basic question:

****How do you update the token's logo?****

193. By iMagic#5916 in the Javascript Channel on 07/12/2022

Howdy! First time working with the hedera sdk within javascript. Following some of the examples on the official documentation however, im bumping into some issues.

This is my code:

<https://i.imgur.com/wqdjPRy.png>

And this is the error im bumping into

```\n

```
const transactionId = await new CryptoTransferTransaction()\n ^
```

```
TypeError: CryptoTransferTransaction is not a constructor\n at main (./test.js:46:33)\n at Object.<anonymous> (./test.js:56:1)\n at Module._compile (node:internal/modules/cjs/loader:1105:14)\n at Module._extensions..js (node:internal/modules/cjs/loader:1159:10)\n at Module.load (node:internal/modules/cjs/loader:981:32)\n at Module._load (node:internal/modules/cjs/loader:827:12)\n at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:77:12)\n at node:internal/main/run_main_module:17:47
```

Node.js v18.3.0  
` ``

Im guessing the examples on the site are outdated? Does anyone know if within the documentation `CryptoTransferTransaction` was replaced with something else? Thanks in advance for the help

**194. By juul#9144 in the Javascript Channel on 07/11/2022**

I am now using your video tutorial (great vid btw) and I notice you basically self reference to generate keys in the const block, I don't see any renaming of my\_account\_id as there is in the generate an account doc

**195. By juul#9144 in the Javascript Channel on 07/11/2022**

in my env I have

MY\_ACCOUNT\_ID = 47636669

MY\_PRIVATE\_KEY = (obviously not going to put it here)

as it's from when I followed the documentation to set up my environment

**196. By juul#9144 in the Javascript Channel on 07/11/2022**

hello, when I run the code straight from the documentation for 'create and transfer your first NFT' I get this:

```
C:\Users\work\Documents\code\hello-hedera-js-
sdk\node_modules\@hashgraph\sdk\lib\EntityIdHelper.cjs:183
 throw new Error(`failed to parse entity id: ${text}`);
 ^
```

Error: failed to parse entity id: undefined

```
 at Object.fromStringSplitter (C:\Users\work\Documents\code\hello-
hedera-js-sdk\node_modules\@hashgraph\sdk\lib\EntityIdHelper.cjs:183:11)
 at Function.fromString (C:\Users\work\Documents\code\hello-
hedera-js-sdk\node_modules\@hashgraph\sdk\lib\account\AccountId.cjs:83:30)
 at Object.<anonymous>
(C:\Users\work\Documents\code\hello-hedera-js-sdk\nftest.js:17:30)
 at Module._compile (node:internal/modules/cjs/loader:1105:14)
 at Object.Module._extensions..js (node:internal/modules/cjs/loader:1159:10)
 at Module.load (node:internal/modules/cjs/loader:981:32)
 at Function.Module._load (node:internal/modules/cjs/loader:822:12)
 at Function.executeUserEntryPoint
[as runMain] (node:internal/modules/run_main:77:12)
 at node:internal/main/run_main_module:17:47
```

reinstalled node and my environment and still getting this issue

I believe it's an error with Hedera, as on another pc the issue persists

this issue happens when I try

to run the NFT creation code from the documentation as well as from the youtube video

**197. By Veripare (TaylorWarden)#2986 in the Developer General Channel on 07/10/2022**

Will someone please help me with a link? I understand that there is a provenance system

and some tangibles tracking documentation to read? Can someone please point me in the right direction? I'm on a wireless so I'm having troubles with reading the docs as my eyesight is poor and I lack the proper prescription glasses.

**198. By harishharidas93#7601 in the Token Service Channel on 07/09/2022**

Hi, is there any doc which completely explains the signing scenario. I have seen different series of signs for the same operation like create token. I have inferred docs and hts token demo. Been stuck at this for a while now.

**199. By Francesco Coacci#2822 in the Token Service Channel on 07/08/2022**

Hey! To check if a token is already associated with an account you can do a Mirror Node API call so you don't have associated fees. For KYC status instead you have to use a `TokenInfoQuery` or an `AccountInfoQuery` (as there's no defaultKycStatus field in token info schema of mirror node api call) and check the defaultKycStatus, check out Default KYC Status in this docs pages (tokenRelationships for Account Infos):  
<https://docs.hedera.com/guides/docs/sdks/tokens/get-token-info>  
<https://docs.hedera.com/guides/docs/sdks/cryptocurrency/get-account-info>

**200. By Ed Marquez#6403 in the Javascript Channel on 07/07/2022**

Yes, you can. I'd suggest looking at the docs in their GitHub, but here's a sample to get you started. This is using the `.once` event listener:

```
`walletData.pairingEvent.once((pairingData) => {
 pairingData.accountIds.forEach((id) => {
 console.log('- Paired account id: ${id}');
 });
});`
```

**201. By Tomachi Anura#8370 in the Javascript Channel on 07/07/2022**

i'm going through docs but it's not very clear

**202. By Frank\_#0089 in the Developer General Channel on 07/03/2022**

what language is used to develop on hedera? is it solidity? and where are tutorials and documentation

**203. By samuelnihou#9657 in the Token Service Channel on 07/03/2022**

Check out the Hashpack hashconnect npm docs

**204. By AndyF#2240 in the Smart Contracts Channel on 06/30/2022**

Fixed the json-rpc-relay by forcing the docker container to install the lerna package. Still no joy on deploying non trivial contracts. The problem is now in the .execute after having uploaded the chunks.

**205. By Francesco Coacci#2822 in the Token Service Channel on 06/29/2022**

Yes, so there was a typo in the docs that has been removed a couple of days ago, the problem here is that you need to remove the squared brackets from your CID variable so you'll have something like this: `CID = "QmPdEScDCLgqeLRgZXNfbcxNGCPnhumRHmgb2Q4j11UjSx" `

**206. By samuelnihou#9657 in the Token Service Channel on 06/29/2022**

@Francesco Coacci,It's copy pasted from the docs:

**207. By AndyF#2240 in the Smart Contracts Channel on 06/29/2022**

took down everything and reinstalled WSL 2 ubuntu 20, docker, docker compose re imported using your blog entry (got caught out by the http:// again) fixed that ran sudo docker-compose up -d and still have an unhealthy json-rpc-relay but the mirror-node-importer is now healthy

**208. By samuelnihou#9657 in the Token Service Channel on 06/29/2022**

I cannot access the sample NFT metadata provided in the docs:

**209. By Ed Marquez#6403 in the Javascript Channel on 06/28/2022**

Hey @AdrianMsM91 {KBL} - HBAR is the native currency, thus it doesn't have a token ID like other HTS tokens.

I've noticed this question comes up when people are trying to send/receive hbar via contracts.

If that's the case for you, consider this example (We're actively working on including this in the docs and making article/video tutorials for this):

- Solidity: [https://github.com/ed-marquez/quick-contract-examples/blob/master/9\\_transferHbarFromContract.sol](https://github.com/ed-marquez/quick-contract-examples/blob/master/9_transferHbarFromContract.sol)

- JS: [https://github.com/ed-marquez/quick-contract-examples/blob/master/9\\_transferHbarFromContract.js](https://github.com/ed-marquez/quick-contract-examples/blob/master/9_transferHbarFromContract.js)

**210. By Lt Ramen#6172 in the Smart Contracts Channel on 06/28/2022**

Please run a docker logs <docker containerId of mirror node importer> to get a better look at the error

**211. By AndyF#2240 in the Smart Contracts Channel on 06/28/2022**

I have reverted to developing on eth at the moment but I will try and get a screenshot. The unhealthy docker containers just comes from downloading and deploying to a windows docker desktop

**212. By Damian Lluch#8585 in the Smart Contracts Channel on 06/27/2022**

Hi! I am trying to split the contract into several parts, as I have seen in the Hedera documentation, but due to a size issue it does not allow me to upload the file in one go.

I am trying to create an empty file, and then using the function FileAppendTransaction() but I get this message that I am not sure what to do...

The example I followed is this:

<https://docs.hedera.com/guides/docs/sdks/file-storage/create-a-file>

(node:51567) UnhandledPromiseRejectionWarning: Error: Contents with size 33350 too long for 10 chunks

Thanks

**213. By nube#7126 in the Developer General Channel on 06/26/2022**

the guide in the docs is pretty good, goes through getting set up, a few example transactions etc. <https://docs.hedera.com/guides/getting-started/introduction>

**214. By cryptoNate97 {064}#9466 in the Smart Contracts Channel on 06/26/2022**

Were you able to figure this out friend? Running into the same problem with the solidity phone number contract example in the Hedera docs

**215. By AlexTaylor#3551 in the Token Service Channel on 06/26/2022**

Here are some notes I shared a while back to try make sense of it all myself. Feel free to comment on doc especially if anything is off <https://docs.google.com/document/d/1dRsojU6OD651XS9AoiQ3BLnfETAYpRD3RWhlf2KKXaY/edit?usp=drivesdk>

**216. By WraithX#0001 in the Token Service Channel on 06/26/2022**

I think they could be very useful in certain circumstances. I'm already thinking of some NFT games that would utilise them. I just think there's a lot of confusion as to what is possible with each key, what they can do and when they should be used. Many are using different terms as well such as 'Burn' keys, which represent different things, from wiping a serial number to deleting an token completely. They don't realise what they want to achieve could be done with just the supply key in certain circumstances etc so just add all keys.

Is there a summary / comparison page anywhere in the docs? Something listing what each key can do, on one page for quick reference in a table or something? It could be useful to clear things up. Probably easier than it sounds to do that?

**217. By AndyF#2240 in the Smart Contracts Channel on 06/25/2022**

followed your blog post etc. Tried to set up using hardhat but hit issues of invalid signature, probably not helped by the 'unhealthy' markers on the docker containers

**218. By nube#7126 in the Developer General Channel on 06/25/2022**

iirc, you're able to update the key pair corresponding to an account ID? Anyone have the docs page for it?

**219. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

> sign with the private key of the account that is being wiped should then be sign with the private key of fee payer account kinda thing

agreed! I think I have permissions to edit that doc, will check now

**220. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

I wish I had time to improve everything

ah yikes, that was an example from the SDK docs?

**221. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

can you please improve the docs accordingly?

**222. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

updates are needed on the docs, cause we tried several time without success at all

**223. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

can't recall about NFT, and docs.hedera.com looks like down right now

**224. By WraithX#0001 in the Token Service Channel on 06/24/2022**

Which from the documentation I didn't believe to be true.

**225. By Damian Lluch#8585 in the Javascript Channel on 06/24/2022**

Hi, does anyone have the Hedera configuration for the Truffle configuration file? I have not found it in their documentation.

Thanks

**226. By Tomachi Anura#8370 in the Javascript Channel on 06/24/2022**

i wasn't able to find any document explaining in details how the architecture is built behind the scenes, so any one able to point out a link or some more infos would be truly appreciated

**227. By Damian Lluch#8585 in the Smart Contracts Channel on 06/24/2022**

Hi, does anyone have the Hedera configuration for the Truffle configuration file? I have not found it in their documentation.

Thanks

**228. By nube#7126 in the Developer General Channel on 06/23/2022**

Hey everyone! Hope you're all having a wonderful Thursday, or Friday!

We've just launched the testnet version of SaucerSwap DEX, built on Hedera, it would be great if you could try it out, and provide any feedback, either bugs or improvements which we could do.

The testnet dex can be found at <<https://public-preview.saucerswap.finance>>

We also have a bug bounty scheme!

Bugs will be classified by our info-sec expert vae.vecturne.hackerman into the following categories:

- 250 SAUCE - Informational (spelling mistakes, etc.)
- 2,500 SAUCE - Minor
- 15,000 SAUCE - Medium
- 75,000 SAUCE - Major
- 250,000 SAUCE - Critical

Each bug must be submitted individually. The first user to report a valid bug will be rewarded with the appropriate amount of SAUCE. If a bug has already been documented by another user, it will not qualify for a SAUCE reward.

Bugs can be submitted here: <<https://forms.gle/vhG66MKVBGj9ZL9t5>>

**229. By cryptoNate97 {064}#9466 in the Javascript Channel on 06/23/2022**

Hello all, so I am looking to get account balances (both hedera and token balances).. I see

that the get account balance query is free of charge.. does the same apply to get account token balance query? It says in the docs to check the query fees table but wasn't sure since it is technically the same thing as get account balance, just fetching tokens instead of hbar balance... thanks

**230. By Greg Scullard#5365 in the Consensus Service Channel on 06/22/2022**

same endpoint for docs is coming up ok for me: <https://testnet.mirrornode.hedera.com/api/v1/docs/>

**231. By Francesco Coacci#2822 in the Javascript Channel on 06/22/2022**

Hi, if you want to execute a transaction you should setup a client. You can setup a testnet client like this: ``const client = Client.forTestnet()`. Then you need to setup an operator (who pays for your transactions) by creating a .env file in your working directory and insert the credentials of your testnet account that you can get here: https://portal.hedera.com/register, if you want to know how to setup your environment check this doc page: https://docs.hedera.com/guides/getting-started/environment-set-up`

Note that once you have an operator, if you want, you can create other account using `AccountCreateTransaction()` and by specifying a private key as parameter. You can generate a Private Key like this: ``const newAccountKey = PrivateKey.generateED25519()`. See here: https://docs.hedera.com/guides/docs/sdks/keys/generate-a-new-key-pair and here: https://docs.hedera.com/guides/docs/sdks/cryptocurrency/create-an-account`

**232. By bugbytes#0817 in the Developer General Channel on 06/22/2022**

Thanks for checking into it, I'm still trying to wrap my head around the purpose of ``spender_id`` vs ``delegated_spender_id``, I thought ``spender_id`` worked for both forms of the call (thought I already tested that), hence my confusion, will wait for doc updates. Thx.

**233. By Greg Scullard#5365 in the Developer General Channel on 06/22/2022**

I've just checked and the documentation is confusing, this is primarily because the ERC721 spec calls for a ``_tokenId`` parameter which isn't a Hedera tokenId (0.0.xxxx). In the context of Hedera, the ``_tokenId`` parameter refers to the serial for the NFT (I'll get the docs updated).

So, you can approve a single NFT ``tokenAddress.approve(gregAddress, 1)`` or approve all your NFTs at once ``tokenAddress.setApproveForAll(gregAddress, true)`` which is more efficient than cycling through each of your NFTs one by one.

It doesn't recursively approve all your tokens to me, only the serials that you happen to own for a given ``tokenAddress``.

**234. By kunalalite#3837 in the Javascript Channel on 06/22/2022**

Can anyone help me resolve this error. I'm trying to create a token on testnet as per the documentation. I'm new to this network and not aware about the key management.

**235. By rynsp8#3537 in the Javascript Channel on 06/20/2022**

I'm looking through the documentation and I'm thinking I saw something about storing



files/data on the network. Isn't this possible? If anyone is on and would kindly drop a link I'd appreciate it.

**236. By cryptorush#9966 in the Smart Contracts Channel on 06/16/2022**

It's now working . I had to pull the main node docker image again. I was using the wrong one which was published earlier.

**237. By reg.cs#2829 in the Smart Contracts Channel on 06/16/2022**

I think, I would go for a NFT in this case, which is minted by the licensor after validating the license document uploaded elsewhere. The NFT could then contain a hash and a URI for the license document and maybe the names of both the licensee and licensor. Furthermore, the license NFT could be transferred to the licensee who would then own this license.

**238. By qingsun#3218 in the Developer General Channel on 06/15/2022**

I want to deploy a local mainnet node to query some transaction information and publish some transactions, what should I do? Is there any relevant documentation? I saw in the official website documentation that the mirror node does not seem to support publishing transactions. Do consensus nodes need permission?

**239. By DPAK#7421 in the Developer General Channel on 06/14/2022**

Hey hbros, have a PR here for correcting a typo in hedera docs <https://github.com/hashgraph/hedera-docs/pull/96>

**240. By Francesco Coacci#2822 in the Token Service Channel on 06/14/2022**

Hey #-token-service just wanna let you know there's a new example in the 'Try Example' section of the docs about Creating and Transferring an NFT using a Solidity Contract, hope this helps!

Here's the link: <https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-an-nft-using-a-solidity-contract>

**241. By Ed Marquez#6403 in the Javascript Channel on 06/14/2022**

These are the doc pages that would help you determine that. If you want to know the gas needed after execution, you can get a receipt for the tx or do a mirror query

<https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees>

<https://docs.hedera.com/guides/mainnet/fees#transaction-and-query-fees>

**\*\*Total Gas (non-Hedera Service transaction) = Intrinsic Gas + EVM Operation Gas\*\***

**\*\*Total Gas (Hedera Service transaction) = Intrinsic Gas + EVM Operation Gas + Hedera Service Gas\*\***

The Hedera Service transaction gas fee is calculated using the USD price of the native Hedera Service transaction multiplied by the gas/USD conversion rate with an additional 20% charge.

**242. By Ed Marquez#6403 in the Token Service Channel on 06/14/2022**

The error has been added to docs.

Looked like an omission for this error. Usually response code info can

be found here ([https://github.com/hashgraph/hedera-protobufs/blob/main/services/response\\_code.proto](https://github.com/hashgraph/hedera-protobufs/blob/main/services/response_code.proto)) and here (<https://docs.hedera.com/guides/docs/hedera-api/miscellaneous/responsecode>)

**243. By nalus#8598 in the Developer General Channel on 06/14/2022**

Hey guys Im trying to create a NFT minting contract and mint a NFT, but I keep getting the MAX\_NFTS\_IN\_PRICE\_REGIME\_HAVE\_BEEN\_MINTED error. I used the same code as explained in the docs (<https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-your-first-nft>).

**244. By teacoat#2092 in the Token Service Channel on 06/13/2022**

yeah this error message should be mentioned in the docs

**245. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

so i am doing by best to:

- 1 - use local nodes as suggested
- 2 - re-formatting my SDK to allow local nodes to be used
- 3 - adapting our engine to run with local nodes
- 4 - regenerating all the topics/files/multisig/accounts/tokens we use for HSuite
- 5 - crashing my head on every wall around me to make this local node docker run on cloud

**246. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

this is not a bug, it's a limitation no one knows about, not mentioned in any docs, was just a very bad surprise man

**247. By Francesco Coacci#2822 in the Javascript Channel on 06/13/2022**

Hi, using Javascript SDK you can get all NFT informations by using the `TokenNftInfoQuery` method and providing an NFT ID. You will get metadata, account ID and other infos

See documentation here: <https://docs.hedera.com/guides/docs/sdks/tokens/get-nft-token-info>

**248. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

can you please more specific? here are plenty of docs out there

**249. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

i ended up by manually change the docker-compose.yaml this way, fully bypassing the env variables, it seems it's working

**250. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

running on OSX, also tried on several linux machines, same docker version, same errors

**251. By reg.cs#2829 in the Token Service Channel on 06/13/2022**

I never tried the local node, since I only have a laptop available which does not fulfill the hardware requirements. But I would suggest that you post some details about the exact steps you performed for installation, your operating system, docker version, etc. so people who installed local nodes can help you

**252. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

i wonder how there can be such an error in the docker-compose.... didn't you guys test it? is it just me facing this issue?

**253. By Tomachi Anura#8370 in the Token Service Channel on 06/13/2022**

basically the entire docker up doesn't work

**254. By Hibchibbler#8069 in the Developer General Channel on 06/12/2022**

Hi!

I have a product that has a bunch of features.

Not all features are free. I would like to sell access to these features by accepting payment of an HTS token.

Are there resources available to me (Ie. consultation, developers, etc..) to help me enable this scenario?

For example; I am a game developer. I am not a web dev, nor a cryptographer.

Most of the documentation is not easy for me to understand, and I am not fluent in javascript.

How can I get help integrating my game with Hedera ecosystem ?

**255. By WW#0305 in the Javascript Channel on 06/12/2022**

The connection is refused for the port 5600 in the docker container for \*Mirror Node GRPC Endpoint\*. Although, it is running properly in the 5600 according to docker

**256. By reg.cs#2829 in the Token Service Channel on 06/11/2022**

And the doc states:

```The mirror node and consensus node test network are scheduled to reset once a quarter starting July 2022. When a testnet reset occurs all account, token, contract, topic, schedule, and file data are wiped```

257. By Michael L#3462 in the Developer General Channel on 06/10/2022

OpenZeppelin Defender now supports Sentinels on Hedera and Hedera Testnet for transaction monitoring and security alerts!

The Sentinel create/edit flow is nearly identical to our other networks. There are a couple considerations specific to Hedera you can find in the Defender docs.

<https://docs.openzeppelin.com/defender/sentinel#hedera-support>

258. By piyush16#5845 in the Javascript Channel on 06/10/2022

Hi Everyone, I tried to have local setup for hedera network(<https://github.com/hashgraph/hedera-local-node>). When i start the docker, after some time i am unable to create any transaction(create account/token/nft) using that. All my queries get stuck. Is someone also facing this issue?

259. By stonecharioteer#7898 in the Developer General Channel on 06/08/2022

Hello all, I'm Vinay from Merkle Science. We're building crypto analytics atop of all blockchains and are trying to onboard Hedera as well. To this end, I'm having some trouble with the mirror node setup. I've followed the documentation to setup the mirror node on GCP (<https://docs.hedera.com/guides/mirrornet/one-click-mirror-node-deployment>), and while I'm able to reach the nodes, I find that there are no transactions in the responses. I get empty payloads that only have

`` ``{"transactions":[],"links":{"next":null}}` ``` in the response. Is there a step that I'm missing?

If this is the wrong channel for this, could you direct me to the right one?

260. By reg.cs#2829 in the Token Service Channel on 06/08/2022

You can use the Hedera token service for this. Just look at the ``TokenCreate`` function in the Hedera doc.

261. By cryptorush#9966 in the Smart Contracts Channel on 06/06/2022

Hello. Is there anyway to use 0.26.2 docker image of Hedera main node, while working with local hedera node. The latest main node image is v0.25.4 on local hedera node repo. <https://github.com/hashgraph/hedera-local-node/blob/b9fb454d1b8291f10dc325b9543825009c59bd45/.env#L7>

But I wanna use this one, to test approval thing of ERC20 interface

<https://console.cloud.google.com/gcr/images/hedera-registry/global/main-network-node@sha256:d443237f3b261873d9745800e4095d6464c46a493795fa7d75e04d87e6f0ca4d/details>

262. By rynsp8#3537 in the Javascript Channel on 06/05/2022

well, for small progress, I was about to run a simple `AccountBalanceQuery()` against my Testnet account and I was able to return back that I indeed have 10000 Hbars in my Testnet account.

I continued on with the tutorial and attempted to create an account and transfer some hbar, which I presume would be funded from my Testnet account, and received an error, `INVALID_TRANSACTION_START`, which according to error documents comes down to timing of my local pc or my internet timing.

Changed and ran it again and received confirmation that an account was indeed created, but then another error, `"TypeError: accountId.clone is not a function"`. It looks like the error is pointing to `setAccountId()`? If I use my Testnet account, I get a returned value, but if I use the `newAccountId`, from the getting-started docs, it throws an error?

263. By noonebutsomeone#8820 in the Developer General Channel on 06/05/2022

Hello is there a demo or a dev document for quorum network with the Hedera plugin ?

264. By rynsp8#3537 in the Javascript Channel on 06/04/2022

Anyone successfully setup a local node? looking at the first few sentences it say that we can set this up by using "the CLI tools or by running Docker" which seems like there is a choice between the two...

I've used the CLI tools and when I run `npx hedera-local start`, I can an error:

Starting the docker containers...

The system cannot find the path specified.

The system cannot find the path specified.

The system cannot find the path specified.

The system cannot find the path specified.

node:events:498

```
throw er; // Unhandled 'error' event
```

so, it seems fairly obvious that I will need Docker, right?

265. By noonebutsomeone#8820 in the Developer General Channel on 06/04/2022

Do u have a document for hedera HCS for quorm network

266. By lebdron#8994 in the Developer General Channel on 06/04/2022

Hi! Is there a way to run local Hedera network without Docker?

267. By Tomachi Anura#8370 in the Javascript Channel on 06/04/2022

Having to setup more dockers and servers on our own cause we can't rely on a solid testnet is just not right

268. By Eli Azev#9456 in the Token Service Channel on 06/03/2022

In the link above you can find examples in js and Java how to get the public key. Sometimes you will face few typos on the docs unfortunately.

269. By Ed Marquez#6403 in the Smart Contracts Channel on 06/03/2022

Plz take a look at the nftManager.sol and deploy.js files here: https://github.com/cisc0f/hedera/tree/main/src/002_nft_hscs_hts for an example of creating and minting an NFT via a contract. We're working to add that example in documentation...

The best practice for NFT metadata is a pointer to a pointer approach, as documented in point 5 of Motivation for this HIP (<https://hips.hedera.com/hip/hip-412>). You'll notice that in the example above, we're just passing the IPFS URI for the JSON metadata that contains info about the asset and another URI that points to the actual asset (image, video, etc)

270. By bugbytes#0817 in the Developer General Channel on 06/03/2022

Yes, *but*, it needs to be setup. I'd suggest looking at the docs on `Alias` functionality. You can send funds to a public key, that will create a new account on the receiving end. For accounts created the normal way, you need to explicitly set an alias (public key) identifier for the account, you can only set it once, and only if its not been used globally elsewhere on the network (IIRC).

271. By rynsp8#3537 in the Javascript Channel on 06/02/2022

This may be a softball question so I'm sure someone can hit it out of the park, but:

Looking through the documentation and examples on Hedera's getting started page, the Environment Set-up suggests we get a Testnet account from the developer portal. Which I've been able to do and have followed the code as suggested on the website with no errors being thrown. So I'm assuming my client has been set correctly to interact with the Testnet.

Following onto the next tutorial of, Create an account, if I already have a Testnet account with a public/private key, why would I need to generate new account private and public keys? They already exist in the .env file.

Why would I need to create a new account if I already have one?

272. By ravilanka#4727 in the Java Channel on 06/02/2022

Hello team, I am new to Hedera Hashgraph and We are trying to use the HTS for building a fungible token on Hedera, I have a set of questions on how to use HTS. The Tech Stack I am using (Spring Boot, PostgreSQL , Hedera Java SDK, Hedera Mirror Node for querying the transactions and, Testnet for playing around with transactions)

Q1. How to associate account id with a Real world user, As I cannot store user name or any other identity in the Hedera Node, So How to identify that a specific account id corresponds to a specific user?

Q2. In one of my use case I need 3 account holders to sign the transaction so that One account can transfer his hbars/tokens from his account to another account, How to achieve it using Multi Sig, as all I have is account Id's of the users and not the private keys. How are the associated signers notified about the transaction? I didn't find any proper documentation around it.

Q3. What is the difference between executing a transaction and freezing a transaction? Can the executed transaction be tampered as it is not frozen?

Q4. While working with HTS, Can we use the same Operator_Key as (Admin Key, Freeze Key, KYC Key and Supply Key) as the Operator is the entity which has all the admin rights to work with the token?

Q5. Is it suggested to store the private key on an external db so that I can get the associated public key to work with HTS? If it is not suggested can you please let me know the suggested approach.

Thanks in advance.

273. By Francesco Coacci#2822 in the Javascript Channel on 06/01/2022

Hi, you can find all the documentation here: <https://docs.hedera.com/guides/docs/sdks> and specifically for Client you can take a look here: <https://docs.hedera.com/guides/docs/sdks/client>

btw `Client.forTestnet()` returns a `NodeClient` that extends a `Client` class. You'll need to set `const client = Client.forTestnet().setOperator(operatorId, operatorKey)` in order to execute transactions using Hedera SDK. The reason why you also need to set an operator using the `.setOperator(...)` extension method is that the operator is responsible for paying transaction fee as you can read here: <https://docs.hedera.com/guides/docs/sdks/client#2.-define-the-operator-account-id-and-private-key>

274. By Ed Marquez#6403 in the Consensus Service Channel on 05/31/2022

You may need to test that to make sure. I haven't tested that myself. However, my guess would be yes. According to docs the order would be backward. The parent executes first and the triggers the child tx, so it would make sense that the child txs never trigger if the parent fails. Again, be sure to double check to be sure :)

275. By rynsp8#3537 in the Javascript Channel on 05/29/2022

@VR and @Nando. I've seen the same thing in VS. I've copied directly from the docs and I get some errors.

276. By reg.cs#2829 in the Token Service Channel on 05/28/2022

I am a bit confused about how atomic swaps can be signed by different participants. If Alice and Bob want to do an atomic swap (e.g., 1 NFT for 100 hBar) and Alice initiates the transaction ... how can bob sign it? The documentation (<https://docs.hedera.com/guides/docs/sdks/tokens/atomic-swaps>) only states that the transaction needs to be signed with both private keys. But Alice does not know Bob's private key. So, how would that work? (without using a scheduled transaction)

277. By reg.cs#2829 in the Token Service Channel on 05/28/2022

According to the documentation this is possible via the `TokenUpdate`: <https://docs.hedera.com/guides/docs/hedera-api/token-service/tokenupdate>

278. By Ed Marquez#6403 in the Smart Contracts Channel on 05/27/2022

@johnda98 I'll create an issue to add a note in the documentation about the limitation of fallback() / receive() not executing when the contract receives HBAR via a crypto transfer. From the engineering side, the last response from the EVM engineer is still the latest info i got

279. By johnda98#4728 in the Smart Contracts Channel on 05/27/2022

never have done.. should be in the docs somewhere;

280. By VR#1587 in the Developer General Channel on 05/25/2022

Yeah part of documentation with requirements and all... Might've been another network though was long time ago

281. By VR#1587 in the Token Service Channel on 05/24/2022

@Greg Scullard did I miss a chapter about ipfs in docs somewhere? Had no info on how to interact with it and use it for nfts

282. By eclectocrat#1567 in the Javascript Channel on 05/23/2022

Hi, I have a question about uploading to HFS (in this case Smart Contract Bytecode): In the docs it looks like you have to run FileAppendTransactions for large files <https://github.com/hashgraph/hedera-sdk-js/blob/3240cd5c1ddef1eab1b796d0a4b44f23c884621f/src/file/FileCreateTransaction.js#L226> I've read on the discord that the total size of a transaction including signing info etc, can't be larger than 6kb so am unsure of recommended block size. Adding to the confusion the file-append-example code <https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/file-append-chunked.js> seems to append something like 13kb of data in one transaction. My current upload code runs a FileAppendTransaction for every 1kb of bytecode I want to upload <https://gitlab.com/eclectocrat/hedera-remix-plugin/-/blob/post-hackathon-cleanup/src/hedera.ts#L93>. Can anyone clarify how to optimally use FileAppendTransaction, what size my data chunks should be, and should I run more than one FileAppendTransaction for each chunk or is a single FileCreateTransaction followed by a single FileAppendTransaction enough? Thanks!

283. By VR#1587 in the Smart Contracts Channel on 05/23/2022

Documentation doesnt really explain how do I mint NFT from SC either

284. By VR#1587 in the Smart Contracts Channel on 05/23/2022

Ah, ok, didn't find any mention in docs, thank you very much

285. By Michael Garber#5033 in the Smart Contracts Channel on 05/23/2022

Hey, this is perfect timing. We have created an issue to add stack overflow links to docs to help promote a single knowledge base of QA <https://github.com/hashgraph/hedera-docs/issues/77>

Participate in the discussion! Your thoughts are extremely valuable

286. By reg.cs#2829 in the Token Service Channel on 05/22/2022

I just followed the "Get started" guide in the hedera docs and everything worked smoothly. So, I would recommend following the full guide: <https://docs.hedera.com/guides/getting-started/introduction>

287. By gap#8880 in the Developer General Channel on 05/22/2022

But as per the docs, we set max transaction fees for `ContractExecuteTransaction()` function only, right?

288. By VR#1587 in the Developer General Channel on 05/21/2022

Very interesting discussion, very on point explanation of security and fairness. I assume it's fine to reference this in some documentation (or white paper like) stuff? Is there a write up of ~speed~ security fairness somewhere?

289. By reg.cs#2829 in the Smart Contracts Channel on 05/21/2022

Hi, I would like to learn more about how a DEX (specifically an orderbook) works in code. Are there any resources somewhere (e.g. simple code snippets, documentation, open-source projects) to look at?

290. By Francesco Coacci#2822 in the Token Service Channel on 05/20/2022

You created a function called `tokenTransfer` in solidity that calls the `HTS.transferToken()`, the arguments of this function are `transferToken(token, sender, receiver, amount)`. It looks like you are using as sender your `toAccountId`. Take a look at this docs: <https://docs.hedera.com/guides/docs/sdks/smart-contracts/hedera-service-solidity-libraries#transfertoken-token-sender-receiver-amount>

291. By Ed Marquez#6403 in the Smart Contracts Channel on 05/19/2022

Yes, the release notes in the documentation show the latest and upcoming releases along with the dates for when each release will be on each network (previewnet, testnet, mainnet). <https://docs.hedera.com/guides/docs/release-notes/services#upcoming-releases>

292. By Ed Marquez#6403 in the Token Service Channel on 05/16/2022

Possible that it's not helpful for your particular use case, but the tutorial does follow the recommended approach listed in point 5 of the motivation for HIP-412: <https://hips.hedera.com/hip/hip-412>

Where you want to use a pointer-to-a-pointer approach. You're more than welcome to hard code a JSON object in that metadata field, but keep in mind the size limitation for both Hedera transactions and metadata field. The documentation does a great job detailing both

293. By Ed Marquez#6403 in the Smart Contracts Channel on 05/16/2022

Try `.freezeWith()` when you create the transaction and before you sign it. See some of the doc examples or blog tutorials.

294. By VR#1587 in the Developer General Channel on 05/16/2022

You should preobably put it in some accompanying docs /materials to your project

295. By Ed Marquez#6403 in the Token Service Channel on 05/16/2022

Hey, Approve and Allowance are live on Mainnet as of Friday May 13. I had been on testnet for a few weeks prior to that. See the release notes for details: <https://docs.hedera.com/guides/docs/release-notes/services#v0.25>

Here are the docs for it: <https://docs.hedera.com/guides/docs/sdks/cryptocurrency/approve-an-allowance>

296. By Ed Marquez#6403 in the Smart Contracts Channel on 05/16/2022

See this response. It links to an external example <https://discord.com/channels/373889138199494658/909532351388864542/968460556900130896>

We'll be adding an example of this in our doc soon as well

297. By nube#7126 in the Developer General Channel on 05/15/2022

why does the release notes part of Hedera docs display still pending on the 0.25 update?

298. By Ed Marquez#6403 in the Smart Contracts Channel on 05/15/2022

One possible route could be to trigger an event when your contract receives tokens. Then you could log the token ID, etc

See this section 3 of this example using hethers js: <https://hedera.com/blog/how-to-use-hethers-js-to-deploy-smart-contracts-on-hedera>, which sets up a filter to pick up when an account sends tokens.

Here's the documentation link for hethers js in case you end up pursuing that route: <https://docs.hedera.com/guides/core-concepts/smart-contracts/hethers>

299. By Ed Marquez#6403 in the Smart Contracts Channel on 05/15/2022

A script for checking receipt of tokens by a contract? I don't think there's a snippet of that in documentation.

300. By VR#1587 in the Smart Contracts Channel on 05/15/2022

ok yeah now that you said it it makes total sense, and is there a snippet somewhere in docs I missed? or is it a classic callback payable if I want to check and then send back some tokens to sender?

301. By bold#5220 in the Smart Contracts Channel on 05/14/2022

Hey I just have some questions regarding a simple smart contract that I put together (I share it below)

- Can I import OZ token templates or is there some kind of ERC20 interface from Hedera that I should import?

- Is there somewhere that I can find existing contract's source code so I can see what methods/functions they have? I specifically want to see the source code for USDC, but can't seem to find that on any of the explorers. In my sample contract I am using transferFrom as I assumed USDC's Hedera smart contract would have that. Now I am

not sure hence why I want to see what functions it has, so I can figure out which function to call to transfer on behalf of another entity.

- I have tried deploying my contract but receive the following error status: `CONTRACT_REVERT_EXECUTED`. I've found the transaction on an explorer but still can't really tell why it's creation is being reverted. Would you have any idea or where I can find some more docs to look into this?

- My expected workflow was this:

- 1) user approves contract for amount by calling `approve` function on token smart contract
->
- 2) user calls `setTransfer` function on smart contract to move tokens into smart contract address ->
- 3) user calls `executeTransfer` function on smart contract to move tokens from smart contract address to user address

If USDC on Hedera doesn't have `approve` and `transferFrom` then I guess my expected workflow won't work. So would I instead have to first do the `delegate transfer ERC` standard you mention above and then can I call the `setTransfer` function and use a `transfer` instead of a `transferFrom` inside the function?

302. By bold#5220 in the Smart Contracts Channel on 05/14/2022

This is the article in docs that I'm referring to btw: <https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>

303. By bold#5220 in the Smart Contracts Channel on 05/14/2022

hi, I was looking through the hedera smart contracts doc, and I see that it mentions `ERC20 approve` and `transferFrom` are not supported operations on Hedera... So does this mean that If I set up a smart contract importing `OpenZeppelin SafeERC20` and try to have it `transferFrom` a `msg.sender` to itself, that it wouldn't work?

304. By csthompson#9365 in the Smart Contracts Channel on 05/14/2022

A great way to test contract reverts to rule out a contract error with bad inputs is to use Ganache/truffle locally for testing. Go through the documentation for setting up ganache and truffle and do some local tests with the smart contract. Once it works as expected, do a contract create on hedera and just use the 'bytecode' property in the json object from the truffle file as the bytecode for the Hedera file service upload for the smart contract. As @Ed Marquez mentioned, you might need to chunk the bytecode out if the smart contract is substantially large

305. By Ed Marquez#6403 in the Smart Contracts Channel on 05/14/2022

See: <https://discord.com/channels/373889138199494658/535491106348072970/934559031576653854> which includes a link to the relevant doc page.

Basically the gas refund is at most 20% of the gas limit (reservation) you specify. The goal there is to incentivize transaction submitters to get within 25% of the actual gas used in order to not be charged for the unused gas reservation.

The ``setQueryPayment`` amount is used entirely because that's an explicit payment

amount you're setting. You can alternatively specify a ceiling for the query payment with `.setMaxQueryPayment()` and the payment will go through for whichever amount necessary as long as its below the limit.

In summary, gas is for EVM computations and query payment in HBAR is to for the non-EVM Hedera resources used.

306. By Ed Marquez#6403 in the Smart Contracts Channel on 05/13/2022

That's correct. For HTS tokens the max supply is something like $2^{64} - 1$. See this previous response for details. <https://discord.com/channels/373889138199494658/909532351388864542/957014848561090610>

It's also detailed in docs for the max supply of a token. That's limit is important because it dictates how many tokens and decimal places your token can have

307. By Ed Marquez#6403 in the Smart Contracts Channel on 05/13/2022

Thanks for the feedback @jaycool !

I plan to make it more visible in doc and accessible to everyone. Will add an example of how to send HBAR from a contract to an account. If you think of other useful examples to add let me know. Or if you have them feel free to share them and we can include them too

308. By JustJam#0807 in the Smart Contracts Channel on 05/12/2022

You sure you have hashconnect set up correctly? That line comes directly from hashconnect docs here: <https://github.com/Hashpack/hashconnect#get-provider>

309. By Topachi#0454 in the Javascript Channel on 05/10/2022

Hey guys! Hope is all well. I cannot find anything on Hedera docs regarding Receiver Signatures. Is it a feature that has been implemented yet? @Justin Atwell @Greg Scullard

310. By Ed Marquez#6403 in the Javascript Channel on 05/10/2022

The best bet would be using Hethers js to decode the error results then. See `interface.decodeErrorResult()` in the Hethers js documentation. <https://docs.hedera.com/hethers/application-programming-interface/utilities/application-binary-interface/interface#decoding-data>

311. By johnda98#4728 in the Smart Contracts Channel on 05/10/2022

It will function just fine .. IF you remove `function() public payable { deposit();`

`};` ... and you should put in notes in the source that humanoids should'nt send hbar to the contractID via a Transfer (wallet) call. check hedera docs.. payable fallback(as above) and Receive() do not 'execute' on hbar send in, ok. the Hbar will show up but `msg.sender` and `msg.value` will not reflect and thus your contract will not know from whom the funds came from and how much.

<https://etherscan.io/address/0xc02aaa39b223fe8d0a0e5c4f27ead9083c756cc2#code>

312. By jokertrader#3541 in the Consensus Service Channel on 05/10/2022

hello all not sure if this is the right place but trying to get fungible token transactions out of Dragonglass.. and cannot seem to find easily in the docs... does anyone know if there is a way or another explorer.. where we can take out all transactions for our fungible token based on our account and then we can use that to filter by user wallet account? - thanks

313. By WW#0305 in the Smart Contracts Channel on 05/09/2022

@Ed Marquez do you know if there are any Oracles with its Smart Contract node deployed in Hedera? Chainlink mentioned that it will deploy it in Hedera, but I could not find any information in their documentation about Hedera. I checked other Oracles like API3, but they are not in Hedera as of yet

314. By Ed Marquez#6403 in the Token Service Channel on 05/09/2022

`Accounts that were created via AccountCreateTransaction() can't sign certain transactions.` I don't think that's accurate. As far as I know, the only difference between accounts created `__through the portal__` and `__through the SDK__` is the automatic re-supply of 10k daily test HBAR (only portal-create accounts get the resupply).

I would suggest double checking the Transaction Signing Requirements section for each tx in the doc:

<https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token#:~:text=Transaction%20Signing%20Requirements>

In this case, the treasury, the admin, and fee payer have to sign.

315. By Ed Marquez#6403 in the Smart Contracts Channel on 05/09/2022

It worked for me :)

Just in case you want to get more info or try other events and filters, I'd suggest looking at the hethers.js doc here: <https://docs.hedera.com/hethers/application-programming-interface/contract-interaction/example-erc-20-contract#events-inherited-from-contract>

316. By Ed Marquez#6403 in the Smart Contracts Channel on 05/09/2022

There is a response from yesterday pointing to an example using TokenCreate precompile.

There's a note in the response about payment needed. In addition, you have to specify the expiration time OR auto renew account + auto renew period.

A tutorial and more docs on this are coming soon

317. By WW#0305 in the Smart Contracts Channel on 05/08/2022

Thank you for your good intentions to help. I already went through the documentation of how to create a smart contract. What I have is a specific roadblock about how to call/query a topic (<https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>) from within a Smart Contract deployed in Hedera?

318. By Tomachi Anura#8370 in the Smart Contracts Channel on 05/08/2022

even if doesn't have to do with the contract, it clearly means the treasury MUST sign the contract txn from a centralized backend... unless you go with approval or you use the contract as a wallet/treasury itself, am i right?

i'm just curious about detailed mechanism of smart contract, cause from the docs and tutorials looks very centralized still.

319. By Ed Marquez#6403 in the Smart Contracts Channel on 05/08/2022

You can transfer an HTS token via a contract in a few ways:

- using ERC standard functions. I would suggest checking the relevant

doc page (search for Supported ERC Standards). Here's an example using the delegateTransfer function https://github.com/ed-marquez/quick-contract-examples/blob/master/5_1_HIP218_FungibleTok.js

- using the HTS precompile. Here's an example <https://github.com/ed-marquez/hedera-example-contract-mint-associate-transfer-hts>

To troubleshoot contract reverts that involve HTS, get the tx record and .setIncludeChildren(true). Or do a mirror mode query for the tx id. It may give you more details on why the revert happened.

320. By Ed Marquez#6403 in the Smart Contracts Channel on 05/08/2022

<https://docs.hedera.com/guides/getting-started/try-examples>. This documentation page has examples to help get started, including transferring HBAR

321. By eclecticocrat#1567 in the Javascript Channel on 05/07/2022

I followed the docs and initially got a `PrecheckStatusError: transaction 0.0.391754@1651946838.561720934 failed precheck with status KEY_REQUIRED` So I tried freezing and signing the transaction but to no avail.

322. By eclecticocrat#1567 in the Javascript Channel on 05/07/2022

Hi I'm trying to create accounts on testnet using the documentation as a guide. (<https://docs.hedera.com/guides/docs/sdks/cryptocurrency/create-an-account>)

323. By SpaceBeard#5550 in the Developer General Channel on 05/06/2022

is there some doc im missing that succinctly describes the HBAR data structure, if so i have thus far failed to find it

324. By Ed Marquez#6403 in the Developer General Channel on 05/05/2022

Could look at the proto: https://github.com/hashgraph/hedera-protobufs/blob/main/services/crypto_add_live_hash.proto

Looking at the note in the doc page you shared, looks like it's not supported. Adding @simihunjan for confirmation or more info

325. By Ed Marquez#6403 in the Smart Contracts Channel on 05/05/2022

Examples 5_1 and 5_2 here (<https://github.com/ed-marquez/quick-contract-examples>) show how you can use those functions with HTS tokens in your smart contract for FT and NFTs. As the doc shows, there's only a small subset of functions that are not supported

326. By Alcacer10#4609 in the Token Service Channel on 05/04/2022

I saw documentary saying elephants have big heads yet they are afraid from mice while a mouse that have little head brains still can get out of traps amazing info!

327. By johnda98#4728 in the Token Service Channel on 05/04/2022

without going to the docs.. anyone.. @Alcacer10 whats the upper limit to total supply for a HTS FT ? what primitive the stack use ? I see wETH on Ethereum now holds 17Billion\$ worth of ETH .. begs the question whats the upper limit on a solidity EVMs unit256 ?
2**256

328. By Ed Marquez#6403 in the Javascript Channel on 05/03/2022

Yep! glad you were able to solve the issue. The documentation does a pretty good job listing the signing requirements for different transactions. In this case, the treasury and admin have to sign more here: <https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token>

329. By datproto | HashGuild #2765 in the Token Service Channel on 05/02/2022

Hey hey, hope you are doing great! During a token sending operations of ours, we keep receiving the error that the ACCOUNT_ID_DOES_NOT_EXIST. However, checking dragonglass, the ACCOUNT_ID indeed does exist and I cannot find any documentation on that error thrown. Any ideas what is the reason for that?

<https://testnet.dragonglass.me/transactions/00265597581651527968955855056>

330. By Ed Marquez#6403 in the Javascript Channel on 05/02/2022

Yes you could try multiple accounts via the portal. You can also create a key and or an account via the SDK (not replenished daily tho). it's possible that the issue is caused by not having the correct signatures for some of the txs. Be sure to check docs for signature requirements

331. By jaycool#5616 in the Smart Contracts Channel on 05/01/2022

Im getting ''' StatusError: receipt for transaction 0.0.0@1651410450.301793047 contained error status CONTRACT_REVERT_EXECUTED ''' when I try to call the smart contract in the docs. Has anyone encountered this problem before?

332. By vae.vecturne#3448 in the Smart Contracts Channel on 04/28/2022

i'm following the documentation for hethers but hitting a typing issue with getDefaultProvider in TypeScript. It's returning a BaseProvider and hethers.Wallet cannot be instantiated with that type.

```
```
```

```
Argument of type 'BaseProvider' is not assignable to parameter of type 'Provider'.
```

```
```
```

as well as

```
```
```

```
Argument of type 'HederaProvider' is not assignable to parameter of type 'Provider'.
```

```
```
```

Is there another way to do it?

333. By numaf.eth#8361 in the Javascript Channel on 04/28/2022

Hi guys! I am trying to get an Nft metadata, but I cant. I was released before HIP-17 so it is a FUNGIBLE_COMMON token with 0 decimals. This is the token seen from the mirror node: <https://mainnet-public.mirrornode.hedera.com/api/v1/tokens/0.0.257894/>

My question is, is there any way to see its metadata? Are there any docs I can read about this?

334. By kjwook#6746 in the Javascript Channel on 04/27/2022

@Ed Marquez Yeah I saw that docu. But I don't know what should I do fix that my issue.

335. By cryptorush#9966 in the Smart Contracts Channel on 04/26/2022

It looks like HTS already supports `numberOfAutomaticAssociations`, but I can't find how to use it from HTS doc.

<https://hips.hedera.com/hip/hip-23>

336. By Ed Marquez#6403 in the Javascript Channel on 04/26/2022

Best way is the mirror node API. Here's the documentation for that: <https://docs.hedera.com/guides/docs/mirror-node-api/rest-api#transaction-by-transaction-id>

Here's an article that shows how to perform those queries: <https://hedera.com/blog/how-to-look-up-transaction-history-on-hedera-using-mirror-nodes-back-to-the-basics>

337. By numaf.eth#8361 in the Javascript Channel on 04/26/2022

thanks Greg! is there any doc I can read to find out how to query those systems?

338. By AD1312#8261 in the Smart Contracts Channel on 04/26/2022

Can you please provide the documentation for hbar transfer using smartcontract (if available)?

339. By nigelthecreator#6071 in the Smart Contracts Channel on 04/25/2022

Found the answer: according to docs it's in tinybar

340. By Supremax67#5749 in the Developer General Channel on 04/23/2022

That's Chainlink labs, not Chainlink the crypto. You might be reading the wrong documentation.

341. By lapuerta#3769 in the Developer General Channel on 04/23/2022

yeah I saw that but it not live right? can't see anything about hedera in the chainlink documentation

342. By Ed Marquez#6403 in the Developer General Channel on 04/22/2022

Looks like it's not supported atm, or at least not documented here (<https://docs.hedera.com/guides/docs/mirror-node-api/rest-api>) or in the Swagger UI.

Could be a good enhancement suggestion (<https://github.com/hashgraph/hedera-mirror-node/issues>) if there's a compelling use case behind it.

343. By vic.a#4499 in the Smart Contracts Channel on 04/22/2022

give it a try. currently, `block.difficulty` is set to 0 so you can take that out. Also, I think that `block.timestamp` might reflect the timestamp of the record-file housing the transaction (which, if you have 2 such calls with the same `number` provided and same `msg.sender`, you might get the same return result). There is a HIP coming that further addresses this: <https://deploy-preview-415--hedera-hips.netlify.app/hip/hip-415> and also do check the docs for the currently supported solidity variables and opcodes: <https://docs.hedera.com/guides/core-concepts/smart-contracts/solidity-variables-and-opcodes>

344. By Ed Marquez#6403 in the Token Service Channel on 04/21/2022

In case anyone is interested, @here is a quick JS example that:

- mints NFTs with the Hedera Token Service
- uses the ****NFT Storage**** API for storing the metadata and image (you will need an API

key and their SDK - see their docs: <https://nft.storage/docs/>)

- provides links to the IPFS URIs and to the mirror node queries for the new NFT

An article and/or video will likely follow in the future. In the meantime, you can read more about updates to the metadata standard in HIP-412 (<https://hips.hedera.com/hip/hip-412>)

345. By Ed Marquez#6403 in the Javascript Channel on 04/19/2022

This seems like a bug, given that that's how it works in previous versions of the SDK and I don't see anything documented about breaking changing related to Scheduled TxS. I see that this issue is already open: <https://github.com/hashgraph/hedera-sdk-js/issues/1085>
Thanks for opening that. The team will take a closer look and go from there.

346. By johnda98#4728 in the Smart Contracts Channel on 04/19/2022

doesn't execute payable/receive fallback if you send hbar to ContractID.. and no msg.data.. block.timestamp gives consensus reach time.. otherwise it's not bad.. it's up with the latest solc & EVM releases - in the Hedera docs.

347. By Master Oogway | HeadStarter#8757 in the Developer General Channel on 04/19/2022

I don't believe there is currently any wallet being developed by Hedera. There used to be, so maybe this is old documentation.

Either way, I'm quite sure it's up to ledger to add HTS token support

348. By Eli Azev#9456 in the Consensus Service Channel on 04/18/2022

I requested the Address Book in testnet and worked fine, nevertheless in mainnet the message "Insufficient Payer Balance" appeared. But I can not find in the doc about Address Book fee

349. By vic.a#4499 in the Smart Contracts Channel on 04/13/2022

guys, we just released our **Hedera Strato Js 0.7.4** (<https://hsj-docs.buidlerlabs.com/markdown/changelog>) with a lot of cool stuff (including browser hip-338 support with a nice docs `Wallet` page to play-with it directly in your browser ... zero config ... : <https://hsj-docs.buidlerlabs.com/markdown/guides/wallet> -- using HashPack, but of course). If you want to give it a try, you don't need to install anything ... it's wired to work in your browser on `testnet`: <https://hsj-docs.buidlerlabs.com/> . Looking forward to your feedback (good or bad)! Happy building!

350. By gehrig#7214 in the Javascript Channel on 04/13/2022

This confused me, too. You need to set `.setSupplyType(TokenSupplyType.Finite)`, which defaults to infinite. A little unintuitive and we'll make it clearer in the docs, thanks.

351. By Ed Marquez#6403 in the Javascript Channel on 04/12/2022

Np! I don't think there's a generator app like the porta. You would have to do it programmatically as shown in the doc and example above. Hope that helps

352. By Ed Marquez#6403 in the Javascript Channel on 04/12/2022

Here's the doc for how to generate an ECDSA key: <https://docs.hedera.com/guides/docs/sdks/keys/generate-a-new-key-pair>

Here's an example for how to generate an account from a private key:
<https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/create-account.js>

353. By Ed Marquez#6403 in the Token Service Channel on 04/12/2022

that's strange... Check out this post: <https://discord.com/channels/373889138199494658/909532351388864542/957014848561090610>
(and this doc link: <https://docs.hedera.com/guides/docs/hedera-api/token-service/tokencreate>)

The supply and decimals of a token are basically capped by the $2^{63}-1$ limit you see in the doc... I don't know how that token got 1000 decimals
will check with team

354. By littletarzan#5253 in the Smart Contracts Channel on 04/09/2022

Are there plans from Hedera to whitelist ContractExecuteTransaction for scheduled transactions? From the docs:
` ``

A schedulable transaction. Note that the global/dynamic system property `scheduling.whitelist` controls which transaction types may be scheduled. In Hedera Services 0.13.0, it will include only `CryptoTransfer` and `ConsensusSubmitMessage` functions.
` ``

I'm looking to inherit Ownable from OpenZeppelin and owner be multisig account

355. By Spidey#3033 in the Javascript Channel on 04/09/2022

Hey everyone? Has anyone done Hedera integration with NEXT js? Can I see some sample or documentation to get started there or I have to build the boilerplate from Scratch?

I would like to use NEXT middleware to setup and talk to Hedera microservices and use Frontend to perform operations via Hedera JS client

356. By theobviater#1970 in the Smart Contracts Channel on 04/08/2022

The docs for Hethers seems to imply they do not: <https://docs.hedera.com/hethers/getting-started#read-only-methods>

357. By 00Dante#6670 in the Token Service Channel on 04/08/2022

Speaking of scheduled transaction; according to the docs right now those are limited to a 30min lifespan.

Is that just the default or is there some way we could renew the scheduled transaction or pay more in fees for its life span to be months or years?

358. By shubi#9407 in the Javascript Channel on 04/08/2022

On a side note, may I ask why the use of so many namespaces? This is an ES6 module. The use of namespaces within ES6 modules is generally not recommended (see the official docs: <https://www.typescriptlang.org/docs/handbook/namespaces-and-modules.html#needless-namespacing>).

359. By AdrianMsM91 {KBL}#9999 in the Token Service Channel on 04/07/2022

What is auto renew period?? Im a bit lost, I didnt see any documentation about this

360. By Tomachi Anura#8370 in the Javascript Channel on 04/07/2022

basically, hedera docs says HFS can have threshold key, but if i try to set it, it returns:
`Error: Cannot set threshold key as file key`

361. By Xaski_Malaxaski#0465 in the Token Service Channel on 04/07/2022

Hey! We have a startup where we make DEX based on Hedera. I need help finding information on auto renew and token operations. 1) How does this function work with tokens? How does this function work with the tokens that we mint? 2) What is the fee for renewal of the token? 3) How is the token removed? What happens to it when removed? There is no information on these issues on the official website with documentation. Help me please)

362. By louweal#6604 in the Smart Contracts Channel on 04/07/2022

@blinkdaffer @Greg Scullard @Supremax67 thanks for your replies, I'll look into creating new accounts using the SDK (I found the documentation here <https://docs.hedera.com/guides/getting-started/create-an-account>)

363. By Ed Marquez#6403 in the Token Service Channel on 04/07/2022

Hi Justin, welcome! When thins are documented, that usually means they're available on mainnet (or at least testnet, which precedes mainnet by about 2 weeks). Another good indicator is the hip dashboard (<https://hips.hedera.com/all.html>). Those are separated by status, and Final ****usually**** means implemented. Finally, release notes (<https://docs.hedera.com/guides/docs/release-notes/services>) can also give you a good idea and history of what's available in mainnet/testnet/previewnet and when

364. By Justin Thai#1024 in the Developer General Channel on 04/07/2022

Hi, I'm new to this forum and hedera so apologies if i've come to the wrong place to ask. Can anyone advise where i should go to check if a particular HIP eg. HIP-24 is available on mainnet? I see TokenPause/TokenUnpause are both documented in the online API doco but wasn't sure if that means it's definitely available in maintnet.

365. By Justin Thai#1024 in the Token Service Channel on 04/06/2022

Hi, I'm new to this forum and hedera so apologies if i've come to the wrong place to ask. Can anyone advise where i should go to check if a particular HIP eg. HIP-24 is available on mainnet? I see TokenPause/TokenUnpause are both documented in the online API doco but wasn't sure if that means it's definitely available in maintnet.

366. By Eli Azev#9456 in the Developer General Channel on 04/05/2022

Hello mates, is it possible to recover the mnemonics from the private key? On hedera docs I just found the opposite.

367. By RodDaSilva#3988 in the Smart Contracts Channel on 04/05/2022

Are Hedera Smart contracts thread safe? Imagine I have a smart contract that needs to perform multiple account crypto/token transfers. For example 100 such transfers. Since 100 exceeds the Hedera limit for how many accounts can be affected by a single transaction (10 as per the docs) I am forced to update these accounts by issuing transactions in sets of 10. My problem is I want a serializable isolation level for the transaction (to use an ATOMIC database term). That is "I want all 100 get affected or none do" semantic. I am pretty sure that if I have a problem between my 5th and 6th

(of 10) multi transfer call and abort (revert) the smart contract there will be no change of state in the Hashgraph - i.e.; that Smart Contracts are ATOMIC. However, I am more interested in what happens when the Smart Contract is invoked by multiple clients (each wanting to cause 100 arbitrary transfers) at the same time. My question is whether or not the Smart Contract allows multiple clients to call it at the same time, or whether it will automatically serialize these calls to one at a time. If I am understanding how this works - I would assume the Hedera consensus algorithm will serialize the requests to run the smart contract such that only one instance will run at a time, but I want to be sure of that assumption. Thanks.

368. By Ed Marquez#6403 in the Smart Contracts Channel on 04/04/2022

@littletarzan @Bart, @bugbytes , @Matt Smithies @johnda98, you folks are active in this channel, so here's a rough repo (<https://github.com/ed-marquez/quick-contract-examples>) with a few smart contract examples. This repo will be cleaned up and referenced somewhere in docs at some point...

It has examples like:

- transferring HTS tokens to contracts (explicitly with addresses or via keywords like `***msg***` and `***this***`)
- transferring HBAR to contracts (via fallback function or with `.setPayableAmount`)
- working hip-218
- setting a contract as `**treasury acct**`, `**supply key**` for a token, etc
(The goal is just to show some of the mechanics)

@johnda98 , to your point, example 7 shows how to have an `**immutable contract**` be the `**treasury**` and `**supply key**` for `**immutable HTS token**` and how to have that contract mint directly to a user while receiving payments in HBAR. Contracts atm can't create tokens or be the adminKey for a token, but that will be coming soon. And the current operations, will get easier too as we iron out kinks...

@Si Chen glad to hear it worked! Hopefully some of those examples are helpful

369. By johnda98#4728 in the Smart Contracts Channel on 04/04/2022

@Nour <https://testnet.dragonglass.me/hedera/tokens/0.0.2276691> and for mainnet 0.0.456858 my company already.. maybe one of the first, only few weeks ago is now KYC/AML cleared with a new Circle Account for USDC(hedera) - tested associate and send on mainnet between hh accounts that are associated. Circle Docs on their sandbox were updated and works with the testnet usdc hts

370. By Ed Marquez#6403 in the Smart Contracts Channel on 04/01/2022

Hi #-smart-contracts channel.

- v0.24 went live on the Testnet yesterday and it introduces a `**new level of interoperability with native Hedera Token Service (HTS) tokens via HIP-218**`
- Basically, the Hedera EVM now exposes HTS fungible tokens as an ERC-20 and HTS non-fungible token as ERC-721
- That means you can do some token operations directly from a contract (like lookup token name, symbol, etc)

Resources

- v0.24 release notes: <https://docs.hedera.com/guides/docs/release-notes/services#v0.24>
- Docs for supported operations: <https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>

****Here's a simplified example.****

If you deploy this contract (<https://github.com/hashgraph/hedera-services/blob/master/test-clients/src/main/resource/contract/solidity/ERC20Contract.sol>) and create an HTS fungible token, then you can call any of those contract functions with some code like:

```
` // Execute HIP-218 functions using ContractExecuteTransaction()
const contractExecTx = new ContractExecuteTransaction()
    .setContractId(contractId)
    .setGas(3000000)
    .setFunction("name", new
ContractFunctionParameters().addAddress(tokenAddressSol));
const contractExecSubmit = await contractExecTx.execute(client);
const contractExecRec = await contractExecSubmit.getRecord(client);

const txRec = await new TransactionRecordQuery()
    .setTransactionId(contractExecRec.transactionId)
    .setIncludeChildren(true)
    .execute(client);

// console.log(
//   - Token name with ContractExecute: $
{txRec.children[0].contractFunctionResult.bytes.toString()}
// );
`
```

371. By Ed Marquez#6403 in the Consensus Service Channel on 03/30/2022

No. The statement about no payment/vote is incorrect.

Here's the SDK documentation for the submitting a topic (which is where CONSENSUSSUBMITMESSAGE comes from)

<https://docs.hedera.com/guides/docs/sdks/consensus/submit-a-message>

There you will find that those are messages submitted for consensus by actual user applications.

Here's the information about the fees associated with the

ConsensusSubmitMessage API (\$0.0001): <https://docs.hedera.com/guides/mainnet/fees#:~:text=ConsensusSubmitMessage>

372. By gehrig#7214 in the Consensus Service Channel on 03/30/2022

A portion of that added time is in the current iteration of beta mirror nodes, the transactions achieve consensus first _then_ get sent to the mirror nodes. A full version, that receives gossip messages directly, is actively being developed. This is not to suggest that they'll be exactly matching. This is called out in the core concepts docs here - <https://docs.hedera.com/guides/core-concepts/mirror-nodes>

373. By teacoat#2092 in the Smart Contracts Channel on 03/29/2022

i understand it now, but i just thought the documentation was missing for that call, i would suggest keeping the docs and the sdk's in line

374. By teacoat#2092 in the Smart Contracts Channel on 03/29/2022

i think the docs are missing contractExecute?

375. By CryptoChelios#1147 in the Developer General Channel on 03/29/2022

The docs are well written, here is the link to the tutorial part of them. Otherwise, they break each concept down to sections and reviews the full code at the at the end. <https://docs.hedera.com/guides/resources/tutorials>

376. By Greg Scullard#5365 in the Java Channel on 03/28/2022

@Maorvelous feel free to share the errors here so we can update the docs.

377. By closet_nerdd#7371 in the Smart Contracts Channel on 03/27/2022

According to the docs, in order to associate an account with a token, you need the account key

378. By jokertrader#3541 in the Smart Contracts Channel on 03/26/2022

where in the docs is the best place to start

379. By shubi#9407 in the Developer General Channel on 03/26/2022

Bringing this back. Could you explain a bit how to view the transactions for this `fileID` on mirror node? The account with that number appears empty and I couldn't find any endpoint for `fileID` in the docs. Thank you @Greg Scullard

380. By littletarzan#5253 in the Smart Contracts Channel on 03/25/2022

the good ole docs

381. By Ed Marquez#6403 in the Token Service Channel on 03/25/2022

You're right!! I forgot that it was added in v0.52 of the mirror node. Thanks for checking and bringing it up.

(for those curious, here's an example of using this new endpoint to get the NFTs owned by an account <https://testnet.mirrornode.hedera.com/api/v1/accounts/0.0.2520793/nfts/>)

I created this issue in the docs repo for tracking <https://github.com/hashgraph/hedera-docs/issues/70>

382. By shubi#9407 in the Token Service Channel on 03/25/2022

Thank you. It looks like the endpoint `accounts/{accountID}/nfts/` that was proposed in that HIP is now active on Mainnet. It would be nice if the REST API documentation could be updated to include this. At the moment it's not in the documentation.

<https://docs.hedera.com/guides/docs/mirror-node-api/rest-api>

383. By Ed Marquez#6403 in the Token Service Channel on 03/24/2022

Hey @jaycool glad you're having fun with the JS SDK!

As usual, the documentation is the best guide to understand who needs to sign specific transactions. As an example, this page (<https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token>) about `TokenMintTransaction()` has a section on transaction

signing requirements. That information is documented for each tx module in the SDK.

For the second part of your question, the treasury account of a token receives the initial supply of the token upon creation and any other tokens minted/burned after token creation (more details here). The Treasury must sign the token creation because they have to authorize that they'll be receiving the newly created tokens.

You don't want users being the treasury of a token without knowing about it or without authorizing it. Thus the treasury signing requirement.

Your understanding of the client is correct. The client interacts with the Hedera network (sends/receives txs, confirmations, queries, etc. and pays the corresponding network fees). When you use `.execute(client)` the client automatically signs that transaction or query regardless of being free or paid and then submits it to the network - that is documented here <https://docs.hedera.com/guides/docs/sdks/transactions/submit-a-transaction>.

384. By Ed Marquez#6403 in the Smart Contracts Channel on 03/24/2022

Hi @bobaT, you're right that a common cause for that issue is the clock settings. On a similar note, here (https://github.com/hashgraph/hedera-protobufs/blob/main/services/response_code.proto) the error list shows that TRANSACTION_EXPIRED happens when `TransactionValidStart + transactionValidDuration` is less than current consensus time`

- Have you tried setting the `setTransactionValidDuration` to the max value? (<https://docs.hedera.com/guides/docs/sdks/transactions/modify-transaction-fields>) that doc page shows that the default is 120 sec, may wanna try the max of 180 sec

- If that doesn't work, It's possible that it could be an issue with the SDK. Btw, which version of the SDK are you using? In that case, I'd suggest opening an issue in the SDK repo and providing the repro steps so the team can investigate further (<https://github.com/hashgraph/hedera-sdk-js/issues>)

385. By Maorvelous#1906 in the Java Channel on 03/22/2022

Hello there I am checking the code in the Hedera docs for creating account and interacting with API in java, Can you tell me if the docs are updated ?

386. By miron#7369 in the Smart Contracts Channel on 03/21/2022

Hi everyone, in documentation about ContractCallQuery there is a text which says that this query is cheaper than normal call. "This is useful for calling getter functions, which purely read the state and don't change it. It is faster and cheaper than a normal call, because it is purely local to a single node.". Isn't it free? I have displayed account balance before and after ContractCallQuery transaction and account's balance didn't change.

387. By Niranjana#9304 in the Developer General Channel on 03/20/2022

Hello guys, I am new to hedera and have few questions..as much as I have gone through the documentation I understand that hedera is public ledger. I am not sure, if I push any data on it, and either want to maintain it on my own nodes or keep the data private from everyone, how that can be achieved?

388. By misterrpink1#4587 in the Smart Contracts Channel on 03/18/2022

Hi all I need an Oracle on Hedera; I looked around the docs and didn't find anything. However, there was an article here about Chainlink integration with Hedera: <https://medium.com/hedera/smart-contract-oracles-on-the-hedera-platform-84ab99592383>

How do you guys handle need to access external data on Hedera?

389. By lostao#7915 in the Smart Contracts Channel on 03/16/2022

If so, any docs available?

390. By Greg Scullard#5365 in the Javascript Channel on 03/14/2022

while (Justin and I) are looking into your issue, how do you propose the same SDK can be used on testnet and mainnet when testnet has new features which are being tested before rolling out to mainnet ?

That's a mistake in the docs, testnet is usually updated 2 weeks prior to deployment on mainnet to enable testing of new features (and regression testing of existing apps).

391. By ramon22#1743 in the Smart Contracts Channel on 03/11/2022

I read documents and what I understood is contacts and accounts can expire and be deleted cause the "blockchain" is Rent based ok how much does rent cost ? and accounts deleted with their public address registered on a smart contract will lose access to any resource assigned to them example an NFT. Gas and fees just to query a contract a view method that is pure ok how much does it cost give at-least a range also a cost range for transactions that change state on the contracts. Thank you

392. By littletarzan#5253 in the Smart Contracts Channel on 03/10/2022

i am on testnet and found the chainId to be 298, not 296 as written on the docs. Or am I misunderstanding testnet vs development network? <https://docs.hedera.com/guides/core-concepts/smart-contracts/solidity-variables-and-opcodes>

393. By simihunjan#3005 in the Developer General Channel on 03/10/2022

That was the very first attempt at having a docs site for Hedera few years ago now that is no longer maintained. docs.hedera.com is the one being maintained.

394. By shubi#9407 in the Developer General Channel on 03/10/2022

Quoting (no link in mobile):

"How do I use `TransactionRecordQuery` to get the actual record of a past transaction? It seems that `execute(client)` in the docs examples executes the transaction itself and thus returns `DUPLICATE_TRANSACTION`"

395. By Bart#1307 in the Developer General Channel on 03/10/2022

Oh ok, I thought I was on the latest docs version, I don't see an option to change or has the docs just not been updated?

396. By Bart#1307 in the Developer General Channel on 03/10/2022

It does according to the sdk docs?

https://hashgraph.github.io/hedera-sdk-js/classes/_transactionid_transactionid.html

<https://github.com/hashgraph/hedera-sdk-js/blob/b7903b8c/src/TransactionId.ts>

397. By Bart#1307 in the Smart Contracts Channel on 03/07/2022

It's in the Hedera docs and is priced in \$

398. By teacoat#2092 in the Smart Contracts Channel on 03/06/2022

could someone explain to me how to convert gas into hbar, the docs are a bit confusing

399. By wheresLINA (Hedera)#0936 in the Developer General Channel on 03/06/2022

Thanks for pointing this out and letting us know. Will share this feedback with our docs team

400. By shubi#9407 in the Developer General Channel on 03/05/2022

THANK YOU SO MUCH! I was able to get the data. A few words in the API documentation would have helped (and saved me a lot of time and frustration).

401. By bugbytes#0817 in the Developer General Channel on 03/05/2022

Sorry, while possible, this is not easy. I'm not sure which sdk you are using, but assuming it is the js sdk, you may need to do something like the following: Decode the base64 into a Buffer/Int8Array, then use the proper class from `@hashgraph/proto` to convert the bodybytes into a "Protobuf" Transaction Body object (which I think may be a `SchedulableTransactionBody` but I've not done this myself), at which point, you may have enough of a structure to pull out the info you need, or you can use `@hashgraph/sdk`'s object's `_fromProtobuf` methods to re-construct to something that might be more familiar.

In short, you're delving into a need to understand the protobuf structures and may have to reference some gRPC google docs as well.

402. By johnda98#4728 in the Token Service Channel on 03/05/2022

Noooooooo.. You'll see that USDC on many chains - mostly as on-protocol tokens(in this case USDC is implemented at a HTS -yes a in-protocol token), USDC from Circle.com which has relationship with Treasury favored Bank GSachs or JPM.. they have to maintain a Fiat currency balance to total supply circulating.. lic. money xfer service domestically, basically. Its a FT on HTS that has backend calls to it from Circle.com Accounts - allowing crosschain value xfers in Fiat terms. Be sure though to Associate a Hedera mainnet account with the USDC TokenID BEFORE you transfer any REAL USDC from a Circle Account or exchange(that has calls to USDC(hedera)). I had Circle update their Docs in their sandbox - that hits the Testnet USDC TokenID to ensure Associates exist with any wallet addresses to that TokenID.

403. By shubi#9407 in the Javascript Channel on 03/02/2022

It would be great if the Rest API documentation could include all response codes. Not just success response code.

404. By shubi#9407 in the Javascript Channel on 03/01/2022

Glad it worked! The documentation is missing the signature with 4 parameters. I actually mentioned this here a while back but it has not been changed.

Still interesting why your initial approach didn't work.

405. By shubi#9407 in the Developer General Channel on 02/25/2022

`addNftTransfer(<nftId, sender, receiver)` is missing a closing `>` in the docs. Also the docs are missing the 4 parameter variation with serial number parameter.
<https://docs.hedera.com/guides/docs/sdks/tokens/transfer-tokens>

406. By AdrianMsM91 {KBL}#9999 in the Developer General Channel on 02/24/2022

Which values should I put in `**env**` in each var? I don't see that specified in any documentation and I'm a bit lost.

407. By cambaz#6941 in the Developer General Channel on 02/24/2022

Hey, I've been looking into HIP17 and my goal is to create an NFT with fractional ownership because we are trying to make a royalties system. In the specs Hybrid Tokens are recommended but not documented. Any suggestions for this kind of use case?

408. By SethV#8086 in the Java Channel on 02/23/2022

Like..not sure if that is related to scheduled transactions (I couldn't find anything in the hedera documentation or sdk)

409. By johnda98#4728 in the Token Service Channel on 02/22/2022

guys, USDC HTS on testnet and their sandbox now working well with Hedera Account associated with that HTS token.. circle.com is updating their documentation to ensure Associations are made before API calls to xfer USDC. Should be one of the first on the planet to get KYC/AMLd with Circle for USDC on Hedera !.. unless anyone knows anyone apart from Circle's dev team who has gone beyond the Sandbox with mainnet.

410. By chovin#8648 in the Developer General Channel on 02/21/2022

Hi all, Is it currently possible for anyone who meets requirements to start a node? Any documentation available besides the requirements as shows on hedera.com? Thanks in advance.

411. By Deleted User#0000 in the Developer General Channel on 02/17/2022

any complete docs, tutorial or demo for the did-sdk-js??

412. By Balaji#8880 in the Javascript Channel on 02/17/2022

```
`const sendHbar = await new TransferTransaction()
  .addHbarTransfer(myAccountId, Hbar.fromTinybars(-1000)) //Sending account
  .addHbarTransfer(newAccountId, Hbar.fromTinybars(1000)) //Receiving account
  .execute(client);`
```

i'm using this function to transfer hbar and in document there mentioned sending account id is enough for processing the transaction but i'm getting invalid signature and

please reply me

413. By Greg Scullard#5365 in the Token Service Channel on 02/15/2022

I think the docs list the signature requirements

414. By johnda98#4728 in the Token Service Channel on 02/14/2022

@Ed Marquez @Rocket Cool... done a maybe the first ever USDC xfer, via java sdk call, from Account to Account .. their sandbox finally works - but I suggested to Circle's team Documentation details on Token Assoc calls needed and xfers to accommodate for their 6 dec places. <https://testnet.dragonglass.me/hedera/tokens/0.0.2276691>

415. By shubi#9407 in the Javascript Channel on 02/14/2022

In the SDK docs: ``addNftTransfer`` is missing the parameter list with serial as second

parameter (only has the three parameters version)
<https://docs.hedera.com/guides/docs/sdks/tokens/transfer-tokens>

416. By Patex#6412 in the Developer General Channel on 02/13/2022

Do mirror nodes keep track of all transactions performed on the network or are old entries get dropped at some point in time? According to the documents they want to distribute it in order for each node not having to contain an entire log of everything, but has something like this already been implemented? Besides running our own mirror node, will we be able to count on the fact that HCS messages will be available indefinitely?

417. By Bart#1307 in the Smart Contracts Channel on 02/13/2022

Chainlink VRF is the best I know, however I don't think Chainlink supports Hedera at this point, you could probably use `block.timestamp` which is random if it's the consensus timestamp by 2/3 of the network measured in nanoseconds(which is random enough as far as I'm concerned), however if you're accessing it in contract I believe its accurate to the second(the dev docs don't specify) limiting its range to 3 since TTF is ~3s

418. By shubi#9407 in the Javascript Channel on 02/13/2022

How do I use `TransactionRecordQuery` to get the actual record of a past transaction? It seems that `execute(client)` in the docs examples executes the transaction itself and thus returns `DUPLICATE_TRANSACTION`

419. By shubi#9407 in the Javascript Channel on 02/12/2022

Found a typo in the SDK Docs. Search "Recordt" to find it. <https://docs.hedera.com/guides/docs/sdks/transactions/get-a-transaction-record>

420. By shubi#9407 in the Javascript Channel on 02/11/2022

I think the inline documentation comments of `AccountCreateTransaction.setKey()` might be a bit ambiguous. They do not say which key should be set. From the context I assume it should be the public key, but it might be helpful to explicitly say so in the docs.

```
AccountCreateTransaction.setKey(key: Key): AccountCreateTransaction
Set the key for this account.
```

```
This is the key that must sign each transfer out of the account.
```

421. By 0xSroka#6172 in the Token Service Channel on 02/11/2022

Hey guys, I'm going through the docs and there's no method to set or update token's Pause key. Am I missing something?

<https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token>

422. By Ed Marquez#6403 in the Javascript Channel on 02/10/2022

Hey, this is great! We appreciate and welcome community contributions. Two ways to contribute to documentation:

- Log an issue

----You may submit an issue directly on hedera-docs repository (<https://github.com/hashgraph/hedera-docs>)

-Create a pull request

---Fork the repository and submit a pull request that includes the suggested updates

=====

Same with the SDK. You can log issues for each SDK in the issues section. Here's the link to the issues of the JS SDK, for example: <https://github.com/hashgraph/hedera-sdk-js/issues>

423. By Patex#6412 in the Javascript Channel on 02/09/2022

Hello everyone,

where would be the most suited way to discuss / propose changes to the sdk - documentation?

I am currently reading through the docs the first time and this usually is a good opportunity to write everything down which is not immediately clear to a fresh pair of eyes.

Github pull request? This discord?

424. By Peach-Flavored Snark#4014 in the Token Service Channel on 02/09/2022

Silly question, how does one mint 10 NFTs per call? I looked into the documentation and saw that **amount** is reserved for fungible tokens only, so I'm just a bit puzzled on how you can mint more than one token

is it that the size of the list in the setMetadata method corresponds with the # of nfts minted? i.e: a list of size 10 set as the Metadata will mint 10 nfts?

425. By Gene#7475 in the Developer General Channel on 02/08/2022

Is there any type of app out there built with Hedera thats for signing documents?

426. By Nilesh#2361 in the Token Service Channel on 02/08/2022

I followed given code in docs.

427. By Nilesh#2361 in the Token Service Channel on 02/08/2022

Hello all,

I am new to Hedera Blockchain. I am working on NFT marketplace project based on Hedera Hashgraph.

For this marketplace, I want to import end user's existing wallet (like hashpack) through their wallets private key. I have used Hedera docs method to import existing keys. <https://docs.hedera.com/guides/docs/sdks/keys/import-an-existing-key>

But while using this method I got error viz, "TypeError: PublicKey.fromStringED25519 is not a function". I have installed @Hashgraph/SDK module successfully. But I am unable to install ed25519 module from npm.

Can anybody help me with a proper guideline to import user's existing wallet in node.js asap?

Below is my code from Hedera docs -

```
//Converts a private key string to PrivateKey
const privateKey = PrivateKey.fromStringED25519("302e02010.....");
```

```
//The public key associated with the private key  
const publicKey = PublicKey.fromStringED25519("302e02010.....");
```

428. By Nilesh#2361 in the Javascript Channel on 02/08/2022

Hello all,

I am new to Hedera Blockchain. I am working on NFT marketplace project based on Hedera Hashgraph.

For this marketplace, I want to import end users existing wallet through their wallets private key. I have used Hedera docs method to import existing keys.

<https://docs.hedera.com/guides/docs/sdks/keys/import-an-existing-key> But while using this method I got error viz, "TypeError: PublicKey.fromStringED25519 is not a function"

Can anybody help me with a proper guideline to import user's existing wallet in node.js asap?

Below is my code from Hedera docs -

```
//Converts a private key string to PrivateKey  
const privateKey = PrivateKey.fromStringED25519("302e02010.....");  
  
//The public key associated with the private key  
const publicKey = PublicKey.fromStringED25519("302e02010.....");
```

429. By Nilesh#2361 in the Developer General Channel on 02/08/2022

its not my private key. its demo key given on Hedera docs.

430. By Nilesh#2361 in the Developer General Channel on 02/08/2022

these keys are given on Hedera docs as a guideline. These are not real keys.

431. By twist522#4105 in the Token Service Channel on 02/08/2022

Hi, everyone - noob conceptual question: what is the idea behind "associate" operation? I sort of guess that this might be to have a control of permission of a given token to a given user, but I wonder as I haven't found a clear explanation in the docs.

432. By shubi#9407 in the Developer General Channel on 02/07/2022

It would be nice to have the API Docs go into more details and have more explanations and examples.

433. By shubi#9407 in the Token Service Channel on 02/05/2022

Is there a way to get an assessment of the custom fees for sending a token, before actually sending it? Or should one just calculate it manually?

I see AssesedCustomFee in the API Docs but it is not entirely clear to me how it is used (and it seems like it relates to past transactions).

434. By Ed Marquez#6403 in the Token Service Channel on 02/04/2022

plz use `***.setSerials([<serialsNumsHere>])***` that one works fine. I believe addSerial may have been deprecated but I'm checking with the team and we'll update docs once we confirm

435. By jazzysam#1476 in the Token Service Channel on 02/04/2022

A question related to Fees - The fee documentation lists the fee for 'TokenMint (fungible)' as \$0.001.....Is this fee dependant on the number of tokens being minted?...e.g. if I want to mint 500 Tokens of the same type vs minting 1000 Tokens of the same type, will the fee be different? Is the fee charged per Token or the whole number of Tokens?

436. By Bart#1307 in the Smart Contracts Channel on 02/04/2022

Does anyone know how I can get the return value from the `**TransactionReceipt**` of a state modifying function executed using `**ContractExecuteTransaction**`? From the sdk docs it appears that it's only possible to get the return value from `**ContractFunctionResult**` which is returned when executing a query via `**ContractCallQuery**`

437. By Ed Marquez#6403 in the Developer General Channel on 02/03/2022

Dear #-developer-general,
The mainnet upgrade to v0.22 has been completed successfully!
That means smart contracts 2.0 is now live!

Here are a few highlights from this release:

- Solidity integration with native HTS tokens
- Network EVM capacity increased to 15M gas-per-second
- Gas limit per `ContractCreate` or `ContractCall` raised to 4M

See all the details in the release notes (<https://docs.hedera.com/guides/docs/release-notes/services#v0.22>). And remember, reading documentation is usually a good idea (<https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees>).

Can't wait to see what cool things you all build!

438. By jaycool#5616 in the Token Service Channel on 02/02/2022

I am trying to mint some NFTs on the mainnet... have a few accounts with Atomic Wallet to be my 'client', 'alice' and 'bob' etc. However, I remember reading in the documents something along the lines that Atomic Wallet doesn't give you developer keys. Will i be able to perform all the necessary functionality with these wallets or will i have to use another wallet? Thanks

439. By Bart#1307 in the Smart Contracts Channel on 02/02/2022

Is this covered in the docs?

440. By Ed Marquez#6403 in the Smart Contracts Channel on 02/01/2022

@Bart, from the same doc page: <https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees>

"In order `**to prevent over-reservation of the smart contract services**`, the gas credited back relative to the reservation will be limited to at most 20% of the reservation amount... This will `**incentivize transaction submitters to get within 25% of the actual gas used**` in order to not be charged for the unused gas reservation."

This enables "...allowing each transaction to consume large amounts of gas without concern for an extreme surge."

441. By Bart#1307 in the Smart Contracts Channel on 02/01/2022

I just came across an explanation in the docs, but it doesn't really explain why 20%, why not a maximum refund of say 40%?

442. By Ed Marquez#6403 in the Developer General Channel on 02/01/2022

Dear #-developer-general,

<https://www.youtube.com/watch?v=0tOckxCyRR8> Here are the Engineering Insights from January covering a couple of important v0.21 updates:

******- Auto-account creation: ******Great for wallet providers! Auto-account creation lets a new user receive h via a CryptoTransfer without having already created an 0.0.X id on the network (hint: alias).

******- Support for ECDSA keys: ****** By supporting these keys, migrating a dApp to Hedera is easier than ever. Anywhere an ED25519 key can be used in the Hedera API, it is now possible to substitute an ECDSA(secp256k1) key.

See more details in the video, documentation, and release notes <https://docs.hedera.com/guides/docs/release-notes/services#v0.21.0>

Stay tuned for updates on v0.22 coming very soon!

443. By Ed Marquez#6403 in the Developer General Channel on 01/28/2022

I'll do a check with the team to see how that's gonna play with the HIP.

You also may have found a doc bug, cause I don't think those conversions from decimal to hex are right

444. By bugbytes#0817 in the Developer General Channel on 01/28/2022

I was checking out some solidity docs, will `block.chainid` be consistent in the future?

445. By Ed Marquez#6403 in the Smart Contracts Channel on 01/27/2022

@johnsonb-oci couple of options here:

1) You can use ethers.js or web3.js with the Hedera SDKs to parse event logs, either from transaction records or mirror node api results. So, to get event data in a readable fashion you would use the contract's ABI, log data, and ethers/web.js.

Here's some sample JS code using ethers.js and mirror node (can do something similar with info from the tx record):

```
> async function getEventsFromMirror(contractId) {
>   const url = `https://testnet.mirrornode.hedera.com/api/v1/contracts/${contractId.toString()}/results/logs?order=asc`;
>
>   axios.get(url)
>     .then(function (response) {
>       const jsonResponse = response.data;
>
>       jsonResponse.logs.forEach(log => {
>         // create an object to specify log parsing requirements
>         let logRequest = {};
>         logRequest.data = log.data;
>         logRequest.topics = log.topics;
```

```
> // parse the logs
> let event = abiInterface.parseLog(logRequest);
> // output the from address and message stored in the event
> console.log(`Mirror event(s): from '${$
{AccountId.fromSolidityAddress(event.args.from).toString()}' update to '$
{event.args.message}'`);
> });
> })
> .catch(function (err) {
>   console.error(err);
> });
> }
```

2) Get the logs and events directly from a mirror node (<https://hips.hedera.com/hip/hip-226> and <https://hips.hedera.com/hip/hip-227>) and use your own library, if applicable. Probably the first option makes more sense for most folks.

We'll look at coming up with some more doc, examples, or articles showing this in the near future.

446. By Ed Marquez#6403 in the Smart Contracts Channel on 01/27/2022

that's a good question. I couldn't find much in docs. Checking with the team...

447. By nube#7126 in the Developer General Channel on 01/26/2022

WELCOME TO THE FUTURE

Our website is live!

<https://www.saucerswap.space/>

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- ✓ Roadmap
- ✓ Docs
- ✓ Countdown
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Buckle up and enjoy the ride

448. By Greg Scullard#5365 in the Javascript Channel on 01/25/2022

The exchange rate is in a file (0.0.112 from memory but could be wrong), the file contains binary data that comes from a protobuf message which is documented in our GitHub. https://github.com/hashgraph/hedera-protobufs/blob/main/services/exchange_rate.proto

449. By Jondog#9572 in the Javascript Channel on 01/24/2022

One more question related to this - I'm trying to update a token's memo - it's a fungible token but it's not updating the memo field.....I don't see a reference to setTokenMemo

in the SDK docs so I'm wondering if I'm trying to do something that can't be done.....can you update the memo for a Fungible token via the SDK?

450. By Greg Scullard#5365 in the Javascript Channel on 01/24/2022

@FelixTheWhale as far as I know, you can't unset a key once it's been set, you can change it, but not remove it.

From the docs "If no value is given for a field, that field is left unchanged.", <https://docs.hedera.com/guides/docs/sdks/tokens/update-a-token>
Setting a value to null is equivalent to it not being set.

451. By Jondog#9572 in the Javascript Channel on 01/24/2022

Good morning - I'm trying to get the tokenType using TokenInfoQuery() but for some reason the execute command fails, my script stops running and I don't get the tokenType but doesn't present an error I'm using the same approach in the docs

```
const token_info = new TokenInfoQuery()  
.setTokenId(tokenId);  
tokenType = (await token_info.execute(client)).tokenType;
```

452. By TotiToti#9160 in the Developer General Channel on 01/24/2022

Check on the website of hedera. Is written on the tokenomics doc the release

453. By Melki#2830 in the Developer General Channel on 01/23/2022

Hi Ed, I personally know the doc but I was thinking of something that looks a bit less serious like moralis learning path, codecademy, ...

454. By Patches | TMCC CEO#0001 in the Consensus Service Channel on 01/23/2022

Fastest consensus, highly scalable system, great dev documentation, great SDKs and support js development, huge opportunity for growth in the space, accessible dev help, great community

455. By Ed Marquez#6403 in the Developer General Channel on 01/23/2022

Hi welcome! You can start with the info

from this <https://help.hedera.com/hc/en-us/articles/4409801903633-How-do-I-start-developing-on-the-Hedera-network-Do-I-need-a-mainnet-account-to-start-#breadcrumb>

The documentation also has good examples for all services to help you start. <https://docs.hedera.com/guides/getting-started/try-examples> I like the idea of a learning roadmap!

In addition if you search the chat history, Waylon and I have developer office hours where we can discuss topics like this.

456. By Ed Marquez#6403 in the Java Channel on 01/22/2022

<https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#gas-reservation-and-unused-gas-refund>

just FYI, keep in mind that the gas returned will be limited to at most

20% of the gas limit amount (reservation). I linked the docs on gas and fees for reference

457. By Ed Marquez#6403 in the Javascript Channel on 01/21/2022

@NikiHax, Check this page: <https://docs.hedera.com/guides/docs/sdks/tokens/transfer-tokens>

That blog may have been from v1 of the SDK. Try using the `TransferTransaction()` module instead and follow the docs for more details on how to use it

458. By Ed Marquez#6403 in the Developer General Channel on 01/20/2022

Dear #-developer-general ! **Testnet has been upgraded to v0.22.1 successfully.**

Here are a few resources:

- Release notes: <https://docs.hedera.com/guides/docs/release-notes/services#v0.22>
- Core Concepts Documentation on Smart Contracts: <https://docs.hedera.com/guides/core-concepts/smart-contracts/hyperledger-besu-evm>
- Documentation on Integrating Hedera Services (like HTS) with Smart Contracts: <https://docs.hedera.com/guides/docs/sdks/smart-contracts/hedera-service-solidity-libraries>
- Deploy a Contract Using the Hedera Token Service: <https://docs.hedera.com/guides/getting-started/try-examples/deploy-a-contract-using-the-hedera-token-service>

Please share your feedback and experience as you read and code with these new resources. Have fun!

459. By aaima_725#1570 in the Developer General Channel on 01/15/2022

Hi, I was just wondering if there is any documentation around writing policies from scratch? Thanks in advance!

460. By teacoat#2092 in the Smart Contracts Channel on 01/13/2022

any idea when the docs for the smart contract stuff be updated? <https://docs.hedera.com/guides/docs/hedera-api/smart-contracts>

461. By Greg Scullard#5365 in the Javascript Channel on 01/12/2022

@Harsh Vardhan Bahree there is no way to know if an accountId (address) is valid (other than whether it's known to Hedera or not) from the address digits alone. So, it possible to transfer to 0.0.26574578 instead of 0.0.26574575 by mistake (typo).

We recently introduced a checksum which adds a few letters to an an account id such that it can be validated against the network on which the accountId exists, for example

For example: 0.0.12344 on testnet resolves to 0.0.12344-ztpck, whereas on mainnet it resolves to: 0.0.12344-dmqow. This would mean that attempting to transfer to the first accountId+checksum on mainnet would fail since the checksum doesn't match.

Equally 0.0.12345 resolves to 0.0.12345-lwnwn on mainnet, so someone mistyping 0.0.12345-dmqow would see an error since the checksum doesn't match that account id on mainnet.

Checksums are fully supported by the SDKs and are documented here: <https://hips.hedera.com/hip/hip-15>

462. By datproto | HashGuild #2765 in the Developer General Channel on 01/05/2022

Just run into error "INVALID_TREASURY_ACCOUNT_FOR_TOKEN" - to double check: Is this correctly documented here? <https://docs.hedera.com/guides/docs/sdks/tokens/errors> -INVALID_TOKEN_INITIAL_SUPPLY as well as INVALID_TREASURY_ACCOUNT_FOR_TOKEN are describing "Invalid token initial supply"?

463. By datproto | HashGuild #2765 in the Developer General Channel on 01/05/2022

Checked with the documentation as well, PrivateKey e.g. should work for sure: <https://docs.hedera.com/guides/docs/sdks/keys/import-an-existing-key> - however no clue with it is not

464. By daniil#5984 in the Developer General Channel on 01/05/2022

Hey guys, looking for advice as an aspiring hedera dev. DLTs are the future and I want to have a job in that future. What's my starting point?

I'm an amateur level web developer, probably within 3-6months of self learning to get a Jr Front End job. Far from knowldgeable but I know enough to have learned how to learn.

My question is, where do you start learning hedera? I can't even come up with a smallproject that would realistically use hedera and that I could build myself, to learn the basics. Im super down to contribute to open source and dive deep, but I need a starter path that's a little more guidance than just docs. When I read docs I at least know what problem I'm solving lol.

I hold 50% of my assets in hbar and I really trust the future and understand the technology at a high level. I want to double down on my investment and get a job in hedera once the Blue chips are hiring devs with the specialized knowledge. I'm all down for bank jobs - implementing a solution that I wholeheartedly believe is the future. But right now I don't even know where to start. Where would you recommend I go first?

465. By Greg Scullard#5365 in the Java Channel on 01/04/2022

Hi @johnda98 according to docs, `The maximum file size is 1,024 kB. ` (<https://docs.hedera.com/guides/docs/sdks/file-storage/create-a-file>)

466. By 0xJepsen#5735 in the Javascript Channel on 01/03/2022

Mentioning @Simi Hunjan as she manages documentation

467. By TikZ#3753 in the Developer General Channel on 01/02/2022

This internal detail is not important to you u can just download the SDK for langauge of ur choice (if exits) and then follow docs.hedera.com

Linux & Windows, any recommendation on what to use to code on for better support in the future? Is it even relevant? For example I just see windows terminal commands in the environment set-up documentation, no Linux. And lastly: Do you maybe know about someone who might have already programmed a tool for this purpose?

2. By TheSorcerer#7771 in the Javascript Channel on 12/16/2021

Good day everybody!

I encountered an issue when creating a token.

when i do something like `(X * (10 ** token.decimals))`

with a decimal number different than 0 at the token creation, it gives me an error as if the number is too big. However according to the docs the number should be just fine.

Any thoughts?

3. By Greg Scullard#5365 in the Smart Contracts Channel on 12/16/2021

You'd need to check the dragonglass developer docs (<https://app.dragonglass.me/hedera/apiview> and <https://app.dragonglass.me/hedera/subscriptionview>), join their discord <https://discord.gg/QznmXmGA> (link valid for 7 days).

4. By AD1312#8261 in the Smart Contracts Channel on 12/16/2021

Thanks...

Had another doubt. Currently I am emitting Events from smart contracts. So I get that we need to use Dragonglass subscription for EVENTS to listen to this.. is there documentation to refer to regarding the api parameters to be used? If so please share.

5. By Ed Marquez#6403 in the Token Service Channel on 12/14/2021

That error occurs when the signature requirements for a transaction are not met (no signature provided, wrong signature provided, etc).

The documentation shows the signing requirements for different transactions. Take the Mint tx as an example, <https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token>, there's a `**tx signing requirements**` section.

So the answer depends on `**what**` you're trying to sign and `**who**` is signing it. Feel free to add details on the specific tx you're trying to sign.

6. By gehrig#7214 in the Smart Contracts Channel on 12/13/2021

Once HIP-208 is complete, i.e. HTS calls are supported, we'll have documentation available this is likely to be in the next month or two - at least on previewnet. <https://github.com/hashgraph/hedera-improvement-proposal/discussions/208>

7. By Simi Hunjan#3270 in the Javascript Channel on 12/13/2021

those two were doc errors so I updated the docs. Nothing to be updated on the SDK side.

8. By Joma#3577 in the Token Service Channel on 12/13/2021

Thank you for the response. I have read through the docs, but I will try one more time. If I get an error I'll share the code. Thank you

9. By Deleted User#0000 in the Javascript Channel on 12/13/2021

I can't see it in docs

10. By Justin Atwell#0583 in the Consensus Service Channel on 12/11/2021

Here's a link to the docs. They use the receipt.TopicId which is already a TopicId so doesn't need fromString.

<https://docs.hedera.com/guides/docs/sdks/consensus/submit-a-message>

11. By bugbytes#0817 in the Developer General Channel on 12/10/2021

Hey @Greg Scullard I'm seeing some regressions in the new *previewnet* some error codes changed:

```
```
Message:
 Assert.Equal() Failure
 Expected: InvalidAccountId
 Actual: AccountIdDoesNotExist
```
```

Previous instances of the network would return `Invalid___Id` error codes when you passed in an empty (0.0.0) address (aka: null) now there's quite a few that return `AccountIdDoesNotExist` now instead....is this deliberate? It seems to be in conflict with the protobuf doc:

```
```
* Associates the provided account with the provided tokens. Must be signed by the
provided
* Account's key.
* If the provided account is not found, the transaction will resolve to
INVALID_ACCOUNT_ID.
```
```

12. By johnsonb-oci#6673 in the Smart Contracts Channel on 12/10/2021

When can we expect updated documentation on smart contracts? I'm particularly thinking about documentation showing how in a smart contract you would be able to make HTS and HCS calls within the smartcontract.

13. By DPAK#7421 in the Developer General Channel on 12/09/2021

Hello, im trying to mint an nft using the js sdk, can someone point me to the docs for getting a CID?

14. By Ed Marquez#6403 in the Developer General Channel on 12/06/2021

Dear #-developer-general,

The Getting Started section of the Hedera Documentation has a refreshed look to make it easier to, well... get started

<https://docs.hedera.com/guides/getting-started/introduction>

15. By oruki#1848 in the Developer General Channel on 12/04/2021

@Bralz feel free to create a ticket here for the doc issue: <https://github.com/hashgraph/hedera-docs>

16. By Bralz#7521 in the Developer General Channel on 12/04/2021

oh that's not the same doc that ive been looking at on the hedera website

17. By oruki#1848 in the Developer General Channel on 12/04/2021

online doc: <https://testnet.mirrornode.hedera.com/api/v1/docs/#/topics/listTopicMessagesById>

18. By Bralz#7521 in the Developer General Channel on 12/03/2021

should probably get added to the docs it's not in there

19. By syzmic#8925 in the Java Channel on 12/03/2021

@Greg Scullard Yes I wanted to build docker services. I came across the hedera-services repo. I just wanted to test the consensus, speed, finality etc locally and see how everything is working out using all hedera services. But I don't see why that cannot be done on the testnet though .

20. By Greg Scullard#5365 in the Java Channel on 12/03/2021

@syzmic with testnet being free to use, there really is no need to setup your own network. It is possible to build docker images from the services repo but in the past 3 years of working and developing on Hedera daily, I've never had the need to do that

21. By syzmic#8925 in the Java Channel on 12/03/2021

Is there a link to the docs for the setup.

22. By Bralz#7521 in the Developer General Channel on 12/02/2021

How can I increase this? I'm not seeing it in the API docs. The chess app rn is capped at 25 turn games and I'd like to raise it to 100 to be on the safe side

23. By [AEP] OrionsBelt#9628 in the Developer General Channel on 12/02/2021

Thats the doc I was hoping to see... thank you for providing the link.

24. By Justin Atwell#0583 in the Developer General Channel on 12/02/2021

Here's USDC documentation for Hedera. <https://www.circle.com/en/usdc-multichain/hedera>

25. By Ed Marquez#6403 in the Javascript Channel on 11/30/2021

@closet_nerdd it is possible. Mirror Nodes keep the history of transactions. Here's a doc page on how to use the mirror node Rest API: <https://docs.hedera.com/guides/docs/mirror-node-api/cryptocurrency-api#accounts>

Dragon Glass: <https://app.dragonglass.me/hedera/home> and Kabuto: <https://explorer.kabuto.sh/mainnet> are network explorers and they show transaction history by account, token, transaction, etc

26. By raaone7#9021 in the Token Service Channel on 11/30/2021

I have a question, on the documentation, can a account have the the option of a list of keys, does this mean that an account can potentially have few private keys associated with it.

27. By TikZ#3753 in the Developer General Channel on 11/29/2021

I'm using hedera s rest API instead of dragon glass the docs say topicId, sequence number and consensusTimestamp all 3 are paths but it's confusing as to how exactly the url should be formed

28. By Totohm Shanti#6955 in the Javascript Channel on 11/29/2021

@teacoat as far as you know, how are they listening to gossips?
is there some websocket i missed out in the docs, or they're using interval and fetching from API every tot seconds?

29. By 0x007#9092 in the Token Service Channel on 11/26/2021

I read in the docs that mint transaction can only be done by the supply manager and it also send the minted tokens to the treasury account. However, I am trying to create a fungible token with zero initial supply, and I want any user to be able to mint tokens directly to their account ID based on some preconditions. Is there a way I could possibly achieve this?

30. By Greg Scullard#5365 in the Javascript Channel on 11/26/2021

They are more suitable for L2 applications (off chain compute) or notarising data (a hash of a document to prove the document existed at time T and is still the correct doc).

31. By zmeeust#0939 in the Java Channel on 11/26/2021

Hi there. To my regret I am not a JAVA developer and I am trying to make request with `TokenMintTransaction().setMetaData()`. This method expects to receive a `List<byte[]>`. The examples in the documentation do not cover these methods. I'm glad to get a hint on how this construction should look like (`List<byte[]>`). Thanks.

32. By windreaver#9182 in the Token Service Channel on 11/25/2021

have the same issue
but from my perspective they didn't looks like they active in answering questions:
1) they claim that you need to open support tickets for all your questions
2) the last 3 questions in their "dev" channel asking the same about NFT metadata standard used
3) why not to have documentation describing what you support and what not ?
4) my support question about NFT is open for 2 days, yet not reaching threshold of 72 hours, but still, it's very common question

33. By shubi#9407 in the Token Service Channel on 11/23/2021

Hello, when transferring an NFT with royalties, it is required to get the signature of the receiver as well?

It seems like this is the case in the tutorial example, but I couldn't find it mentioned in the documentation. Thanks

34. By johnda98#4728 in the Java Channel on 11/22/2021

yep got it in long in the contract create call.. orig had 300tbar in it.. assumed as docs say excess gas gets returned as usual. yep already deployed the bytecode previously w no prob

35. By richard2021#6420 in the Developer General Channel on 11/22/2021

@Supremax67 refer to the docs, I can see manually sign a transaction, but in the submit a transaction, still use `execute(client)` function to do sign and broadcast, do we have a doc for manually broadcast the transaction to node?

36. By msanders#9466 in the Developer General Channel on 11/21/2021

@MooonRabbiit I wouldn't put too much dependency on uni. Most of the best programmers I have ever work with are self taught. When I hire people I don't look at degrees at all, I don't discredit it either, but it doesn't tell me anything about a potential hire. If you want to learn blockchain development all of the project pages have great developer documentation. <https://ethereum.org/en/developers/>, <https://docs.hedera.com/guides/>, If you are just starting in programming <https://nodejs.org> has a great ecosystem that is pretty beginner friendly. You can easily search online for "npm <topic of choice>" and typically turn up some library that may be useful to investigate further. Books are great as well to gather a collection of well curated information. I learned how to program before the internet became a wealth of knowledge and ended up with a small library of books LOL. Now you can just youtube/stackoverflow just about everything, watch a few different videos on topics and read comments to get a feel for any conflicting information. The best thing you can ever do for yourself is learn how to do independent research. School will rarely teach you those skills which kinda makes sense if you think about it.

37. By bugbytes#0817 in the Javascript Channel on 11/20/2021

I believe anyone can extend the life of a token by paying to update its expiration [when expiry is turned on on the network] this will implicitly renew the treasury account by design if I'm reading the design docs correctly.

38. By wheresLINA (Hedera)#0936 in the Developer General Channel on 11/19/2021

Hi everyone, as the Hedera ecosystem grows and we look to decentralize the network further, the Hedera Portal will no longer support mainnet account creation.

If you, or others, are still in need of a Hedera mainnet account, consider one of the 12 hbar supported wallets (<https://hedera.com/account-creation>) with account creation. For developers, a list of wallets that provide key access and passphrase SDK support is available on Hedera docs' mainnet access(<https://docs.hedera.com/guides/mainnet/mainnet-access>) page.

The Hedera Developer Portal (<https://portal.hedera.com/register>) will continue to remain a place to access the Hedera previewnet and testnet, as well as additional developer resources.

Thanks for your continued support.

39. By Supremax67#5749 in the Javascript Channel on 11/19/2021

An e-mail was sent out recently.

*As the Hedera ecosystem grows and we look to decentralize the network further, the Hedera Portal will no longer support mainnet account creation.

If you, or others, are still in need of a Hedera mainnet account, consider one of the 12 hbar supported wallets with account creation. For developers, a list of wallets that provide key access and passphrase SDK support is available on Hedera docs' mainnet access page.

The Hedera Developer Portal will continue to remain a place to access the Hedera previewnet and testnet, as well as additional developer resources.

Thanks for your continued support.

The Hedera Team*

40. By zmeeust#0939 in the Token Service Channel on 11/19/2021

Hi. Is there any way to create copies (supply) for NFT? In other blockchain its named "editions", that means copies. In Hedera docs initial supply must be set to 0 and during mint process i can't change it. Does this mean that i can not create copies of NFT token?

41. By aiswarya.cryptic#1738 in the Developer General Channel on 11/19/2021

Hello!

I'm Aiswarya from Cryptic Entertainments, a Crypto Edutainment venture. We are currently creating music community anthems & documentaries for projects like Polygon, Near, IOST, etc.

I want to discuss a possible collaboration with Hedera. Can you please connect me with the concerned person?

Thanks

42. By supakodo#6251 in the Developer General Channel on 11/18/2021

Yeah there it is right in the docs, totally missed it -- thank you again.

43. By Greg Scullard#5365 in the Developer General Channel on 11/18/2021

take a look at the examples under the javascript SDK (or our docs).

44. By supakodo#6251 in the Developer General Channel on 11/18/2021

Wow -- thank you. I totally missed that in the docs

45. By Ed Marquez#6403 in the Javascript Channel on 11/18/2021

It may be that doc is outdated. Let me do a check an I'll update you (and the doc) when I have more info. For now I would suggest using the 4 params with addNftTransfer

46. By AlexTaylor#3551 in the Javascript Channel on 11/18/2021

also getting error `failed precheck with status ACCOUNT_REPEATED_IN_ACCOUNT_AMOUNTS` and no accounts are repeated afaiak @Ed Marquez could you confirm if the input should be 4 parameters per your example, or 3 per the docs with v2.4.1

47. By sieder#2654 in the Javascript Channel on 11/18/2021

it also shows 4 parameters here, the `addNftTransfer`, the docs might be outdated i think

48. By AlexTaylor#3551 in the Javascript Channel on 11/17/2021

probably something noddy going on but when i switch from `addTokenTransfer` to `addNftTransfer` (adding `nftId`) something is going off...
`ReceiptStatusError: receipt for transaction 0.0.0@1637183517.928594759 contained error status INVALID_SIGNATURE`
looks like the sender account is not being picked up

any ideas?

i believe the input is ``addNftTransfer(tokenId, nftId, sender, receiver)`` based on @Ed Marquez demos but the Hedera docs is missing tokenId <https://docs.hedera.com/guides/docs/sdks/tokens/transfer-tokens>

49. By Greg Scullard#5365 in the Token Service Channel on 11/15/2021

``RUN echo NEXT_PUBLIC_BASE_API_URL=/v1 > .env.local`` in the Dockerfile for the UI

50. By Greg Scullard#5365 in the Token Service Channel on 11/15/2021

If I remember correctly, the docker setup takes care of it.

51. By om#2657 in the Token Service Channel on 11/15/2021

Thanks for suggestion , I am will try all these also i believe i had to create new docker image in my machine then i had to run that

52. By Ed Marquez#6403 in the Developer General Channel on 11/08/2021

There will be doc tutorials and video examples as well. Feel free to share specific suggestions that you think would be helpful for a broad audience

53. By ItMineS#1192 in the Developer General Channel on 11/06/2021

Does anyone have any information on the staking mechanics/tech docs for HBAR staking? I know it will be released q2 2022.

Will it be similar to Tezos or Cardano? etc. What will be the Minimum Staking Requirement? Any info would be great.

54. By Peach-Flavored Snark#4014 in the Token Service Channel on 11/06/2021

Just wanted to ask if the documentation is up to date - and smart contracts can't interact with HTS tokens at the moment?

If so, I'm wondering if Smart Contract 2.0 will rectify this?

55. By Chriss#9308 in the Java Channel on 11/06/2021

Thanks to Rocket & Greg, I realized that ASN1. DER Encoding is used for each key value. It would be great some document in hedera doc could contain this.

Maybe the document has this already or the document doesn't need to do because it is very common case that I didn't know.

56. By winded#4752 in the Developer General Channel on 11/05/2021

Where is the most technical documentation on hedera apart from the actual codebase?

57. By Rocket#2012 in the Developer General Channel on 11/04/2021

@winded there's a ton of tutorials, the SDK documentation is well written and the dev community here is really helpful so if you just jump in I'm sure you can figure things out quickly

58. By a.s.h#5530 in the Developer General Channel on 11/03/2021

Just saw the update regarding HIP 23. Is there any way i can play around with the `maxAutoAssociations` feature on the testnet? Looked through the sdk docs but couldn't find anything.

59. By Ed Marquez#6403 in the Token Service Channel on 11/03/2021

[https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token#:~:text=setMetaData\(%3CmetaDatas%3E\),and%20is%20immutable.](https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token#:~:text=setMetaData(%3CmetaDatas%3E),and%20is%20immutable.)

^ according to docs, for `setMetaData` "The maximum allowed size of each metadata is 100 bytes and is immutable." Note that there's also a 100 character limit for the metadata field if you use a URI

here's the info in StackOverflow

that bugbytes was referring to: <https://stackoverflow.com/questions/69587986/getting-transaction-oversize-error-when-submitting-a-transaction-on-the-hedera-n>

60. By Robin | AIOO#2182 in the Javascript Channel on 11/01/2021

Hi! Can anybody point me in the right direction on documentation or tutorials to get from backend to frontend with Hedera. Like recommended bundler etc. Thanks!

61. By Silver Graph#4113 in the Developer General Channel on 10/25/2021

Hey everyone! So I was going through the docs and in

```SDKs > Specialized Types > TopicId```

in the js example, I saw this

**62. By wensheng#8721 in the Java Channel on 10/25/2021**

pass in something like `new Hbar(1)`, so it's `setQueryPayment(new Hbar(1))`. Yeah, It will be nice for Hedera to update the docs.

**63. By nitinace#9687 in the Java Channel on 10/25/2021**

`setQueryPayment` is not in the docs so can you tell me how to use and what args i have to pass in it?

**64. By wensheng#8721 in the Developer General Channel on 10/24/2021**

Are there documentations for new smart contract? I tried new SC on testnet. I can use latest solidity version now (0.8.9), so that's great. I can create/call/execute hello-world and set-get-message smart contracts. But I'd like to experiment with more complex SC. The first speed bump is address/account\_id confusion. If a function have a address parameter, what should it be? Solidity address or Hedera AccountId? I used `ContractFunctionParameters().addAddress()`, it takes ethereum style address(40hex) like '0x1234abcd...', it does not take '0.0.1234'. I guess new SC is fairly incomplete and work in progress? How can we know more about the new SC development and contribute to it?

**65. By nube#7126 in the Developer General Channel on 10/23/2021**

it was originally done by the community in a shared google docs file

**66. By gehrig#7214 in the Developer General Channel on 10/21/2021**

The docs page is likely your best resource today. Keep in mind you'll need to compile your contract to byte code, add it as a file and then call the `ContractCreate` transaction. We should have more tutorials and the like coming. <https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract>

**67. By WW#0305 in the Token Service Channel on 10/20/2021**

A general question, when you mint an NFT and use Hedera File Service to store an associated encrypted document used for the token generation, is there a way to give

ownership of the encrypted document and its decryption key to each new NFT owner as the NFT gets sold and resold?

**68. By mickeymond#2952 in the Token Service Channel on 10/14/2021**

How do I get to know the Treasury Account Id for Testnet?

If available please share a link to the Docs where Treasury Accounts for all Networks have been documented.

I want to play with the HTS...

**69. By Justin Atwell#0583 in the Developer General Channel on 10/14/2021**

There's a channel to talk all about HTS on the left so don't forget to check that out! Here's the docs: <https://docs.hedera.com/guides/docs/sdks/tokens>

**70. By mickeymond#2952 in the Developer General Channel on 10/14/2021**

How do I get to know the Treasury Account Id for Testnet?

If available please share a link to the Docs where Treasury Accounts for all Networks have been documented.

I want to play with the HTS...

**71. By mickeymond#2952 in the Developer General Channel on 10/14/2021**

I see both HCS & HTS have >10,000 txn/sec according to the docs and I am assuming they should all be at the same security level.

I want to know why one will choose HCS over HTS for a CBDC Use Case and Vice-Versa.

**72. By mickeymond#2952 in the Developer General Channel on 10/14/2021**

How do I get to know the Treasury Account Id for Testnet?

If available please share a link to the Docs where Treasury Accounts for all Networks have been documented.

**73. By Supremax67#5749 in the Developer General Channel on 10/13/2021**

Documentation about IPFS even recommends to store the hash on a blockchain. This is to make sure that the metadata is immutable. I am sure others who has used IPFS in combination with Hedera can fill in the gap if you got more questions.

**74. By rogeriob2br#9829 in the Developer General Channel on 10/11/2021**

HI! I don't know if this is the right place to ask.

I work at IBM. And I'm looking to link things in here to a project, and I would like to know if there is somewhere in the documentation, or on your team, that has the contact person responsible for IBM as a member of the board.

I decided to ask here, because IBM's internal structure for blockchains has already grown a lot, and the only point about Hedera that I had found so far was a person who is no longer part of the institution: Porter Stowell

**75. By Ed Marquez#6403 in the Token Service Channel on 10/07/2021**

GoMint: <https://hedera.com/users/gomint>

Galaxy: <https://hedera.com/blog/calaxy-built-on-the-hedera-network-adds-initial-advisors-from-dapper-labs-liquefy-bluesky-and-centre-consortium>

If looking for technical content:

- Docs: <https://docs.hedera.com/guides/docs/sdks/tokens/mint-a-token>
- Video tutorial: See link two messages above ^

**76. By Bralz#7521 in the Developer General Channel on 10/03/2021**

@Rocket i have sent you a DM but I would also like to get confirmation from a hedera team member what the rules are for using the default testnet mirror nodes. there's nothing in the docs about restrictions other than throttling

**77. By avinash.buddana#9793 in the Javascript Channel on 10/02/2021**

hii i have my contact byte code how to deploy it on hedera network using js-sdk . if their is any tutorial or documentation that will be helpfull

**78. By avinash.buddana#9793 in the Developer General Channel on 10/02/2021**

Hii i want to deploy my contract on hedera network can someone help me with some documentation how to deploy a contract on hedera network . i am using javascript sdk

**79. By Greg Scullard#5365 in the Developer General Channel on 10/01/2021**

@Cisterciansis they are documented in our docs but I would consider them a moving target until we enable anonymous public mainnet nodes (in other words, it's not happening next weeks so specs could change by then). There is no firm ETA on when that would be.

**80. By bugbytes#0817 in the Developer General Channel on 09/30/2021**

But the docs now describe something different.

**81. By bugbytes#0817 in the Developer General Channel on 09/30/2021**

@Greg Scullard QQ about scheduled transactions: If you receive a `IDENTICAL\_SCHEDULE\_ALREADY\_CREATED` response, did you pay any fees? The docs say when you get this result code, it will tell you the scheduled ID to sign so you can submit a Sign Scheduled Transaction instead (which would incur a fee), but does not say if it charges you for the initial [failed] attempt?

**82. By watlar#6756 in the Consensus Service Channel on 09/27/2021**

I'm really sorry in advance if this is a silly question also for HFS - so, I read that the file size limit is 1MB but each transaction is only limited to 6Kb. Documentation says that we can use FileAppend to add the additional contents so - does this mean that if I do want to upload a 1MB file, I'd have to do it in increments of 6Kb size transactions?

**83. By Justin Atwell#0583 in the Consensus Service Channel on 09/26/2021**

Yup. All transactions support key lists, threshold and nested key structures.  
Docs for Keys: <https://docs.hedera.com/guides/core-concepts/keys-and-signatures>

So on your topicCreate you'd have a type of threshold key. Create topic doc: <https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

**84. By Jordannn#9673 in the Javascript Channel on 09/23/2021**

Any help would be appreciated.

Here's how I'm sending:

...

```
const transferNFT = async (client, receiver, tokenId, serial) => {
 let transaction = await new TransferTransaction()
 transaction.addNftTransfer(tokenId, serial, sender, receiver)
 transaction.freezeWith(client);

 console.log("Attempting to send tx: ", transaction)

 return new Promise((resolve, reject) => {
 let txResponse = null;
 const privateKey = PrivateKey.fromString(process.env.RESERVE_PRIVATE_KEY);

 transaction.sign(privateKey).then((signTx) => {
 return signTx.execute(client);
 }).then((txResponse) => {
 return txResponse.getRecord(client)
 }).then((record) => {
 console.log("GOT TX RECORD: ", record)
 resolve(record)
 }).catch((err) => {
 reject(err)
 })
 })
}
```

The documentation says to send NFTs with `addNftTransfer(<nftId, sender, receiver)` however this was generating an error.

The above code goes through just fine but I do not see any transaction in kabuto or dragonglass and the token id does not have any `Token Transfer` transaction in either explorer

#### **85. By Greg Scullard#5365 in the Developer General Channel on 09/23/2021**

@ChiefSteph You don't need a mainnet account id to develop, using your portal profile, create an account on testnet and use that for development (it's free and you don't need to buy hbar )

We have SDKs for Java (inc. android), Javascript (inc. react), Go and .NET which you can find here <https://github.com/hashgraph> and documentation here: <https://docs.hedera.com>

The SDKs all have examples, my suggestion is to start working through them, get them working with your testnet credentials, familiarise yourself to the point where you understand them fully (maybe focussing on the services that are of interest to you), then walk, run, fly with your own development.

#### **86. By nigelthecreator#6071 in the Javascript Channel on 09/23/2021**

@0xJepsen Thank you for the reply. I should have included more of the code I've actually written since I know how to retrieve the nft serial number. However the documentation says that for .addNftTransfer method requires NftId + sender AccountId + receiver

AccountId. And no matter what I do I get the error that is: Cannot read properties of undefined. I've also used console.log extensively to check every single variable along the way so I'm really bummed that it doesn't work :/

**87. By TikZ#3753 in the Developer General Channel on 09/22/2021**

I find huge potential in hcs it can probably solve alot of trust issue as long as companies follow legal documentation around what the events are supposed to do etc

**88. By Greg Scullard#5365 in the Consensus Service Channel on 09/22/2021**

@ChrisWang may I kindly ask that you don't ask the same question in several channels ? The Hedera services can be run locally, however as far as I know it can only be done through docker images to make it easier to deploy several nodes for consensus.

**89. By Aparajita\_1107#2914 in the Developer General Channel on 09/21/2021**

Hi,  
I hope you are doing well.

I'm Aparajita Singh from Cryptic Entertainments, a Crypto Edutainment venture. We are currently creating music brand anthems, documentaries, short films & web series for reputed projects like Polygon, IOST, WazirX, etc. & helping them create lifelong art pieces for their respective communities.

On similar lines, I would like to create a brand anthem for Hedera Hashgraph.

Can you please provide me with the contact information of the concerned person?

**90. By oruki#1848 in the Token Service Channel on 09/18/2021**

You can check the online open api doc, for example for testnet, it's at <https://testnet.mirrornode.hedera.com/api/v1/docs/#/tokens/listNfts>

**91. By hmsimha#4133 in the Developer General Channel on 09/18/2021**

Hi! I'm really new to HBAR, I'm wondering if there's information about what it takes to run a node right now? I saw the docs don't link the node software, and mention you have to sign up for an account... is the node software open source?

**92. By will.yjini#9079 in the Javascript Channel on 09/18/2021**

Hey, noob question. In the js sdk, I see that when sending a transaction, the sdk does `\_makeSignedTransaction` for each nodeId returned by `client.\_network.getNodeAccountIdsForExecute();`.

```
...
 this._signedTransactions = this._nodeIds.map((nodeId) =>
 this._makeSignedTransaction(nodeId)
);
...
```

Why so? Do I just need to send one of them to one node, or do I have to send all of them? Does anyone has a link to doc that explains this matter?

**93. By seanshimb#1645 in the Token Service Channel on 09/17/2021**

Do we have an end-to-end tutorial available for creating NFTs floating around? I've had

moderate success creating tokens, but am hitting a consistent road-block "failed precheck with status INVALID\_TRANSACTION\_BODY" during the minting process - despite closely following documentation on the Hedera SDK. Cooper's tutorials cover up to transacting tokens, but not the minting or burning itself (unless I've missed something) -thanks!

**94. By BroManTech#2938 in the Developer General Channel on 09/16/2021**

definitely sounds ambitious! I'll go through the docs when I've got some time

**95. By dotat#4801 in the Developer General Channel on 09/16/2021**

this indicates, from my perspective, everything in the previous revision of the document was SOP up until now

**96. By dotat#4801 in the Developer General Channel on 09/16/2021**

my statement stands, the document was changed earlier today

**97. By dotat#4801 in the Developer General Channel on 09/16/2021**

the document was identical to the version specified there up until earlier today

**98. By dotat#4801 in the Developer General Channel on 09/16/2021**

because that's what the deployment documentation says

**99. By Myztikal\_#5399 in the Developer General Channel on 09/16/2021**

the docs state that it's only compatible with contracts up to v0.5.9. It looks like in that version that the maximum state size as well

**100. By dotat#4801 in the Developer General Channel on 09/16/2021**

Even if you, personally, do not see a reason for it to happen, it can, has and may happen to companies that follow lax internal security processes - Hedera shouldn't be the single point of failure because they may have access to all the servers (or, whoever has access to their servers). The node deployment document is a great example of this kind of lack of oversight

**101. By rhysied#6748 in the Developer General Channel on 09/16/2021**

from my understanding looking at the docs its basically to help maintain and manage the node (see `[https://docs.hedera.com/guides/mainnet/mainnet-nodes/node-requirements`](https://docs.hedera.com/guides/mainnet/mainnet-nodes/node-requirements)).

**102. By Supremax67#5749 in the Developer General Channel on 09/13/2021**

Their reward is the platform, without it, they would need to bring medical papers with them instead of simply tapping their phone. Check the video if you haven't seen it. Medical documents can be falsified, which is another risk factor.

**103. By Solar#1572 in the Developer General Channel on 09/12/2021**

you can record that documentation in the DLT

**104. By Solar#1572 in the Developer General Channel on 09/12/2021**

can blockchains allow society to better direct economic incentives to do good in the world and record that documentation and then you are awarded in tokens or dollars



**105. By Rocket#2012 in the Javascript Channel on 09/10/2021**

it's probably just outdated code on their end, their documentation is actually very good overall so once you get things running things are pretty smooth.

**106. By Justin Atwell#0583 in the Developer General Channel on 09/10/2021**

Things are capped on purpose. I'll let others say why, but here's the current values according to docs: <https://docs.hedera.com/guides/mainnet>

**107. By 0xJepsen#5735 in the Developer General Channel on 09/09/2021**

but there are lots of types of transactions you can take a look in the documentation

**108. By jjsullivan#2357 in the Token Service Channel on 09/09/2021**

I am trying to return all the tokens for an account. After reading the docs, I used Get account info. I see there is a tokens method, but I am struggle with how to call the tokens method.

**109. By PassiveDoge#0658 in the Developer General Channel on 09/09/2021**

ok then how do we maintain immutability, any docs i can read?

**110. By bobby3535#8117 in the Developer General Channel on 09/07/2021**

i also wonder whether this is why phantom has been pumping recently, last time i read the docs of phantom, seemed like it plagiarized most of the hashgraph algo

**111. By Chris#5446 in the Javascript Channel on 09/07/2021**

@Bralz I'm currently playing around with the js sdk, and I must say it's extremely refreshing to use and well documented too.

**112. By Greg Scullard#5365 in the Consensus Service Channel on 08/30/2021**

@Xanderall I've pushed a few updates to github on the stable coin demo and merged a PR. I've tested both Docker and local build successfully. Let me know if you have any issues.

**113. By JohnArnold#4114 in the Java Channel on 08/28/2021**

Good evening. New to hashgraph, and trying to build the SDK.  
The docs (README) refer to 'select one of the following...' in the gradle section.  
To what are they referring? Do I need to change a config somewhere?

**114. By Supremax67#5749 in the Developer General Channel on 08/27/2021**

\*"Hedera Wallet users

After the Hedera mainnet upgrade, your Hedera Wallet application for iOS / Android will need to be updated. The latest version of the Hedera Wallet application for iOS won't be available until 24 - 48 hours after the mainnet has been upgraded — please continue checking the App Store for this update. It is available for update on Android today. Until you've updated your Hedera Wallet application, you will not be able to send HBAR cryptocurrency. Before updating, please securely document your backup phrase."\*

E-mail was sent to all subscribers on August 6th, 2019.

**115. By jjsullivan#2357 in the Consensus Service Channel on 08/26/2021**

@Greg Scullard Do you have any good Java setup documentation? I am ok with JavaScript. I am running into errors on my Java environment

**116. By jjsullivan#2357 in the Java Channel on 08/26/2021**

@Liberated Thanks. Is There any documentation on environmental setup?

**117. By jjsullivan#2357 in the Java Channel on 08/25/2021**

Are there any thorough documents for installing and configuring the Java SDK ?

**118. By jjsullivan#2357 in the Javascript Channel on 08/25/2021**

Are there any thorough documents for installing and configuring the JavaScript SDK?

**119. By jjsullivan#2357 in the Developer General Channel on 08/25/2021**

Is there a recent good document for the basic setup of the JavaScript, or Java SDK?

**120. By Liberated#0417 in the Developer General Channel on 08/23/2021**

I don't know a ton about EVM smart contracts on Hedera but it is compatible. Heres the docs: <https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract>

**121. By Liberated#0417 in the Java Channel on 08/21/2021**

Just in the env file. Make sure you follow the docs for how to modify the file and never paste a private key anywhere where folks can see it!

**122. By hamo2000#4417 in the Java Channel on 08/21/2021**

ok, The documentation wasn't 100% clear. Do I need to download the hedera SDK and install it locally from github or refer to it through the github link from the import?

**123. By gman#6244 in the Token Service Channel on 08/19/2021**

I saw references to `NON\_FUNGIBLE\_UNIQUE` in the documentation and I thought it was already implemented <https://docs.hedera.com/guides/docs/hedera-api/token-service/tokencreate>

thank you for your reply!

**124. By gman#6244 in the Token Service Channel on 08/19/2021**

Does anyone know how I can create a token of type `NON\_FUNGIBLE\_UNIQUE` ? Based on the documentation, I thought I would just need to set decimals and initialSupply to 0 in the `TokenCreateTransaction`

**125. By Liberated#0417 in the Token Service Channel on 08/17/2021**

Hedera supports this via custom fees on HTS. The creator could be the collector account. Docs: <https://docs.hedera.com/guides/docs/sdks/tokens/custom-token-fees>

**126. By Greg Scullard#5365 in the Developer General Channel on 08/13/2021**

The trusted machine is a GitHub commit hash, anyone can pull the commit, run it against a game topic Id and see the result. Or pull a docker image for a given tag version. That's the smart contract.

**127. By Bralz#7521 in the Developer General Channel on 08/12/2021**

ya but is there like a document describing how to set this up properly

**128. By bugbytes#0817 in the Developer General Channel on 08/12/2021**

Thanks for the explanation, it wasn't a testnet or preview net node that did this, a local

docker instance, but quite odd since it shouldn't have had a queue of any significant length ... interesting can the writing of the balance file interfere with that I wonder.

**129. By bitker#9243 in the Consensus Service Channel on 08/10/2021**

The public rpc interface provided by the official document (<https://mainnet-public.mirrornode.hedera.com>) will still report an error if requested once a minute

**130. By rhyssied#6748 in the Token Service Channel on 08/10/2021**

few questions re: token service:

1) do the KYC flags get enforced anyway, or is it up to the appnet(s) to check permissions before transferring tokens? The docs don't mention any errors on the KYC grant / remove pages or transfer page related to KYC

2) if a token XYZ on an account is frozen, could you still send XYZ tokens to that account? (presumably, they would be immediately frozen)

**131. By Liberated#0417 in the Consensus Service Channel on 08/08/2021**

Where can I find a list of possible Inner Transactions for Scheduled Transactions?

According to docs I see cryptotransfer and consensusSubmitMessage but says as of .13.0, so just double checking.

**132. By NotKyle#4231 in the Developer General Channel on 08/05/2021**

that is my understanding as well by reading the docs

**133. By Bralz#7521 in the Developer General Channel on 08/04/2021**

Is there some documentation on what use cases the hashgraph is optimal for? All my app ideas seem like they'd be better suited to AWS right now. I'm looking for like a pitch on where the consensus service would shine

**134. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 08/02/2021**

Hello all! I hope you can join us for another one of our monthly Hedera Hashgraph virtual meetups, hosted by Creative Coast of Savannah Georgia. This evening, 6pm EST, join myself and Hedera MVP Waylon Jepsen for a discussion of the powerful Attica Voting platform. Trustworthy voting using Hashgraph technology is just what the doctor ordered for these uncertain times! Come join us for a fun and informal chat about this awesome use case. BYOB <https://thecreativecoast.org/event/hedera-hashgraph-savannah-meetup-2021-08-02/>

**135. By donkuixote#9405 in the Developer General Channel on 08/02/2021**

Hi, not sure if this is the place to ask this but I'm trying to install the Composer browser extension from Hash Systems.... It doesn't look like there has been any activity on their Github for a while though and the extension is no longer listed in the Chrome store. I tried cloning the repository and using `load unpack` as per the README but am unable to find the `/dist` folder. Since the documentation says that `/dist` is generated by webpack I tried running `node webpack.production.config.bable.js` but that did not work for me (keep in mind I'm not a developer, just shooting in the dark here trying to get this to work). Any ideas?

**136. By Bralz#7521 in the Token Service Channel on 08/01/2021**

i guess dockerizing the app and using nginx is a better strategy than nodemon with server that calls up the app

**137. By pistachio#4691 in the Consensus Service Channel on 07/23/2021**

Hi guys, I am following the consensus service fabric plug-in tutorial (<https://docs.hedera.com/guides/resources/tutorials/getting-started-with-the-hedera-consensus-service-fabric-plugin#hyperledger-fabric-network>), but I failed to start the orders image on docket, the log told me that it couldn't find expected key, but I did put the correct testnet account id and private key from hedera portal to ordered.yaml file. Does anyone have a clue about this?

**138. By Danasupergruppe#9168 in the Token Service Channel on 07/23/2021**

look at the docs

**139. By Johnda98#0683 in the Java Channel on 07/21/2021**

min reqs ..in the docs of course.

**140. By 0.\_kalava#8481 in the Token Service Channel on 07/14/2021**

Is there any documentation for request parameters for different endpoints ?

**141. By Deleted User#0000 in the Developer General Channel on 07/13/2021**

@Bralz for the moment I won't as I still have a bunch of things I want to do and the code needs a clean up, but I'm happy to explain what's going on and perhaps down the line I will.

In short I have a single nodejs app that fetches the transaction count from DragonGlass's REST API and has a websocket server running. Every 10 seconds it grabs the data and pushes to everybody connected to the websocket. The frontend is built using a framework called Svelte; it's very lightweight and quick to get started with. There's a couple of functions on the frontend that calculates the difference between the last 10 seconds and the current count, then works out the average TPS.

It's relatively simple and I spent more time tinkering with Docker, nginx and certbot for the SSL than coding the app lol

**142. By Matt // AffirmationNFT#6673 in the Developer General Channel on 07/08/2021**

Just checking this though. The java is executed within the docker image of that example (note the CMD java at the bottom of the file). The .env file is copied to the image during the docker build process and copies the env file from the examples folder. I've then checked the running docker container and can confirm the .env is present and has the required values as per the linted env file. You just know this is going to be something obvious, but its killing me!

**143. By Liberated#0417 in the Developer General Channel on 07/07/2021**

Well, you could start with the docs: <https://docs.hedera.com/guides/>

Good luck buddy!

**144. By Matt // AffirmationNFT#6673 in the Developer General Channel on 07/07/2021**

Hey all! I'm just diving into some of the initial Hedera development tutorials, currently on the did-sdk-java (<https://github.com/hashgraph/did-sdk-java>) and seeing an error that looks to be related to setting the operator from the env variables. I've sanity checked the env files contain the correct details etc. and ran the docker build with no cache etc. to clear out any old builds. Any other ideas?

**145. By Wade#7030 in the Developer General Channel on 07/05/2021**

hello everyone do you have document about how to sync events with p2p network for hashgraph ?

**146. By shemnon#2321 in the Developer General Channel on 07/03/2021**

I understand the IDE/Docker issues, been a dev for quire a while. My issues are with getting hedera services to startup. Thinks like linux only networking (epoll in networking), the documented configs not starting on the ports they claim in config.txt (always 50211), partial docker image names (and clearly not on docker hub).

**147. By 0xJepsen#5735 in the Developer General Channel on 07/03/2021**

@shemnon your developer environment really depends on what you are trying to build. IntelliJ is generally a pretty robust IDE but can sometimes use a lot of system resources. Docker can be very useful but does have it's own learning curve regarding containerization. If you are looking for a lightweight IDE I recommend either VScode or Atom. Hopefully this helps.

**148. By shemnon#2321 in the Developer General Channel on 07/03/2021**

Is there a good dev-setup guide? Both docs/intellij-quickstart.md and docs/docker-quickstart.md are either out of date or expecting local setup.

**149. By Greg Scullard#5365 in the Token Service Channel on 06/29/2021**

- if an account is closed, how do we reopen it after the expiration period?

When an account runs out of hbar, it will be marked for deletion and can be funded again for a short period of time (TBD) so it "undeletes" itself and renews automatically. If not funded within that time, it will be deleted and removed from the ledger, no funds can be sent to it after then, and the account id cannot be reused.

- if an account is closed, and another party had sent us funds at the closed account, are the funds lost?

See above, the transaction will fail and funds will not leave the paying account.

- since there is a get balance fee, explicitly point out to developers they need to implementing rate limiting on their side, otherwise the operator's wallet can be drained, causing an account closure, thereby causing a full denial of service.

getBalance is free as is getReceipt, no need to rate limit this.

- documentation that clearly explains what happens to token balances once HBAR hits 0. i.e. the tokens are lost too?

per current design tokens left in an account with 0 hbar will be transferred back to the token's treasury at the time the account is deleted.

There is a HIP in progress on the subject of account renewals, you may comment there if you like: <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-16.md>

**150. By nkavian#1321 in the Token Service Channel on 06/28/2021**

@Supremax67 Thanks for the quick reply. I appreciate the example that 9 cents will last a long time. However, the crux of the matter is that users can surely intentionally or mistakenly empty their HBARs and lose their account. What happens if I'm holding \$10k of a stablecoin, but HBARs became 0. To be really honest, my first impression of reading your response, you're simply giving reasons in defense of the current design. I don't want to turn this into a debate, but a short response: 9 cents over 100 years can not honestly be thought of as an economical incentive. These fees cause more headaches than any possible benefit.

I understand this is the current design, and it's unlikely to change. As a consequence of Hedera imposing these fees, architects and developers deserve a deeper level of details in the form of a white paper, a medium blog, or thorough documentation that explains from Hedera's point of view how accounts should be managed over time. Some example topics / questions:

- if an account is closed, how do we reopen it after the expiration period?
- if an account is closed, and another party had sent us funds at the closed account, are the funds lost?
- since there is a get balance fee, explicitly point out to developers they need to implementing rate limiting on their side, otherwise the operator's wallet can be drained, causing an account closure, thereby causing a full denial of service.
- documentation that clearly explains what happens to token balances once HBAR hits 0. i.e. the tokens are lost too?
- explicitly pointing out to developers and providing best practices of how to manage long lived wallets. i.e. a "hosted" consumer wallet where the consumer who is not a developer may drain the wallet, and how should developers protect and manage these wallets so they aren't closed.
- Should the developers force an arbitrary minimum balance of 1 HBAR, etc...

**151. By OgreAbroad#7836 in the Developer General Channel on 06/24/2021**

The "governance" section of the website almost seems like it is possible now, but the article I found in the docs section makes it sound like only council members can run a node.

Thanks for the clarification!

**152. By OgreAbroad#7836 in the Developer General Channel on 06/24/2021**

Hello! I'm researching new chains to help secure, and am impressed with Hadera. I found a doc where it states that only the governing council can run a node.

Is there any information on when that might change?

**153. By wheresLINA (Hedera)#0936 in the Developer General Channel on 06/24/2021**  
hi @Simi Hunjan from our team manages documentation directly and she can help!

**154. By Rocket#2012 in the Developer General Channel on 06/24/2021**  
I believe Lina might be the person to contact for documentation? @wheresLINA (Hedera)

**155. By Liberated#0417 in the Developer General Channel on 06/24/2021**  
Do you know if there's a better place to put these? It's not my intention to tell the world about every doc typo, but I do want to make sure the right people get notified.

**156. By Liberated#0417 in the Developer General Channel on 06/23/2021**  
diagram 2 needs to be fixed on this documentation page: <https://hedera.com/blog/a-better-approach-to-distributed-applications>

**157. By Dmitry1987#8353 in the Developer General Channel on 06/20/2021**  
For now narrowed down to 4 possible solutions and need to pick one so will keep hanging out in all chats and reading all docs...

**158. By Liberated#0417 in the Token Service Channel on 06/19/2021**  
so when you are transferring crypto the sending account must sign the transaction. Here is the link to the transfer crypto documentation: <https://docs.hedera.com/guides/docs/sdks/cryptocurrency/transfer-cryptocurrency>

Since you are using an account other than the operator\_id to transfer out of the treasury account, you will need to sign the transaction manually. Some of the examples only show using the Operator\_id as the one doing both. Here's a link to the documentation explaining that whole bit: <https://docs.hedera.com/guides/docs/sdks/transactions/manually-sign-a-transaction>

Finally, it's always valuable to read about Keys and Signatures: <https://docs.hedera.com/guides/core-concepts/keys-and-signatures>

**159. By Dmitry1987#8353 in the Developer General Channel on 06/18/2021**  
I saw that the nodes right now are only by member companies, premissioned. when is the expected launch of public blockchain in a form that everyone can run a node? (or will it be this same one, just released to public nodes?) I went through the docs page but didn't see a mention of date for release.

**160. By Liberated#0417 in the Developer General Channel on 06/14/2021**  
This page is a great starting point. You'll see the supported SDK's when you start getting into the docs: <https://hedera.com/get-started>

**161. By Liberated#0417 in the Developer General Channel on 06/12/2021**  
Beats me. Not a Hedera employee, but many projects separate out the Types from the SDKS. I found the Hedera Doc site to be a bit klunky myself. Always room to improve!

**162. By Liberated#0417 in the Developer General Channel on 06/09/2021**  
Would be really awesome if we had documentation that had an option for Gradle instead of Maven. <https://docs.hedera.com/guides/getting-started/java/hcs-submit-your-first-message>

**163. By Andy#5527 in the Token Service Channel on 06/09/2021**

@Rocket @Greg Scullard Thanks for your answers on the expiry. Maybe I am not understanding the docs correctly. Is there currently any specification on how long a token has before expiring? I know there is an "expiry" at some point, but is it days? weeks? years?

Apologies if I'm just missing something obvious

**164. By Andy#5527 in the Token Service Channel on 06/09/2021**

Hi all. I'm still reading through the docs and have read that tokens expire. But what I can't find is what that time span is for a token to expire and require renewing? Is anyone able to point me to the right place in docs? Thanks so much!

**165. By b\_xt\_r#5042 in the Javascript Channel on 06/08/2021**

The docs show how to send a tx and get the tx record from the txResponse, but what if I want to query an arbitrary tx?

**166. By om#2657 in the Javascript Channel on 06/08/2021**

Actually

When we try to deploy the contract using local system or Docker, it works fine on both Testnet and Mainnet.

But our Production setup is using a K8 cluster and there are facing the issue for both Testnet and Mainnet.

Error: 13 INTERNAL: Received RST\_STREAM with code 0

**167. By Wade#7030 in the Developer General Channel on 06/06/2021**

where is the document about how to decide the event as other header in hashgraph ?

**168. By 2t#2104 in the Token Service Channel on 06/05/2021**

any good documentation on how to use the HTS for auctions of NFTs?

**169. By Wade#7030 in the Developer General Channel on 06/03/2021**

hello everyone

do you have document about how to decide which event as the new event other header ?

**170. By AlexTaylor#3551 in the Token Service Channel on 06/02/2021**

i dont know, you may want to check Telegram groups for wallet support questions. Else here for coding solutions you can try any of the SDKs the method is TransferTransaction the docs are hidden somewhere sorry i couldn't find them

**171. By Liberated#0417 in the Token Service Channel on 06/01/2021**

@Greg Scullard do you know if there are any required standards around the hash?

is it sha256 only or is md5checksum ok (The doc contract doesnt say)? Just curious about how someone might store that hash in their own private system.



MD5 Checksum is not cryptographically secure so I dont know if you could use it as an NFT nd have it still count as an NFT.

**172. By BroManTech#2938 in the Developer General Channel on 05/31/2021**

1 on 1 free assistance is a big ask, but there are certainly recorded materials and documentation to help you get started as indicated above. If you're a bit farther along and have something concrete, it might be time to apply for the Hedera Boost program: <https://hedera.com/boost>

**173. By Deleted User#0000 in the Javascript Channel on 05/28/2021**

I didnt see any parameter for that in the hedera doc. let me search again.

**174. By Rocket#2012 in the Javascript Channel on 05/28/2021**

here is the documentation site that i use: <https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

**175. By Rocket#2012 in the Javascript Channel on 05/28/2021**

it might have been an old doc

**176. By paglu69#1501 in the Javascript Channel on 05/28/2021**

hey @Rocket It worked thanks for the help any idea why  
ConsensusTopicCreateTransaction wasn't working because it's there in the docs

**177. By Dan Voyce#8581 in the Consensus Service Channel on 05/28/2021**

Perfect thanks - was just getting to that bit in the docs!

**178. By Deleted User#0000 in the Token Service Channel on 05/27/2021**

Hi I have been reading the documents about HTS and I am not able to find my answer yet. How can I extract the tokenId from my Hedera account. When I do console log to print the account I see the relationship but when I try to transfer tokens to another wallet I have to execute the association. The problem is Since I created the token already I want to just pull the tokenId to execute the association and then proceed with my code to transfer. If this is something you have seen before please just point me to the right direction so I can check

**179. By Sudeesh#4858 in the Developer General Channel on 05/26/2021**

Guys, I want to use hedera mainnet for the production, I have submitted the verification documents in <https://portal.hedera.com/> like a month ago and it is still in verification pending state. Could you please help me regarding, from where should i buy hbar and should i use some exchanges to create account and use it in production?

**180. By Greg Scullard#5365 in the Token Service Channel on 05/26/2021**

SDKs in Java, JavaScript and GoLang. There is a .NET sdk which is shown in the docs and a python sdk which is a wrapper around the Java SDK (see the #-python channel for details). .NET and python SDKs are built by community members.

**181. By Greg Scullard#5365 in the Java Channel on 05/26/2021**

The SDK itself is generic and deals with the Topics and Files that are used to manage generic DiDs and VCs. The example within the same project is an implementation of a specific DiD and VCs for a sample driving licence example. You'd need to implement your own DiD/VC specifications in Java (or a generic handler for any DiD VC) leveraging the DiD

SDK with a REST API that your JS can invoke. The SDK + REST Api could be deployed in a Docker container which you JS could call.

**182. By plechovahuba#0856 in the Developer General Channel on 05/25/2021**

Yes I checked the "Tokenization on Hedera" doc and somehow thought that burn could be happening with HBAR. Thanks for explanation, my bad

**183. By Liberated#0417 in the Developer General Channel on 05/23/2021**

I didn't see anywhere to report grammar errors on docs. Just post it here?

**184. By Andy#5527 in the Token Service Channel on 05/22/2021**

Hi, I'm very new here and have been reading the docs <https://docs.hedera.com/guides/mainnet/fees>

What's the difference between Cryptocurrency Service and the Token Service? Why is there CryptoCreate and TokenCreate?

Thanks so much in advanced.

**185. By hamtron2000#8222 in the Javascript Channel on 05/20/2021**

@Rocket Not yet. Maybe I'm out of my depths, but I've just started following the 'getting started' docs in my node environment. Got my account, keys, hashgraph sdk and dotenv in the package and I'm trying to interact with testnet, but I keep getting hung up on "precheck" errors and not quite sure how to approach the troubleshooting? I feel I'm missing an entire concept here somehow. Is there anyone here that could get a rough around the edges developer up and running? Also, should I be using v1 or v2? Thanks for your patience if you read this far

**186. By esh#1009 in the Token Service Channel on 05/20/2021**

Hi guys. Got a few questions, so maybe someone could answer or reference some documentation online touching those points.

So, HTS can be used to create and transfer tokens. Let's say for the sake of simplicity that would be an NFT token, which is unique and can only be minted once. Say you put it on site, and 2 people are trying to buy it around the same time. How do you deal with the following:

- a) Where the payment transaction would be sent - to the "token" address or to a specific dedicated address?
- b) If it's not the "token address" - how to understand that the transfer done by the "customers" is for that item specifically (memo on the transaction?)
- c) When the first transaction comes in and you "transfer" the token - what happens to the latter transaction - will it be automatically refunded (if it was sent to the "token" address for example) or it would need to be handled in some specific way?

**187. By Rocket#2012 in the Token Service Channel on 05/18/2021**

take a look at the create token page in the hedera sdk documentation

**188. By paglu69#1501 in the Java Channel on 05/18/2021**

com.hedera.hashgraph.sdk.PrecheckStatusException: Hedera transaction

0.0.531120@1621363..... failed pre-check with the status KEY\_PREFIX\_MISMATCH  
TransactionResponse txResponse =  
transaction.freezeWith(client).sign(PrivateKey.fromString(token.getAdminKey())).sign(PrivateKey.fromString(token.getAdminKey())).execute(client);  
getting this error for this line, in the documentation its written One public key matches more than one prefixes on the signature map anyone has any idea about this issue?

**189. By paglu69#1501 in the Token Service Channel on 05/18/2021**

`com.hedera.hashgraph.sdk.PrecheckStatusException: Hedera transaction  
`0.0.531120@1621363.....` failed pre-check with the status `KEY\_PREFIX\_MISMATCH`  
TransactionResponse txResponse =  
transaction.freezeWith(client).sign(PrivateKey.fromString(token.getAdminKey())).sign(PrivateKey.fromString(token.getAdminKey())).execute(client);  
getting this error for this line, in the documentation its written **\*\*One public key matches more than one prefixes on the signature map\*\***  
but cant understand what that actually means

**190. By Rocket#2012 in the Token Service Channel on 05/18/2021**

state proofs aren't available right now, though, right @Greg Scullard ? I dont see where you can get one in the SDK documentation and on the hedera fee site it says they're coming soon

**191. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

@paglu69 the Hedera API isn't JSON, it's gRPC (protobuf), you're probably best look at the SDKs which are documented here: <https://docs.hedera.com>

**192. By d-wave#8323 in the Token Service Channel on 05/18/2021**

I am passing the fileId to ContractCreateTransaction and it does not give any error. but when I try to fetch admin key from it response using getAdminKey() then it does not find that method in response

```
const transaction = await new ContractCreateTransaction()
 .setGas(500)
 .setBytecodeFileId(bytecodeFileId)
 .setAdminKey(adminKey);
```

//Get admin key

```
transaction.getAdminKey()
```

code is failing at transaction.getAdminKey()

d-wave — Today at 10:25 AM

Also I need some info on : how other users can buy NFT ?

how they will connect their wallet ?

I have gone through hedera documentation but did not find anything related to this

**193. By Rocket#2012 in the Token Service Channel on 05/18/2021**

it seems the documentation isn't too clear on how token expiry works

**194. By Rocket#2012 in the Token Service Channel on 05/18/2021**

@Greg Scullard I'm actually curious now, I can't find the token renewal fee on either the fees page or in the documentation.

**195. By Rocket#2012 in the Token Service Channel on 05/18/2021**

I just re-read the documentation

**196. By Rocket#2012 in the Token Service Channel on 05/18/2021**

make sure you read the documentation closely

**197. By ScanMan#5063 in the Developer General Channel on 05/17/2021**

Anyone has the correct link to the Go SDK docu? I am in Github right now and the give link docs.hedera.com/docs/hedera-sdks does not work ...

**198. By Wade#7030 in the Developer General Channel on 05/13/2021**

hello everyone

do you have document about how to integrate(list) hbar into exchange ?

**199. By Rocket#2012 in the Javascript Channel on 05/12/2021**

It's not a documentation issue

**200. By Greg Scullard#5365 in the Javascript Channel on 05/12/2021**

Thanks @Rocket , if it's a documentation issue, you can ping @Simi Hunjan , she's the brains behind our docs site and examples

**201. By access2content#3886 in the Javascript Channel on 05/10/2021**

Hello developers. I am currently facing a bug during wallet creation. Here is the error log:

```
ERROR ::: hashgraphProvider -> createWallet ::: { Error: 13 INTERNAL: Received
RST_STREAM with code 0
at Object.callErrorFromStatus (/home/ubuntu/siki/node-backend/node_modules/@grpc/grpc-js/build/src/call.js:31:26)
at Object.onReceiveStatus (/home/ubuntu/XXXXX/node_modules/@grpc/grpc-js/build/src/client.js:176:52)
at Object.onReceiveStatus (/home/ubuntu/XXXXX/node_modules/@grpc/grpc-js/build/src/client-interceptors.js:336:141)
at Object.onReceiveStatus (/home/ubuntu/XXXXX/node_modules/@grpc/grpc-js/build/src/client-interceptors.js:299:181)
at process.nextTick (/home/ubuntu/XXXXX/node_modules/@grpc/grpc-js/build/src/call-stream.js:145:78)
at process._tickCallback (internal/process/next_tick.js:61:11)
```

I don't face this issue every time the function is run. It only happens some times when an account is to be created. I am using the standard code that is provided in the Hedera Docs. Any suggestions?

**202. By AlexTaylor#3551 in the Token Service Channel on 05/05/2021**

i agree i think it's important to clear this up somehow on the docs. And in general, there is a shortage of common-language taxonomy to distinguish these ideas, partly due to the unique nature of what HTS offers. fyi @Simi Hunjan

**203. By Kalyan#4612 in the Consensus Service Channel on 05/04/2021**

Hello, is there any limitation on number of messages that we can submit under particular topic? I understand that there is a limit on message size (which is 64KB). Similarly, any limit on number of messages under one topic? If I put more and more number of messages under one topic, will there be any performance or any other bottlenecks? Please clarify and request you to point me to right official documentation. Thank you.

**204. By Galois Field#1930 in the Developer General Channel on 05/03/2021**

Are there any docs on how to activate/run the swirls-open-review code. I just got it to build and deploy with Nix (as in NixOS, not the coin) and I'd like to play with it. Perhaps there's a way to build a container from the jars?

**205. By olegb#1331 in the Consensus Service Channel on 05/03/2021**

<https://docs.hedera.com/guides/mainnet/fees>

In fee doc, I see consensus, smart contract, file, ... service fees.

**206. By MikeG#0508 in the Developer General Channel on 05/03/2021**

This is directly from Hedera docs: "Users can also create accounts on the mainnet by visiting the Hedera Portal and creating a new profile. Please note that you will be required to complete a KYC process in order to do this and will be credited 5 hbars for your trouble." which is another lie. When they automatically fail your account because they claim your identity verification failed, how can you get hbar credit?

**207. By Rocket#2012 in the Token Service Channel on 05/03/2021**

I want to say that perhaps it's just a stupid misunderstanding on my part and it's probably not a big deal, but on the other hand I guess there's merit to writing the documentation to minimize stupid misunderstandings

**208. By Rocket#2012 in the Token Service Channel on 05/03/2021**

yeah, this is the wording on the hedera docs

**209. By MikeG#0508 in the Developer General Channel on 05/03/2021**

And the question is: why don't they have control over this? We have put significant development time into making a dApp that would run on Hedera and now we have big questions about the barrier to entry for potential customers to use this. In the documentation under Core Concepts - Accounts it says "Accounts are the central starting point for Hedera.". Maybe this can be rewritten to include my experience. "Accounts are the central starting point for Hedera, we don't know if you'll be able to get an account on Hedera as we have no control over the central starting point of our technology, so, whatever...". Can this be added as a HIP?

**210. By MikeG#0508 in the Developer General Channel on 05/03/2021**

I submitted my passport during the mainnet account creation process and after about 5 days I went back to mainnet to check the status and it says "Verification failed", with no other reason as to why or next steps. What gives? Is this my new existential dilemma, I'm not who my identity documents say I am? Should I call Homeland Security and check that I'm even a citizen? Nice job Hedera!

**211. By Rocket#2012 in the Token Service Channel on 05/03/2021**

I am aware that tokens can be created with a large supply, which is why I'm wondering why there's a hard limit of tokens associated to an account, per the hedera documentation

**212. By coltsfanatic07#0179 in the Developer General Channel on 04/29/2021**

Decide exactly what you want to do, start by reviewing the docs and then grabbing the SDK of your just and just start building. Make sure you get a TestNet account so you can try anything out that you want.

<https://docs.hedera.com/guides/>

**213. By TKoz#3901 in the Developer General Channel on 04/27/2021**

Thanks Brady.

So for this last sentence, "They can have whatever hidden configuration and added code running to mint coins or revert transactions which aren't documented."

Once I can run a mainnet node I can be assured that this isn't the case, but would I be able to verify that this sentence is false if I were to run a full mirror node?

**214. By TKoz#3901 in the Developer General Channel on 04/27/2021**

So in the recent town hall Leemon gave an answer about nodes who do not update their software to the latest version. For those that missed the full context here is the clip:

<https://www.youtube.com/watch?v=jKvQzVRQ1q0&t=994s>

I have question about how this is verified. Since currently only permissioned nodes are allowed in the validating process, how can I be sure that the nodes are using the software that is the same as the open review github repo.

I tried to explain this to someone by showing the clip of Leemon above, but they claim that it's still impossible to know if the code is what they say it is. Here was there response:

"[Leemon] can explain all he wants, as long as you can't join the validation process, it's impossible to verify if it works like the way he says it does. They can have whatever hidden configuration and added code running to mint coins or revert transactions which aren't documented."

Looking for clarification on if this would actually be possible under current conditions?

Thanks

**215. By Cody (SwirlDs)#4217 in the Developer General Channel on 04/22/2021**

My personal opinion on java as a language:

- Sufficiently easy to use. During a regular work day I spend my time fighting algorithmic problems, not fighting the language (not true for all languages)
- Sufficiently performant. If you spend the same amount of time writing an algorithm in Java and C++ you will get roughly similar performance. Maybe you could squeeze a few extra percent out of C++ by dumping 100s of hours into it, but usually there are much more useful optimizations (such as improving algorithms). This was not true historically, but modern java has come a long way.
- There are lots of libraries available

- It runs on pretty much anything
- Strong documentation
- Lots of people know it
- Security issues? Not that I am aware of... Crappy code will have security holes regardless of language, and so the only solution is to not write crappy code.

Is it perfect? No. But it is a solid tool that can do all the things we need to do with it.

**216. By Fenix#3599 in the Token Service Channel on 04/18/2021**

Quick question, is there any good document describing the process of creating a non-fungible token using HTS? I've seen it mentioned in several places on the official site that NFTs are possible on the network, but I couldn't locate a concrete example of the process.

**217. By Zedd#0170 in the Consensus Service Channel on 04/14/2021**

If there's answers in docs I'd love to read that, I've been browsing the API docs

**218. By minwook#6420 in the Javascript Channel on 04/07/2021**

If the following is what you mean with "examples", I could not find what I looked for there.

<https://docs.hedera.com/guides/resources/demo-applications>  
<https://docs.hedera.com/guides/resources/tutorials>  
<https://docs.hedera.com/guides/resources/starter-projects>

Beside these, I have followed the instructions in the SDK document (<https://docs.hedera.com/guides/>) as I was hit with the problem I mentioned in my original message.

I would greatly appreciate if you (or anyone else) could point me to relevant materials.

**219. By gehrig#7214 in the Token Service Channel on 04/06/2021**

Yes, that's correct. Quote is pulled from Leemon in our slack. Your point on token type and docs is noted, we'll try and make sure everything is aligned there. @Simi Hunjan for reference ^

**220. By AlexTaylor#3551 in the Token Service Channel on 04/06/2021**

If this is a quote where is it from?

I've not seen the term TokenType used in the docs. From the described logic I assume this is the Hedera token entity (eg 0.0.12345), and would be Token class in IWA taxonomy?

**221. By Raindancer#7691 in the Developer General Channel on 03/29/2021**

Yeah, the SDKs are well documented as well as the PBFs

**222. By Greg Scullard#5365 in the Developer General Channel on 03/29/2021**

I agree the documentation you need to start on a SDK from scratch is lacking, to be fair 99% of our community uses the SDKs that are there and those are documented in <https://docs.hedera.com> (including examples as well as the examples in the SDKs themselves)

**223. By Raindancer#7691 in the Developer General Channel on 03/29/2021**

I was kinda shocked by the state of the resources (not docs, repositories) given the promises I read about.

**224. By Greg Scullard#5365 in the Developer General Channel on 03/28/2021**

More than happy to help indeed, was merely pointing out that the protobuf messages are reasonably well documented and many don't look at them, even to check the reason for an error message just trying to teach fishing where possible, rather than give fish.

**225. By Greg Scullard#5365 in the Developer General Channel on 03/28/2021**

The protobuf messages are documented, if you follow your nose from a service call or query, you should be able to work out the constituent parts. There are plenty of comments in the message specifications too.

**226. By Raindancer#7691 in the Developer General Channel on 03/27/2021**

Folks, is there any better docs of the API than the ones on the hedera pages? They have a lot of blanks ...

**227. By WacoDeFiAdmin#4269 in the Token Service Channel on 03/23/2021**

Hello- new to the docs and I'm wondering if there is ability to tie a token to an API - like a location on google maps or a one for sports score updating - also, could you create say a token with the power to delete all/part of another users specific type of token - trying to look at this from the gamification ramifications. Thanks!

**228. By teacoat#2092 in the Developer General Channel on 03/21/2021**

ah excellent, thats what i get for skipping straight to the docs lol

**229. By teacoat#2092 in the Developer General Channel on 03/21/2021**

can anyone explain to me this in the docs:

**230. By Greg Scullard#5365 in the Consensus Service Channel on 03/19/2021**

It's good background doc on the architecture and thinking behind using HCS in a layer2 network model.

**231. By KenTheJr#6963 in the Consensus Service Channel on 03/19/2021**

You're fine asking here. Docs are good to read, but there isn't a LOT of documentation about tokens on HCS. There are the stablecoin (<https://github.com/hashgraph/hedera-stable-coin-demo>) and NFT (<https://github.com/hashgraph/hedera-hcs-erc721-sample>) repos in GitHub that can be useful for reference.

**232. By temporalFragment#0471 in the Consensus Service Channel on 03/19/2021**

err, maybe HCS doesn't even use wallets? sorry, I guess I should just go read the HCS docs

**233. By KenTheJr#6963 in the Consensus Service Channel on 03/19/2021**

There are probably two approaches here:

- 1) use chunking to allow much larger message sizes via HCS. This is a pattern supported by any of our official SDKs.
- 2) use something other than on-ledger full documents. An example of this is how we are working w/ IWA to define a DID-based model that only requires the 100-byte memo field on HTS tokens with all the flexibility of massive data sets.



**234. By Simi Hunjan#3270 in the Token Service Channel on 03/18/2021**

Fixed in the docs example. @temporalFragment Thank you for flagging!!

**235. By temporalFragment#0471 in the Token Service Channel on 03/18/2021**

yes SDK examples Documentation->SDKs->Token Service->Get token info

**236. By Greg Scullard#5365 in the Token Service Channel on 03/18/2021**

@temporalFragment is that error in the docs or the sdk examples ?

@Simi Hunjan FYI

**237. By temporalFragment#0471 in the Token Service Channel on 03/18/2021**

PLS FIX THIS ERROR, otherwise the docs are fantastic, thank you

**238. By temporalFragment#0471 in the Token Service Channel on 03/18/2021**

I've created files, created tokens, transferred tokens all using the documentation

**239. By nicolasmanea#3385 in the Javascript Channel on 03/17/2021**

Hi, I am trying to deploy a test smart contract on the Testnet and I am having issues with getting it to work. I have followed the documentation, but surely I have missed something somewhere. Can anyone help?

**240. By bugbytes#0817 in the Developer General Channel on 03/17/2021**

The gossip and mirror nodes are implemented in Java, and have docker deployments you can use for testing. Nodes communicate via gRPC and there are Java, JavaScript and .NET, Go client SDK/toolkits that handle the raw gRPC communication for your app if you don't wish to do so directly. The main gossip node code is here: <https://github.com/hashgraph/hedera-services>

**241. By rhyssied#6748 in the Token Service Channel on 03/14/2021**

<https://docs.hedera.com/guides/docs/hedera-api/miscellaneous/responsecode#responsecodeenum>

Says durations >120 will spawn

an invalid\_transaction\_duration error. Has it changed or are the docs wrong?

**242. By Greg Scullard#5365 in the Token Service Channel on 03/12/2021**

Other than the readme in the repository, there is no additional documentation no.

**243. By Johnda98#0683 in the Developer General Channel on 03/09/2021**

G.. presume the team put in the docs that scVM doesnt implement payable fallback then..  
dats coolio.

**244. By Deleted User#0000 in the Java Channel on 03/07/2021**

Hey guys,

I started developing on Java SDK, seems like docs are a bit outdated. I am trying to create a mirror node client from host:port .  
any suggestion here?

**245. By Greg Scullard#5365 in the Token Service Channel on 03/05/2021**

I think the build copies it to docker so you need to rebuild docker or make it so the file is on a volume available within docker.

**246. By padeum#3079 in the Token Service Channel on 03/05/2021**

Hi. I'm trying out the hts demo but when I'm make changes to the template.json file it does not update with just restart the docker. Is there any easy way, instead of rebuild every time?

**247. By marksimpkins#2065 in the Token Service Channel on 03/03/2021**

Hi, I have I reckon a pretty basic question, from the Docs it says that 'Smart contracts cannot access or transfer HTS tokens at this time.' What are the implications of that? So I cant create 'smart contract' that could take the buy fee for a token and split that amount into different wallets (e.g. owners of copyright on a song)?

**248. By Sudeesh#4858 in the Javascript Channel on 03/02/2021**

Guys, Is there any way to get the transaction cost from TransactionResponse or TransactionReceipt ? Doc says it's possible (<https://docs.hedera.com/guides/docs/hedera-api/miscellaneous/transactionresponse>) but I cant find it in the JS sdk. Currently I am checking the balance before and after the transaction, really hope there is a better way to do it

**249. By igor\_martins#2800 in the Javascript Channel on 02/27/2021**

Hi, I have a question for a topic that I haven't found in the Hedera documentation. Can the size in bytes of a transaction interfere in the amount of time demanded for consensus in the Hedera network?

**250. By danny#5184 in the Token Service Channel on 02/26/2021**

That means a NFT can be shared by many people. If the NFT is made from a file (picture or video), it can be an ownership depending on the percentage of a token.

And can we have any documents for learning about NFT ? I want to know the process to make NFT in Hedera consensus Nodes.

**251. By Matt Smithies#7285 in the Token Service Channel on 02/22/2021**

Anything where documentation or value can be attributed to an asset over time, I'm working on a project with DOVU where land owners / farmers could tokenise land for maintaining carbon stores in the ground. The dNFT token in this case tracks the documents, photos and audits over time which prove updated soil carbon values.

My hope that it goes beyond basic carbon credits and connects the incentive of an additional income to the public accountability to continually follow good agricultural practises, so it becomes more of a medium/long term solution.

**252. By 0xJepsen#5735 in the Token Service Channel on 02/21/2021**

does the token service support NFT minting? Could someone point me to the right docs if you want?

**253. By AlexTaylor#3551 in the Token Service Channel on 02/19/2021**

Great stuff! Are wildcards allowed eg for searching symbol field. I wasn't sure from the docs <https://app.dragonglass.me/hedera/apiview>

Also any examples would be handy.

Example examples: <https://docs.kabuto.sh/reference#filtering>

Thanks!

**254. By rhysied#6748 in the Developer General Channel on 02/18/2021**

for people that are generating transactions and letting users sign the bytes (I know @bugbytes has a tool for doing this in the Windows app store), how are you handling the transaction timing?

are you just generating the transaction timestamp there and then hoping its still valid? Transaction duration is limited to 120 seconds per the docs so it doesn't give a large window of opportunity. Do you create a transactionID slightly in the future and delay submission if the user returns it earlier than expected?

**255. By Simi Hunjan#3270 in the Javascript Channel on 02/17/2021**

@rhysied thank you, the docs are updated!

**256. By rhysied#6748 in the Javascript Channel on 02/17/2021**

another small issue, some of the keys listed in the docs ``https://docs.hedera.com/guides/docs/hedera-api/miscellaneous/responsecode`` dont match those in the JS SDK (e.g. ``EMPTY_LIVEHASH_BODY` / `EMPTY_LIVE_HASH_BODY``).

I'm assuming its actually the docs that need to be updated but not sure

**257. By AlexTaylor#3551 in the Token Service Channel on 02/17/2021**

how do we set the token memo? I see from DG people are doing this but haven't seen it documented yet..

**258. By dylakilla#6385 in the Developer General Channel on 02/16/2021**

Hey in the HH docs there was a statement about the slowest node being the bottleneck for speed. Is this still true?

**259. By alasano#1353 in the Token Service Channel on 02/15/2021**

On github I see an example of a ERC721 equivalent NFT created using HCS - But I have not managed to find a concrete example (with code sample) of NFT using HTS. (either online or searching through discussions here)

I had asked Mance in his AMA (at the end so didn't get an answer) whether I had misunderstood the advertised NFT capability or whether in the future it will be easier to create NFTs without using HFS or IPFS etc for the unique metadata. It also seems like to create an NFT you may need to use CreateToken @ 1\$ a pop and have a singular token perhaps?

In general I think there is a big need to document the functionality properly either on the hedera docs or as a sample in github. NFTs are already huge and getting bigger every day, I think it's worthwhile to take some time to clarify

**260. By BorutG#5215 in the Java Channel on 02/15/2021**

Hi, did I miss something in the docs, I want to get accountId from private / public key.

**261. By Greg Scullard#5365 in the Consensus Service Channel on 02/11/2021**

Thanks @AlexTaylor they do indeed. It seems the additional documented query parameters don't work though. Say I only want topic messages from sequence 15 onwards to save downloading and parsing past messages.

**262. By Kaspir#6996 in the Java Channel on 02/10/2021**

I'm having an issue with getting the tokenId after creation (testnet environment). Docs suggest getting it from the TransactionReceipt but that isn't working. How do I go about this?

**263. By bugbytes#0817 in the Developer General Channel on 02/04/2021**

@Greg Scullard Looks like someone broke <https://github.com/hashgraph/hedera-services> build (at least the docker version) by removing `hapi-proto` do you have guidance on how we're suposto build it now?

**264. By CyberBoar#2880 in the Javascript Channel on 02/04/2021**

Is there a resource doc of how the value of a token is calculated against hbar?

**265. By ciminuv#9431 in the Developer General Channel on 02/03/2021**

Could someone please share me link to there document if there is?

**266. By ciminuv#9431 in the Developer General Channel on 02/03/2021**

Hey guys, I am new here. I am checking the dev documents on Hedera. It said the network compatible with smart contract written in Solidify, but unable to find any extra document talk about interacting with extra services on Hedera network, e.g: file ,etc.

**267. By Nacer Abdelhak#3587 in the Developer General Channel on 02/02/2021**

Because in order to make an escrow smart contract the Fiat currency must be changed into Hbar first than the bot agent ( the computer machine) hold the money of the buyer for example until the seller send documents to the bot agent that prooves he has sent the items or products to the buyer , than the computer release the Hbar to the seller who can exchange his recived Hbar into Fiat currency !!!!!????? Am i right

**268. By CyberBoar#2880 in the Javascript Channel on 02/02/2021**

To sum up: So sign() method determines who pays the fees.?

Let's say alice want to send bob some tokens (without marketplace). The one paying has to sign with her private key then pays the fees also.

Or as alternative the operator pays the fees if there is no .sign()

I've seen no other choice than the execute(client) // being client the operator, i guess it makes sense as the privatekey is needed

?

You do this with vuex-persist store variables, storing the keys in the clients (meaning user). Right?

Are there any alternatives to this? It seems it would be a cumbersome stuff to ask everytime for a key of such length, even with mnemonic tricks. But it doesnt feel like an optimal solution either.

Is there a type of recover-my-password for such keys? (Please provide doc links if so)

2.-Side question: The fees are always in hbars, independent of the tokens value?

I thought i read somewhere the transactions(or was it swaps?) with tokens were free

**269. By Nacer Abdelhak#3587 in the Developer General Channel on 02/02/2021**

Im a doctor not a developper

**270. By very\_very\_special#7485 in the Javascript Channel on 02/02/2021**

Hi guys, I have a doubt. I don't see any "block" being talked about anywhere in the hedera docs. Just txns, no info about their height? Even in the explorers I don't see them. What's this sorcery?

**271. By cbono#5133 in the Javascript Channel on 02/01/2021**

Do you have a link to docs on the transaction. Is the idea that one would collect the private key and pass in a header to the backend service (operator)? Or what's a better way to manage the keys?

**272. By Matt Smithies#7285 in the Token Service Channel on 02/01/2021**

@Greg Scullard It looks like setting the decimals in TokenCreateTransaction divides the supply down to the provided magnitude, is this by design and did I just miss it in the docs?

**273. By Greg Scullard#5365 in the Javascript Channel on 01/29/2021**

@0xholman not sure, I haven't tried. I'd check the envoy docs to see if they support subscriptions (i.e if there is a way to enable grpc subscriptions over grpcWeb)

**274. By harshak777#7678 in the Javascript Channel on 01/28/2021**

Hello guys I after deploying I tried calling a function and I got the response back but I cant see the output of the call... like in the example in the docs the output seemed to be in the rawoutput field but that is missing in my response

**275. By AlexTaylor#3551 in the Token Service Channel on 01/28/2021**

Some notes on HTS as i try to get my head around it might help others, but if anyone spots any clangers please let me know or comment/suggest edits on the doc..

<https://docs.google.com/document/d/1dRsojU6OD651XS9AoiQ3BLnfETAYpRD3RWhlf2KKXaY/>

cheers

**276. By AlexTaylor#3551 in the Developer General Channel on 01/27/2021**

Are livehashes implemented? seen them in the docs, are there any examples? they look handy..

**277. By yezzer#8110 in the Javascript Channel on 01/27/2021**

@AlexTaylor I also had that issue, docs need updating

**278. By Simi Hunjan#3270 in the Javascript Channel on 01/27/2021**

@Jordannn I am using version v2.0.13 of the JS SDK . The doc examples have both v2 and v1 samples that may differ. The file create example for v1 looks like it is using v1.4.4 noted in the comments. Will run the example in that version to see if I experience any errors for both file create and deploying a smart contract. Thanks!

**279. By Jordannn#9673 in the Javascript Channel on 01/27/2021**

@Simi Hunjan thanks for getting back! I'm afk right now but the problem was just that the methods referenced in the doc's related to the CreateFileTransaction as well as the deploy contract transaction (they might be called something different, I can't remember off the top of my head) are different than what is actually in the sdk.

What version of sdk did you use? I'm on the latest, 1.4.something

**280. By Simi Hunjan#3270 in the Javascript Channel on 01/26/2021**

Hi @Jordannn , thanks for your feedback. I used the code in the docs to create a file and all worked well. Can you please share the error message you were receiving to help identify the issue?

**281. By Jordannn#9673 in the Javascript Channel on 01/26/2021**

\*\*\*

Disregard the above. I was able to get it going by checking out the library code. Examples in the docs are out of date it seems

**282. By sokos6#7448 in the Javascript Channel on 01/25/2021**

Hi Greg...I'm not sure at this point. I can run the index.js from the documentation in my react app. I suppose I'm missing the point where it shows up in DragonGlass. I can get the function to show up in the console, with the token name and stuff. I think i'm close, just need help to cross the finish line

**283. By nonconformist#7604 in the Developer General Channel on 01/24/2021**

Hi, does HBAR also has validator nodes? If it has, is there a documentation on how to do it? Thanks

**284. By SauceMaster#5425 in the Javascript Channel on 01/23/2021**

Hello. I am trying to use hedera SDK on the web. I noticed script `bundle:browser` . are there any docs on this?

**285. By jjiaoyuwang#4793 in the Token Service Channel on 01/23/2021**

Hello everyone. Are there any global methods that interact with accounts that contain a token created by HTS? Specifically, I'm thinking burn or get account list. I looked in the docs but couldn't find anything. Many thanks!

Edit: found the information here if anyone's interested <https://docs.hedera.com/guides/docs/mirror-node-api/cryptocurrency-api#token-balances>

**286. By Oxholman#4290 in the Token Service Channel on 01/22/2021**

You can make the name a reference to another document (such as an IPFS hash) that contains metadata about the token

**287. By Cooper#2101 in the Developer General Channel on 01/21/2021**

I believe that token names can be up to 100 characters, but maybe @Simi Hunjan can clarify and/or update our docs!

**288. By KeithCozart#7861 in the Javascript Channel on 01/21/2021**

In the setup docs (<https://docs.hedera.com/guides/getting-started/javascript/environment-set-up>) it says to copy and paste your private key in .env, and then it's used as process.env.MY\_PRIVATE\_KEY in client.setOperator(). However if you want to sign with it you have to convert it with PrivateKey.fromString(process.env.MY\_PRIVATE\_KEY).

**289. By alasano#1353 in the Developer General Channel on 01/19/2021**

I really appreciate all the insight and responses! I feel like I took some things for granted with HBAR so I'm just quickly going through documentation and I'll get back to you

**290. By Johnda98#0683 in the Token Service Channel on 01/18/2021**

@Roland Ringgenberg. If multiple DNA verification source documents are encrypted to HHfile id.. thus is held in consensus.. are bound to that NFT.. I'll bid a few HBAR for that token.. IF and only if, upon a private sale smart contract, that the tea cup is couriered to me. Additional DNA documented test results would need to be bound to that token.. If i were to re-sell that cup in the marketplace for a few HBARS more, Leemon would have to agree to an initial skin cell swab of course.

**291. By Supremax67#5749 in the Token Service Channel on 01/18/2021**

\*"In Hedera Services v0.10.0, we improved the usability of the Hedera Token Service (HTS) with a newTotalSupply field in the receipts of TokenMint and TokenBurn transactions. Without this field, a client must follow the entire record stream of a token's supply changes to be certain of its supply at the consensus timestamp in the receipt. (Note that HTS operations are now enabled on Previewnet and Testnet, but remain disabled on Mainnet at this time. Please consult the SDK documentation for HTS semantics.)"\*

**292. By surajsingla333#5243 in the Javascript Channel on 01/16/2021**

Hey everyone,

```
const client = Client.forTestnet();

client.setOperator(accountId, privateKey);

//Verify the account balance of new
const accountBalance = await new AccountBalanceQuery()
 .setAccountId(accountId)
 .execute(client);

const balance = accountBalance.hbars.toTinybars()
, , ,
```

I am trying this code (the same is given in the get started docs) but I am not getting the amount correctly. It should be in number but I am getting an object like this

```
`{"low":2140267941,"high":230,"unsigned":true}`
```

Can anyone help me out what am I missing? Also, I am using this with react, if that makes any difference?

**293. By burtcoin#0940 in the Token Service Channel on 01/15/2021**

when I go here --> <https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token> I'm trying to find that method in the docs. is this the same type of token?

**294. By Anas | OPOLO.io#2935 in the Javascript Channel on 01/12/2021**

@Greg Scullard Is there any documentation available in which bytes for data present in transaction is defined. for example (start-timestamp, end-timestamp, amount, fees etc)

**295. By Greg Scullard#5365 in the Developer General Channel on 01/11/2021**

@Deleted User unfortunately, we don't have a Python SDK (we have Go, Java, JavaScript

and .Net). The SDKs are all on <http://github.com/hashgraph> and documented here: <https://docs.hedera.com>. They also contain examples to get you started.

Also go to <https://portal.hedera.com> to create yourself a testnet account without which you won't be able to do anything.

Hope this helps and welcome to Hedera.

**296. By AlexTaylor#3551 in the Token Service Channel on 01/09/2021**

Thanks, just taking stock of what's out there at the moment.

Interested in the logical model of what's possible (i think that's covered in the docs already), plus maybe an overview of some of the use cases (again probably in the various webinars)

Any one-pagers or short slide decks would be cool.

**297. By Oxholman#4290 in the Developer General Channel on 01/07/2021**

From release notes "Note that HTS operations are now enabled on Previewnet and Testnet, but remain disabled on Mainnet at this time. Please consult the SDK documentation for HTS semantics.)"

**298. By bugbytes#0817 in the Developer General Channel on 01/04/2021**

The network uses gRPC for the transport and Protobuf as the message format. IIRC you can manually create a protobuf encoded message from JSON using the google provided libraries, but it is much easier to use one of the supported hedera or community SDKs because they manage the details of waiting for message responses and error scenarios. If you want to go that far in the weeds however, the old HAPI site is here <https://github.com/hashgraph/hedera-protobuf> (which has some documentation utility) and the most up-to-date protobuf source files have moved to <https://github.com/hashgraph/hedera-services/tree/master/hapi-proto> . However, I'd recommend using Java, JS, go, or .net instead.

**299. By bugbytes#0817 in the Developer General Channel on 01/04/2021**

@Deleted User I'm not sure how to respond, there are a number of fully developed libraries for accessing the network, Hedera has theirs documented <https://docs.hedera.com/guides/getting-started/java/transfer-hbar> and the .net SDK is partially documented <https://bugbytesinc.github.io/Hashgraph/tutorials/index.html> albeit .net is a volunteer project, I don't get paid to do it.

**300. By Greg Scullard#5365 in the Developer General Channel on 01/03/2021**

@UnknownSoul our GitHub repo has plenty of examples (<https://GitHub.com/hashgraph>), the SDKs in the same repo have simple examples and our docs are in <https://docs.hedera.com>.





**2. By ilia.okhotnikov#4430 in the Consensus Service Channel on 12/21/2020**

Hi guys,  
do you have any documentation on how to connect Hedera Hashgraph Proof-of-Action Microservice ( <https://github.com/hashgraph/hedera-proof-of-action-microservice>) to Hedera mainnet? I've tried to find any reference in the source code but without any success

**3. By Greg Scullard#5365 in the Developer General Channel on 12/13/2020**

@Gehehe <https://docs.hedera.com> has common documentation for the Java, JS and GO SDKs with examples for each language.  
The examples in the repositories and well as various demo project in <https://github.com/hashgraph> are a good place to start looking too.

**4. By Oxholman#4290 in the Developer General Channel on 12/13/2020**

I've only really read the documentation for the javascript one, but they're pretty similar

**5. By Gehehe#8583 in the Developer General Channel on 12/13/2020**

Which has the best documentation if you don't mind me asking , I mean the most descriptive. I enjoy good documentation and learn better with them than videos so I'd love to know if ya know?

**6. By Gehehe#8583 in the Developer General Channel on 12/13/2020**

i wanted to get started with hedera and just wanted to know which SDKs have solid documentation so far. I was hoping for python but that didn't pan out well, js i'd presume has all the documentation?

**7. By staff91#6813 in the Developer General Channel on 12/10/2020**

Hello all.  
I am a native Italy, fluent in English. I have worked worked as a translator for various crypto projects. Therefore, I have translated tons of blockchain-related content. Including whitepapers, documentation, websites and blog articles.

**8. By Greg Scullard#5365 in the Javascript Channel on 12/09/2020**

@Anas | OPOLO.io that's a pretty broad question, suggest you check out <https://docs.hedera.com> and our github <https://github.com/hashgraph> for documentation, sdks and examples.

**9. By bugbytes#0817 in the Token Service Channel on 12/07/2020**

Hey hedera, you're missing the .net sdk on that link, granted a bit behind on the docs, but RC1 got there first

**10. By bugbytes#0817 in the Token Service Channel on 12/07/2020**

I guess the a place to start with the docs would be <https://docs.hedera.com/guides/docs/integrating-a-hedera-token-service-token>

**11. By bugbytes#0817 in the Token Service Channel on 12/07/2020**

With the token API as is it is emerging, this appears to be supported. You can create transactions that atomically exchange hBars and tokens. In the future, I anticipate the wallet developers will incorporate these feature too. At the moment we are very early in the process, HTS is only turned on on previewnet. Documentation will be coming very soon.

**12. By shiva#1467 in the Java Channel on 12/07/2020**

I took clone of <https://github.com/hashgraph/did-sdk-java> and followed <https://www.youtube.com/watch?v=Zitoa1NNMIs&t=179s> these steps by hedera hashgraph but when i am running this cmd `docker build -t did-demo .` i am getting error => ERROR [build 4/4] RUN ./gradlew --no-daemon assemble

Please, Can anyone help me on this

**13. By gehrig#7214 in the Developer General Channel on 11/23/2020**

Looks great, Matt. Nice docs, with Postman and all, too.

**14. By Simi Hunjan#3270 in the Javascript Channel on 11/13/2020**

@mycplus the docs site currently supports v1 documentation. v2 documentation will be come available on 11/19

**15. By Simi Hunjan#3270 in the Java Channel on 11/13/2020**

@you\_ate\_my\_food that method is available in V2 of the SDKs. Documentation for V2 will become available 11/19 on the docs site

**16. By you\_ate\_my\_food#4494 in the Java Channel on 11/13/2020**

What's the ``freezeWith(client)`` method? I see it belongs to Transaction.java  
@Simi Hunjan @Greg Scullard

Thanks! (Are there any docs for the transaction class)?

**17. By Simi Hunjan#3270 in the Token Service Channel on 11/09/2020**

@you\_ate\_my\_food Thanks Rahul. ``setNodeAccountId()`` method can be applied to any transaction type in the Hedera network so you will find that documented here: <https://docs.hedera.com/guides/docs/sdks/transactions>

**18. By Greg Scullard#5365 in the Javascript Channel on 11/09/2020**

The transactions are built in the SDK following the protobuf specification which is documented here: <https://github.com/hashgraph/hedera-protobuf>  
That specification can be compiled into a low level library in a number of languages for use in an application or inclusion in an SDK.  
The format itself (on the wires) is protocol buffers (<https://developers.google.com/protocol-buffers>)

**19. By you\_ate\_my\_food#4494 in the Token Service Channel on 11/08/2020**

It seems to me that <https://docs.hedera.com/guides/docs/sdks/tokens/define-a-token> doesn't have all the methods -  
for example: ``TokenCreateTransaction`` has a ``setNodeAccountId()`` method but the docs don't show that.

**20. By Masakaka#4473 in the Consensus Service Channel on 10/28/2020**

> You can ``fromMnemonic`` on a privateKey in the SDKs, there are ``derive`` methods too on the key, but this is complex, not all wallets use the same derivation / HD path to a Hedera account key.  
@Greg Scullard can show code or document for this

**21. By Masakaka#4473 in the Consensus Service Channel on 10/26/2020**

how to life time for topic and auto renew topic and accountid can show case or document for this ?

**22. By Cooper#2101 in the Javascript Channel on 10/12/2020**

<https://docs.hedera.com> is likely the best place to start @Dan-E

smart contract docs would specifically be <https://docs.hedera.com/guides/docs/sdks/smart-contracts>

**23. By Dan-E#4519 in the Javascript Channel on 10/12/2020**

Can anyone point me in the right direction in the documentation? I uploaded a smart contract on the test network and am trying to access the smart contract and sign a transaction with the creator's private key to execute some functionality.

I don't see any way to do it from contract call, and am wondering where to look.

**24. By Cooper#2101 in the Javascript Channel on 10/12/2020**

Thanks for documenting - will pass this along, and also see if I can get it running on my end. Haven't had time to play around w/ v2 yet but hoping to do so soon

**25. By Cooper#2101 in the Javascript Channel on 10/12/2020**

> "Error: Unable to resolve module `crypto` from `node\_modules/@hashgraph/sdk/src/cryptography/sha384.js`: crypto could not be found within the project."

@0xholman did you figure this out or are you still having issues? as Ken mentioned, we'd love feedback and to document any problems as soon as possible

**26. By gehrig#7214 in the Java Channel on 09/29/2020**

Sure thing, I'll see if we can make that clearer in the docs, as well. We'll be sure to update everyone once the Hedera API adds renewals.

**27. By Greg Scullard#5365 in the Java Channel on 09/22/2020**

Or, run 2 in docker and a third in IntelliJ.

**28. By sandyroxx#8160 in the Consensus Service Channel on 09/12/2020**

hello I want to know the address encoding for hedera coin couldn't find on docs

**29. By Greg Scullard#5365 in the Developer General Channel on 09/12/2020**

Check [docs.hedera.com](https://docs.hedera.com) for updates, likely along with sdk updates that support the service.

**30. By 0xholman#4290 in the Developer General Channel on 09/12/2020**

> Not aware of docs yet. Last tagged version on GitHub should be on preview net.

Deployment is automated on tagging.

@Greg Scullard Perfect, thank you

**31. By Greg Scullard#5365 in the Developer General Channel on 09/12/2020**

Not aware of docs yet. Last tagged version on GitHub should be on preview net.

Deployment is automated on tagging.

**32. By 0xholman#4290 in the Developer General Channel on 09/12/2020**

Is there any documentation available on the token service?

**33. By Greg Scullard#5365 in the Java Channel on 09/09/2020**

Indeed, might even be worth creating a volume for the docker image to store the persisted DiD/VC/... data

**34. By AlexTaylor#3551 in the Java Channel on 09/09/2020**

Another noddy question... is there a quick way to rebuild a docker container (eg after editing .env ) as it takes a while with

```
`docker build -t did-demo .`
```

else for a rainy day ... <https://docs.docker.com/>

**35. By AlexTaylor#3551 in the Java Channel on 09/09/2020**

Thanks @Greg Scullard and sorry i see now that it's also clearly documented in the .env comments!

**36. By AlexTaylor#3551 in the Java Channel on 09/08/2020**

(i'm new to docker)

**37. By AlexTaylor#3551 in the Java Channel on 09/08/2020**

I was able run the DID demo on windows docker. How can I resume an existing appnet? The following creates a completely new appnet each time:

```
docker run -p 5050:5050 did-demo:latest
```

**38. By Greg Scullard#5365 in the Developer General Channel on 09/07/2020**

@AlexTaylor I've just pushed an update

- Dockerfile now uses WORKDIR, it may work better for you

-Note change to readme, the `.env.sample` to copy is the one from `/examples` not `/`

**39. By AlexTaylor#3551 in the Developer General Channel on 09/06/2020**

Can anyone help with the following error building a did-demo on windows docker:

```
` `` `
```

```
C:\Users\User\Downloads\did-sdk-java>docker build -t did-demo .
```

```
Sending build context to Docker daemon 2.448MB
```

```
Step 1/13 : FROM adoptopenjdk:12-jdk-hotspot AS build
```

```
12-jdk-hotspot: Pulling from library/adoptopenjdk
```

```
7ddbc47eeb70: Pull complete
```

```
c1bbdc448b72: Pull complete
```

```
8c3b70e39044: Pull complete
```

```
45d437916d57: Pull complete
```

```
b5035666b1cd: Pull complete
```

```
6001d850392b: Pull complete
```

```
Digest: sha256:4826cc29db2b51f297bfd9a3383b242b34fe32984fd8d3e9c1f04432e3337696
```

```
Status: Downloaded newer image for adoptopenjdk:12-jdk-hotspot
```

```
---> 4a5b686f015a
```

```
Step 2/13 : COPY ./ /opt/hedera-did
```

```
---> 655e4d6f60d5
```

```
Step 3/13 : RUN cd /opt/hedera-did && ./gradlew --no-daemon
```

```
---> Running in e1602c742836
/usr/bin/env: 'sh\r': No such file or directory
The command '/bin/sh -c cd /opt/hedera-did && ./gradlew --no-daemon' returned a non-
zero code: 127
```
```

40. By Supremax67#5749 in the Developer General Channel on 09/06/2020

Most people don't own a fire safe, yet tons of people have important documents.

41. By Rens Laros#0756 in the Developer General Channel on 09/06/2020

> @Rens Laros hi Rens
> Thank you for trying to see it from my view, and helping me fight the issue here. So @Supremax67 in your mind, i must be a scammer because 1. My address is 0.0.8888? 2. I have not moved my funds 3. I was frustrated and accusing Hedera. ?
> Very good ground? You have never held your crypto in the same wallet for more than 6 month without touching it or buying more? Why is that strange? I can document the ownership of the Binarance address where the initial deposits was send from, if there is a need to claim ownership!
> Also as i wrote before, my wallet did have a 24 word seed stored in it, and just for safety, i copied it to the clipboard on my phone to be 100% sure it was correct, before uninstalling the wallet. So yes it is 100% a bug in the wallet, and 0% responsibility from my side.
@Banderas I'm trying to find out how this can be prevented from happening in the future, your attitude towards others here is not something I support at all. There's no fight here and if there was, i'm not participating nor helping you for sure.

There's also for sure some responsibility on your side as you should have 2 seeds + your private key noted down, Besides any technical issues. If you did your part correctly, you would still be able to access your funds.

42. By Banderas#8328 in the Developer General Channel on 09/06/2020

> That's just it, you can speak for yourself and your experience. You can't do it for others tho. you might not be confused with X or Y or understand it all. Some others might be confused or might not fully get something or might think they get it but don't. Based on the issues that are arising, I have the feeling more can be done to inform / prevent compared to what's being done now . You can disagree with that but that doesn't change a thing about my opinion.
@Rens Laros hi Rens
Thank you for trying to see it from my view, and helping me fight the issue here. So @Supremax67 in your mind, i must be a scammer because 1. My address is 0.0.8888? 2. I have not moved my funds 3. I was frustrated and accusing Hedera. ?
Very good ground? You have never held your crypto in the same wallet for more than 6 month without touching it or buying more? Why is that strange? I can document the ownership of the Binarance address where the initial deposits was send from, if there is a need to claim ownership!
Also as i wrote before, my wallet did have a 24 word seed stored in it, and just for safety, i copied it to the clipboard on my phone to be 100% sure it was correct, before uninstalling the wallet. So yes it is 100% a bug in the wallet, and 0% responsibility from my side.

43. By Rens Laros#0756 in the Developer General Channel on 09/06/2020

I'm saying I miss documentations / tutorials for "end users" and team members that actively help with this.

44. By Rens Laros#0756 in the Developer General Channel on 09/06/2020

> I am still using the android wallet that is no longer supported. The day it crashes on me, I know I'll be fine because I got both the seed and the private key

@Supremax67 like i said, lot's of ppl don't know the difference between a seed / key and don't know a seed isn't useable in other apps. Instead of having to explain this over and over to ppl that are having issues. Some documentation / tutorials could be provided up front.

45. By Supremax67#5749 in the Developer General Channel on 09/06/2020

Hi <User>,

Found below is an important notice regarding an update to the Hedera Wallet; this update requires action from all end-users. Please carefully read below for more information:

What is it?

Hedera has updated the Hedera Wallet for iOS and Android to v1.2.

When is this happening?

September 9th, 2019.

Why is Hedera doing this?

This new version of the Hedera Wallet (v1.2) includes an update to the encryption standard (BIP39) used for key generation (public / private key pair and backup phrase). This updated encryption standard is used industry-wide.

You'll also notice there is now an option to "Create Account" in the side-drawer of your Hedera Wallet. This functionality will not work until open access (OA) of the Hedera mainnet.

What do I need to do?

After updating your Hedera Wallet, you'll be asked to either 'Accept' or 'Skip' updating your public / private key pair and backup phrase. Accepting is optional, but highly recommended if you plan to migrate your Hedera account to a hardware wallet or custodial service (rather than opening a new one).

NOTE: If you 'Accept' the update, you MUST securely document your new backup phrase. It is your responsibility to ensure that your backup phrase and public / private key pairs are safely and securely documented. Hedera is unable to offer any assistance for those who have lost their public / private key pairs or backup phrase.

For questions regarding this update, please reach out to support@hedera.com.

The Hedera Team

46. By Rens Laros#0756 in the Developer General Channel on 09/06/2020

All i'm saying is more documentation / articles and more active support from Hedera would be good and should imo be expected. Maybe it helps with all these people having issues

47. By bugbytes#0817 in the Developer General Channel on 09/05/2020

If so, I would be grateful if I could get a peek of their node0 log? I have tried a linux environment, WSL2 environment and Windows Docker Desktop environment and they still won't get past

```
node_0 | This computer has an internal IP address: 172.19.0.3
```

48. By bugbytes#0817 in the Developer General Channel on 09/05/2020

Hi, I was wondering has anyone been able to spin up <https://github.com/hashgraph/hedera-services/blob/master/docs/docker-quickstart.md> with the docker instructions?

49. By bugbytes#0817 in the Developer General Channel on 09/01/2020

```
> 2020-09-01 12:27:08.310 INFO 101 ServicesMain - Now current platform status = ACTIVE in HederaNode#2.
```

```
> 2020-09-01 12:27:08.335 INFO 101 ServicesMain - Now current platform status = ACTIVE in HederaNode#0.
```

```
> 2020-09-01 12:27:08.473 INFO 101 ServicesMain - Now current platform status = ACTIVE in HederaNode#1.
```

@dgustator Unfortunately I'm not getting that far with the docker-compose, first I think the classpath in the startup script is missing the HederaNode.jar file, I modified the script and now I can connect on 127.0.0.1:50213 and retrieve the balance of 0.0.2 (the treasury I believe)...but when I try to do something that requires a TX, I get PLATFORM_NOT_ACTIVE which is consistent with _not_ seeing the above in the log. But I'm rather lost as to what the problem is.

50. By Cody (SwirlDs)#4217 in the Developer General Channel on 08/31/2020

@bugbytes I've had luck running intellij on windows (yuck), linux, and mac. I also got it running in a docker instance that happened to be on a mac.

51. By bugbytes#0817 in the Developer General Channel on 08/30/2020

I'm afraid I don't have IntelliJ, thus the appeal of docker. I spun up docker-compose did a bunch of spelunking, in the code base but unable to figure out what's wrong.

52. By bugbytes#0817 in the Developer General Channel on 08/30/2020

So, I tried setting up a local HH network using the instructions for docker: <https://github.com/hashgraph/hedera-services/blob/master/docs/docker-quickstart.md>

53. By dgustator#9104 in the Developer General Channel on 08/28/2020

@bugbytes I did not try the docker but I was able to run fully functional 3 nodes network from within my IDE . I change the address book to start just one node after that to save memory

54. By bugbytes#0817 in the Developer General Channel on 08/28/2020

Intriguing, I thought it didn't include the core consensus part though. Does docker compose bring up a fully functional test network?

55. By Greg Scullard#5365 in the Developer General Channel on 08/25/2020

the list of nodes is on docs.hedera.com (or check the previewnet.json file in the theft prevention demo project in our github)

56. By pablo12335#8946 in the Java Channel on 08/22/2020

documentation? never heard of her

57. By bugbytes#0817 in the Java Channel on 08/22/2020

Where is the change in DEFAULT PAYABLE SC behavior documented?

58. By AlexTaylor#3551 in the Developer General Channel on 08/12/2020

just documenting the test in case it helps anyone else:

demo of 2 example tx with start time out of sequence vs consensus time

```

tx id, consensus time

0.0.27495@1597287607.000000000, 2020-08-13T03:00:13.342+0000 = 1597287613342

0.0.27495@1597287547.000000000, 2020-08-13T03:00:20.788+0000 = 1597287620788

```

[http://hbar.live/mirror/txn/?](http://hbar.live/mirror/txn/?acWithdraw=0.0.27495&fromEpoch=1597287613342&toEpoch=1597287613342&outputformat=debug)

[acWithdraw=0.0.27495&fromEpoch=1597287613342&toEpoch=1597287613342&outputformat=debug](http://hbar.live/mirror/txn/?acWithdraw=0.0.27495&fromEpoch=1597287613342&toEpoch=1597287613342&outputformat=debug)

[http://hbar.live/mirror/txn/?](http://hbar.live/mirror/txn/?acWithdraw=0.0.27495&fromEpoch=1597287620788&toEpoch=1597287620788&outputformat=debug)

[acWithdraw=0.0.27495&fromEpoch=1597287620788&toEpoch=1597287620788&outputformat=debug](http://hbar.live/mirror/txn/?acWithdraw=0.0.27495&fromEpoch=1597287620788&toEpoch=1597287620788&outputformat=debug)

59. By dgustator#8125 in the Java Channel on 08/11/2020

@Greg Scullard I understand the reasoning but allowing that converts every contract to become effectively "payable". The reason crypto transfer was not allowed and you had to use `contractCallMethod` with empty `functionParameters` and non zero amount was exactly that if you did not want your contract to be payable it would not accept any hbar. If you designed your contract to be payable you also probably provisioned methods to withdraw balance or self destruct. Now, if you by mistake transfer hbar to contract and it was not designed as payable there is no way to withdraw contract balance. Another issue as you can see is there is no way to port some deFi contracts from ethereum to HH because if contract "receives" hbar as a result of crypto transfer transaction its callback function would not be called. Could you please find out if this is by design or just a new loophole? In any event I believe this should be clearly documented in `CryptoTransfer.proto` so people would know what to expect

60. By Oxholman#4290 in the Javascript Channel on 08/11/2020

> Hello, is it possible to update this page ?<https://docs.hedera.com/guides/docs/sdks/consensus/submit-a-message>

>

> "ConsensusSubmitMessageTransaction" no longer exists, it should be replaced by "ConsensusMessageSubmitTransaction". Unfortunately it is impossible to sign the

transaction with the new function

@1337 <https://github.com/hashgraph/hedera-docs> The docs are actually open-source, if you'd like to PR that I'm sure they'd appreciate it

61. By Roland Ringgenberg#2815 in the Consensus Service Channel on 07/25/2020

I'd like to bring the discussion back to bugbytes concern about "This is suposto be a TRUST layer". I try to follow the discussion without actually having used the feature yet, but it also concerns me a little to read "second memo field" and "randomness". To me this sounds a lot like discussions about ordering of ip packages in the early day of the internet. Without already having read the docs (sorry! ;), what is the use-case and reasoning behind this message chunk stuff?

62. By Greg Scullard#5365 in the Developer General Channel on 07/23/2020

Also spotted a question you asked on Telegram wrt dark/light modes. Apple afaik would prefer if your app is compliant to their UI design specs, that is an app that works in whichever mode the end user prefers. I have an app which used it own colour scheme that I had to update after the dark/light option became available. Some things you could do in the past like set a custom colour on a slider aren't available anymore, they're making it harder to stray from Apple UI specs.

That said, you can force your app to be either dark/light irrespective of the user's preference

```
...  
override func viewDidLoad() {  
    super.viewDidLoad()  
    #if DEBUG  
    // change the appearance only while testing  
    overrideUserInterfaceStyle = .dark  
    #endif  
}  
...  
  
https://developer.apple.com/documentation/  
xcode/supporting\_dark\_mode\_in\_your\_interface/  
choosing\_a\_specific\_interface\_style\_for\_your\_ios\_app
```

I would recommend you use

"default" or "system colours" wherever possible, they automatically adjust to light/dark.

63. By Kirill#3013 in the Developer General Channel on 07/16/2020

Hi guys! In the docs <https://docs.hedera.com/guides/mirrornet/run-your-own-beta-mirror-node> and in config I see that AWS S3 buckets are available for hedera-mirror-node, but no detailed info: bucket name, maybe some guide or example config similar to <https://github.com/hashgraph/hedera-mirror-node/blob/master/application.yml> Can anyone advice on this please?

64. By Greg Scullard#5365 in the Consensus Service Channel on 07/13/2020

so HCS itself doesn't know what those messages mean, it has no understanding of an asset, an audit record, the hash of a PDF document, etc... it's just (this is said lightly) a means to deliver messages to multiple people in the same sequence

65. By Oxholman#4290 in the Developer General Channel on 07/07/2020

Awesome to see the docs on github.

66. By Johnda98#0683 in the Java Channel on 07/07/2020

See pic.n prior msg. ... not sure if docs have a typo.. yup \dt not \ls postgres to see tables

67. By Greg Scullard#5365 in the Java Channel on 07/07/2020

@Johnda98 what's wrong with the docs ?

68. By keerthi#3714 in the Javascript Channel on 07/07/2020

Hi , I have started working on hedera. I am using Javascript SDK "hashgraph/sdk", I m trying to use fileService. But I m getting error as "Invalid transaction start" when I execute the code given in the official doc. When i modify these setExpiration and settransactionId's validstartseconds parameter, Iam getting error as " transaction expired". Could you please guide me ?

69. By Johnda98#0683 in the Java Channel on 07/06/2020

@Greg Scullard .. Have em fix the docs.. K cool.

70. By gehrig#7214 in the Developer General Channel on 07/06/2020

Hey @AlexTaylor , I know we've begun to use them internally for a treasury like use case that you mention, but I'm not aware of any live multi-sig uses in the wild. There is currently an arbitrary 10 key max for lists, unsure about hierarchy I'd imagine there is some size limit. @Simi Hunjan we may want to document these limits (if it isn't already).

71. By Johnda98#0683 in the Java Channel on 07/06/2020

very sweet.. main mirror up ... not sure if docs have a typo.. yup \dt not \ls

72. By Cooper#2101 in the Developer General Channel on 06/29/2020

Hi @bejee45 - you should be able to install it by running

```
npm install @hashgraph/sdk
```

You can see the SDK reference documentation at - <https://docs.hedera.com/guides/docs/sdks/cryptocurrency/create-an-account>

There are also a variety of examples available in the GitHub repository itself - <https://github.com/hashgraph/hedera-sdk-js>

73. By Johnda98#0683 in the Java Channel on 06/28/2020

its a digital Exchange Asset representing legal docs.. its priced in a coin 80894

74. By Gokul#6925 in the Developer General Channel on 06/22/2020

Hi,
while going through the #deleted-channel ,hedera Docs, what I understood was, when coming to storage vs performance, hedera weighs the performance more and reduce storage(or wont be storing the data for long). In case of Consensus as service it is understandable that we should use the mirror nodes to save the transaction hashes,msgs along with running hashes.But what about the case of smart contracts,what will happen to the data i put into smart contracts,will it be on the network nodes? for how long? Can anyone please explain this to me ?

75. By you_ate_my_food#4494 in the Java Channel on 06/19/2020

@Greg Scullard any ideas on why one could get a `CONTRACT_EXECUTION_ERROR`? The docs just say that it isn't a typical contract error and it is definitely not a `CONTRACT_REVERT`. Do you know of any situations where that could be fired?

76. By Hp#9211 in the Developer General Channel on 06/18/2020

@rhysied I have copied information from the hedera official docs and i doublechecked and i am giving the right configuration "3.testnet.hedera.com:50211":"0.0.6"

77. By Khoa#1731 in the Consensus Service Channel on 06/16/2020

from this step of building the instructions

```
```make configtxgen configtxlator cryptogen orderer peer docker```
```

**78. By oruki#1848 in the Consensus Service Channel on 06/16/2020**

testnet looks fine. @blockhash if the orderer docker containers are still up, can you do a ```docker logs orderer.example.com```?

**79. By keith#6591 in the Javascript Channel on 06/11/2020**

looking at this line in the doc examples `console.log(`file contents: ${new TextDecoder().decode(fileContents)}`)`

**80. By Cooper#2101 in the Javascript Channel on 06/08/2020**

> Good day all,

>

> I have a scenario, where I have a contract that uses a library(Solidity). Is there a way to deploy such kind of contract?

@metselder Hello have you seen our solidity examples, or the documentation?

It should showcase how to deploy solidity. <https://docs.hedera.com/guides/docs/sdks/smart-contracts/create-a-smart-contract>

**81. By Greg Scullard#5365 in the Developer General Channel on 06/08/2020**

@Deleted User the best option is to use one of the SDKs, they are documented here:

<https://docs.hedera.com>. If you need to go "native" with gRPC, best learn as much as you can on gRPC and protobuf first by going through examples related to your language of choice first, then use one of the SDKs as a source of inspiration and check out our github repo where the protobuf files have their own project. There is documentation in the same repo, although it's extracted from the comments/structure of the proto files, but a good starting point.

**82. By adian#2923 in the Java Channel on 06/05/2020**

@Greg Scullard How much does record costs? I couldn't find this information in the documentation.

**83. By Cooper#2101 in the Developer General Channel on 06/03/2020**

@AlexTaylor I've had some issues where docs took a bit to load, but it could also just be my wifi connection I did notice the broken links that you mentioned, which were leftover from a previous version of the docs site. Those should be fixed now!

**84. By AlexTaylor#3551 in the Developer General Channel on 06/03/2020**

@hedera are some docs pages down?

on page

<https://www.hedera.com/file-service>

link appears broken "Page not found"

<https://docs.hedera.com/guides/hedera-api/file-service/fileservice.proto>

I also got an error 525 on the docs homepage but this appears to be ok now:

<https://docs.hedera.com/guides/docs/sdks>

**85. By Greg Scullard#5365 in the Java Channel on 05/25/2020**

Smart contracts are solidity, widely document already

**86. By Manheb#3342 in the Javascript Channel on 05/20/2020**

in solidity documents we have an election sample code and by study this code we can understand how it's work

**87. By Greg Scullard#5365 in the Javascript Channel on 05/17/2020**

Some of the api documented in protobuf isn't implemented yet (getByKey query, livehashes/claims for example).

**88. By harshak777#7678 in the Javascript Channel on 05/17/2020**

Like is there any full docs of all the functions available for this sdk

**89. By wheresLINA (Hedera)#0936 in the Developer General Channel on 05/17/2020**

@Nivedita Prasad i would say checking out our website and documentation would be a good start: [hedera.com](https://hedera.com) & [docs.hedera.com](https://docs.hedera.com)

**90. By Johnda98#0683 in the Java Channel on 05/16/2020**

Could be how the scVM 'is' .. the same .sol worked perfectly on a EVM here .. and I know hedera doesnt use msg.data and other special variables.. but curious if HH has any documentaiton on how the VM differs.. as its a pain to hope n pray .. what runs in unit test in a in-mem VM or ropsten.. had 'interesting effects' until it settled when deployed to testnet.. all good.. I think there maybe some delays or something worth double checking on that process, internally there.. on the contractId to bytecode fileid and what gets deployed to the scVM, when, syncup etc... deeper in the stack.. anyway.. working ok now.

**91. By Cooper#2101 in the Developer General Channel on 05/12/2020**

> I am new in hashgraph I want to start one project in hashgraph so where I start best for me

@Ripoon Hey Alex, welcome to the Hedera community! Probably the best place to start is by signing up on [portal.hedera.com](https://portal.hedera.com) to get your Testnet Account credentials. From there, you can dive into either our documentation ([docs.hedera.com](https://docs.hedera.com)), or the SDK examples and demo applications available on our GitHub ([github.com/hashgraph](https://github.com/hashgraph)) Feel free to DM me and I can answer any initial questions you may have.

**92. By dbdagr8#6960 in the Consensus Service Channel on 05/02/2020**

Hi,

What are the exact list of changes that need to be done to existing fabric 2.0.0 network to use Hedera Consensus Service? Is documentation for that available?

**93. By TKoz#3901 in the Developer General Channel on 04/30/2020**

> @TKoz the node associated with account 0.0.5 is temporarily unavailable , could it be you're trying to send it a transaction ?

@Greg Scullard That's possible. I'm looking through the docs on github, and I can't find any commands on how to choose a node to send transactions to? Is that possible in the hedera-cli?

**94. By Greg Scullard#5365 in the Java Channel on 04/29/2020**

That probably should be referenced in the document/code to be fair.

**95. By Greg Scullard#5365 in the Developer General Channel on 04/28/2020**

@0xholman we're aware of some slight documentation issues around getting the demo up and running. Will try to fix in the next few days.

**96. By Cooper#2101 in the Consensus Service Channel on 04/23/2020**

Hi @AlexTaylor - Accounts, Topics, Files, and Contracts, are all "entities" on Hedera that all have the same easily readable format. You can learn a bit more about them in the docs here - <https://docs.hedera.com/guides/docs/sdks/specialized-types#topicid>

**97. By Craig Drabik#8023 in the Developer General Channel on 04/23/2020**

if you want people to use your development framework, great docs help

**98. By 0xholman#4290 in the Developer General Channel on 04/23/2020**

Alright, sweet, gonna check out that as well. Are you the one writing the docs?

**99. By KenTheJr#6963 in the Developer General Channel on 04/23/2020**

...seriously though...I checked out the Github project...that is really well documented. Thanks for that.

**100. By Craig Drabik#8023 in the Java Channel on 04/16/2020**

run the gradle build on a docker container, copy out the artifact, then continue

**101. By Craig Drabik#8023 in the Java Channel on 04/16/2020**

or, an option d is you could dockerize some of the build

**102. By you\_ate\_my\_food#4494 in the Developer General Channel on 04/01/2020**

The documentstion online?

**103. By Johnda98#0683 in the Java Channel on 03/30/2020**

I'll give it a shot today.. I think opcodes are opcodes.. docs say its constantinople ok.. thats the current ScVM .. all coolio

**104. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 03/13/2020**

Of course. Thanks again. I think some good documentation, maybe another video is in order here. Account creation is obviously essential to the Hedera ecosystem, it doesn't make sense to confuse the heck out of people right out of the gate. Maybe I'll dig in and make a video for people with tiny brains like me.

**105. By MetaCombo#3767 in the Developer General Channel on 03/09/2020**

So I've took a look at the documentation and it doesn't seem very in depth. Can anyone point me in the right direction for hedera solidity tutorials?

**106. By Greg Scullard#5365 in the Developer General Channel on 03/09/2020**

@revenga69 ten years in the making, Blockchain (or distributed ledgers in general) indeed still has to prove it can make a difference like the internet did, time will tell but from the discussions I'm having, green shoots are happening all over the place.

There are several reasons why this hasn't happened yet in truth

- Speed, until Hedera, no public DLT has the capability to process sufficient transactions per second for a large business or two, let alone thousands

- Fairness, most DLTs to date leave the door open to some form of manipulation. Hedera fixes that.

- Stability, no enterprise would risk putting their data on a platform that is at risk of forking. If you tokenize a physical asset or record ownership of a physical asset on a platform that will fork, you're opening the door to each asset being owned by two different people (Alice transfers to Bob on fork A and to Carol on fork B. Bob and Carol can both claim ownership of the asset -> not good).

You're also correct that many uses cases are solved with a database (They are today), but that requires trust. Third parties exist to create that trust, but you have to trust them too.

Any data held in a database is subject to modification by bad actors, someone owns and runs it, has the keys to the kingdom and can change data.

With a DLT, this becomes impossible, or at least leaves a trace. Let's take a simple example. You have a contract with a large employer, or you agree up to terms and conditions on a web site. Can you guarantee 100% that the contract can't be tampered with, can you guarantee 100% that the web site owner hasn't updated terms and conditions behind your back in the event of a dispute.

Store a hash of the document in a ledger that gives you a timestamp that can't be altered and you have 100% guarantees that any tampering will be evident.

Simple use case that alone could generate millions of TPS per day.

**107. By blockhash#7901 in the Consensus Service Channel on 03/04/2020**

thanks. got it . any documentation available for the above hcs implementation?

**108. By gehrig#7214 in the Javascript Channel on 03/03/2020**

Thanks for the feedback. Seems like we haven't made the proper updates to docs since it has reached greater stability at v1. I'll see what our team can do to smooth things out.

**109. By peskelin#2526 in the Javascript Channel on 03/03/2020**

In general, my feedback is that I find the documentation to be all over the place. There seem to be many changes throughout minor and major version increments that have rendered the docs both in GitHub and in various Medium articles and YouTube inaccurate.

**110. By Greg Scullard#5365 in the Consensus Service Channel on 02/27/2020**

The humans in your example would want to prove what they did (eg hash of a tax return sent to hcs to prove the hash and therefore the doc existed at the time of sending).

**111. By Cooper#2101 in the Javascript Channel on 02/21/2020**

Solidity docs should be the same. For deploying solidity to Hedera using JavaScript, you should be able to check out <https://docs.hedera.com/guides/docs/sdks/smart-contracts>

**112. By Berardo S.#9830 in the Javascript Channel on 02/21/2020**

hi please someone can link me a documentation about solidity developing in hashgraph. Specifics please.

**113. By peskelin#7248 in the Javascript Channel on 02/19/2020**

Got you now - ok so the old docs did not get updated with the `getAccountBalance(accountID)` param

**114. By mehcode#0963 in the Javascript Channel on 02/19/2020**

( yes the docs are at fault for suggesting it, but the above is the actual issue )

**115. By mehcode#0963 in the Javascript Channel on 02/19/2020**

The docs were written (well) before the SDKs were stable and the doc writer (who is awesome btw) has been going through and fixing documentation.

**116. By mehcode#0963 in the Javascript Channel on 02/19/2020**

@peskelin I've personally written around 90% of the SDKs so if you want to bitch, yell here. You have caught the docs in a pre 1.0 transition period though.

**117. By mehcode#0963 in the Javascript Channel on 02/19/2020**

So the doc writer may have assumed that the overload also exists in JavaScript, with good reason.

**118. By mehcode#0963 in the Javascript Channel on 02/19/2020**

No. That's fair. The docs are very wrong actually.

**119. By mehcode#0963 in the Javascript Channel on 02/19/2020**

This doesn't sound like anything wrong with Hedera, just perhaps the docs are a bit light on what ``.env`` means and how it works. I wouldn't have written them that way but ``.env`` is just a way to load config from a file for development purposes.

**120. By Berardo S.#9830 in the Developer General Channel on 02/17/2020**

someone can link me doc about solidity integration with hashgraph please?

**121. By Nicholas#6381 in the Developer General Channel on 02/14/2020**

hbar coin is built on top of the hashgraph. can we create another coin using their network? is there any limitation or prohibition to do this? if not, who knows where is the documentation to start?

**122. By Greg Scullard#5365 in the Developer General Channel on 02/14/2020**

@legel the distribution of hbar is documented on our web site.

**123. By Greg Scullard#5365 in the Consensus Service Channel on 02/13/2020**

@sharkyrob if you saw the webinar, I went through the demo (some of it) that is included



in hcs-sxc-java. It runs in docker containers, there's a bit of readme to go through, creating a topic Id and you should be able to run the demo to get a feel for it, then look at the code (if Java's your thing)

**124. By wn#7267 in the Developer General Channel on 02/13/2020**

Hi guys, has been a while since I checked in on the development of Hedera, and a lot has happened since. Kudos for all achievements so far. Very impressive.

I wanted to read a bit more about how the payment system works with HBAR, but since the documentation/information in circulation is also growing I couldn't find it directly. Can anyone point me in the right direction for this? The main thing I wanted to figure out is how micropayments work on Hedera...

**125. By Cooper#2101 in the Developer General Channel on 02/12/2020**

> Hey guys I am able to stake my bars right ?

@grandoptimist staking is under development, alongside some other features you can see within the docs <https://docs.hedera.com/guides/>

**126. By Gavin#4900 in the Javascript Channel on 02/10/2020**

i'm loooking at the upgraded docs

**127. By Craig Drabik#8023 in the Javascript Channel on 02/06/2020**

I typically write a little shell script for each project to set node version, environment variables, start up dependencies in Docker like DB containers, etc.

**128. By mehcode#0963 in the Java Channel on 02/04/2020**

The only documented difference between `TransactionRecordQuery` and `TransactionId#getRecord` is that the latter throws an exception on a bad status in the receipt

**129. By Nistrim#1750 in the Developer General Channel on 01/29/2020**

Yes, they must have put the threshold for creating a record when receiving, too low. I think the documentation warns against this

**130. By mehcode#0963 in the Developer General Channel on 01/23/2020**

To be fair from day 1 there was the same docs I'm referring to in the protobufs

**131. By bugbytes#0817 in the Developer General Channel on 01/23/2020**

@mehcode I disagree, it was functionality that was taken away without warning. So much of our efforts have had to proceed without documentation to start, the way the system works is the documentation, so changes like these are very disruptive.

**132. By mehcode#0963 in the Developer General Channel on 01/23/2020**

They were only ever documented as being returned on creations

**133. By mehcode#0963 in the Java Channel on 01/11/2020**

If you want to poke around the generated docs

**134. By mehcode#0963 in the Java Channel on 01/11/2020**

I just realized I never announced that we have API docs

**135. By mehcode#0963 in the Java Channel on 01/09/2020**

The Java SDK v0.9.0 is out. Existing applications should work as-is with several deprecations as we preapre to release v1.0.0 to match the JavaScript SDK.

Changes documented here: <https://github.com/hashgraph/hedera-sdk-java/blob/master/CHANGELOG.md>

As always, please let me know if you have any issues using the SDK or updating your applications.

**136. By Craig Drabik#8023 in the Java Channel on 01/09/2020**

@JSilver @Johnda98 My understanding is along the lines of JSilver's - orderers broadcast the fair transaction order, peers validate/produce blocks.

Certs can be one of the most painful things about transitioning from HLF in Docker on a workstation to actual production.

**137. By gehrig#7214 in the Java Channel on 01/08/2020**

We should have this more clearly called out in our docs. Thanks for flagging, Eamonn.

**138. By nerooweb#5104 in the Java Channel on 01/04/2020**

Okay, as an example:

I want to authorise my drivers license on the Hedera Network:

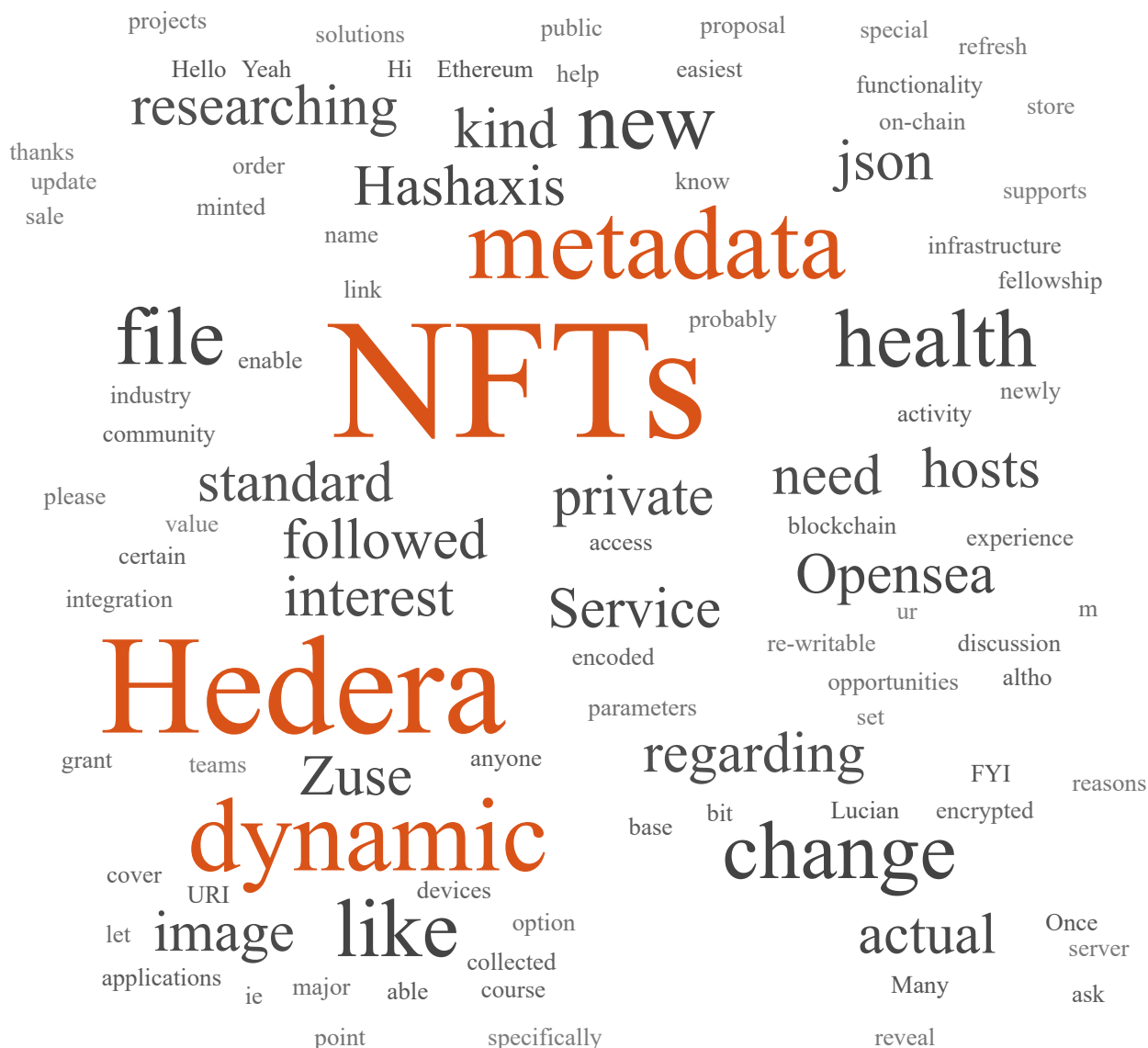
There would be a plain text file which says, that I (My name and details,) have a valid license. And a trusted KYC institute (maybe the gorverment) would also say that this account ID belongs to me. They would create a document which testifies both and both parties + me would sign this document and add it as a claim to my account?



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## 5. dynamic nft

### Comments in 2022



#### 1. By Ashe Oro#8558 in the Smart Contracts Channel on 07/20/2022

Hi, I can help.

1. "Does Hedera supports reveal functionality like used in Ethereum/Opensea where we change the base URI to change the cover image to actual images after the public sale?"  
A: Once the metadata value is set on a newly minted NFT, you will not be able to change it on-chain to point to a new link (which hosts ur json file). If you want to update NFTs (ie dynamic NFTs) you will most likely need to host the json file on a server where you have write access. There may be more "web3" solutions regarding using Hedera File Service, but for now this is probably the easiest way, altho a bit web2.

2. "Is there an option to refresh metadata on Hashaxis/Zuse like there is on OpenSea"

A: I'm actually not certain and you would need to ask those teams specifically.

3. "What is the metadata standard followed by Hedera/Hashaxis/Zuse for NFTs?"

A: Here is the standard that all major NFT projects on Hedera follow <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-412.md>

### **2. By AbsolutelyNot#3226 in the Javascript Channel on 07/11/2022**

FYI - there is a community proposal on dynamic NFTs which may interest you.

### **3. By Xmarket6#8374 in the Developer General Channel on 05/04/2022**

Hello all

My name is Lucian, and I am new to Hedera. I am researching new blockchain infrastructure opportunities where it can enable the integration of dynamic NFTs with the health industry/services using re-writable metadata in order to store special health parameters collected by various health applications and devices, of course, encrypted and encoded for private reasons.

If anyone is interested or has experience regarding Hedera have a private discussion about it.

Also, if there is any kind of research grant/fellowship for this kind of activity please let me know.

Many thanks!

### **4. By AdrianMsM91 {KBL}#9999 in the Developer General Channel on 04/10/2022**

Yeah Dynamic Nfts



When it comes to creating products and services to empower individuals and families to gain an income, I think it makes more sense (and credibility) for any and all proof to be onchain inside of an HCS message, and timestamped based on the consensus.

In addition with such a restriction I am concerned that it will limit the possible innovation for the development of new specs and processes for HIPs centred around HCS.

So I'd be more comfortable with a range of 8196 - 16392 bytes, with increased fees if required, anyone agree?

---

With that said I am working on a potential 1000+ TPS HCS usecase too (which will easily fit within 1024bytes) so happy to discuss the challenges.

### **2. By Matt Smithies#7285 in the Token Service Channel on 02/17/2021**

I've thrown this kinda/sorta spec for dynamic NFTs (dNFTs) together, as a starting point. As fundamentally we need to start the conversation for different token specs somewhere. <https://github.com/trustringerprises/hedera-dnft-specification>





## Comments in 2023



I am trying to adjust the amount of HBARs provided in the "msg.value" field when invoking the "CreateFungibleToken" of the HTS precompiled contract.

Exchange rates might change and consequently Hbar cost for token create might change. The demo contract provided has the means to adjust how much Hbar is transferred as

value to the precompile call.

In the How to teach this section the contract TokenCreateContract.sol is mentioned, but I checked it and I could not find any code implementing the HBAR adjustment.

<https://github.com/hashgraph/hedera-smart-contracts/blob/main/contracts/hts-precompile/examples/token-create/TokenCreateContract.sol>

### **2. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 03/07/2023**

Hello, good afternoon, I saw this HIP has just been approved. <https://github.com/hashgraph/hedera-improvement-proposal/pull/689> , how long can It takes to have implemented in the SDK?

### **3. By AlexTaylor#3551 in the Developer General Channel on 02/27/2023**

Are there any decentralized private file services out there, built on hedera or otherwise?

How about extending HIP412 for some kind of "smart" uri eg

hedera://0.0.12345?cid=xxx

where the hedera file is an address book of nodes, and CID is a content identifier

### **4. By rhysied#6748 in the Developer General Channel on 02/24/2023**

re: HIP-412, are there any recommended sizes for the "image" field provided for wallets/ marketplaces outside of `a width between 320 and 1080 pixels` ? As in have people gravitated towards any particular size?

Also are there any guidelines about optimisation (e.g. using pngquant) ?

### **5. By Michael Garber#5033 in the Javascript Channel on 02/23/2023**

Hello! There is a HIP in draft that discusses this very thing. Would you mind commenting on this pull request and describing what you need batch transactions for? <https://github.com/hashgraph/hedera-improvement-proposal/pull/551/files>

### **6. By DeeJay#0076 in the Token Service Channel on 02/18/2023**

I believe the treasury account is exempt from all charges for **\*\*outbound\*\*** as mentioned.

fee collector accounts 'it depends'

There was a recent HIP (HIP-573) to allow all collectors accounts to be excluded from any other custom fees but it is optional to turn on I believe in order to ensure backward compatibility in case there was reliance on the old implementation.

### **7. By bugbytes#0817 in the Token Service Channel on 02/18/2023**

Other accounts sending **\*inbound\*** to the treasury are **\*not\*** exempt from fees, there was some discussion (and maybe a HIP) to change that shortly after one of the ransom-token attacks happened.

### **8. By RaphaelM#1144 in the Javascript Channel on 02/15/2023**

Hey ! I'm unsure if the custom token fees are malfunctioning or if you're encountering

issues when trying to exempt a specific account from paying these fees ?  
I wanted to mention that with HIP-573, you have the option to exclude a particular account from paying custom fees.  
Therefore, Hedera has not removed custom fees, but has instead added this as an optional feature.

**9. By piyush16#5845 in the Javascript Channel on 02/15/2023**

I need to implement HIP-573 Custom Token Fee.  
I saw this article <https://hedera.com/blog/how-to-exempt-hedera-accounts-from-custom-token-fees>

I am trying to implement it but not working as expected.  
Do anyone know why v30 output is not working now.  
Is hedera removed custom token fee concept in upcoming versions?

**10. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/14/2023**

As DeeJay shared, architecture tweak may be considered.  
Also, there is work being done on EVM Archive node (<https://hips.hedera.com/hip/hip-584>) currently targeting early Q2.  
This may be of interest to you.

**11. By AbsolutelyNot#3226 in the Developer General Channel on 02/11/2023**

Would this help ?

<https://hips.hedera.com/HIP/hip-412.html>

**12. By Ashe Oro#8558 in the Developer General Channel on 02/10/2023**

btw @altoid HIP583 was originally scheduled to be included in the 0.35 release in early March, but seeing there's on-going discussions it may be delayed <https://github.com/hashgraph/hedera-improvement-proposal/pull/673>

**13. By AbsolutelyNot#3226 in the Developer General Channel on 02/10/2023**

Curious to learn what you are working on ? Possible you can DM me, I would like to take this back to the team working on this HIP

**14. By altoid#2758 in the Developer General Channel on 02/10/2023**

My proof of concept is all set now, thank you so much for all your help I ended up just going with previewnet HIP-538 is a big deal for us makes things much more usable. Testnet was essentially not operative for EVM so probably something going on in that RPC adapter layer

**15. By Ashe Oro#8558 in the Developer General Channel on 02/09/2023**

btw, if you use preview net, then HIP583 is already deployed

**16. By Ashe Oro#8558 in the Developer General Channel on 02/09/2023**

i know it's a bit wonky but HIP-583 will resolve this oddness

**17. By Ashe Oro#8558 in the Developer General Channel on 02/09/2023**

again, for now you'll probably have to use the SDK to send hbar to the pubkey (not pub addr) until this HIP is active. It was supposed to go into the most recent Services release, but was pushed. Lemme find out the current status.

**18. By Ashe Oro#8558 in the Developer General Channel on 02/09/2023**

idk if MM lets you send to a pubkey. We'll very soon have this addressed <https://hips.hedera.com/hip/hip-583>

**19. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/07/2023**

For now, and it is about to change in near future, treasury should continue to operate as is. Treasury is exempt from \_rent\_.

The behavior once rents are enforced on treasury is still being considered (probably a HIP for community to provide input).

**20. By antorcol#9712 in the Token Service Channel on 02/01/2023**

I'm going over the info about the token-service, and I have a couple of questions. My first question is about creating tokens:

The most recent TokenCreate API at <https://docs.hedera.com/hedera/docs/hedera-api/token-service/tokencreate> lists 21 properties you can use to create a token. It is unclear which of these are required. The whitepaper at [https://hedera.com/hh\\_tokenization-whitepaper\\_v2\\_20210101.pdf](https://hedera.com/hh_tokenization-whitepaper_v2_20210101.pdf) lists a fewer number of properties (12), but does list `name`, `symbol`, `decimals`, `treasury account`, `token renewal account`, and `initial supply` as required or mandatory. Should I assume this same set of six properties are the only required ones to create a token?

Also, side question -- is the correct term for these token features `*field*`, `*attribute*`, `*property*`, or ????. The SDK listed above uses `*field*`. The HIP-412 (<https://hips.hedera.com/hip/hip-412#required-optional-and-conditionally-optional-fields>) also uses `*field*`, but Michael Mulders' discussion about Hedera NFT Metadata (<https://hedera.com/blog/hedera-nft-metadata-hip412>) uses `*property*`.

**21. By RaphaelM#1144 in the Smart Contracts Channel on 02/01/2023**

Hey ! @Miguel Ángel- ioBuilders

Like DeeJay said we don't have any fee component inside the HederaToken struct of the precompiled so you can't update the fee schedule from the precompiled contract.

From HIP-514: Hedera Token Service Precompiled Contract Token Management Functions <https://hips.hedera.com/hip/hip-514>

You can see that they are an user story that talk about retrieve the fee schedule but not update it, I need to talk with the team to see if this is something on the roadmap.

**22. By Justyn#3610 in the Token Service Channel on 01/31/2023**

Is there a HIP anywhere in the pipeline yet that you know of to address these allowance issues? I think it would benefit a lot of people to get them resolved.

**23. By AbsolutelyNot#3226 in the Developer General Channel on 01/31/2023**

@shailesh\_144 in addition to what @DeeJay shared, we expect to push out HIP-513 (<https://hips.hedera.com/hip/hip-513>) later in Feb. This may be of interest to you.

**24. By AbsolutelyNot#3226 in the Token Service Channel on 01/30/2023**

@Chriss , @DeeJay : Confirmed from the team. There should be +1000 Auto-associations slots. these can be added 5K steps. So the pattern as described in the HIP should work. If it does not, we got a bug !

**25. By DeeJay#0076 in the Developer General Channel on 01/30/2023**

```
const query = new AccountInfoQuery().setAccountId(acctId);
const info = await query.execute(client);

const tokenMap = info.tokenRelationships;
const tokenBal = tokenMap.get(tokenId.toString());
...
```

**26. By johnda98#4728 in the Smart Contracts Channel on 01/27/2023**

@Ed Marquez Other option as mentioned a while ago.. would be yes a HIP to offer a deployer a longer auto-renew - as greater deploy tran cost - but a revenue benefit to the nodes/resources.. depending on yr tran cost algos.. maybe a geometric or linear scale 92day .... 184.. etc..

this way a User see a use-case of a SC and verifies the autorenew and can say to themselves.. ok cool.. this Platforms usecase's lifecycle is 6 months 184 days or so.. and held immutable until then(ie first rent due).. no need to check if platform has paid rent by calling its contract to see if it excepts or to set a calendar to get Assets out - if they see renew account is 0 and SC holds 0 HBAR.

Usecase/platform can pre-pay its Landlord and that pre-pay is paid/final.. and can be seen publicly by a User off the bat... as opposed to having to validate platforms's promises to its Users that they will pay a rolling 92 days... or say a User having to check that to see if a platform has paid and/or hbar held is not 0.

'all good' as they say.

**27. By GarySmith | | Don't DM#4478 in the Developer General Channel on 01/24/2023**

@everyone HashPack 5.0.0 launched today, we will have an official announcement of this update soon but you may notice 5 letters after your account id in various places - this is called a checksum and is basically an optional security measure to help make sure people don't send to an incorrect account. It was proposed by Leemon himself in HIP-15 (<https://hips.hedera.com/hip/hip-15>)

You don't need to include this string of characters to send to your account, its just an extra layer for apps that support it. You are free to leave it off if whatever dapp or exchange you are using doesnt support it.

If you are sending a large amount of hbar from one account to another, its useful to include it to make sure you don't miss a number and send 10k hbar to 0.0.1235 instead of 0.0.12345 for example.

We will likely tweak our implementation of it based on user feedback, so let us know if you find this useful (or hate it)

**28. By AbsolutelyNot#3226 in the Javascript Channel on 01/18/2023**

Ah. Let me get you a HIP reference which may address your use-case.

**29. By DeeJay#0076 in the Smart Contracts Channel on 01/17/2023**

Thanks kindly. I tried but failed to do that. Specifically in this case I think it is an extension to a HIP vs a new one and a change in method signature. It would be awesome is the comments checked in with a method referenced the relevant HIPs to help track down changes - sounds like a great intro note for devs coming to the network [sidebar: i am not sure is the precompile SC as in a package to help track versions now? I have become used to coming up the latest version haphazardly when I spot it]

**30. By Greg Scullard#5365 in the Smart Contracts Channel on 01/17/2023**

I'll see if there is an easy way to find out other than to look at release notes for the HIP that implements a feature, then checking if that release is on previewnet/testnet/mainnet.

**31. By jeflyer1234#8780 in the Developer General Channel on 01/17/2023**

Is this hip 351 live?

**32. By AbsolutelyNot#3226 in the Developer General Channel on 01/17/2023**

For random number see: <https://hips.hedera.com/HIP/hip-351.html>

For Oracle Svc: Plz contact THF. They have few initiatives in flight and at the moment this may be invite only

**33. By The Catholic Novelist#7123 in the Developer General Channel on 01/16/2023**

Hey, I was reading some of Leemon's papers and he answered my question--I think it was in one of the HIPs--which suggested I had to put HBAR into the new Hashpack wallet on Brave--and viola: then I could see the public key!

**34. By Chriss#9308 in the Token Service Channel on 01/16/2023**

Back to my question, I read a sentence in HIP-367,

> A User can configure auto association to more than 1,000

and now I see that it doesn't mean that a user can configure unlimited auto association. Although if it mean the unlimited auto association, this approach is not smart way for some reasons.

Let me try DeeJay your great guide. The example SC transaction is so useful.

**35. By AbsolutelyNot#3226 in the Smart Contracts Channel on 01/14/2023**

John, it may be possible and you can suggest a HIP.

I think there were other suggestions from community, e.g. have XXX months of rent equivalent HBar deposited in the entity account and as long as this deposit threshold is met, the entity is exempt from rent. (Increasing costs of malicious action)

**36. By johnda98#4728 in the Smart Contracts Channel on 01/14/2023**

@AbsolutelyNot mentioned it a few months ago - be awesome if a deployer could pay upon deploy - for an auto-renew longer than 90 days - for usecases that demand no rent-liability for any period ie immutable upon deploy for x seconds. a nice HIP for someone to suggest - nodes may like the extra tran & gas income upfront of maintaining a contract > 90 days.

**37. By AbsolutelyNot#3226 in the Developer General Channel on 01/12/2023**

Address CheckSum -a saftey measure. You can read more about it here.

<https://hips.hedera.com/hip/hip-15>

\_To prevent such manual entry mistakes, we propose the introduction of address checksums, which could be optional to preserve address backward compatibility.\_

**38. By Liebenfiels#7895 in the Developer General Channel on 01/01/2023**

You have now just over 4k unique accounts used daily out of well over 1M. This statistics still improved in 2022, previously for years it was around 1k/daily.

For 2023 what to focus on :

1. Network scalling (as pitched during 2018 Hedera launch) as priority to enable larger uses cases, 100k TPS throughput minimum.
2. All ecosystem to be aware and implement single standards, create one if needed. HIPs should be read.
3. To make nodes more robust, nodes consolidation mentioned before as one solution, to enable more council members joining existing infrastructure in form of partnership of three with existing council members.
4. Network is still in beta, to leave beta impentation and stop playing with frequent monthly protocol updates, upgrades should be done rarely to allow stability.





Hence some rely on wall garden QR that is not in readable format by generic scanners from phone camera, neither is acceptable the same as QR code just solely based on account ID (never secure).

What should be coded in QR text based (account ID with check sum) then will always be in Human readable format by scanners outside wallet, so you can hover with phone camera on website and read it, and wallet can do the check account ID vs check sum if correct (match).

### **4. By Liebenfiels#7895 in the Developer General Channel on 12/30/2022**

No, should be based on HIP-15 I put in comments on GitHub how it could work to utilise Dr Baird.

I came with different alternative check sum method and QR based on that, but easier to follow HIP-15 and do based on that. Very simply, no need invent anything else what Dr Baird did. Foundation failed to follow through.

### **5. By Liebenfiels#7895 in the Developer General Channel on 12/30/2022**

There were priorities they focused on hype mainly NFT market places, DeFi and in broader web3 metaverse scams etc. They decide who win who loses if they refuse "grant" to some wallets, or provide different amount.

Grants don't work that way, they misuse the word grant completely. Grants are transparent, publically announced and anyone should be able to receive it if they met basic conditions. They should have created open public and equal sum grants to:

1. Implement HIP-15
2. Implement QR code standard.

All wallets to receive equal amount, not one gets more one gets less, one nothing. It is not fair, neither transparent neither grant in first place what they do.

### **6. By Liebenfiels#7895 in the Developer General Channel on 12/30/2022**

Year on and Hbar Foundation was not even able to enforce key wallets to implement single HIP-15 checksum standards as a condition to provide grants to them. They haven't driven any standards in fact neither QR code standard, nothing.

Apart from Wallawallet that implemented HIP-15 as they are always excellent focusing on important priorities first such security for users not to typo accounts ID, what matters and then infrastructure for NFT hype etc.

There are key priorities that always has to be followed.

### **7. By DeeJay#0076 in the Smart Contracts Channel on 12/20/2022**

there are a few multi-file standards for NFTs. <https://hips.hedera.com/hip/hip-412> a reasonable discussion on it.

### **8. By Ed Marquez#6403 in the Javascript Channel on 12/16/2022**

Feels like a bug since the HIP talks about 3rd parties being able to verify, but that seems to be missing.

A workaround could be doing a call to the random number precompile and writing to state the number. See <https://hashscan.io/testnet/transaction/1670012887.602679404?tid=0.0.2520793-1670012876-681938430>

**9. By Ed Marquez#6403 in the Javascript Channel on 12/14/2022**

It's not clear to me how HashConnect could be returning a transaction record when the signer/provider interface (<https://hips.hedera.com/hip/hip-338>) doesn't have a way to do so. The interface has ways to deal with receipts, but I don't see records (there are account records but not tx records).

If you're trying to get the result from a contract function you're executing via HashPack, I'd consider:

- hethers.js (<https://docs.hedera.com/hethers/application-programming-interface/signers>) should be compatible with HashPack (<https://github.com/Hashpack/hashconnect#providersigner>)
- mirror node queries (that's what hethers.js does in some cases too)

**10. By Ed Marquez#6403 in the Javascript Channel on 12/14/2022**

This previous response points to the documentation about the signer/provider interface that HashPack followed for implementation. <https://discord.com/channels/373889138199494658/616725732650909710/1052260039475335308>

Here's also the hip for additional detailed on the interface: <https://hips.hedera.com/hip/hip-338> - I don't remember if there's a way to get a tx record with this interface. So yes, the Client in the SDK is would be the way to get that record

iirc, I ran into a similar issue trying to perform paid queries with the HashPack signer a while back (see <https://github.com/Hashpack/hashconnect/issues/111>). I believe their recommendation was to use mirror node queries as they didn't have plans to add those type of paid queries.

**11. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 12/12/2022**  
Happy Monday folks, hope everyone is doing great!

As the Hedera NFT ecosystem grows, users and creators coming into the space need clear rules of the road or the end result will be a bad user experience.

Team Wallawallet works hard to support the latest standards in the Hedera ecosystem, join us today, Monday December 12th at 12 noon EDT to find out how.

In this week's live streaming Alternative Money Monday we'll do a deep dive into:

- What is the NFT HIP-412 and who cares?
- How does Wallawallet handle NFTs?
- What data is required to make an NFT?
- Files array - recursive metadata
- Display type - attributes
- Correct metadata for images - mime\_types

We're giving away 20,000 \$JAM tokens every week! Follow us on Twitter @wallawallet to

learn how or just watch the livestream. SEE YOU THERE!  
<https://youtu.be/VOAuKvpm8PE>

**12. By Supremax67#5749 in the Developer General Channel on 12/09/2022**

@armbarsubmission You are referring to people who are fine tuning the HIP process and introduced the HCS as well as HTS.

**13. By johnda98#4728 in the Smart Contracts Channel on 12/08/2022**

I dont get paid to 'author' HIPs, regrettably.. even 'lowly Devs' have to eat food and pay heating bills.. much to the shock of abstract talker type high esteemed 'non-Devs'.

**14. By DeeJay#0076 in the Smart Contracts Channel on 12/08/2022**

@johnda98 sounds like you need to author a new HIP

**15. By johnda98#4728 in the Token Service Channel on 12/08/2022**

it means removed from ledger after a warning Exception that the Payee- token creator/or owning account(contracts account) is empty and if it is not loaded w hbar before the grace period then it falls off ledger. ie yes dead. Hedera nodes the Landlords boot u out n off, unlike a heavy-chain DAG 'tree', Hedera is a healthy-cost efficient & fast 'vine' DAG... ie it doesnt carry dead 'state' on its leaves forever.

If a Contract address owns any other assets than Hbar ie NFTs/FTs then at boot off time.. they go into the custody of ..... a HIP is in process I think.. or @Greg Scullard Greg takes care of them..

my use-case doesnt need >90days auto-renew so not that familiar or tested what happens to any assets the expiring Contract holds.. say if it owns any tokens.

**16. By Greg Scullard#5365 in the Token Service Channel on 12/07/2022**

if 0x protocol is in use, there are a couple of HIPs in progress you'll need (working on them)

**17. By Michael Garber#5033 in the Smart Contracts Channel on 12/05/2022**

That there are hts contracts that interact with hts and allow you to create associate mint burn transfer and dissociate. <https://hips.hedera.com/hip/hip-358>

**18. By Michael Garber#5033 in the Consensus Service Channel on 12/01/2022**

Start your discussion there. I'm the hip maintainer currently. LMK if you need anything to help you. Excited to see your discussion!

**19. By Supremax67#5749 in the Developer General Channel on 12/01/2022**

@min11benja Your comment is not related to the #-collaborate channel. You may wish to repost it to one of the other channel or such as here or talk about it under #-hips  
If you have a suggestion on how to improve the network, you should open an Hedera Improvement proposal.

**20. By johnda98#4728 in the Smart Contracts Channel on 11/30/2022**

then a HIP. So you can die with ease knowing your Contract is safe for say a period of time into the future.. say 6months or so... etc... even if Auntie flow drains its balance. ie pre-paid immutability is by definition mutable. oops. lol.

**21. By reg.cs#2829 in the Consensus Service Channel on 11/30/2022**

Ok, how would I go about to create a draft so that it can be discussed? Just fork `hashgraph/hedera-improvement-proposal`, create my HIP draft, and file a pull request?

**22. By Greg Scullard#5365 in the Consensus Service Channel on 11/30/2022**

Sounds like this could be a candidate for a HIP

**23. By alexrp#0334 in the Developer General Channel on 11/30/2022**

Hi there!

I have red HIP-16 (<https://hips.hedera.com/hip/hip-16>) but i still have a doubt, is the smart contract and account auto-renewal enabled by default or it's necessary to send a tx to enable it? Thanks in advanced!

**24. By bugbytes#0817 in the Developer General Channel on 11/30/2022**

@Greg Scullard is HIP-631 going to get rid of \*Account Aliases\*?

**25. By UniqueVoid#9995 in the Developer General Channel on 11/29/2022**

The more I learn about these partnerships the more I like it, I think HBAR is gonna go places since it's the native token associated with all the things the hedera network can do

**26. By Supremax67#5749 in the Developer General Channel on 11/29/2022**

There's currently a flaw in the current staking model which I have raised. All the details are posted on the HIP

**27. By nube#7126 in the Developer General Channel on 11/28/2022**

<https://hips.hedera.com/>

**28. By nube#7126 in the Developer General Channel on 11/28/2022**

Then make a hip

**29. By nube#7126 in the Developer General Channel on 11/28/2022**

make a hip about it :D

**30. By ipconfig#3828 in the Smart Contracts Channel on 11/27/2022**

I recently transferred the ownership of my contract from an ED25519 address to an ECDSA\_SECP256K1 address. However, when I call the contract's ownerOnly guarded functions it reverts.

I used the Ethereum Address provided by HashScan (<https://hashscan.io/mainnet/account/0.0.1455952>) (0x620500552B98986e5609D4Ec768D636e4570245c)

Did I permanently lock myself out of my contract, or do I have to send the TX as an Eth TX? RE: HIP 410 (<https://hips.hedera.com/hip/hip-410>)

**31. By AlexTaylor#3551 in the Token Service Channel on 11/23/2022**

Are there any HIPs around private assets attached to NFTs? eg downloads etc

HIP412 now has a checksum within the files array, so this could be used, and the uri could be eg a Hedera file with a list of providers and endpoints managing access to those assets.. any thoughts?

<https://hips.hedera.com/hip/hip-412>

**32. By Liebenfiels#7895 in the Developer General Channel on 11/17/2022**

If they don't follow meetings I doubt they even read the HIPs as take longer to read and understand than attending meetings. Then is disconnect if they don't know what is going on in ecosystem and there was a lot of criticism in 2021 that many are not attending meetings.

Weekly meetings I would skip too- cannot be too frequent, but these are not that frequent meetings. They all should participate equally to have equal share in votes and driving ecosystem and if 1/3 skips then why they even in.

**33. By Liebenfiels#7895 in the Developer General Channel on 11/17/2022**

they vote during meetings on many aspects like HIP etc native staking etc, many skip most meetings, these are large companies present in many countries so time zone is no excuse.

**34. By Greg Scullard#5365 in the Token Service Channel on 11/17/2022**

There may be a HIP in the works to improve the experience in relation to airdrops, etc... watch this space.

**35. By Michael Garber#5033 in the Token Service Channel on 11/15/2022**

You should champion a HIP discussion and see where it goes! <https://github.com/hashgraph/hedera-improvement-proposal/discussions/new>

**36. By Michael Garber#5033 in the Token Service Channel on 11/15/2022**

Not that I am aware of. You have to be a fee collector to be exempt from fees. HIP-583 outlines the behavior of exempting fee collectors from paying fees <https://hips.hedera.com/hip/hip-573>

**37. By Michael Garber#5033 in the Token Service Channel on 11/14/2022**

That's not available currently, and was an early design decision to have it like that.

"if you had a freeze key and frozen accounts, unsetting the key would mean these accounts would be frozen for ever, unless a check is made which could be costly in terms of performance"

@Greg Scullard

There is a discussion on this here so hedera might have this ability. The hip is being formed. If you'd like to contribute your thoughts we encourage it! <https://github.com/hashgraph/hedera-improvement-proposal/pull/540>

**38. By Liebenfiels#7895 in the Developer General Channel on 11/11/2022**

Correct Hbar price help to recover 1M Hbar as user had email linked to account (when Hbar price was offering price prediction in early 2019), but lots of accounts are ghost or dormant like recently person confused Bye-nance 0.0.16952 with 0.0.16852 while check sum will pick that up. All funds there 19k are misplaced as nearly 100% chance to brute force valid account ID by typo in Hedera (1 to 4 Billion chance in Bitcoin address format). I will send note to Foundation- if they sponsor any wallet and if wallet have no Dr Baird check-sum HIP-15 implemented by Jan 1st 2023 to state that all the wallets will be liable and will need to cover the misplaced Hbar, if they take money from Foundation and don't do damn job by following single standards in ecosystem, putting user at risk of misplacing it.

**39. By Liebenfiels#7895 in the Developer General Channel on 11/11/2022**

yes and then add account to history- they haven't yet implemented in ecosystem HIP-15 check sum for accounts, only Walla Wallet (very good wallet) and Hashscan has it. It is 5 letters secondary check that will pick up typos. Typos not hacks not lost phrases are main reason people lose funds in ecosystem.

**40. By Supremax67#5749 in the Smart Contracts Channel on 11/11/2022**

<trying to visualize a computer with pieces of microchips tied together in a Hashgraph formation coming out of every port>

**41. By Liebenfiels#7895 in the Developer General Channel on 11/11/2022**

Hence you don't have any discussion on HIP-415 as they wanted to pass it quietly and not make public fuss about it.

Even it is post consensus, but database (what matters) is based on chain of very frequent blocks (neither is good solution as has to prove at scale).

**42. By Liebenfiels#7895 in the Developer General Channel on 11/11/2022**

With recent HIP -415 Introduction of Blocks the 2 sec events are packed into blocks at mirror nodes level.

For each tx it displays block number. It forms chain of blocks linked with other hence Hedera is a blockchain.

Bit embarrassing as Hedera battered blockchain in past like there is no tomorrow, and realised to track it to be searchable it need linked blocks. Hence before you had limited past search capability on explorers, as there was no blocks.

They labelled feature as required for Ethereum compatibility as excuse, but in fact you would never be able to find search past tx easily. It would not work without being blockchain.

**43. By jaycool#5616 in the Token Service Channel on 11/07/2022**

Just uplifting this one last time before I make the HIP

HIPs have sections for community insight / contributions so any thoughts would be great

**44. By Liebenfiels#7895 in the Developer General Channel on 11/06/2022**

@Supremax67 it is good that you put that comment on staking HIP-406 as council will read it as it is their duty.

**45. By jaycool#5616 in the Token Service Channel on 11/06/2022**

Also - anyone got any good ways of getting around multi /threshold keys for admin key on TokenCreateTransactions? its more challenging as the public keys are required to sign for admin keys. Im about to send a HIP asking if they can implement the functionality onto ScheduleCreateTransaction()

**46. By Liebenfiels#7895 in the Developer General Channel on 11/05/2022**

They ignored any solution in the HIP- that would prevent such scenrario.

**47. By NetOperator Wibby#7587 in the Developer General Channel on 11/04/2022**

UD is built on partnerships. Surprised they didn't go through with collaborating with the Handshake owner of .wallet

**48. By RaphaelM#1144 in the Javascript Channel on 11/03/2022**

@Supremax67 I think it's HIP 406

related link to github <https://github.com/hashgraph/hedera-improvement-proposal/discussions/408>

**49. By Supremax67#5749 in the Javascript Channel on 11/03/2022**

@RaphaelM I have to add comments to a HIP due to a huge design flaw surrounding proxy staking and potential security risk to the network. You wouldn't have the HIP #?

**50. By Supremax67#5749 in the Token Service Channel on 11/03/2022**

That would require a HIP to be submitted. Anyone can submit a HIP

**51. By rbair#5985 in the Token Service Channel on 10/31/2022**

BTW, we are well along in design of a HIP that solves the "Ransom Token" issue. Whoever has sent those is just wasting their money, users will be able to get rid of them without paying custom fees or renewal fees. Details should be published in the very near future on the design we have for it.

**52. By bugbytes#0817 in the Token Service Channel on 10/30/2022**

Thought there was discussion of a HIP for that, but the \*ransom token\* creator would prob. not enable that flag.

**53. By Liebenfiels#7895 in the Developer General Channel on 10/29/2022**

people including wallets providers (they don't) need to understand HIP-15 and all could be explained on one slide including account ID format, check sum and what to type. And of course single QR code standard that does not even exists 4.5 years after network was launched.

**54. By Liebenfiels#7895 in the Developer General Channel on 10/29/2022**

I search on Hedera website and realised indeed there is no single simple infographic slide what is Account in Hedera and how to send receive funds including what 0.0. means and HIP-15 checksum explained and when memo is required. Users need to have that on single simple slide – easily findable, the same for wallets- as website is poorly searchable. Things may seem obvious but they not, as there is public key on top.

**55. By Liebenfiels#7895 in the Developer General Channel on 10/28/2022**

Hashscan become the best explorer and only to date that follows HIP-15 checksum for accounts. Very clear to read- great work by Swirls.

**56. By Liebenfiels#7895 in the Developer General Channel on 10/27/2022**

There are no airdrops in network, there are rewards for contributing to node consensus by staking account balance. Read Hedera website (blog), HIP on GitHub and twitter and hedera-news and announcement channels here

**57. By Liebenfiels#7895 in the Developer General Channel on 10/25/2022**

DM yes, will drop you article and video on Bitcoin implementation- admin will eat me if I put here as off topic. There was no other way to end 2008 WP, if word recovery was used

Bitcoin would not take off, but it was signalled that Bitcoin will always follow law. I would be keen to know if Mr Hoskinson stays strongly against it as Hedera Founders. At some point in time I will put HIP and then we will see what happens.

**58. By nube#7126 in the Developer General Channel on 10/25/2022**

improvement proposals?  
<https://hips.hedera.com/>

**59. By Supremax67#5749 in the Developer General Channel on 10/25/2022**

So all partnerships and marketing is handled primarily on the grant side of things. HBAR foundation being the better known one. I would recommend reaching out to them.

**60. By Supremax67#5749 in the Developer General Channel on 10/25/2022**

@nube Yeah, sounds like a deviation to me. Hedera doesn't have much control over third party wallets. If Ledger needs a special function to be enabled on Hedera side, I would have suspected they would have submitted a HIP by now. So unless there's a HIP I wasn't aware of, that would still be a Ledger question.

**61. By Liebenfiels#7895 in the Developer General Channel on 10/23/2022**

Yes it is like asking Hedera why wallets (Walla did) have not implemented yet Dr Baird HIP-15 check sum for account IDs. Its been over year and nothing..

**62. By Liebenfiels#7895 in the Developer General Channel on 10/23/2022**

All networks with long term survival plan will eventually have it implemented, you need to be patient. When the time comes, when community and what is important Hedera (they have very strong stance against it) is ready, I will put the HIP

**63. By Liebenfiels#7895 in the Developer General Channel on 10/22/2022**

I have not lost any keys or misplaced Hbar and will not include anyone in recovery HIP if they are affected. I will be happy to add them as user stories only but they will not be co-authors of HIP (only those to contribute if are not affected)

**64. By Liebenfiels#7895 in the Developer General Channel on 10/22/2022**

I pointed on that problem in HIP, the problem if they set up stake nodes once and lose keys.

Don't forget in near future the fairly tale stories of no recovery in DLT will be old fallacies- non recovery in law is a con (does not exist).

I will be putting recovery at ledger HIP at some point- but won't call like that not to annoy Founders.

It will be called something like "Non-binding unilateral agreement between stakeholder and Hedera". Mechanism I solved already easy to implement- but will be expensive for user and take minimum 9 months (attorney cost, legal aspect check at council level, notary).

Bitcoin is doing freezing and recovery implementation at code already (lost and stolen funds)

**65. By Liebenfiels#7895 in the Developer General Channel on 10/22/2022**

yes of course ping smaller day to day use account ID to your bigger account that you dont need to touch and keep on ledger. Once the bigger account receives tx the stake reward



from account 800 will be included in it. It is all explained by Hedera on twitter, blog and HIP what triggers payment.

**66. By Iron#4548 in the Developer General Channel on 10/22/2022**

it's more that the cold wallet is somewhat difficult to access by easy means. I'd rather have my hot wallet send a txn or something to my cold wallet to trigger the rewards to be pulled to that cold wallet. Curious if that's possible. Or do I need to create a HIP?

**67. By Patches | TMCC CEO#0001 in the Token Service Channel on 10/21/2022**

posted new HIP discussion for metadata string updates through addition of new METADATA key for NFTs if anyone is interested or has feedback.

<https://github.com/hashgraph/hedera-improvement-proposal/discussions/607>

**68. By Liebenfiels#7895 in the Developer General Channel on 10/21/2022**

People should start reading HIPs

**69. By Supremax67#5749 in the Token Service Channel on 10/21/2022**

@johnda98 That is why the HIP would exist. To iron out the details. But it is possible to find a happy place.

**70. By johnda98#4728 in the Token Service Channel on 10/21/2022**

@tinkerm .. add to thoughts for core/ new HIP.. see doesnt effect me.. designed usecase around 90day mutability. So Traders know that when they create a Contract it is non-rented immutable to ABFT for 90days ONLY.. and that is the lifespan of the Contract in the case, even though there are no Token assets tied to the Contract's Account.

**71. By johnda98#4728 in the Token Service Channel on 10/21/2022**

Moreover.. it better be a darn high priority HIP.. for any projects with tokens in Contracts models.

**72. By Supremax67#5749 in the Token Service Channel on 10/21/2022**

@johnda98 In the banking industry, we have such a thing as a dormant account where if we don't hear from the client after a certain period, the funds are sent off to a financial regulatory division of the government which holds unclaimed funds. Maybe something a bit similar can be done for accounts with no balance after sometimes has passed where it goes to a dedicated treasury account for holding. Or, an option for the user to dedicate their next of kin. I am sure the HIP related to this would have to be long and detailed.

**73. By johnda98#4728 in the Token Service Channel on 10/21/2022**

Ethically .. on AccountID autorenew fail, after/on grace period Exception/warning ... then any assoc Token assets should die with the Account, UNLESS a Beneficiary Account is present at/by that removal from ledger time hit.. and the Beneficiary is auto-associated at die time, with the Tokens it holds. same goes for Contracts..?... soooo...

soooo.. Dont send your tokens to a Contract that has a proposed/future hip implemented beneficiary address - in case one forgets those Assets.. then its too bad.. unless Contract is self aware of its Account balance and soon as it sees the CONTRACT\_EXPIRED\_AND\_AWAITNG\_PERM.... exception.. then it self calls a func that spins through & sends all Tokens back to Accounts it received them from.. held in a

array of a mapping for all token types it holds.

but then it wont have the hbar in its Account to pay the gas to execute that call on itself... ooohh.. the beauty of 'Rented immutability. ie mutably immutable. @tinkerm

**74. By tinkerm#4293 in the Token Service Channel on 10/21/2022**

sounds like we need a HIP discussion

**75. By tinkerm#4293 in the Token Service Channel on 10/21/2022**

> then WHY should the source Treasury receive that 'value' back ? without the Account's 'Widow' being asked if the Account had a living will.  
that's a very interesting point; maybe we need a HIP to add a "beneficiary account" field

**76. By cheezcharmer#5634 in the Javascript Channel on 10/18/2022**

if token is not associated then tokenrelationships will return a null obj

**77. By Christos58#1505 in the Developer General Channel on 10/18/2022**

Are all these partnerships all for decoration?

**78. By Liebenfiels#7895 in the Developer General Channel on 10/15/2022**

More innovative solutions then better, they key is implementation. The HIP-15 was approved over a year ago and it is still not broadly used. Hashscan is only explorer to date that integrated it.

Wallawallet will implement it in Android shortly, I think is in IOS already, Hashpack is planning in next months.

Blade is not there yet with check sum, has wall garden QR code- which is totally useless (not readable by phone camera), not sure why their developers waste time on it. I would suggest them to learn how QR code should work (look on BTC addresses on blockchair explorer- user can read the code with any phone camera as text file, check if the address coded by QR matches displayed on website before using wallet phone app to read it. For Hedera account QR should be also in text as account ID-check sum e.g. 0.0.1234-pikcw, then wallet to check if the package embedded in QR code is correct or not (if hard coded check sum in mainnet matches this in QR. End of innovation, not some other nonsense solutions.

Hopefully by end of year check sum will be in most apps, that is all what is needed as user will have 5 letters to confirm they match together with account ID as double check. Then QR code in readable for user format based on singe standard.

The priorities should be HIP implementations and then other things on roadmap.

**79. By Liebenfiels#7895 in the Developer General Channel on 10/14/2022**

of course if you read some of my past posts, lot of funds are lost due to simply account mis-type (typos as 10% of population is disclectic), One person lost over 200k Hbar by typing wrong account as there is no sum checks in most wallets. Hence many of my post on HIP-15 implementation, single QR code standard in ecosystem etc

**80. By nube#7126 in the Developer General Channel on 10/14/2022**

@tww9 this might be useful

<https://hips.hedera.com/hip/hip-406>

<https://hedera.com/blog/proxy-staking-on-hedera>

**81. By johnsonb-oci#6673 in the Smart Contracts Channel on 10/13/2022**

How does Hedera know the account that is paying, in the hip-213 example it just looks like all there is different is the extra public key and signature. Does Hedera use the public key to do a reverse search for the account registered with that public key?

**82. By johnsonb-oci#6673 in the Smart Contracts Channel on 10/13/2022**

I was looking at <https://hips.hedera.com/hip/hip-213>, since I was wanting to have a non-sender account be the fee payer for an action, but I have a question on it.

**83. By tinkerm#4293 in the Smart Contracts Channel on 10/13/2022**

Hi DeeJay, I'll ping you once a HIP materializes, it's still in the "strongly requested feature" camp ATM!

**84. By DeeJay#0076 in the Smart Contracts Channel on 10/13/2022**

Intrigued on the mention of a token airdrop feature...do you have the associated HIP reference? I ask as unsure what angle it might be taking so figured should ask for the relevant HIP before making a fool of myself

**85. By Iron#4548 in the Smart Contracts Channel on 10/12/2022**

Thanks for that Michael. That was the answer I'm after. So from what I read based on your statement, are you saying that there is a work item planned to do this very thing in Q1 '23 or beyond? If so, is there a work item or a HIP that I can track? I'm willing to wait

**86. By tinkerm#4293 in the Smart Contracts Channel on 10/12/2022**

Hi @Iron , there are no technical roadblocks to creating this feature

But as a work item, IMO it will need some vocal advocates and community support (highly up-voted HIP ideas, etc) for Hedera to prioritize it before Q1 '23

**87. By Iron#4548 in the Smart Contracts Channel on 10/12/2022**

Yes, I know about Stader and how they do their staking. But that's not my use case. Let's ignore staking for now and that is just a distraction from what I'm really after.

What I'm interested in how to schedule a call from a smart contract to itself from a specific time in the future using scheduled transaction.

Dr. Leemon Baird said back in March 2022 in the video I linked above:

\*"So if you wanted to do something like a bond that is making payments every month once a month, the smart contract needs to make a payment well. How does it know when to do it? Some human has to remember to send it a message once a month to make a call to it once a month to wake it up and then they can do the thing to make it do the payment you can set up to be secure. ... \*

\*"A smart contract, well it's running the first time one of the thing it can do it call the hedera transaction that creates a scheduled transaction that a month from now we'll call the smart contract. It makes some payments on its bond and then before it goes to sleep

it makes another one for a month in the future and it just keeps doing that forever and now it's alive. You can have actual smart contracts that are living in a real sense and since it has its own um store of hbars you know it could be funded to run for millions of years and it could be set up so that it maybe earns money in some ways in which case it's alive. it's an entity that will run forever and it just keeps going forever"\*

This is exactly what I'm after. Has this been implemented yet in Smart Contract 2.0? Or is there an existing HIP or a work task for this? Do I need to create a HIP?

Thanks

**88. By Iron#4548 in the Smart Contracts Channel on 10/11/2022**

In summary, I want real solid information on these:

- 1) How to schedule a transaction from a smart contract to call itself n days from now (i.e. a smart contract that is self governed and does not require any human interactions)
- 2) How to get a smart contract to stake to a node with its stored HBAR to earn passive HBAR to help self-sustain the smart contract forever.

If I need to enter HIPS for these, let me know. Or if a DEV could reach out to me for a short 1 on 1 chat over discord that would be good too.

**89. By bugbytes#0817 in the Developer General Channel on 10/11/2022**

@Greg Scullard Is there a HIP to compensate for the deprecation of `tokens` lists in balance queries? It seems reasonable (for wallets and other high performance systems) that they should be able to explicitly query the balance of an account/token pair just like they can query the live balance of hBar for an account. The latency of mirror nodes is an issue. (plus the complication of a wallet or other similar system needing to integrate/correlate/time/juggle/wait to get a simple answer such as Account A has how many B tokens?)

**90. By Liebenfiels#7895 in the Developer General Channel on 10/05/2022**

I have sent messages to Acoer and DragonGlass explorers to implement HIP-15 check sum (display the 5 letters next to account ID in agreed in HIP format). Hashscan has done it already and check sum is available there for each account ID. I don't see way to message Kabuto.

**91. By Liebenfiels#7895 in the Developer General Channel on 10/05/2022**

It still happens nearly daily, hence have to be blocked at wallet levels, warnings can be there- it does not matter. Including obvious typos characters that are not included in memo. People use mobile phone not physical computer keyboard and easy to press wrong digit, hence also HIP-15 (check sum) is important and will pick that up error as user will compare 5 letter check sum if matches or not.

**92. By Liebenfiels#7895 in the Developer General Channel on 10/04/2022**

I mentioned in past. Wallets should be recognising main exchange account addresses IDs and not allow user to send transaction if memo field is not filled including the character length (if they use the same memo length for all user). That can be done at wallet UI and no need for any HIP, just common sense wallet programming and operation. That would prevent all these transactions send without memo to known exchange addresses.

**93. By Greg Scullard#5365 in the Token Service Channel on 10/04/2022**

How did you define the metadata/image for your NFT ? It has to be done in a way the wallet will be able to understand (check HIP-412)

**94. By teacoat#2092 in the Developer General Channel on 10/03/2022**

are you adhering to hip-412 metadata standards? <https://hips.hedera.com/hip/hip-412>

**95. By Liebenfiels#7895 in the Developer General Channel on 10/01/2022**

Its been well over year since that HIP-15 was closed and wallets are still in la la land or in Alice in Wonderland or whatever else they are with their roadmaps, lagging badly to follow up standards.

**96. By Liebenfiels#7895 in the Developer General Channel on 10/01/2022**

Excellent news that hashscan explorer displays now check sum for account IDs (Dr Baird HIP-15) that address and solves account ID mistype problems and gives user that secondary check, to ensure account typed is correct as aimed. There should be push now to update all wallet ecosystem and explorers with the same Dr Baird single standard, as quickly as possible including explanation what is for.

To me it could work as below how I understand it:

1. User A aiming to receive Hbar can provide sender person B a package (in form of text of screen shots assuming not all wallets will have QR code capabilities)  
account ID + check sum e.g. 0.0.1234-pikcw
2. User B (sender) sending funds to user A will type account ID 0.0.1234 only and wallet will then display also check sum for it.
3. User B before sending Hbar would check both account ID + check sum (with that provided by user A) to make sure typed account ID correctly as secondary check. Also can use website to generate check sum if needed.

QR code- to make in human readable format as 0.0.1234-pikcw.

1. Wallet will read the QR after scanning it- then take just account ID from it 0.0.1234 and check if displayed check sum it has as wallet (hard coded) = check sum in QR code

If CORRECT- then input account ID for transaction

If WRONG- if check sum does not match to fail safe and not input account ID (corrupted QR code, where either account ID is wrong or check sum)

The account history is now longer till beginning of open access (Sep 2019).

<https://hashscan.io/#/mainnet/dashboard>

**97. By nube#7126 in the Developer General Channel on 09/30/2022**

i haven't seen one. It's dependant on two other HIPs being implemented first, 410 & 415, both of which are on the roadmap for Q4

**98. By nube#7126 in the Developer General Channel on 09/28/2022**

there is a hip about this though iirc

**99. By Supremax67#5749 in the Developer General Channel on 09/27/2022**

This was a good idea for a HIP, but someone from the community has to start submitting it if it has any chances of being implemented. It would avoid future problems of transfers where a memo is required but was left empty.

**100. By bugbytes#0817 in the Javascript Channel on 09/26/2022**

The "sentinel" for an `none` key would be an empty `KeyList` key, however, I don't know

if that is yet supported by the network (there is a HIP in progress to make this so). I'd recommend trying an empty `KeyList`, if you get an error back then, its not implemented yet. Be sure to sign with both the admin key and the existing kyc key too.

**101. By Supremax67#5749 in the Developer General Channel on 09/21/2022**

You would have to check with the Helium community of what was involved. I believe there was also a HIP submitted about this which provide some context. But since the project belong to Helium, it would have to be someone from Helium who answers it. If you are from Helium and trying to build on Hedera, please use one of the other channels such as #consensus-service or #🌀-java

**102. By Supremax67#5749 in the Developer General Channel on 09/17/2022**

That wouldn't be something Hashpack would be doing as they would have other priorities. That should be something the Hedera community be doing. Anyone can submit a HIP.

**103. By Liebenfiels#7895 in the Developer General Channel on 09/17/2022**

I said in telegram before, on me is HIP (Recovery at Ledger)- it may not phrased like that and submitted only once other key networks follow decentralised recovery (nobody will be forcing miners or validators to accept notary note based on identity KYC confirmation by law firm/court case etc). Identity and option to have it registered in advance will be important, but there will be services like that in crypto. The solution has been implemented elsewhere and it will be for miners to decide if to follow law or walk away from platform being in contempt of court order- they won't be forced (hence decentralised decision to implement it).

**104. By Liebenfiels#7895 in the Developer General Channel on 09/17/2022**

I can contact Haskpack via their discord channel (support ticket) with suggestion, but would be also good someone who know Hashpack team to be in touch. They are good in listening and implementing and then others can follow. HIP is not always solution to start, look on Dr Bird sum check from last year, not been followed. Competition always is solution if one wallets advertised they have solution then other wallets will follow. I like Hashpack due to very good UI and they already introduced some features others follow. They seem to understand lack of QR in ecosystem and looks their mobile wallet has (need to test mobile version). All wallet providers should not allow to send tx to known exchanges addresses without memo and in correct format (assuming exchanges follow memo standard).

**105. By rhyssied#6748 in the Token Service Channel on 09/17/2022**

So you don't sign for the association, the user would need to do that after you create the token OR they'd need to open some automatic token association slots ready for you to send it (the idea being to avoid spammy airdrops which may have tax implications).

From the use case you've proposed it sounds like the best option would be to follow similar logic to some NFT mints where the user goes to site (in your case clicks the create button), then they get prompted to associate the token, then (possibly after another click) you could send them the token.

There was recently a HIP for atomic transactions that you may be interested in but I'm not sure how far along it is so the better option might be to just follow the same process

as other NFT mints but with the extra step of you creating the token (do you mean creating a token inside an existing collection or a completely new token? The latter might be expensive as it costs \$1 to create a new token)

**106. By Supremax67#5749 in the Developer General Channel on 09/16/2022**

@Liebenfiels I guarantee many would pay a micro fee to implement such a feature. Too much manual human intervention is required when a memo is missing. It would save them a lot of money.

So you should definitely submit a HIP on this.

**107. By Supremax67#5749 in the Developer General Channel on 09/16/2022**

That sounds like a HIP to me. Deny a transfer to account 0.0.XXXXX if a memo minimal requirement has not been met.

You are going to submit that proposal?

**108. By johnda98#4728 in the Developer General Channel on 09/13/2022**

I touched on that HIP implement so my Customers could create Accounts without my platform paying for it from a platform acctn.. as Customers didnt want to be KYCd silliness.... I think the AccountID was supposed to spring into existence upon deposit to that key - with the new AccountID tran create cost deducted from the deposited balance.. but I dropped it and fell back to the Hashpack way of platform pay.. and deduct cost of tran via platform commiss/fees later on or via value-add of the new user..etc.

**109. By rhyssied#6748 in the Developer General Channel on 09/10/2022**

Where did you send your transaction from? The SDK should prevent you sending it to a nonexistent account. There was a HIP to allow you to create an account if one didn't already exist but you would have to specify the public key to use.

I'd recommend going on DragonGlass or another explorer to check the public key of the account you sent funds to, as that will correspond to the required signatures (afaik it is impossible for a regular account to have a completely blank public key)

**110. By Justyn#3610 in the Token Service Channel on 09/06/2022**

I doubt it will be. I've created a HIP here that proposes letting you remove keys from a token. If that gets approved/implemented then we should be able to. <https://github.com/hashgraph/hedera-improvement-proposal/pull/540>

**111. By Greg Scullard#5365 in the Smart Contracts Channel on 09/02/2022**

Don't be sorry, it can be hard to keep track of outstanding items in Discord and sometimes they fall through

Seems the HIP was deployed on testnet a few days ago (after your message), see here for release notes so you can keep tabs on what is deployed on which network

<https://docs.hedera.com/guides/docs/release-notes/services>

What is the issue you're encountering, hard to debug without an error message or something to go on

**112. By Greg Scullard#5365 in the Token Service Channel on 08/30/2022**

Agreed, it's a first step. Besides Fireblocks for hbar, ONChain support hbar and token transfers. We are working on other relationships and increased support for additional services with existing custodians.

**113. By Greg Scullard#5365 in the Token Service Channel on 08/30/2022**

It is being added: <https://hips.hedera.com/hip/hip-514>

**114. By shung (.)#3978 in the Smart Contracts Channel on 08/26/2022**

Is the contract itself always the auto renew account?

I think @Greg Scullard had told me that the auto renew account is the creator contract for the contracts created through CREATE2 . But he was unsure about it. I have read the related HIP (<https://hips.hedera.com/hip/hip-329>) and it does not mention such a thing. Also currently Javascript SDK does not seem to have a method for checking `autoRenewAccountId` of a contract, so I could not figure out how to verify it.

**115. By hemant#4832 in the Token Service Channel on 08/26/2022**

Hi Everyone, i am giving allowance for all NFTs from my account A to a smart contract C. Now when i try to transfer the NFT from my contract it still requires me to sign from account A. I am using transferNFTs method from hip 336

**116. By hemant#4832 in the Smart Contracts Channel on 08/26/2022**

Hi Everyone, i am giving allowance for all NFTs from my account A to a smart contract C. Now when i try to transfer the NFT from my contract it still requires me to sign from account A. I am using transferNFTs method from hip 336

**117. By Justyn#3610 in the Token Service Channel on 08/16/2022**

@littletarzan OK, had a play. Here's what I used:

```
const keylist = KeyList.of();
let transaction = await new TokenUpdateTransaction()
 .setTokenId("0.0.47907576")
 .setAdminKey(keylist)
 .freezeWithSigner(wallet);

transaction = await transaction.signWithSigner(wallet);
```

Results of trying to modify the different keys.

`setAdminKey`: Updates the key to this and the token becomes immutable.

```
{
 "admin_key": {
 "_type": "ProtobufEncoded",
 "key": "3200"
 }
}
```



```
`setKycKey`: Error: INVALID_KYC_KEY
`setPauseKey`: Transaction success but not change to the key
`setWipeKey`: Error: INVALID_WIPE_KEY
`setFreezeKey`: Error: INVALID_FREEZE_KEY
`setFeeScheduleKey`: Error: INVALID_CUSTOM_FEE_SCHEDULE_KEY
```

So, yes, you can change the admin key to whatever `ProtobufEncoded 3200` is and the Token is then immutable but it doesn't cleanly remove the key. You could send a random key in the update and achieve the same thing I think.

You can't change any of the other keys with the same technique.

Good to know about this but I think the HIP would help still by creating some simple functions for removing the keys.

The HIP has been submitted for review here if anyone was interested in taking a look:  
<https://github.com/hashgraph/hedera-improvement-proposal/pull/540>

**118. By Justyn#3610 in the Token Service Channel on 08/16/2022**

That sounds great. This is the first I've heard of a way to remove the keys. Are you able to provide or point to an example transaction that would do this please. If this is the case then there is no need for the HIP

**119. By Supremax67#5749 in the Javascript Channel on 08/12/2022**

@cryptorush Hedera is not a blockchain.  
See <https://hips.hedera.com/hip/hip-415>

**120. By fg\_zr1#3276 in the Javascript Channel on 08/11/2022**

If I'll configure my metamask to web3 relay (custom or from swirldslabs for example), and contracts have been deployed to hedera network, do I even need to change something in my frontend app? Referring to <https://hips.hedera.com/hip/hip-410> I may assume I'm able to use regular contracts interfaces with `ethers`, is that correct?

I mean to the definition "The above diagram proposes an alternative flow where the application itself does not know about Hedera and the transaction is submitted by the wallet to the relay directly" tells us exactly about having ability to use regular Ethereum interface? And in this case I won't need to change something at all.

And also let me ask you about this:

"The user that signs the transaction has an account on Hedera, and the relay has an account on Hedera, but the application itself does not."  
Is that relevant for testnet?

**121. By Ed Marquez#6403 in the Token Service Channel on 08/11/2022**

@cryptorush <https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>

See `***approve***` and `***allowance***` in the link above. Atm those functions don't have precompiles, but you can use those supported ERC standard calls on HTS tokens (that was HIP-218).

See line 103 onward ([https://github.com/ed-marquez/quick-contract-examples/blob/master/5\\_1\\_HIP218\\_FungibleTok.js#L103](https://github.com/ed-marquez/quick-contract-examples/blob/master/5_1_HIP218_FungibleTok.js#L103)) here for an example using those ERC calls on an HTS token.

### **122. By Ed Marquez#6403 in the Smart Contracts Channel on 08/11/2022**

@cryptorush see <https://hips.hedera.com/hip/hip-514>.

I believe it's in the works atm. Implementation of that HIP will add many of the other functionalities that are available today via the SDK but not in the precompile. That includes token wipe, kyc, update, pause, freeze, etc.

Likely to be completed in this quarter or the next ; )

### **123. By fg\_zr1#3276 in the Javascript Channel on 08/10/2022**

Hello guys.

So far I've found that with `hashconnect` (<https://www.npmjs.com/package/hashconnect>) I'm able to establish the connection with my wallet and create pairing string, topic etc. Also I'm able to create the provider and signer. At the same time they are refers to Wallet Provider feature: <https://hips.hedera.com/hip/hip-338> and to hethers package for contract's interaction: <https://docs.hedera.com/hethers/getting-started>

So for example in regular dApp in Ethereum you create the provider/signer utilising metamask and then you are able to sign the transactions while interacting with you smart contracts (which have been initialized with ethers.js or web3).

What is not clear for me in Hedera ecosystem, should I use `hashconnect` instances together with `hethers`? If I want to have an instances of my contracts and then be able to sign them with my wallet (which is hashpack). In tutorials I found that hethers is used for contracts deployment with hardhat, while if you want to interact and sign contracts - you should use hashconnect and use hedera SDK directly (and call ContractExecuteTransaction/ContractCallQuery...).

Am I able to do similar like I do with metamask and ethers?

```

```
const wallet = (window as any).ethereum; // this is metamask
const provider = new ethers.providers.Web3Provider(this.wallet);
```

```
const signer = this.provider.getSigner();
```

```
const contract = new ethers.Contract(
  contractAddress,
  contractAbi,
  signer,
);
```

```
// call and sign my contract's transactions
```
```

Or it's not the case for Hedera? If you have any references with such kind of questions being answered, please share. Any help would be very appreciated.

Eventually, I have to add Hedera support with hashpack wallet to existing dApp, with tons of contracts interactions with `ethers`, and I'm not sure if I'll have to rewrite all the interactions or could I just have a bridge with `hethers`.

**124. By Ed Marquez#6403 in the Smart Contracts Channel on 08/09/2022**

Yes, HashConnect: <https://hashpack.github.io/hashconnect/>

And I'd take a look at HIP-338 on Signer/Provider architecture:  
<https://hips.hedera.com/hip/hip-338> (example of freezing, and executing with signer: <https://github.com/ed-marquez/hedera-dapp-days/blob/main/src/components/hedera/tokenCreate.js>)

**125. By Supremax67#5749 in the Smart Contracts Channel on 08/06/2022**

Not sure what you mean by trip-able, but if there's a feature that should be on the network, please start up a HIP about it.

All changes that occurs on Hedera's network only happens because someone submitted a HIP.

**126. By Justyn#3610 in the Token Service Channel on 08/05/2022**

If anyone is interested in contributing, I've created a draft HIP for this feature request here: <https://github.com/hashgraph/hedera-improvement-proposal/pull/540>  
@DPub @Topachi @Patches | TMCC CEO would be good to get your input if you have the time. I know you're all very busy! You may have some other user stories / implementation ideas that could help improve the proposal.

**127. By Justyn#3610 in the Token Service Channel on 08/05/2022**

Hi @tinkerm did a HIP ever surface out of this conversation for updating `TokenUpdate` to allow the admin key to sign an update to remove itself and/or other keys (Wipe, KYC, Freeze, Pause, Supply, Fee Schedule) from a Token? I've checked the current list of HIPs and can't see anything obvious that relates to this: <https://hips.hedera.com/all.html>

I think I'm right in saying that right now it's impossible to remove any key that was set at the point of Token creation? The only option seems to be to fudge it with a fake key with the method you suggested in your message above which isn't ideal.

If a HIP doesn't already exist and people still want this addressing, would anyone like to help put a HIP together with me to get this proposal in the queue?

**128. By Tomachi Anura#8370 in the Consensus Service Channel on 08/02/2022**

correct...we shall make a HIP to give fees also to mirrors then, they deserve it!!

**129. By Ed Marquez#6403 in the Consensus Service Channel on 08/01/2022**

Only with HTS atm. There's a discussion to create a HIP for adding precompiles for HCS: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/479>

Feel free to follow or contribute to the discussion.

**130. By vae.vecturne#3448 in the Smart Contracts Channel on 07/29/2022**

> In this alpha release of Hedera Services 0.26, we are excited to deploy previewnet support for HIP-410 (Wrapping Ethereum Transaction Bytes in a Hedera Transaction). and

HIP-415 (Introduction Of Blocks).

I noticed this, but was confused by the wording, it sounds like previewnet support was added for HIP-410 and HIP-415

**131. By vae.vecturne#3448 in the Smart Contracts Channel on 07/27/2022**

has HIP 415 (block numbers) made it to mainnet yet?

**132. By Ed Marquez#6403 in the Javascript Channel on 07/26/2022**

I'm case it's of interest, a schedule transaction could give you more time (30 minutes) to collect the required signatures for a tx (not all tx types are supported atm). I believe there's also a HIP for long term schedule txs

**133. By nube#7126 in the Developer General Channel on 07/26/2022**

It went live on mainnet last week, <https://hips.hedera.com/hip/hip-406>

**134. By nube#7126 in the Developer General Channel on 07/26/2022**

<<https://hips.hedera.com>>

**135. By johnda98#4728 in the Smart Contracts Channel on 07/25/2022**

I think for native iOS you have to build your own trans after study of the protobuf definitions.. I usually use jhipster for a single RN codebase for all 3 platforms.. w a java spring REST API on backend of course.

install protobuf swift plugin brew install swift-protobuf

install grpc swift plugin for protoc <https://github.com/grpc/grpc-swift#getting-the-plugins>

a snippet... bit old now.. check the Repos.. Hedera may have updated native iOS options

```
class BaseOperation: Operation {
 var errorMessage:String?
 var node:HGCNodeVO!
 public static var operationQueue:OperationQueue = {
 let queue = OperationQueue.init()
 queue.maxConcurrentOperationCount = 1
 return queue
 }()

 override func main() {
 node = APIAddressBookService.defaultAddressBook.randomNode()
 Logger.instance.log(message: " >>> \(node.address())", event: .i)
 }

 var cryptoClient: Proto_CryptoServiceServiceClient {
 let client = Proto_CryptoServiceServiceClient.init(address: node.address(), secure:
false)
 return client
 }

 var tokenClient: Proto_SmartContractServiceServiceClient {
```

```
return Proto_SmartContractServiceServiceClient.init(address: node.address(), secure:
false)
}

func desc(_ error:Error) -> String {
 if let rpcError = error as? RPCError {
 switch rpcError {
 case .timedOut:
 return NSLocalizedString("Request timedOut", comment: "")
 case .invalidMessageReceived:
 return NSLocalizedString("Invalid message received", comment: "")
 case .callError(let result):
 print(result)

 }
 }
}
```

### **136. By reg.cs#2829 in the Developer General Channel on 07/21/2022**

Hi, I hear Leemon talk a lot about decentralized recovery. If I understood correctly, it's still a work in progress thing. But I wondered, if there is any HIP or something on that to keep up to date?

### **137. By bugbytes#0817 in the Smart Contracts Channel on 07/19/2022**

Also the new RPC HIP may produce something that just might have this functionality, I've not done my research on that yet, but it too, is promising.

### **138. By bugbytes#0817 in the Smart Contracts Channel on 07/19/2022**

It might be something that could be added to mirror node functionality -- they dabbled for a while in reporting state changes of contracts -- not the same thing I know -- but the pieces may be there behind the scenes. This possibly might be something to suggest in a HIP

### **139. By bugbytes#0817 in the Smart Contracts Channel on 07/19/2022**

Its not a large fee, but it is not free for the network to load and return the information. One thing about hedera, it does not attempt to hide the real cost of interacting and storing information.

In the future, you may be able to get more information out of mirror nodes, but I've not been following that...as contracts become more integrated with the network, they may also be able to emit HCS messages, which can be retrieved from a mirror node as well (that's speculation on my part)

We're in the early stages, if there is something that's missing that you think would be helpful, there is the HIP process to request new functionality.

### **140. By rhysied#6748 in the Token Service Channel on 07/19/2022**

you can get that data from mirror nodes via the route ``/api/v1/accounts/:accountId/nfts`` (see the HIP for the example response: ``https://hips.hedera.com/hip/hip-331#specification``)

**141. By bugbytes#0817 in the Developer General Channel on 07/17/2022**

Soon.

<https://hips.hedera.com/hip/hip-406>

**142. By Grazin Bullets#2690 in the Developer General Channel on 07/13/2022**

Yes.

> The 0.27 release of Hedera Services initiates the first phase of HIP-406 (Staking).

**143. By Rocket#2012 in the Developer General Channel on 07/13/2022**

<https://hips.hedera.com/hip/hip-405>

**144. By nube#7126 in the Developer General Channel on 07/13/2022**

hedera doesn't really use blocks, hip-415 is coming soon though

**145. By johnda98#4728 in the Token Service Channel on 07/13/2022**

```
AccountInfo tokenbalcheck = new AccountInfoQuery()
```

```
 .setAccountId(USER_ACCOUNT.getOperatorAccountId())
```

```
 .execute(USER_ACCOUNT);
```

```
 if (!tokenbalcheck.tokenRelationships.containsKey(USDC)) { ... as example
USDC tokenId
```

**146. By Francesco Coacci#2822 in the Smart Contracts Channel on 07/12/2022**

Hey, take a look here: <https://hips.hedera.com/hip/hip-13>

**147. By Francesco Coacci#2822 in the Token Service Channel on 07/08/2022**

Hey! To check if a token is already associated with an account you can do a Mirror Node API call so you don't have associated fees. For KYC status instead you have to use a `TokenInfoQuery` or an `AccountInfoQuery` (as there's no defaultKycStatus field in token info schema of mirror node api call) and check the defaultKycStatus, check out Default KYC Status in this docs pages (tokenRelationships for Account Infos):

<https://docs.hedera.com/guides/docs/sdks/tokens/get-token-info>

<https://docs.hedera.com/guides/docs/sdks/cryptocurrency/get-account-info>

**148. By McCain#3545 in the Developer General Channel on 07/06/2022**

The 2000 StellarKing NFT are spaceships made to play in a battle royale P2E game 

Giving away 5 whitelists and 1 airdrop To enter:

**149. By nube#7126 in the Developer General Channel on 07/04/2022**

> I would like to know who I can contact regarding partnerships?

if you want to contact hedera, they have a form at the bottom of their website (<<https://share.hsforms.com/1qD7NTaCNRfSu3p11Ajh25wceh7k>>), although i'm not sure how it works now as few people really work there since they migrated to swirls labs

**150. By DanielKnez#0110 in the Developer General Channel on 07/04/2022**

GM! Amazing to be part of this community. I would like to know who I can contact regarding partnerships? I am the Head of Growth & Community at Menthol Protocol and we would love to discuss a future partnership!

**151. By Supremax67#5749 in the Developer General Channel on 07/02/2022**

<https://hips.hedera.com/>

<https://www.hbartothemoon.com/hederausecases>  
<https://youtu.be/3Vu5ewGCmB8>  
<https://staderlabs.com/>  
<https://www.hashpack.app/>  
<https://www.saucerswap.finance/>

**152. By DonRavle#8487 in the Developer General Channel on 06/30/2022**

Hi everyone! I'm following this project for a 2 years now and everyone at Hedera is doing the great job. So great that I just wanna start learning how to program on it. I'm experienced developer mostly in C/C++ and Python but I already did some projects to a few companies in Solidity. Also, I'm aware of how Hedera works in details but that's only a theory. I don't have programmatic knowledge with Hedera however, but want to learn as you see. I can't say that I'm following all the HIPs in the detail but I know about some important ones like native staking and running Ethereum Solidity contracts on Hedera with translating it to bytecode. I'm also aware of the Token service, Smart Contract Service and File service. Don't know much details about them but I know what they do. Consensus service is something that is not yet clear to me but I guess is something like defining your own network (sorry for being noob about it). My question is really what's the best way for me to jump in quickly into all of this based on my knowledge? I see there are some official SDKs and some community driven SDKs. I'm best at C and Python but I'm afraid they will not be supported enough so the third choice is JavaScript (not my favorite). What's your view on this and could you provide me some materials to learn from?

**153. By Francesco Coacci#2822 in the Token Service Channel on 06/30/2022**

So now you still need to check if the metadata is correct, I suggest checking out HIP-412 (new nft metadata schema) here: <https://hips.hedera.com/hip/hip-412> and to change your metadata to the one you can find in this tutorial: <https://docs.hedera.com/guides/getting-started/try-examples/create-and-transfer-an-nft-using-a-solidity-contract>

**154. By Supremax67#5749 in the Smart Contracts Channel on 06/26/2022**

The support about Rust has nothing to do with Hedera devs but community feedback. You can submit a proposal <https://hips.hedera.com/>

**155. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

Product has said that to change `TokenUpdate` semantics, we need to go through HIP and council review.

There `_is_`, however, a quick-and-dirty way to make an NFT collection un-wipeable:

- Choose a low-entropy Ed25519 public key; for example, 32 bytes of binary zeros or hex ``abcdabcdabcdabcdabcdabcdabcdabcdabcdabcdabcdabcdabcdabcdabcd``.
- In a single ``TokenUpdate``, replace *\*both\** the admin and wipe keys of the NFT collection with this public key.
- Now to wipe an NFT in this collection, you would have to invert the SHA-512 hash function, which is...going to take a while.

The downside, of course, is that the admin key becomes unusable. If an NFT collection set an admin key because e.g. they wanted change the supply key someday, this might not be acceptable.

**156. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

the throttling issue is a much more complicated one, but if you do want to open a HIP, let me know

**157. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

Note that even if the HIP is approved, it will only reduce the probability of hitting congestion. (Hopefully by a lot, though!)

We need a very mature rent + expiration policy to create options that (nearly) eliminate congestion

**158. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

@reg.cs @Tomachi Anura I've heard a few conversations about splitting out `ScheduleCreate` and/or `AccountCreate` throttles.

To ultimately trigger that change, I think the right step is to open a HIP.

Would either of you be interested in doing a first draft? I could help out with some of the technical details.

**159. By reg.cs#2829 in the Token Service Channel on 06/24/2022**

As I understood the HIP-423, there a mechanism implemented that ensures that the scheduled transaction is executed based on the throttle limit set for the contained transactions:

**160. By Supremax67#5749 in the Smart Contracts Channel on 06/24/2022**

Anyone can contribute to a HIP, not just Hedera Devs

**161. By nalus#8598 in the Token Service Channel on 06/23/2022**

Hey guys Im trying to mint an Nft in my collection, but metadata shows as empty no matter what i do (<https://www.zionft.com/testnet/0.0.46051612/7>). The metadata is uploaded to IPFS and follows the HIP-10 standard, any ideas?

**162. By Francesco Coacci#2822 in the Consensus Service Channel on 06/17/2022**

Hey @jf\_lin , you can check out HIP-16 diagram here <https://hips.hedera.com/hip/hip-16> to see how auto-renew works, if you have no hbar either you add them to your wallet and wait for the grace period to end or you change the account id responsible for auto-renewing .

**163. By Greg Scullard#5365 in the Java Channel on 06/16/2022**

According to the HIP, the block.timestamp will be `Instant of consensus timestamp of the first transaction/Record Stream Object in the Record file`, so all transactions in a given block will have the same block.timestamp.

**164. By johnda98#4728 in the Java Channel on 06/15/2022**

after it becomes more HIP .. will block.timestamp still be block.timestamp ie consensus UX time... or ..... something else.

**165. By Ed Marquez#6403 in the Consensus Service Channel on 06/15/2022**

See notes in the github repo (<https://github.com/hashgraph/hedera-services/releases/tag/v0.27.0-alpha.5>) these notes will be added to the release notes soon



More details on the HIP: <https://hips.hedera.com/hip/hip-406>

**166. By reg.cs#2829 in the Smart Contracts Channel on 06/15/2022**

<https://hips.hedera.com/hip/hip-376>

**167. By nube#7126 in the Developer General Channel on 06/13/2022**

you can stake on stader.

Hedera network staking isn't live just yet, the Improvement proposal and discussion around it was finalised earlier this month. The HIP is here if any is curious, <<https://hips.hedera.com/hip/hip-406>>

**168. By Greg Scullard#5365 in the Token Service Channel on 06/13/2022**

@Tomachi Anura this HIP addresses the issue of state size growing (potentially far faster than any other network, e.g. token mint is 120x faster than transactions on Eth)

<https://hips.hedera.com/hip/hip-25>

It's not a bug fix

**169. By Francesco Coacci#2822 in the Javascript Channel on 06/13/2022**

@Ramos Then you can use `AccountInfoQuery` and see all owned NFTs of the account see here: <https://docs.hedera.com/guides/docs/sdks/cryptocurrency/get-account-info> Specifically see the `tokenRelationships` method

**170. By Supremax67#5749 in the Developer General Channel on 06/11/2022**

For example... <https://hips.hedera.com/HIP/hip-412.html>

**171. By Supremax67#5749 in the Developer General Channel on 06/11/2022**

My experience has been mostly community members building on Hedera and not the Hedera dev themselves starting HIPs

**172. By PossibleTs#8069 in the Developer General Channel on 06/11/2022**

If someone from the Dev team, identify something to be improved, it should go through a HIP for community feedback. Is this the way?

**173. By Supremax67#5749 in the Developer General Channel on 06/11/2022**

HIP suggestions are open to all. The community contributes to it and then the Hedera council decides if the feature is needed and/or applicable for the network. Community feedback is important for HIP.

**174. By PossibleTs#8069 in the Developer General Channel on 06/11/2022**

So Alex Popowycz leads the Dev teams. And how the roadmap is controlled?

If someone wants to change something or suggest improvements the path is through HIPs, but I imagine the Team has some priorities and improvements from inside, is this open to the community?

**175. By tinkerm#4293 in the Smart Contracts Channel on 06/09/2022**

@Bart sorry for slow reply, had a lot of validation to do post-upgrade (0.26 was packed with some non-trivial changes needed to support the JSON-RPC bridge coming up).

First, the feedback that validates your request:

1. Your thesis on the relative cost of query `gas` versus transaction `gas` is mostly correct; the latter resource is constrained in a way the former is not.
2. As shown by Ethereum, free `ContractCallLocal` queries are an important part of enabling high-value dapps.
3. Free `ContractCallLocal` queries are 100% on the Hedera roadmap (via *\*zero-stake nodes\** that participate in gossip but not consensus; these will be essentially real-time mirror nodes)

Note the "mostly correct" qualifier in #1. Even though queries don't compete for CPU time needed to handle transactions, they *\*do\** compete for I/O buffers and disk bandwidth when accessing the `VirtualMap`s that store contract data (see <https://hips.hedera.com/hip/hip-25>, the most important HIP of them all).

So if we facilitate `ContractCallLocal` queries against consensus nodes---though natural today---this creates a material headwind for our (very ambitious) internal roadmap for the contract service. Thus the decision in 0.26 to make it even *\*more expensive\** to run `ContractCallLocal` queries against consensus nodes .

In the short term, we hope many use cases can adapt by replacing ERC-style assets with HTS tokens managed and owned by contracts (now the contract "state" is native token balances that are visible through free `GetAccountBalance` queries---c.f. SaucerSwap)

In the medium term, it *\*may\** be possible to enhance the record stream with contract storage information accessible through existing mirror nodes (with a few seconds latency)

But in the long term, we know we have to provide the ecosystem with free `ContractCallLocal`. Hedera and the council will have an open ear to the community in the meantime.

### **176. By tinkerm#4293 in the Smart Contracts Channel on 06/08/2022**

@reg.cs yep, there's a HIP with a great many details <https://hips.hedera.com/hip/hip-423>

> So, it is correct that in this case the fallback fee @Rj talked about would not be triggered even if the hbar transaction fails (e.g., because Bob suddenly has not enough hbar at the time both have signed)?

If the transaction is Alice sending Bob 1 NFT w/ custom fees, then the transfer will only succeed if Bob can afford the custom fee

If Bob sends, say 100 hbar in return, and the NFT creator set a 5% royalty, then Alice will only get 95 hbar and 5 hbar will go to the fee collector

The "fallback fee" is when Bob didn't exchange any hbar with Alice for the NFT. Then Bob must be able to afford a fixed fee set by the NFT creator; for example, 1 hbar

### **177. By reg.cs#2829 in the Smart Contracts Channel on 06/08/2022**

Yeah, I am already looking forward to the longlines scheduled transaction! Is there already a HIP for that containing some details?

With regard to the NFT-hbar exchange and just to see if I understood it correctly (still a newbie here): So, it is correct that in this case the fallback fee @a.s.h talked about would not be triggered even if the hbar transaction fails (e.g., because Bob suddenly has not enough hbar at the time both have signed)?

**178. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

And there is of course,

**\*\*Option three - Powers of persuasion\*\***

- Write a HIP with a detailed explanation of why Hedera needs to enable this use case

**179. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

It's a very natural extension, and from a business logic perspective, *\*should\** have been in the original HIP-206

We left it out just from a healthy respect of "unknown unknowns". The more battle-hardened that SC 2.0 becomes, the easier it will be to get this HIP accepted by the council.

In your shoes, with a contract that needs to negotiate the exchange of an `XYZ` NFT from Alice for hbar from Bob, *\*giving precedence to the `XYZ` royalty fee\** instead of an hbar fallback fee, I would consider one of two work-arounds:

**\*\*Option one - Solidity workaround\*\***

- Set the `XYZ` royalty fraction  $1/f$  and `fallbackFee` amounts as part of contract state
- If Bob is paying `msg.value` hbar for the NFT, where  $msg.value > fallbackFee$ , then divert an additional  $msg.value/f - fallbackFee$  to the fee collector via `address.send(msg.value / f - fallbackFee)`.

**\*\*Option two - Simulated hbar workaround\*\***

- Create a fungible token `HbarProxy` with supply and wipe key, with your contract as the treasury
- Ensure Alice, Bob, and the `XYZ` fee collector are associated to `HbarProxy` (worst part of this option)
- At the start of the transaction, use `HederaTokenService.wipe()` to clear both Alice and Bob's `HbarProxy` balances (get these via `IERC20(HbarProxy).balanceOf(Alice)`, etc)
- If Bob is paying  $x = msg.value$  hbar for the NFT, send Bob  $x$  units of `HbarProxy`
- Do a `HederaTokenService.cryptoTransfer()` that exchanges Alice's NFT for Bob's  $x$  units of `HbarProxy`
- Since fungible value is exchanged, the royalty will be applied
- Check Alice's final balance  $y$  of `HbarProxy`; now  $x - y$  is the correct royalty to send to the fee collector via `address.send()`

**180. By Bart#1307 in the Smart Contracts Channel on 06/07/2022**

Thank you.

Hopefully, we'll be able to test out hip-482's `eth\_call` on testnet soon.

**181. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

the record stream is currently being enhanced to have a "side-car" mechanism of exporting extra data (c.f. <https://hips.hedera.com/hip/hip-435>)

**182. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

Hey @a.s.h! This is a great use case that isn't supported by the current `HederaTokenService` precompile, which assumes hbar transfers will be done through the `address.send()`/`address.transfer()` EVM mechanisms

It would be quite simple to give `HederaTokenService.cryptoTransfer()` full power to perform hbar transfers among arbitrary parties, as you need it to

The security concerns are, of course, less trivial; and I suspect this change needs to go through the full HIP process and get council approval

**183. By Ed Marquez#6403 in the Smart Contracts Channel on 06/03/2022**

You can't at the moment. That would require precompiles for HCS (just like the ones we have today for HTS). As mentioned, there's a HIP for that (see or comment here: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/479>).

**184. By Ed Marquez#6403 in the Smart Contracts Channel on 06/03/2022**

Plz take a look at the nftManager.sol and deploy.js files here: [https://github.com/cisc0f/hedera/tree/main/src/002\\_nft\\_hscs\\_hts](https://github.com/cisc0f/hedera/tree/main/src/002_nft_hscs_hts) for an example of creating and minting an NFT via a contract. We're working to add that example in documentation...

The best practice for NFT metadata is a pointer to a pointer approach, as documented in point 5 of Motivation for this HIP (<https://hips.hedera.com/hip/hip-412>). You'll notice that in the example above, we're just passing the IPFS URI for the JSON metadata that contains info about the asset and another URI that points to the actual asset (image, video, etc)

**185. By johnda98#4728 in the Smart Contracts Channel on 06/03/2022**

thats an existing HIP I think... for integration of HCS service into the .sol precompiles

**186. By reg.cs#2829 in the Token Service Channel on 05/31/2022**

Nice, then I am looking forward to see the HIP!

**187. By Ed Marquez#6403 in the Token Service Channel on 05/31/2022**

Got it. I believe it's just two options atm:

- Like someone else suggested previously: set the transaction for execution at some point in the future and then you have a 2 minute window from that future start time for signing
- Or
- Use scheduled txns for extending that signing window to 30 minutes (as you noticed, not all txs are supported atm with scheduled txs)

I mentioned to someone else last week that there a HIP in progress to enable this type of use case while eliminating the time window issue...

That's all the info I have atm about that HIP until the authors release it to the public...

**188. By Greg Scullard#5365 in the Java Channel on 05/27/2022**

<https://hips.hedera.com/hip/hip-415> introduces the notion of blocks, but these are "virtual" blocks, no change to the underlying consensus, we're not minting blocks

**189. By Francesco Coacci#2822 in the Token Service Channel on 05/27/2022**

Hi, right now there's a HIP about long term scheduled transaction but It's still in "Accepted" status. Check out here HIP-423: <https://hips.hedera.com/hip/hip-423>  
Btw as you can see here in the latest Hedera Mirror Node release it's included: <https://docs.hedera.com/guides/docs/release-notes/mirror-node#v0.56>

**190. By bugbytes#0817 in the Developer General Channel on 05/27/2022**

Scheduled TX are not on par with regular transactions. Its only a small subset of functions are supported, and they require quite a number of supporting transactions. Which hip are you referring to?

**191. By Ed Marquez#6403 in the Developer General Channel on 05/26/2022**

Scheduled txs extend that window to 30 minutes. I believe I saw a HIP recently addressing your point @bugbytes

**192. By csthompson#9365 in the Smart Contracts Channel on 05/25/2022**

Is anybody else absolutely stoked about HIP-410?!!!

**193. By VR#1587 in the Javascript Channel on 05/25/2022**

@Ed Marquez \*Hedera Services 0.26 implements HIP-376, allowing smart contract developers to use the familiar EIP-20 and EIP-721 "operator approval" with both fungible and non-fungible HTS tokens.\*

Imagine I have 4 in game tokens for user to operate

Imagine I am creating account for user who does not have contract on Hedera network

Can I do something like .setOperators([]); with a list of contracts (addresses) which are already pre "operator approved" upon creation?

**194. By VR#1587 in the Smart Contracts Channel on 05/25/2022**

AAAAH Im so confused again, I read through HIP... lets say there is a special NFT metadata field I want to set value of in SC itself... do I have to create byte array in SC somehow ? Also I dont necessarily have to upload it anywhere on host of sort from my understanding..? I can just upload it directly into mint if Im under said 100b size?

**195. By Greg Scullard#5365 in the Smart Contracts Channel on 05/24/2022**

There's a recent HIP on smart contracts interacting with HCS, I suspect posting to HCS will be possible, reading from a mirror is unlikely since it requires a HTTPs request outside of the consensus network.

**196. By reg.cs#2829 in the Token Service Channel on 05/24/2022**

I will have a look into HIP-412 as well. And referring to a topicID using the HCS as metadata storage also sounds like a neat idea!

**197. By Greg Scullard#5365 in the Token Service Channel on 05/24/2022**

or, using HIP-412, store metadata on IPFS which contains a link to S3 (for example) where you keep mutable information

...

```
"files": [// object array that contains uri, type and metadata
 {
 "uri": "uri to file",
```

```
"type": "mime type",
"metadata": "metadata object - OPTIONAL",
"metadata_uri": "uri to metadata - OPTIONAL"
},
...
}
```

**198. By Greg Scullard#5365 in the Smart Contracts Channel on 05/24/2022**

You could do what you suggest, however the metadata field is limited to 100 bytes. Also to ensure your NFTs are displaying properly in wallets, adopting a standard is important so that wallets don't have to code to each and every NFT collection out there. This is the standard currently being followed: <https://hips.hedera.com/HIP/hip-412.html>

**199. By Winthan#4087 in the Developer General Channel on 05/23/2022**

what is different btw HIP vs HBAR?

**200. By nube#7126 in the Developer General Channel on 05/23/2022**

Here is the HIP re staking and the github discussion thread:

HIP - <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-406.md>

Discussion - <https://github.com/hashgraph/hedera-improvement-proposal/discussions/408>

**201. By johnda98#4728 in the Token Service Channel on 05/23/2022**

Just to remind any heads stuck in the Matrix strong forces.. the USD is not stable relative to its own 'value' in real asset terms.. so stable-coins are in fact a grand misnomer.. but feeds off soul's false perception that a dollar has always been a dollar and therefore we 'price' crypto (wrongly) in USD.. why o why ... humans.. soft in the head...pricing 'stuff' in a so called Reserve Currency.. its almost 1000\$ for a bag of chips and beer.. soon.

**202. By Ed Marquez#6403 in the Token Service Channel on 05/19/2022**

That's my understanding as well.

atm I'm not sure what the frequency will end up being (I need to do a deeper dive into the HIP). I think that will be pinned down once the HIP goes from Last Call to Final.

**203. By Ed Marquez#6403 in the Token Service Channel on 05/19/2022**

Hedera doesn't have blocks That notion will be coming soon to the networks for better interoperability. See: <https://hips.hedera.com/hip/hip-415>

**204. By Ed Marquez#6403 in the Token Service Channel on 05/19/2022**

no problem! Glad you're trying out Hedera. I'd suggest taking a look at:

- this video (<https://youtu.be/lp3mwdYEZEK>) for an overview of NFTs on Hedera. Note that video shows how to do things with the JS SDK. You can do most of those same things (like create, transfer, mint, burn, associate, dissociate) via a smart contract using the precompiles from this page (<https://docs.hedera.com/guides/docs/sdks/smart-contracts/hedera-service-solidity-libraries>)

- HIP 412 (<https://hips.hedera.com/hip/hip-412>) has the latest info on the metadata standards for NFTs. From there, I would highlight the pointer-to-a-pointer approach.

Where you basically have i) the JSON metadata and ii) the Image on decentralized storage (like IPFS). Then your JSON points to the URI of the image, and you use the URI of the JSON as the metadata for the new NFT you mint with Hedera

**205. By Francesco Coacci#2822 in the Smart Contracts Channel on 05/19/2022**

It seems like this HIP is not right for you. If I understood correctly I would take this path: If you have contract A and contract B, you can insert a solidity function in A that calls a function in B and check if the return value is ok or there's a revert.

**206. By Francesco Coacci#2822 in the Smart Contracts Channel on 05/19/2022**

Hi! Metamask support will be available in the near future. HIP-482 is still in his last call status as you can see here: <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-482.md>

**207. By VR#1587 in the Smart Contracts Channel on 05/19/2022**

Reading HIP-218 now it seems like HTS actually has this ?

**208. By WW#0305 in the Smart Contracts Channel on 05/18/2022**

<https://github.com/hashgraph/hedera-improvement-proposal/discussions/479#discussioncomment-2777867> I expanded a bit more the HIP. Let's wait for more discussion and we can prepare the draft once we are happy

**209. By Dereek69#7262 in the Developer General Channel on 05/18/2022**

Hey, do you guys know about Deca4 Advisory? Ive been finding a few articles online about them having partnerships with the Hedera Foundation and wanted to confirm with the team if those news are true and what has been accomplished together so far

**210. By Bralz#7521 in the Smart Contracts Channel on 05/17/2022**

I opened a HIP for it <https://github.com/hashgraph/hedera-improvement-proposal/discussions/479> feel free to add this suggestion @WW

**211. By Ed Marquez#6403 in the Smart Contracts Channel on 05/17/2022**

<https://hips.hedera.com/all.html> Don't see it there yet.

Community members are more than welcome to submit and share with others to get traction. This write up has a section on the process for submitting a HIP: <https://hips.hedera.com/hip/hip-1>

**212. By Ed Marquez#6403 in the Smart Contracts Channel on 05/17/2022**

@ENIAC yes, this hip would be helpful but it's being actively developed. Likely to be included in the next few months.

**213. By Bralz#7521 in the Smart Contracts Channel on 05/17/2022**

Is there HIP out yet for reading HCS topics from a smart contract?

**214. By csthompson#9365 in the Smart Contracts Channel on 05/17/2022**

Checkout HIP-260 <https://hips.hedera.com/hip/hip-260>

**215. By Oxholman#4290 in the Smart Contracts Channel on 05/17/2022**

Any HIP right now for supporting wiping tokens from account?

**216. By Ed Marquez#6403 in the Token Service Channel on 05/16/2022**

Possible that it's not helpful for your particular use case, but the tutorial does follow the recommended approach listed in point 5 of the motivation for HIP-412: <https://hips.hedera.com/hip/hip-412>

Where you want to use a pointer-to-a-pointer approach. You're more than welcome to hard code a JSON object in that metadata field, but keep in mind the size limitation for both Hedera transactions and metadata field. The documentation does a great job detailing both

**217. By johnda98#4728 in the Smart Contracts Channel on 05/16/2022**

np.. Leemon promised to send me a Pint of IPA and a bag of chips(crisps) for adding-value as Tech support when @Ed Marquez is busy cooking the crisps..

**218. By Tomachi Anura#8370 in the Javascript Channel on 05/16/2022**

i am running AccountInfoQuery as usual, but it returns always an empty map under tokenRelationships

**219. By Ed Marquez#6403 in the Javascript Channel on 05/14/2022**

An alternative could be to work with HashConnect the old fashioned way - without executeWithSigner, which means packaging it as bytes for signing. They have examples of that approach in their repo. I think signer provider is much cleaner but the issue are the snags that you're encountering. That's why checking the hip and source code could give you the details you need for this new functionality

**220. By Ed Marquez#6403 in the Javascript Channel on 05/14/2022**

I believe that is expected. For now, you may need to look at the HIP (<https://hips.hedera.com/hip/hip-338>) and source code (<https://github.com/hashgraph/hedera-sdk-js/tree/main/src>) for implementation details. Take a look at the ways for the signer or provider to get tx confirmations.

Also the signer you're using (HashConnect, SDK, hethers, etc) likely has an effect here. At some point they should be somewhat consistent, but I think this is an area of active development for all teams.

looping in

@chorotoi#5693 @simihunjan#3005

**221. By kjwook#6746 in the Smart Contracts Channel on 05/14/2022**

Any example call hip206 transferNFT on smartContract?

**222. By kjwook#6746 in the Smart Contracts Channel on 05/13/2022**

Is it contract receive NFTs?? HIP-206/HederaTokenService.sol 'transferNFT' function is revert to when I transfer to ContractId

**223. By Ed Marquez#6403 in the Smart Contracts Channel on 05/13/2022**

It's still very early days of those implementations of HIP-338 in multiple places (SDK, Hethers js, HashConnect). The engineering team is having these conversations. I doubt that things will converge to the point where you need only a single signer. For now, my understanding is that you need to instantiate and use different signers.

@SM FYI



**224. By [WW] \$i|\_EnT Ki|\_|\_E'v'#1150 in the Token Service Channel on 05/08/2022**

Well I actually found an alternative method to have mutable metadata on HTS token with a latest HIP. The proposed metadata\_uri field..

**225. By csthompson#9365 in the Smart Contracts Channel on 05/07/2022**

<https://docs.hedera.com/guides/docs/hedera-api/token-service/tokenmint> and HIP-10 <https://hips.hedera.com/hip/hip-10> but I recommend asking in #-token-service

**226. By Ed Marquez#6403 in the Token Service Channel on 05/05/2022**

Yep, right now according to the HIP (<https://hips.hedera.com/hip/hip-16>) the renewal limit can be between 81 and 92 days. Soon that's gonna change to be between 30 and 90. Glad you got it to work

**227. By ZanittyUA#0895 in the Developer General Channel on 05/04/2022**

Saucer Swap looks promising IMO. From what I gather, the Saucer Swap DEX will let HTS do all the heavy lifting which is what we've been dreaming about all this time ever since HTS was announced. I understand there are some HIPs (currently only on test net) that need to be live on mainnet. To me, the team looks solid and the app looks to have been developed systematically <https://docs.saucerswap.finance/introduction/roadmap>

**228. By filipeVenancio.eth#1672 in the Smart Contracts Channel on 05/02/2022**

I see the new HederaTokenService.sol doesnt have this function (was using HIP 206)

**229. By Ed Marquez#6403 in the Javascript Channel on 04/28/2022**

Many of the tokens that were created back then (before HIP-10 and 412) added the metadata in the symbol and/or memo fields.

If mirror nodes don't give you a lot of info on those fields (for FTs), you could perform a `TokenInfoQuery` but I don't think that query is free - see <https://docs.hedera.com/guides/mainnet/fees#token-service> TokenGetInfo looks like it's \$0.0001

You could also create an enhancement issue in the mirror node SDK and the team can evaluate adding that functionality

**230. By Ed Marquez#6403 in the Developer General Channel on 04/28/2022**

It's possible and likely that the 100 byte limit for the metadata field will remain. HIP-412 suggests standardizing with the **\*\*pointer-to-a-pointer\*\*** approach, where what you include in the metadata field is only a CID or IRL of the JSON file. That JSON file in turn contains another CID or IRL of the image (or other media) artifact. That way both the JSON and media artifact exist in decentralized storage and you only use the CIDs/IRLs.

Looping in @Ashe Oro in case there's more info to add about the 100 byte limit.

**231. By wensheng#8721 in the Developer General Channel on 04/28/2022**

Thank you Ed. Another question, when HIP412 is implemented. the metadata size limit of 100 bytes will not longer apply, correct? Since there's no way all those information can fit into 100 bytes.

**232. By numaf.eth#8361 in the Javascript Channel on 04/28/2022**

Hi guys! I am trying to get an Nft metadata, but I cant. I was released befor HIP-17 so it

is a FUNGIBLE\_COMMON token with 0 decimals. This is the token seen from the mirror node: <https://mainnet-public.mirrornode.hedera.com/api/v1/tokens/0.0.257894/>

My question is, is there any way to see its metadata? Are there any docs I can read about this?

**233. By cryptorush#9966 in the Smart Contracts Channel on 04/26/2022**

It looks like HTS already supports `numberOfAutomaticAssociations`, but I can't find how to use it from HTS doc.

<https://hips.hedera.com/hip/hip-23>

**234. By bugbytes#0817 in the Developer General Channel on 04/26/2022**

From HIP 367 -- @Greg Scullard - help me out here, does this mean the current Query Balance which returns FT token balances will no longer return token balances? Or does it mean the Query Balance method is going away completely? Or does this mean its just the "zero balances" of associated FT & NFT that will be missing?

...

This HIP deprecates token association data in `getAccountInfo` and `getAccountBalance`. Clients must query the mirror nodes for this information. Within 6 months of this HIP being approved, these queries will no longer return association data.

...

I'm getting lost in the semantics and can't quite make out what's really going on.

**235. By 0xStef#9154 in the Smart Contracts Channel on 04/26/2022**

@Greg Scullard when did you say this would be implemented?

<https://hips.hedera.com/hip/hip-358>

**236. By Greg Scullard#5365 in the Smart Contracts Channel on 04/26/2022**

Hedera Improvement Proposals: <https://hips.hedera.com>

GitHub: <https://github.com/hashgraph/hedera-services>

Release notes: <https://docs.hedera.com/guides/docs/release-notes/services>

**237. By Ed Marquez#6403 in the Smart Contracts Channel on 04/25/2022**

<https://docs.hedera.com/guides/resources/tutorials>

^ that link also shows some tutorials for working with Hedera NFTs (see first tile), including how to create one that has custom fees.

Also the ability to create a token via a contract (using precompiles) is currently on testnet and will hit mainnet likely in the next network update. See details here: <https://hips.hedera.com/hip/hip-358>

**238. By numaf.eth#8361 in the Javascript Channel on 04/25/2022**

hey guys! I have a question. Is there any way to retrieve metadata from old nfts? I mean those who were created before hip-17 was launched

**239. By Greg Scullard#5365 in the Developer General Channel on 04/25/2022**

I'm not aware of a HIP but I see you started a discussion where engineering are providing input.

**240. By bugbytes#0817 in the Developer General Channel on 04/25/2022**

@Greg Scullard can you point me to the HIP where this policy is established? I'm having a difficult time finding it.

**241. By vic.a#4499 in the Smart Contracts Channel on 04/22/2022**

give it a try. currently, `block.difficulty` is set to 0 so you can take that out. Also, I think that `block.timestamp` might reflect the timestamp of the record-file housing the transaction (which, if you have 2 such calls with the same `number` provided and same `msg.sender`, you might get the same return result). There is a HIP coming that further addresses this: <https://deploy-preview-415--hedera-hips.netlify.app/hip/hip-415> and also do check the docs for the currently supported solidity variables and opcodes: <https://docs.hedera.com/guides/core-concepts/smart-contracts/solidity-variables-and-opcodes>

**242. By filipeVenancio.eth#1672 in the Token Service Channel on 04/22/2022**

well HIP-412 may help with my next fun project, I want to create a way of invoicing over NFTs and if companies want integrate them using json forma

**243. By Ed Marquez#6403 in the Token Service Channel on 04/21/2022**

In case anyone is interested, @here is a quick JS example that:

- mints NFTs with the Hedera Token Service
- uses the **\*\*NFT Storage\*\*** API for storing the metadata and image (you will need an API key and their SDK - see their docs: <https://nft.storage/docs/>)
- provides links to the IPFS URIs and to the mirror node queries for the new NFT

An article and/or video will likely follow in the future. In the meantime, you can read more about updates to the metadata standard in HIP-412 (<https://hips.hedera.com/hip/hip-412>)

**244. By csthompson#9365 in the Smart Contracts Channel on 04/19/2022**

Been doing a lot of testing, digging through code, and confirming with a few others on #-hips . Summary below:

- CryptoTransfer SHOULD work where an evm\_address of a create2 contract can be used as the alias key in an accountId and is allowed by hedera services, however the protobufs don't currently allow for this.
- Once a create2 is called, the evm address can be used in contractInfo lookup which will return the accountId that can be used in a CryptoTransfer
- The balance is reflected in the create2 smart contract and any value sends will reflect in the receiving accountId balance call

**245. By bigKnightOut#0207 in the Javascript Channel on 04/18/2022**

I've followed the HIP json format as required

**246. By csthompson#9365 in the Smart Contracts Channel on 04/17/2022**

Does anybody have an example of doing a cryptotransfer where the alias is an evm\_address as specified in HIP-329? <shard>.<realm>.<evm alias>

**247. By littletarzan#5253 in the Smart Contracts Channel on 04/16/2022**

i dont think EIP-712 is supported - the native cryptography of hedera is ed25519 and EIP-721 is ECDSA. There's a HIP related to supporting "approve" though but I forgot where I saw it

**248. By gehrig#7214 in the Token Service Channel on 04/14/2022**

@AndyF the token service can be extended in terms of adding a HIP that gets accepted and successfully into the Hedera API. You could obviously extend it with your own centralized app logic, but I'm assuming that's not ideal.

Related to snapshots, it may be worth looking at what Calaxy is doing with their DAO tooling, I'm sure @Cooper would be happy to chat on it, too. Here's their spec –

<https://github.com/the-creators-galaxy/creators-galaxy-improvement-proposals/blob/master/CGIP/cgip-4.md>

With regards to downstream issues, yes cost is higher, perf slower, the bigger one for most is ecosystem support. If you care about wallets, exchanges, etc supporting your token, then HTS is the way to go and where the momentum is being built.

**249. By vic.a#4499 in the Smart Contracts Channel on 04/13/2022**

guys, we just released our \*\*Hedera Strato Js 0.7.4\*\* ( <https://hsj-docs.buidlerlabs.com/markdown/changelog> ) with a lot of cool stuff (including browser hip-338 support with a nice docs `Wallet` page to play-with it directly in your browser ... zero config ... : <https://hsj-docs.buidlerlabs.com/markdown/guides/wallet> -- using HashPack, but of course ). If you want to give it a try, you don't need to install anything ... it's wired to work in your browser on `testnet`: <https://hsj-docs.buidlerlabs.com/> . Looking forward to your feedback (good or bad)! Happy buidling!

**250. By gehrig#7214 in the Token Service Channel on 04/13/2022**

I haven't heard anything on that, but sounds neat and would make for a great HIP.

**251. By Ed Marquez#6403 in the Smart Contracts Channel on 04/12/2022**

<https://docs.hedera.com/guides/docs/release-notes/services>

^ From the release notes, v0.24 will be on mainnet this week.

If HIP 358 makes it to mainnet for the next release, then that means around mid-May. Keep in mind that that's subject to change based on quality standards.

**252. By YoungSir#0422 in the Smart Contracts Channel on 04/11/2022**

When will hip 358 be completed

**253. By yuxuf#6568 in the Developer General Channel on 04/11/2022**

Hello,

Where may I follow up with Hedera's new developments, partnerships and such in a timeline?

**254. By Supremax67#5749 in the Developer General Channel on 04/08/2022**

No information has been disclosed about proxy staking as it is not yet ready. There's a HIP about it if you wanna have a read.

**255. By Supremax67#5749 in the Token Service Channel on 04/07/2022**

But if you do come up with a better solution, Hedera is always listening to the HIP.

**256. By Supremax67#5749 in the Token Service Channel on 04/07/2022**

I believe there's a HIP about another account paying for those fees. I wouldn't be able to recall the HIP number.

**257. By AdrianMsM91 {KBL}#9999 in the Token Service Channel on 04/07/2022**

I have read that but I didnt find the answer... I read this but I guess it isnt apply now  
<https://hips.hedera.com/hip/hip-372>

**258. By Supremax67#5749 in the Javascript Channel on 04/07/2022**

<https://hips.hedera.com/>

**259. By Supremax67#5749 in the Javascript Channel on 04/07/2022**

Bare in mind, there might be an existing HIP for this same topic.

**260. By Supremax67#5749 in the Javascript Channel on 04/07/2022**

Changes to the network are submitted via the HIP process. This would be your best bet to submit an option or a change.

**261. By Greg Scullard#5365 in the Token Service Channel on 04/07/2022**

@Xaski\_Malaxaski this may help : <https://hips.hedera.com/hip/hip-372>

**262. By Ed Marquez#6403 in the Token Service Channel on 04/07/2022**

Hi Justin, welcome! When thins are documented, that usually means they're available on mainnet (or at least testnet, which precedes mainnet by about 2 weeks). Another good indicator is the hip dashboard (<https://hips.hedera.com/all.html>). Those are separated by status, and Final **\*\*usually\*\*** means implemented. Finally, release notes (<https://docs.hedera.com/guides/docs/release-notes/services>) can also give you a good idea and history of what's available in mainnet/testnet/previewnet and when

**263. By roko#1041 in the Smart Contracts Channel on 04/07/2022**

Hi, regarding the HIP-206 how do you read the balance of an Hedera Native Token Service account within solidity?

**264. By Justin Thai#1024 in the Developer General Channel on 04/07/2022**

Hi, I'm new to this forum and hedera so apologies if i've come to the wrong place to ask. Can anyone advise where i should go to check if a particular HIP eg. HIP-24 is available on mainnet? I see TokenPause/TokenUnpause are both documented in the online API doco but wasn't sure if that means it's definitely available in maintnet.

**265. By Justin Thai#1024 in the Token Service Channel on 04/06/2022**

Hi, I'm new to this forum and hedera so apologies if i've come to the wrong place to ask. Can anyone advise where i should go to check if a particular HIP eg. HIP-24 is available on mainnet? I see TokenPause/TokenUnpause are both documented in the online API doco but wasn't sure if that means it's definitely available in maintnet.

**266. By Master Oogway | HeadStarter#8757 in the Developer General Channel on 04/05/2022**

Not yet. There is currently a HIP for native staking, so it should be coming soon

**267. By Ed Marquez#6403 in the Smart Contracts Channel on 04/04/2022**

@littletarzan @Bart, @bugbytes , @Matt Smithies @johnda98, you folks are active in this channel, so here's a rough repo (<https://github.com/ed-marquez/quick-contract-examples>) with a few smart contract examples. This repo will be cleaned up and referenced somewhere in docs at some point...

It has examples like:

- transferring HTS tokens to contracts (explicitely with addresses or via keywords like `***msg***` and `***this***`)
- transferring HBAR to contracts (via fallback function or with `.setPayableAmount`)
- working hip-218
- setting a contract as `**treasury acctnt**`, `**supply key**` for a token, etc  
(The goal is just to show some of the mechanics)

@johnda98 , to your point, example 7 shows how to have an `**immutable contract**` be the `**treasury**` and `**supply key**` for `**immutable HTS token**` and how to have that contract mint directly to a user while receiving payments in HBAR. Contracts atm can't create tokens or be the adminKey for a token, but that will be coming soon. And the current operations, will get easier too as we iron out kinks...

@Si Chen glad to hear it worked! Hopefully some of those examples are helpful

**268. By robl#6965 in the Developer General Channel on 04/04/2022**

It's possible. Comment from Leemon on HIP-406: "One example: the Hedera Council could stake from its treasury, and choose to not accept rewards for it." <https://github.com/hashgraph/hedera-improvement-proposal/discussions/408#discussioncomment-2485601>

**269. By nube#7126 in the Developer General Channel on 04/03/2022**

You could write a HIP for the idea

**270. By nube#7126 in the Developer General Channel on 04/03/2022**

It isn't a HIP no, it's just something hashpack has/is doing.

**271. By ivo.eth#7331 in the Smart Contracts Channel on 04/02/2022**

I also have a question related to the announcement - do we know approximately how much smart contract rent will be?

The proposal [<https://hips.hedera.com/hip/hip-16>] mentions that it will depend on contract storage and usage but I didn't see concrete values in HBAR per byte storage or per call. Are the values not determined yet?

**272. By Ed Marquez#6403 in the Smart Contracts Channel on 04/01/2022**

Hi #-smart-contracts channel.

- v0.24 went live on the Testnet yesterday and it introduces a `**new level of interoperability with native Hedera Token Service (HTS) tokens via HIP-218**`
- Basically, the Hedera EVM now exposes HTS fungible tokens as an ERC-20 and HTS non-fungible token as ERC-721
- That means you can do some token operations directly from a contract (like lookup token name, symbol, etc)

### Resources

- v0.24 release notes: <https://docs.hedera.com/guides/docs/release-notes/services#v0.24>
- Docs for supported operations: <https://docs.hedera.com/guides/core-concepts/smart-contracts/supported-erc-token-standards>

**\*\*Here's a simplified example.\*\***

If you deploy this contract (<https://github.com/hashgraph/hedera-services/blob/master/test-clients/src/main/resource/contract/solidity/ERC20Contract.sol>) and create an HTS fungible token, then you can call any of those contract functions with some code like:

```
` // Execute HIP-218 functions using ContractExecuteTransaction()
const contractExecTx = new ContractExecuteTransaction()
 .setContractId(contractId)
 .setGas(3000000)
 .setFunction("name", new
ContractFunctionParameters().addAddress(tokenAddressSol));
const contractExecSubmit = await contractExecTx.execute(client);
const contractExecRec = await contractExecSubmit.getRecord(client);

const txRec = await new TransactionRecordQuery()
 .setTransactionId(contractExecRec.transactionId)
 .setIncludeChildren(true)
 .execute(client);

// console.log(
// - Token name with ContractExecute: $
{txRec.children[0].contractFunctionResult.bytes.toString()}
//);
`
```

### **273. By gehrig#7214 in the Token Service Channel on 03/31/2022**

I think @Justin Atwell was considering a similar HIP, IIRC. May want to collab.

### **274. By Patex#6412 in the Token Service Channel on 03/31/2022**

I am looking into creating a hip, already cloned the repo but this will take a while to get right.

Sorry for the repeating questions but how do we know if a token is already associated with a wallet or not?

I tried to query the mirror nodes for balance and accounts, but this only works if the account has at least one token in possession.

Is the recommended approach to query the transactions of an account filter for tokenassociation / tokendisassociation transaction and resolve by timestamp?

Edit: the tokenassociation transaction in the mirror node does not have a field which contains which token was associated?

**275. By Greg Scullard#5365 in the Token Service Channel on 03/31/2022**

That said, it may be worth having that feature available natively. You can create a HIP to suggest it.

**276. By nube#7126 in the Developer General Channel on 03/30/2022**

We (SaucerSwap) are currently waiting on a final improvement proposal, HIP-358 TokenCreateTransaction support in HSCS (<https://github.com/hashgraph/hedera-improvement-proposal/pull/358>).

There were a few other HIPs we were looking at, such as HIP-218 create2 opcode, which is scheduled for mainnet update on April 15th.

**277. By AbsolutelyNot#3226 in the Smart Contracts Channel on 03/29/2022**

Suggest a HIP ?

**278. By shemnon#2321 in the Smart Contracts Channel on 03/29/2022**

Approve/Allowance and transferFrom currently are not implemented. HIP-376 should cover that.

**279. By shemnon#2321 in the Smart Contracts Channel on 03/29/2022**

It's described at a high level in the HIP - <https://hips.hedera.com/hip/hip-218#erc-20-calls-directly-to-token-accounts>. We have a redirect contract that if a token is called will redirect the call (via DELEGATECALL) to the HTS precompile contract, which is configured to handle these indirect calls. It also redirects the output and reverts.

**280. By simihunjan#3005 in the Smart Contracts Channel on 03/29/2022**

hi @you\_ate\_my\_food . @shemnon would be better equipped to address the how we did questions . Here is an example that shows how we handle signatures. It is applied to a transaction on the Hedera side calling the solidity function from the contract <https://docs.hedera.com/guides/getting-started/try-examples/deploy-a-contract-using-the-hedera-token-service>. Let me know if that helps answer the second part of your question. Also, there is a HIP to add support for approve/allowance <https://hips.hedera.com/hip/hip-376>.

**281. By Ed Marquez#6403 in the Smart Contracts Channel on 03/29/2022**

@papagaj You are correct. At the moment HashConnect provides a working solution for signing transactions via a browser extension.

There's a HIP relevant to this that will enable more options in the future: <https://hips.hedera.com/hip/hip-179>

**282. By Ed Marquez#6403 in the Developer General Channel on 03/28/2022**

Not at the moment. There are two HIPs relevant to this <https://hips.hedera.com/hip/hip-336> and <https://hips.hedera.com/hip/hip-376>

This functionality may be available in the near future.

**283. By FelixTheWhale#8788 in the Javascript Channel on 03/27/2022**

Alias account has shard node and private key, it is Hip from January

**284. By Bart#1307 in the Smart Contracts Channel on 03/27/2022**

This blog goes over all the functionality introduced in hip-206 including associations:



<https://hedera.com/blog/how-to-deploy-smart-contracts-on-hedera-part-2-a-contract-with-hedera-token-service-integration>

**285. By littletarzan#5253 in the Smart Contracts Channel on 03/25/2022**

when using the hip-206 precompiles below,

```
function mintToken(address token, uint64 amount, bytes[] memory metadata) internal
 returns (int responseCode, uint64 newTotalSupply, int64[] memory serialNumbers)
{
 (bool success, bytes memory result) = precompileAddress.call(
 abi.encodeWithSelector(IHederaTokenService.mintToken.selector,
 token, amount, metadata));
 (responseCode, newTotalSupply, serialNumbers) =
 success
 ? abi.decode(result, (int32, uint64, int64[]))
 : (HederaResponseCodes.UNKNOWN, 0, new int64[](0));
}
```

Why was uint64 chosen as the input? Suppose someone has a token whose decimals go out to 18, would he be able to mint 1000 tokens?

**286. By shubi#9407 in the Token Service Channel on 03/25/2022**

Thank you. It looks like the endpoint `accounts/{accountID}/nfts/` that was proposed in that HIP is now active on Mainnet. It would be nice if the REST API documentation could be updated to include this. At the moment it's not in the documentation.

<https://docs.hedera.com/guides/docs/mirror-node-api/rest-api>

**287. By Ed Marquez#6403 in the Smart Contracts Channel on 03/24/2022**

The concept of "rent" is something that multiple networks are looking to implement.

Hedera may be one of the first ones to implement it.

Note, however, that auto-renewal and expiry are not enabled on the network yet. That will be enabled in a future release.

<https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#:~:text=Smart%20contract%20entity%20auto%20renewal%20and%20expiry%20will%20be%20enabled%20in%20a%20future%20release.%20Please%20check%20out%20HIP%2D16%20for%20more%20information.>

HIP-16 (<https://hips.hedera.com/hip/hip-16>) has more information on the process, and timeframes.

**288. By Ed Marquez#6403 in the Token Service Channel on 03/24/2022**

No timeline for this particular feature at the moment given other priorities.

If long-term scheduled txs are a priority for your work, feel free to start a hip (<https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-1.md>), get input from the dev community, and that will encourage the engineering team to prioritize this.

**289. By Planck#4428 in the Token Service Channel on 03/24/2022**

Scheduled Transaction currently has a 30 minute time window but I heard mention that

will be extended in the future. Anyone know when that's planned to go live? (or which HIP I have to wait for?)

**290. By Ed Marquez#6403 in the Smart Contracts Channel on 03/23/2022**

Here's information on that from a previous conversation.

<https://discord.com/channels/>

373889138199494658/909532351388864542/938876645153062992

Short answer is

no HIP atm. Very likely to be delivered in Q2 or Q3, subject to change, of course.

**291. By amindorostanian#6285 in the Smart Contracts Channel on 03/23/2022**

Any HIP already regarding HCS calls from Smart Contracts? Any idea regarding the feasibility of such feature?

**292. By Ed Marquez#6403 in the Token Service Channel on 03/22/2022**

as an alternative you can also use ``ContractInfoQuery()`` to get the contract's balance of a specific token:

```
`const cCheck = await new
ContractInfoQuery().setContractId(contractId).execute(client);
console.log(cCheck.tokenRelationships._map.get(tokenId.toString()).balance.low);`
```

**293. By Patex#6412 in the Consensus Service Channel on 03/21/2022**

@Greg Scullard yes exactly. In my use case I create a game which achieves fair ordering via HCS and I would like to show a transaction history with links to a block explorer. For this I need to construct the transaction Ids.

Until HIP-171 is implemented I helped myself and fetched the payer account id from the message chunks (this is not officially supported yest in the js-sdk).

Currently I am stuck at retrieving the transaction start time. The consensus timestamp is submitted but the transactionId depends on the submission timestamp if I am correct.

**294. By Supremax67#5749 in the Developer General Channel on 03/20/2022**

@Santana There's a channel called #-python, but it is a wrapper of Java, still works though. There's also a HIP process to get a python going.

**295. By Patex#6412 in the Developer General Channel on 03/13/2022**

How long does it usually take for an HIP in accepted state to be implemented? I am looking at <https://hips.hedera.com/hip/hip-171> in particular

**296. By johnda98#4728 in the Java Channel on 03/07/2022**

This should be a new HIP "Come on u Hedera lot.. Greg's a genius.. have him and Leemon engineer it so a special Alias becomes Valid once ANY crypto tran ( FROM A existing 3rd party wallet) is sent for any amount >= the tran fee for new account create.. should be easy.... avoiding a 0.0.publickey of course.. impossible to key into a wallet unless QR scanned -thats an option for a platform.. a new User HAS to scan the QR of the Alias and send 1 or 2 min hbar to it from his own 3rd party wallet)

**297. By tinkerm#4293 in the Java Channel on 03/07/2022**

from an architectural perspective, this HIP was important as a building block to implementing the `CREATE2` EVM opcode

**298. By tinkerm#4293 in the Java Channel on 03/07/2022**

> Why didnt you guys just engineer that HIP it so if any wallet xfer can send to an Alias and if no Valid AccountID exists then if the deposit > the tran fee for the create then create a valid AccountID.. Then all we do is as usual check the AccountInfoQuery and see if .accountId is not null to see if they 'signed up' if null.

**299. By johnda98#4728 in the Java Channel on 03/07/2022**

@tinkerm Why didnt you guys just engineer that HIP it so if any wallet xfer can send to an Alias and if no Valid AccountID exists then if the deposit > the tran fee for the create then create a valid AccountID.. Then all we do is as usual check the AccountInfoQuery and see if .accountId is not null to see if they 'signed up' if null.. then prompt the user that their new Account has not been funded yet.

**300. By tinkerm#4293 in the Java Channel on 03/07/2022**

hmm the HIP <https://hips.hedera.com/hip/hip-32> is unfortunately a bit out-of-date; here is how Leemon described its purpose though:

```  
If a user has an account on Hedera, it is easy to create new accounts, paying for the new accounts from the old one. But if a user has no account, then it is inconvenient to create a new account, because they need the help of someone else to pay for the creation of the account.
```

**301. By johnda98#4728 in the Java Channel on 03/07/2022**

i thought the entire HIP for that feature was to let Platforms create Accounts albeit Aliases at 0 cost .. then they become Active Accounts when the User wishes ie Users have to fund ie pay for the consensus reach to make it a valid AccountID. -means dont have to have captchas etc to prevent abuse/ if the platform pays for each new 'free' account.. ie potentially a user draining a account.. unless one checks the ip address of new user.. then they could use many ips' etc etc

**302. By Greg Scullard#5365 in the Token Service Channel on 03/07/2022**

not quite, so you set the serial to be negative to remove the allowance

```  
The NftAllowance message is used to modify the NFT serial number list for a spender. If the NFT serial number is positive then the NFT will be added to the approved list. Conversely if the serial number is negative the NFT will be removed from the approved list.

If the caller wants to remove all serial numbers from the approved list the approvedForAll field should be set to false. If the approvedForAll field is set to true, the serial number list for the spender will also be purged as the spender is granted access to all NFT instances and an enumeration is not required.
```

from the HIP: <https://github.com/hashgraph/hedera-improvement-proposal/blob/e2f8926060e7378446d3c939d0eff5259b7390ee/HIP/hip-336.md>

**303. By shubi#9407 in the Developer General Channel on 03/05/2022**

I am not talking about HIPs, just technical issues people face.

**304. By El Cid.eth#9431 in the Developer General Channel on 03/03/2022**

i get that. I get that this company is a long term play. What i dont understand, is why if all these partnerships have been established, we've yet to see any mention from said partners.

**305. By cambaz#6941 in the Developer General Channel on 02/25/2022**

What are Hybrid Tokens mentioned in <https://hips.hedera.com/hip/hip-17#hybrid-tokens> ? I want to implement a fractional ownership but it's not possible to create an NFT with decimals @Greg Scullard

**306. By cambaz#6941 in the Developer General Channel on 02/24/2022**

Hey, I've been looking into HIP17 and my goal is to create an NFT with fractional ownership because we are trying to make a royalties system. In the specs Hybrid Tokens are recommended but not documented. Any suggestions for this kind of use case?

**307. By johnda98#4728 in the Java Channel on 02/23/2022**

@Greg Scullard @Ed Marquez @tinkerm H-guys.. whats the status of the new Account Aliases ? ie no fee creates.. that still a HIP ? want to incorporate into a DeFi DApp - so we dont have to use Captcha / or other ways to enforce no abuse of Account creates/ like platform account drains - presently a 2Hbar or so per new acct. thnks in advance.

**308. By nube#7126 in the Smart Contracts Channel on 02/21/2022**

Hey there! Not sure how much research you've done or understand about Hedera smart contracts etc. however I'll try to explain

We are waiting on some HIPs (hedera improvement proposals) which have yet to launch on the network. Smart Contracts 2.0 is launching somewhat in stages, the ability for interoperability with HTS (Hedera token service) is already live etc. HIP 218 (Smart Contract interactions with Hedera Token Accounts) and create2 have yet to launch. Those are need for our project, as such the statement by Nari which you were looking to verify as false is accurate.

The HIPs are not yet launched on mainnet or testnet, so your statement about the testnet and mainnet being 'basically' the same is accurate, we can't test on either.

Not sure if you saw, but I answered the bullet pointed concerns (there were 8 i think?) from your now deleted Reddit comment. It might some other questions you have, here's the link <https://www.reddit.com/r/Hedera/comments/sveu48/comment/hxiy3tw>

**309. By gehrig#7214 in the Smart Contracts Channel on 02/18/2022**

I won't speak on their behalf, but an app like that is likely waiting on a HIP to support create2 opcodes. So being unable to test that on a testnet would be accurate.

**310. By Greg Scullard#5365 in the Token Service Channel on 02/15/2022**

I've not looked into it yet (e.g. not tried it), but it looks related to a recent HIP enabling approvals whereby you can delegate approval to spend hbar/tokens on your behalf to another account. The `isApproved` is a boolean to enable/disable the approval.

**311. By Greg Scullard#5365 in the Javascript Channel on 02/11/2022**

@shubi the mirror is used in the SDK for HCS message subscriptions (the client subscribes to a topic and invokes a callback when a message is sent to the topic).

The client could indeed extend support to further mirror APIs as a "reflection" of the REST API, if you feel strongly about this, I suggest you raise a HIP (<https://github.com/hashgraph/hedera-improvement-proposal>)

**312. By Ed Marquez#6403 in the Token Service Channel on 02/10/2022**

without that HIP, it's a two step process.

<https://discord.com/channels/>

373889138199494658/768621337865486347/927731117572898857

1 get all the token balances for an account, and 2 get nft serials owned by the account

**313. By d3mage#8353 in the Token Service Channel on 02/10/2022**

As I understand, while this HIP is not implemented, the only possible way to fetch serial numbers from account is to get TokenIDs and check owner of each serial number of TokenID?

**314. By Ed Marquez#6403 in the Consensus Service Channel on 02/08/2022**

Yes, topics do have an expiration time (although this features is not live on the network yet, so atm entities don't expire).

I think the default renewal period is something like 3 months (or 92 days)

Here's more info on topics: <https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

And here's the HIP: <https://hips.hedera.com/hip/hip-16>

**315. By Ed Marquez#6403 in the Smart Contracts Channel on 02/07/2022**

There isn't an existing HIP about this yet. If you create one and get some support from the community, then it could be prioritized faster by the engineering teams : )

**316. By amindorostanian#6285 in the Smart Contracts Channel on 02/07/2022**

is there a HIP for this already? can you provide the link please?

**317. By Rocket#2012 in the Token Service Channel on 02/02/2022**

@bugbytes Hey bugbytes, I've been putting together a hip-10 update as a community effort to make a more standardized schema and I would love your/Calaxy's feedback

**318. By Bart#1307 in the Smart Contracts Channel on 02/02/2022**

I feel like this issue is serious enough to be an urgent HIP

**319. By Greg Scullard#5365 in the Developer General Channel on 02/02/2022**

@bugbytes I think that's by accident rather than by design, now I remember someone raised this a while back and was going to create a HIP...

**320. By nube#7126 in the Developer General Channel on 01/31/2022**

a HIP is an improvement proposal, they aren't all necessarily live on the network

**321. By Ed Marquez#6403 in the Token Service Channel on 01/31/2022**

that's correct. Manually associated tokens don't count toward the max auto association limit.

You can query auto-associated tokens by doing an AccountInfoQuery(),

tokenRelationships has a map of all the tokens related to an account, and that map has a field for each token "automaticAssociation = true/false". Check this page for ref: <https://docs.hedera.com/guides/docs/sdks/cryptocurrency/get-account-info>

### **322. By Ed Marquez#6403 in the Developer General Channel on 01/28/2022**

I'll do a check with the team to see how that's gonna play with the HIP.

You also may have found a doc bug, cause I don't think those conversions from decimal to hex are right

### **323. By AbsolutelyNot#3226 in the Developer General Channel on 01/28/2022**

You can help by initiating a discussion here and chaperoning a HIP

<https://github.com/hashgraph/hedera-improvement-proposal/discussions>

### **324. By bugbytes#0817 in the Token Service Channel on 01/28/2022**

Not at this time, that feature would make a great HIP proposal.

### **325. By Rocket#2012 in the Token Service Channel on 01/28/2022**

<https://hips.hedera.com/hip/hip-331>

### **326. By Rocket#2012 in the Token Service Channel on 01/28/2022**

not at the moment but I've started a HIP which is currently on Last Call

### **327. By Ed Marquez#6403 in the Smart Contracts Channel on 01/27/2022**

@johnsonb-oci couple of options here:

1) You can use ethers.js or web3.js with the Hedera SDKs to parse event logs, either from transaction records or mirror node api results. So, to get event data in a readable fashion you would use the contract's ABI, log data, and ethers/web.js.  
Here's some sample JS code using ethers.js and mirror node (can do something similar with info from the tx record):

```
> async function getEventsFromMirror(contractId) {
> const url = `https://testnet.mirrornode.hedera.com/api/v1/contracts/${contractId.toString()}/results/logs?order=asc`;
>
> axios.get(url)
> .then(function (response) {
> const jsonResponse = response.data;
>
> jsonResponse.logs.forEach(log => {
> // create an object to specify log parsing requirements
> let logRequest = {};
> logRequest.data = log.data;
> logRequest.topics = log.topics;
> // parse the logs
> let event = abiInterface.parseLog(logRequest);
> // output the from address and message stored in the event
> console.log(`Mirror event(s): from '${AccountId.fromSolidityAddress(event.args.from).toString()}' update to '${event.args.message}'`);
> });
> });
> }
```

```
> });
> })
> .catch(function (err) {
> console.error(err);
> });
> }
```

2) Get the logs and events directly from a mirror node (<https://hips.hedera.com/hip/hip-226> and <https://hips.hedera.com/hip/hip-227>) and use your own library, if applicable. Probably the first option makes more sense for most folks.

We'll look at coming up with some more doc, examples, or articles showing this in the near future.

### **328. By Ed Marquez#6403 in the Developer General Channel on 01/26/2022**

The status of the HIP is accepted, not final. Which means the change hasn't been implemented in code yet.

### **329. By bugbytes#0817 in the Developer General Channel on 01/26/2022**

Was wondering is HIP-198 out of date (<https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-198.md>) it says testnet should be return `0x01` but it appears to be returning `0x03` at the moment.

### **330. By Greg Scullard#5365 in the Developer General Channel on 01/26/2022**

The transaction includes the valid start time (it's in the TransactionId) and is indeed part of the payload the user signs. Keeping the device synced with a time server (set date to auto) is indeed to solution for now, the SDK removes a few seconds from the client's time to take into account minor time differences.

There have been suggestions of adding an API to Hedera enabling the query of a node's time and use this instead of the client's clock. The client would use the return value from the query to set its transaction id.

(maybe an opportunity for a HIP ?)

### **331. By bugbytes#0817 in the Smart Contracts Channel on 01/25/2022**

At the moment tokens can only be minted to the designated treasury and then transferred to a holder. Directly minting to a receiving wallet might make for a good HIP proposal.

### **332. By Greg Scullard#5365 in the Java Channel on 01/25/2022**

I believe there are solutions indeed, create a HIP (<https://hips.hedera.com>) and it will be considered for inclusion on the roadmap.

### **333. By Greg Scullard#5365 in the Javascript Channel on 01/24/2022**

Generally speaking, whenever a key is set on an entity, it cannot be removed (so the same applies to supply, freeze, etc... keys). This is an early design decision which makes sense for some keys, if you had a freeze key and frozen accounts, unsetting the key would mean these accounts would be frozen for ever, unless a check is made which could be costly in terms of performance...

On a more technical level, protobuf doesn't encode nulls meaning the node receiving the transaction doesn't get "null", it gets nothing/not set (protobuf removes all "unnecessary" data in order to be as efficient as possible).

If you feel strongly about this, my suggestion would be to create a Hedera Improvement Proposal to gather community feedback (<https://hips.hedera.com>)

**334. By shubi#9407 in the Token Service Channel on 01/23/2022**

I assume most users who use the endpoint proposed in HIP-331 will also need the metadata of the NFTs. Wouldn't it make sense to offer the metadata through that endpoint and avoid these N queries asking for the metadata?

**335. By Greg Scullard#5365 in the Token Service Channel on 01/20/2022**

A default 3 months will apply if not set (mind you, you can't set it much differently at the moment in any case)

This should explain it all, <https://hips.hedera.com/HIP/hip-16.html> it's not enabled yet and no eta for that to change just yet.

**336. By Cchor#4960 in the Developer General Channel on 01/19/2022**

@daniil

I cannot answer your question, but, more than the source code, ecosystem, partnerships and team is where the value is.

**337. By Ashe Oro#8558 in the Token Service Channel on 01/18/2022**

typically the best practice regarding NFTs and metadata is the "pointer to a pointer approach" as described in [HIP-10](<https://hips.hedera.com/hip/hip-10>)

The first pointer is to a JSON file hosted via IPFS. Set the `metadata` field on the NFT to the JSON file's CID (aka IPFS hash link or IPFS URI). This is done during token creation with HTS. An example can be seen here <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

The JSON file can then contain an array of other metadata defining the NFT's properties/attributes. Again, I recommend you reference HIP-10 for best practices and standards.

The `image` property/attribute in the JSON file should be set to another IPFS link which points to the image to be used as the NFT.

Now you see why I call it "a pointer to a pointer" since the metadata property on the NFT points to a JSON file on IPFS which then points to the image file on IPFS. Hope this helps!

**338. By Justin Atwell#0583 in the Token Service Channel on 01/17/2022**

There's a HIP coming soon to address this as well.

**339. By Greg Scullard#5365 in the Javascript Channel on 01/12/2022**

@Harsh Vardhan Bahree there is no way to know if an accountId (address) is valid (other than whether it's known to Hedera or not) from the address digits alone. So, it's possible to transfer to 0.0.26574578 instead of 0.0.26574575 by mistake (typo).

We recently introduced a checksum which adds a few letters to an account id such that



it can be validated against the network on which the accountId exists, for example

For example: 0.0.12344 on testnet resolves to 0.0.12344-ztpck, whereas on mainnet it resolves to: 0.0.12344-dmqow. This would mean that attempting to transfer to the first accountId+checksum on mainnet would fail since the checksum doesn't match.

Equally 0.0.12345 resolves to 0.0.12345-lwnwn on mainnet, so someone mistyping 0.0.12345-dmqow would see an error since the checksum doesn't match that account id on mainnet.

Checksums are fully supported by the SDKs and are documented here: <https://hips.hedera.com/hip/hip-15>

### **340. By AlexTaylor#3551 in the Developer General Channel on 01/11/2022**

\*"---- i tried doing a TokenUpdateTransaction to remove a key for a token but my test didn't succeed. I tried assigning an existing key to null, undefined, [], but those values didn't work. Seems like the update expects another key value only"

\*

Thanks @Ed Marquez for testing that too! So at least for now it seems that removing a key isn't possible. I can imagine this could be useful though, eg in combo with admin key. I'll keep an eye out for HIPs as i can see some user cases that could benefit from this later on.

### **341. By littletarzan#5253 in the Token Service Channel on 01/10/2022**

looking forward to hip-218

### **342. By AlexTaylor#3551 in the Developer General Channel on 01/08/2022**

Key key question.. ;-)

HFS .. can files be set immutable? Ie no admin key or admin key permanently removed?

HTS can keys be irreversibly removed once added?

And/or any related hips on the topic

### **343. By littletarzan#5253 in the Smart Contracts Channel on 01/07/2022**

in hip-206, is it possible for a SC to create fungible token and be the only party authorized to mint/burn tokens?

### **344. By [WW] \$i|\_EnT Ki|\_|\_E'v'#1150 in the Token Service Channel on 01/05/2022**

Thanks for the response In HIP 10 ; the metadata.json uri would be : <https://dev.luthersystemsapp.com/nft-test-en.json> ; which is a gateway URI ;; If someone wants to redirect the given gateway uri to a whole new metadata json file.. (Which means can centrally manipulate) , it would be a bad practice since it will destroy the factor of immutability of the asset minted.

In my opinion the best practice would be to either .. use the IPFS CID it self or universal ipfs address (ipfs://CID) in the metadata field. This should actually come from the Hedera itself in my opinion

I'm just trying to give my ideas on how things could change for the betterment of the Hedera eco system and I highly appreciate what the Hedera Devs doing

**345. By daniil#5984 in the Developer General Channel on 01/05/2022**

Hey guys, looking for advice as an aspiring hedera dev. DLTs are the future and I want to have a job in that future. What's my starting point?

I'm an amateur level web developer, probably within 3-6months of self learning to get a Jr Front End job. Far from knowldgeable but I know enough to have learned how to learn.

My question is, where do you start learning hedera? I can't even come up with a smallproject that would realistically use hedera and that I could build myself, to learn the basics. Im super down to contribute to open source and dive deep, but I need a starter path that's a little more guidance than just docs. When I read docs I at least know what problem I'm solving lol.

I hold 50% of my assets in hbar and I really trust the future and understand the technology at a high level. I want to double down on my investment and get a job in hedera once the Blue chips are hiring devs with the specialized knowledge. I'm all down for bank jobs - implementing a solution that I wholeheartedly believe is the future. But right now I don't even know where to start. Where would you recommend I go first?

**346. By Supremax67#5749 in the Developer General Channel on 01/04/2022**

They are plenty of avenues for people to share their input. Anywhere from HIP, to Facebook, to Reddit, to townhall questions.

**347. By johnda98#4728 in the Java Channel on 01/02/2022**

sucky bit is I dont know how the query will perform if have 10,000+ ContractIDs in there (saved as .sol addresses) .. and thus to instead of Append to the EOF, be nice to Pre-pend. I guess I should raise a HIP.. or can this be done already?

**348. By Kiril#8850 in the Developer General Channel on 01/02/2022**

Okay, it looks something that will help with signing is on the way <https://hips.hedera.com/hip/hip-179#abstract>

**349. By HashAxis#6514 in the Token Service Channel on 01/01/2022**

Is there any HIP around refining this process? It seems like it is more sensible that "Alice", the seller, pays the royalty after the payment is received from Bob. This would also eliminate the need for Bob's signature as it relates to the royalty payment. Royalties in the traditional sense are a duty owed by the seller, not by the buyer.

## Comments in 2021



### 1. By Rocket#2012 in the Consensus Service Channel on 12/28/2021

Try writing up a HIP

### 2. By Rocket#2012 in the Token Service Channel on 12/24/2021

there is HIP-179

### 3. By shubi#9407 in the Token Service Channel on 12/24/2021

Hello, there were talks about an upcoming RPC to sign transactions. Is that in a HIP? Anywhere one could read about it? Thanks

### 4. By gehrig#7214 in the Smart Contracts Channel on 12/13/2021

Once HIP-208 is complete, i.e. HTS calls are supported, we'll have documentation

available this is likely to be in the next month or two - at least on previewnet. <https://github.com/hashgraph/hedera-improvement-proposal/discussions/208>

**5. By prezzo#5036 in the Developer General Channel on 12/13/2021**

Hi guys Just saw this on EMTech's website.. can someone explain to me what is the relationships about?

**6. By johnsonb-oci#6673 in the Smart Contracts Channel on 12/10/2021**

No, at least not with using HTS. There has been talk recently about adding a hip to add the erc-20 approve action, which would allow the DEX to transfer W tokens of XYZ on your behalf, then one could have the order book logic for a contract do the approve, when party1 of the trade does its limit sell/buy, and when party2 comes in to complete the other end of the trade with PDQ tokens, all they need to do is send a transaction to the smart contract with its (party2) signature. Then the contract provides its authorization for the approved transfer for party1 and the atomic transfer of XYZ tokens from party1 to party2 and PDQ tokens from party2 to party1

**7. By Ed Marquez#6403 in the Token Service Channel on 12/10/2021**

<https://hips.hedera.com/hip/hip-23> There's also a Hedera Improvement Process (HIP) proposal for making these token associations opt-in, so it's something that will likely become optional/easier in the future

**8. By Greg Scullard#5365 in the Smart Contracts Channel on 12/07/2021**

And response posted in the other channel which may not be open to all or permanent.

So the challenge with any royalty is that two people are involved in the operation, the token holder (Alice) sending the token to someone (Bob) who's paying Alice for the token and also paying the token issuer (Carol) a royalty.

It is necessary for both Alice and Bob to sign the transaction, Alice to approve the transfer of the token to Bob and Bob to approve the payment to Alice + Carol.

Whether this is done natively with the token service or a smart contract doesn't change the fact that both parties need to approve the operation.

In a P2P scenario it's challenging... we need support from wallets for scheduled transactions or the ability to notify someone of a transaction they need to sign.

Marketplaces help to some extent, but not entirely since you need to transfer "ownership" of your token to a marketplace so that they can sell it on your behalf (they can better manage the signature collection process), however, in transferring the token to the marketplace, you're back to the P2P scenario in that the simple act of transferring the token to the marketplace (in escrow) incurs a royalty payment. This is particularly important if the royalty payment has a fixed component, even transferring the token to the marketplace for free would result in the fixed royalty being paid to the issuer...

We should create a HIP to add support for an allowance feature called Approve on HTS meaning you can "share" control of the token with someone else (and as the owner, revoke that control). The someone else (a marketplace) would then be able to sell the token on your behalf, but it would never have been transferred to them in the first place, just granted the ability to transfer it on your behalf.

**9. By Greg Scullard#5365 in the Token Service Channel on 12/06/2021**

You can create a metadata JSON file which contains the CID for the image and store the JSON file itself on IPFS, then use the resulting metadata CID as your NFT metadata.

Here's an example [https://cloudflare-ipfs.com/ipfs/](https://cloudflare-ipfs.com/ipfs/bafkreif3dwrwbweefsmbm3i6h6n5ycndqg5mdl3q2g3je2rz4p72khi73oka)

bafkreif3dwrwbweefsmbm3i6h6n5ycndqg5mdl3q2g3je2rz4p72khi73oka

Note this uses HIP-10 for its schema: <https://hips.hedera.com/hip/hip-10>

A file stored on the Hedera file service can also be made to be non-editable (e.g. by not providing an admin key).

**10. By Greg Scullard#5365 in the Developer General Channel on 12/01/2021**

Hi Otis, this is not available outside of smart contracts no. There is a Hedera Improvement Proposal (<https://hips.hedera.com>) that floated the idea of a native liquidity pool.

Once smart contracts v2.0 are released on Hedera (Q1 2022), you'll be able to write a smart contract in Solidity to do pretty much anything you want and optionally link it to our native Token Service.

**11. By Vadim T#0388 in the Developer General Channel on 11/26/2021**

Hi team, I'm Vadim from CoinJoy (media platform, news aggregator, portfolio tracker). Who may I get in touch with regarding partnerships?

**12. By Rocket#2012 in the Token Service Channel on 11/23/2021**

Yeah i was following the HIP

**13. By johnda98#4728 in the Java Channel on 11/22/2021**

oh.. well.. caught up on the HIPs for SCs.. was goin to ask him..looks like payable fallback func in solc works now. due to new EVMs-looks like a hyperledger proj derivative now,... but latest solc. cool. and 1mb state store ceiling will be solved soon.. nice.

**14. By msanders#9466 in the Developer General Channel on 11/20/2021**

As a developer I am most excited about the transactional performance gains and the predictable fiat based gas fees. A little concerned about HIP-16 but I understand the rationale. The other networks do not support as many real world applications thus far.

**15. By msanders#9466 in the Token Service Channel on 11/20/2021**

What will be the impact of HIP-16 on NFTs when it is set active? Am I correct to assume that ALL NFTs ( or any entity on Hedera for that matter ) will incur a perpetual "rent" and thus never be truly "owned" by anyone apart from maybe the consensus node "land lords"? I find Hedera to be a very promising platform, but I am a bit concerned that even Accounts will expire without paying rent. How does that impact HBAR held at a custodian? I'm assuming the custodian's account would need to pay rent as well? I assume the fee is to be kept small enough in Fiat that it would seem negligible in practice? THANK YOU!!

**16. By Bralz#7521 in the Token Service Channel on 11/20/2021**

Is the public minting of NFTs still not an HTS feature? Is there an HIP for it?

**17. By 0xJepsen#5735 in the Smart Contracts Channel on 11/16/2021**

<https://hips.hedera.com/hip/hip-206>

**18. By Terence#4186 in the Developer General Channel on 11/10/2021**

hi, admin, does the hederastarter project have any relationships with you

**19. By Supremax67#5749 in the Consensus Service Channel on 11/10/2021**

@Dan Voyce Sounds like something for the HIP

<https://github.com/hashgraph/hedera-improvement-proposal>

Perhaps submitting one of how Hedera's network should handle time change?

**20. By Houseonfire#5013 in the Javascript Channel on 11/10/2021**

Im being told my metadata is too long and it wasn't telling me that before. So definitely in the right direction.

How do i go about formatting my metadata according to HIP-10 without it being too long?

**21. By SM#9151 in the Developer General Channel on 11/10/2021**

We also would love to hear your feedback on this HIP proposal: <https://github.com/hashgraph/hedera-improvement-proposal/pull/179> - it addresses a standard interface for applications to connect to external signature providers, simplifying wallet integration - very important topic! Please share your thoughts in the PR thread.

**22. By SM#9151 in the Developer General Channel on 11/10/2021**

Hi everyone! We have a whole bunch of new and exciting HIPs that are waiting for your feedback. If you want to know the latest and greatest possibly coming to Hedera - keep an eye on the HIPs repository, and without your feedback, they won't be complete!

There are also some changes we are implementing for the HIPs process to make it more effective. The changes are outlined in HIP-1, you can read more here: <https://hips.hedera.com/hip/hip-1> or here: <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-1.md>

Please note we have also added a Jekyll integration to the `hedera-improvement-proposal` repo, so every time a new HIP is created or a HIP gets an update, <https://hips.hedera.com/> gets updated as well.

HIPs that immediately need your feedback are:

<https://hips.hedera.com/hip/hip-10>: HIP-10: Token Metadata JSON Schema

<https://hips.hedera.com/hip/hip-13>: HIP-13: Hedera Name Service

<https://hips.hedera.com/hip/hip-11>: HIP-11: Layer-2 Smart Contract Network

<https://hips.hedera.com/hip/hip-171>: HIP-171: Add Message Sender's Account Id to Mirror Node API Response

<https://hips.hedera.com/hip/hip-173>: HIP-173: Opt-in merged scheduling

<https://hips.hedera.com/hip/hip-185>: HIP-185: Smart Contract Service Gas Based Throttling

<https://hips.hedera.com/hip/hip-198>: HIP-198: Ledger ID

You may notice these HIPs are in `Last Call` status. This is an active community feedback stage of a HIP lifecycle and allows a window of time (until datetime in `last-call-date-time` field) to propose any changes. The best way to provide feedback is in the discussion thread assigned in the discussions-to section of a given HIP) by providing your feedback and tagging a HIP author.

Let us know if you have any questions!

**23. By shemnon#2321 in the Developer General Channel on 11/10/2021**  
(note, this is all speculative until the HIP is fully implemented.)

**24. By bugbytes#0817 in the Developer General Channel on 11/09/2021**  
If you want to be part of the discussion on \*how\* it will be integrated, the HIP process is just getting started: <https://github.com/hashgraph/hedera-improvement-proposal/pull/206/files>

**25. By a.s.h#5530 in the Developer General Channel on 11/03/2021**  
Just saw the update regarding HIP 23. Is there any way i can play around with the maxAutoAssociations feature on the testnet? Looked through the sdk docs but couldn't find anything.

**26. By Ed Marquez#6403 in the Developer General Channel on 11/02/2021**  
<https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-1.md#start-with-an-idea-for-hedera>  
^ in the Process section => HIP-1

The process mentions that it should start with a discussion as an idea. It's ok to draft the hip in that idea stage and move it forward from there.

**27. By Bralz#7521 in the Developer General Channel on 11/02/2021**  
Are you supposed to open a thread in the discussions section before drafting a HIP? The "Before Submitting" section of the readme didn't mention this

**28. By Ed Marquez#6403 in the Developer General Channel on 11/02/2021**  
Hi #-developer-general, below are some highlights from the latest and hottest HIP discussions. Be sure to participate in these discussion and support the topics you think should be prioritized by the development teams. Share your comments, upvotes, reactions, and new ideas too.

**\*\*Newest topics:\*\***

- Auto Account Creation #187: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/187>

**\*\*Newest AND hottest topics:\*\***

- Python SDK #180: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/180>

- Integrating Solidity compiler to SDKs #162: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/162>

- Delegating KYC For Tokens #160: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/160>

**\*\*Hottest topics:\*\***

- Hedera Ledger Service (HLS) Suggestion #131: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/131>

**\*\*Check out other topics to discuss and support: \*\***

<https://github.com/hashgraph/hedera-improvement-proposal/discussions>

**29. By Bralz#7521 in the Developer General Channel on 10/27/2021**

How long does it typically take for a HIP to get its first response from a repo maintainer?

**30. By Ed Marquez#6403 in the Token Service Channel on 10/25/2021**

@AlexTaylor checked with the team about this. Here's an update.

Let's imagine:

- User A sends user B an NFT X (with a custom royalty fee of 10%)
- User B sends User A 3 fungible tokens + some  $h$  bar in exchange for the NFT X

**\*\*Answer:\*\***

- The 10% fee is deducted from all fungible value that A receives in the transaction (both units of fungible tokens and  $h$ ). There is an example transaction record in the HIP 18 page that you linked : )

- This rule still applies even if A sends the NFT to B, and **\*\*only a third party C \*\***transfers fungible value to A in the CryptoTransfer. That is, the royalty is collected from ALL fungible value received by the party sending the NFT in a transaction.

**31. By wensheng#8721 in the Java Channel on 10/23/2021**

I can not air-drop without KYC, but KYC require token association, which defeat the purpose of HIP23.

**32. By wensheng#8721 in the Java Channel on 10/23/2021**

Hi, @Greg Scullard Is it possible to air-drop token on testnet? Since testnet has implemented HIP23, I thought trying air-drop, but it didn't work. I can not transfer without KYC, but KYC still need token association. So how can I do air-drop?

**33. By Ed Marquez#6403 in the Developer General Channel on 10/21/2021**

Dear #-developer-general, today the Testnet was upgraded to v0.19. <https://docs.hedera.com/guides/docs/release-notes/services#v0.19.0>

In this release:

- We are thrilled to announce migration of the Hedera smart contract service to the Hyperledger Besu EVM, as laid out in HIP-26. This enables support for the latest v0.8.9 Solidity contracts, and harmonizes our gas schedule with that of the "London" hard fork. The Besu migration also sets the stage for a step change in smart contract performance on Hedera (performance improvements, and integration with our other services coming soon).
- HIP-23 feature set is now enabled, so that any account that has been configured with a non-zero `maxAutoAssociations`` can receive air-drops (i.e., units or NFTs of a token type without explicit association).
- HIP-24, which provides a safety measure for token types created with a `pauseKey`. If a `TokenPause`` is submitted with this key's signature, then all operations on the token will be suspended until a subsequent `TokenUnpause``.

**34. By Bralz#7521 in the Developer General Channel on 10/20/2021**

How long does it typically take an HIP to go from its first pr to closure?



**35. By Rocket#2012 in the Token Service Channel on 10/18/2021**

Issue posted to the HIP. Thanks for confirming @Greg Scullard

**36. By Rocket#2012 in the Token Service Channel on 10/18/2021**

I suppose I should raise an issue on the hip regarding the suggestion of transferring the cost to the token sender

**37. By Greg Scullard#5365 in the Token Service Channel on 10/18/2021**

the HIP (link below) had placeholders for fr, es, de, etc... localisation of the metadata which is a great idea, however those language tags are specified inside urls which works for web sites, but not so well for IPFS.

<https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-10.md>

I've seen a similar specification for ERC-721 (and someone recently twitted that a lot of NFT metadata is not exactly decentralised...), without dismissing this approach which may work for some, I think we need to allow an alternative that's not dependent on being able to rewrite urls.

**38. By Patches | TMCC CEO#0001 in the Token Service Channel on 10/18/2021**

Interesting.. Do you have a link or the HIP # to the old NFT standard so I can make sure we're accommodating it?

When you say replace text in a url. are you talking about the URL to the schema from the token, or the cloudflare image url to IPFS

**39. By Greg Scullard#5365 in the Token Service Channel on 10/18/2021**

Sounds great, I think we need a v2 of the NFT metadata standard that's already got a HIP (needs to be backwards compatible). One issue I see with that proposal is the localisation assumes someone is able to replace text in a URL. This is fine if the metadata is stored on S3 or such like, but won't work for IPFS, each localisation will have it's own CID with no way to influence the URL.

**40. By Patches | TMCC CEO#0001 in the Token Service Channel on 10/18/2021**

We're getting close to releasing our tool to the community for minting in this schema above. We're being cautious before we launch to make sure the schema is as forward thinking as we need it before a flood of NFTs are minted and can't be changed from this.

I think it's getting close to HIP PR time to help build a foundation for all the NFT tools / wallets / and market places that are coming online for NFTs

**41. By Bralz#7521 in the Developer General Channel on 10/18/2021**

@Greg Scullard I opened the PR for HIP let me know if I did this right: <https://github.com/hashgraph/hedera-improvement-proposal/pull/171>

**42. By Bralz#7521 in the Developer General Channel on 10/18/2021**

ok then ill open up a HIP later

**43. By Bralz#7521 in the Developer General Channel on 10/18/2021**

@Greg Scullard So this HIP is just to change the behavior of the official hedera mirror nodes? Or does this need to be done at the mirror node SDK level?

**44. By Bralz#7521 in the Developer General Channel on 10/18/2021**

@Greg Scullard Ok I will open the HIP. So would it be better to give this to the HCS messages themselves, or to the mirror node? The mirror node already knows the sender, judging by kabuto, so it seems like less steps to just add the id to the api's response rather than the message itself

**45. By Greg Scullard#5365 in the Developer General Channel on 10/18/2021**

@Bralz agreed, I think a HIP to ask for the transaction id at a minimum to be included in the REST API response (and subscription) would make a lot of sense.

**46. By Bralz#7521 in the Developer General Channel on 10/18/2021**

Right I could re-query the transaction and make 2 API calls per message/chess move. And this would probably be fine for chess games but if there's another use case for the HCS where an app wants to know the id of a sender, and there's a LOT of information going around, it's going to double the API calls for what could be an already large number. Is there any way to simplify this process with an ID field for a message? Or could a mirror node itself customize what it sends back (modifying the mirror's node's response via an API parameter would be easier than a HIP)? There are a lot of potential use cases for the HCS that would want to know the ID of a message's sender without taking extra steps

**47. By Bralz#7521 in the Developer General Channel on 10/17/2021**

@Greg Scullard would this be worth opening an HIP? adding the sender's account id to a message could be an optional flag for a topic (or done on a per-message basis).

**48. By AlexTaylor#3551 in the Token Service Channel on 10/15/2021**

There's nothing to stop you tokenizing any file type, eg a zip containing all 6 images. There isn't a standard yet for this afaik, but you have this option on GoMint. You might make the public image a montage of the 6, and in the description explain the zip contents.

Anyone any thoughts if this could work based on HIP-10 or similar?

**49. By gehrig#7214 in the Token Service Channel on 10/15/2021**

You \_could\_ insert whatever you like as metadata, but going against the HIP-10 standard is likely not advised for proper ecosystem support. @0xjepsen wrote a nice quickstart here that talks about that schema. <https://hedera.com/blog/developer-quick-start-nfts-and-metadata>

**50. By Ed Marquez#6403 in the Developer General Channel on 10/15/2021**

Dear #-developer-general, happy Friday! Here are the top voted HIP discussions from this week.

Check them out and share your thoughts and upvotes on the ones you would like to see become a reality!

Delegating KYC For Tokens: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/160>

Integrating Solidity compiler to SDKs: <https://github.com/hashgraph/hedera->

improvement-proposal/discussions/162

HIP-29: JavaScript DID SDK: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/166>

View all discussions here: <https://github.com/hashgraph/hedera-improvement-proposal/discussions>

**51. By Justin Atwell#0583 in the Developer General Channel on 10/15/2021**

I like this page for showing an overview of use cases and partnerships. It's not Hedera owned but oh well: <https://www.hbartothemoon.com/allcases>

**52. By litterthanlit#9385 in the Developer General Channel on 10/15/2021**

hi guys, where could I find some research articles about hedera? (etc. partnerships, use cases, patents)

**53. By Supremax67#5749 in the Developer General Channel on 10/13/2021**

Not sure how smart contracts 2.0 will work as is or if there's an option to automatically make payments. But I would assume that issue has been addressed or would be address in one form or another. Another reason why the #-hips exist, to get feedback/suggestion from the ecosystem.

Just keep in mind that without "rent", a ledger has no obligations to keep your data the moment they decide to prune the chain. Pruning is a necessary process for any public DLT, for the ones who does not do this & have no "rent" fees; it would end up incurring operational cost that eventually becomes unsustainable or translates into ever increasing higher fees.

**54. By Ed Marquez#6403 in the Developer General Channel on 10/12/2021**

dear #-developer-general,

Below are a couple of HIP ideas where @0xJepsen and I would like to hear your thoughts and input. We look forward to the continued discussions on Github:

- Defining a recommended pattern (standard) for handling offline signing: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/153>

- Allow Open minting with HTS: <https://github.com/hashgraph/hedera-improvement-proposal/discussions/151>

**55. By Ed Marquez#6403 in the Token Service Channel on 10/11/2021**

^from the HIP abstract

**56. By Ed Marquez#6403 in the Developer General Channel on 10/07/2021**

FYI - We identified an issue with token auto associate (HIP 23). For this reason, HIP 23 will not be included in this update: <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-23.md>

The rest of the mainnet v0.18 upgrades will be included in today's update.

Background about HIP 23:

Under some test scenarios when the issue occurs, the code does not handle the token

balance updates correctly resulting in issues sending information to the mirror nodes; a fix for token auto associate on testnet is expected in the next couple of weeks.

**57. By Matai#8950 in the Token Service Channel on 10/06/2021**

Any insight one how many platforms minting HTS NFTs are following the hip10 standard? <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-10.md>

**58. By Greg Scullard#5365 in the Developer General Channel on 10/05/2021**

15 Indeed, thanks for correcting me. It was the first approved HIP, not the first created.

**59. By Rocket#2012 in the Developer General Channel on 10/05/2021**

this is an interesting HIP

**60. By Greg Scullard#5365 in the Developer General Channel on 10/05/2021**

It was HIP-1

**61. By Greg Scullard#5365 in the Developer General Channel on 10/05/2021**

@teacoat there is yes, if someone gives you a testnet account id and you send to that account on mainnet, it's a different account (testnet has many more accounts than mainnet so it would only work for a subset of testnet accounts).

You should not be able to send from a testnet account id on mainnet by mistake unless they both share the same key (which is unlikely).

A recent HIP introduced checksums for account ids, adding -xxxxx to an account id, the checksum is validated against the digits (so you can't mistake 0.0.12334 for 0.0.12344) and the network in question, so 0.0.123 on mainnet will have a different checksum to 0.0.123 on testnet.

The HIP is fairly recent, but hopefully it will be taken into account by wallet apps and others in the fullness of time, we'll then get used to account Ids having a checksum for verification.

**62. By Patches | TMCC CEO#0001 in the Developer General Channel on 09/28/2021**

Hello!

We did some research in looking for wallets to recommend and we believe Xact Wallet is the best UI for NFT viewing and token association.

Their dev team is always adding new features that come out pretty quickly. Their team is getting ready to support HIP-27 which will really help ease the UX of NFT purchasing on Hedera. You can check them out here:

<https://wallet.xact.ac/>

**63. By 3rdgencrypto#0026 in the Token Service Channel on 09/23/2021**

Hi, I'm doing artwork for a Hedera NFT project and I want to do some cool things with HIP-18 functionality that will really showcase Hedera capabilities. Any advice on finding a dev partner that would be chill, trustworthy, creative, and interested in working on the project?

**64. By nkavian#1321 in the Java Channel on 09/22/2021**

Support for HIP-16

"Every entity in Hedera fill have fields for expirationTime, autorenewPeriod, and autorenewAccount. These can be set when it is created, and can be changed with an update transaction."

"The autorenewAccount is the account that will automatically pay for the auto-renew."

"If the linked auto-renew account cannot cover the fee required for the default extension period, then the entity itself is charged (if it is an account or smart contract)."

So as it's described, I'd like to set the `autorenewAccount` to point to my operator account when I call `AccountCreateTransaction`. But when I look at `AccountCreateTransaction`, it doesn't contain a field for setting `autorenewAccount`.

**65. By seanshimb#1645 in the Token Service Channel on 09/17/2021**

This might be a very stupid comment (and one written without having done any research) but is it possible hip-17 isn't fully rolled out to test net? @SM can you shed some light here?

**66. By 0xJepsen#5735 in the Javascript Channel on 09/15/2021**

I'm not sure i understand exactly what you're asking. There is a schema on storing metadata in Hip-10. There are few different ways you could do this depending on how much space you need. The default storage here just takes 100bytes and if your data fits there you can store it in json. The other options are for it to be a uri to where it is stored on Filecoin, the Hedera File Service, or IPFS.

**67. By Supremax67#5749 in the Consensus Service Channel on 09/14/2021**

There is something called the HIP on Hedera's Github which allows anyone to contribute ways to improve Hedera. #-hips

**68. By rhyssied#6748 in the Consensus Service Channel on 09/14/2021**

so there are a few things there:

- anyone can develop on the network, but the code running nodes is Open Review, not Open Source (although you can submit HIPs and issues for SDKs and the other parts of the service layer)
- currently Hedera is using permissioned nodes however there is a path in place to eventually get to anonymous nodes (once tokens are sufficiently distributed and obtaining 1/3rd would be unviable)
- council membership is limited to very large organisations (usually with at least some household recognition in their own markets)

**69. By AlexTaylor#3551 in the Developer General Channel on 09/09/2021**

@Myztikal\_ good question, maybe someone else knows. it may need a HIP if not currently possible. i can see the value of that though

**70. By vira#7285 in the Developer General Channel on 09/07/2021**

I would like to invite the discord members to check out a HIP suggestion made by the DOVU CTO -- this is something that would make DeFi possible on Hedera as a core service

without having to build a L2/appnet or relying on solidity  
<https://github.com/hashgraph/hedera-improvement-proposal/discussions/131>

**71. By Rocket#2012 in the Developer General Channel on 09/06/2021**

There is a HIP proposal in progress that I have unfortunately haven't had time to work on

**72. By JS#1112 in the Developer General Channel on 09/01/2021**

Hi Team,I was wondering who might be the right person to speak with regarding partnerships?

**73. By Rocket#2012 in the Javascript Channel on 08/25/2021**

there is no standardized way of specifying a logo, but there are HIPs that are in development that are proposing a standard for metadata that would point to a logo

**74. By AlexTaylor#3551 in the Developer General Channel on 08/25/2021**

thanks...it could.. aware of any HIPs around that?

**75. By wheresLINA (Hedera)#0936 in the Developer General Channel on 08/13/2021**

hey all, our next engineering insights meeting is on august 23rd. during this we'll be discussing:

- Hedera Services Code v0.17.0 (testnet: Aug 19, mainnet: Sept 2)
- HIP-18: Custom Token Fee additions (royalties)
- Performance measurement results overview (v0.16.1+)
- Changelog / deprecations <https://docs.hedera.com/guides/docs/changelog>

Please know that these webinars are also a great place to ask questions as well.  
You can RSVP here: [https://hedera.zoom.us/webinar/register/7416288789877/WN\\_jjmI-oHuQQqU35gzu9LVKg](https://hedera.zoom.us/webinar/register/7416288789877/WN_jjmI-oHuQQqU35gzu9LVKg)

**76. By Greg Scullard#5365 in the Developer General Channel on 08/06/2021**

@NotKyle @Liberated is correct, you can't bundle different types of transactions in a scheduled transaction (although I think I created a HIP discussion suggesting this would/could be a good idea).

However, you can include several hbar and token transfers in a single cryptoTransfer, all will succeed or fail atomically.

**77. By Rocket#2012 in the Developer General Channel on 08/05/2021**

there's a HIP out there for ZK proofs which would probably be one way of verifying that someone owns an NFT before giving them access to the content

**78. By AlexTaylor#3551 in the Token Service Channel on 08/05/2021**

Can anyone help with a question on HIP-18  
<https://github.com/hashgraph/hedera-improvement-proposal/discussions/92#discussioncomment-1133741>

\*Can anyone help with an example of the royalties use case that's being released on mainnet today? Fractional fee is denominated in the token itself, so only works for fungible tokens. Or is it planned to allow denominating\_token\_id for fractional fees as is allowed for fixed fees? This would enable the NFT royalty use case

which some users have mentioned in this discussion. I feel i must be missing something

Tithe barns (example of 12th century fractional fee transfer) [https://en.wikipedia.org/wiki/Tithe\\_barns\\_in\\_Europe](https://en.wikipedia.org/wiki/Tithe_barns_in_Europe)  
engineering insights <https://www.youtube.com/watch?v=3iBza4XyoGc>  
case studies <https://github.com/hashgraph/hedera-services/blob/master/docs/fees/custom-fees-characterization.md>  
docs <https://docs.hedera.com/guides/docs/hedera-api/token-service/customfees>  
\*

### **79. By bugbytes#0817 in the Developer General Channel on 08/02/2021**

There are some HIPs that are being discussed to try to start working on this problem, one present working solution is the way <https://hashgraph.bugbytes.com/> does it. The system generates the bytes (in hex) for the transaction to be signed and you copy that string to a separate signing tool to produce a Hex encoding of a signature map (same one as the hedera protobuf)....works really well, the site never sees a private key.

### **80. By Liberated#0417 in the Developer General Channel on 07/30/2021**

I am pretty sure the answer is no, but figured I'd ask and see if it's an idea worth proposing a HIP for:

What if I could grant someone authority to buy/sell my tokens or sign transactions for me?

I'm thinking of use cases for folks who should NOT be allowed to spend their own money such as kids, Mentally incapacitated voters, felons, people that think arrays start at 1, stuff like that.

### **81. By Jordannn#9673 in the Token Service Channel on 07/27/2021**

I'm trying to use the new HIP-17 NFT token updates but I keep getting `failed precheck with status INVALID\_TRANSACTION\_BODY` whenever I try and `mint` one of the NFT tokens.

Token Type

```
const tx = await new TokenCreateTransaction();
tx.setTokenName(token.name);
tx.setTokenType(TokenType.NonFungibleUnique)
tx.setSupplyType(TokenSupplyType.Finite)
tx.setTokenSymbol(token.symbol.toUpperCase());
tx.setDecimals(0);
tx.setInitialSupply(0);
tx.setMaxSupply(token.maxSupply);
tx.setTreasuryAccountId(process.env.RESERVE_ACCOUNT_ID);
tx.setAutoRenewAccountId(process.env.RESERVE_ACCOUNT_ID);
tx.setSupplyKey(PublicKey.fromString(process.env.RESERVE_PUBLIC_KEY))
tx.setAutoRenewPeriod(autoRenewPeriod);
tx.setTokenMemo(`${token.name} - Maximum Supply ${token.maxSupply}`);
```

Mint Token TX:

```
const tx = await new TokenMintTransaction();
tx.setTokenId(token.tokenId)
tx.setAmount(1)
tx.setMetadata([0])
```

### **82. By 0xjepsen#5735 in the Developer General Channel on 07/12/2021**

Another cool thing in the pipeline is HIP-17 and HIP-18 which are scheduled to hit the main-net in early august. Hip-17 is full support for custom NFT tokens with a wide range of capabilities. HIP-18 is custom token fees that could allow for royalty payments and social tokens. Really exciting stuff

### **83. By Greg Scullard#5365 in the Developer General Channel on 07/10/2021**

There are two HIPs on fees and NFTs

### **84. By Rocket#2012 in the Developer General Channel on 07/10/2021**

@Greg Scullard I did some work on my HIP proposal for a standardized Signing Protocol, I have @0xjepsen helping me out on it

### **85. By Greg Scullard#5365 in the Token Service Channel on 06/29/2021**

- if an account is closed, how do we reopen it after the expiration period?

When an account runs out of hbar, it will be marked for deletion and can be funded again for a short period of time (TBD) so it "undeletes" itself and renews automatically. If not funded within that time, it will be deleted and removed from the ledger, no funds can be sent to it after then, and the account id cannot be reused.

- if an account is closed, and another party had sent us funds at the closed account, are the funds lost?

See above, the transaction will fail and funds will not leave the paying account.

- since there is a get balance fee, explicitly point out to developers they need to implementing rate limiting on their side, otherwise the operator's wallet can be drained, causing an account closure, thereby causing a full denial of service.

getBalance is free as is getReceipt, no need to rate limit this.

- documentation that clearly explains what happens to token balances once HBAR hits 0. i.e. the tokens are lost too?

per current design tokens left in an account with 0 hbar will be transferred back to the token's treasury at the time the account is deleted.

There is a HIP in progress on the subject of account renewals, you may comment there if you like: <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-16.md>



**86. By Supremax67#5749 in the Token Service Channel on 06/28/2021**

@nkavian "if an account is closed, and another party had sent us funds at the closed account, are the funds lost?"

An account that is no longer active cannot receive funds. Can't accidentally send funds to it.

Since renewal fees hasn't been enabled yet, you won't see an example of what happens. Furthermore, I expect renewal fees to be live at the same time as proxy staking, further offsetting the cost if any HBAR in the wallet if staking used.

"Hedera imposing these fees", is not the proper terminology. Hedera is saying this is how much it cost to do "this" and "that" on the network and charges its users for such services. There isn't a network or service that is truly free, there is always a catch 22. Hedera is being transparent about the cost. One option is to increase the cost for the first token create to allow for that minimum deposit of HBAR. You'll also notice there's a #-hips channel for such suggestion. I recommend checking out the pinned link if you wish to contribute to the solution.

Honestly and IMHO, the issue is being nitpicked. There is a higher chance of someone losing their private key than a Developer forgetting to leave a balance on the account.

**87. By Greg Scullard#5365 in the Token Service Channel on 06/22/2021**

possible, want to start a HIP discussion on it ?

**88. By Greg Scullard#5365 in the Token Service Channel on 06/22/2021**

The hip is still draft by the authors and yet to be published. I don't believe the association is automatic as you suggest, but I have an idea for another HIP which could be helpful in that regard and many others.

The general idea would be to have a "bundle" or "atomic" transaction type which could carry two or more transactions, an order would be specified for these transactions such that when the bundle reaches consensus, the transactions are executed in the specified order and if any fails, the entire bundle fails.

So the bundle would essentially contain an array of transactions, not sure if each transaction would carry its own signatures, or whether the bundle would (I think signatures per bundle would make more sense, since they approve the entire "process" and could be supported by scheduled transactions too).

Such bundles could:

- Create a token, associate to an account, transfer the token
- Alice creates a HCS message, Bob pays Alice 10hbar for doing so

...

**89. By bugbytes#0817 in the Token Service Channel on 06/22/2021**

What number is the hip on association? (btw, I've always thought HTS could be tailored such that if the receiving party signed the token transfer transaction it would grant association if not already associated).

**90. By Greg Scullard#5365 in the Token Service Channel on 06/22/2021**

@interpolate smart contracts can't interact with HTS. There's a HIP in progress to specify royalty rules when you create a token, this will be native and will require no coding.

**91. By Greg Scullard#5365 in the Token Service Channel on 06/22/2021**

@bugbytes I like the idea, it would however bypass the association and enable anyone to mint to any account, there's a HIP on association. Nothing to stop minting a (default frozen) token to treasury, transferring to the interested party and wiping later. still needs the interested party to associate for now.

**92. By bugbytes#0817 in the Token Service Channel on 06/21/2021**

I had commented in HIP-17 about the idea of allowing an NFT to be directly minted to an consumer's account instead of the treasury. @Greg Scullard any comments? It just occurred to me that if you had a frozen token, and minted it directly to non-treasury accounts, would that come pretty close to functionality of live hashes? Something that would simulate a accreditation body vouching for credentials for example? The idea is that the account wouldn't necessarily be able to move the token elsewhere and the accreditation entity could burn the token at any time.

**93. By Darth CryotoHawk#3687 in the Consensus Service Channel on 06/18/2021**

Hi all. I am considering writing up a HIP to include filtering beyond date and limit to `hedera.NewTopicMessageQuery().Subscribe`. Currently, I am filtering the response in the `onNext` function, but this may not scale unless I pull and cache-aside in redis or some other store. Am I thinking about this right? Would appreciate any insight the community can provide prior to writing it up.

**94. By gehrig#7214 in the Javascript Channel on 06/09/2021**

Yeah, that's right, and what you're suggesting -- to my understanding at least -- is what HIP 17 would better support.

**95. By gehrig#7214 in the Javascript Channel on 06/09/2021**

You also may be interested in HIP-17 in case you haven't come across that - <https://hbarhips.com/hips/17>

**96. By vira#7285 in the Consensus Service Channel on 06/09/2021**

would personally love to hear something definitive on this topic; and if this feature isn't available by default, whether it could be implemented via HIPs or something

**97. By Rocket#2012 in the Developer General Channel on 06/01/2021**

if no one is working on a HIP right now I'd be willing to throw one up

**98. By Greg Scullard#5365 in the Developer General Channel on 06/01/2021**

A HIP on this would be awesome so there is some commonality across all wallets as much as possible at least in the message definitions and methods.

**99. By Greg Scullard#5365 in the Developer General Channel on 06/01/2021**

Looks like a site that was built amongst other things to list HIP (Hedera Improvement Proposals). Cooper who used to work for Hedera ran a small competition and they are one of the candidates. That said I can't vouch for the site on behalf of Hedera, due diligence is always recommended.

**100. By esh#1009 in the Token Service Channel on 05/31/2021**

Reading the HIP-16, I've realized there is also an interesting scenario of the token expiration and renewal. If that fee falls onto the issuer and the issuer "prints" tons of NFTs, that might kill the business. But I don't want that discussion to go off track from the subject of accounts, so perhaps that can be discussed later.

**101. By Greg Scullard#5365 in the Token Service Channel on 05/31/2021**

I think the HIP I referenced above would be a good place to discuss.

**102. By Supremax67#5749 in the Token Service Channel on 05/31/2021**

@Greg Scullard So a marriage of the initial setup fee + minimal balance retained should address the NFT problem. Would that be 2 HIPs or one and the same.

**103. By Deleted User#0000 in the Javascript Channel on 05/28/2021**

cheese you are an expert! ok so here is the lesson learned for me and others who might be interested.

1. AccountId.fromString and PrivateKey.fromString have to be used. Cooper's video is a little bit old so be careful with the new syntaxes. once I changed the constructors with these functions they worked fine.

2. the tokenID can be identified with the let token = "x.x.xxx" command

3. if you created a token already and need to find the tokenids you can do that by doing an accountqueryinfo which will fetch all the tokenrelationships with a specific account

4. remember to add the adminkey when creating a token. this will be needed in case you want to delete it.

5. tokens can be created with the same name and symbol. keep this in mind when moving to the mainnet.

basic lessons learned that maybe could save 1 or 2 days for newbies like me. thanks Rocket!

**104. By Supremax67#5749 in the Developer General Channel on 05/26/2021**

Most will say yes, but even if people said no, that's why there's #-hips.

Honestly, Hedera has 1.2 billions transactions on real life use cases. It's been battle tested and Main net has not yet achieved version 1.0

**105. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

I believe the account that funds auto renewal is the treasury account, there is a hip proposing an alternative funding account (also for accounts).

**106. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

There is a HIP open on separate accounts for renewal fees, maybe worth a comment or two.

**107. By bugbytes#0817 in the Token Service Channel on 05/13/2021**

(That I think we should add a HIP for, it makes sense to create and refine a token and eventually remove sudo)

**108. By Vict#3422 in the Token Service Channel on 05/08/2021**

Is it possible to build a deflationary type token similar to SafeMoon, using HTS and HSC?

For example there is a 10% collected (Tax) every time someone sells their tokens. 5%

would need to be split and sent back to all the current holders and the other 5% would be send to a different account to be used for liquidity ( paying for exchange listing fees and etc.)

Not saying I want to build this type of token, but if it is not currently possible with HH maybe this would be a good HIP.

**109. By Mx#7494 in the Token Service Channel on 05/06/2021**

How to list all token associated in accountID? Because AccountInfoQuery returned only TokenRelationShips but with map {} map {} values

**110. By MikeG#0508 in the Developer General Channel on 05/03/2021**

And the question is: why don't they have control over this? We have put significant development time into making a dApp that would run on Hedera and now we have big questions about the barrier to entry for potential customers to use this. In the documentation under Core Concepts - Accounts it says "Accounts are the central starting point for Hedera.". Maybe this can be rewritten to include my experience. "Accounts are the central starting point for Hedera, we don't know if you'll be able to get an account on Hedera as we have no control over the central starting point of our technology, so, whatever...". Can this be added as a HIP?

**111. By gehrig#7214 in the Developer General Channel on 04/05/2021**

Hey all, replied to pimpi90 in #-hips, too, but to clarify I can confirm it is from Hedera / me. All links should go to the HIPs repo - <https://github.com/hashgraph/hedera-improvement-proposal>

**112. By Supremax67#5749 in the Developer General Channel on 04/05/2021**

@pimpi90 can't tell you if it was legit or a spoofed e-mail. But the HIP is a real thing. See #-hips

**113. By Matt Smithies#7285 in the Token Service Channel on 04/03/2021**

The usage of "NFT" from a marketing/branding perspective can be useful to share the intent of what you are trying to do for non-technical audiences. In particular the recent concerns that NFTs can be bad for the environment but we all know that isn't the case in terms of HTS or flow (and others). Naturally everyone (even us tech folks) struggle with the idiosyncrasies of all the new developments.

People don't care what they are interacting with as long as the experience is frictionless and simple. The issue that is going to be big is around image rights, copyright of content and piracy as well as bridges to other networks and current applications.

As more community HIP standards and recommendations come out of the ether over the coming months hopefully things will be less opaque.

**114. By gehrig#7214 in the Token Service Channel on 04/01/2021**

I'd hope / expect a HIP to help clarify and standardize this question. I'm sure Greg has better ideas than I. In your suggestion I'm not sure how you'd cleanly cap the supply. I suppose you could create the instances, create a file that references the instances, add that file to the class token? Seems messy to me.

**115. By Cody (SwirlDs)#4217 in the Developer General Channel on 03/23/2021**

@Aeon Animus In general, the best way to present requests for changes is to submit a HIP (Hedera Improvement Proposal). <https://github.com/hashgraph/hedera-improvement-proposal>

**116. By rhysied#6748 in the Developer General Channel on 03/22/2021**

Not sure if there would be any interest in a HIP to either `remove the signing requirement for all account creation keys`

**117. By Deagle#1163 in the Developer General Channel on 03/20/2021**

Anyone can submit stuff in the Hedera improvement proposal section and those literally get voted on by the governance council, I think this was said in the latest town hall anyways

Plus the entire goal of Hedera is to become the most decentralized, permissionless network there is.

The governance model is needed to build out the network and figure out all the things that different industries will need from the network, in my estimation - which is why there is a requirement for governance council members to come from different industries. This is just the first stage of ensuring that vision going by everything I have seen and read.

You are already able to talk to core dev members here, so I don't see how you think you don't have a say. Leemon always seems very excited about the HIP system as well

What better way to drive the adoption of decentralized networks than to leverage the positions of companies' that already have deep market penetration in their sectors?

**118. By KenTheJr#6963 in the Consensus Service Channel on 03/19/2021**

on a related note, this is the type of topic that we will be discussing via HIP going forward. It was just a timing thing that this didn't make it into a HIP.

**119. By Matt Smithies#7285 in the Consensus Service Channel on 03/19/2021**

I don't believe this is a good idea, understandably the size needs to be scaled down but this is too low, in my opinion.

With my work with DOVU we are working on implementing various IWA specs and are developing a certified carbon methodology with the National Farmers Association in the UK, the core of which is contained with audit process leveraging dynamic NFTs (HCS + HTS + IPFS).

1024 bytes/characters or 200-250 words is likely to not be enough, especially as onchain JSON structures.

When it comes to creating products and services to empower individuals and families to gain an income, I think it makes more sense (and credibility) for any and all proof to be onchain inside of an HCS message, and timestamped based on the consensus.

In addition with such a restriction I am concerned that it will limit the possible innovation for the development of new specs and processes for HIPs centred around HCS.

So I'd be more comfortable with a range of 8196 - 16392 bytes, with increased fees if required, anyone agree?

---

With that said I am working on a potential 1000+ TPS HCS usecase too (which will easily fit within 1024bytes) so happy to discuss the challenges.

**120. By KenTheJr#6963 in the Developer General Channel on 03/12/2021**

Hey everyone, the HIP repo is starting to get some traction. We'd love your feedback and input on new proposals. I set up a discussions section in Github for us to have structured conversations around ideas, editing draft proposals, and Q&A on existing HIPs. <https://github.com/hashgraph/hedera-improvement-proposal/discussions>

**121. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 03/01/2021**

Hello everybody! We hope you can join us in about 3 hours, 6pm EDT, for the monthly Hashgraph Meetup Monday! Hosted by Ledgerama and Creative Coast of Savannah, GA, we will be discussing HTS, HIP or Hedera Improvement Process, wallets, and a whole lot more. <https://thecreativecoast.org/event/hedera-hashgraph-savannah-meetup-2021-03-01>

**122. By Bart#1307 in the Developer General Channel on 02/28/2021**

gotcha, was just a thought that came to mind when I was considering how an internally robust decentralised system such as Hedera could work without any reliance on external infrastructure namely DNS and CAs at least beyond the initial bootstrapping, hence considered having those systems/services being built-in/native to Hedera itself via a proposed Hedera Name Service(HNS) and in a very real sense be the Trust Layer of the Internet. Not sure how feasible it would be, but I've proposed an HIP for it.

**123. By Don#3285 in the Token Service Channel on 02/26/2021**

@asddataking if you are interested in proposing an idea for the ecosystem, consider looking into the #-hips process.

**124. By Bart#1307 in the Developer General Channel on 02/21/2021**

Ok, if not I think it would be a good idea for a Type 1b HIP call it Hedera DEX Service(HDEXS). Also have another idea for an HIP, just refining it before I disclose it to the community for consideration.

**125. By Matt Smithies#7285 in the Token Service Channel on 02/18/2021**

@Cooper @Greg Scullard I'll certainly push it towards submitting to a HIP but yes contributing to the IWA would be good but I'm not entirely clear how that process would work.

**126. By Cooper#2101 in the Token Service Channel on 02/17/2021**

+1 to Greg, @Matt Smithies we'd love if you submitted this as a HIP to formally standardize the specification

**127. By Skorcher#3107 in the Developer General Channel on 02/10/2021**  
mention the partnerships

**128. By nsjames#6276 in the Developer General Channel on 02/06/2021**  
Really it's a game of PnL. You have to look at it like user acquisition. In most cases wallets make money through various means (referrals, premium memberships, promotions, trading fees, etc).

You have to balance the user acquisition cost with the average revenue per user.

**129. By alasano#1353 in the Token Service Channel on 01/22/2021**  
Sounds good, thanks @Cooper - Looking forward to seeing those partnerships come to fruition with an official (marketing) launch of HTS on Mainnet

**130. By KenTheJr#6963 in the Developer General Channel on 01/20/2021**  
@rhysied I'd love to get your feedback on the HIP itself

**131. By bugbytes#0817 in the Developer General Channel on 01/20/2021**  
(I've already commented on the hip, and I like it in general)

**132. By KenTheJr#6963 in the Developer General Channel on 01/20/2021**  
Final call for comments on <https://github.com/hashgraph/hedera-improvement-proposal/issues/35> . We'll be finalizing the HIP next week, but would love all of your feedback @everyone

**133. By KenTheJr#6963 in the Developer General Channel on 01/15/2021**  
Hey everyone. Looking for some feedback on this HIP: <https://github.com/hashgraph/hedera-improvement-proposal/issues/35>





```
export async function accountCreate(wallet) {
 const client = hederaClient();

 const privateKey = await PrivateKey.generate();

 const response = await new AccountCreateTransaction()
 .setKey(privateKey.publicKey)
 .setMaxTransactionFee(new Hbar(100))
 .setInitialBalance(new Hbar(process.env.VUE_APP_INITIAL_BALANCE))
 .execute(client);

 const transactionReceipt = await response.getReceipt(client);
 const newAccountId = transactionReceipt.accountId;
 console.log("transactionReceipt==>" + transactionReceipt);
 console.log("newAccountId==>" + newAccountId);
 const transaction = {
 id: response.transactionId.toString(),
 type: "cryptoCreate",
 inputs: "initialBalance=" + process.env.VUE_APP_INITIAL_BALANCE,
 outputs: "accountId=" + newAccountId.toString()
 };
 EventBus.$emit("addTransaction", transaction);

 return {
 accountId: newAccountId.toString(),
 account: {
 wallet: wallet,
 privateKey: privateKey.toString(),
 tokenRelationships: {}
 }
 };
}
```

### **3. By Johnda98#0683 in the Developer General Channel on 11/08/2020**

Put the memo number that binance gives you when you click for deposit, into the wallet note field.. NOT the name field. Eitherway you can always send the transaction hash of any binance deposit no-shows, to binance.. Takes them 3 days to return any failed sends from their pool acctn back to yr wallet addr. Or send 10m hbar to my account & i'll fedex you a bag of chips in return.

### **4. By Johnda98#0683 in the Developer General Channel on 08/28/2020**

@robl. 10000 hbar.. Doesnt cover my costs at 250\$/hr. I used to "dev" on mainnet only.. But its the node switchout chores.. Moreover its the redeploy of SCs to main .. I would have done that if i knew beforehand that previewnet scrubbed acctns every few hours. 10000hbar.. Buy a bag of chips w that.. But yes seriously yes you're right will do all on main for next client & expense the pennies.

### **5. By Ragox#3762 in the Developer General Channel on 08/13/2020**

15 partnerships with some of the largest global companies that are each running a

node, with at least some of them actively working on projects utilizing HBAR, the US government investigating Hedera Hashgraph for potential usage in a nationwide power grid, the Australian EFTPOS doing a PoC on using Hedera Hashgraph, Hyperledger Fabric released a plug-in for the Hedera Consensus Service, plus there are even more exciting projects of which many aren't even public yet. And you're telling me that this is placed 54th with a marketcap of only \$245 million? That's so surreal



## Comments in 2023



as a quick guess it is your arguments supplied not type matching:

```
function createNft(
 string memory name,
```

```
 string memory symbol,
 string memory memo,
 int64 maxSupply,
 int64 autoRenewPeriod
 ...)
 ...
 new ContractFunctionParameters()
 .addString("Fall Collection") // NFT name
 .addString("LEAF") // NFT symbol
 .addString("Just a memo") // NFT memo
 .addInt64(250) // NFT max supply
 .addUInt32(7000000) // Expiration: Needs to be between 6999999 and 8000001
 ...);
```

## **2. By AbsolutelyNot#3226 in the Developer General Channel on 02/27/2023**

I posted this in #-smart-contracts and wanted to share this here as well ..

> Further update to follow, for now, SC expiry due to non payment of rent is not enabled. This extends to contracts which are not treasury. (You can ignore the Expiry Timestamp in HashScan).

> The Storage Fee (once main-net is +100M k/v pairs and SC it self has +100 K/v Pairs) is still applicable although not enabled.

## **3. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/27/2023**

Further update to follow, for now, SC expiry due to non payment of rent is not enabled. This extends to contracts which are not treasury. (You can ignore the \_Expiry Timestamp\_ in HashScan).

## **4. By Michael Garber#5033 in the Javascript Channel on 02/16/2023**

When you make a transaction, it has up to 180 seconds to be confirmed by a node in the network. If it isn't confirmed within this time, it will expire and you'll have to create, sign, and submit the transaction again. Can you provide a code snippet of the transaction you are sending?

## **5. By Alban#1567 in the Developer General Channel on 02/15/2023**

Morning all. Hedera dev noob here looking to start with a usecase of rent payment by using a stablecoin on Hedera? Busy reading up on some docs and tutorials and i'm deciding on which language to use. I have some python experience but I see this is only a wrapper so I might considering diving into Go. Tips and tricks or opinions on which SDK is the best are welcome.

## **6. By Defigirlxoxo#2936 in the Developer General Channel on 02/14/2023**

Check out @Ed Marquez thread detailing Smart contract rent: [https://twitter.com/ed\\_marquez/status/1625500144283303939](https://twitter.com/ed_marquez/status/1625500144283303939)

## **7. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/11/2023**

> The auto-renewal fee for a contract is \$0.026 USD per 90 days

<https://docs.hedera.com/hedera/core-concepts/smart-contracts/gas-and-fees#smart-contract-rent-frequently-asked-questions-faq>

**8. By cryptorush#9966 in the Smart Contracts Channel on 02/10/2023**

I have one question with smart contract rents. For the UniswapV2Pair contract (HBAR-USDC, etc) / WHBAR contract, contract itself holds HBAR so I think it'll be paying contract rent properly. Trouble is that the pair will be broken because HBAR amount will be changed. Same for WHBAR. Do we need to recharge HBAR to these contracts after rent payments? If so, how can we get the amount that is paid for rent?

**9. By Tahlil#4174 in the Developer General Channel on 02/07/2023**

Why does a topic have a lifetime...if the topic is deleted is the related message that were created also deleted? What if I want to permanently store the the topic messages and query by topic...should I extend the expiration time or store the data offchain?

**10. By AbsolutelyNot#3226 in the Smart Contracts Channel on 02/07/2023**

For now, and it is about to change in near future, treasury should continue to operate as is. Treasury is exempt from \_rent\_.

The behavior once rents are enforced on treasury is still being considered (probably a HIP for community to provide input).

**11. By michielswirlds#1775 in the Token Service Channel on 02/06/2023**

<https://hedera.com/blog/smart-contract-rent-on-hedera-is-coming-what-you-need-to-know> you can read up on smart contract rent if interested

**12. By ADI#1382 in the Token Service Channel on 02/06/2023**

Hi guys! We're currently using the Token Service to create NFT collections. Would the upcoming rent mechanism affect them? If I understand correctly, rent will only be introduced for smart contracts?

**13. By Tomachi Anura#8370 in the Consensus Service Channel on 02/04/2023**

fetching a query transaction after 2mins, so it basically was expired, so nothing really related to the SDK itself this time

**14. By antorcol#9712 in the Token Service Channel on 02/01/2023**

I'm going over the info about the token-service, and I have a couple of questions. My first question is about creating tokens:

The most recent TokenCreate API at <https://docs.hedera.com/hedera/docs/hedera-api/token-service/tokencreate> lists 21 properties you can use to create a token. It is unclear which of these are required. The whitepaper at [https://hedera.com/hh\\_tokenization-whitepaper\\_v2\\_20210101.pdf](https://hedera.com/hh_tokenization-whitepaper_v2_20210101.pdf) lists a fewer number of properties (12), but does list `name`, `symbol`, `decimals`, `treasury account`, `token renewal account`, and `initial supply` as required or mandatory. Should I assume this same set of six properties are the only required ones to create a token?

Also, side question -- is the correct term for these token features `*field*`, `*attribute*`, `*property*`, or ????. The SDK listed above uses `*field*`. The HIP-412 (<https://hips.hedera.com/hip/hip-412#required-optional-and-conditionally-optional-fields>) also

uses `*field*`, but Michael Mulders' discussion about Hedera NFT Metada (<https://hedera.com/blog/hedera-nft-metadata-hip412>) uses `*property*`.

**15. By Ed Marquez#6403 in the Javascript Channel on 02/01/2023**

@cryptorush not that I'm aware of... took a quick look at the docs about utilities (<https://docs.hedera.com/hethers/application-programming-interface/utilities>) and didn't find much.

hethers is an adaptation of ethers.js, and those properties/concepts of ``adminKey``, ``autoRenewalAccount``, ``autoRenewPeriod``, and ``expirationTime`` are not a thing in other chain and tools.

**\*\*The only way that I'm aware of to pay rent for those contracts is from the balance of the contracts themselves\*\*** (e.g. transfer HBAR to the contract OR make the contract charge a fee per operation to accumulate an HBAR balance). That may be the same case for contracts deployed using things like ``CREATE2`` and a JSON-RPC relay with EVM libraries.

**16. By Ed Marquez#6403 in the Token Service Channel on 01/31/2023**

I'm not aware of a time component in allowances, so no expiration. It's valid until the allowance is spent or removed by the owner (afaik).

**17. By Justyn#3610 in the Token Service Channel on 01/31/2023**

Thanks for clarifying @Ed Marquez While I'm on the subject, do you know if allowances ever expire if not spent by the spender? I couldn't see a way to set an expiry on an allowance.

**18. By cryptorush#9966 in the Smart Contracts Channel on 01/31/2023**

If the contract is created via CREATE2, how can I specify auto renewal account & period, which should be defined for smart contract rent?

**19. By johnda98#4728 in the Smart Contracts Channel on 01/27/2023**

@Ed Marquez Other option as mentioned a while ago.. would be yes a HIP to offer a deployer a longer auto-renew - as greater deploy tran cost - but a revenue benefit to the nodes/resources.. depending on yr tran cost algos.. maybe a geometric or linear scale 92day .... 184.. etc..

this way a User see a use-case of a SC and verifies the autorenew and can say to themselves.. ok cool.. this Platforms usecase's lifecycle is 6 months 184 days or so.. and held immutable until then(ie first rent due).. no need to check if platform has paid rent by calling its contract to see if it excepts or to set a calendar to get Assets out - if they see renew account is 0 and SC holds 0 HBAR.

Usecase/platform can pre-pay its Landlord and that pre-pay is paid/final.. and can be seen publicly by a User off the bat... as opposed to having to validate platforms's promises to its Users that they will pay a rolling 92 days... or say a User having to check that to see if a platform has paid and/or hbar held is not 0.

'all good' as they say.

**20. By johnda98#4728 in the Smart Contracts Channel on 01/27/2023**

only danger really is for any chain based users who are used to assuming immutability.. to say then trust a platform who deploys a SC and pays the first 92 days.. fine.. but the user then deposits say HTS Assets into the SC, to then not read or understand from the platform's fine-print that rent must be paid and 'will' be paid by the deployer(platform).. but for some reason platform defaults and doesnt pay and hbar bal is also 0 and SC gets marked for ledger drop-off ... BUT any HTS assets that remain(that belong to unaware Users but held in say a mapping/array - for whatever reason/usecase), - that these Assets will get sent back to the HTS Treasury account.. not to the Users account as 'true' owner - as the protocol does not/cannot obviously execute any SC state data/ logic and send stuff back to 'owners' of course.

is this french.. so yes Caveat Emptor. ;). latin.

**21. By Ed Marquez#6403 in the Smart Contracts Channel on 01/26/2023**

If you missed the info session and Q&A we had this week about Smart Contract Rent, @here's the recording. Resources are available in the description and comments:  
<https://youtu.be/WLPx1gqmDSI>

**22. By Phasmatis#9222 in the Developer General Channel on 01/26/2023**

My account shows this: Expires at  
4:06:30.8518 PMJan 21, 2023, GMT

**23. By AbsolutelyNot#3226 in the Developer General Channel on 01/24/2023**

No such rent at the moment. It is only for smart contracts.

**24. By Ed Marquez#6403 in the Smart Contracts Channel on 01/24/2023**

Hi @here - Today at 11:30am EST (in ~50 minutes), we'll be hosting this Info and Q&A session about **\*\*smart contract rent\*\***.  
<https://hedera.com/everything-you-wanted-to-know-about-smart-contract-rent-on-hedera>

We'll cover key things to know about rent during the session. However, if you have other questions or feedback on this topic, feel free to share them during or ahead of the session.

Looking forward to seeing many of you there.

**25. By Ed Marquez#6403 in the Smart Contracts Channel on 01/17/2023**

Hi #-smart-contracts - on Tue, Jan 24 (in one week), we'll be hosting this Info and Q&A session about smart contract rent.  
<https://hedera.com/everything-you-wanted-to-know-about-smart-contract-rent-on-hedera>

We'll cover key things to know about rent during the session. However, if you have other **\*\*questions\*\*** or **\*\*feedback\*\*** on this topic, feel free to share them ahead of the session (simply respond in a thread).

Looking forward to seeing many of you there.



**26. By AbsolutelyNot#3226 in the Smart Contracts Channel on 01/14/2023**

The SC Treasury is also exempt from Storage Fee.

Not that we want to encourage people to make their SC a treasury for a Token and bypass Rent, but rather to provide a time to refactor the code/tooling/economics etc.

**27. By AbsolutelyNot#3226 in the Smart Contracts Channel on 01/14/2023**

John, it may be possible and you can suggest a HIP.

I think there were other suggestions from community, e.g. have XXX months of rent equivalent HBar deposited in the entity account and as long as this deposit threshold is met, the entity is exempt from rent. (Increasing costs of malicious action)

**28. By AbsolutelyNot#3226 in the Smart Contracts Channel on 01/14/2023**

Initially, the Treasury will be exempt, that it does not expire and is not deleted. This may change in future.

**29. By DeeJay#0076 in the Smart Contracts Channel on 01/14/2023**

Good to know. Thanks. What if the treasury is itself a SC that has expired? I don't intend to let that happen but it is a live use case.

**30. By johnda98#4728 in the Smart Contracts Channel on 01/14/2023**

@AbsolutelyNot mentioned it a few months ago - be awesome if a deployer could pay upon deploy - for an auto-renew longer than 90 days - for usecases that demand no rent-liability for any period ie immutable upon deploy for x seconds. a nice HIP for someone to suggest - nodes may like the extra tran & gas income upfront of maintaining a contract > 90 days.

**31. By johnda98#4728 in the Smart Contracts Channel on 01/14/2023**

... cant see where it says what happens to HTS Assets owned by the contract after its grace period over & removed from ledger.

state data gone so, imho, Assets also. Can't not pay the Rent & Eat it too ? not sure if this prev discussed aspect .. if it was ever clarified in protocol recent updates.

**32. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 01/09/2023**

Happy Monday HBARbarians and Walla Mob! We hope everybody is ready for another year of fun, drama and excitement in the crypto-sphere. Join us today as we kick off the first Alternative Money Monday of the year, today at 12 Noon EDT, with one of the most OG of OGs in Hashgraph, Ken Anderson from LaunchBadge.

Wallawallet now supports the Kabuto Name Service (KNS) and today we'll be going over KNS and why these new domain names are important for the Hedera ecosystem and Web3 in general.

We'll be asking Ken about:

- What is KNS and how does it work?
- Domain expiration and rules of the road
- What is the potential for these domains and IoT?

- How is KNS the same or different than Web23 and Hashgraph.name?

Join us for the livestream and BYOQ (bring your own questions) and don't forget to follow us on Twitter @wallawallet to enter to win 10,000 JAM Tokens every week! <https://youtu.be/Xb-m9MXhls0>

**33. By VR#1587 in the Developer General Channel on 01/05/2023**

this I don't know, no idea how it works with minted tokens if the contract expired

**34. By cm74#4165 in the Developer General Channel on 01/05/2023**

so the nft does not expire ?

**35. By cm74#4165 in the Developer General Channel on 01/05/2023**

Hi again . Could someone explain, what does it mean that an nft expires and what is the Auto Renew Period and the Auto Renew Account?

**36. By Liebenfiels#7895 in the Developer General Channel on 01/01/2023**

It is, I haven't seen it before that many created in a day, it cost 5 cents to create account so hopefully done to be used soon.

At some point accounts with no balance will be deactivated once quarterly renewals are implemented, so they need to be used at some point and have balance otherwise will be deleted in future.



**2. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

Solution would be to have a Hedera protocol feature that lets any node bid on a spectacular HBAR amount offered to hold that Contract in-perpetuity immutable.. ie Freehold ! .. no renting immortality any more.. buy immortality upon Contract Create.

**3. By littletarzan#5253 in the Smart Contracts Channel on 12/15/2022**

points to a 3/5 multisig rentPayer accountId

**4. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

oh I see so User has to 'trust' platform to pay the rent - I guess thats fine if its in the user agreement/expectation.

**5. By littletarzan#5253 in the Smart Contracts Channel on 12/15/2022**

saucerswap has a global rentpayer for all things saucerswap

**6. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

@littletarzan Maybe a Contract should have a 'rent escrow' account that holds a balance upon create that is untouchable by admin key and the balance held would cover auto-renew rent payments immutability for however long the deployer wishes.. ie rent paid in advance for the use-case immutable lifecycle of its purpose. I'll have to read Ed's recent rent anouncement see if that covers it

**7. By littletarzan#5253 in the Smart Contracts Channel on 12/15/2022**

true, any user can send rent payment directly to the contract holding the tokens though

**8. By johnda98#4728 in the Smart Contracts Channel on 12/15/2022**

yeah a big hoo ha a few weeks ago.. say if u have 10M USDC that sits in a contract that expires and Circle gets a nice Christmas bonus or the platforms or Another account whom is the NFT treasury suddenly gets high value NFTs back in its wallet from a user's Contract that they forget about.

Strictly speaking immutably ethically, those Assets should be lost if Users fails to pay rent. imho. User be warned in any use case that gives Customer ownership of a contract thats >90days autorenew .. moreover if a User has Assets held in a Platform's Contract that has autorenew >90days - then they should 'trust' the platform/ admin key to pay the rent.

**9. By VR#1587 in the Smart Contracts Channel on 12/15/2022**

quick question, SC rent is taken from SC ContractId address or attached account?

**10. By Ed Marquez#6403 in the Token Service Channel on 12/12/2022**

@samuelnihou see this previous response about renewal payments for Hedera entities. <https://discord.com/channels/373889138199494658/673969691907325983/1041915337693728768>

In summary, in the future all entities will have a renewal payment to remain unexpired on the network.

Contracts will be the first entity for which autorenewal payments are enabled (starting around March 2023)

More details about contract rent here: <https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#smart-contract-rent-auto-renewal-and-storage>

**11. By DeeJay#0076 in the Smart Contracts Channel on 12/11/2022**

as an added benefit these user level escrow accounts likely under the 100 K/V pairs so will be exempt from SC rent

**12. By VR#1587 in the Smart Contracts Channel on 12/11/2022**

Tbh I'm fine paying for rent cost just don't limit me

**13. By DeeJay#0076 in the Smart Contracts Channel on 12/11/2022**

indeed. SC solve many things but are not a catch-all with infinite scalability. there is a tragedy of the commons effect. hence SC rent which will put a cost on storage to guide when they suit and when they do not

**14. By johnda98#4728 in the Smart Contracts Channel on 12/11/2022**

@DeeJay curious DJ.. who pays your Treasury SCs renewal ? or at least pay into the Treasury SCs balance ?

**15. By DeeJay#0076 in the Smart Contracts Channel on 12/11/2022**

'depends' as I guess is always the answer.

could still have the token an HTS token then store the additional data into the SC \*\*but\*\* there could be a not insubstantial cost when SC rent kicks in

**16. By johnda98#4728 in the Smart Contracts Channel on 12/08/2022**

It was discussed in this thread I think a few weeks ago.. Scullard and Ed are on-it I think.. oh that's right Michael(core). said that if a Contract expired with Assets still owned by it. and hbar 0 of course.. then Assets would get transferred to a 'hedera account ie a trustee account' or something similar... as opposed to the Assets getting sent back to their Treasury !

oops.. yes say Circle gets a windfall of someone else's 1mill\$ worth of USDC or a valued 'DeeJay' NFT worth a few mill gets set back to its treasury or some key

I think I retorted that a 'trusted' account .. is probably Gregs.. who then runs off to Argentina (better weather there).

that's how the discussion of me suggesting hey.. pay nodes upfront on Create for a > 90day immutable rental period.. no prob for my customers.. they'd love to pay 5\$ or plenty more so to keep stuff in state for 6 months + or so without worry if the contracts bal fell to 0(for whatever reason).. question is.. can the slippery Hedera Vine handle having 'heavy leaves' hanging from its stems for such a long period.. without slowing the TPS rate

**17. By rhysied#6748 in the Consensus Service Channel on 12/07/2022**

if your computer clock is wrong by more than a few minutes you will usually get a failure anyway as the transaction will be expired / invalid when you create it.

What I meant more was the transaction ID contains the "valid start time", not the actual "created time", e.g. you could technically create a transaction today with a valid start time many years in the future, you just wouldn't be able to submit it to the network successfully outside of the valid window (valid start time + valid duration - 2 mins by default but up to

3 mins)

hope that helps

**18. By DeeJay#0076 in the Smart Contracts Channel on 12/01/2022**

Hence my question above on SC rent...a tomorrow problem but I want to get ahead of it!

**19. By johnda98#4728 in the Smart Contracts Channel on 11/30/2022**

is auto-renew limited to 90days max ? never checked since my case is 90days anyway. if it is not.. then a create that covers > 90 days .. 6 months or so.. a hefty hbar hit on create but those funds are then paid ahead .. thats cool.

pre-pay rent > 90 days.

Greg doesnt answer me any more ;). lol.. I'm just another annoying Brit who likes to see Greg's French get beaten at Rugby.

**20. By johnda98#4728 in the Smart Contracts Channel on 11/30/2022**

we just limit the use-case to auto-renew 90days ;). dont have to worry then about mutability and Assets in contracts's account if renter bails. 'rentable immutability' gotta love it.. a Merkle Vine that wants its cake-roots n eat it too.. perm roots like a Blockchain Merkle tree.

tickling.... immortality, but only if your Great Aunt doesnt marry the Trustee of your trust-fund that pays the Auto-renew.

**21. By DeeJay#0076 in the Smart Contracts Channel on 11/30/2022**

did we ever get guidance on how to calculate rent costs for as contract? I know \$0.02 per key/value pair but how to know how many K/V pairs I am using? I know i can execute a ContractInfoQuery() then get .storage attribute from the response which i believe is the number of bytes used but I struggle to relate that to K/V pairs to calculate the cost. Anyone have a link to a guide explaining how to map it to cost?

**22. By alexrp#0334 in the Developer General Channel on 11/30/2022**

Hi there!

I have red HIP-16 (<https://hips.hedera.com/hip/hip-16>) but i still have a doubt, is the smart contract and account auto-renewal enabled by default or it's necessary to send a tx to enable it? Thanks in advanced!

**23. By Unkown#4103 in the Javascript Channel on 11/23/2022**

hey guys when i try to execute the code I'm not able to mint an nft

```
\node_modules\@hashgraph\sdk\lib\ReceiptStatusError.cjs:45
 super(props, `receipt for transaction ${props.transactionId.toString()} contained error
status ${props.status.toString()}`);
 ^
```

ReceiptStatusError: receipt for transaction 0.0.48908382@1669195701.597815572 contained error status INSUFFICIENT\_TX\_FEE

```
transactionId: TransactionId {
 accountId: AccountId {
 shard: Long { low: 0, high: 0, unsigned: false },
 realm: Long { low: 0, high: 0, unsigned: false },
 num: Long { low: 48908382, high: 0, unsigned: false },
 aliasKey: null,
 aliasEvmAddress: null,
 _checksum: null
 },
 validStart: Timestamp {
 seconds: Long { low: 1669195701, high: 0, unsigned: false },
 nanos: Long { low: 597815572, high: 0, unsigned: false }
 },
 scheduled: false,
 nonce: null
},
transactionReceipt: TransactionReceipt {
 status: Status { _code: 9 },
 accountId: null,
 fileId: null,
 contractId: null,
 topicId: null,
 tokenId: null,
 exchangeRate: ExchangeRate {
 hbars: 30000,
 cents: 144016,
 expirationTime: 2022-11-23T10:00:00.000Z,
 exchangeRateInCents: 4.800533333333333
 },
 topicSequenceNumber: Long { low: 0, high: 0, unsigned: false },
 topicRunningHash: Uint8Array(0) [],
 totalSupply: Long { low: 0, high: 0, unsigned: false },
 scheduledTransactionId: null,
 serials: [],
 duplicates: [],
 children: []
}
}
```

**24. By Ed Marquez#6403 in the Consensus Service Channel on 11/14/2022**

Eventually, yes. At some point in the future, all entities (contracts, accounts, files, tokens, topics, etc.) on Hedera will need a renewal payment. However, this is only starting for smart contracts in the near future. For all other entities, including topics, the timeline is not yet known, so not in the foreseeable future.

**25. By Yugal#6061 in the Token Service Channel on 11/11/2022**

Hey Team, I wanted to check if freeze key can be transferred if we're transferring NFT to beneficiary. We're trying to create conditional ownership protocol for NFTs and looking at ways to get freezekey to our smart contract so that we can freeze asset in renter's wallet

and return to owner upon expiry.

Further, Is there delegation key to make transfer call which can be triggered by smartcontract upon meeting certain conditions

Thank you!

**26. By Greg Scullard#5365 in the Consensus Service Channel on 11/10/2022**

Having a group of people sign that way would not work unless the topic has a submit key. If hedera sees that all required signatures are present when you schedule the tx, it will execute automatically. The purpose of scheduling a tx is to delegate the signature collection process to hedera until sufficient signatures are present or the schedule expires.

**27. By ssl#7354 in the Developer General Channel on 11/09/2022**

Membership of 3 years expires in Dec 2023, like for few others as well, they can renew for next 3 years, thats all

**28. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

The renewal fee trigger reward payment as such a huge impact on the decentralization and security of the network that I don't think anyone thought of the 100 years timeframe

**29. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

@nube But check this out...

Depending when your account was created, the renewal period is different.

**30. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

If renewal fees are not being triggered automatically. That is 1 option

**31. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

The renewal fees are not enough to offset the reward fees. So any amount of a few HBARS will accumulate for eternity. This is a flaw I flagged and still waiting for a response.

**32. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

Now, not every account is setup the same way for the renewal fees. If your account was created in the early days, it may trigger a renewal fee every 30 days

**33. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

@Kingslayer Technically, you can have it unclaimed forever. Renewal fees will surely be enabled before the 365 days, which will trigger rewards.

The sad part is renewal fees contributes to secondary problem.

**34. By Supremax67#5749 in the Developer General Channel on 11/03/2022**

About 0.002 HBAR needed to proxy stake. Maybe a bit less. Going too low and the renewal fees and/or transaction fee will eat it up.

**35. By Supremax67#5749 in the Developer General Channel on 11/03/2022**

Actually, time expired. What happened to the time? Inflation of course.

**36. By Supremax67#5749 in the Developer General Channel on 11/03/2022**

For instance, Google can actually end up on the list once the 2 consecutive terms of 3 years expires.



**37. By BooBoo#9946 in the Token Service Channel on 11/02/2022**

@Supremax67 I have this error when I don't add an expiration time

**38. By BooBoo#9946 in the Developer General Channel on 11/02/2022**

cauz I don't have an expiration time

**39. By rbair#5985 in the Token Service Channel on 10/31/2022**

BTW, we are well along in design of a HIP that solves the "Ransom Token" issue. Whoever has sent those is just wasting their money, users will be able to get rid of them without paying custom fees or renewal fees. Details should be published in the very near future on the design we have for it.

**40. By littletarzan#5253 in the Token Service Channel on 10/31/2022**

I am creating a token using `HederaTokenService.createFungibleToken()` precompile in a smart contract's constructor. I set the autoRenewAccountId of the contract to an accountId `rentPayer`, and I set the token's autoRenewAccountId to `address(this)`. Does Hedera look first for auto-renew funds for the created token in rentPayer, or in the ContractId?

**41. By monkeycoder#1004 in the Smart Contracts Channel on 10/30/2022**

Thanks! Btw, i thought the contract rental had not yet came into effect.?

**42. By Supremax67#5749 in the Developer General Channel on 10/28/2022**

I also found out I have such an old account that my renewal period is this...

**43. By michielswirlds#1775 in the Javascript Channel on 10/27/2022**

Here's an example I had created where you have a multisig tx that requires multiple signatures. The expiration has been set to 24h instead of the default 30min. (it's similar to the example in the docs): <https://gist.github.com/michielmulders/98cf0fdbb3c5f8de4db06ed8fb8b7278>

**44. By monkeycoder#1004 in the Smart Contracts Channel on 10/27/2022**

I want to understand the smart contract rental & key-value pairs. Say i'm hosting a NFT contract for energy trading. For whatever reasons (not important) i want the value to be persisted into the token so i mapped it like so `` `{id: deviceSN, locationInstalled, coordinates}` ``

1. does that mean I have 1 key-value pair or will it be 3 pairs?

2. For example, each transaction stored:

`` `id1 - SN001, NY, 1.0294,238.34878

id2 - SN002, SG, 1.9450,695.383

id3 - SN003, ITALY, 5.3443,239.394893 `` `

does that mean I have 3 key-value pairs now? or still 1? I hope my question is understandable. thanks in advance

**45. By johnda98#4728 in the Token Service Channel on 10/24/2022**

@tinkerm 'trusted entity' whos that ? Greg S ?... and .. 'uncontrolled expiration event' ?? whats that 'uncontrolled'? lol - Putin hits n then controls 2/3rds+ of all nodes.. sounds very 'trusting' .. Greg S seems solid though.... so he's going to hold the pkeys to the Account that now holds the Token Assets that were once associated to a Contracts

Account that is now expired.. thats cool.. Greg wont move to Panama.. mosquitos.. Brit/Frenches dont like bugs, not sure.. so my kids have to fly to Panama to get their toys back then eh... just Texas.. I hope.

.. luckily, only impact here for our case is to not display any INVALIDs or even PENDINGs - as they fall off the Vine nicely.. as our contracts have no in-protocol assets held. Not so much of a humorous matter for Projects with contracts that hold other Assets and state for multip[le accounts that have value > 90 days.

**46. By tinkerm#4293 in the Token Service Channel on 10/24/2022**

Haha @johnda98 would be a good plot for a surrealist Web3 action comedy...I see your point I think...you may want to know a contract's assets would go to a trusted entity in case of some uncontrolled expiration event

**47. By Supremax67#5749 in the Developer General Channel on 10/23/2022**

renewal fee is about 9 cents in cost over the period of 100 years. So a non issue for almost anyone staking

**48. By Supremax67#5749 in the Developer General Channel on 10/23/2022**

I don't know when they will turn on renewal fee, but I predict it will be within 365 days since that is how long they'll accumulate funds

**49. By Supremax67#5749 in the Developer General Channel on 10/23/2022**

This is why I am letting the account renewal fee do it for me.

**50. By Supremax67#5749 in the Developer General Channel on 10/23/2022**

@HEDERAHUNTER Oh, I am not collecting it. Compounding is not what people think it pays. I am letting the renewal fees once enabled do that for me.

**51. By Supremax67#5749 in the Developer General Channel on 10/22/2022**

It takes 100 years to charge 9 cents of renewal fees. So an account with 1000 HBARs will never get drained, an issue I brought up.

**52. By Supremax67#5749 in the Developer General Channel on 10/22/2022**

I have been waiting for a while for them to turn renewal fees so that HBAR can be returned to the ecosystem. But my original suspicion was that they were waiting on proxy staking to start making payments. Been saying it for about 2 years now.

**53. By johnda98#4728 in the Token Service Channel on 10/21/2022**

sounds somewhat 'centralized'.. bit of a sad anaology .. finreg, gov, old legacy central 'authority' banking that is.. Supreme Max.. if I may kindly suggest.

soooo.. 'dedicated treasury account'... dedicated by whom and whom holds the keys ? and whom pays for it ? and does this 'treasury account' have itself held in consensus and therefore if so.. who pays the renewal fees ? .... Max.. its not a zero sum 'issue' .. and be sure to, like I know you do.. do not assume that all issues raised are some sort of 'nice attack'.. ok good.. agreed..

nubes @nube 's initial point is highly serious.. if Contracts hold multiple HTS Assets and then become ready for remove due to 0 hbar bal and autorenew fail.. and @bugbytes

is right .. if Assets get 'returned'.. returned to whom ? Treasury of the TokenID ... errrr nope.. unethical.. and even if so.. 'who' does the returning ? HH's protocol ? .. errrr no... its not Nanny Bank FinReg of Contract Assets.

my later point is that if the Contract knows it is going to fail ie be removed then it can/ could return all the Assets to all the orig sendings Accounts prior to removal... how ? it needs gas and there is none as thats why the autorenew fail was tripped ie 0 balance and it needs self awareness and to pay gas to store such tran records..mappings/arrays.. unfeasible.

read my last msg.. its a core architecture issue .. whomever came up with last year this 'rented immutability' .. which is misnomered... has to re-wrestle how Assets can be held safe to ABFT immutably .. not rented.. immutable.. see it ?

ELSE .. contracts holding Token assets have to inform their Customers that if the hbar bal = 0 and autorenew is up... then withdraw or request return of Assets, or will be lost.. ie a no-nanny approach.

**54. By tinkerm#4293 in the Token Service Channel on 10/21/2022**

> if a SC fails autorenew.. whats it return 'GRACE PERIOD ' ?  
pretty much, before an expired contract is permanently removed,  
there's a 1 week "grace period" where calling it will return  
`CONTRACT\_EXPIRED\_AND\_AWAITING\_PERMANENT\_REMOVAL`

**55. By johnda98#4728 in the Token Service Channel on 10/21/2022**

you see... GBless Leemon for 'doing the right thing and nice guy' .... but..... 'Rentable Immutability' of SCs .. is kinda like Oxym 'Smart Bomb' .... Robert Pirsig would say.. yep Cake n Eat it.. fast n cheap Vine DAGs not so easy to 'manage' immutability of state, once purchased.. see Rentable Immutability is fine.... except the Deployer and the usecase needs to make the decision on 'Beneficiary' .... yes not the Nanny Gov.

**56. By tinkerm#4293 in the Token Service Channel on 10/21/2022**

Got it, so both of you all would have expected an expired account's assets to be "burned" as it is permanently removed?

**57. By tinkerm#4293 in the Token Service Channel on 10/21/2022**

Hey bugbytes, can you elaborate? As I understood the question, it was about an expired contract `0.0.X` that \_does\_ hold e.g. a balance of the HTS USDC token

**58. By nube#7126 in the Token Service Channel on 10/14/2022**

Regarding auto account renewal:

Let's say there's an account with 0 hbar left, and it's scheduled for deletion, but it still has a balance of HTS tokens, such as SAUCE, DOVU, USDC etc.

What would happen to those HTS tokens once the account is deleted?

**59. By Ed Marquez#6403 in the Smart Contracts Channel on 10/10/2022**

Going by the explanation for  
expired topics (<https://github.com/hashgraph/hedera-protobufs/blob/>

6c3e6d37d9652bdb57600587d0218c9245eb513e/services/response\_code.proto#L649), I would expect a similar approach is followed for contracts.

So,

- one would first hit CONTRACT\_EXPIRED\_AND\_PENDING\_REMOVAL (see [https://github.com/hashgraph/hedera-protobufs/blob/6c3e6d37d9652bdb57600587d0218c9245eb513e/services/response\\_code.proto#L1291](https://github.com/hashgraph/hedera-protobufs/blob/6c3e6d37d9652bdb57600587d0218c9245eb513e/services/response_code.proto#L1291))
- then (CONTRACT\_DELETED) [https://github.com/hashgraph/hedera-protobufs/blob/6c3e6d37d9652bdb57600587d0218c9245eb513e/services/response\\_code.proto#L373](https://github.com/hashgraph/hedera-protobufs/blob/6c3e6d37d9652bdb57600587d0218c9245eb513e/services/response_code.proto#L373)

...adding @tinkerm for confirmation

**60. By Supremax67#5749 in the Token Service Channel on 10/08/2022**

@nigelthecreator I suspect the renewal fees are kept off because they are waiting for proxy staking reward to be turned on. One offsetting each other as long as you have a certain minimum in your account.

**61. By Supremax67#5749 in the Token Service Channel on 10/08/2022**

I think some ledgers charges for an account creation, but many have no rental fees. A huge problem the other ledgers won't fix because crypto bros think it is not normal to have rental fees, not realizing that account is kept live on the ledger having an infinite cost over time.

**62. By Supremax67#5749 in the Token Service Channel on 10/08/2022**

@nigelthecreator Ledgers that doesn't have a rental fee ends up with either hidden fees or network inflation.

**63. By johnda98#4728 in the Token Service Channel on 10/08/2022**

wallets could support standard calls to core erc20s on hedera ... up to the wallet OEM. i put those calls into my Client MvP walletDApps all the time for their erc20s(if they want one)..

the VG8 token erc20 contract i deployed for client in feb 2019 to mainnet prob fallen off ledger by now... low to zero auto renew bal..90days.. renewed 14 or so times by now. id have to dig into emails notes to find the contractid for it.

immutability mutably rented

**64. By rhysied#6748 in the Token Service Channel on 09/28/2022**

thanks Ed. The ideal scenario for us would be separating the supply key into burn and mint keys so we could only have the burn key set. We want to avoid any keys that may be either used or perceived to allow any negative permissions for the token creator (i.e. supply key would allow us to re-mint any burned tokens up to the max supply, wipe would allow us to wipe any account, etc)

A network-wide burn account would be the next best after that, although for now we are planning on creating our own burn account by adding so many keys its impossible to sign a transaction without getting throwing a TRANSACTION\_OVERSIZE error.

The only risk then would be that the burn account gets deleted once auto-renewal is

activated which I think results in the tokens being returned to the treasury, but afaik this can be avoided by other users topping up the burn account if necessary

**65. By Supremax67#5749 in the Developer General Channel on 09/22/2022**

@jassie78 @Chads

For account expiration to be in effect, Hedera would have to enable account renewal fees. It is my understanding that they are not looking to do that until proxy staking payment is enabled. So A, needs C so B can lead to A.

**66. By Chads#8953 in the Developer General Channel on 09/22/2022**

Account expirations aren't in affect as far as I know. I don't think that's your problem.

**67. By jassie78#5988 in the Developer General Channel on 09/22/2022**

Hi i was looking for some help not sure if this is the right place to ask but my ledger live account say "failed to find healthy working node" I've cleared cache and its still have same message. I've search hbar address on <https://app.dragonglass.me/hedera/accounts> entered my hbar address and it says "Expires 06-14-2022" Having done some searching on google it says as long as you have hbar the account auto renews i have enough hbar in account and just thinking why say expired on dragon glass? is this the reason why my hbar account isn't syncing on ledger because the account isn't active even though i have enough hbar? would anyone have any solutions to resolve this issue?

**68. By rhysied#6748 in the Developer General Channel on 09/16/2022**

does anyone know what the current expiration time is locked to on the testnet for scheduled transactions? as I seem to be able to set 24 hour expiry which shows up in the mirror node data for the expiry time yet it doesnt seem to be enforced as signing transactions within the expiry fails unless the scheduled transaction was created recently.

Is it limited to 30 minutes? In which case should it flag my expiry time as invalid / limit it in the mirror to be (now + 30 minutes) ?

**69. By Supremax67#5749 in the Token Service Channel on 09/14/2022**

Because there isn't one yet. It is not enabled at the moment because they are not charging renewal fees.

I am predicting this will come online once Proxy staking Stage 3 or 4 comes into effect. There go, HBAR earned through proxy staking would help cover renewal fees (for most accounts). The renewal fees are ridiculous low and charged every 90 days, which comes out to something like 9 cents USD for 100 years.

**70. By Greg Scullard#5365 in the Javascript Channel on 09/02/2022**

Is your connection to mainnet stable ? It could be that you lost connection and the SDK kept retrying to no avail.

I also suggest you check you're on the latest SDK, there were changes made to generate transactionIds for each chunk append "just in time" rather than ahead of time meaning that if your overall file upload (n times file append) takes more than 2 minutes, transactions prepared in advance won't expire.

**71. By Greg Scullard#5365 in the Smart Contracts Channel on 09/02/2022**

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**72. By Greg Scullard#5365 in the Smart Contracts Channel on 09/01/2022**

@shung (,) there is no garbage collection on soft deleted entities yet which is probably why this is happening. When rent is enabled, garbage collection will happen.

**73. By shung (,)#3978 in the Smart Contracts Channel on 09/01/2022**

Also a question. When a contract created by CREATE2 is expired and deleted from rent not being paid, will redeploying it succeed, or would it give an error?

**74. By Francesco Coacci#2822 in the Javascript Channel on 08/11/2022**

Well, it's not for holding assets. Rent is necessary because of storage occupation. I think this recent article can help you: <https://hedera.com/blog/smart-contract-rent-on-hedera-is-coming-what-you-need-to-know>

**75. By mo5#5957 in the Javascript Channel on 08/11/2022**

Thank you

I know that soon each account need to pay a "rent" yearly to hold an asset. So basically before use tokenassociatetransaction we will need to pay the rent ?

**76. By Ed Marquez#6403 in the Token Service Channel on 08/09/2022**

It is possible you may be hitting a network throttle at that time (depending on what you're trying to do) and the transaction expires.

The issue may not present itself at a different time.

Or as an alternative, you could try setting up your own Hedera local node to avoid interference from other users in your testing. Specific instructions here <https://docs.hedera.com/guides/resources/tutorials/developer-tools>

**77. By Supremax67#5749 in the Token Service Channel on 08/08/2022**

Account renewal fees are \$0.00022 every 90 days.

**78. By frank132#8057 in the Token Service Channel on 08/08/2022**

I know the current "no renewal" model that ethereum and other chains use is not sustainable

**79. By rhysied#6748 in the Token Service Channel on 08/08/2022**

Anyone should be able to pay for the renewal iirc so you'd have to hope the token creators or another token holder (or yourself for that matter) would step in and pay the renewal fee to keep it active.

Not 100% sure what limitations there would be on the network. No more minting if a tidy bet, possibly also no more trading. I don't think the balance would be removed from your account as you will have paid the fee to associate, although possibly an expectation that people will clean up a "dead" token balance rather than pay extra at renewal time.

After that comes the philosophical questions of what do you own if you buy an NFT? The token may become inactive on Hedera but the files could still exist in IPFS so what rights do you have then?

**80. By frank132#8057 in the Token Service Channel on 08/08/2022**

also does the expiration work per nft, or for the whole collection?

**81. By frank132#8057 in the Token Service Channel on 08/08/2022**

hi guys..what happens when a nft expires? Suppose I buy a hedera nft and then nobody pays to renew the token, does my nft get "destroyed"?

**82. By mo5#5957 in the Javascript Channel on 08/08/2022**

ok so basically in order to receive a token , in the futur we need to have a minimum balance hbar (the rent) ?

**83. By rhysied#6748 in the Javascript Channel on 08/08/2022**

One issue you may run into in future is that accounts are expected to pay "rent" (a tiny amount of HBAR which would be offset by staking earnings for most users), but if they both have absolutely 0 hbar they may get flagged for deletion once account renewal (rent) is activated (there is a grace period of a week or so where they can top up before being deleted)

**84. By rhysied#6748 in the Developer General Channel on 08/08/2022**

if the issue is long term storage you could potentially look at some paid for pinning tools (which would likely be a cheaper option over the long term versus transaction costs and renewal fees)

**85. By Aslam#9563 in the Smart Contracts Channel on 07/29/2022**

I increased max fee on my client using setDefaultMaxTransactionFee and now its failing with TRANSACTION\_EXPIRED... my bytecode size is around 15k bytes. I dont understand why its getting expired?.. @Greg Scullard... Its deploying successfully on TESTNET... it has some issue with MAINNET

**86. By Greg Scullard#5365 in the Smart Contracts Channel on 07/29/2022**

@Aslam couple of thoughts to help solve your issue

\* Are you using the latest version of the SDK (there was an issue uploading large files in the past where it took more than 2 minutes to upload the first few chunks of the file, leading to the prepared transactions for the next chunks to have expired, newer SDKs as far as I know generate transactions per chunk in real time to avoid this)

\* Is your bytecode particularly large, could you try to run the solidity compiler with optimisation to reduce the bytecode.

\* How do you create the contract ? 1. create the file, 2. create the contract, or do you use the contract creation flow from the SDK.

**87. By Ed Marquez#6403 in the Token Service Channel on 07/29/2022**

Yes, you can set the same key (or the operator key) to fill multiple purposes for an HTS token, so things like admin, supply, kyc, etc.

For the additional questions about royalties, this tutorials covers that topic and more for NFTs: <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

I covered the other questions about autorenewal fees in this response in the #-consensus-service channel <https://discord.com/channels/373889138199494658/673969691907325983/1002560187737047103>

**88. By Ed Marquez#6403 in the Consensus Service Channel on 07/29/2022**

If you look at the methods list for `TopicCreateTransaction`, you'll find the fields `setAutoRenewAccountId` and `setAutoRenewPeriod` <https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

That specifies the account id that will pay and for how long the entity should be renewed. Once those parameters are specified, the renewal payments are deducted from that account and all you have to do is make sure there's a balance to cover the renewal fee. Note that those parameters are available in the SDK, but renewal fees are not active on the network at this moment.

**89. By shraddha2610#6702 in the Smart Contracts Channel on 07/28/2022**

@Greg Scullard hello there,  
I am unable to deploy my contract on the Mainnet. getting TRANSACTION EXPIRED error.  
Can you please help me here?

**90. By s7#7018 in the Consensus Service Channel on 07/27/2022**

how do we renew the topic?  
before the topic expired.

**91. By s7#7018 in the Developer General Channel on 07/26/2022**

before the topic expired

**92. By Ed Marquez#6403 in the Consensus Service Channel on 07/25/2022**

Hi @Iron !

- As stated in the documentation, the limit for the topic memo is 100 bytes. As you point out, there are other places where the limit may be 100 characters, and those are correctly listed as well.

- To the best of my knowledge, the renewal fees for consensus topics haven't been determined yet. Rent on Hedera will be introduced first for smart contracts, then it will be introduced for other entities (like consensus topics, accounts, tokens, etc.).

- For the mirror node question, what @Supremax67 is correct. Hedera operates a mirror node that provides free queries for testing that are throttled at 100 requests per second. For production applications, we suggest looking into mirror nodes operated by the community members - so options like DragonGlass and Kabuto. Those mirror node operators set their own pricing

**93. By Iron#4548 in the Consensus Service Channel on 07/24/2022**

ConsensusUpdateTopic is not related to auto renewal. It's used to update /modify the parameters of the consensus topic.



**94. By Supremax67#5749 in the Consensus Service Channel on 07/24/2022**

@Iron I see a function for ConsensusUpdateTopic which seem to match with how expensive a renewal fee would be.

**95. By Supremax67#5749 in the Developer General Channel on 07/21/2022**

My guess is they will use account 0.0.800 as a soften delivery method 1/90 of the funds sent out on a daily balance. 90 days scale works well. The renewal fee is also 90 days based.

**96. By Greg Scullard#5365 in the Token Service Channel on 07/15/2022**

no, the signature includes the valid\_start + duration of the transaction, so it would fail with EXPIRED\_TRANSACTION is you waited too long. But, if you re-submit within the valid\_start + duration window, it will work, or fail as a DUPLICATE\_TRANSACTION if the (alleged) failure did indeed not process the transaction first time.

**97. By AbsolutelyNot#3226 in the Smart Contracts Channel on 07/12/2022**

@yellowhat : if there are enough hbar in the account, the entity will be renewed.

We will be publishing a blog to share more details on the rents.

Also, you have an option to update/upgrade the smart-contract. This may help.

<https://docs.hedera.com/guides/docs/sdks/smart-contracts/update-a-smart-contract>

**98. By yellowhat#9875 in the Smart Contracts Channel on 07/12/2022**

Hi do I need to add any logic/functions to my smart contract now to pay smart contract rents (which I believe is currently not enabled) if I'm going to deploy it to mainnet soon? <https://hedera.com/blog/smart-contract-rent-is-coming-to-hedera> suggests that rent can be paid with hbar held by the smart contract - so, as long as the contract has enough hbar, it will never expire?

This is important because once I deploy a contract to mainnet, it is immutable and it's no longer possible to add any new logic/functions (to the deployed contract) that might be required to pay for rent, when rent is enabled later.

**99. By rhysied#6748 in the Token Service Channel on 07/11/2022**

I think the reason it says UNKNOWN is because it can't get any other status info (i.e. it doesn't know if it's reached consensus or not or failed for whatever reason - so it also can't say for sure that it hasn't reached consensus yet).

The safest thing you can do to avoid this issue is assuming you are still within the valid duration to be able to resend the transaction - resend it with the same transaction ID and everything after the first processed transaction would be rejected as a duplicate.

If the valid duration has expired and you still aren't aware if the transaction reached consensus you could potentially use a mirror to check the status of the transaction

**100. By bugbytes#0817 in the Token Service Channel on 07/11/2022**

You also may be able to tweak the retry parameters so you cover the timespan of 180 seconds, that way you force it to get to the transaction expired error.

**101. By Supremax67#5749 in the Developer General Channel on 07/09/2022**

They are no Mainnet faucet. You would use 1 account to cover the activation fee of the

accounts you are creating. Everything on Hedera as a fee, except balance query and account renewal. I believe renewal fees will become active once proxy staking becomes enabled. But don't worry too much about it, an account with a 9 cents balance will last for 100 years, approximately.

**102. By Ed Marquez#6403 in the Javascript Channel on 07/07/2022**

hi @Eric - please see these two previous responses (they're next two each other in the timeline)"

<https://discord.com/channels/373889138199494658/909532351388864542/956575923921104966>

<https://discord.com/channels/373889138199494658/909532351388864542/956665383371276328>

In short, it could be the SDK version being used or the network being busy, thus unable to process the tx and it expires

**103. By bugbytes#0817 in the Javascript Channel on 07/04/2022**

Greg, you know \*i know that\* about expired., my unit tests have been around for almost 3 years and compensate for these things....it is the network not working very well that is causing this to happen.

**104. By Greg Scullard#5365 in the Javascript Channel on 07/04/2022**

@Tomachi Anura Node 0.0.4 wasn't accepting transactions (PLATFORM NOT ACTIVE) earlier today - I've alerted devops. You can temporarily set your client's node list to exclude it.

Transaction expired is typically due to a time difference between you and the node, expired meaning the valid\_start\_date (inc. time) of the tx is more than 2 minutes in the past.

**105. By bugbytes#0817 in the Javascript Channel on 07/04/2022**

Interesting <https://hedera.txns.com/> says ~2tps and I'm getting transaction expired on a test suite I just kicked off. TESTNET is very sick today, what's up @Greg Scullard ?

**106. By AlexTaylor#3551 in the Token Service Channel on 06/28/2022**

For example, whether you write 0, 50 or 100 bytes of say the symbol field, does this impact the fees (1) at token create, and (2) at renewal. I guess (1) can be tested easily enough Also for minting - usage of the metadata field.

**107. By AlexTaylor#3551 in the Token Service Channel on 06/27/2022**

Related.. are unused bytes on Hedera entities charged wrt creation, renewal etc?

**108. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

Note that even if the HIP is approved, it will only reduce the probability of hitting congestion. (Hopefully by a lot, though!)

We need a very mature rent + expiration policy to create options that (nearly) eliminate congestion

**109. By jf\_lin#1453 in the Consensus Service Channel on 06/16/2022**

If auto\_renew expires, but there is no hbar in the wallet, what will happen? Can the wallet still be transferred? What do I need to do to get back to normal?

**110. By Tomachi Anura#8370 in the Token Service Channel on 06/14/2022**

@here something very strange is happening....

when i create a new NFT token, the first one is never minted, even if it says it is.

then, from the second on, it works and it gives me a serialNumber + 1 even if onchain i see serialNumber.

let me explain this better.

1 - create a new NFT token

2 - i see under transactions the TOKENCREATION one

3 - i mint the first token, it returns success with serialNumber 1

```
`TransactionReceipt {
 status: Status { _code: 22 },
 accountId: null,
 fileId: null,
 contractId: null,
 topicId: null,
 tokenId: null,
 scheduleId: null,
 exchangeRate: ExchangeRate {
 hbars: 1,
 cents: 12,
 expirationTime: 1963-11-25T17:31:44.000Z,
 exchangeRateInCents: 12
 },
 topicSequenceNumber: Long { low: 0, high: 0, unsigned: false },
 topicRunningHash: Uint8Array(0) [],
 totalSupply: Long { low: 2, high: 0, unsigned: false },
 scheduledTransactionId: null,
 serials: [Long { low: 1, high: 0, unsigned: false }],
 duplicates: [],
 children: []
}`
```

4 - i refresh the mirror node transactions, and i just see the TOKENCREATION, no TOKENMINT so far

5 - i check under /api/v1/tokens/MY\_NFT\_ID/nfts and i see NO tokens created

6 - i run again the same mint function, and it says serialNumber 2 has been created

7 - i refresh the mirror node transactions, and now i see the TOKENMINT is finally there

8 - i check under /api/v1/tokens/MY\_NFT\_ID/nfts and i see the first token with serialNumber 1 has been created

**111. By Ed Marquez#6403 in the Javascript Channel on 06/02/2022**

from here: [https://github.com/hashgraph/hedera-protobufs/blob/main/services/response\\_code.proto](https://github.com/hashgraph/hedera-protobufs/blob/main/services/response_code.proto)

That error means: "\*Pre-Check error when TransactionValidStart + transactionValidDuration is less than current consensus time\*"

A couple of factors could be at play here. i) the transaction may be taking longer than 180sec to be processed and its timing out, this it expires. The workaround would be to keep trying. Atm there's a throttle of 2 TPS on account creation txs (<https://docs.hedera.com/guides/testnet#test-network-throttles>). ii) check that your system clock is set to automatic - sometimes setting the clock manually can introduce weird issues that cause a similar error (INVALID\_START\_TIME)

**112. By Topachi#0454 in the Token Service Channel on 05/26/2022**

Hello! When will scheduled transactions be customizable regarding the expiration time?

**113. By Greg Scullard#5365 in the Smart Contracts Channel on 05/25/2022**

A smart contract cannot initiate a transaction and request signing (it may be able to in the future when smart contract can created scheduled transactions).

In your example:

- \* The NFT seller might call the contract to indicate they're will to sell for 100, transferring the token to the contract and maybe includes a SaleId and time limit
- \* The buyer calls the contract, sending it hbar and specifying the SaleId they're interested in
- \* If the time limit isn't expired, the contract passes the 100h to the seller and the token to the buyer
- \* If the time limit is expired, the contract throws an error (optionally transfers the token back to the seller)
- \* If the token isn't transferred to the seller above, the seller can (after time x), claim it back from the contract by calling an appropriate method.

**114. By johnda98#4728 in the Token Service Channel on 05/20/2022**

oh well.. thats to do with the autorenew, the admin keys(or not) and if the account is 0 on autorenew date then it will fall off the ledger (yep renting immutability).. which is fine. See I keep the contract's use-case within the auto-renew period as a maximum anyways. and..... you can put the bytecode into the memo field of the deployed contract instance.. again .. trust in the DApp as a higher 'layer' .. but yep like uniswap.. can still call the contracts directly.. even if they block a junk token from their .js front end "'central' authority we-know best, not the marketplace, website"

**115. By Ed Marquez#6403 in the Token Service Channel on 05/17/2022**

The TokenCreate precompile right now (unnecessarily) requires specifying an auto-renewal account + period OR expiry time. This behavior will be updated soon to match the behavior in the SDK.

Those attributes don't have to be specified for token creation via the SDK because default values are provided under the hood.

**116. By Ed Marquez#6403 in the Token Service Channel on 05/17/2022**

Right now expiry of entities is not active on any network (mainnet testnet etc). It will start in a few months with contracts. Some time after that it will apply to tokens accounts, etc. as well.

Once we reach that point you must specify auto-renewal accounts and period OR expiry time.

**117. By cryptorush#9966 in the Token Service Channel on 05/17/2022**

How can I create HTS token which is never expired?

**118. By Ed Marquez#6403 in the Smart Contracts Channel on 05/16/2022**

See the TokenCreateContract example in this repo: <https://github.com/hashgraph/hedera-smart-contracts/tree/main/hts-precompile>

You're likely running into that issue because you need to specify i) auto-renewal account and auto-renewal period OR ii) expiry time

**119. By Ed Marquez#6403 in the Smart Contracts Channel on 05/16/2022**

Right now expiry and auto-renewal of entities have not been enabled on the network.

Contracts will be the first entity that expire. That's a couple of months out and it will be communicated when it's coming. Much later, other entities (tokens, accounts, etc) will have to be renewed as well. Terms range from 30 to 90 days and the rent value is TBD, but probably very low (cents or fractions of a cent paid in HBAR)

**120. By johnda98#4728 in the Smart Contracts Channel on 05/12/2022**

Thread.sleep(1000);

```
//appending remaining data
if (remainder > 0) {
 byte[] partBytes = Utilities.copyBytes(numParts * FILE_PART_SIZE, remainder,
byteCode);
 new FileAppendTransaction().setFileId(newFileId)
 .setContents(partBytes).execute(client);
}
```

```
System.out.println(" BYTECODE file Id : " + newFileId);
```

```
Thread.sleep(1000);
```

```
FileInfo fileInfo = new FileInfoQuery()
 .setFileId(newFileId)

 .execute(client);
```

```
System.out.println("file Hedera Id = " + fileInfo.fileId);
System.out.println("Memo = " + fileInfo.fileMemo);
System.out.println("file is deleted = " + fileInfo.isDeleted);
System.out.println("file size = " + fileInfo.size);
System.out.println("file Expiration time (secs) = " + fileInfo.expirationTime);
System.out.println("file keys = " + fileInfo.keys);
```

```
System.out.println(" bytecode file: " + newFileId);
```

**121. By johnda98#4728 in the Smart Contracts Channel on 05/10/2022**

@Ed Marquez Ed.. yes thats kinda neat - if my users forget about a trading contract with

a balance held in it and it expires in the use-case.. it will stay on ledger after protocols' autorenew period.. ad infinitum until bal = 0, then fall off. So one doesn't have to worry about sending hbar back to payer(deployer), or nanny the Users funds.

**122. By Ed Marquez#6403 in the Smart Contracts Channel on 05/09/2022**

There is a response from yesterday pointing to an example using TokenCreate precompile.

There's a note in the response about payment needed. In addition, you have to specify the expiration time OR auto renew account + auto renew period.

A tutorial and more docs on this are coming soon

**123. By johnda98#4728 in the Smart Contracts Channel on 05/06/2022**

BTW I just let user's DeFi SC deploys 'fall off' Hedera after the Autorenew period expires IF they have already paid-out the investment.. else its 'Mea culpa' if it sits there with a balance forever until fees kick it off.

**124. By Ed Marquez#6403 in the Token Service Channel on 05/05/2022**

Yep, right now according to the HIP (<https://hips.hedera.com/hip/hip-16>) the renewal limit can be between 81 and 92 days. Soon that's gonna change to be between 30 and 90. Glad you got it to work

**125. By cryptorush#9966 in the Token Service Channel on 05/05/2022**

Actually, I resolved this by setting expirationTime to block.timestamp + 90 days

**126. By Ed Marquez#6403 in the Smart Contracts Channel on 05/05/2022**

From: <https://hedera.com/blog/smart-contract-rent-is-coming-to-hedera>

"\*There are two ways in which a smart contract on Hedera will be able to pay for its renewal fees.

Self funded. Renewal fees are paid by the hbar held by the smart contract.

[Not yet enabled] External funded. Hbars from a defined Hedera account are able to pay a smart contract's renewal fees.\*"

**127. By 7671#7251 in the Token Service Channel on 04/28/2022**

Guys, I am trying to call `HederaTokenService.createFungibleToken()`, but not sure what auto renewal and tokenKeys are.

Can you please help? Thanks

**128. By arthuros#5957 in the Developer General Channel on 04/25/2022**

You know I better ask. It push me more easily to rent VPs and take time to support testnet. Sorry I don't catch the joke.take care

**129. By Khoa#1731 in the Consensus Service Channel on 04/21/2022**

<https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

Is the auto renewal feature for topics supported on HAPI yet?

**130. By reg.cs#2829 in the Smart Contracts Channel on 04/19/2022**

Yeah, I understand that. I was not thinking about a long-term storage anyway. The use

case I was describing above would only need to store the file until all participants signed the scheduled transaction and then the users that lend the computing power would be paid and the user using the service would get the file. After that the file could expire and be deleted.

**131. By johnda98#4728 in the Smart Contracts Channel on 04/19/2022**

fine if your users want to pay fees to store large volumes in consensus.. look.. just store the hash on the ledger.. see it ? ipfs is your decentralized dbase ... the ledger is your consensus of hashed content - immutable(well as long as you pay your renew fees on your contract .. immutability is rentable on hedera... no squatters rights.

**132. By johnda98#4728 in the Token Service Channel on 04/16/2022**

noticed your comments.. yes on a Vine not a Merkle Tree .. immutability is 'rented' .. they struggle with how to keep the Vine 'lite' and yet offer public ledger immutability.. In some ways.. yes can't be something that one is defined as not being ie a blockchain ie heavy with immutable assets - but at a price of deploy ie Ethereum 40\$ or such.. and 32+min confirmations for a reason.. personally I'd sooner pay 40\$ for a NFT knowing it was immutable than to worry about topping up an account with in-protocol crypto to pay the rent every few years - even if the deploy cost was only 1.50\$ or less.

**133. By gehrig#7214 in the Smart Contracts Channel on 04/09/2022**

If I understand your question correctly, the smart contract on Hedera would likely still be keeping the same amount of information if not more, regardless of if those hbars it is responsible for are wrapped or not. What the smart contract is doing doesn't matter in terms of state storage renewal fees/rent.

**134. By Supremax67#5749 in the Token Service Channel on 04/07/2022**

They occur every 90 days and are extremely low. Once this function has been turned on, a balance of \$1 for example, would sustain the account past your lifetime and your grandchildren lifetime. However, that fee renewal hasn't been turned on yet.

**135. By Greg Scullard#5365 in the Token Service Channel on 04/07/2022**

A token, an account, a contract, a topic are all known as "entities" on Hedera, they will renew and expire the same way.

**136. By Greg Scullard#5365 in the Token Service Channel on 04/07/2022**

1. the account will be suspended for a period of time, unable to participate in transactions, but able to receive hbar to fund its renewal and take it out of suspended state.

If after the suspension period expires, there are no hbar to renew the account, it will be marked as deleted for a period of time, then finally deleted. Once marked as deleted or deleted, there is no recovery.

**137. By Xaski\_Malaxaski#0465 in the Token Service Channel on 04/07/2022**

I formulated my questions more clearly: 1) what will happen to the tokens on the account if at the time of account renewal it has 0 hbar (the account must be deleted)  
2) what will happen to the token if, at the time of its renewal, the account from which the commission should be charged will be 0 hbar

**138. By Ed Marquez#6403 in the Token Service Channel on 04/07/2022**

btw, autorenewal is not yet implemented. The link Greg provided has answers for your other questions

**139. By Xaski\_Malaxaski#0465 in the Token Service Channel on 04/07/2022**

Hey! We have a startup where we make DEX based on Hedera. I need help finding information on auto renew and token operations. 1) How does this function work with tokens? How does this function work with the tokens that we mint? 2) What is the fee for renewal of the token? 3) How is the token removed? What happens to it when removed? There is no information on these issues on the official website with documentation. Help me please)

**140. By johnda98#4728 in the Smart Contracts Channel on 04/04/2022**

Coolio brother.. and yup.. when you deploy the contract, not setting the admin key makes the contract immutable... which all should be really, in all usecases worth their salt. I usually have a 90day in seconds expiration period.. then if any HBAR in it, gets returned to deployer.. @Greg Scullard right G ?

**141. By Supremax67#5749 in the Smart Contracts Channel on 04/02/2022**

@ivo.eth As far as I know, they are currently not charging for rent. I believe contract renewal and account renewal fees won't start before proxy staking becomes available. Nothing officially announced, but it surely looks that way. Contract call is its own fee

**142. By ivo.eth#7331 in the Smart Contracts Channel on 04/02/2022**

Thank you! If I'm reading this right, smart contract rent will depend only on rent duration & file size (which I assume is contract bytecode size + contract internal storage size) so it should be easy to forecast expected future rent (in HBAR).

Other factors like how often the contract is called or gas cost per call do not influence the rent, is that correct?

**143. By ivo.eth#7331 in the Smart Contracts Channel on 04/02/2022**

I also have a question related to the announcement - do we know approximately how much smart contract rent will be?

The proposal [<https://hips.hedera.com/hip/hip-16>] mentions that it will depend on contract storage and usage but I didn't see concrete values in HBAR per byte storage or per call. Are the values not determined yet?

**144. By Iron#4548 in the Smart Contracts Channel on 04/01/2022**

Just a question about smart contract rent + self fund as per latest announcement:

Is it possible to implement logic in the smart contract itself to deduct a small HBAR fee/gas (fixed USD amount) from those using the smart contract, and the deducted amount will go into the smart contract's hbar account used to pay for rent?

The idea behind this is that the smart contract will auto sustain itself with usage without a need of a centralized party, and perhaps the custom fee/gas will reduce the higher the hbar the smart contract has.



Or is that what this is for? "We can however deploy our smart contract to have a payable function, more on this later."

**145. By Ed Marquez#6403 in the Smart Contracts Channel on 03/24/2022**

The concept of "rent" is something that multiple networks are looking to implement.

Hedera may be one of the first ones to implement it.

Note, however, that auto-renewal and expiry are not enabled on the network yet. That will be enabled in a future release.

<https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#:~:text=Smart%20contract%20entity%20auto%20renewal%20and%20expiry%20will%20be%20enabled%20in%20a%20future%20release.%20Please%20check%20out%20HIP%2D16%20for%20more%20information.>

HIP-16 (<https://hips.hedera.com/hip/hip-16>) has more information on the process, and timeframes.

**146. By Supremax67#5749 in the Smart Contracts Channel on 03/24/2022**

There is a renewal required after 90 days. \*\*You will have to double check with one of the developers\*\*, but as long as the account where the renewal fee is being taken still has a sufficient balance, you would be fine.

**147. By IgorAbramov#3366 in the Smart Contracts Channel on 03/24/2022**

Does the smart contract after deploy expire in 3 months?

**148. By makeshyft\_tom#5877 in the Token Service Channel on 03/16/2022**

to trigger it....ok....I like that actually. That way inactive users stop getting the drip. Is there any kind of renewal that needs to happen that needs human intervention?

**149. By Supremax67#5749 in the Smart Contracts Channel on 03/14/2022**

I would love to know how you came up with centralization for a smart contract that can expire. Those are completely separate things.

**150. By AbsolutelyNot#3226 in the Smart Contracts Channel on 03/14/2022**

The renewals can be done by anyone or the entity (account, smart-contract) itself.

**151. By AbsolutelyNot#3226 in the Smart Contracts Channel on 03/14/2022**

In addition, there is significant security aspect. If there is no cost to store perpetually, everything comes to a halt. Once we have a 'renewals & expiry', we take into consideration the state-size and duration the entity be available and subsequently can make an argument to increase the maximum state-size of a smart-contract.

**152. By Supremax67#5749 in the Smart Contracts Channel on 03/14/2022**

@Juno If you are given the ability to make unlimited Smart contracts with no expiration date, then the network can be shutdown from within by simply enforcing unrealistic computational requirements without proper compensation. It may not seem like a popular choice, but it ain't about that; it's about building a ledger that is still going to be around in 100 years. You don't cover the cost, the ledger will inevitably suffer, as already seen on ledgers that has been around for a couple of years.

Most devs entering the crypto space might see this as being an issue until they keep

using the same "no expiry" ledgers over the course of 2+ years. So as a dev, what makes the most sense, pay for no expiration and end up with ever increasing fees for future contracts OR renew your contract for a small fee and never have to worry about ridiculous inflationary future fees?

**153. By ramon22#1743 in the Smart Contracts Channel on 03/13/2022**

I did look at the fee model sorry I did not see the account renewals. Yes when users interact with the ledger they pay even querying contracts that don't change the state they pay does that all not cover the cost ...maybe the other blockchains spoiled me. Thanks for the help and Good luck

**154. By Supremax67#5749 in the Smart Contracts Channel on 03/13/2022**

@ramon22 Everything built on a ledger has a cost. If you don't cover that cost over time, you end up with exponential fees as seen on other networks (or even worse, inflationary hidden cost). The fee for account renewals is extremely small, 10 cents would cover an account for about 100 years. Have you at least took the time to check the fee model link I provided you?

**155. By gehrig#7214 in the Smart Contracts Channel on 03/11/2022**

@ramon22 to add, rent is turned on, but specifically for smart contracts will be soon as indicated on the roadmap - <https://hedera.com/roadmap>

**156. By ramon22#1743 in the Smart Contracts Channel on 03/11/2022**

I read documents and what I understood is contracts and accounts can expire and be deleted cause the "blockchain" is Rent based ok how much does rent cost ? and accounts deleted with their public address registered on a smart contract will lose access to any resource assigned to them example an NFT. Gas and fees just to query a contract a view method that is pure ok how much does it cost give at-least a range also a cost range for transactions that change state on the contracts. Thank you

**157. By Greg Scullard#5365 in the Token Service Channel on 02/23/2022**

You can use a timestamp instead (unix timestamp representing seconds since epoch) the `block.timestamp` in Solidity will resolve to the consensus timestamp of the transaction being executed, so you can use that to compare with your expiration date.

**158. By alexbraz#7950 in the Token Service Channel on 02/22/2022**

tk @Greg Scullard , in this scenario, what the best approach to implements the token expiration in your opinion? If we do that in smart contract, how can we represents the expiration date? When we're working with blockchain we can use the blocknumber, but using hashgraph whats the approach?

**159. By alexbraz#7950 in the Token Service Channel on 02/15/2022**

Hi guys, im trying HTS with token expiration, but after expiration, the token is working perfectly. Is that the correct operation? The expiration functionality is working fine currently?

**160. By Ed Marquez#6403 in the Consensus Service Channel on 02/08/2022**

Yes, topics do have an expiration time (although this features is not live on the network yet, so atm entities don't expire).  
I think the default renewal period is something like 3 months (or 92 days)

Here's more info on topics: <https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

And here's the HIP: <https://hips.hedera.com/hip/hip-16>

**161. By Topachi#0454 in the Consensus Service Channel on 02/08/2022**

Hey fellas! Does a topicId have an expiration time? Or if it has the autoRenewal, what is the standard renewal time that refunds the topic?

**162. By Bart#1307 in the Smart Contracts Channel on 01/31/2022**

Ok, just wanted to confirm that the native functionality is cheaper than managing expiration directly in contract

**163. By Bart#1307 in the Smart Contracts Channel on 01/31/2022**

Thanks, and setting the expiration in this way would be cheaper than say the gas cost incurred for passing validFrom and validFor parameters to a contract call that reverts if not in the valid time range?

**164. By Bart#1307 in the Smart Contracts Channel on 01/31/2022**

Does anyone know if it's possible to specify an expiration on a generic transaction? For example an HBAR transfer that occurs after the expiration isn't valid and so isn't processed

**165. By Greg Scullard#5365 in the Javascript Channel on 01/28/2022**

Looking at the protobuf specification, the file likely contains a `ExchangeRateSet` which itself contains two `ExchangeRate` (current and next)

```
...
message ExchangeRateSet {
 /**
 * Current exchange rate
 */
 ExchangeRate currentRate = 1;

 /**
 * Next exchange rate which will take effect when current rate expires
 */
 ExchangeRate nextRate = 2;
}
...
```

**166. By closet\_nerdd#7371 in the Token Service Channel on 01/20/2022**

@Greg Scullard does a token expire if you don't specify the expiration time?, What does it mean for a token to expire?

**167. By teacoat#2092 in the Developer General Channel on 01/16/2022**

looks like somebodies cert expired

**168. By Greg Scullard#5365 in the Developer General Channel on 01/14/2022**

Two things could be happening. Your computer clock is off by a few seconds / minutes, or a throttle is being reached for the mint operation and the sdk keeps retrying for 2

minutes after which the transaction's valid duration is exceeded and therefore expired. We are working with the sdk team to improve the retry mechanism in the latter case.



The expiration times don't matter right now, since atm we always use the same schedule for both "current" and "next"

### **3. By mtthwcmpbll#7922 in the Java Channel on 11/25/2021**

Hi folks! I've been playing with some small java apps to get used to the SDK and I was wondering if someone could sanity check this with me. I'm trying to programmatically show some of the fees expected for some actions and saw a reference to the Fee Schedule file (<https://github.com/hashgraph/hedera-sdk-java/issues/144#issuecomment-508098694>). I assumed it'd be a representation of the fees page (<https://docs.hedera.com/guides/mainnet/fees>) describing the kinds of transactions and the price in hbar or dollars or something.

Unlike the ExchangeRateSet special file, there doesn't seem to be a class in the .sdk package to convert it into, only the protobuf itself. On testnet, if download the file, stuff it into a protobuf, and show its contents it looks empty:

```
```java
ByteString contents = new FileContentsQuery()
    .setFileId(FileId.FEE_SCHEDULE)
    .execute(client);
```

```
FeeSchedule currFeeSchedule = FeeSchedule.fromBytes(contents.toByteArray());
System.out.println(currFeeSchedule);
```
```

shows:

```
```
FeeSchedule{transactionFeeSchedules=[TransactionFeeSchedule{requestType=NONE,
feeData=FeeData{nodeData=null, networkData=null, serviceData=null, type=DEFAULT},
fees=[]}], expirationTime=1970-01-01T00:00:00Z}
```
```

It seems strange that the expiration date is timestamp 0 and there are no fees associated at all. Am I loading the wrong file, or pulling it down incorrectly?

### **4. By Greg Scullard#5365 in the Token Service Channel on 11/23/2021**

The receiver will (ultimately) have to pay for account renewals which will include renewal of the token association.

### **5. By Greg Scullard#5365 in the Token Service Channel on 11/22/2021**

Hi, appreciate your comments and concerns over rent. It's an issue most networks choose to ignore for now, but may have to contend with in the future. Hedera chose to address this from the outset rather than start imposing rent in the future. The renewal costs are extremely low on a per entity basis indeed.

### **6. By bugbytes#0817 in the Javascript Channel on 11/20/2021**

I believe anyone can extend the life of a token by paying to update its expiration [when expiry is turned on on the network] this will implicitly renew the treasury account by design if I'm reading the design docs correctly.

### **7. By msanders#9466 in the Token Service Channel on 11/20/2021**

What will be the impact of HIP-16 on NFTs when it is set active? Am I correct to assume that ALL NFTs ( or any entity on Hedera for that matter ) will incur a perpetual "rent"

and thus never be truly "owned" by anyone apart from maybe the consensus node "land lords"? I find Hedera to be a very promising platform, but I am a bit concerned that even Accounts will expire without paying rent. How does that impact HBAR held at a custodian? I'm assuming the custodian's account would need to pay rent as well? I assume the fee is to be kept small enough in Fiat that it would seem negligible in practice? THANK YOU!!

**8. By Björn#3844 in the Javascript Channel on 11/12/2021**

Transaction expired again

**9. By Greg Scullard#5365 in the Token Service Channel on 10/20/2021**

@WW there is no "Hedera way" to do this, you'd have to use a secure peer to peer key sharing mechanism. Also note that you may need to rotate keys (and change keys on the file) when the NFT changes hands to ensure a previous owner can't access/modify the data (they could of course have kept a plain-text copy of the encrypted data )

Encryption of file data is not handled by Hedera, you'd have to do this in your app/ solution. Modifying file data is controlled by the file's admin key which can sign a fileUpdate transaction.

Also note that files on Hedera will eventually be subject to renewal fees, so for the file to remain on the network, it's expiration date will need to be periodically updated (and the corresponding transaction fee paid) otherwise the file will be deleted from the ledger (when past its expiration date)

**10. By Greg Scullard#5365 in the Token Service Channel on 10/18/2021**

It was never a secret and will be shouted loud and clear as we run up to enabling renewals.

**11. By Imperiu5#5552 in the Developer General Channel on 10/18/2021**

I'm unable to create a new hedera account via several Wallets: exodus fails, myhbarwallet doesn't work (certificate expired), Wallawallet: error creating new account http status 500 -> something going on?

**12. By Greg Scullard#5365 in the Developer General Channel on 10/12/2021**

@Deleted User when auto-renew is enabled on the network, these accounts will automatically fund their renewal for the specified `autoRenewDuration` on the account, or whatever they can afford if there are not enough hbar in the account to cover the renewal for the duration. If no hbar is put into the account when the next renewal kicks in, the account will be marked for deletion (for a week or two) and if not funded by then, it will be removed from the network (and can't ever be reused).

The renewal fees are paid to the nodes and Hedera treasury, no burning. An account is only ever deleted when its balance reaches 0 or if the owner of the account deletes it (and sends remaining hbar to another account in the process)

**13. By Deleted User#0000 in the Developer General Channel on 10/12/2021**

But I see there's a lot of account being abandoned with 0.0001 HBAR or something similar, does the HBAR go back to the treasury when their account is expired or is it burned forever?

**14. By Ed Marquez#6403 in the Token Service Channel on 10/11/2021**

and to close the loop, just reiterating that auto-renewal is not enabled as of now and what's in those images ^ is the end goal once auto-renewal is available

**15. By [WW] \$i|\_EnT Ki|\_|\_E'v'#1150 in the Token Service Channel on 10/11/2021**

The question that i have is: lets assume i create a nft token with no auto-renew. And someone buys that one from me. And the token gets expired in 3 months. If that is the case who will pay for the renew ?

**16. By Ed Marquez#6403 in the Token Service Channel on 10/11/2021**

The system will automatically pay account renewal fees if the account has a balance. If the account does not have a balance the account will be suspended for one week before it is deleted. You can renew an account during the suspension period.

@[WW] \$i|\_EnT Ki|\_|\_E'v' That's from here: <https://docs.hedera.com/guides/core-concepts/accounts#expiration>

Note that it's not currently not implemented on the network i.e. accounts do not expire - they will at a later date.

**17. By [WW] \$i|\_EnT Ki|\_|\_E'v'#1150 in the Token Service Channel on 10/11/2021**

what happens when token gets expired?

**18. By nkavian#1321 in the Java Channel on 09/22/2021**

Support for HIP-16

"Every entity in Hedera fill have fields for expirationTime, autorenewPeriod, and autorenewAccount. These can be set when it is created, and can be changed with an update transaction."

"The autorenewAccount is the account that will automatically pay for the auto-renew."

"If the linked auto-renew account cannot cover the fee required for the default extension period, then the entity itself is charged (if it is an account or smart contract)."

So as it's described, I'd like to set the `autorenewAccount` to point to my operator account when I call `AccountCreateTransaction`. But when I look at `AccountCreateTransaction`, it doesn't contain a field for setting `autorenewAccount`.

**19. By Bralz#7521 in the Developer General Channel on 09/19/2021**

yes and also the hcs acts as a log so just putting in a topic id into the app lets you load up a completed game and go through the board positions so long as the topic hasnt expired

**20. By Supremax67#5749 in the Developer General Channel on 08/29/2021**

Not really. Anything has a cost overtime. To commit the state of each of those accounts has a cost associated of approximately \$0.00022 every 90 days. The renewal fee hasn't been enable yet and I suspect it will only be turned on once proxy staking is lived. Proxy staking should easily offset the renewal fee, assuming you have a certain amount of HBAR held. Most likely 10 HBAR proxy staked would be enough to offset, but nothing was officially confirmed.



**21. By Supremax67#5749 in the Developer General Channel on 08/27/2021**

A forgotten wallet with 1000 HBARS would most likely take 272,000 years before it reaches zero from renewal fees. Assuming everything stays constant.

**22. By Supremax67#5749 in the Token Service Channel on 08/08/2021**

@DL1MP1K Not quite, there's a grace period. However, yes, eventually, the account gets delete if there is no HBAR Balance. We are talking of an extremely low fee.

Why does the fee exist? Because there is a real cost associated to having an account maintain on any ledger. The only difference is that Hedera is transparent about it, while other DLTs finds ways around the problem with much worse consequences.

EDIT: The renewal fee hasn't been turned on yet.

**23. By Bralz#7521 in the Developer General Channel on 08/05/2021**

So if I wanted to create an app like a craigslist clone. Users can posts gigs/sales/etc with a location that will use the google maps api. Those topics do not need to be permanent and should expire after a set time. Users should be able to message each other in-app about the topics and perhaps even send payment through the app. Would there be any advantage of using the hashgraph to service this as opposed to running it on a typical AWS setup? I suppose there doesn't need to be a consensus on whether a gig exists or not. Would the handling of topics (ie: sales and jobs) be serviced well via consensus as opposed to a fleet of EC2's?

**24. By Supremax67#5749 in the Token Service Channel on 07/11/2021**

In fact, he doesn't even need to pay Hedera's network every 90 days. If he had a 9 cents balance, the account would never expire in his lifetime. Why renewal fees? Because nothing is free, any network not having renewal fees is either overcharging up front OR has no financially incentive to keep the NFT on its ledger OR has hidden fees.

**25. By Supremax67#5749 in the Token Service Channel on 07/11/2021**

@0xDroid.eth || c3p0.hbar Your friend that is involved with HBAR has his facts messed up. He is confusing the account renewal fee which is \$0.00022 with the mint fee which is \$1.00.

**\*\*BIG DIFFERENCE!\*\***

**26. By Bralz#7521 in the Token Service Channel on 07/11/2021**

where are you seeing the 3 month renewal on gomint? i dont see it in the faq

**27. By 0xDroid.eth || c3p0.hbar#7055 in the Token Service Channel on 07/11/2021**

Just for clarification the guy I was talking to is an \$hbar guy he loves Hedera.

Actually he got big into NFT creation and collecting when GoMint first launches and we all love Peter.

But in this guys words even though he will still support Peter moving to HEN was easier, user friendly, didnt have to pay the mint every 3 months to renew the contract, and only pennies to create.

He said that Hederas tokenizing service was aimed at larger institutions and was probably about two years behind for smaller retail adaptation.

What is the reason for the 3 month renewal of NFTs? So is he saying that if the content creator doesnt renew the people who purchased the NFT will lose what they purchased?

IF thats the case it seems a little counter productive... what if the content creator dies and is no longer able to renew the NFT??? Ive got to be missing something right?

**28. By 0xDroid.eth || c3p0.hbar#7055 in the Token Service Channel on 07/11/2021**

So there is a new wallet coming out soon that supports the photos of NFTs.

Talking with someone today about minting on Hedera and they say its terrible for the small retail guy.

Now the lack of fanbase is because its still so early i am willing to scratch that off...

Is it true that creating the NFT itself is a long process with forms to fill out?

And strangest of all I was told that the NFY contract expires after 3months in which you have to pay to renew??

Can anyone confirm this to be true?? Why would they think this is a good thing if it is? Dont we want more people to move to HTS?

**29. By Greg Scullard#5365 in the Token Service Channel on 06/29/2021**

- if an account is closed, how do we reopen it after the expiration period?

When an account runs out of hbar, it will be marked for deletion and can be funded again for a short period of time (TBD) so it "undeletes" itself and renews automatically. If not funded within that time, it will be deleted and removed from the ledger, no funds can be sent to it after then, and the account id cannot be reused.

- if an account is closed, and another party had sent us funds at the closed account, are the funds lost?

See above, the transaction will fail and funds will not leave the paying account.

- since there is a get balance fee, explicitly point out to developers they need to implementing rate limiting on their side, otherwise the operator's wallet can be drained, causing an account closure, thereby causing a full denial of service.

getBalance is free as is getReceipt, no need to rate limit this.

- documentation that clearly explains what happens to token balances once HBAR hits 0. i.e. the tokens are lost too?

per current design tokens left in an account with 0 hbar will be transferred back to the token's treasury at the time the account is deleted.

There is a HIP in progress on the subject of account renewals, you may comment there if you like: <https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-16.md>

**30. By Supremax67#5749 in the Token Service Channel on 06/28/2021**

@nkavian "if an account is closed, and another party had sent us funds at the closed account, are the funds lost?"

An account that is no longer active cannot receive funds. Can't accidentally send funds to

it.

Since renewal fees hasn't been enabled yet, you won't see an example of what happens. Furthermore, I expect renewal fees to be live at the same time as proxy staking, further offsetting the cost if any HBAR in the wallet if staking used.

"Hedera imposing these fees", is not the proper terminology. Hedera is saying this is how much it cost to do "this" and "that" on the network and charges its users for such services. There isn't a network or service that is truly free, there is always a catch 22. Hedera is being transparent about the cost. One option is to increase the cost for the first token create to allow for that minimum deposit of HBAR. You'll also notice there's a #-hips channel for such suggestion. I recommend checking out the pinned link if you wish to contribute to the solution.

Honestly and IMHO, the issue is being nitpicked. There is a higher chance of someone losing their private key than a Developer forgetting to leave a balance on the account.

### **31. By nkavian#1321 in the Token Service Channel on 06/28/2021**

@Supremax67 Thanks for the quick reply. I appreciate the example that 9 cents will last a long time. However, the crux of the matter is that users can surely intentionally or mistakenly empty their HBARS and lose their account. What happens if I'm holding \$10k of a stablecoin, but HBARS became 0. To be really honest, my first impression of reading your response, you're simply giving reasons in defense of the current design. I don't want to turn this into a debate, but a short response: 9 cents over 100 years can not honestly be thought of as an economical incentive. These fees cause more headaches than any possible benefit.

I understand this is the current design, and it's unlikely to change. As a consequence of Hedera imposing these fees, architects and developers deserve a deeper level of details in the form of a white paper, a medium blog, or thorough documentation that explains from Hedera's point of view how accounts should be managed over time. Some example topics / questions:

- if an account is closed, how do we reopen it after the expiration period?
- if an account is closed, and another party had sent us funds at the closed account, are the funds lost?
- since there is a get balance fee, explicitly point out to developers they need to implementing rate limiting on their side, otherwise the operator's wallet can be drained, causing an account closure, thereby causing a full denial of service.
- documentation that clearly explains what happens to token balances once HBAR hits 0. i.e. the tokens are lost too?
- explicitly pointing out to developers and providing best practices of how to manage long lived wallets. i.e. a "hosted" consumer wallet where the consumer who is not a developer may drain the wallet, and how should developers protect and manage these wallets so they aren't closed.
- Should the developers force an arbitrary minimum balance of 1 HBAR, etc...

### **32. By Supremax67#5749 in the Token Service Channel on 06/28/2021**

You need to have that fee to provide economical incentive to keep the account on the ledger. A network that doesn't charge you a renewal as either no obligations to keep the

account active over a decade or 2, or charged you so much upfront that Hedera will easily end up being a better solution.

**33. By JeffW#5649 in the Token Service Channel on 06/16/2021**

Since Token "Rent" is so cheap, would it make sense for HTS to provide the option to pay some amount up-front in exchange for a non-expiring NFT? It would be worth it to get rid of the hassle of managing rent. Even if it were, say, \$5.00 for an non-expiring NFT, it seems worth it and I think the \$5.00 should cover rent for a very long time. I know you could just put that \$5.00 in a treasury wallet or something, but that is just another thing to manage and another thing that could go wrong would prefer the option having the platform deal with that.

**34. By El Dudearini#9731 in the Token Service Channel on 06/10/2021**

Will account numbers be recycled after expiration?

**35. By b\_xt\_r#5042 in the Javascript Channel on 06/09/2021**

Oh I see, the memo does get applied to the TokenInfo itself, not the transaction

```
` ``TokenInfo {
 tokenId: TokenId {
 shard: Long { low: 0, high: 0, unsigned: false },
 realm: Long { low: 0, high: 0, unsigned: false },
 num: Long { low: 189****, high: 0, unsigned: false }
 },
 name: 'Arrakis',
 symbol: 'ARKS',
 decimals: 0,
 totalSupply: Long { low: 100, high: 0, unsigned: true },
 treasuryAccountId: AccountId {
 shard: Long { low: 0, high: 0, unsigned: false },
 realm: Long { low: 0, high: 0, unsigned: false },
 num: Long { low: 188****, high: 0, unsigned: false }
 },
 adminKey: null,
 kycKey: null,
 freezeKey: null,
 wipeKey: null,
 supplyKey: null,
 defaultFreezeStatus: null,
 defaultKycStatus: null,
 isDeleted: false,
 autoRenewAccountId: AccountId {
 shard: Long { low: 0, high: 0, unsigned: false },
 realm: Long { low: 0, high: 0, unsigned: false },
 num: Long { low: 18*****, high: 0, unsigned: false }
 },
 autoRenewPeriod: Duration { seconds: Long { low: 7776*, high: 0, unsigned: false } },
 expirationTime: Timestamp {
 seconds: Long { low: 163*****, high: 0, unsigned: false },
```

```
nanos: Long { low: 0, high: 0, unsigned: false }
},
tokenMemo: 'ipfs://bafyreicl3kq7lgmy74bbukp4mnn4sckcz2rvixk*****/
metadata.json'
} `` `
```

**36. By Greg Scullard#5365 in the Token Service Channel on 06/09/2021**

Hi, currently all expiries are locked to three months and is shown in the expiration date of all entities on the network. Through an update transaction, it will be possible to extend the expiration date, or for some entities this will be automatic provided there are funds in the account that renewals come from.

It will eventually be possible to specify expiry across a wider time period (e.g. a few minutes or a year)

But nothing to worry about immediately, expiry isn't enabled, won't be for a few months and when it is, everything will be extended by 3 months (or so) to give everyone time to adapt, and we will be warning everyone in plenty of time.

**37. By Supremax67#5749 in the Developer General Channel on 06/09/2021**

Illegal how? Trying to recall any contracts irl that is not tied to circumstances or an expiration, there are none. The subscription model used on Hedera is extremely cheap and further incentivises Hedera to keep providing that service. Other chains will just have you pay an exorbitant amount upfront and not have any incentives to keep their chain store the data.

**38. By Andy#5527 in the Token Service Channel on 06/09/2021**

Hi all. I'm still reading through the docs and have read that tokens expire. But what I can't find is what that time span is for a token to expire and require renewing? Is anyone able to point me to the right place in docs? Thanks so much!

**39. By Rocket#2012 in the Developer General Channel on 06/07/2021**

tokens on HTS have a renewal cost/expiry

**40. By esh#1009 in the Token Service Channel on 06/01/2021**

@Liberated , please check my reply to the Storage Wars comparison. What you are talking about is the relationship between you and Hedera in your comparison to using AWS. Not the relationship between \_you and your client\_. Now imagine that you use AWS to sell services or items. You have customers. They believe they have "bought" your services or items and they are blissfully unaware that in 3 months they would have to \_pay to AWS\_ so the services they "bought" from you don't disappear and the items they bought from you are not returned to you (without a refund). I hope it is a bit clearer now.

If the comparison you provided was in response to the point about the tokens to support, rather than accounts expiration subject, then yes, you have a point. However, there is still a problem - the costs of supporting multitude of tokenized objects, if your margin is low, are not sustainable in the long run for a small business or solo entrepreneur. Not just that - if your business happens to stop doing what it was doing (or if you just lost interest), all your clients are going to lose their assets (now imagine some expensive NFT there or something).

**41. By Liberated#0417 in the Token Service Channel on 06/01/2021**

@esh I dont get your frustration. If I run a website on AWS I have to pay for it to serve my customers. If I'm connected to the municipal water supply, I have to pay (or rent) for the pipes to carry that water.

Indeed, if you look at a reasonably similar use case look at AWS. They have AWS credits that are non refundable but fuel network power in some fashion or another.

small companies and large corporations alike will likely have a scheduled Transaction to make sure they have enough HBAR in their account. I don't see how that's different from giving Amazon your credit card personally.

**42. By esh#1009 in the Token Service Channel on 06/01/2021**

Well, as I mentioned, a way to make a lot (if not all) non-corporate projects producing sufficient amount of tokens non-sustainable in the long run (because of the total costs of the token renewals). The more I look into this, the more it seems that Hedera is a ledger for big corporations, not for mid-size businesses and enthusiasts. It just needs to be more open about that. Which is a pity, really, because the technicals are good and dev tools are good too.

**43. By esh#1009 in the Token Service Channel on 05/31/2021**

Yeah, I will - I have already posted the concerns regarding the account expiration. The fact that tokens are also to require renewals is a new subject, so I want accounts to be discussed first there.

**44. By esh#1009 in the Token Service Channel on 05/31/2021**

Reading the HIP-16, I've realized there is also an interesting scenario of the token expiration and renewal. If that fee falls onto the issuer and the issuer "prints" tons of NFTs, that might kill the business. But I don't want that discussion to go off track from the subject of accounts, so perhaps that can be discussed later.

**45. By Greg Scullard#5365 in the Token Service Channel on 05/31/2021**

note, transfer of tokens on account expiration is not to the seller (inferring last owner), but the issuer.

**46. By Greg Scullard#5365 in the Token Service Channel on 05/31/2021**

@esh I don't think you can use current DLTs as a reference, if tokenisation is to take flight, ownership of tokens won't be in the 10s or 100s, it could be in the 1000s per user, think scale, large scale... With these numbers, storage becomes a real issue long term and Hedera is addressing the cost of that storage upfront, rather than impose it as an afterthought later on.

We are also at the very beginning of this industry and I fully expect that users who quite rightly today "have no clue", will eventually become acutely aware of what having a crypto account entails.

Networks to date have got away with free storage (maybe subsidised by transaction fees), although some are discussing rent (or TPS caps) while being already behind Hedera in terms of transaction count.

**47. By esh#1009 in the Token Service Channel on 05/31/2021**

I've just checked the Suku site to see what term do they use - and it is "sale". Not "lease", but "sale". So having something that is "sold" pulled back to "seller" by the expiration mechanism is going to be a headache (legal and/or otherwise) for both the "buyer" and the "seller".

**48. By esh#1009 in the Token Service Channel on 05/31/2021**

They are paying the current fees to issue and transfer tokens - they physically can't "pay the fees" for the account (that recurring sub to keep it live) someone has created in some wallet. So this "transparent experience" is completely unrelated to the subject of expiration and how that is being dealt with. I would not be surprised if Suku guys have not (yet) accounted for the case of what happens if that expiration gets activated and they will start receiving the issued tokens back.

**49. By esh#1009 in the Token Service Channel on 05/31/2021**

I didn't quite get it how Eth example fits into this - you are talking about different fees there, not the fees to keep the account open. Do you have any examples, aside say from Ripple, which requires non-spendable amount on the account, having such expirations and recurring subscriptions just to keep an account live?

**50. By esh#1009 in the Token Service Channel on 05/31/2021**

As for the legal problem - again, this is a question for the lawyers, but I'm pretty sure someone will eventually complain that the purchase was made, but the goods were returned to the seller without refund due to that expiration.

**51. By esh#1009 in the Token Service Channel on 05/31/2021**

@Supremax67 , @Rocket - As I said, I understand the \_technical\_ reasons and the practicality from that point of view. But think of ordinary users and how that makes the whole journey worse for them. Imagine those native tokens and the user A who wants to gift some custom token to user B (user B is your regular internet user, whose only knowledge about crypto, let alone Hedera, is summed up to "it exists"). Now you immediately have a few obstacles:

a) The user B needs to have a wallet (that is solvable and Hedera lists a number of wallets, so OK on this front).

b) The user B needs to associate the token to its account - already not very straightforward and you might not find Android/iOS wallets supporting that (and don't forget the wallet should also be able to display those native tokens).

c) The user B has no idea that even if wallet was downloaded and tokens are received, in 3 months + a week or two of the grace period, unless there is some top up with hBars, his account will be gone and all his gifted/purchased items will be gone. That's the worst part of it and rather sneaky/non-obvious for a "normal" user. And by the way, this might pose a legal problem if the tokens were purchased and then due to this "expiration" most users would not know about, they would go back to treasury/seller - this is similar to you buying an item (let's say a new sofa) and next day seller coming to your house and saying "I've heard you haven't paid the rent this month, so you might be moving out soon, and I'm taking the sofa back (but you won't get a refund)"

**52. By esh#1009 in the Token Service Channel on 05/30/2021**

Does anyone @here know why hedera accounts seemingly have an expiration date? At least the testnet ones ...

**53. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

As far as I I le you can execute and pay for a transaction that extends the expiry date of a token, thus avoiding the renewal being paid by treasury and needing to transfer funds to that account.

**54. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

I believe the account that funds auto renewal is the treasury account, there is a hip proposing an alternative funding account (also for accounts).

**55. By Fenix#3599 in the Token Service Channel on 05/18/2021**

I don't mean token ownership, i mean the ownership of the account that would be used to fund the auto-renewals

**56. By Fenix#3599 in the Token Service Channel on 05/18/2021**

What keeps me worried is not the rent, that part is cheap and there's no problem getting the funds. Its more about the responsibility to remember to and actually perform the action of paying rent, it would be nice to have a system/platform that takes care of that in a decentralised way, but without relying on users to do any additional actions past their for example NFT purchase.

**57. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

These things are non trivial when you try to plan years in advance, introducing rent has been discussed within other networks that run at nothing like the possible speed of Hedera. It's one thing to store data when you run at 10tps max, it's another when you're at 10k+ TPS

**58. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

Hcs topics are subject to renewal fees too

**59. By Fenix#3599 in the Token Service Channel on 05/18/2021**

I guess with Hedera NFTs, you could use NFT tokens simply as a proof of sale / transfer of ownership and then immediately let the token expire. Relying exclusively on state proofs as the real proof of ownership. Pretty interesting.

**60. By Supremax67#5749 in the Token Service Channel on 05/18/2021**

Then there's the argument to be made that if your account is using proxy staking, it might just be enough to offset the renewal fee, which is already at a ridiculously low amount.

**61. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

There is a HIP open on separate accounts for renewal fees, maybe worth a comment or two.

**62. By JeffW#5649 in the Token Service Channel on 05/18/2021**

I guess if you were selling NFT's you could route a very small percent of the money into a "rent" account to cover the renewal fees.

**63. By Rocket#2012 in the Token Service Channel on 05/18/2021**

which wouldnt expire



**64. By Rocket#2012 in the Token Service Channel on 05/18/2021**  
that wouldnt expire

**65. By Supremax67#5749 in the Token Service Channel on 05/18/2021**  
@JeffW People overestimate the fees for an account renewal. Have you done the math?

**66. By Supremax67#5749 in the Token Service Channel on 05/18/2021**  
Have you done the math with the renewal fees?

**67. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**  
Renewal fees are very low, reflecting the amount of data being kept on the ledger.

**68. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**  
@JeffW someone will have to fund the ongoing existence of the token.

Every token type has an associated account (the treasury account). An expired account that can't autorenew is deactivated for a week. If it still hasn't been renewed, it is deleted, and its tokens transfer to the treasury account.

The treasury account always has an expiration date the same as or later than its TokenType. (Extending the latter automatically extends the former, if needed). So the treasury account can't expire unless the TokenType itself expires. In which case, all tokens of that type expire.

By the way, anyone can, at any time, extend the life of the TokenType. Or of a file or smart contract or topic. So if a community is relying on a given entity continuing to exist, any member of that community can make sure it does.

**69. By JeffW#5649 in the Token Service Channel on 05/18/2021**  
After reading the above, I have a question about Token Expiration dates. Thinking about the upcoming auction demo, when someone bids and wins one off Leeman's silver/gold tokens with corresponding NFT, will they (the winner) need to pay the token renewal fee ongoing? Similar, if I were to sell digital NFT's, the purchasers would need to pay this renewal fee or risk losing the NFT?

**70. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**  
@Crypto\_Tigger tokens have expiry so that if nobody cares about a token and it is not renewed, it gets deleted from the ledger. If the token is still associated to accounts, it will not be deleted unless the accounts themselves are no longer funded in which case any remaining tokens on these accounts will be returned to the token's treasury account.

You can't create a token without an expiration time

**71. By Crypto\_Tigger#8518 in the Token Service Channel on 05/18/2021**  
Why token has expiry and i dont want to create token that has expiry , can i create a token without any expiration time ?

**72. By paglu69#1501 in the Token Service Channel on 05/18/2021**  
``public class Token implements Serializable {  
 private String tokenName;  
 private String tokenSymbol;`

```
private AccountId TreasuryAccountId;
private Key AdminKey;
private Key KycKey;
private Key FreezeKey;
private Key WipeKey;
private Key SupplyKey;
private boolean FreezeDefault;
private Instant ExpirationTime;
private String TokenMemo;`
```

**73. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

I expect networks will eventually come to the conclusion that rent is a necessity. Hedera is being upfront about it, no surprises.

**74. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

Renewal isn't implemented yet but in progress. All entities will expire on the network unless they are renewed. If you don't specify an expiry date, a default set to 3 months is used, after which renewal will happen automatically when implemented so long as there are funds in the associated renewal accounts.

**75. By Rocket#2012 in the Token Service Channel on 05/18/2021**

yes. on that page there is no 'Token Renewal' fee.

**76. By Rocket#2012 in the Token Service Channel on 05/18/2021**

If I'm reading this right, tokens expire after 90 days by default, implying that tokens \*must\* expire. Is there a maximum expiry time? Can I set the expiry to, say 1 million years, and have it be indefinite?

**77. By Rocket#2012 in the Token Service Channel on 05/18/2021**

@Greg Scullard I'm actually curious now, I can't find the token renewal fee on either the fees page or in the documentation.

**78. By Crypto\_Tigger#8518 in the Token Service Channel on 05/18/2021**

Thats good but i like to make crypto currency thats not need any expiration

**79. By Rocket#2012 in the Token Service Channel on 05/18/2021**

you have the option to expire, but you dont have to make it expire

**80. By Crypto\_Tigger#8518 in the Token Service Channel on 05/18/2021**

I dont understand why people put expiration for tokens ?

**81. By Crypto\_Tigger#8518 in the Token Service Channel on 05/18/2021**

If I dont set expiration than no renewal .thats good

**82. By Rocket#2012 in the Token Service Channel on 05/17/2021**

the renewal fee only applies if you set an expiration time

**83. By Crypto\_Tigger#8518 in the Token Service Channel on 05/17/2021**

Me too have one simple question , if I create a token on hedera do i need to pay token renewal fee. I have seen on the fees section . They have renewal fee for tokens. If they charge for creating token ,transferring ok . But if token has expiery date if you dont

renew it .I feel scared for Hedera because no one will use hedera based tokens . Because BITCOIN or ETH tokens no one pay renewal fee or it never expires once is created . I feel like HEDERA want to find every way to make money from the users . If this go like this this project no mass market will use the hedera services

**84. By JSilver#6283 in the Token Service Channel on 04/21/2021**

Yesterday's demo showed the auction when and Hbar bid knocks down the standing bid. You could send the hbar or token, and the dApp has the AMM function to do the swap; so it is a swap broken in 2 steps. I have a prototype ready with this model.

Another alternative is to build the atomic swap (at the swap rate at latest price in the convex curve) and send to scheduler. If the swap rate is acceptable to the other leg, the counter-party signs and the swap is executed. If not, the transaction expires.

**85. By Instafluff#7764 in the Developer General Channel on 04/19/2021**

may i also ask if there is an unofficial discord for community chatter? it seems the link i found on the hashgraph website's help section is expired

**86. By rhyssied#6748 in the Consensus Service Channel on 04/14/2021**

1) sounds completely sane

2) not sure what you mean by this question tbh, but if you get the message at sequence number 12 for example it will always be sequence number 12 if that is what you were asking.

3) hash-hash.info and app.dragonglass.me use their own custom logic, however most of the other mirror nodes are using the the record files that get pushed to AWS and GCP. Total delay between submission and mirror node discovery is the time for the message to reach consensus + record files to be published + ingestion from cloud files and writing to the DB. Record files now seem to be published every 2 seconds (used to be 5 iirc), so the whole process should take <10 seconds end to end

4) The most reliable way would be to host your own mirror node and exclude any irrelevant information. All of the mirrors appear to be consistent and all of them have the full history so far afaik. Some mirrors may eventually roll off old data or offer paid for archived data, etc. Your topic will expire eventually once entities have to pay their autorenewal fees to stay in state (a.k.a. "rent")

**87. By gehrig#7214 in the Token Service Channel on 04/05/2021**

> The treasury account always has an expiration date the same as or later than its TokenType. (Extending the latter automatically extends the former, if needed). So the treasury account can't expire unless the TokenType itself expires. In which case, all tokens of that type expire.

> By the way, anyone can, at any time, extend the life of the TokenType. Or of a file or smart contract or topic. So if a community is relying on a given entity continuing to exist, any member of that community can make sure it does.

**88. By bugbytes#0817 in the Token Service Channel on 04/02/2021**

When auto-renew is implemented, its anticipated that the account holder pays for the space to hold account balances, so yes, in essence, holding many different types of tokens in a single account may result in a higher account renewal fee (albeit anticipated to be tiny in the first place). That is one of the reasons the account holder has to authorize receiving tokens prior to receiving them, it allocates storage space on the network for their balance.

**89. By rhysied#6748 in the Developer General Channel on 03/28/2021**

afaik you can create an account with 0 balance as the first account renewal period is paid by the account creator. After that expires the account would then be marked for deletion and deleted after a 7 day grace period if no funds were added

**90. By merijn#2388 in the Consensus Service Channel on 03/25/2021**

I have a question about expiration times.

It seems I can't set the expiration time higher than 3 months for both topic and file transactions. Actually, if I try to set any expiration date, I receive AUTORENEW\_DURATION\_NOT\_IN\_RANGE.

What I want to achieve is: upload an image, specify some textual info with it, and make it publicly accessible forever for anyone to check. (similar to a copyright proof). The expiration times make me nervous. I read something about that everything will always remain accessible on the mirror net, but I don't find this very clearly explained anywhere. Is there currently a way for me to safely build what I'm trying to achieve?

**91. By BroManTech#2938 in the Developer General Channel on 03/25/2021**

going by hedera.com/fees, I'm getting a rate estimate of \$0.0002 for CryptoAccountAutoRenew with 3 month expiration parameter

**92. By Johnda98#0683 in the Developer General Channel on 03/22/2021**

grievances ? thats an old word.. thats for centralized courts .. go to the judge and cry the SC is in charge now and it doesnt need food .. just a renewal fee

**93. By Johnda98#0683 in the Consensus Service Channel on 03/19/2021**

yup i deployed VG8 token erc20/777 in jan 2019.. its on mainnet also probably.. or could have fallen off if my account didnt pay its 90day rent

**94. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 02/22/2021**

hi Surpremax67, creating an entity in state imposes a different burden on the nodes than subsequent storage (which the renewal fee pays for)

**95. By Johnda98#0683 in the Java Channel on 02/22/2021**

exactly that @Greg Scullard yep.. as I keep encrypted keys seeded by hash of a password and corresponding account info in the file. Passwords hashed n stored to ABFT and keys too !.. just dont spend all the hbar and let hedera file expire.

**96. By Supremax67#5749 in the Developer General Channel on 02/22/2021**

If they went up by a factor of 5, a \$0.001 renewal fee would also make sense.

**97. By Supremax67#5749 in the Developer General Channel on 02/22/2021**

@Paul Madsen (Hedera Hashgraph) Hopefully they will also revise renewal fee as that is also really low.

**98. By yezzzer#8110 in the Token Service Channel on 02/12/2021**

Additional q's:

1. Is storing JSON in the Symbol/Name a reasonable action?

2. If we link to a HFS object in the Symbol / Name of a NFT, the HFS object expiration time

needs to be set to never expire, is there a cost for permanently storing that? I don't see a fee here <https://docs.hedera.com/guides/mainnet/fees>

**99. By AlexTaylor#3551 in the Token Service Channel on 02/12/2021**

That depends on what value you want the NFT to represent, eg ownership or access

eg you could have an NFT for house ownership, or a fixed term rental

GoMint, launching later today, will be exploring such questions  
<https://twitter.com/gomintme>

**100. By CyberBoar#2880 in the Javascript Channel on 02/05/2021**

I guess object could expire if u dont want to instantiate again :?  
otherwise its str <https://stackoverflow.com/questions/8164802/serialize-javascript-object-into-json-string>

**101. By surajsingla333#5243 in the Javascript Channel on 02/01/2021**

```
TransactionRecord {
 receipt: TransactionReceipt {
 status: Status { _code: 22 },
 accountId: null,
 fileId: null,
 contractId: null,
 topicId: null,
 tokenId: null,
 exchangeRate: ExchangeRate {
 hbars: 30000,
 cents: 239255,
 expirationTime: 1970-01-19T15:49:40.800Z
 },
 topicSequenceNumber: Long { low: 0, high: 0, unsigned: true },
 topicRunningHash: <Buffer >,
 totalSupply: Long { low: 0, high: 0, unsigned: true }
 },
 transactionHash: <Buffer d8 f7 a8 e9 e8 e5 49 ab d1 52 ab c5 73 6a 72 74 0a 0a ad 43 ac
19 48 91 e2 79 a5 5f 58 fd 3d 69 44
7a c5 7e 1c f0 c5 2b e9 56 51 78 1c cd 72 31>,
 consensusTimestampstamp: Timestamp {
 seconds: Long { low: 1612179954, high: 0, unsigned: false },
 nanos: Long { low: 275362005, high: 0, unsigned: false }
 },
 transactionId: TransactionId {
 accountId: AccountId { shard: [Long], realm: [Long], num: [Long] },
 validStart: Timestamp { seconds: [Long], nanos: [Long] }
 },
 transactionMemo: '',
 transactionFee: Hbar {
 _valueInTinybar: Long { low: 46777794, high: 0, unsigned: true }
```

```
},
transfers: [
 Transfer { accountId: [AccountId], amount: [Hbar] },
 Transfer { accountId: [AccountId], amount: [Hbar] },
 Transfer { accountId: [AccountId], amount: [Hbar] }
],
contractFunctionResult: ContractFunctionResult {
 contractId: null,
 bytes: <Buffer >,
 errorMessage: '',
 bloom: <Buffer >,
 gasUsed: Long { low: 6398, high: 0, unsigned: true },
 logs: [[ContractLogInfo]]
},
tokenTransfers: TokenTransferMap {
 _map: Map {},
 _map: Map {},
 _fromString: [Function]
}
},
...
```

this is the record response and as it shows no logs are there

**102. By you\_ate\_my\_food#4494 in the Token Service Channel on 01/27/2021**

@AlexTaylor I believe accounts can still expire even if tokens to it are frozen (although this feature isn't fully released yet).

**103. By AlexTaylor#3551 in the Token Service Channel on 01/27/2021**

And can the account expire?

**104. By bugbytes#0817 in the Developer General Channel on 01/21/2021**

(note: renewal fees are not yet implemented, but at some point in the future they will be)

**105. By bugbytes#0817 in the Developer General Channel on 01/21/2021**

"temporarily lost" - yes, there may be some, but it is *\*never\** burnt, eventually accounts rendered inaccessible due to lost keys will have the hbar recovered thru renewal fees until consumed.



Ik that there is already a mechanism that notifies all SDK devs of any changes in HAPI. But probably it isn't high up on the priority list in Java

#### **4. By Hua#7134 in the Java Channel on 11/19/2020**

The invalid expiration time is a real blocker for me as well. Without the ability to create a token, there is not much you can do to explore the token service. I wonder if there's a work-around for this issue while we're waiting for the release on Friday. Thanks.

#### **5. By DM#6713 in the Developer General Channel on 10/28/2020**

> @DM They'll get announced in due time, it is not just Hedera's decision, but the governing member as a whole and the company rolling onboard. Companies have a lot of red tapes before they announce anything to the media. They are not partners but becoming a temporary owner of the network, way different than announcing a letter of intent.

@Supremax67 thank you for your comment. you are right in everything you say. what I don't like is that it's temporary, it's like having associations with an expiration date ... don't you think?

#### **6. By Masakaka#4473 in the Consensus Service Channel on 10/28/2020**

> Hi @Masakaka worry not for now, these features are not yet enabled, however when they are:

> \* All entities (accounts, topics, contracts, tokens) have to be paid for in order to remain on the network, they will otherwise get deleted automatically.

> \* The auto-renew account is the account that funds the renewal, renewal happens every auto-renew period for the same duration (e.g. every 3 months for 3 months).

> \* If the balance of the auto-renew account is insufficient to cover the period, the renewal will be whatever the account can pay for (e.g. could be 1 month although renewal period is 3).

> \* If the account is credited before the next expiry (1 month the above scenario), renewal will be automatic and the entity will remain on the ledger

> \* If the account balance is 0 at the time of renewal, the entity will be marked as deleted and eventually purged from the ledger for good.

>

> Files are a little different in that you specify how long you want the file to be on the ledger when you create it. You can later extend that duration if you wish, otherwise the file will self-delete when the expiry date has passed.

>

> Why do we do this ? Well, there is a cost to holding the data for these entities which nodes have to bear, a cost we acknowledged as soon as we launched the network, not a problem to solve later. Free for all works for a while, then either costs are added as an after-thought, or node operators start questioning whether they should keep holding data for free.

>

> Note: There is a youtube video and blog on our crypto economics that goes into the detail of how those fees are distributed, I'll dig them up if you're interested. Let me know.

>

> Hope this helps.



> Greg

@Greg Scullard thank you for answer this is clear

**7. By Greg Scullard#5365 in the Consensus Service Channel on 10/27/2020**

Hi @Masakaka worry not for now, these features are not yet enabled, however when they are:

- \* All entities (accounts, topics, contracts, tokens) have to be paid for in order to remain on the network, they will otherwise get deleted automatically.
- \* The auto-renew account is the account that funds the renewal, renewal happens every auto-renew period for the same duration (e.g. every 3 months for 3 months).
- \* If the balance of the auto-renew account is insufficient to cover the period, the renewal will be whatever the account can pay for (e.g. could be 1 month although renewal period is 3).
- \* If the account is credited before the next expiry (1 month the above scenario), renewal will be automatic and the entity will remain on the ledger
- \* If the account balance is 0 at the time of renewal, the entity will be marked as deleted and eventually purged from the ledger for good.

Files are a little different in that you specify how long you want the file to be on the ledger when you create it. You can later extend that duration if you wish, otherwise the file will self-delete when the expiry date has passed.

Why do we do this ? Well, there is a cost to holding the data for these entities which nodes have to bear, a cost we acknowledged as soon as we launched the network, not a problem to solve later. Free for all works for a while, then either costs are added as an after-thought, or node operators start questioning whether they should keep holding data for free.

Note: There is a youtube video and blog on our crypto economics that goes into the detail of how those fees are distributed, I'll dig them up if you're interested. Let me know.

Hope this helps.

Greg

**8. By bugbytes#0817 in the Developer General Channel on 10/25/2020**

If I were to speculate, it is due to two reasons: An account holder has to pay for storage, unsolicited air-drops could result in a rising account renewal fee. And tax implications: the tax man can say - "you can't deny your involvement with that air-drop because you approved it by associating".

**9. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 10/14/2020**

Yeah when your CEO asks you for rent money there may be trouble in the air. ♂

**10. By Johnda98#0683 in the Developer General Channel on 10/13/2020**

Yep.. Just one of millions of angel list 'hope equity' plays that keep on poking around until they find suckers to dev a production capable mvp.. Paid for with promised 'equity'.. When a "serious looking" "team" asks you for 1000\$ to pay their rent.. Lol. Millions of ultra high esteemed delusional types out there.. Yep.. Watchout for the 'im on TV utube clips.. Narcissistic 'tells' right there. Oh well they paid 2500\$ fiat for me to build them a wallet that won them a hackathon (no real winnings of course.. Just 'credits' lol..) I

re-badged existing frame so was only 8hrs wrk.. Users n abusers out there guys.. So be careful, dont give your soul & talents away.

**11. By gehrig#7214 in the Java Channel on 09/29/2020**

Sure thing, I'll see if we can make that clearer in the docs, as well. We'll be sure to update everyone once the Hedera API adds renewals.

**12. By gehrig#7214 in the Java Channel on 09/29/2020**

@Deleted User topics, like accounts, don't have renewals enabled yet. As of this moment your topic won't expire.

**13. By Johnda98#0683 in the Developer General Channel on 09/06/2020**

@bugbytes seems no way then to make a SC undeleteable by its deployer keypair. Ie NO immutability until expiration upon no renew payment. Tell me im wrong please.

**14. By Rens Laros#0756 in the Developer General Channel on 09/06/2020**

It's about making sure people, with or without technical knowledge know what all these things are and how to handle it. In actual separate tutorials / infographics instead of a small message on the sign up process.

22 v 24 /multisigs / acc renewals / seeds vs keys / pub vs private etc.

**15. By Rens Laros#0756 in the Developer General Channel on 09/06/2020**

The fact is that lots of users are having issues. either with the official wallet or other wallets simply because there's a lack of clarity. Even if it's the users fault, if you see lot's of users doing the same thing, make sure it's clear how things should or shouldn't be done.

It's also strange that the user above now has 24 new words, but they're useless. The wallet provided this and doesn't show his old one anymore. I don't know what the cause was for this but I doubt it has to do with him not writing something down. This should be done in a way where you either have the old or the correct / working new one. Not 24 useless words

I also don't see a good reason why you would drop support for the "main" wallet, the 22/24 seeds are confusing and could use an explanation. Same with acc renewals etc. I'd love to see more info / tutorials so that people can start buying hbar with confidence.

**16. By bugbytes#0817 in the Developer General Channel on 09/05/2020**

but I think you can call update contract to extend the expiration time explicitly

**17. By bugbytes#0817 in the Developer General Channel on 08/31/2020**

As far as I get is:

...

```
node_0 | 2020-08-31 15:09:23.252 INFO 156 ServicesMain - Ledger state ok.
node_0 | 2020-08-31 15:09:23.524 INFO 158 ServicesMain - System files rationalized.
node_0 | 2020-08-31 15:09:23.581 INFO 160 ServicesMain - Accounts exported.
node_0 | 2020-08-31 15:09:23.598 INFO 162 ServicesMain - Record expiration reviewed.
node_0 | 2020-08-31 15:09:23.608 INFO 164 ServicesMain - Fee schedule loaded.
```

```
node_0 | 2020-08-31 15:09:23.609 INFO 166 ServicesMain - Completed initialization of
STAKED_NODE #0
node_0 | 2020-08-31 15:09:23.609 INFO 87 ServicesMain - init finished.
node_0 | This computer has an internal IP address: 172.19.0.2
```
```

My first question is that "up and running correctly"?

18. By Greg Scullard#5365 in the Developer General Channel on 08/18/2020

Why should the rest of the world care that we changed the file, we both agreed to do it and the network enforced that agreement through cryptography.

In changing the file, we didn't affect transaction history or the validity of the ledger.

This also enables the network to prune itself over time. Files that aren't paid for in terms of storage will be deleted, accounts that hold no hBar for a period of time will be deleted, contracts that are not funded will also be deleted. This ensures that no "dust" is left in data storage, incurring an ongoing cost that node operators have to bear. Networks that have not done so in the past are now facing the reality of this cost and looking to solution such as paying rent for data storage.

So to your question about trusting the balances. Would it be possible to slowly or randomly drain account balances ? Of course, it's software, you can do anything. To counter this:

-The software for the services layer that controls accounts, etc... is now open source (<https://github.com/hashgraph/hedera-services>) so anyone can inspect the code and check that there are no such backdoors.

-Doing so would cause irreparable damage to the network, its adoption and its value meaning there would only be losers, nobody would gain from such behaviour.

19. By Supremax67#5749 in the Developer General Channel on 08/17/2020

In fact, those renewal fees are so low that I wish they would increase them to deal with "dead" accounts.

20. By Supremax67#5749 in the Developer General Channel on 08/17/2020

Having your account kept open for a certain amount of time on the public ledger, that part is a service and they already do charge very very small renewal fees. Your account only gets closed if you can't pay the fees. I don't believe that has been rolled out yet, but the fees are so low that if you proxy stakes, you'll easily be able to set off those renewal fees.

21. By Greg Scullard#5365 in the Developer General Channel on 08/17/2020

@Xi195 immutable (or controlled mutability) is supported in that for the duration of the file existing on the Hedera network, it can be immutable (or modified by approved keys). You will be able to extend the duration of the file subject to payment in hBar so it remains on the network.

Hedera acknowledged the true cost of storing data on the network upfront which is why

entities eventually expire unless storage is paid for. This is in preference to starting out offering everything for free, then charging fees later on.

22. By Xi195#0023 in the Developer General Channel on 08/15/2020

Hello everyone. I'm curious if there's a way to create a file with no expiration. I'm used to data in Ethereum and Bitcoin transactions persisting indefinitely, so I'm having a hard time understanding why (and how) fileCreationTransactions help me explore. Apologies if this is a dumb question, but I was thinking of some use cases that aren't viable with expiring records. Dozing off writing this out doesn't help either. Below is a screenshot of what I'm talking about. Thanks in advance for any responses.

23. By bugbytes#0817 in the Developer General Channel on 08/11/2020

```
PreAuthorizationLimit
  Account
  Gateway[]
  Outflow
  Inflow
  Expires
  \ \ \
```

24. By bugbytes#0817 in the Developer General Channel on 08/11/2020

Although the PreAuth limit probably needs to include Account Numbers and an Expires on time.

25. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 08/04/2020

> @Paul Madsen (Hedera Hashgraph) Currently expirationTime shows in the past, will this be updated or what is/will be the process to detect accounts to be flushed?

@AlexTaylor when we implement expiration we will extend all accounts to some time in the future (with some degree of randomness). As long as accounts have some (tiny amount of) hbars, they will autorenew at that future time.

26. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 08/04/2020

> @Paul Madsen (Hedera Hashgraph) I am pretty sure that you would have to generate a transaction record for account/contract/topic etc autorenewal and export it as part of the current record stream

@dgustator correct

27. By AlexTaylor#3551 in the Developer General Channel on 08/04/2020

> When we start enforcing expiration, nodes will just flush out any objects in state unable to pay for their continued storage

@Paul Madsen (Hedera Hashgraph) Currently expirationTime shows in the past, will this be updated or what is/will be the process to detect accounts to be flushed?

28. By dgustator#8125 in the Developer General Channel on 08/04/2020

@Paul Madsen (Hedera Hashgraph) I am pretty sure that you would have to generate a transaction record for account/contract/topic etc autorenewal and export it as part of the current record stream

29. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 08/04/2020

When we start enforcing expiration, nodes will just flush out any objects in state unable to pay for their continued storage

30. By 0xholman#4290 in the Developer General Channel on 08/04/2020

> @0xholman there is no explicit tx for renewal. When we turn it on, whenever an account(or a file etc) expires, the nodes will calculate the fee necessary to pay for the extension of its storage. That fee will be subtracted from the appropriate account. @Paul Madsen (Hedera Hashgraph) thank you, for some reason I thought I'd seen an account renewal transaction in my history some time back, I'm guessing I mistook it for an account record request from the hedera wallet

31. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 08/04/2020

@0xholman there is no explicit tx for renewal. When we turn it on, whenever an account(or a file etc) expires, the nodes will calculate the fee necessary to pay for the extension of its storage. That fee will be subtracted from the appropriate account.

32. By Craig Drabik#8023 in the Java Channel on 07/17/2020

You don't have to redeploy. The contract has to pay for its resources. It will attempt to do so when the autoRenewPeriod expires. It will extend the expiration up to the autoRenewPeriod length according to available funds.

33. By Deleted User#0000 in the Java Channel on 07/16/2020

can someone explain why Hedera chose to have smart contract expiration dates? is it to save space on unused contracts?

34. By bugbytes#0817 in the Javascript Channel on 07/07/2020

The transaction expired may have come from setting the TX start seconds too far in the past, basically you have the window from the TX start time for the life of Expiration seconds, which I believe is presently limited to 180s max.

35. By keerthi#3714 in the Javascript Channel on 07/07/2020

Hi , I have started working on hedera. I am using Javascript SDK "hashgraph/sdk", I m trying to use fileService. But I m getting error as "Invalid transaction start" when I execute the code given in the official doc. When i modify these setExpiration and settransactionId's validstartseconds parameter, Iam getting error as " transaction expired". Could you please guide me ?

36. By Gokul#6925 in the Developer General Channel on 06/22/2020

@bugbytes thanks for ur reply, now i could understand. lets assume i am adding a record to an array in the contract and calling a function to retrieve an array , in both the case i will paying some hbars or gas, so in addition to these charges I also need to pay a rent to have my records stored in the network. Is this what you are saying ryt ????

37. By Johnda98#0683 in the Java Channel on 06/15/2020

<p>Asset's Hedera held Expiration Time : .. : PT2191H40M
<p>Asset's Hedera held Expiration Time : .. : null
<p>Name : JDx Auction JDx</p>

Exception in thread "main" io.grpc.StatusRuntimeException: UNAVAILABLE: HTTP status code 503

invalid content-type: text/html

headers: Metadata(:status=503,cache-control=no-cache,content-type=text/html)

DATA-----

<html><body><h1>503 Service Unavailable</h1>

No server is available to handle this request.

</body></html>

DATA-----

38. By Cooper#2101 in the Javascript Channel on 05/21/2020

"The key that has the ability to update or delete the topic. expirationTime can be modified by anyone. If no adminKey is specified, updateTopic may only be used to extend the expirationTime, and deleteTopic is disallowed." - <https://docs.hedera.com/guides/docs/sdks/consensus/create-a-topic>

39. By Greg Scullard#5365 in the Developer General Channel on 05/06/2020

@sof.hbar there is no expiration date on keys, only on accounts, contracts, topics and files. This means that the above entities need their storage on ledger paid for. If an account has 0 balance when it reaches its expiry date/time, it's deleted.

40. By sof.hbar#2222 in the Developer General Channel on 05/06/2020

what means the expiration day of the public key?

41. By Johnda98#0683 in the Java Channel on 04/16/2020

abstracting out.. COULD BE.. maybe.. or not.. an implementation issue technically that misunderstands what a smart Contract (SC) really and truly is. basically is should not be deleteable .. yes can expire on the owners paying account but NOT to be deleteable by a keypair unless a platform can set the new keypair of the buyer to the Contract WITHOUT the seller having to sign off on. Thoughts ?

42. By bugbytes#0817 in the Developer General Channel on 03/12/2020

Technically speaking, accounts with zero balances are allowed, and if I recall correctly, at the moment, the account renewal process has not yet been implemented on the network (we all get a free ride for now).

43. By nateo#7017 in the Developer General Channel on 03/12/2020

`An account cannot exist at 0 HBar, every 90 days there will be a renewal fee (don't worry, the renewal is super low you will never notice it) that if you don't have any funds, it will close your account.`

44. By Supremax67#5749 in the Developer General Channel on 03/08/2020

@Fluli Without renewal fees, someone could and can attack the network from within, spamming new accounts opening until the network can't afford it anymore.

45. By Supremax67#5749 in the Developer General Channel on 03/08/2020

Once proxy staking comes out, your renewal fee will be a joke.

46. By Supremax67#5749 in the Developer General Channel on 03/08/2020

@Fluli A reward for going through KYC is the 5 HBar. An account cannot exist at 0 HBar,

every 90 days there will be a renewal fee (don't worry, the renewal is super low you will never notice it) that if you don't have any funds, it will close your account.

47. By Supremax67#5749 in the Developer General Channel on 03/07/2020

@Nistrim Renewal fees may not have been taken, but they are definitely part of their calculator fee models. They are set as a 90 days.

48. By Nistrim#1750 in the Developer General Channel on 03/07/2020

btw, I have not seen Hedera taking any account renewal fees, @Supremax67. I have a couple of 1 hbar accounts, and they are all older than 90 days, and still have 1.00000000 hbar in there

49. By dgustator#8125 in the Developer General Channel on 02/12/2020

@UnknownSoul @bugbytes It is usually when start time is in a future not past ,it is ok if your start time is less than a current node time as long it is within transaction expiration limits

50. By Johnda98#0683 in the Developer General Channel on 01/26/2020

@Greg Scullard. G.. there's 2 hbar balances.. The one held by the contracts paying account ? Where autorenew deductions made from.. And another balance of the hbar held payable by the contract.. Ie sent with calls from users accounts to that payable contract. What happens to that balance ? if sadly the contract expires at that point

51. By Greg Scullard#5365 in the Developer General Channel on 01/26/2020

@Johnda98 my understanding is that the contract will auto renew itself out of that account so when it expires it's likely the account is empty.

52. By Johnda98#0683 in the Developer General Channel on 01/26/2020

Sooo.. When a HH Contract expires any payable hbar held at that time is held locked in the contracts hh account? Or that instance expires also at that time? Ie hbar lost

53. By Johnda98#0683 in the Developer General Channel on 01/26/2020

Ethereum the eth is locked until the contract logic pays out or not.. User has trust of immutability .. But when expiration is introduced.. Who gets the locked balance.. No-one hopfully.. And any user will have to be aware of .. Including the deployer/payer hh account... Or.. Maybe the hbar bal is kept in the contracts hh account upon expiry .. Was discussed with @dgustator constantin :)

54. By Johnda98#0683 in the Developer General Channel on 01/26/2020

Remember there is a difference between the contract's HH 'owning.. Deploying ie paying account.. And the hbar of any held in a contract that is marked/method as payable.
@Greg Scullard. .. Thats raises a question perhaps.. When a payable contract itself holding hbar expires ..does the hbar held get returned to the HH paying/owning account? Or is lost? Thats needed to know so a user can trust a contract.. if its owning paying account fails to maintain balance ie expires on autorenew.. Hbar lost is preferable to default bal send to contract owning paying ac. Theres no way the scVM knows what accounts held in a contracts state are to receive what balance ..upon expiry

55. By JSilver#6283 in the Developer General Channel on 01/25/2020

And 2: the contracts will expire and have limitations on storage. So it is critical that you

make them "payable" so you can deposit coins, and you include a service to prune the State as needed.

56. By JSilver#6283 in the Java Channel on 01/07/2020

```
@you_ate_my_food      ContractId mainReader = new ContractId(0, 0, 15234);
    System.out.println("The Main Reader is      " + mainReader);
    ContractInfo contractInfo = new ContractInfoQuery()
        .setContractId(mainReader)
        .execute(client);
```

```
    long secondsEpoch =
TimestampHelper.timestampFrom(contractInfo.expirationTime).getSeconds();
    Date date = new Date(secondsEpoch * 1000L);
```

```
    System.out.println("    Expiration    " + date.toString());
    System.out.println("    Storage      " + contractInfo.storage);
```

57. By mehcode#0963 in the Java Channel on 01/03/2020

@nerooweb So accounts are "renewed" for "autoRenewPeriod" more time when they expire. You can either control that by messing with "autoRenewPeriod" or just paying for a year at a time by using "setExpirationTime".

58. By nerooweb#5104 in the Java Channel on 01/03/2020

@ all: What does setExpirationTime on Accounts do? They have a autoRenewPeriod and as long as its paid for, they don't expire or...?

Comments in 2023



Hello, if you want to collect multiple signatures for your transaction, scheduled transaction might be useful. Scheduled transaction is a special transaction recorded on chain waiting for required signatures before it can be executed. <https://docs.hedera.com/hedera/sdks-and-apis/sdks/schedule-transaction/create-a-schedule-transaction>

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2. By phoenix#6938 in the Developer General Channel on 03/01/2023

@Pathorn So you mean, the seller have to create a scheduled transaction?
In Zuse marketplace, when the buyer buy the nft, the seller do nothing.
The buyer just approve.

3. By Pathorn#7333 in the Developer General Channel on 02/28/2023

Non-custodian is a bit tricky. No, when the seller lists the NFT, the scheduled transaction should be not created yet since we don't know who will buy the NFT (the seller need to specify that in the scheduled transaction) . The seller can list the NFT on the marketplace and price (marketplace will just the detail on its database). Once the buyer decides to buy it, the marketplace should notify the seller so the seller can create and sign a scheduled transaction. Then the buyer should get notified about the scheduled transaction and sign it to execute the trade. Please take a look at the schedule transaction example here. <https://docs.hedera.com/hedera/sdks-and-apis/sdks/schedule-transaction/create-a-schedule-transaction>

4. By phoenix#6938 in the Developer General Channel on 02/28/2023

@Pathorn I am going to do the non-custodian option.
So, I tried to implement the scheduled transaction.
But I didn' t yet.

I have a few question.

1. When seller list nft in a marketplace, schedule transaction will be created?
2. When buyer buy a nft, how can I do in frontend? Do I sign a schedule transaction in frontend?

Please send me a schedule transaction example.

5. By Pathorn#7333 in the Developer General Channel on 02/28/2023

There are many options for this.

1. You can do the custodian option. The seller will transfer NFT to a marketplace account so when the buyer want to buy, he can buy directly from the marketplace account
2. The seller must allow the marketplace account to transfer NFT out of the seller wallet. When the buyer wants to buy an NFT, the marketplace will do the swap.
3. Non-custodian solution, this is the safest option, also the most complex one. The buyer and seller can do an atomic swap directly without intermediary using scheduled transaction. <https://docs.hedera.com/hedera/core-concepts/scheduled-transaction>. However, the marketplace needs to have a way for buyer and seller to communicate.

6. By bugbytes#0817 in the Developer General Channel on 02/24/2023

On one level it makes sense, the payer is indeed signing 3 times with 3 different signature (since countersigning is not the same as creating the scheduled tx). But indeed, I don't have any old examples to draw from to see if this has changed. I guess its left to the API consumer to sort it out.

7. By rhysied#6748 in the Developer General Channel on 02/24/2023

hi bugbytes, assuming you were responding to me then this is an example: `https://testnet.mirrornode.hedera.com/api/v1/schedules/0.0.3562898`

you can see the public_key_prefix ending in `byO6w=` has been added three times. Once when the scheduled transaction was created (this account was the payer) and

subsequently when adding the other keys (again, it was used as a fee payer to add a signature that doesn't have an account in its own right to pay fees if that makes sense)

8. By rhysied#6748 in the Developer General Channel on 02/24/2023

has anyone been using scheduled transactions for a while? I'm not sure if my memory is incorrect but I've just noticed on testnet that now duplicate signatures are listed with different timestamps whereas I thought before if signatures were already present they were "discarded" (or to put it another way only new signatures were added to the list)

9. By Ashe Oro#8558 in the Developer General Channel on 02/10/2023

btw @altoid HIP583 was originally scheduled to be included in the 0.35 release in early March, but seeing there's on-going discussions it may be delayed <https://github.com/hashgraph/hedera-improvement-proposal/pull/673>

10. By Michael Garber#5033 in the Developer General Channel on 02/08/2023

You may find this helpful

```nonce:```

> The identifier for an internal transaction that was spawned as part of handling a user transaction. (These internal transactions share the transactionValidStart and accountID of the user transaction, so a nonce is necessary to give them a unique TransactionID.) An example is when a "parent" ContractCreate or ContractCall transaction calls one or more HTS precompiled contracts; each of the "child" transactions spawned for a precompile has a id with a different nonce.

<https://hashgraph.github.io/hedera-protobufs/#:~:text=Scheduled%20or%20no-,nonce,-int32>

<https://docs.hedera.com/hedera/sdks-and-apis/sdks/transactions/transaction-id#:~:text=The%20nonce%20value%20for%20the%20parent%20transaction%20ID%20is%2000>

```is\_approval:```

> (indicating allowance) -

> If true then the transfer is expected to be an approved allowance and the accountID is expected to be the owner. The default is false (omitted).

[https://hashgraph.github.io/hedera-protobufs/#:~:text=or%20receives\(positive\)-,is_approval,-bool](https://hashgraph.github.io/hedera-protobufs/#:~:text=or%20receives(positive)-,is_approval,-bool)

<https://docs.hedera.com/hedera/sdks-and-apis/sdks/cryptocurrency/approve-an-allowance>

11. By RaphaelM#1144 in the Smart Contracts Channel on 02/01/2023

Hey ! @Miguel Ángel- ioBuilders

Like DeeJay said we don't have any fee component inside the HederaToken struct of the precompiled so you can't update the fee schedule from the precompiled contract.

From HIP-514: Hedera Token Service Precompiled Contract Token Management Functions <https://hips.hedera.com/hip/hip-514>

You can see that they are an user story that talk about retrieve the fee schedule but not update it, I need to talk with the team to see if this is something on the roadmap.

12. By Miguel Ángel- ioBuilders#5464 in the Smart Contracts Channel on 01/31/2023
Hi @RaphaelM!!

Yes, we could do it using TokenFeeScheduleUpdate sdk function, or setting the custom fee while creating the token with these two functions you mentioned, but our idea was to associate custom fees to existing tokens through the precompile since it is possible to create the custom fees through the FeeHelper smart contract.

13. By RaphaelM#1144 in the Smart Contracts Channel on 01/31/2023

Also be aware you can't update the fee schedule if you don't have a fee schedule key set for the token.

14. By DeeJay#0076 in the Consensus Service Channel on 01/27/2023

so instead you track the items price (centralized / decentralized) and flag the user who then signs the message to buy? or you add a proxy layer of indirection - user sets the approval spend (or places funds in escrow) to pay for the item then the app buys using the users funds - noting that smart contracts do not have a scheduler so that bit / polling would happen outside anyway. Maybe user prefunds (escrow) and external bot monitors, if there is a trade to make it touched the SC which executes and the user later comes to collect.

I realise you are offering a stylistic 'problem' and you might not like my ideas, I am simply trying to illustrate (quickly!) most things can be reimagined to achieve the same end goal without giving full authority out on a more permanent basis.

15. By DeeJay#0076 in the Javascript Channel on 01/21/2023

```
const scheduledTxRecord = await new
TransactionRecordQuery().setTransactionId(TransactionId.fromString(scheduledTxId.toString()))
.execute(client);
console.log('The scheduled transaction record is: ' + JSON.stringify(scheduledTxRecord,
null, 2));
```

I will be honest I expected the code you provided to work but here is a workaround

16. By Greg Scullard#5365 in the Developer General Channel on 01/20/2023

Scheduled on the 20th (today) to happen on 29th.

17. By DeeJay#0076 in the Javascript Channel on 01/19/2023

scheduled tx (currently) you have 30 mins

18. By bmino#8415 in the Javascript Channel on 01/19/2023

thanks for the help @DeeJay! confirmed I can lock the transaction accountid and validStart but the validDuration cannot exceed 120 (2 minutes) so at best we could set the start a day in the future to gather signatures, but would only have a 2 minute window to execute the tx. gonna investigate scheduled txs now

19. By DeeJay#0076 in the Javascript Channel on 01/19/2023

otherwise you need to use a scheduled tx

20. By DeeJay#0076 in the Smart Contracts Channel on 01/19/2023

```
/// A list of token key types the key should be applied to and the value of the key
struct TokenKey {

    // bit field representing the key type. Keys of all types that have corresponding bits
    set to 1
    // will be created for the token.
    // 0th bit: adminKey
    // 1st bit: kycKey
    // 2nd bit: freezeKey
    // 3rd bit: wipeKey
    // 4th bit: supplyKey
    // 5th bit: feeScheduleKey
    // 6th bit: pauseKey
    // 7th bit: ignored
    uint keyType;

    // the value that will be set to the key type
    KeyValue key;
}
```

21. By DeeJay#0076 in the Javascript Channel on 01/19/2023

yes (I think it's 2 minutes...that's what is in my head but would have to go check). you can extend that using scheduled transactions (costs a little more) then you get to 30 minutes for all signatures to be collected [roadmap suggests extending that 30 mins out for longer times - up to 1 year last i saw]

22. By DeeJay#0076 in the Javascript Channel on 01/19/2023

no. the signed bytes are for the specific transaction with a stabilized hash for a given node that has to round trip in the 2-minute window (create, get tx id, freeze, sign, add signatures, submit). You can go longer by using scheduled tx but the same issue for your use case. (my threshold comment was perhaps muddying the water - just how I think of it as in your case you need X of X signatures)

23. By MyCryptoHouse#1072 in the Developer General Channel on 01/17/2023

I'm trying to find tokenomics schedule for Hedera, Hedera current circulation is 25B, and max will 50B, so my question is;

1. what year will reach max 50B ?
2. what is the annual inflation rate ?

Thx so much

24. By HarvirPeralta#8768 in the Developer General Channel on 01/10/2023

also may i know which supply schedule is the correct one?

25. By DeeJay#0076 in the Token Service Channel on 01/06/2023

the fees are set in fiat so fluctuate with hbar price is all. unlike gas paid to a SC it is safe to offer up more hbar as max tx fee as it will only take what is needed per the fee schedule.

code in these tutorials would actually be used? If i want to create a token class, and mint an NFT for Alice, in a way where she pays for it, how do i go about doing this? Alice's account is not going to be created from my account in the real world, right? Do i have to pay to create the token class, mint the NFT, then transfer, and wait for her to sign the transaction? I would rather Alice pay the fees to begin with. I attempted to do a scheduled transaction but it responded that the transaction type is not whitelisted.

3. By Supremax67#5749 in the Developer General Channel on 12/20/2022

You can have a scheduled transaction call a smart contract, which can set the next scheduled transaction.

4. By Supremax67#5749 in the Developer General Channel on 12/20/2022

That's called Scheduled transaction on Hedera.

5. By Ed Marquez#6403 in the Javascript Channel on 12/16/2022

The release schedule for mirror node is slightly faster than releases for services, so I'd say a few weeks. Things may be slowing down tho due to EOY holidays.

6. By bugbytes#0817 in the Developer General Channel on 12/13/2022

For those of you who'd like to look at the schedule, open chrome tools and set the browser to emulate mobile, then you can drag the sessions into view.

7. By bugbytes#0817 in the Developer General Channel on 12/13/2022

Anyone else find the ecosystem week webpage desktop hostile, can't scroll (horizontally) to see the schedule. https://hedera.com/ecosystem-week?page=

8. By nube#7126 in the Developer General Channel on 12/09/2022

hedera hasn't published a schedule past 2025

9. By Jota88keys#7759 in the Developer General Channel on 12/09/2022

I mean...in the Hedera supply schedule I attached is not included the Hedera preminted treasury (32,4%). The total supply showed is arround 27 BHbar, so there are arround 23 BHBar left (To get 50 HBar) and that's 46 % of total supply, not 32,4%.

10. By nube#7126 in the Developer General Channel on 12/09/2022

not that it matters (Hedera seem to have already disregarded it), but here's the most recently published schedule afaik from Hedera from September 2021.
<https://hedera.com/treasury-management-report#DISTRIBUTIONS>

11. By Jota88keys#7759 in the Developer General Channel on 12/09/2022

Hi guys! I'm taking a look on the Hedera Tokenomics and I have a question. In the Hedera supply schedule the total amount of tokens is arround 27BHbar. So, arround 23 BHbar are nedded to reach 50 BHbar. But Hedera preminted treasury is arround 16.2 BHbar. So, where is the 6.8 BHbar left? I would appreciate some help because I'm a pretty new investor in crypto and I would like to understand this project better. I would like to start investing in Hbar.

12. By kantorcodes#3716 in the Token Service Channel on 12/05/2022

Gotcha. It would be nice if there was a way to filter scheduled transactions by ones who have been executed

13. By Liebenfiels#7895 in the Developer General Channel on 12/05/2022

NASA Artemis 3 moon landing mission is scheduled for 2025. Still long way, hope it answers your question.

14. By nube#7126 in the Developer General Channel on 12/04/2022

Transactions are manually throttled on the network at the moment. The throttles are set to

crypto (inc. token) transfers 10,000 tps
consensus service 10,000 tps
token minting
 fungible - 125 tps
 non-fungible 50 tps
schedule transaction 100 tps
smart contract 350 tps
<https://docs.hedera.com/guides/mainnet>

15. By Supremax67#5749 in the Developer General Channel on 12/01/2022

You said emissions, you mean release schedule? The term emission is more used for carbon emission.

16. By reg.cs#2829 in the Consensus Service Channel on 11/30/2022

It still would be better to have the opportunity to schedule a SubmitTransaction that is executed when a certain group of people signs it without the need for a SubmitKey. So, that the ScheduleTransaction gets a Property "RequiredKeys", which defines who needs to sign the ScheduleTransaction to be executed.

17. By Grand Architect Yggsmark Von Pop#1045 in the Token Service Channel on 11/30/2022

```
const transaction = await new TokenCreateTransaction()  
    .setTokenName("USD Bar")  
    .setTokenSymbol("USDB")  
    .setTreasuryAccountId(treasuryId)  
    .setInitialSupply(10000)  
    .setDecimals(2)  
    .setAutoRenewAccountId(treasuryId)  
    .setAdminKey()  
    .setFreezeKey(<key>)  
    .setFeeScheduleKey(<key>)  
    .setPauseKey(<key>)  
    .setWipeKey(<key>)  
    .setSupplyKey(<key>)  
    .freezeWith(client)
```

18. By Grand Architect Yggsmark Von Pop#1045 in the Token Service Channel on 11/25/2022

PrecheckStatusError: transaction 0.0.1455664@1669390103.430690128 failed precheck with status PAYER_ACCOUNT_NOT_FOUND

at new PrecheckStatusError (C:\Users\Raymond\OneDrive\Documents\hello-hedera-js-sdk\node_modules\@hashgraph\@24m\@sdk\lib\PrecheckStatusError.cjs:54:5)

```
    at TokenCreateTransaction._mapStatusError
(C:\Users\Raymond\OneDrive\Documents\hello-hedera-js-sdk\node_modules\
[4m@hashgraph ← [24m\sdk\lib\transaction\Transaction.cjs:1381:12)
    at TokenCreateTransaction.execute (C:\Users\Raymond\OneDrive\Documents\hello-
hedera-js-sdk\node_modules\ ← [4m@hashgraph ← [24m\sdk\lib\Executable.cjs:690:22)
← [90m    at processTicksAndRejections (node:internal/process/task_queues:96:5) ← [39m
    at async main (C:\Users\Raymond\OneDrive\Documents\hello-hedera-
js-sdk\index2.js:14:20) {
  status: Status { _code: ← [33m2 ← [39m },
  transactionId: TransactionId {
    accountId: AccountId {
      shard: Long { low: ← [33m0 ← [39m, high: ← [33m0 ← [39m,
unsigned: ← [33mfalse ← [39m },
      realm: Long { low: ← [33m0 ← [39m, high: ← [33m0 ← [39m,
unsigned: ← [33mfalse ← [39m },
      num: Long { low: ← [33m1455664 ← [39m, high: ← [33m0 ←
[39m, unsigned: ← [33mfalse ← [39m },
      aliasKey: ← [1mnull ← [22m,
      aliasEvmAddress: ← [1mnull ← [22m,
      _checksum: ← [1mnull ← [22m
    },
    validStart: Timestamp {
      seconds: Long { low: ← [33m1669390103 ← [39m, high: ← [33m0 ←
[39m, unsigned: ← [33mfalse ← [39m },
      nanos: Long { low: ← [33m430690128 ← [39m, high: ← [33m0 ←
[39m, unsigned: ← [33mfalse ← [39m }
    },
    scheduled: ← [33mfalse ← [39m,
    nonce: ← [1mnull ← [22m
  },
  contractFunctionResult: ← [1mnull ← [22m
}
```

19. By Giuseppe Bertone#0526 in the Smart Contracts Channel on 11/23/2022

Hi @alberto-IoBuilders , that behaviour is currently expected, but please don't rely on that because we are disabling key inheritance of msg.sender for ContractCreation via sending EthereumTransaction. The result is by default, contracts created via ethereum transaction to have empty admin key. The PR is already merged (<https://github.com/hashgraph/hedera-services/pull/4110>), and it is scheduled to be present into the v.0.32.0 (testnet is currently at v0.31.3)

20. By bugbytes#0817 in the Java Channel on 11/23/2022

They're asking a different question: Why can't they schedule that TX, scheduling a token associate is not presently supported by the hedera network - actually most of hedera transactions are NOT schedulable at this time, its a bummer. I'm going to have to write my own mempool to support DAO management to facilitate multi-party multi-signature transactions for simple things such as treasury key rotation. Or hedera could just open up the support for scheduled transactions.

21. By Unkown#4103 in the Javascript Channel on 11/23/2022

hey guys when i try to exectute the code I'm not able to mint
an nft

```
\node_modules\@hashgraph\sdk\lib\ReceiptStatusError.cjs:45
```

```
  super(props, `receipt for transaction ${props.transactionId.toString()} contained error  
status ${props.status.toString()}`);  
  ^
```

ReceiptStatusError: receipt for transaction 0.0.48908382@1669195701.597815572
contained error status INSUFFICIENT_TX_FEE

```
transactionId: TransactionId {  
  accountId: AccountId {  
    shard: Long { low: 0, high: 0, unsigned: false },  
    realm: Long { low: 0, high: 0, unsigned: false },  
    num: Long { low: 48908382, high: 0, unsigned: false },  
    aliasKey: null,  
    aliasEvmAddress: null,  
    _checksum: null  
  },  
  validStart: Timestamp {  
    seconds: Long { low: 1669195701, high: 0, unsigned: false },  
    nanos: Long { low: 597815572, high: 0, unsigned: false }  
  },  
  scheduled: false,  
  nonce: null  
},  
transactionReceipt: TransactionReceipt {  
  status: Status { _code: 9 },  
  accountId: null,  
  fileId: null,  
  contractId: null,  
  topicId: null,  
  tokenId: null,  
  exchangeRate: ExchangeRate {  
    hbars: 30000,  
    cents: 144016,  
    expirationTime: 2022-11-23T10:00:00.000Z,  
    exchangeRateInCents: 4.800533333333333  
  },  
  topicSequenceNumber: Long { low: 0, high: 0, unsigned: false },  
  topicRunningHash: Uint8Array(0) [],  
  totalSupply: Long { low: 0, high: 0, unsigned: false },  
  scheduledTransactionId: null,  
  serials: [],  
  duplicates: [],  
  children: []  
}  
}
```

22. By reg.cs#2829 in the Consensus Service Channel on 11/22/2022

But that limits scenarios where I want a scheduled transaction to define the demands for an inner transaction (as in the one outlined above, where I want to send a message to an open ConsensusTopic only if multiple people agree). Or am I wrong?

23. By bero#0078 in the Java Channel on 11/22/2022

I was trying to create a tokenAssociateTransaction and wanted a user to sign it on his end using their private key. I thought that using scheduled transactions was the optimal choice, however I ran into the issue mentioned above. Any ideas on how I can achieve my goal ?

24. By bero#0078 in the Java Channel on 11/22/2022

Hello guys, are the TokenAssociateTransactions not whitelisted in the scheduledTransactions ?

25. By JeromeK#0064 in the Token Service Channel on 11/22/2022

@kantorcodes <https://docs.hedera.com/guides/docs/mirror-node-api/rest-api#schedule-transactions>

There is no filter called "executed" what you have is "executed_timestamp"

26. By kantorcodes#3716 in the Token Service Channel on 11/22/2022

Hello looking at the schedules API, looks like the "executed" filter does not work?

<https://mainnet-public.mirrornode.hedera.com/api/v1/schedules?executed=true>

27. By Greg Scullard#5365 in the Consensus Service Channel on 11/18/2022

You add signatures to the scheduled transaction to meet the demands of the inner transaction.

28. By Michael Garber#5033 in the Consensus Service Channel on 11/18/2022

Why not set a submit key as a threshold key of 100 with 10 required signatures to meet the threshold? You can then create your topic, schedule a transaction of a submit message, and when you sign that scheduled tx with any of the 10 signatures, the message posts to the topic. Then just repeat that flow

29. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 11/17/2022

If is more than 2 min, you will need to use `ScheduleTransaction` and send signed from Client side

30. By reg.cs#2829 in the Consensus Service Channel on 11/17/2022

Now, my related question is: Why were scheduled transaction designed in a way, that requires the inner transaction to define the required signatures? Why don't we sign the outer (schedule) transaction instead of the inner (scheduled) transaction? This would allow scenarios like the one above. I guess, there is some reason for that and I would like to understand it.

31. By reg.cs#2829 in the Consensus Service Channel on 11/17/2022

Well, I kind of want the latter ... but not with an arbitrary number of people. I think, I didn't explain it well enough. I try it in a more structured way:

- (1) I have application which works in a round-based mode
- (2) I have a HCS topic without a SubmitKey

- (3) I have 100 users and all are subscribed to the HCS topic
- (4) Each round, an algorithm choose 10 users out of the 100 , which now form a group
- (5) One of the 10 people now schedules a ConsensusSubmitMessage, which the N out of the 10 people should be required to sign
- (6) If N sign it, the message is posted to the HCS topic, if not, it's not posted
- (7) The 90 remaining users do something depending on wether the message is received or not until the next round starts
- (8) Next round: Start again from step (4)

With the current implementation of scheduled transactions, the ConsensusSubmitMessage would immediately be posted (since the HCS topic has no SubmitKey set). If I set a SubmitKey for first 10 users, I could only do one round, because I can never be sure that these 10 users are still online to sign the TopicUpdate transaction in order to set a new SubmitKey for the next group.

32. By Greg Scullard#5365 in the Consensus Service Channel on 11/17/2022

It does indeed and avoids you having to manage the keys on the topicId itself. The point I was referring to however is that I got the impression that you wanted scheduled transaction to accept more signature (and maybe from different private keys) than those known to Hedera in relation to a TopicId which would be odd since Hedera verifies that signatures satisfy its understanding of when a transaction is approved and can put put forward to consensus (it has sufficient signatures matching the topic's keys), as opposed to using scheduled transactions as a means of collecting an arbitrary number of signatures which leads to another question - when does Hedera execute the scheduled transaction in that case ?

33. By reg.cs#2829 in the Consensus Service Channel on 11/17/2022

Yeah, that's what I was asking for in connection with ConsensusSubmitMessages: Give a group of people the ability to schedule a ConsensusSubmitMessages so that it goes through when the group (or a specific threshold number of the group members) signed it. But, the group changes after the ConsensusTopic was created and with each message. The latter is not possible. I see that Greg's proposed method is a workaround, but it essentially recreates the schedule transaction logic on the app level, doesn't it?

34. By reg.cs#2829 in the Consensus Service Channel on 11/17/2022

I am still learning, so maybe I just don't understand the purpose of scheduled transaction correctly. What you describe is certainly a way to do it (thanks), but it also seems like it would recreate the scheduled transaction logic on the app level. I thought the scheduled transactions are designed for this purpose: Give a group of people the chance to approve a specific action (transaction) without requiring them to send around the transaction for manual signing. Sure, I can build this logic also on the app level using the HCS - but what's the benefit of a scheduled transaction then?

35. By Ed Marquez#6403 in the Java Channel on 11/16/2022

In this case, both Alice and Bob sign the transaction because a balance is being deducted from both accounts.

As a general rule, accounts for which a balance is being deducted have to sign that tx. Options like offline signing, scheduled transactions, allowances give you ways to collect all required signatures or approve a third party to spend your balance

36. By reg.cs#2829 in the Consensus Service Channel on 11/10/2022

I guess, I will have to do it in another way. But it would be great, if there would be a possibility in future versions of the SDK to sign scheduled transactions themselves without requiring a separate topic/account with a predefined key(list). Or is this for some reason not done on purpose, @Greg Scullard?

37. By reg.cs#2829 in the Consensus Service Channel on 11/10/2022

Yeah, that is exactly what I need: Schedule a ConsensusSubmitMessage and have each member of the group sign it whenever they are ready. But not with a fixed group (e.g., a governance council), but for a group that changes with every message. I don't want to send a pre-signed transaction to Hedera.

38. By Greg Scullard#5365 in the Consensus Service Channel on 11/10/2022

Having a group of people sign that way would not work unless the topic has a submit key. If hedera sees that all required signatures are present when you schedule the tx, it will execute automatically. The purpose of scheduling a tx is to delegate the signature collection process to hedera until sufficient signatures are present or the schedule expires.

39. By Greg Scullard#5365 in the Consensus Service Channel on 11/10/2022

You'd set keys for submission on the topic itself, then .sign the ConsensusSubmitMessage as many times as required (either directly or via a scheduled tx)

40. By reg.cs#2829 in the Consensus Service Channel on 11/10/2022

I have a more practical question as well: I am trying to schedule a `ConsensusSubmitMessage` (with the Go SDK), which requires a signature from multiple keys. However, there seems to be no `SetKey()` method for the `NewScheduleCreateTransaction()`. I don't want a ConsensusTopic with a SubmitKey, but I sometimes want that (variable) groups of people need to sign a scheduled `ConsensusSubmitMessage` before it gets submitted to the topic. How would I go about this?

41. By reg.cs#2829 in the Consensus Service Channel on 11/09/2022

Yes, but from my perspective this is something that would be up to the creator of the escrow to ensure it is sufficiently funded. From the Hedera perspective, I understand that it might be an issue if there was an army of recurring scheduled transaction that will certainly fail. Maybe there could checks be implemented that cause consensus nodes to cancel the schedule loop if the payer account is not funded for 10 consecutive repetitions of the transaction (or something like this)?

42. By Greg Scullard#5365 in the Consensus Service Channel on 11/09/2022

The challenge with escrow to a certain extent is that it is conditioned on there being sufficient balance in the account to pay, the recurring scheduled transaction could fail repeatedly (and the account owner could switch their keys, meaning the scheduled tx would always fail too).

Even a smart contract solution would only work if the funds are locked into the contract which can't always be the case (e.g. I take out a loan and use a contract to pay interest for 4 years, I may not have the funds to lock 4 years of interest into a contract).

43. By reg.cs#2829 in the Consensus Service Channel on 11/09/2022

Well, I think that either would be great: Having the possibility to schedule multiple

transactions at once or a "repeat=true/false" parameter for the ScheduleCreate transaction, that would automatically schedule the same transaction again after it executes. This could allow some interesting use cases, such as a simple (cost-efficient) escrow that pays out at intervals (which at the moment requires a smart contract). Or a continuous signaling event which submits a message to a consensus topic, which could be used to sync dapp instances.

44. By reg.cs#2829 in the Consensus Service Channel on 11/09/2022

Ah, yes ... you remember it correctly. I mixed things up. He was talking about a smart contract that executes a function and in that function it schedules a ContractCallTransaction that calls the same function in some point in the future.

45. By Greg Scullard#5365 in the Consensus Service Channel on 11/09/2022

For a scheduled tx to re-schedule itself and do something useful, we would need to support multiple transactions in one, eg scheduling a crypto transfer and including a rescheduling of itself. I'm not aware this is planned. Although a recurring schedule could be an alternative (just brainstorming here)

46. By Greg Scullard#5365 in the Consensus Service Channel on 11/09/2022

Iirc this was in the context of smart contracts being able to schedule their next execution. This isn't yet enabled.

47. By reg.cs#2829 in the Consensus Service Channel on 11/08/2022

Yeah, that is clear. This calls a scheduled transaction several times. But what I mean and what Leemon Baird mentioned in one or two talks IIRC is: A scheduled transaction that executes something (like a hbar transfer) and then schedules itself again, so that it goes on indefinitely (until the payer account can't pay anymore) without depending on a software that invokes it again.

48. By Michael Garber#5033 in the Consensus Service Channel on 11/08/2022

I haven't executed this, but I imagine you could query an account balance and as long as it has enough hbar for a scheduled tx then it could work.

```
`while (queryAccountBalance() > 0) {  
  //Create a schedule transaction  
  const transaction = new ScheduleCreateTransaction()  
  .setScheduledTransaction(sendHbar);  
  //Sign with the client operator key and submit the transaction to a Hedera network  
  const txResponse = await transaction.execute(client);  
  //Request the receipt of the transaction  
  const receipt = await txResponse.getReceipt(client);  
  //Get the schedule ID  
  const scheduleId = receipt.scheduleId;  
  console.log("The schedule ID of the schedule transaction is " +scheduleId);  
}`
```

49. By reg.cs#2829 in the Consensus Service Channel on 11/07/2022

Thanks, @Michael Garber! For the keylist, it is clear now. So there is now internal limit set but probably there is a practical in terms of memory or something

Regarding the scheduled transaction: Hm, I think I don't quite understand how that would look like. I was starting to code something like the following:

```
```\nScheduleTransactionA := hedera.NewScheduleCreateTransaction().\n    SetPayerAccountID(accountID).\n    SetScheduledTransaction(NewTransferTransaction())\n\nScheduleTransactionB := hedera.NewScheduleCreateTransaction().\n    SetPayerAccountID(accountID).\n    SetScheduledTransaction(ScheduleTransactionA)\n```\n
```

But that would only schedule one scheduled transaction, which finally executes the transfer transaction. But it would stop there and not repeat itself. What am I doing wrong?

### **50. By Michael Garber#5033 in the Consensus Service Channel on 11/07/2022**

1. I believe this is already theoretically possible. You might schedule a tx that schedules tx and then configure the logic to support when they happen and what they do when they execute. Or maybe you would use a while loop or something else (edited)

2. Its not exactly unlimited see @bugbytes comment on this.  
I don't know what the practical limit is <https://discord.com/channels/373889138199494658/673969691907325983/942062541041971282>

### **51. By pandADA#8280 in the Token Service Channel on 11/06/2022**

Thanks that could work, I was experimenting with those scheduled transactions but haven't yet figured out a way to do it

### **52. By jaycool#5616 in the Token Service Channel on 11/06/2022**

Also - anyone got any good ways of getting around multi /threshold keys for admin key on TokenCreateTransactions? its more challenging as the public keys are required to sign for admin keys. Im about to send a HIP asking if they can implement the functionality onto ScheduleCreateTransaction()

### **53. By reg.cs#2829 in the Consensus Service Channel on 11/03/2022**

2. Is there a limited to how many signatures a scheduled transaction can ask for or is the length of the key list / threshold key essentially unlimited?

### **54. By reg.cs#2829 in the Consensus Service Channel on 11/03/2022**

1. I heard Leemon talk about scheduled transactions that can schedule another transaction, so that there is a transaction that goes on forever on its own (as long as it is funded by fees). Is this already possible or just a planned feature that will be integrated later?

### **55. By reg.cs#2829 in the Consensus Service Channel on 11/03/2022**

Hi, I have two questions related to scheduled transactions:

**56. By jaycool#5616 in the Token Service Channel on 11/03/2022**

Any plans on whitelisting TokenCreateTransaction() so that it can be used for a ScheduledCreateTransaction() ?? Would be a very useful feature

**57. By nube#7126 in the Developer General Channel on 11/01/2022**

distribution schedule is here

<https://hedera.com/treasury-management-report#DISTRIBUTIONS>

**58. By michielswirlds#1775 in the Javascript Channel on 10/27/2022**

So you basically create a scheduled transaction that holds a single transaction that sends the NFT to a recipient and also performs an HBar/token transfer from the recipient to you. Of course, you can include anything in the schedule TX.

Examples:

- <https://docs.hedera.com/guides/getting-started/try-examples/schedule-your-first-transaction>

- (outdated but might be useful): <https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/schedule-example.js>

**59. By michielswirlds#1775 in the Javascript Channel on 10/27/2022**

<https://docs.hedera.com/guides/core-concepts/scheduled-transaction>

**60. By michielswirlds#1775 in the Javascript Channel on 10/27/2022**

Hi @CryptoShaker , this can be done using Scheduled transactions.

**61. By bugbytes#0817 in the Developer General Channel on 10/24/2022**

I may be misunderstanding what broadcasting means in this context. In hedera, it works more like RPC where you contact the target node and give it the signed transaction (that privileged node then gossips to the others to get consensus ordering) there is no mesh of other nodes that can pass-along a signed transaction to a privileged node, at least not yet. (I have been thinking of something of the sort to facilitate multi-signature transactions that are not supported by scheduled transactions, but nobody's built anything public AFAIK yet)

**62. By nube#7126 in the Token Service Channel on 10/14/2022**

Regarding auto account renewal:

Let's say there's an account with 0 hbar left, and it's scheduled for deletion, but it still has a balance of HTS tokens, such as SAUCE, DOVU, USDC etc.

What would happen to those HTS tokens once the account is deleted?

**63. By johnda98#4728 in the Smart Contracts Channel on 10/13/2022**

STS - Scheduled Transaction Service - yep would have to be held to ABFT - else yes might as well cron job / microservice call the Contract from public Cloud on their clock. If the STS is held in consensus ie its atomic/integral with the Contracts it calls/when... you could have the Contract it services micropay for the schedule service... like autorenew and if zero then set PENDING for delete status, then remove.

**64. By tinkerm#4293 in the Smart Contracts Channel on 10/12/2022**

Definitely! I'm sure Leemon chose this example b/c he shares that view

We expect to enable long-term scheduled transactions in December (0.32 release)

If/when that goes smoothly (we're testing the heck out of it!), all that's left is to open the "system contract" bridge between the EVM and the scheduled transaction service

This is a well-charted path now, so with a little nudge we might be able to pull it into Q1 (Dev team would definitely be willing to burn a little midnight oil on it, such a cool feature)

**65. By Iron#4548 in the Smart Contracts Channel on 10/12/2022**

Yes, I know about Stader and how they do their staking. But that's not my use case. Let's ignore staking for now and that is just a distraction from what I'm really after.

What I'm interested in how to schedule a call from a smart contract to itself from a specific time in the future using scheduled transaction.

Dr. Leemon Baird said back in March 2022 in the video I linked above:

\*"So if you wanted to do something like a bond that is making payments every month once a month, the smart contract needs to make a payment well. How does it know when to do it? Some human has to remember to send it a message once a month to make a call to it once a month to wake it up and then they can do the thing to make it do the payment you can set up to be secure. ... \*

\*"A smart contract, well it's running the first time one of the thing it can do it call the hedera transaction that creates a scheduled transaction that a month from now we'll call the smart contract. It makes some payments on its bond and then before it goes to sleep it makes another one for a month in the future and it just keeps doing that forever and now it's alive. You can have actual smart contracts that are living in a real sense and since it has its own um store of hbars you know it could be funded to run for millions of years and it could be set up so that it maybe earns money in some ways in which case it's alive. it's an entity that will run forever and it just keeps going forever"\*

This is exactly what I'm after. Has this been implemented yet in Smart Contract 2.0? Or is there an existing HIP or a work task for this? Do I need to create a HIP?

Thanks

**66. By Iron#4548 in the Smart Contracts Channel on 10/11/2022**

In summary, I want real solid information on these:

- 1) How to schedule a transaction from a smart contract to call itself n days from now (i.e. a smart contract that is self governed and does not require any human interactions)
- 2) How to get a smart contract to stake to a node with its stored HBAR to earn passive HBAR to help self-sustain the smart contract forever.

If I need to enter HIPS for these, let me know. Or if a DEV could reach out to me for a short 1 on 1 chat over discord that would be good too.

**67. By Iron#4548 in the Smart Contracts Channel on 10/11/2022**

I was able to re-find the source where Dr. Leemon Baird was talking about a smart contract being 'alive'. Basically he was saying that a smart contract could schedule a transaction to call itself one month from now. <https://youtu.be/Da3Ot0ssMi4?t=1065> (at around 18:30)

**68. By Iron#4548 in the Smart Contracts Channel on 10/11/2022**

I understand that. I honestly thought there was a scheduled transaction functionality or something like that for smart contracts to avoid using an expensive methodology like using a loop

**69. By Iron#4548 in the Smart Contracts Channel on 10/11/2022**

I thought there was a better / cheaper method to do this by using scheduled transactions or something along those lines.

**70. By Iron#4548 in the Smart Contracts Channel on 10/11/2022**

Another question - how can I get my smart contract to schedule a call to itself say 1 hour from now? I recall Dr. Leemon Baird talking about having a smart contract being 'alive'. Where can I get more info about this?

**71. By DeeJay#0076 in the Token Service Channel on 09/23/2022**

to be clear not talking of a token graveyard (although i have deployed one of those for creators with dud mints where they don't have a supply key). I mean the SC controls the token and implements the burn. I will open up the code repository once i tidy up the unit tests and get it out on mainnet (which requires the upgrade to v0.29 scheduled for 27th Sept) so hopefully, it's next week.

ping me a DM if you want to chat on it more.

**72. By Gaborn#9395 in the Token Service Channel on 09/18/2022**

```
// SPDX-License-Identifier: GPL-3.0
pragma solidity >=0.6.0 <0.9.0;
```

```
import './HederaResponseCodes.sol';
import './IHederaTokenService.sol';
import './HederaTokenService.sol';
import './ExpiryHelper.sol';
```

```
contract TokenCreator is ExpiryHelper{
```

```
 // create a fungible Token with no custom fees
 function createFungible(
 string memory name,
 string memory symbol,
 uint initialSupply,
 uint decimals,
 uint32 autoRenewPeriod
) external payable returns (address createdTokenAddress) {
```

```
 IHederaTokenService.HederaToken memory token;
```

```
token.name = name;
token.symbol = symbol;
token.treasury = address(this);

// create the expiry schedule for the token using ExpiryHelper
token.expiry = getAutoRenewExpiry(address(this), autoRenewPeriod);

// call HTS precompiled contract, passing initial supply and decimals
(int responseCode, address tokenAddress) =
 HederaTokenService.createFungibleToken(token, initialSupply, decimals);

if (responseCode != HederaResponseCodes.SUCCESS) {
 revert ();
}

createdTokenAddress = tokenAddress;
}
}
```

**73. By rhysied#6748 in the Developer General Channel on 09/16/2022**  
(failure is `INVALID\_SCHEDULE\_ID` btw)

**74. By rhysied#6748 in the Developer General Channel on 09/16/2022**  
does anyone know what the current expiration time is locked to on the testnet for scheduled transactions? as I seem to be able to set 24 hour expiry which shows up in the mirror node data for the expiry time yet it doesnt seem to be enforced as signing transactions within the expiry fails unless the scheduled transaction was created recently.

Is it limited to 30 minutes? In which case should it flag my expiry time as invalid / limit it in the mirror to be (now + 30 minutes) ?

**75. By rhysied#6748 in the Javascript Channel on 09/15/2022**  
does anyone know of a way to convert the transactionBody of a scheduled transaction returned via the mirror into a readable JS format? Ideally I want to see the transfers, etc

I know its base64 encoded, but I tried doing Transaction.fromBytes() and it failed and I don't think there is a TransactionBody.fromBytes() method afaics

edit: for anyone else trying to do this I'd recommend you dont basically the main issue I ran into is you cant trust atob() to decode the base64 string due to special characters so you instead need to use protobufjs/util to parse the data into a buffer, and then you can use hashgraph/proto to decode the buffer into a readable ScheduleableTransactionBody

**76. By Ed Marquez#6403 in the Javascript Channel on 09/14/2022**  
I can't speak to the specifics of how HashPack implemented that feature.

However, here are the fee schedules in the documentation:

- <https://docs.hedera.com/guides/mainnet/fees> (main schedule)
- <https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees#gas-fees>

(formula for EVM gas)

and here's the fee estimator tool:

- <https://hedera.com/fees>

My guess is that you could implement some sort of lookup based on the tx type...

**77. By Supremax67#5749 in the Developer General Channel on 09/08/2022**

I couldn't find your reference on Hedera's website for "VirtualBlobValue" or "ScheduleVirtualValue". Perhaps if you could explain what those functions do and a dev could find the Hedera equivalent term?

**78. By shaunuk#9231 in the Developer General Channel on 09/08/2022**

i'm new to the Hedera ecosystem and have just started looking through the code to get a bit more familiar with Hedera's internals, and I've got a question or two if anyone is up for it. it wasn't clear exactly which channel to put my question in, so I'll just ask here instead; are VirtualBlobValue and/or ScheduleVirtualValue objects ever sent/received across the wire between nodes?

**79. By bugbytes#0817 in the Token Service Channel on 09/04/2022**

It relies on scheduled transactions so it might cost a little more, but it gets the job done.

**80. By Matt Woodward#2967 in the Token Service Channel on 08/30/2022**

Hey Millan, welcome to the community! The following may be some good starting points for you:

- How to Develop on Hedera: <https://hedera.com/blog/how-to-develop-on-hedera-back-to-the-basics>

- Get started with the Hedera Token Service - (Part 1: How to Mint NFTs): <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

- Get started with the Hedera Token Service - (Part 2: KYC, Update, and Scheduled Transactions): <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update-and-scheduled-transactions>

- Get started with the Hedera Token Service - (Part 3: How to Pause, Freeze, Wipe, and Delete NFTs): <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-3-how-to-pause-freeze-wipe-and-delete-nfts>

**81. By RobotJones#3858 in the Token Service Channel on 08/19/2022**

when creating a token, is it common to re-use the same key for `adminKey`, `supplyKey`, `kycKey`, `freezeKey`, `wipeKey`, and `feeScheduleKey`? Or is best practice to create and manage 6 separate keys?

**82. By FranFernández {KBL}#6073 in the Javascript Channel on 08/18/2022**

I continue experienced this problem, @Ed Marquez. You can't reproduce it? I'm thinking that the case occurs when the serial number of both tokenId is the same.

```
``js
```

```
const nftsToSend = [
 {
 tokenId: "0.0.47857020",
 serial: 45,
```

```
 },
 tokenId: "0.0.47857020",
 serial: 44,
 },
 {
 tokenId: "0.0.47857106",
 serial: 44,
 }
// [...]
let trx = new TransferTransaction()
 .addHbarTransfer(receiverId, -amount)
 .addHbarTransfer(senderId, amount);

nfts.forEach((nft) => {
 const nftId = new NftId(TokenId.fromString(nft.tokenId), nft.serial);
 trx.addNftTransfer(nftId, senderId, receiverId);
});
``,``
```

\* Maybe is important detail that I'm using this transaction in "setScheduledTransaction" method of a ScheduleCreateTransaction()

### 83. By Justyn#3610 in the Token Service Channel on 08/16/2022

@littletarzan OK, had a play. Here's what I used:

```
``,``
const keylist = KeyList.of();
let transaction = await new TokenUpdateTransaction()
 .setTokenId("0.0.47907576")
 .setAdminKey(keylist)
 .freezeWithSigner(wallet);

transaction = await transaction.signWithSigner(wallet);
``,``
```

Results of trying to modify the different keys.

`setAdminKey`: Updates the key to this and the token becomes immutable.

```
``,``
"admin_key": {
 "_type": "ProtobufEncoded",
 "key": "3200"
}
``,``
```

```
`setKycKey`: Error: INVALID_KYC_KEY
`setPauseKey`: Transaction success but not change to the key
`setWipeKey`: Error: INVALID_WIPE_KEY
`setFreezeKey`: Error: INVALID_FREEZE_KEY
`setFeeScheduleKey`: Error: INVALID_CUSTOM_FEE_SCHEDULE_KEY
```

So, yes, you can change the admin key to whatever `ProtobufEncoded 3200` is and the

Token is then immutable but it doesn't cleanly remove the key. You could send a random key in the update and achieve the same thing I think.

You can't change any of the other keys with the same technique.

Good to know about this but I think the HIP would help still by creating some simple functions for removing the keys.

The HIP has been submitted for review here if anyone was interested in taking a look: <https://github.com/hashgraph/hedera-improvement-proposal/pull/540>

**84. By Francesco Coacci#2822 in the Javascript Channel on 08/11/2022**

Hi @mo5, so token association is necessary to receive a token and can be done in two ways:

- Manually: if an account, let's say, Alice, wants to transfer a token to Bob, she can't unless Bob performs a TokenAssociateTransaction of the token ID that Alice is trying to transfer.

- Automatically: An account can set a number of automatic token associations, so you can avoid using a TokenAssociateTransaction.

Check here: <https://docs.hedera.com/guides/docs/sdks/tokens/associate-tokens-to-an-account>

And here: <https://docs.hedera.com/guides/core-concepts/accounts#auto-token-associations>

Token KYC is used when you need your token to be used only by specific accounts.

Check out these two articles:

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update-and-scheduled-transactions>

**85. By Justyn#3610 in the Token Service Channel on 08/05/2022**

Hi @tinkerm did a HIP ever surface out of this conversation for updating `TokenUpdate` to allow the admin key to sign an update to remove itself and/or other keys (Wipe, KYC, Freeze, Pause, Supply, Fee Schedule) from a Token? I've checked the current list of HIPs and can't see anything obvious that relates to this: <https://hips.hedera.com/all.html>

I think I'm right in saying that right now it's impossible to remove any key that was set at the point of Token creation? The only option seems to be to fudge it with a fake key with the method you suggested in your message above which isn't ideal.

If a HIP doesn't already exist and people still want this addressing, would anyone like to help put a HIP together with me to get this proposal in the queue?

**86. By rhysied#6748 in the Javascript Channel on 08/04/2022**

recommend you have a look through the docs:

`<https://docs.hedera.com/guides/core-concepts/smart-contracts/gas-and-fees>`



`https://docs.hedera.com/guides/core-concepts/smart-contracts/hyperledger-besu-evm#gas-schedule`

**87. By rhysied#6748 in the Developer General Channel on 08/04/2022**

<https://github.com/hashgraph/hedera-services/blob/master/hedera-node/src/main/resources/bootstrap.properties#L106>

Is this list up to date in that these are still the only schedule-able transaction types? And if so any idea when it'll be expanded? (As per <https://github.com/hashgraph/hedera-services/blob/master/docs/scheduled-transactions/revised-spec.md>)

I'm particularly interested in account update which seems to have some support in the SDKs for scheduling (e.g. `.Scheduled()`)

**88. By rhysied#6748 in the Consensus Service Channel on 08/03/2022**

<https://github.com/hashgraph/hedera-services/blob/master/docs/scheduled-transactions/revised-spec.md>

**89. By rhysied#6748 in the Consensus Service Channel on 08/03/2022**

looks like you can do scheduled message submits btw

**90. By rhysied#6748 in the Consensus Service Channel on 08/03/2022**

too many for them each to have their own key then tbh you are probably best off developing your own interface for authorising users and submitting messages but if you have to use hashpack then you might be able to utilise scheduled transactions (assuming they support message submit which I'd need to check tbh).

So potentially users submit a scheduled transaction that contains a message submit transaction (meaning they still pay for message submits which is why I assume you want them to sign), which you would check and then add the required submit key

**91. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 08/02/2022**

@Francesco Coacci Do you know how many `.addNftTransfer()` or `.addHbarTransfer` can have the one Trx? And also how many Trx you can include inside of a `ScheduleTransaction`?

**92. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 08/02/2022**

I'm using like this and its working for my version:

```
```.js
txToSchedule.addNftTransfer(nft.tokenId,nft.serial,senderId,receiverId);
```
```

**93. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 08/02/2022**

So schedule now can be valid for 24h?

**94. By AdrianMsM91 {KBL}#9999 in the Javascript Channel on 08/02/2022**

Hello! is this live? <https://github.com/hashgraph/hedera-sdk-js/blob/main/examples/schedule-example.js#L56>

**95. By rhysied#6748 in the Javascript Channel on 07/26/2022**

thanks Ed, I realised the current time was fairly short to avoid scheduled transactions just floating around in memory, I didnt realise it was that short however

**96. By Ed Marquez#6403 in the Javascript Channel on 07/26/2022**

I'm case it's of interest, a schedule transaction could give you more time (30 minutes) to collect the required signatures for a tx (not all tx types are supported atm). I believe there's also a HIP for long term schedule txs

**97. By rhysied#6748 in the Javascript Channel on 07/26/2022**

you could potentially create and freeze the transaction for some time in the future, but you'd still be limited to the 3 minute validity window from that time (e.g. I create bytes for 1st Jan 2030 00:00:00, it'd still need to be signed and submitted by 00:03:00).

For long periods like this there could be other issues like changes in keys if its a multiparty transaction, changes in the underlying protobufs or just other general issues like network downtime. If future transactions are something you are particularly interested in I'd have a look at scheduled transactions (``https://docs.hedera.com/guides/core-concepts/scheduled-transaction``) which I think are limited to a few days or potentially you might be better looking at a smart contract for logic that spans months / years

edit: sorry, may have missed the point of what you were saying. Most of the time people leave them as the default values, but essentially for your transaction you have the `transaction_valid_start` time which is the timestamp included in the transaction ID after the @ , and you also have the `transaction_valid_duration` field which can be up to 180 seconds (I was incorrect earlier when I said it was 2 minutes). So regardless of when you set the `valid_start` time for (as long as its in the future), you are still limited by the `valid_duration` window (which iirc is a limitation based around how long transaction records are kept in memory on the consensus nodes)

**98. By bugbytes#0817 in the Javascript Channel on 07/18/2022**

Without ``AccountUpdateTransaction`` it is very difficult to do multi-sig key rotation, the alternative is for someone to write a synthetic mempool as a resource for multiple parties to use. ... or use scheduled transactions (if they were supported).

**99. By izradragoon#4876 in the Javascript Channel on 07/18/2022**

I have a question about ``AccountUpdateTransaction``, which allows an old ``Key`` (or ``Keylist``) to be replaced with a new one. I've been experimenting with multisig and scheduled transactions, which work well with **\*\*Blade Wallet\*\***. However, the current whitelist:

`````

`scheduling.whitelist=ConsensusSubmitMessage,CryptoTransfer,TokenMint,TokenBurn`

`````

doesn't yet include ``CryptoUpdate`` .

Is there any plan to add ``cryptoUpdate`` (and maybe ``cryptoCreate``) to the ``scheduling.whitelist`` ?

**100. By nube#7126 in the Developer General Channel on 07/11/2022**

<https://www.google.com/search?q=hedera+hbar+release+schedule>

**101. By castaway#7472 in the Token Service Channel on 07/11/2022**

Can someone provide the token unlock schedule and tokenomics?

**102. By castaway#7472 in the Developer General Channel on 07/11/2022**

Can someone provide the token unlock schedule and tokenomics?

**103. By Tomachi Anura#8370 in the Javascript Channel on 07/04/2022**

if we try to use scheduled transaction, we hit the limit cause all the entity creation is throttled by the same threshold

**104. By Tomachi Anura#8370 in the Javascript Channel on 07/04/2022**

```
`node_modules/@hashgraph/sdk/lib/topic/TopicMessageSubmitTransaction.cjs:326:13) {
 status: Status { _code: 67 },
 transactionId: TransactionId {
 accountId: AccountId {
 shard: [Long],
 realm: [Long],
 num: [Long],
 aliasKey: null,
 aliasEvmAddress: null,
 _checksum: null
 },
 validStart: Timestamp { seconds: [Long], nanos: [Long] },
 scheduled: false,
 nonce: null
 }
}
```

**105. By samuelnihou#9657 in the Javascript Channel on 07/03/2022**

Have you written this CustomFeeSchedule function yourself?

**106. By MikeM#4800 in the Javascript Channel on 07/02/2022**

Hi, I'm creating non fungible unique NFTs and trying to transfer from the treasury to a new user account; with my current setup it's been working fine, however today I get an Insufficient Tx Fee error: see custom fee setup below: async function CreateCustomFeeSchedule(){

```
 let nftCustomFee = await new CustomRoyaltyFee()
 .setNumerator(5)
 .setDenominator(100)
 .setFeeCollectorAccountId(treasuryId)
 .setFallbackFee(new CustomFixedFee().setHbarAmount(new Hbar(1)));
 return nftCustomFee;
```

**107. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

very cool ❤️ So far, the biggest pain point is congestion for `TopicCreate` and `ScheduleCreate` transactions?

**108. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

@reg.cs @Tomachi Anura I've heard a few conversations about splitting out `ScheduleCreate` and/or `AccountCreate` throttles.

To ultimately trigger that change, I think the right step is to open a HIP.

Would either of you be interested in doing a first draft? I could help out with some of the technical details.

**109. By reg.cs#2829 in the Token Service Channel on 06/24/2022**

@tinkerm You already mentioned that it maybe a questionable aspect of current policy to make all create transactions compete with each other. Are there any plans on decoupling the throttling of `ScheduleCreate` and `TopicCreate` transactions from the other Create transactions?

**110. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

i agree on setting low throttle for token/account creation, but scheduled should work smoothly if we want to build on top of hedera using the full power out of those features

**111. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

point is, we shall NOT allow schedule entities to be blocked and fail because of account or token creations

**112. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

any entity id you wanted to create, either schedule/token/account whatever, didn't work cause tps were saturated

**113. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

it doesn't create the schedule transaction at all

**114. By reg.cs#2829 in the Token Service Channel on 06/24/2022**

As I understood the HIP-423, there a mechanism implemented that ensures that the scheduled transaction is executed based on the throttle limit set for the contained transactions:

**115. By reg.cs#2829 in the Token Service Channel on 06/24/2022**

Does the ScheduleCreate fail or does the transaction wrapped in the scheduled transaction fail?

**116. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

I can fully understand any limit regarding AccountCreate and TokenCreate to avoid flooding the network, either testnet or mainnet, but if you created schedules to allow mint/burn/sendToken/sendHbar to be executed when threshold is reached, you shall guarantee us those scheduled transaction will always be executed

**117. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

If you want people to build cool things by taking advantages of consensus and schedule/multisig, you definitely and urgently need to split those limits.  
Our network and other projects hedera based, which relies heavily on HCS and scheduled txn can't face any block because someone is creating wallet accounts!!

**118. By tinkerm#4293 in the Token Service Channel on 06/24/2022**

Hi @Topachi!

Please do keep in mind there are fundamentally two types of transactions:

1. Transactions that just change the state of existing entities; vs,
2. Transactions that create new entities.

An analogy might be:

1. Making a payment with an existing credit card; vs,
2. Getting a new credit card.

Clearly, there will always be a much lower TPS on the second category! (When VISA says its payment network can handle 25k TPS, they only mean they can handle such usage spikes from existing accounts; not that they could open new accounts for everyone on earth in a matter of days.)

So with the hashgraph consensus algorithm, we believe we can scale to 100k+ TPS of small transactions of the first type in a single shard. But there will always be a much lower ceiling on fast---or how long---any network can keep creating new entities; e.g. the 50M NFT situation we had on testnet earlier.

The Hedera council has chosen the current TPS limits on `\*Create` transactions based on tradeoffs between user requirements, the node hardware specs, the technical limits of the current software, and the economics of our pricing model.

This is quite a complicated calculus, as you can imagine! It sounds like you've already discussed with Greg that one (maybe questionable) aspect of the current policy is that all of `TokenCreate`, `AccountCreate`, `TopicCreate`, and `ScheduleCreate` are competing for the **same network capacity**. So if someone is creating a lot of accounts, it might take a lot of re-tries (more than 10) to successfully create a scheduled transaction.

All of this will keep evolving---and as the software keeps improving, I personally expect all our TPS limits to move up noticeably.

But there will always be periods of congestion where, even if a network has plenty of capacity for type (1) transactions, it is still throttling type (2) transactions.

### **119. By Topachi#0454 in the Token Service Channel on 06/23/2022**

Our engine relies on Schedule Transactions and we are not able to create an entity id for schedules

### **120. By Tomachi Anura#8370 in the Token Service Channel on 06/14/2022**

@here something very strange is happening....

when i create a new NFT token, the first one is never minted, even if it says it is.

then, from the second on, it works and it gives me a serialnumber + 1 even if onchain i see serialnumber.

let me explain this better.

1 - create a new NFT token

2 - i see under transactions the TOKENCREATION one

3 - i mint the first token, it returns success with serialNumber 1

```
`TransactionReceipt` {
 status: Status { _code: 22 },
 accountId: null,
```

```
fileId: null,
contractId: null,
topicId: null,
tokenId: null,
scheduleId: null,
exchangeRate: ExchangeRate {
 hbars: 1,
 cents: 12,
 expirationTime: 1963-11-25T17:31:44.000Z,
 exchangeRateInCents: 12
},
topicSequenceNumber: Long { low: 0, high: 0, unsigned: false },
topicRunningHash: Uint8Array(0) [],
totalSupply: Long { low: 2, high: 0, unsigned: false },
scheduledTransactionId: null,
serials: [Long { low: 1, high: 0, unsigned: false }],
duplicates: [],
children: []
}`
```

4 - i refresh the mirror node transactions, and i just see the TOKENCREATION, no TOKENMINT so far

5 - i check under /api/v1/tokens/MY\_NFT\_ID/nfts and i see NO tokens created

6 - i run again the same mint function, and it says serialNumber 2 has been created

7 - i refresh the mirror node transactions, and now i see the TOKENMINT is finally there

8 - i check under /api/v1/tokens/MY\_NFT\_ID/nfts and i see the first token with serialNumber 1 has been created

### **121. By reg.cs#2829 in the Token Service Channel on 06/11/2022**

And the doc states:

````The mirror node and consensus node test network are scheduled to reset once a quarter starting July 2022. When a testnet reset occurs all account, token, contract, topic, schedule, and file data are wiped````

122. By tinkerm#4293 in the Smart Contracts Channel on 06/09/2022

Hey @reg.cs , in that scenario, once both Alice and Bob signed, the scheduled transaction would execute, and resolve to a status of something like `INSUFFICIENT_ACCOUNT_BALANCE_FOR_CUSTOM_FEE`

Bob would neither receive the NFT, nor be charged any custom fees

The only state change from the transaction would be payment of the Hedera service fee (a fraction of the `\$0.001` total fee for a `CryptoTransfer` that exchanges NFTs)

123. By nakshatrasinghh#6013 in the Developer General Channel on 06/09/2022

COnsole throws output as: [object object], it shows thison JSON.stringify. Receipt :
{ "status": { "_code": 22, "accountId": null, "fileId": null, "contractId": "shard": { "low": 0, "high": 0, "unsigned": false }, "realm": { "low": 0, "high": 0, "unsigned": false }, "num": { "low": 34929390, "high": 0, "unsigned": false }, "evmAddress": null, "_checksum": null, "topicId": null, "tokenId": null, "scheduleId": null, "exchangeRate":

```
{"hbars":30000,"cents":262539,"expirationTime":"2022-06-09T06:00:00.000Z","exchangeRateInCents":8.7513,"topicSequenceNumber":  
{"low":0,"high":0,"unsigned":false},"topicRunningHash":{},"totalSupply":  
{"low":0,"high":0,"unsigned":false},"scheduledTransactionId":null,"serials":  
[],"duplicates":[],"children":[]}
```

124. By reg.cs#2829 in the Smart Contracts Channel on 06/08/2022

Thanks for the link, I will have a look into this

my other question was rather about the nature of atomic swaps in connection with fallback fees. Let's say, Alice creates a scheduled transaction with an atomic swap of 1 NFT with a fallback fee of 10 hbar going from Alice to Bob in exchange for 100 hbar going from Bob to Alice. Now, Bob needs to sign the transaction. Let's assume he does, but does not have 100 hbar but 50 hbar. Technically, the NFT transfer could proceed but the 100 hbar transaction could not. However, he could afford the fallback fee. Would this scheduled transaction fail completely with an error code or would the fallback fee be triggered?

125. By reg.cs#2829 in the Smart Contracts Channel on 06/08/2022

Yeah, I am already looking forward to the longlines scheduled transaction! Is there already a HIP for that containing some details?

With regard to the NFT-hbar exchange and just to see if I understood it correctly (still a newbie here): So, it is correct that in this case the fallback fee @a.s.h talked about would not be triggered even if the hbar transaction fails (e.g., because Bob suddenly has not enough hbar at the time both have signed)?

126. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022

@reg.cs Scheduling such a `CryptoTransfer` and then awaiting signatures from Alice and Bob should work no problem!

The 0.27 release is expected to bring long-lived scheduled transactions in the (instead of the 30min max lifetime we currently have); this could make such applications more practical

127. By reg.cs#2829 in the Smart Contracts Channel on 06/07/2022

If not, you could let Alice or Bob trigger the scheduled atomic transfer and use the smart contract (if necessary at all) only for preserving the state or as a trustworthy access point that mediates the transaction. Like, it could do all validation checks and then set a state variable to true. Both Alice and Bob then query the SC if the validation checks passed and then the NFT holder triggers the scheduled atomic swap.

128. By reg.cs#2829 in the Smart Contracts Channel on 06/07/2022

@tinkerm @a.s.h would this issue also occur if one would use a scheduled transaction to do an atomic swap with NFT for hbar, which needs to be signed by Alice and Bob? (so, without a smart contract)

129. By Topachi#0454 in the Javascript Channel on 06/04/2022

If I understand the bug, is it related to separating the concerns of recognizing whether an Entity ID is being created as either account purpose, contract, scheduled tnx...?

130. By bugbytes#0817 in the Javascript Channel on 06/04/2022

...and while I'm in this mood, this last week we were kinda messed up in production due to the *swrlds* hedera node malfunctioning but not taken off line, fortunately our engineering team is resourceful and recovered the scheduled-tx based activity, but we wasted a lot of my time thinking it was our fault, when it was actually a malfunctioning mainnet node.

131. By bugbytes#0817 in the Javascript Channel on 06/04/2022

2tps was not the problem, I've seen testnet do this before, it is a logic bug in entity ID generation, when other entities are being generated (aka scheduled transactions, tokens, files, contracts etc), it blocks the ability to create accounts. I've noted this before, I do not know if this is an understanding of the problem, or willingness to fix the problem obstacle.

132. By Tomachi Anura#8370 in the Javascript Channel on 06/04/2022

I can understand also the rate limits on token creation, but at least the scheduled transaction should be fully running like normal transactions and HCS should work properly as well, my 2 cents here

133. By Tomachi Anura#8370 in the Javascript Channel on 06/04/2022

I am fully unable to run scheduled transactions since days now

134. By Eli Azev#9456 in the Developer General Channel on 06/03/2022

In my second question I am referring generically to the set up throttle that limited transactions, as for example account creation. Yesterday schedule_creation was the transaction that made the whole network in busy status, nevertheless it reached only 100 tps or 360k per hour, what looks to me too small to busy the network entirely.

135. By Tomachi Anura#8370 in the Javascript Channel on 06/03/2022

yeah, i can't create a single scheduled transaction at all

136. By Don Hector#3191 in the Javascript Channel on 06/03/2022

Yesterday somebody was hammering schedule create transactions on testnet which was causing certain types of transactions (those creating a new entity) to respond with BUSY. It looks like the same thing is happening again today. Token create transactions don't work, but hbar transfers do. I'm guessing the throttle is being hit for entity creation...

137. By Tomachi Anura#8370 in the Javascript Channel on 06/03/2022

it's weird cause i can see hashpack is working fine when i send transaction out, but if i then create a transaction server side or i schedule one, i keep getting the `max attempts of 10 was reached for request with last error being: BUSY`

138. By Ed Marquez#6403 in the Token Service Channel on 05/31/2022

Got it. I believe it's just two options atm:

- Like someone else suggested previously: set the transaction for execution at some point in the future and then you have a 2 minute window from that future start time for signing
- Or
- Use scheduled txns for extending that signing window to 30 minutes (as you noticed, not all txs are supported atm with scheduled txs)

I mentioned to someone else last week that there a HIP in progress to enable this type of use case while eliminating the time window issue...

That's all the info I have atm about that HIP until the authors release it to the public...

139. By reg.cs#2829 in the Token Service Channel on 05/31/2022

Thanks, Ed! The hashconnect examples are nice because that's the next thing I wanted to look at.

But my initial question was really about how to do it without scheduled transaction.

Mostly to learn how it work and also for transaction types which are not covered by scheduled transactions. But I think, I do understand now how it works.

140. By Ed Marquez#6403 in the Token Service Channel on 05/31/2022

This article has a section and code example using scheduled transactions:

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update-and-scheduled-transactions#:~:text=Console%20output%3A-,Schedule%20Transactions,-Scheduled%20transactions%20enable>

If you look at the latest SDK and HashConnect updates that implement Signer/Provider architecture, you likely can send the transaction to both wallets for signing within the 30 minute window that the scheduled tx gives you.

I'd suggest looking at some of the files in this directory (<https://github.com/ed-marquez/hedera-dapp-days/tree/main/src/components/hedera>) to get an idea of how to work with the HashConnect signer/provider, which simplifies the process of signing and executing transaction with your wallet a lot!

141. By reg.cs#2829 in the Token Service Channel on 05/29/2022

I see why scheduled transactions are more reasonable for that use case. But since I am still learning, I'd love to see how it works the traditional way.

142. By AlexTaylor#3551 in the Token Service Channel on 05/29/2022

without scheduled tx you'd create the tx with a start time in the future, send it round for signing by each party, and once ready hold on to it until the start time is reached then fire it off to Hedera. I think the window is only 2 mins so don't miss it or you have to repeat the whole process again. Hence scheduled tx for convenience i believe.

143. By reg.cs#2829 in the Token Service Channel on 05/28/2022

I am a bit confused about how atomic swaps can be signed by different participants. If Alice and Bob want to do an atomic swap (e.g., 1 NFT for 100 hBar) and Alice initiates the transaction ... how can bob sign it? The documentation (<https://docs.hedera.com/guides/docs/sdks/tokens/atomic-swaps>) only states that the transaction needs to be signed with both private keys. But Alice does not know Bob's private key. So, how would that work? (without using a scheduled transaction)

144. By Francesco Coacci#2822 in the Token Service Channel on 05/27/2022

Hi, right now there's a HIP about long term scheduled transaction but It's still in

"Accepted" status. Check out here HIP-423: <https://hips.hedera.com/hip/hip-423>

Btw as you can see here in the latest Hedera Mirror Node release it's included: <https://docs.hedera.com/guides/docs/release-notes/mirror-node#v0.56>

145. By bugbytes#0817 in the Developer General Channel on 05/27/2022

Scheduled TX are not on par with regular transactions. Its only a small subset of functions are supported, and they require quite a number of supporting transactions. Which hip are you referring to?

146. By Topachi#0454 in the Token Service Channel on 05/26/2022

Hello! When will scheduled transactions be customizable regarding the expiration time?

147. By Ed Marquez#6403 in the Developer General Channel on 05/26/2022

Scheduled txs extend that window to 30 minutes. I believe I saw a HIP recently addressing your point @bugbytes

148. By bugbytes#0817 in the Developer General Channel on 05/26/2022

(scheduled transactions dos not support, say token association)

149. By Greg Scullard#5365 in the Smart Contracts Channel on 05/25/2022

A smart contract cannot initiate a transaction and request signing (it may be able to in the future when smart contract can created scheduled transactions).

In your example:

- * The NFT seller might call the contract to indicate they're will to sell for 100, transferring the token to the contract and maybe includes a SaleId and time limit
- * The buyer calls the contract, sending it hbar and specifying the SaleId they're interested in
- * If the time limit isn't expired, the contract passes the 100h to the seller and the token to the buyer
- * If the time limit is expired, the contract throws an error (optionally transfers the token back to the seller)
- * If the token isn't transferred to the seller above, the seller can (after time x), claim it back from the contract by calling an appropriate method.

150. By reg.cs#2829 in the Token Service Channel on 05/25/2022

I have a question about scheduled transactions: Imagine I schedule an atomic swap between to parties with a multi-sign transfer transaction – let's say an exchange of an NFT vs. 100 hbar. Both parties need to sign the transaction in order to execute it. Will both the NFT and the 100 hbar on both accounts be locked until the transaction is signed? Or will the transaction just fail if one of the two accounts does not hold the 100 hbar or the NFT at the time the scheduled transaction is signed by all parties?

151. By VR#1587 in the Smart Contracts Channel on 05/22/2022

also I see a lot of usages for uint256:

```
```uint constant ADMIN_KEY_TYPE = 1;
uint constant KYC_KEY_TYPE = 2;
uint constant FREEZE_KEY_TYPE = 4;
uint constant WIPE_KEY_TYPE = 8;
uint constant SUPPLY_KEY_TYPE = 16;
uint constant FEE_SCHEDULE_KEY_TYPE = 32;
uint constant PAUSE_KEY_TYPE = 64;
``` or `int32` use for ResponseCodes
```

Is there a compatibility reason of sort ot use such big int memory allocations for such short value..?

152. By .Kittycat#5642 in the Smart Contracts Channel on 05/19/2022

yeah the credentials were not being passed correctly

so I fixed that

but now it is giving this error:

```

```
/media/kittycat/Linux_files/node_projects/technica_hackathon/node_modules/
@hashgraph/sdk/lib/PrecheckStatusError.cjs:23
 super(props, `transaction ${props.transactionId.toString()} failed
precheck with status ${props.status.toString()}`);
 ^
```

```
PrecheckStatusError: transaction 0.0.34851921@1653031443.805421247
failed precheck with status INVALID_TRANSACTION_START
 at new PrecheckStatusError (/media/kittycat/Linux_files/node_projects/
technica_hackathon/node_modules/@hashgraph/sdk/lib/PrecheckStatusError.cjs:23:5)
 at FileCreateTransaction._mapStatusError (/media/kittycat/Linux_files/
node_projects/technica_hackathon/node_modules/@hashgraph/sdk/lib/transaction/
Transaction.cjs:939:12)
 at FileCreateTransaction.execute (/media/kittycat/Linux_files/node_projects/
technica_hackathon/node_modules/@hashgraph/sdk/lib/Executable.cjs:392:22)
 at processTicksAndRejections (node:internal/process/task_queues:96:5)
 at async main (/media/kittycat/Linux_files/node_projects/technica_hackathon/
index.js:31:27) {
 status: Status { _code: 5 },
 transactionId: TransactionId {
 accountId: AccountId {
 shard: Long { low: 0, high: 0, unsigned: false },
 realm: Long { low: 0, high: 0, unsigned: false },
 num: Long { low: 34851921, high: 0, unsigned: false },
 aliasKey: null,
 _checksum: null
 },
 validStart: Timestamp {
 seconds: Long { low: 1653031443, high: 0, unsigned: false },
 nanos: Long { low: 805421247, high: 0, unsigned: false }
 },
 scheduled: false,
 nonce: null
 }
}
}```
```

**153. By robzer#9513 in the Developer General Channel on 05/19/2022**

is this accurate

<https://messari.io/asset/hedera-hashgraph/profile/supply-schedule>

**154. By Supremax67#5749 in the Developer General Channel on 05/19/2022**

<https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**155. By reg.cs#2829 in the Consensus Service Channel on 05/19/2022**

I still need to put some thought into that. But at the moment, I believe that this would be no real issue. The person would then still have to do the job. Otherwise they would not have a benefit from this behavior. The scheduled transaction would only be used as a method to register for the job - if the group can't fulfill the job in a given time then, it will fail and be recreated.

**156. By reg.cs#2829 in the Consensus Service Channel on 05/18/2022**

Hi, I am currently reading about scheduled transactions and I am wondering, if the following is possible: Can a multisignature transaction be scheduled which requires at least `N` signatures from any group of people but without specifying the group before (so without providing a fixed key list)?

**157. By d1pp3r#4098 in the Developer General Channel on 05/16/2022**

<https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**158. By d1pp3r#4098 in the Developer General Channel on 05/16/2022**

hi, when will token distribution schedule be updated for Q2?

**159. By Supremax67#5749 in the Developer General Channel on 05/12/2022**

@CRYPTOK3R <https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**160. By Elijah2000#5086 in the Developer General Channel on 05/07/2022**

Can anyone tell me where to find a list of all tokens currently operating on HEDERA? Also is there any schedule of upcoming Ito's? I find it really difficult to find any useful information on projects @Axler8 what the issue all about? You got it solve.

**161. By Axler8#4580 in the Developer General Channel on 05/07/2022**

Can anyone tell me where to find a list of all tokens currently operating on HEDERA? Also is there any schedule of upcoming Ito's? I find it really difficult to find any useful information on projects

**162. By nube#7126 in the Developer General Channel on 04/20/2022**

It is scheduled for Q2 2022 though

**163. By Greg Scullard#5365 in the Consensus Service Channel on 04/20/2022**

You can do this from mirror data yes, each message has `chunk\_info` if appropriate  
``,``

```
"chunk_info": {
 "initial_transaction_id": "0.0.10-1234567890-000000321",
 "nonce": 3,
 "number": 1,
 "total": 2,
 "scheduled": true
},
`,``
```

If you know the original transaction id, you can work out its consensus timestamp and then get the corresponding sequence number for the message. You can then query

`/api/v1/topics/{topicId}/messages/{sequenceNumber}` which will return the message (or chunks for the message)

```
...
{
 "messages": [
 {
 "chunk_info": {
 "initial_transaction_id": "0.0.10-1234567890-0000000321",
 "nonce": 3,
 "number": 1,
 "total": 2,
 "scheduled": true
 },
 "consensus_timestamp": "1234567890.000000001",
 "message": "bWVzc2FnZQ==",
 "payer_account_id": "0.0.10",
 "running_hash": "cnVubmluZ19oYXNo",
 "running_hash_version": 2,
 "sequence_number": 1,
 "topic_id": "0.0.7"
 }
],
 "links": {
 "next": null
 }
}
...
```

Storing the data off ledger isn't necessarily such a bad thing. If you enable someone to calculate the running hash of all your stored messages against the topicId's running hash, they have proof you haven't tampered with the messages.

**164. By reg.cs#2829 in the Smart Contracts Channel on 04/19/2022**

Yeah, I understand that. I was not thinking about a long-term storage anyway. The use case I was describing above would only need to store the file until all participants signed the scheduled transaction and then the users that lend the computing power would be paid and the user using the service would get the file. After that the file could expire and be deleted.

**165. By Ed Marquez#6403 in the Javascript Channel on 04/19/2022**

This seems like a bug, given that that's how it works in previous versions of the SDK and I don't see anything documented about breaking changing related to Scheduled Tx's. I see that this issue is already open: <https://github.com/hashgraph/hedera-sdk-js/issues/1085> Thanks for opening that. The team will take a closer look and go from there.

**166. By johnda98#4728 in the Smart Contracts Channel on 04/19/2022**

call the FileCreate from the schedule service

**167. By reg.cs#2829 in the Smart Contracts Channel on 04/19/2022**

Thanks for the response. I also thought about encryption, but hoped there was something native. Two follow-up questions:

1. I need a separate cloud micro service, a simple `FileCreate` (Hashgraph API) wouldn't suffice?
2. So, the scheduled transaction can have a return value that is only received by those who have signed?

**168. By johnda98#4728 in the Smart Contracts Channel on 04/19/2022**

you could yes use a public cloud microservice to schedule a encrypted File create.. then use a SC to collect all signatures, return a key that enables de-encrypt

**169. By reg.cs#2829 in the Smart Contracts Channel on 04/19/2022**

Hi, since I don't know where to ask it, I'll post it here: I did no blockchain development so far and am currently reading myself into the Hashgraph API to obtain an understanding of what projects might be possible. My question is about the FileService. Is it possible with the FileService API to create a file with a scheduled transaction and then only allow access to this file after all signatures have been given?

**170. By shubi#9407 in the Javascript Channel on 04/19/2022**

When I update the SDK to recent versions (0.2.13 - but I think it started in 0.2.12) I get multiple errors of the type:

`TS2345: Argument of type 'TransferTransaction' is not assignable to parameter of type 'Transaction'.

Property 'override' is protected in type 'TransferTransaction' but public in type 'Transaction'.

This happens when, for example, trying to pass a `TransferTransaction` to `setScheduledTransaction` that accepts a `Transaction` parameter.

Is that really intended? That one wouldn't be able to pass a `TransferTransaction` to be scheduled?

**171. By Ashe Oro#8558 in the Developer General Channel on 04/15/2022**

THIS IS A SCHEDULED EVENT Apr 15, 16:00 - 18:00 UTC Apr 7, 21:29 UTC

Scheduled - Hedera will be upgrading the Mainnet to 0.24.x (release notes: <https://hedera.io/release-notes>) on Friday, April 15, 2022 at 16:00 UTC. The upgrade will take approximately 120 minutes to complete, during which time all network services on the Hedera Mainnet will be offline

**172. By shubi#9407 in the Developer General Channel on 04/11/2022**

From what I caught on Discord, I think TM uses the same account to create schedule transactions through the same node.

**173. By littletarzan#5253 in the Smart Contracts Channel on 04/09/2022**

Are there plans from Hedera to whitelist ContractExecuteTransaction for scheduled transactions? From the docs:

```\n

A schedulable transaction. Note that the global/dynamic system property `scheduling.whitelist` controls which transaction types may be scheduled. In Hedera

Services 0.13.0, it will include only CryptoTransfer and ConsensusSubmitMessage functions.
` ` `

I'm looking to inherit Ownable from OpenZeppelin and owner be multisig account

174. By Kiril#8850 in the Token Service Channel on 04/08/2022

Great plans and news for scheduling! Hope we get that sooner than later...

My ask/vision is to chain schedules, as so when one completes then the next in queue triggers. But that's not available yet and will have to find other way for my use case - mint and send token to account.

175. By Greg Scullard#5365 in the Token Service Channel on 04/08/2022

for now it's fixed at 30 minutes, I understand that extending beyond (with additional fees) is planned, as is scheduling the actual execution at some point in time (e.g. schedule for dec 24th at midnight, assuming all signatures are received by then, that's when it will execute).

176. By 00Dante#6670 in the Token Service Channel on 04/08/2022

Speaking of scheduled transaction; according to the docs right now those are limited to a 30min lifespan.

Is that just the default or is there some way we could renew the scheduled transaction or pay more in fees for its life span to be months or years?

177. By Greg Scullard#5365 in the Token Service Channel on 04/08/2022

@Kiril this is not possible no, and creating a scheduled transaction from a contract isn't supported yet either. Leemon hinted it may be possible in the future, but not now

178. By shubi#9407 in the Javascript Channel on 04/08/2022

So it looks like all the previous exports in
`node_modules\@hashgraph\proto\lib\index.d.ts` have been removed and moved into (nested) namespaces. How can I import `SchedulableTransactionBody` in the new version? I rely on this object to be able to decode the transaction body in the mirror API schedule response.

179. By Kiril#8850 in the Token Service Channel on 04/08/2022

Hey folks, is it possible to chain scheduled transactions?

Use case: mint then transfer the NFT to account ID

or this something that should be done in a smart contract better?

180. By Greg Scullard#5365 in the Token Service Channel on 04/07/2022

Vesting schedule of what ?

181. By castaway#7472 in the Token Service Channel on 04/07/2022

where's the vesting schedule? When was TGE date Are tokens vested daily or a certain day of the month? Thanks!

182. By Thubisi#5886 in the Token Service Channel on 04/06/2022

Hi Ed

I have created a new NftId with the TokenID I get from my receipt after submitting the

TokenCreateTransaction to Hedera.

```
``C:\Projects\Hashbits-
server\node_modules\@hashgraph\sdk\lib\PrecheckStatusError.cjs:23
  super(props, `transaction
${props.transactionId.toString()} failed precheck with status ${props.status.toString()}`);
  ^

PrecheckStatusError: transaction
0.0.2746328@1649268651.158142070 failed precheck with status INVALID_NFT_ID
  at new PrecheckStatusError (C:\Projects\Hashbits-
server\node_modules\@hashgraph\sdk\lib\PrecheckStatusError.cjs:23:5)
  at TokenNftInfoQuery._mapStatusError
(C:\Projects\Hashbits-server\node_modules\@hashgraph\sdk\lib\query\Query.cjs:385:12)
  at CostQuery._mapStatusError (C:\Projects\Hashbits-
server\node_modules\@hashgraph\sdk\lib\query\CostQuery.cjs:127:24)
  at CostQuery.execute
(C:\Projects\Hashbits-server\node_modules\@hashgraph\sdk\lib\Executable.cjs:392:22)
  at processTicksAndRejections (node:internal/process/task_queues:96:5)
  at async TokenNftInfoQuery.getCost (C:\Projects\Hashbits-
server\node_modules\@hashgraph\sdk\lib\token\TokenNftInfoQuery.cjs:275:16)
  at async TokenNftInfoQuery._beforeExecute
(C:\Projects\Hashbits-server\node_modules\@hashgraph\sdk\lib\query\Query.cjs:248:28)
  at async TokenNftInfoQuery.execute
(C:\Projects\Hashbits-server\node_modules\@hashgraph\sdk\lib\Executable.cjs:330:5)
  at async main (C:\Projects\Hashbits-server\nft.js:69:20) {
  status: Status { _code: 226 },
  transactionId: TransactionId {
    accountId: AccountId {
      shard: Long { low: 0, high: 0, unsigned: false },
      realm: Long { low: 0, high: 0, unsigned: false },
      num: Long { low: 2746328, high: 0, unsigned: false },
      aliasKey: null,
      _checksum: null
    },
    validStart: Timestamp {
      seconds: Long { low: 1649268651, high: 0, unsigned: false },
      nanos: Long { low: 158142070, high: 0, unsigned: false }
    },
    scheduled: false,
    nonce: null
  }
}
```

183. By AlexTaylor#3551 in the Developer General Channel on 04/02/2022

Here's a nice tutorial on that from Ed <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update-and-scheduled-transactions>

184. By Patex#6412 in the Token Service Channel on 03/31/2022

Is it somehow possible to let a user pay for a nft mint transaction (scheduled

transaction?) and atomically transfer the nft into his account?

If we split up the transaction into 2 parts either one has to carry a counter party risk. The nft we are trying to mint is customized to the user and if he does not sign the subsequent transfer transaction we are stuck on the cost for minting and a useless token. If the user pays for minting our treasury has custody of the nft until the transfer request and he has to trust us that we are sinning it.

185. By nube#7126 in the Developer General Channel on 03/30/2022

We (SaucerSwap) are currently waiting on a final improvement proposal, HIP-358 TokenCreateTransaction support in HSCS (<https://github.com/hashgraph/hedera-improvement-proposal/pull/358>).

There were a few other HIPs we were looking at, such as HIP-218 create2 opcode, which is scheduled for mainnet update on April 15th.

186. By Rode#4093 in the Developer General Channel on 03/29/2022

Hey guys, does anyone know where I can find the HBAR token allocation and emission schedule?

187. By Ed Marquez#6403 in the Token Service Channel on 03/24/2022

No timeline for this particular feature at the moment given other priorities. If long-term scheduled txs are a priority for your work, feel free to start a hip (<https://github.com/hashgraph/hedera-improvement-proposal/blob/master/HIP/hip-1.md>), get input from the dev community, and that will encourage the engineering team to prioritize this.

188. By Planck#4428 in the Token Service Channel on 03/24/2022

Scheduled Transaction currently has a 30 minute time window but I heard mention that will be extended in the future. Anyone know when that's planned to go live? (or which HIP I have to wait for?)

189. By Greg Scullard#5365 in the Consensus Service Channel on 03/21/2022

I tell a lie, it's there now

```
{
  "messages": [
    {
      "chunk_info": {
        "initial_transaction_id": "0.0.10-1234567890-000000321",
        "nonce": 3,
        "number": 1,
        "total": 2,
        "scheduled": true
      },
      "consensus_timestamp": "1234567890.000000001",
      "message": "bWVzc2FnZQ==",
      "payer_account_id": "0.0.10",
      "running_hash": "cnVubmluZ19oYXNo",
      "running_hash_version": 2,
    }
  ]
}
```

```
    "sequence_number": 1,
    "topic_id": "0.0.7"
  }
],
"links": {
  "next": null
}
}
...
```

190. By Danish#7730 in the Developer General Channel on 03/16/2022

Hii Guys, I am getting an error "INVALID_NODE_ACCOUNT" for TokenAssociateTransaction on Testnet. Because of this I am not able to mint or transfer nfts and create new associate accounts. It was working fine till yesterday. Error logs can be found below.

```
result: {
  status: false,
  error: PrecheckStatusError: transaction 0.0.30842376@1647420304.451053950 failed
precheck with status INVALID_NODE_ACCOUNT
    at new PrecheckStatusError (C:\Users\DELL\OneDrive\Desktop\Frshr Tech\Nft
Indya\NFTIndyaWebApp\node_modules\@hashgraph\sdk\lib\PrecheckStatusError.cjs:23:
5)
    at TokenAssociateTransaction._mapStatusError
(C:\Users\DELL\OneDrive\Desktop\Frshr Tech\Nft
Indya\NFTIndyaWebApp\node_modules\@hashgraph\sdk\lib\transaction\Transaction.cjs:
1062:12)
    at TokenAssociateTransaction.execute (C:\Users\DELL\OneDrive\Desktop\Frshr
Tech\Nft
Indya\NFTIndyaWebApp\node_modules\@hashgraph\sdk\lib\Executable.cjs:374:22)
    at processTicksAndRejections (node:internal/process/task_queues:96:5)
    at async tokenAssociationTransaction (C:\Users\DELL\OneDrive\Desktop\Frshr
Tech\Nft
Indya\NFTIndyaWebApp\server\common\blockchain\tokenServicesHelper.js:424:22)
    at async Object.tokenAssociate (C:\Users\DELL\OneDrive\Desktop\Frshr Tech\Nft
Indya\NFTIndyaWebApp\server\common\blockchain\tokenServicesHelper.js:451:18)
    at async buy (C:\Users\DELL\OneDrive\Desktop\Frshr Tech\Nft
Indya\NFTIndyaWebApp\server\contoller\nft.js:304:16) {
  status: Status { _code: 3 },
  transactionId: TransactionId {
    accountId: [AccountId],
    validStart: [Timestamp],
    scheduled: null,
    nonce: null
  }
}
}
{
  status: false,
```

```
id: undefined,
message: 'tokenId=0.0.30974066, AccountId=0.0.30842376'
}
Account: 0.0.30973756
{
  status: false,
  error: 'receipt for transaction 0.0.0@1647420308.170285866 contained error status
TOKEN_NOT_ASSOCIATED_TO_ACCOUNT'
}
```

191. By Théo Pomies#9100 in the Developer General Channel on 03/10/2022

Hi, when sending a scheduled transaction with two different web clients and operators I get a `INVALID_NODE_ACCOUNT` response,

To fix this, should I set the client that executes the last transactions with the same NODE (singular), that executed the first one on the other client/operator, or should I set it with the same NODES (plural) as the first one ? Thanks alot

192. By Greg Scullard#5365 in the Javascript Channel on 03/09/2022

If you set a different memo on your second schedule, it won't come up as a duplicate, see below

- * Two `ScheduleCreate` transactions are *identical* if they are equal in all their
- * fields other than `payerAccountID`. (Here "equal" should be understood in the sense of
- * gRPC object equality in the network software runtime. In particular, a gRPC object with [unknown fields](https://developers.google.com/protocol-buffers/docs/proto3#unknowns) is
- * not equal to a gRPC object without unknown fields, even if they agree on all known fields.)
- *
- * A `ScheduleCreate` transaction that attempts to re-create an identical schedule already in
- * state will receive a receipt with status `IDENTICAL_SCHEDULE_ALREADY_CREATED`; the receipt
- * will include the `ScheduleID` of the extant schedule, which may be used in a subsequent
- * `ScheduleSign` transaction. (The receipt will also include the `TransactionID` to
- * use in querying for the receipt or record of the scheduled transaction.)

from https://github.com/hashgraph/hedera-protobufs/blob/main/services/schedule_create.proto

193. By AlexTaylor#3551 in the Token Service Channel on 03/08/2022

yes, there's the KYC or freeze key, either can be used to control movements of a token into or out of an account

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update->

and-scheduled-transactions

<https://docs.hedera.com/guides/docs/sdks/tokens/enable-kyc-account-flag-1>

[https://docs.google.com/document/d/](https://docs.google.com/document/d/1dRsojU6OD651XS9AoiQ3BLnfETAYpRD3RWhlf2KKXaY/)

[1dRsojU6OD651XS9AoiQ3BLnfETAYpRD3RWhlf2KKXaY/](https://docs.google.com/document/d/1dRsojU6OD651XS9AoiQ3BLnfETAYpRD3RWhlf2KKXaY/)

194. By Tomachi Anura#8370 in the Javascript Channel on 03/07/2022

I bet for scheduledTransaction is kind of normal, cause they are also meant to avoid duplicates.

But a query to get the transaction receipt/record is another story loool

195. By Peach-Flavored Snark#4014 in the Javascript Channel on 03/07/2022

Let's see... unfortunately I've never used the TransactionRecordQuery() so I can't really comment on the matter

All I can say is I've gotten a similar issue with ScheduledTransactions when I create a new one after the previous TX gets fired off. Odd stuff.

If you found a bug, it wouldn't hurt to schedule a call with the calendly below:

[https://calendly.com/waylon-jepsen/catch-up-call?](https://calendly.com/waylon-jepsen/catch-up-call?back=1&month=2022-03&date=2022-03-08)

[back=1&month=2022-03&date=2022-03-08](https://calendly.com/waylon-jepsen/catch-up-call?back=1&month=2022-03&date=2022-03-08)

^ Waylon seems available as soon as tomorrow

<https://calendly.com/ed-marquez/help?month=2022-03>

^ Ed seems backed up til the 21st

Hopefully Greg or Ashe can weigh in and it can be resolved in an expedient manner

196. By shubi#9407 in the Developer General Channel on 03/06/2022

Thank you. Might be nice to have a simpler way to get the details of an inner transaction from the mirror API `schedules` endpoint. Makes sense for people to want to read the details of a scheduled transaction before they sign it (and not have to pay each time with a query). Maybe a function in the SDK to read a `transaction_body` string could be added.

197. By shubi#9407 in the Developer General Channel on 03/06/2022

For reference, if anyone wants to use `transaction_body` from the `schedules` API endpoint, here's a working TypeScript example:

```
```ts
```

```
import { SchedulableTransactionBody } from "@hashgraph/proto";
```

```
function _base64ToSchedulable(base64: string) {
 const byteArray =
 Uint8Array.from(atob(base64), c => c.charCodeAt(0));
 return SchedulableTransactionBody.decode(byteArray);
}
```

```
const transaction_body =
"CICU69wDEg10cmFuc2ZlciB0ZXN0ShgKFgoJCgQYqZciEM8PCgkKBBiolyIQ0A8=";
console.log(_base64ToSchedulable(transaction_body));
```
```

198. By shubi#9407 in the Developer General Channel on 03/05/2022

I tried to use the schedule API endpoint to get the details of the inner scheduled transaction. The only relevant data there, is a `transaction_body` base64 encoded string. It's not clear (to me) how to turn that into a transaction or something legible. If you can do that, I would love a short code example.

199. By bugbytes#0817 in the Developer General Channel on 03/05/2022

haven't been following the deets, what's the current issue? Sometimes you can make assumptions about the scheduled TX based on convention.

200. By teacoat#2092 in the Developer General Channel on 03/05/2022

I can vouch for @shubi's issue, the data the mirror node api returns for scheduled transactions seems basically useless to get any info about the underlying transaction

201. By steven-sheehy#7923 in the Javascript Channel on 03/04/2022

It's a `SchedulableTransactionBody` proto serialized as bytes and encoded to base64 that comes from the `ScheduleCreateTransactionBody` https://github.com/hashgraph/hedera-protobufs/blob/975a0e0fdbcf81fe7f8ff66e5278ed754040a78/services/schedule_create.proto#L74

202. By Ed Marquez#6403 in the Javascript Channel on 03/03/2022

It would be:

Base URL + endpoint = <https://testnet.mirrornode.hedera.com/api/v1/schedules/scheduleId>

where schedule id has form 0.0.xxx and you can get it from a schedule create receipt

203. By shubi#9407 in the Javascript Channel on 03/03/2022

How do I get the details of a scheduled transaction using the `schedules/{scheduleID}` endpoint?

204. By shubi#9407 in the Developer General Channel on 03/03/2022

How can I use the `transaction_body` string I get from `schedules/{scheduleID}` endpoint in order to read the scheduled transaction?

205. By shubi#9407 in the Javascript Channel on 02/27/2022

They introduced some breaking changes. You can either go back a few versions, or set the maximum transaction fee (for each scheduled transaction - setting it in the client didn't work for me).

206. By Peach-Flavored Snark#4014 in the Javascript Channel on 02/26/2022

upon further investigation, it appears the scheduled transaction succeeds - but the transfer fails due to insufficient tx fees... which is a bit odd

all my test accounts have at least 10 hbars loaded on them, and so does the client...
hmm...

207. By Peach-Flavored Snark#4014 in the Javascript Channel on 02/26/2022

Side note: I forgot about fees and set my initial balance to 2 hbars while trying to transfer 1, no luck with that unfortunately

is there a way to check on the status of the underlying transaction after the scheduled transaction gets fired off?

208. By Peach-Flavored Snark#4014 in the Javascript Channel on 02/26/2022

So I've been running this example to create a multisig wallet with an initial balance of 1 HBAR, then to create a ScheduledTransaction to pull that 1 hbar into a different wallet...

to get the signatures I fire off a couple ScheduleSignTransactions and everything looks to be in order

until I checked the balances and I'm baffled as to why the HBARS never left my multisig account ;

I'm not sure what I may be doing wrong, but suggestions are much appreciated

209. By shubi#9407 in the Developer General Channel on 02/24/2022

Just an update: it seems like it's enough to set the max fee for the inner scheduled transaction, and not set the max fee in the schedule transaction. Setting the max fee in the client doesn't seem to help.

210. By shubi#9407 in the Developer General Channel on 02/24/2022

I tried setting max transaction fee on client. Still got the same error. Changed max on both schedule transaction and inner transaction and it worked.

In my opinion it greatly degrades the development experience, if for every new transaction you would need to set again and again the default max fee, or else the transaction fails. Adds a lot of unnecessary boilerplate. The default should just work imo.. if someone wants to have a maximum fee of 0 (?) for some reason they can set it manually.

211. By shubi#9407 in the Developer General Channel on 02/24/2022

Were any breaking changes introduced in 2.9.1? I have a simple example that works fine in 2.8.0 but fails in 2.9.1 with "INSUFFICIENT_TX_FEE" error for the schedule transaction.

212. By SethV#8086 in the Java Channel on 02/23/2022

Like..not sure if that is related to scheduled transactions (I couldn't find anything in the hedera documentation or sdk)

213. By Topachi#0454 in the Consensus Service Channel on 02/19/2022

URGENT MESSAGE: @Greg Scullard @SM Shibar Network has encountered HCS Mainnet issues since yesterday. We were trying to go ahead and sign the Multi-Sig treasury by using the HCS as a consensus mechanism to transfer the transactionBytes in a clear way, relying on Hedera, but it does not go through. We had to reschedule.

214. By Greg Scullard#5365 in the Token Service Channel on 02/15/2022

You can, you'd need to freeze the transaction, then `.getBytes()` which will serialise the transaction object to a byte array. Send to the other party, they can then rebuild a Transaction object from the bytes, sign and submit(execute).

This has to happen within 2 minutes of the transaction being created, unless you set the TransactionId for the transaction to be in the future, in which case the transaction has to

be submitted between the valid_start of the transaction and 2 minutes after that.
Or, use scheduled transactions which give you 30 minutes to apply both signatures to the transaction (with a small additional cost).

215. By HBAR Comrade | HBots#8527 in the Token Service Channel on 02/12/2022

PrecheckStatusError.cjs:23

```
super(props, transaction ${props.transactionId.toString()}) failed precheck with status  
${props.status.toString()});  
^
```

PrecheckStatusError: transaction 0.0.692079@1644713233.990720761 failed precheck with
status INVALID_NODE_ACCOUNT

```
at new PrecheckStatusError (/Users/Documents/GitHub/hedera-minting/  
node_modules/@hashgraph/sdk/lib/PrecheckStatusError.cjs:23:5)  
at TokenMintTransaction._mapStatusError (/Users/Documents/GitHub/hedera-minting/  
node_modules/@hashgraph/sdk/lib/transaction/Transaction.cjs:1062:12)  
at TokenMintTransaction.execute (/Users/Documents/GitHub/hedera-minting/  
node_modules/@hashgraph/sdk/lib/Executable.cjs:374:22)  
at processTicksAndRejections (node:internal/process/task_queues:96:5)  
at async tokenMinterFcn (/Users/Documents/GitHub/hedera-minting/mainnet/  
index.js:95:22)  
at async main (/Users/Documents/GitHub/hedera-minting/mainnet/index.js:84:16) {  
  status: Status { _code: 3 },  
  transactionId: TransactionId {  
    accountId: AccountId {  
      shard: Long { low: 0, high: 0, unsigned: false },  
      realm: Long { low: 0, high: 0, unsigned: false },  
      num: Long { low: 692079, high: 0, unsigned: false },  
      aliasKey: null,  
      _checksum: undefined  
    },  
    validStart: Timestamp {  
      seconds: Long { low: 1644713233, high: 0, unsigned: false },  
      nanos: Long { low: 990720761, high: 0, unsigned: false }  
    },  
    scheduled: null,  
    nonce: null  
  }  
}
```

216. By shubi#9407 in the Javascript Channel on 02/12/2022

If I try to schedule a transaction and get an `IdenticalScheduleAlreadyCreated` error -
how can I get the `ScheduleID` of that schedule? Would be great if the error object
included the `ScheduleID`.

217. By shubi#9407 in the Javascript Channel on 02/11/2022

I believe `Admin Key` might be missing an `(optional)` in its description.

<https://docs.hedera.com/guides/docs/sdks/schedule-transaction/create-a-schedule-transaction>

218. By bugbytes#0817 in the Token Service Channel on 02/05/2022

Sorry, that one is stuck, its the `fee_schedule_key` is what needs to be populated if want to adjust fees in the future.

219. By DPub#3443 in the Token Service Channel on 02/05/2022

QQ: So a custom fee on a Token was set to an incorrect collector account id. Looks like I can do a TokenFeeScheduleUpdateTransaction() - can I change an existing fee? Here is the example - admin key was left null to argh. <https://mainnet-public.mirrornode.hedera.com/api/v1/tokens/0.0.681341>

220. By bugbytes#0817 in the Token Service Channel on 02/02/2022

Yes, A single transaction can have any combination of *transfers* of hBar, Tokens and NFTs packaged inside the transaction. And yes, if scheduled, the transaction can't proceed until all the required signatures have been sent to the network.

221. By shubi#9407 in the Token Service Channel on 02/02/2022

Is it possible to have two transactions inside one schedule transaction, so that the two get executed only when the signature requirements of both are fulfilled?

222. By Greg Scullard#5365 in the Smart Contracts Channel on 01/31/2022

"generic" transactions have a 2 minute validity window at the most. You may be able to use scheduled transactions where you can set the expiry time of a schedule (between 0 and 30 minutes)

223. By Greg Scullard#5365 in the Token Service Channel on 01/25/2022

A scheduled transaction would increase that time window to 30 minutes, otherwise, you can set the valid start date to be say 24h in the future, giving you 24h to collect the signatures, but the tx *must* be submitted to Hedera at the right time (24h from now).

224. By Greg Scullard#5365 in the Token Service Channel on 01/25/2022

@Ashe Oro that's one way yes, the other is scheduled transactions (with support for only a subset of transaction types at the moment).

* The above approach requires that either all signatures are collected and transaction submitted to the network within 2 minutes of the transaction object being created by the SDK, or, using the SDK, setting the transaction valid start some time in the future to allow signature collection, but the submission to the network has to happen between valid_start and valid_start + 2 minutes (meaning some scheduling is required).

* Scheduled transactions enable one party to send the tx with some missing signatures to Hedera, get a schedule id and ask other signatories to add their signature to the schedule. Once Hedera deems all necessary signatures are received, the transaction is executed. Currently, a schedule remains valid for 30 minutes after which it's no longer usable and a new one has to be created (with another round of signatures)

225. By FelixTheWhale#8788 in the Javascript Channel on 01/24/2022

Good morning, how to pass null-key (I want to remove schedule key and set it "null" in this example) correctly for TokenUpdateTransaction? I am doing:

```
``` .setFeeScheduleKey(null)```
```

transaction succeeds but key is not changed



**226. By Ed Marquez#6403 in the Token Service Channel on 01/21/2022**

<https://docs.hedera.com/guides/docs/sdks/tokens/custom-token-fees>:

- Royalty fees are paid by the account exchanging the fungible value. When the NFT sender does not receive any fungible value, the fallback fee is charged to the NFT receiver
- A token's treasury account and any fee collecting accounts defined in the custom fee schedule for a token are exempt from paying any custom transaction fees when the token is transferred.

^The first point above says that the 1 hbar should be charged to the NFT creator (exchanging the fungible value = sending 10bar), but the 2nd point says the NFT creator should be exempt from paying the fee. Seems a bit odd and almost like an edge case... Just to confirm is the NFT creator also the **\*\*token treasury\*\*** or **\*\*fee collecting account\*\*** in your case?

**227. By 0xjepsen#5735 in the Developer General Channel on 01/20/2022**

@here i'll be doing a twitch stream later tonight walking you through how to deploy smart contracts on previewnet, come join me here at 6pm mst if you would like to learn how to use our EVM <https://www.twitch.tv/hederatv/schedule?seriesID=df1db746-8a84-4d60-ac9d-6f266c4194f1>

**228. By Bboozizik#7646 in the Smart Contracts Channel on 01/15/2022**

How is the SC2 update preparation going? Did the update schedule come out?



**3. By Greg Scullard#5365 in the Smart Contracts Channel on 12/28/2021**

That said, a concert with thousands of staff would likely not be possible to handle with HTS (too many custom fee schedules), a contract could arguably manage it, but not by paying everyone on a per ticket basis but accumulating what's owed to each account and letting them withdraw when the concert is over.

**4. By daniil#5984 in the Developer General Channel on 12/13/2021**

Hey guys I'm relatively new and am confused on the role of HBAR in a utilitarian sense and as a store of value at the same time.

Please correct me if i'm wrong, but in my understanding HBAR will be used for API calls. Thus, the coin itself has real utility, and the more networks use it = the more volume it will have.

Yet, a part of the pitch is that the "gas" fees are negligible, but aren't they then effectively based on the price of HBAR? If each transaction costs 0.1 HBAR, but the price of HBAR goes up 100-fold, the API calls get much more expensive. So, my assumption, is that if all of the above is correct, then over time they will drop the price of API calls - which they have no doubt thought about and considered. With that in mind, have they ever released a schedule / details as to how they will price an API call? So what exactly does the value of HBAR represent? Because if the pricing of the API calls is always adjusted to cost some certain amount of fiat currency, what really is the value of HBAR?

I feel as if im tripping over some basic fundamentals here, but I cannot find a straightforward answer to this, so I would really appreciate it if someone more knowledgeable could correct where exactly I went wrong in my understanding of the network

**5. By Greg Scullard#5365 in the Token Service Channel on 12/10/2021**

@Rens Laros it is possible to define royalties as part of a token's definition. Since the transfer of the token from Alice to Bob triggers a royalty payment from Bob to another account, both Alice and Bob need to sign the transaction (either offline before submitting to Hedera or using scheduled transactions).

**6. By Totohm Shanti#6955 in the Javascript Channel on 12/09/2021**

Also, i noticed that there are errors here

<https://docs.hedera.com/guides/docs/sdks/tokens/update-a-fee-schedule>

i mean:

- 1 - `TokenUpdateFeeScheduleTransaction` doesn't exists, it is called `TokenFeeScheduleUpdateTransaction` as in java it seems
- 2 - `addCustomFee` as a function does NOT exist

**7. By Greg Scullard#5365 in the Smart Contracts Channel on 12/07/2021**

And response posted in the other channel which may not be open to all or permanent.

So the challenge with any royalty is that two people are involved in the operation, the token holder (Alice) sending the token to someone (Bob) who's paying Alice for the token and also paying the token issuer (Carol) a royalty.

It is necessary for both Alice and Bob to sign the transaction, Alice to approve the transfer of the token to Bob and Bob to approve the payment to Alice + Carol.

Whether this is done natively with the token service or a smart contract doesn't change the fact that both parties need to approve the operation.

In a P2P scenario it's challenging... we need support from wallets for scheduled transactions or the ability to notify someone of a transaction they need to sign.

Marketplaces help to some extent, but not entirely since you need to transfer "ownership" of your token to a marketplace so that they can sell it on your behalf (they can better manage the signature collection process), however, in transferring the token to the marketplace, you're back to the P2P scenario in that the simple act of transferring the token to the marketplace (in escrow) incurs a royalty payment. This is particularly important if the royalty payment has a fixed component, even transferring the token to the marketplace for free would result in the fixed royalty being paid to the issuer...

We should create a HIP to add support for an allowance feature called Approve on HTS meaning you can "share" control of the token with someone else (and as the owner, revoke that control). The someone else (a marketplace) would then be able to sell the token on your behalf, but it would never have been transferred to them in the first place, just granted the ability to transfer it on your behalf.

**8. By robl#6965 in the Developer General Channel on 12/03/2021**

Note: hedera release-notes is currently showing v0.21.0 scheduled to deploy on mainnet before testnet. Looks like the dates were inadvertently swapped

**9. By Greg Scullard#5365 in the Token Service Channel on 11/29/2021**

@shubi you could look into Scheduled Transactions which enables someone to create a transaction with missing signatures and leave it "pending" in Hedera for up to 30 minutes. You could transmit the ScheduleId to the other party with which they can pull the transaction, inspect it and if acceptable to them, submit a signature which will complete the signature set and result in Hedera executing the transaction. After 30 minutes, if not all signatures were received, the scheduled transaction is automatically deleted.

**10. By tinkerm#4293 in the Java Channel on 11/29/2021**

Hi! The protobuf type for the contents of file `0.0.111` is `CurrentAndNextFeeSchedule` here <https://hashgraph.github.io/hedera-protobufs/#proto.CurrentAndNextFeeSchedule>

If you parse with that type, you should get a dizzying amount of information, with a bunch of resource prices for each Hedera operation (`CryptoTransfer`, `ContractCall`, ...)

The expiration times don't matter right now, since atm we always use the same schedule for both "current" and "next"

**11. By Greg Scullard#5365 in the Developer General Channel on 11/26/2021**

With Hedera (and within a smart contract), there is no concept of block, however we translate block.timestamp to be the consensus timestamp of the transaction, could you work out a schedule based on time passing ? e.g. store the block.timestamp of the last emission and if/when the current block.timestamp is > xyz seconds/minutes, start a new issuance and reset the "clock" ?

### 12. By mtthwcmbll#7922 in the Java Channel on 11/25/2021

Hi folks! I've been playing with some small java apps to get used to the SDK and I was wondering if someone could sanity check this with me. I'm trying to programmatically show some of the fees expected for some actions and saw a reference to the Fee Schedule file (<https://github.com/hashgraph/hedera-sdk-java/issues/144#issuecomment-508098694>). I assumed it'd be a representation of the fees page (<https://docs.hedera.com/guides/mainnet/fees>) describing the kinds of transactions and the price in hbar or dollars or something.

Unlike the ExchangeRateSet special file, there doesn't seem to be a class in the .sdk package to convert it into, only the protobuf itself. On testnet, if download the file, stuff it into a protobuf, and show its contents it looks empty:

```
```java
ByteString contents = new FileContentsQuery()
    .setFileId(FileId.FEE_SCHEDULE)
    .execute(client);
```

```
FeeSchedule currFeeSchedule = FeeSchedule.fromBytes(contents.toByteArray());
System.out.println(currFeeSchedule);
```
```

shows:

```
```
FeeSchedule{transactionFeeSchedules=[TransactionFeeSchedule{requestType=NONE,
feeData=FeeData{nodeData=null, networkData=null, serviceData=null, type=DEFAULT},
fees=[]}], expirationTime=1970-01-01T00:00:00Z}
```
```

It seems strange that the expiration date is timestamp 0 and there are no fees associated at all. Am I loading the wrong file, or pulling it down incorrectly?

### 13. By Supremax67#5749 in the Developer General Channel on 11/25/2021

No such thing on Hedera. HBAR are on a release schedule and DEX can be built on the ones already available in circulation.

### 14. By Hashburglar#5904 in the Developer General Channel on 11/25/2021

Say you created a DEX and allocated x amount of the total supply of token XYZ to airdrops, development funds, etc. The remaining y amount of total supply would be gradually released based on a predetermined emission schedule. This y allocation would primarily go towards LP Farm Rewards. Emissions have to be calculated based on XYZ per unit of time, or per block.

For example, SpookySwap calculates this based on BOO per second: <https://docs.spookyswap.finance/tokenomics-1/emissions-schedule>

### 15. By Hashburglar#5904 in the Developer General Channel on 11/25/2021

Does Hedera have scheduled block times? With Fantom's Lachesis protocol (supposedly similar to Hashgraph), block times are proportional to the transaction activity on the block. This is confusing because Fantom claims to be a DAG.

### 16. By msanders#9466 in the Token Service Channel on 11/22/2021

@Greg Scullard Thank you for your response! That does make sense for sure as I bet the data size growth of the other chains will inevitably need to be addressed as you

mentioned. So far there are opportunities for less tech savvy individuals to own NFTs and hold Tokens, etc. on other chains indirectly. With this model I think the initial hurdle is going to be normalizing the notion of "maintenance fees" when someone purchases and holds any Hedera assets through a third party. The unknown is likely the thing to give the most friction so hopefully the process of setting these fees will be very transparent and changes will follow a schedule that is likely pretty long. If the fees are negligibly low that overhead could likely be absorbed indirectly by the service provider. I'm interested in potentially using Hedera for games in the future and other applications.

**17. By bugbytes#0817 in the Developer General Channel on 11/22/2021**

I know this was closed, but I'm starting to think it was the wrong solution: <https://github.com/hashgraph/hedera-sdk-go/issues/314>

When scheduling transactions, why should the \*HAPI\* client be encumbered by using a pre-determined identical list of transfers in exactly the same order when trying to orchestrate a scheduled payment among different separate clients. Given that "sameness" of a scheduled transaction can easily be computed by the net of any tokens and crypto transferred, why can not this comparison be computed by the hedera node receiving the request?

**18. By Ed Marquez#6403 in the Token Service Channel on 11/19/2021**

@BlueSultan Fixed the extra period. Just an FYI, here's an updated version of the blog post that shows newer functionality, like NFTs, custom royalty fees, scheduled transactions (part 2), and more. <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

**19. By Greg Scullard#5365 in the Developer General Channel on 11/17/2021**

You can also use scheduled transactions for the same purpose, although Alice will have to pay a small additional fee to add her signature to a schedule.

**20. By Peach-Flavored Snark#4014 in the Token Service Channel on 11/13/2021**

I didn't realize all 3 parts of the getting started with HTS were already on the hedera blog

the urls are below if it's applicable to anyone

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update-and-scheduled-transactions>

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-3-how-to-pause-freeze-wipe-and-delete-nfts>

**21. By Supremax67#5749 in the Developer General Channel on 11/09/2021**

Fixed supply on a very slow release schedule. All of it should be released to the market within 10-20 years

**22. By bugbytes#0817 in the Developer General Channel on 11/04/2021**

@Greg Scullard another Q: does signing a scheduled transaction renew its "lease" or extend its life in any way?

**23. By Ed Marquez#6403 in the Token Service Channel on 11/03/2021**

#token-service,

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-2-kyc-update-and-scheduled-transactions>

Here's Part 2 of **\*\*how to get started with HTS (updated)\*\***. Part 2 shows how to do the following for an NFT:

- Enable/disable KYC
- Update token properties (if the token is mutable)
- Schedule transactions (like an NFT transfer)

Stay tuned for Part 3 next week ...

**24. By Ed Marquez#6403 in the Developer General Channel on 11/02/2021**

@bugbytes 30 minutes

<https://docs.hedera.com/guides/docs/sdks/schedule-transaction/schedule-faq#11.-when-does-a-scheduled-transaction-expire>

**25. By bugbytes#0817 in the Developer General Channel on 11/02/2021**

@Greg Scullard et al., how long does is an pending scheduled transaction retained by the network before it goes bye bye if not signed by all of the required parties?

**26. By Ed Marquez#6403 in the Token Service Channel on 11/02/2021**

My understanding (and according to the release notes) is that it's been available since v0.17 back in September: <https://docs.hedera.com/guides/docs/release-notes/services#v0.17.4>

Here's a recent blog post with an example on how to mint NFTs with royalty fees: <https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts#:~:text=Check%C2%A0section%20below.-,Create%20a%20Custom%20Fee%20Schedule,-Let%E2%80%99s%20start%20by>

**27. By Ferrugenfish#2006 in the Developer General Channel on 10/31/2021**

Looks to be scheduled for Q2 2022

**28. By Ed Marquez#6403 in the Token Service Channel on 10/26/2021**

#token-service,

<https://hedera.com/blog/get-started-with-the-hedera-token-service-part-1-how-to-mint-nfts>

Here's an update on how to get started with HTS. The blog post covers how to:

- Create a custom fee schedule (royalty)
- **\*\*Configure a non-fungible token (NFT)\*\***
- Mint and burn NFTs
- Associate and Transfer NFTs

Hope you find it useful.

**29. By vira#7285 in the Developer General Channel on 10/25/2021**

hi, I saw a post on reddit that HSC2.0 is rolling out in November. is this true? thought it was scheduled for q1/q2 2022

**30. By Ed Marquez#6403 in the Developer General Channel on 10/21/2021**

Dear #-developer-general, today the Testnet was upgraded to v0.19. <https://docs.hedera.com/guides/docs/release-notes/services#v0.19.0>

In this release:

- We are thrilled to announce migration of the Hedera smart contract service to the Hyperledger Besu EVM, as laid out in HIP-26. This enables support for the latest v0.8.9 Solidity contracts, and harmonizes our gas schedule with that of the “London” hard fork. The Besu migration also sets the stage for a step change in smart contract performance on Hedera (performance improvements, and integration with our other services coming soon).
- HIP-23 feature set is now enabled, so that any account that has been configured with a non-zero `maxAutoAssociations` can receive air-drops (i.e., units or NFTs of a token type without explicit association).
- HIP-24, which provides a safety measure for token types created with a pauseKey. If a `TokenPause` is submitted with this key's signature, then all operations on the token will be suspended until a subsequent `TokenUnpause`.

**31. By Lumpy#9920 in the Developer General Channel on 10/15/2021**

This might be in the wrong channel but does anyone know how the hbar foundation releases grants? Is it in scheduled releases? Have they approved any projects yet? Thanks!

**32. By Greg Scullard#5365 in the Token Service Channel on 10/11/2021**

Justin, scheduled transactions only support submitting HCS messages and transfer transactions at the moment as far as I know.

**33. By Justin Atwell#0583 in the Token Service Channel on 10/10/2021**

What I would do is Create a token just like you described above, but when a user wants to mint on the token I'd Create a Scheduled Transaction then make the inner transaction a TokenMint transaction with the user's signature (the payer accountId required in the Token Mint Transaction) from the wallet. I don't believe functionality exists that allows you to mint from a wallet yet.

Scheduled Transaction: <https://docs.hedera.com/guides/docs/sdks/schedule-transaction/create-a-schedule-transaction>

**34. By wheresLINA (Hedera)#0936 in the Developer General Channel on 10/04/2021**

hi everyone, tomorrow at 5pm pt @0xJepsen is doing a live coding session on Twitch going over how to mint an NFT using the Hedera JavaScript SDK: <https://www.twitch.tv/hederatv/schedule?seriesID=d412f2b0-5367-414c-9eba-121ec88c49e5>. If you ever have any suggestions on other content you would like to see from our team please share it with us via this form: <https://forms.gle/PgK15fQk8TP3FKWo8> or feel free to DM me



**35. By Greg Scullard#5365 in the Developer General Channel on 10/04/2021**

HI, we created an issue to track a change to how pre-existing scheduled transactions are handled such that they can be signed with a create: <https://github.com/hashgraph/hedera-services/issues/2269>

**36. By bugbytes#0817 in the Developer General Channel on 09/30/2021**

@Greg Scullard QQ about scheduled transactions: If you receive a `IDENTICAL\_SCHEDULE\_ALREADY\_CREATED` response, did you pay any fees? The docs say when you get this result code, it will tell you the scheduled ID to sign so you can submit a Sign Scheduled Transaction instead (which would incur a fee), but does not say if it charges you for the initial [failed] attempt?

**37. By Rocket#2012 in the Token Service Channel on 09/22/2021**

Random question, are scheduled transactions live on mainnet?

**38. By mrmr#9941 in the Developer General Channel on 09/17/2021**

<https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**39. By AlexJ#1720 in the Developer General Channel on 09/02/2021**

What's is the token release schedule for HBAR? With only 19% of tokens released i'm curious when the other tokens will hit the market.

**40. By teacoat#2092 in the Javascript Channel on 08/14/2021**

is there a way to get the current transaction fee before doing a transaction? I found this but I'm not sure how to access it <https://docs.hedera.com/guides/docs/hedera-api/basic-types/feeschedule>

**41. By Liberated#0417 in the Developer General Channel on 08/12/2021**

It would be really cool, because I could one day use my rules engine to decide which inner transaction my Scheduled Transaction could be or something.

**42. By Liberated#0417 in the Consensus Service Channel on 08/08/2021**

Where can I find a list of possible Inner Transactions for Scheduled Transactions? According to docs I see cryptotransfer and consensusSubmitMessage but says as of .13.0, so just double checking.

**43. By Greg Scullard#5365 in the Developer General Channel on 08/06/2021**

@NotKyle @Liberated is correct, you can't bundle different types of transactions in a scheduled transaction (although I think I created a HIP discussion suggesting this would/could be a good idea).

However, you can include several hbar and token transfers in a single cryptoTransfer, all will succeed or fail atomically.

**44. By Liberated#0417 in the Developer General Channel on 08/05/2021**

Pretty sure you can do one token transfer to two different accounts in a scheduled transaction. I think that's a bit more expensive. I don't think i've ever had to transfer to more than one account. Here's the fee estimator: <https://hedera.com/fees>

**45. By Liberated#0417 in the Developer General Channel on 08/05/2021**

I think you can do more than one account in a transfer. I just don't think it's possible to

have two transactions inside of a scheduled transaction. For instance, I think you as the operator could pay two people in one transaction.

**46. By NotKyle#4231 in the Developer General Channel on 08/05/2021**

if possible to trigger both transfers under the same schedule, maybe this can save me some months of development.

**47. By NotKyle#4231 in the Developer General Channel on 08/05/2021**

by reading the SDK for `setScheduleTransaction(<transaction>)`, I assume it's not possible, but in my case it would be essential that all events occur simultaneously

**48. By NotKyle#4231 in the Developer General Channel on 08/05/2021**

Hi guys, quick question, can I pass a List of Schedulable Transactions to a single `ScheduleCreateTransaction` object? Meaning: I want a single scheduled event that, once multisig is achieved, triggers 2 `CryptoTransfer` and 1 `ConsensusSubmitMessage` simultaneously

**49. By Liberated#0417 in the Developer General Channel on 08/03/2021**

Absolutely agreed there.

So wallets always get the green light to touch your private keys and such because they are considered the "gateway" to crypto and there's simply not an alternative way to easily get credentials.

This *\*feels\** like it could be an official Hedera product to start.

Call it HCS Transaction wallet or something. Let it generate scheduled transactions and have functionality similar to a wallet. Someone needs to bridge the gap between wallets on a smartphone (the ones that get the green light with Private Keys) and and HCS on a server IMO.

**50. By Greg Scullard#5365 in the Developer General Channel on 08/03/2021**

Not that scheduled transactions are there to make this process easier.

**51. By Rocket#2012 in the Developer General Channel on 07/31/2021**

I was aware of threshold key lists for scheduled transactions

**52. By plechovahuba#0856 in the Developer General Channel on 07/23/2021**

Why is circulating supply 9.8B? It should be around 8.5B - <https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**53. By oleksii.arkhypov#8580 in the Token Service Channel on 07/13/2021**

@Greg Scullard

It looks like it works but it reaches consensus with status

`TOKEN_ID_REPEATED_IN_TOKEN_LIST`, not `SUCCESS` and though NFT tokens aren't transferred

SDK itself works fine, doesn't produce any exceptions, also all required signatures are successfully attached. BUT as soon as last signature attached transaction completes with `TOKEN_ID_REPEATED_IN_TOKEN_LIST`. To exclude wrong data for transaction the same data (absolutely identic completes with success if it's executed in regular way: if it's generated, signed within 120-180 seconds). Also scheduled transaction easily could be

found in scheduled transaction with all attached signatures.

P.S. ScheduledTransaction for Hbar transfer works fine and reaches consensus with SUCCESS status.

P.P.S. looks like issue with ScheduleCreateTransaction occurs when transaction body is: transferTransaction.addTokenTransfer(tokenId, accountId, tokenAmount).addTokenTransfer(tokenId, accountId, -tokenAmount).

**54. By 0xJepsen#5735 in the Developer General Channel on 07/12/2021**

Another cool thing in the pipeline is HIP-17 and HIP-18 which are scheduled to hit the main-net in early august. Hip-17 is full support for custom NFT tokens with a wide range of capabilities. HIP-18 is custom token fees that could allow for royalty payments and social tokens. Really exciting stuff

**55. By Greg Scullard#5365 in the Token Service Channel on 07/12/2021**

Scheduled token transfer should work. We had the same issue with one of the SDKs, looking into whether it's a bug.

**56. By oleksii.arkhypov#8580 in the Token Service Channel on 07/12/2021**

Hi, Guys.

Got question according ScheduleCreateTransaction/SignTransaction.

I've been implementing scheduled token transfer (not Hbars) via scheduled transaction but somehow transaction fails in hedera network with Status when reaching consensus:

TOKEN\_ID\_REPEATED\_IN\_TOKEN\_LIST

Regular approach when creating transaction and signing it directly works perfectly (transaction body is equal in both cases)

I guess scheduled token transfer isn't supported at this point of time.

Java-SDK

Transaction type: TransferTransaction

Method used: addTokenTransfer

**57. By Rocket#2012 in the Developer General Channel on 07/08/2021**

It's kind of like scheduled transactions

**58. By Greg Scullard#5365 in the Consensus Service Channel on 07/06/2021**

Think of scheduled transactions as a beta for the full feature set. Had to get multi party signing right and working first

**59. By Liberated#0417 in the Consensus Service Channel on 07/05/2021**

I think a better name for Scheduled Transaction would be "Verified Transaction".

Is Hedera adding a scheduling aspect to it?

**60. By gehrig#7214 in the Consensus Service Channel on 06/24/2021**

Overall, that makes sense to me. I think you'd want to attach a key to each business and have a 'verified businesses' topic that maps a key to a business. You'd also likely want some off-ledger pointer of that key belonging to them, similar to proving domain ownership. Scheduled transaction would come into play if you want a central issuing authority to sign that proof of key ownership alongside the business.

**61. By Darth CryotoHawk#3687 in the Consensus Service Channel on 06/23/2021**

Hi all. I am writing a demo application that requires a list of verified businesses to choose from. Currently the businesses each exist as messages on a topic. To verify that the businesses are legit I was thinking of using scheduled transactions to have multiple accounts sign the transaction before it gets executed and recorded onto the topic. FOr example I want to add an entry for Bob's Auto Garage. Using a scheduled transaction, I could say don't record the transaction until Bob verifies the info . Does this make sense? Is this correct use case for scheduled transactions, to have multiple accounts sign and verify a transaction for the purposes of establishing validity.

**62. By Greg Scullard#5365 in the Token Service Channel on 06/22/2021**

The hip is still draft by the authors and yet to be published. I don't believe the association is automatic as you suggest, but I have an idea for another HIP which could be helpful in that regard and many others.

The general idea would be to have a "bundle" or "atomic" transaction type which could carry two or more transactions, an order would be specified for these transactions such that when the bundle reaches consensus, the transactions are executed in the specified order and if any fails, the entire bundle fails.

So the bundle would essentially contain an array of transactions, not sure if each transaction would carry its own signatures, or whether the bundle would (I think signatures per bundle would make more sense, since they approve the entire "process" and could be supported by scheduled transactions too).

Such bundles could:

- Create a token, associate to an account, transfer the token
- Alice creates a HCS message, Bob pays Alice 10hbar for doing so

...

**63. By Rocket#2012 in the Developer General Channel on 06/10/2021**

scheduled transactions can also accomplish this too

**64. By Rocket#2012 in the Developer General Channel on 06/07/2021**

There isn't a schedule

**65. By Liberated#0417 in the Token Service Channel on 06/01/2021**

@esh I dont get your frustration. If I run a website on AWS I have to pay for it to serve my customers. If I'm connected to the municipal water supply, I have to pay (or rent) for the pipes to carry that water.

Indeed, if you look at a reasonably similar use case look at AWS. They have AWS credits that are non refundable but fuel network power in some fashion or another.

small companies and large corporations alike will likely have a scheduled Transaction to make sure they have enough HBAR in their account. I don't see how that's different from giving Amazon your credit card personally.

**66. By Greg Scullard#5365 in the Developer General Channel on 05/26/2021**

Scheduled transactions (which are valid up to 30 minutes) could be the answer there.

Submit the transaction with a "hot" key (the transaction fee payer) from an account which holds relatively small amounts of hBar at any one time, then within 30 minutes, submit the missing signatures using the "cold" key.

**67. By Greg Scullard#5365 in the Token Service Channel on 05/20/2021**

first question would be how is the payment effected, if it's in hbar, see answers below

a) the payment in hbar could be included in the same transaction as the token transfer, the token holder and the payer would both have to sign the transaction, either be exchanging transaction payloads with each other so they can both sign and one submit to Hedera, or using a scheduled transaction, the buyer submits the transaction as a scheduled transaction, shares the transaction id with the seller who can query for the transaction, verify he/she's happy with it and submit his/her signature for the scheduled transaction to execute. This has to happen within 30 minutes or the transaction is discarded by the network.

b) if you separate the token transfer from payment via a third party, the memo could indeed be used to indicate the reason for the payment.

c) the latter transaction would not be refunded no, but if two transactions per the a) solution were sent, the first to execute will succeed, the second will fail since the seller no longer holds a token to transfer to a buyer (INSUFFICIENT TOKEN BALANCE would be the error)

**68. By JeffW#5649 in the Javascript Channel on 05/14/2021**

I'm completely fine with NOT using actual Smart Contracts. I'm more interested in mimicking them as close as possible using the HTS SDK. It seems scheduled transactions are about as close as I can get. I will play with them and see where it leads me. Thanks for your input.

**69. By rhysied#6748 in the Javascript Channel on 05/14/2021**

Unfortunately it's not like a fully atomic list of operations so you'd have to rely on the user having already associated with the asset afaik (haven't gone hands on with either HTS or the scheduled transactions yet)

**70. By rhysied#6748 in the Javascript Channel on 05/14/2021**

Smart contracts are self contained entities and currently have not access to HCS or HTS so assuming your NFTs are on the token service that is a no go.

To clarify, with scheduled transactions the intention is that you would be able to create a swap (e.g. my 10 HBAR for your NFT). Without scheduled transactions you would need to sign this with both keys, however with scheduled transactions you can set up the transfer (i.e. the NFT will be swapped for 10 HBAR) and sign it, where it is then published to the network (I think there is an upper limit on how long they last but can't remember it ATM, not sure if it's 24 hours or several days).

As a user (potentially via your dapp interface or via a wallet, this is where the ecosystem needs some time to develop), I will see the transaction is waiting for my signature, sign it and then push it back to the network where it can execute in the same manner as if both keys were provided at the start

**71. By Rocket#2012 in the Javascript Channel on 05/14/2021**

Scheduled transactions might also be a thing. Again I'm not too clear on how smart contract type transactions can be performed on hedera's network

**72. By JeffW#5649 in the Javascript Channel on 05/14/2021**

Ok, well this helps. I can see the benefit of keeping my private key on the server and signing all MY transaction there. Then, the user will either need to use a wallet/plugin connected to my site or they will need to sign a scheduled transaction that I 'send' to them. That's what I've gotten out of the above discussion so far. This has been helpful and if anyone else want to chime in, please do. I'm drinking from the fire-hose right now.

**73. By rhysied#6748 in the Javascript Channel on 05/14/2021**

I'd probably lean more towards option 4 and be prepared to eat the costs (or pass it on to users as a transaction fee) as the ecosystem around scheduled transactions will likely improve and also it gives you the option of handling all your Hedera logic server side if you wanted to

**74. By rhysied#6748 in the Javascript Channel on 05/14/2021**

So the main issue you will have afaics is allowing the user to sign the transaction.

Currently I think there are 4 options (potentially more that I have missed):

- 1) allow the user to just paste their key in to sign a transaction (bad for the user's security, many users will not trust this system)
- 2) use the SDK to generate a transaction which can then be converted to bytes, handed off to the user to sign, with the return bytes then processed (quite complex, need to develop or use an existing signing tool, limitations around the time between generating the bytes, signing and submitting)
- 3) build in support for one of the Hedera browser extensions (only downside being none of them seem to have become the defacto one to use, not sure about how much interoperability there is or whether each one needs a bespoke integration, no mobile support?)
- 4) leverage the new scheduled transaction feature to generate the purchase transaction and let the user sign it asynchronously (only downsides here are potentially you may waste money on fees if users keep cancelling orders, also not sure how much third party support their is for it yet)

**75. By Supremax67#5749 in the Token Service Channel on 05/14/2021**

Hedera doesn't decide pricing, their main concern is security of the network. In a world where a rich billionaire can affect pricing by a simple Tweet, no project can guarantee you a pricing schedule.

**76. By coltsfanatic07#0179 in the Token Service Channel on 05/14/2021**

<https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**77. By Krulknul#6373 in the Developer General Channel on 05/12/2021**

Sorry I don't know everything about the release schedule, mainly about hashgraph consensus itself.

**78. By Rocket#2012 in the Developer General Channel on 05/12/2021**

there's literally a schedule on their website

**79. By rhysied#6748 in the Token Service Channel on 05/09/2021**

Not sure if you may be able to enforce somewhat similar behaviour using freeze / unfreeze and scheduled transactions (e.g. monitor for user transfers, freeze those funds until the user signs a token wipe or other scheduled transaction and then unfreeze).

Not really user friendly though

**80. By Supremax67#5749 in the Developer General Channel on 05/07/2021**

@IRV They are everywhere, depends which one you are referring to. The whitepaper, the Hedera18 YouTube presentation or the SAFT release schedule?

**81. By Deleted User#0000 in the Developer General Channel on 05/06/2021**

Is the mainnet upgrade rescheduled?

**82. By bugbytes#0817 in the Token Service Channel on 04/29/2021**

Scheduled Account Create is turned off on testnet

**83. By Greg Scullard#5365 in the Token Service Channel on 04/28/2021**

I believe all transaction types can be put through a scheduled tx

**84. By Matt Smithies#7285 in the Token Service Channel on 04/28/2021**

@Greg Scullard are atomic swaps (for HTS tokens) on scheduled transactions as of yet?

**85. By Myridium#8284 in the Developer General Channel on 04/27/2021**

I calculated the rough amount I would expect to receive annually from staking and it seems to be like Hedera staking won't be very profitable until/if Hedera has more transactions than the Visa network, by an order of magnitude. And this is assuming those transactions are token transactions at \$0.001. Do you know if Hedera will release rewards from the Treasury for proxy staking incentive? I didn't see any indication of this in their token release schedule.

**86. By Myridium#8284 in the Developer General Channel on 04/26/2021**

The fees for each service are fixed by a USD price schedule; the amount of HBAR you pay is determined according to the exchange rate.

I'm sure there's lots more to say but those are the main advantages I see at the moment

**87. By JSilver#6283 in the Token Service Channel on 04/21/2021**

Ethereans can say this is a form of delegated trust... and I get it. But, following this logic you can imagine what comes next: we set a network of dApps (a shard or realm in Hedera's jargon), that will execute a transaction, reach consensus, and then return the response to the main shard for execution of the scheduled transaction.

**88. By JSilver#6283 in the Token Service Channel on 04/21/2021**

Yesterday's demo showed the auction when and Hbar bid knocks down the standing bid. You could send the hbar or token, and the dApp has the AMM function to do the swap; so it is a swap broken in 2 steps. I have a prototype ready with this model.

Another alternative is to build the atomic swap (at the swap rate at latest price in the convex curve) and send to scheduler. If the swap rate is acceptable to the other leg, the counter-party signs and the swap is executed. If not, the transaction expires.

**89. By wheresLINA (Hedera)#0936 in the Developer General Channel on 04/08/2021**  
unfortunately the speaking slot did not align with his schedule so he won't be presenting this time around

**90. By El Dudearini#9731 in the Developer General Channel on 03/29/2021**  
@RSumner2 <https://help.hedera.com/hc/en-us/articles/360002542517-What-is-the-schedule-for-coins-to-be-released-from-Hedera-s-Treasury->

**91. By bugbytes#0817 in the Developer General Channel on 03/29/2021**  
I'm also wondering when the next iteration of scheduled events hits \*previewnet\* from the code base, it looks like its all there.

**92. By bugbytes#0817 in the Developer General Channel on 03/22/2021**  
The future "Scheduled Transaction" feature will help out with not handling private keys, presently I've solved it by passing around the encoded message (protobuf) and asking for the (protobuf) signature back, no sharing of private keys, granted it all has to be done within the original TX start/expire window.

**93. By Supremax67#5749 in the Developer General Channel on 03/20/2021**  
Just keep in mind the 15 years release scheduled is adjusted based on the value of HBAR.

**94. By Skorcher#3107 in the Consensus Service Channel on 03/19/2021**  
pricey but doable, I am interested in investing if I can get some kind of reward schedule. I can invest in the hardware for multiple nodes if the ROI makes sense. Guess Ill shoot the right people an email if no one in the chat has a rough idea.. Appreciate the link @Supremax67

**95. By bugbytes#0817 in the Token Service Channel on 03/12/2021**  
...also, one does not necessarily need to wait for scheduled transactions to be added to the network. Parties can exchange a transaction with the atomic exchange with the way it works today, the last party to sign submits it to the network - doesn't even have to be the payer. The trick is to have a TX id within an agreed upon window so it can be signed in time to submit before the ID "times out". No one need expose their private key to a third party or custody service.

**96. By rhysied#6748 in the Token Service Channel on 03/12/2021**  
so assuming you already have a buyer (lets say your friend wants to swap you 10 HBARs and the custom token they minted for 2 of your custom tokens), you (or your friend, but lets say you in this example) would be able to use the upcoming scheduled transactions to set up a transaction containing all the swaps and pre-sign it with your key and push it to the network. Once its on the network, your friend will be able to check it (to make sure you haven't been sneaky and tried to take all of their tokens), sign it and submit the now fully signed transaction to the network where it will execute and all of the swaps take place.

unfortunately there isnt a built in order book / exchange, so if you didn't already have a buyer you would have to look at other methods (either token transfers on supported exchanges, using wrapped tokens, etc, etc)

(Edit: <https://www.myhex.io/> may be of interest, forget about them until I went on



Twitter. I haven't used them (not sure if it's active yet) but it should do the trick when it's up and running)

**97. By rhysied#6748 in the Developer General Channel on 03/12/2021**

ATM yes the mainnet upgrades require downtime although this is something the team have said they're trying to address in future.

Everyone's setup will be different, but fortunately for us as we can queue tracking data we just set up a cron job to stop our workers submitting to the network and resume after the network should be back up (we normally stop a little beforehand and wait an extra 30 mins or so after the scheduled restart in case there are any issues).

For frontend applications you would need to warn your users that the service will be unavailable. You can subscribe to the status.hedera.com feed which can help with automating that iirc

**98. By Supremax67#5749 in the Developer General Channel on 03/10/2021**

@oscarC3R <https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled->

**99. By bugbytes#0817 in the Developer General Channel on 03/03/2021**

Does anyone know what the final list of schedule-able transactions will be? So far it looks like you can only schedule a `_create` account, `transfer_`, and `_submit` HCS message\_.

**100. By bugbytes#0817 in the Developer General Channel on 02/27/2021**

Another thing, why was I able to schedule the above without ``nodeAccountID`` and ``transactionFee`` as a part of the ``TransactionBody`` bytes and still get past the precheck?

**101. By bugbytes#0817 in the Developer General Channel on 02/27/2021**

Ok, in this case I figured it out, but I think this is a bug:

```
\\`
{
 "nodeAccountID": { "accountNum": "3" },
 "transactionFee": "6000000000",
 "cryptoTransfer": {
 "transfers": {
 "accountAmounts": [
 { "accountID": { "accountNum": "2423" }, "amount": "-86" },
 { "accountID": { "accountNum": "2424" }, "amount": "86" }] } }
}
\\`
```

I get the need for a "scheduled" transaction to include the ``transactionFee``, but why would it need ``nodeAccountID``, does this force the countersigning party to submit to node 0.0.3?

**102. By Greg Scullard#5365 in the Developer General Channel on 02/27/2021**

@bugbytes you can get the 3min record of a scheduled transaction's execution from a node by doing a `getTransactionRecord` query with the `TransactionID` of the parent `ScheduleCreate` with `TransactionID.scheduled=true`

**103. By bugbytes#0817 in the Developer General Channel on 02/26/2021**

Indeed the \*scheduling\* TX did return a schedule ID:

```
\\
"transactionGetReceipt": {
 "header": { },
 "receipt": {
 "status": "SUCCESS",
 "exchangeRate": {
 "currentRate": { "hbarEquiv": 1, "centEquiv": 12, "expirationTime": { "seconds":
"4102444800" } },
 "nextRate": { "hbarEquiv": 1, "centEquiv": 15, "expirationTime": { "seconds":
"4102444800" } } },
 "scheduleID": { "scheduleNum": "1005" } } }
\\
```

but the above was for the countersignature.

**104. By Greg Scullard#5365 in the Developer General Channel on 02/26/2021**

Schedule Id in 0.0.xxx format.

**105. By bugbytes#0817 in the Developer General Channel on 02/26/2021**

Forgive me, I just don't see the info I'm looking for that I can use to get a record for the executed transaction, or I'm grossly misunderstanding.

I send this countersignature:

```
\\
{
 "transactionID": { "transactionValidStart": { "seconds": "1614368217", "nanos":
8440777000 }, "accountID": { "accountNum": "1001" } },
 "nodeAccountID": { "accountNum": "3" },
 "transactionFee": "6000000000",
 "transactionValidDuration": { "seconds": "120" },
 "scheduleSign": {
 "scheduleID": { "scheduleNum": "1005" },
 "sigMap": { "sigPair":
[{ "ed25519": "xh/Di24MVDqfS2BGBpli8eEw0SHOMFt5wnExK7eeshiIQI9/
MuR1a8uc5jWUJTMCE8oIEhQIclwn2FK0O3l1CQ==" }] } }
}
\\
```

**106. By bugbytes#0817 in the Developer General Channel on 02/26/2021**

Exactly, and my opinion is that to support a wider range users, that when a TX causes a scheduled transaction to execute: the network should return the TX ID of the execution as a courtesy.

**107. By Greg Scullard#5365 in the Developer General Channel on 02/26/2021**

Well, if you fire and forget and don't get your receipt within 3 minutes, you have to resort to a mirror. A scheduled tx is fire and forget to some extent.

**108. By Greg Scullard#5365 in the Developer General Channel on 02/26/2021**

Wallets already do in the main for tx history. A scheduled tx can happen some time in the future, it's not possible for hedera nodes to retain this data for too long after the execution.

**109. By Greg Scullard#5365 in the Developer General Channel on 02/26/2021**

A mirror node query would be needed to ascertain whether (and when / in error) the scheduled transaction was executed.

The record for the inner transaction (Transaction id known) includes the scheduling transaction id that executed it.

**110. By bugbytes#0817 in the Developer General Channel on 02/26/2021**

Ok, here's another one: when a counterparty signs a scheduled transaction, how do they know their action triggered an execution? ``ScheduleGetInfoQuery`` fails on an executed scheduled transaction with ``INVALID_SCHEDULE_ID``.

**111. By Greg Scullard#5365 in the Developer General Channel on 02/26/2021**

"So if I understand: the reason why a party can't take the easy road by signing a message that just contains the ScheduleID (what you refer to as a blind signature?) is because Hedera wants the party to take the extra step to produce a signature for the matching transaction bytes"

Correct, it's not so much that Hedera wants to (we could have chosen not to), it's best practice to have a signature for the intent (the transaction itself), than just an approval.

"I still get a bit caught up on the create transaction then; because, while not exactly a "blind" signature, there is no signature on the scheduled transaction, only the envelope."

The create contains the body of the transaction to schedule and that's signed as part of the "envelope" so it is signed, albeit not explicitly as a separate signature.

"So that leads to a question, which is cheaper: Creating a Scheduled Transaction or Signing a Scheduled transaction: ..."

Creating will always be more expensive, in the same way that creating an account is more expensive than renewing it.

"... and to confirm, there is no way to submit a potential transaction that you may choose to sign in the future ..."

Correct, that's my understanding.

Note: for counterparty signing, it's possible to get the scheduled transaction's body bytes from a ``ScheduleGetInfoQuery``, inspect the contents of the transaction (if desired) and sign it, saving p2p communication of the transaction (although the counterparty needs to know the ``scheduleID``)

**112. By bugbytes#0817 in the Developer General Channel on 02/25/2021**

So if I understand: the reason why a party can't take the easy road by signing a message that just contains the ScheduleID (what you refer to as a blind signature?) is because Hedera wants the party to take the extra step to produce a signature for the matching

transaction bytes (\*and\* then they have to sign the envelope too to pay for updating the list of signatures on that transaction).

I still get a bit caught up on the create transaction then; because, while not exactly a "blind" signature, there is no signature on the scheduled transaction, only the envelope.

So that leads to a question, which is cheaper: Creating a Scheduled Transaction or Signing a Scheduled transaction: the size of a TransactionBody bytes can sometimes be smaller than a SigMap depending on how its built and whole TX only requires one signature then.

... and to confirm, there is no way to submit a potential transaction that you may choose to sign in the future unless the payer of the envelope is not the payer of the scheduled transaction.

### **113. By Greg Scullard#5365 in the Developer General Channel on 02/25/2021**

@bugbytes I'll try to answer your questions,

-Transaction Payer: ScheduleCreateTransactionBody optionally allows a `payerAccountID` to be set to pay for the execution of the scheduled transaction (optionally different to the account paying for the scheduling transaction to be created).

-My understanding is that signing something "blind" is a no-no in DLT, we are referring to signatures, not approvals and a signature requires a payload to be signed. The advantage of scheduled transactions over the current method for multi-sig is that while you still need to exchange the transaction bytes (unless they can be generated deterministically by all parties who could independently submit `ScheduleCreate`, the first to consensus would create, the others would append signatures to the already created tx - sort of idempotent), there is no need for a central authority to collect the signatures and send to Hedera (which could go wrong if said authority becomes malicious). The burden of collecting and submitting for consensus is now with the network.

-If the payer signs the scheduling transaction, they necessarily sign the body bytes of the scheduled transaction within, they should not sign unless they know what they're signing. There isn't a separate signature for this purpose as far as I know, but signing the "envelope" means you signed the contents too.

### **114. By bugbytes#0817 in the Developer General Channel on 02/25/2021**

That is inconsistent with above since signing the scheduling transaction implicitly signs the scheduled transaction if the payers are the same - in other words, the payer does not explicitly sign the scheduled transaction.

### **115. By bugbytes#0817 in the Developer General Channel on 02/25/2021**

Another thing, you can't just "approve" a scheduled transaction with just the ScheduleID, you have to (somehow) get the body bytes of the original transaction, sign that, and submit that and sign the transaction that submits that (if you're both the payer and approver)

.

### **116. By bugbytes#0817 in the Developer General Channel on 02/25/2021**

For example, you can't have a single payer schedule a payment that they do not wish

to sign just-yet. If you want to have the payer of the scheduled transaction approve the transaction later, you have to use a different payer for the scheduling transaction.

.

**117. By bugbytes#0817 in the Developer General Channel on 02/25/2021**

Where is a good place to discuss issues we have with the scheduled transaction service? I'm not sure github is a good place for high level things because, well, that's not where the community congregates.

.

**118. By Bart#1307 in the Developer General Channel on 02/19/2021**

Aren't anonymous consensus nodes only scheduled for release by 2025?

**119. By bugbytes#0817 in the Developer General Channel on 02/04/2021**

Completely agree with the scalable side of the problem, Its just that, somehow, we need "just enough" programmability to be executable by the network itself (to avoid the need for custody and needing to fully trust a 3rd party). For example, if we had unlock script like functionality embedded in scheduled transactions, would that be enough? Is solidity overkill if we had that instead?

**120. By Greg Scullard#5365 in the Developer General Channel on 02/03/2021**

We're working on scheduled transactions which will enable just that. Each participant can independently send their signature on a pending transaction which will execute when sufficient signatures are received - watch this space.

**121. By Greg Scullard#5365 in the Javascript Channel on 02/02/2021**

Fees are irrespective of token value and expressed in USD, the exchange rate is updated regularly so the a@punt of hbar paid reflects the usd fee schedule.

**122. By rhysied#6748 in the Developer General Channel on 01/29/2021**

I watched it earlier and tbh he seems to dislike it from the outset as Hedera is the "corpo"-token. My main issue with his analysis would be that it's mostly out of date, as well as he even admittedly glossed over Paul Madsen's response to Eric Wall (iirc Eric Wall did a follow up to his "counter-counter-FUD" after he spoke to Leemon at a conference).

So the main issues with the "FUD" are:

- not all services run at 10k+ TPS (counterpoint is that EVM is limited anyway, and none of the services are anywhere near that capacity. We did over 1.3k TPS on HCS (slower than crypto transfers due to message sizes) and we could go faster with more optimisation on our end)
- 50bn tokens (counterpoint is that there are several other protocols with the same / higher token counts - also whether there are 500 or 500 trillion tokens has no impact on the functionality of the platform)
- Coin release schedule review (this was completed early 2020 iirc, you can judge whether you agree with the release schedule or not)
- Google and "big corporations" can increase the supply whenever they want (theoretically most protocols can increase the amount of base tokens with consensus among the miners / block producers / governance voters. With any protocol this comes with massive reputational risk, and with some other protocols the risk of forking)
- closed source (The core Hedera code has been open review since last May iirc?)

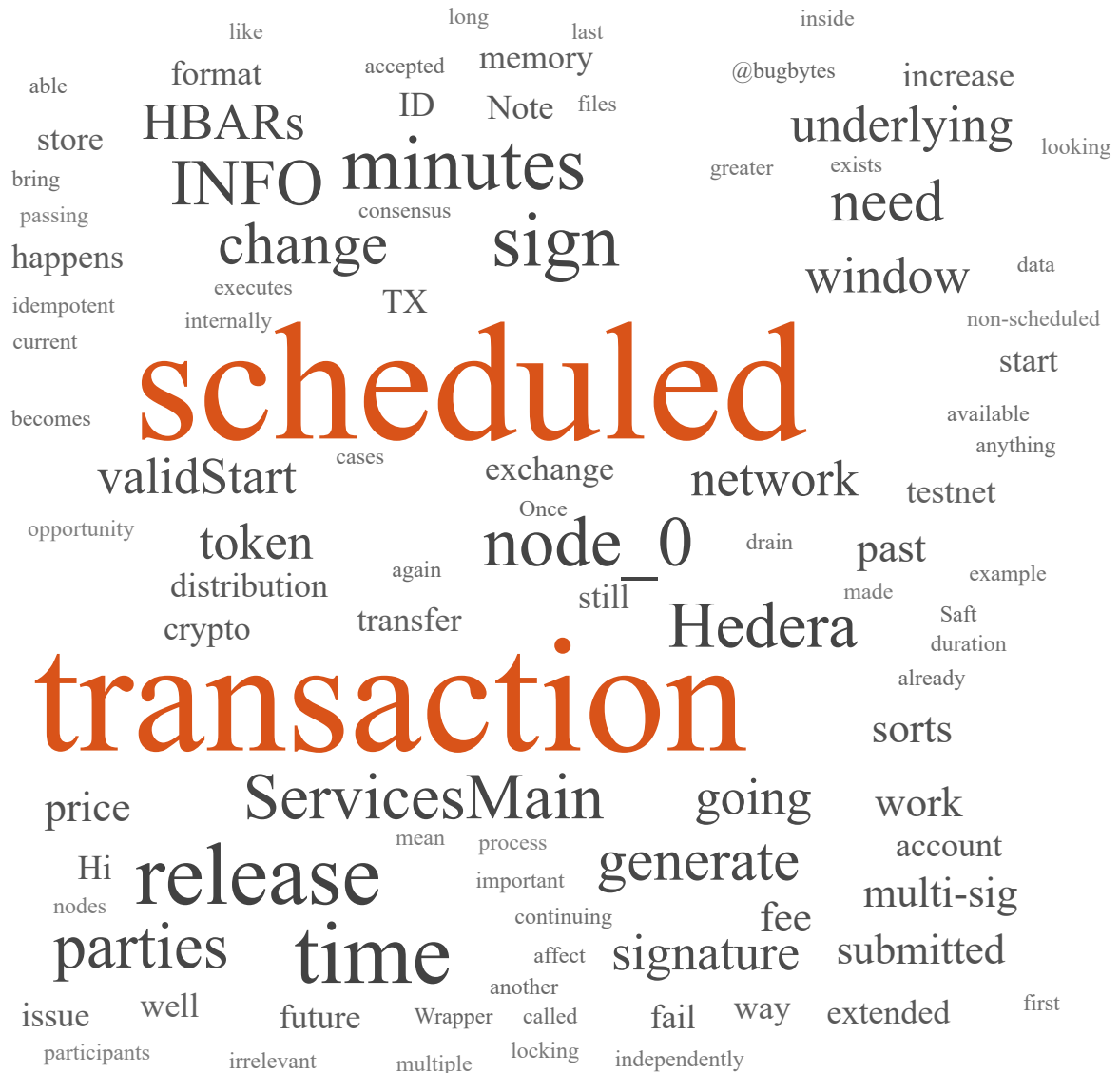
Think that was pretty much it. It's not all incorrect, it's just if you don't feel comfortable with Hedera's governance model then maybe it's worth looking at more "decentralised" protocols (with all the caveats around mining centralisation, block producer collision, etc)

The reason we are using Hedera is because it's a Ronseal protocol and does what it says on the tin. It's fast, secure, relatively cheap (not the cheapest protocol in the world) with stable cost basis that we can forecast with.

That's my 2¢ anyway

**123. By Greg Scullard#5365 in the Developer General Channel on 01/07/2021**  
@Johnda98 in some countries that's how you schedule meetings

## Comments in 2020



### 1. By Greg Scullard#5365 in the Developer General Channel on 12/17/2020

note: The start time would still be relevant to the overall scheduled transaction (if `now` is outside of start time + 3 minutes, the scheduled transaction creation will fail).

### 2. By Greg Scullard#5365 in the Developer General Channel on 12/17/2020

"Would another way of saying this is that the underlying transaction's startTime now becomes irrelevant because it is wrapped inside a Schedule Wrapper of sorts?"

-I believe so, need to check

"How long will this signing window of opportunity be extended for multiple parties?"

-It won't be for ever, but will be greater than 3 minutes (subject to proportionate fees)

" Does the format of the underlying transaction change (in other words, can the TX ID be

well in the past by the time the last signature is made?)"

-No change to the underlying transaction format, TX ID could well be in the past by that time yes

"What happens if you have a scheduled transaction that was accepted but drain the account with a non-scheduled transaction before the scheduled transaction executes?"

-The scheduled transaction will fail with "INSUFFICIENT\_BALANCE"

### **3. By bugbytes#0817 in the Developer General Channel on 12/17/2020**

Would another way of saying this is that the underlying transaction's startTime now becomes irrelevant because it is wrapped inside a Schedule Wrapper of sorts? How long will this signing window of opportunity be extended for multiple parties? Does the format of the underlying transaction change (in other words, can the TX ID be well in the past by the time the last signature is made?) What happens if you have a scheduled transaction that was accepted but drain the account with a non-scheduled transaction before the scheduled transaction executes?

### **4. By Greg Scullard#5365 in the Developer General Channel on 12/17/2020**

On process, fair point, will raise internally.

The valid duration of a transaction is also the duration for which a record/receipt is available. If that window is increased from 3 minutes, there is a corollary increase in memory requirements on the nodes to store the data for a longer period of time. At high TPS this is a significant increase in memory hence the 3 minutes.

Valid start exists to prevent replay attacks (a transaction that was generated in the past can't be re-used) - storing transaction hashes as an alternative isn't viable (again, memory).

There is no issue with continuing to use the current multi-sig method (this will continue to work), there are use cases however that need to independently sign a transaction without having someone first generate it, then passing it around for signature. For example: If an appnet needs to perform a crypto transfer, all the participants can deterministically generate the same scheduled crypto transfer transaction (scheduled as opposed to duplicate), and sign it. Once all the participants have sent their transaction to Hedera, the crypto transfer will take place.

Note: The `ScheduleCreate` is sort of idempotent in that it won't fail if it's called twice, the scheduled transaction that already exists will have a signature added to it with the second `create` (sort of idempotent because there is an actual change to data).

### **5. By Greg Scullard#5365 in the Developer General Channel on 12/17/2020**

@bugbytes @xenearth scheduled transactions will make multi-sig easier to use.

Currently in a multi-sig scenario, one party needs to generate a transaction, sign it and pass it to N other parties to sign before it can be submitted to the network. If the generated transaction has a `validStart` which is `now`, there's a 3 minute window for all this to happen. If the `validStart` is in the future, the transaction must be signed by all necessary parties before the future `validStart` and eventually submitted to the Hedera Network between the future `validStart` and `validStart + 3 minutes`



With scheduled transactions, whoever generates the transaction will be able to submit it to Hedera to store, but not process to consensus (up to a certain time). Other parties will then be able to issue a transaction to `sign` this scheduled transaction. Once there are sufficient signatures, the transaction will be submitted for consensus.

This provides a greater window of time for all parties to sign a transaction and adds flexibility to multi-sig scenarios.

Note: Edited to change from 2 minutes to 3 minutes per @bugbytes's comment below

**6. By xenearth#1679 in the Developer General Channel on 12/16/2020**

Will scheduled transactions allow anything like "time locking" of HBARs?

Time locking of HBARs supported natively by Hedera has a number of important use cases, for example of what I mean see: <https://www.toptal.com/ethereum-smart-contract/time-locked-wallet-truffle-tutorial>

**7. By bugbytes#0817 in the Javascript Channel on 11/15/2020**

Any API call with "Token" in it will not work on testnet until after the upgrade to 0.9 scheduled for the 19th. Until then, you will need to work against previewnet.

**8. By Supremax67#5749 in the Developer General Channel on 09/23/2020**

I would also like to bring you to the attention of page 16 of that PDF which shows the release schedule. We are looking at full release of token by the year 2033. Slow release is intentional to mitigate the change for any single entity to own more than 1/3 of the tokens.

**9. By CryptoDabbing#6953 in the Developer General Channel on 09/23/2020**

<https://help.hedera.com/hc/en-us/articles/360002789198-When-are-the-next-distributions-of-hbars-scheduled-> can anyone explain to me what this means. thanks

**10. By bugbytes#0817 in the Developer General Channel on 09/09/2020**

Hi, I forget where to look for the release schedule, when is 0.8.0 scheduled to go to TESTNET?

**11. By bugbytes#0817 in the Developer General Channel on 08/31/2020**

As far as I get is:

```
node_0 | 2020-08-31 15:09:23.252 INFO 156 ServicesMain - Ledger state ok.
node_0 | 2020-08-31 15:09:23.524 INFO 158 ServicesMain - System files rationalized.
node_0 | 2020-08-31 15:09:23.581 INFO 160 ServicesMain - Accounts exported.
node_0 | 2020-08-31 15:09:23.598 INFO 162 ServicesMain - Record expiration reviewed.
node_0 | 2020-08-31 15:09:23.608 INFO 164 ServicesMain - Fee schedule loaded.
node_0 | 2020-08-31 15:09:23.609 INFO 166 ServicesMain - Completed initialization of
STAKED_NODE #0
node_0 | 2020-08-31 15:09:23.609 INFO 87 ServicesMain - init finished.
node_0 | This computer has an internal IP address: 172.19.0.2
```

My first question is that "up and running correctly"?

**12. By 0xholman#4290 in the Developer General Channel on 08/04/2020**

The scheduled network maintenance is going to bring the entire network down for 150 minutes?

**13. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 07/03/2020**

@IronGuards Just to be clear, some group of people already managed to acquire more than 1/3 of the HBAR; the Hedera Governing Council. It was designed that way so that the network CAN work as intended and stay secure. They will be releasing hbar from the treasury on a schedule extending more than a decade.

**14. By Supremax67#5749 in the Developer General Channel on 05/28/2020**

@Enouwin There is a release schedule on Hedera's website, let me find the link.

**15. By Cody (SwirlDs)#4217 in the Developer General Channel on 05/18/2020**

Although I am not permitted to give specifics about release dates and schedules, I can confirm that proxy staking is an important feature to us that will not be ignored.

**16. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 05/12/2020**

Each node independently calculates the fee for every transaction, using the appropriate fee schedule and exchange rate in effect at that time

**17. By Cooper#2101 in the Developer General Channel on 05/12/2020**

@0xholman - Hedera takes the average price from different exchanges and uploads it to a dedicated file on a scheduled interval. @Paul Madsen (Hedera Hashgraph) can provide additional clarity if I'm mistaken, or if there's anything in particular you're curious about.

**18. By 0xholman#4290 in the Developer General Channel on 04/24/2020**

Schedules are so pre-corona

**19. By Paul Madsen (Hedera Hashgraph)#1582 in the Java Channel on 04/14/2020**

@you\_ate\_my\_food can you try again? Ive updated feeschedule and exchange rate on testnet . (I dont think thats the issue but want to rule things out)

**20. By CryptoHunter#9545 in the Developer General Channel on 03/21/2020**

> Hi, is still on schedule to have the Saft Release tomorrow? Is it going to affect the price?  
@Zhivko This is where you need to go for price talk. <https://t.me/hbarprice>

**21. By Zhivko#7280 in the Developer General Channel on 03/21/2020**

Hi, is still on schedule to have the Saft Release tomorrow? Is it going to affect the price?

**22. By Greg Scullard#5365 in the Developer General Channel on 02/16/2020**

Release schedule and distribution is available on the <https://hedera.com> web site (<https://www.hedera.com/hh-hbar-coin-economics-paper-100919-v2.pdf>)

**23. By Mustang#0149 in the Developer General Channel on 02/16/2020**

@Greg Scullard @Craig Drabik Thanks. And where can i see the token distribution and token release schedule?

**24. By MicBTC#2117 in the Developer General Channel on 01/17/2020**

When are the next distributions of hbars scheduled? in 2020 !!



## Comments in 2023



that's exactly what approve does, and that is why the vulnerability exists. I initially approve 10, I change my mind and I want to allow you to spend only 5, I send a new approve, but in the meantime you spend those 10. Once my new approve arrives, you have already spent 10 (your allow balance is 0), now you can spend 5. Result : you can potentially spend 15....

**2. By alberto-IoBuilders#0345 in the Smart Contracts Channel on 03/09/2023**

The Hedera HTS precompiled contract uses an "approve()" method to set the allowance for a spender. Isn't a "Approve Race Condition" vulnerability?

**3. By McNeil#6761 in the Developer General Channel on 02/17/2023**

@Deejay would this method be safe? creating an array of random numbers returned by contract on js side and sending them back in? Or does this affect security/predictability of the numbers. Still no clue why I can't create the array on contract side

**4. By johnda98#4728 in the Smart Contracts Channel on 02/15/2023**

see... its the same old holy grail.. 'something for nothing' .... "Can we have ABFT security measure of consensus and immutability.. and yet not have to pay for it."

What I see way too often is Usecases not evaluating the 'value' of the data they wish to hold secure. Measuring and evaluating is the key word(s) here. If the state changes to that data is not 'valued' higher than the HBAR 'value' needed to secure and obtain it(query).. then one should re-examine the usecase's purpose and thus 'need' for a public DLT..

maybe go with a permissioned private.. like a bunch of HLFabric node EVMs run by Bob ie Walmart supply chain.. then you can at least have the marketing guys put out a PR saying 'its Blockchain'.. but its not what we say.. its what we DONT say that is critical.. ie we wont then say its ABFT secured.

**5. By antorcol#9712 in the Token Service Channel on 02/02/2023**

Another question. The Tokenization Whitepaper notes that tokens, whether fungible or non-fungible, can be grouped by major use case. Two are provided: utility tokens (proof of access, to a product or service) and as security tokens (which represent trading of the value). Most of the examples I've seen so far fall into one of these classes. The whitepaper is several years old now, though. Are there any other general classes of token emerging?

**6. By Hbarian#0631 in the Developer General Channel on 01/29/2023**

Hi everyone

I was reading about the EVM and can't get an answer to some questions that I have. This maybe irrelevant now with the nodes being run only by trustees. But what will happen if a node uses a rogue version of EVM.? Are there any security checks in place to prevent such attacks?

**7. By reg.cs#2829 in the Consensus Service Channel on 01/27/2023**

For the payment part between buyer and seller, I can easily imagine a smart contract escrow with a deposit/withdrawal mechanism. However, for the bidding part a SC is not ideal. Partially due to price, partially due to the polling issue. A HCS topic would be better for the bidding. The best scheme I can come up with is:

- a user has its actual funds in a dedicated wallet app which they register with a smart contract for fund withdrawal/deposit (that way the dapp has no private key for the user funds)
- dApp creates a separate Hedera account for the user upon registration which handles the automated calls like bidding

The dapp then would handle only the private key for the second account, which at least

increases security. The remaining issue is, that the second account would still need enough HBAR to pay for the bidding process and other transactions. It would be nice if the user could set up an allowance for the second account to pay all transaction fees for the second account from the users primary account (in the best case: The user could define in the allowance exactly which topics and smart contracts they allow spending for) . But that seems to be impossible, right?

If so, the user would need to transfer some hbar to the second account every few days leaving the risk for the dapp being hacked and the money allocated for the fees of the automated calls to be stolen. I think this scheme is good, except for the latter part. And I am trying to resolve this without sacrificing any of the decentralization.

### **8. By reg.cs#2829 in the Consensus Service Channel on 01/27/2023**

This is a more general question about handling accounts in a Dapp, but I need to post it somewhere, so I use this channel. If my dApp needs to make frequent **\*\*automated calls\*\***, it would be inconvenient to ask the user to sign each transaction via Hashpack/ Metamask/etc. One way to circumvent this, is to store the private key of the user's dApp account in an encrypted keystore and hold the key in memory as long as the app is running (and the user provided his password to decrypt the file at app launch). The user then only needs to transfer HBAR to this dApp account from his primary account to pay for fees.

However, since this comes with security risks and I wonder if there is a better way for a dApp developer that would not require an internal key handling?

For example, is there something like a CryptoAllowance which makes it possible to grant a secondary account (i.e. the dApp) the right to make transactions only to **\*\*specific topics and smart contracts\*\*** and make the primary account pay for it? Or is there another way to handle the issue above, which does not involve managing the user's private key within the dApp?

### **9. By Supremax67#5749 in the Consensus Service Channel on 01/24/2023**

Hedera holds the golden standard for security, aBFT.

### **10. By GarySmith || Don't DM#4478 in the Developer General Channel on 01/24/2023**

@everyone HashPack 5.0.0 launched today, we will have an official announcement of this update soon but you may notice 5 letters after your account id in various places - this is called a checksum and is basically an optional security measure to help make sure people don't send to an incorrect account. It was proposed by Leemon himself in HIP-15 (<https://hips.hedera.com/hip/hip-15>)

You don't need to include this string of characters to send to your account, its just an extra layer for apps that support it. You are free to leave it off if whatever dapp or exchange you are using doesnt support it.

If you are sending a large amount of hbar from one account to another, its useful to include it to make sure you don't miss a number and send 10k hbar to 0.0.1235 instead of 0.0.12345 for example.

We will likely tweak our implementation of it based on user feedback, so let us know if you find this useful (or hate it)

**11. By DM#6713 in the Developer General Channel on 01/21/2023**

Why is there no staking with ledger? They are promoting "non-security" not offering that is unacceptable. they force people to withdraw their HBAR from their cold wallets to stake, is that security?

**12. By davinci#3768 in the Developer General Channel on 01/13/2023**

<https://davincigraph.medium.com/ethereum-2-0-vs-hedera-hashgraph-a-battle-for-scalability-security-and-sustainability-d0037592b001>

**13. By bugbytes#0817 in the Developer General Channel on 01/13/2023**

Hedera likes to make this analogy, but its apples and oranges, yes mining in BTC is not as diverse as would be ideal, however the security of the network is not the miners as much as the full nodes (thousands of them) that "trust but verify"....hedera has none of that, we have only the council nodes that, we have to take at face value (because the act of "verifying" in this case is really complicated that nobody's doing it)

**14. By Liebenfiels#7895 in the Developer General Channel on 01/13/2023**

How to solve nodes problems it should be obvious after many years. I am writing that from personal experience how corpos operate as I work for one valued over 100 Billion dollars.

1. Hedera as entity should create and own powerful nodes infrastructure and not ask each new member to provide one.

2. New joining council members to be provided keys to already existing infrastructure and to run and manage in form of partnership of 3 council members per node from different industries, or even to manage all council nodes jointly as council.

3. This is to eliminate weak nodes and bad PR so you don't read that X council member node is offline, to avoid being finger pointed.

In corpos it takes time to request infrastructure and get new funds to improve it, doing it for 2x3 years term and it is as it is.

Hedera has enough in treasury to put tens of millions of dollars if not more to provide infrastructure to all council members. The key is responsible managing and decision and not them running independently. Even if they to run jointly the security improves as they will watch their hands and upskill each other and pass knowledge to new members.

**15. By PhillipR#4342 in the Developer General Channel on 01/12/2023**

I am Cybersecurity and Alan Johnson#3005 copied my message above and put it in a direct message and I blocked him. He only has one message on this server saying, "hello". Sorry, but have been a discord moderator for nearly 3 years. You can ask Orbis86, or Soniya about me and my full handle to be transparent is PhillipR#4342.

**16. By PhillipR#4342 in the Developer General Channel on 01/12/2023**

Hello, when I enter an ID to receive an NFT from the HBAR wallet does it cost a



transaction fee? This is the first time I have used HBAR and am educating myself. Am from Orbis as a Sigma Ambassador and Cybersecurity Expert. I am putting together information on HBAR and the security of your blockchain. Would appreciate the help on only the transaction fee and if that will require me using Moonpay to get assets in my wallet?

**17. By Fazoo52#1248 in the Developer General Channel on 01/01/2023**

Sweet. I'm gonna jump back to that staking question one more time, what's the difference between staking using ledger and staking using hashpack? Is it security??



for NFT hype etc.

There are key priorities that always has to be followed.

**3. By jaycool#5616 in the Token Service Channel on 12/29/2022**

Ahhh yeah got ya yeah makes sense to have multi key accounts for increased security

**4. By Supremax67#5749 in the Developer General Channel on 12/24/2022**

Funny part, is sometimes encrypted public data is better protected than hosted on remote private server. When publicly hosted, people expect the worse in terms of security, while privately hosted, most feel safe and forget things like privacy breach is a thing.

**5. By Supremax67#5749 in the Developer General Channel on 12/24/2022**

@jaycool Technically, everything is public when you think about it. Big companies connecting to remotely hosted server; data might be private, but still sitting behind some kind of encryption/security/login credentials.

So how crazy of a stretch to use IPFS and encode the data?

**6. By Greg Scullard#5365 in the Javascript Channel on 12/23/2022**

No. All mints do indeed go to treasury. A transfer operation needs to take place after that. The key for minting can be different from the key of the treasury account. If minting and transfer was allowed, it would potentially break the security of the token if the keys are different. There's an argument for allowing it if the keys are the same (or the tx is signed by both treasury and supply keys)

**7. By Supremax67#5749 in the Developer General Channel on 12/21/2022**

That's because most L1 sucks. Sorry for being blunt but it is the truth. The only reason you would add a layer is because the native layer can't handle it. L2 is a bandaid to the problem, not a solution. With more layers, you add more speed and flexibility, but you start losing on security and latency efficiency.

2 layers means both Layer 1 and Layer 2 has to run rock solid. Any of the 2 layers falter and you got a problem.

@Fazoo52

**8. By Malhar#5700 in the Developer General Channel on 12/21/2022**

Hello team, I'm curious whether there is any kind of reward or compensation for submitting a valid report/vulnerability related to web security?

**9. By Supremax67#5749 in the Developer General Channel on 12/11/2022**

And another thing people should care the most, how secure the network is. Hedera is the only aBFT network. Security should always matter.

**10. By RaphaelM#1144 in the Javascript Channel on 12/09/2022**

Hey @oliver.k-I I don't think that's possible for a security issue, if you are able to recover the private key from an account id then anyone can actually sign transaction on your behalf.

**11. By dancleary50#5886 in the Developer General Channel on 12/04/2022**

<https://www.cryptoratingcouncil.com/asset-ratings> on this website we have a security

rating of 3.75/5. XRP has a rating of 4/5 and obviously the SEC came after them, wondering if the same could happen to us

**12. By dancleary50#5886 in the Developer General Channel on 12/04/2022**

Is HBAR a security?

**13. By VR#1587 in the Smart Contracts Channel on 12/01/2022**

But Chainlink oracle is soo baaaad

It's cost is ridiculous and is definitely not designed for per operation calls.

In addition it's hardly a secure system iuam. It just moves vulnerability point to oracle connection but you're never fully safe

**14. By Mr.Jacob#7549 in the Developer General Channel on 11/28/2022**

I'm so paranoid about security that I use hw dongles everywhere and haven't even installed myhbarwallet

**15. By nube#7126 in the Developer General Channel on 11/28/2022**

low security how?

**16. By Mr.Jacob#7549 in the Developer General Channel on 11/28/2022**

keeping such a low security level. especially when the network is managed by institutions rather than the community

**17. By ssl#7354 in the Developer General Channel on 11/25/2022**

HBAR if declared security by SEC we are ready?

**18. By johnda98#4728 in the Consensus Service Channel on 11/07/2022**

For custodial wallets for highest security.. encrypt the priv key with the password hash and even better.. keep that in a hedera file - inconsensus to ABFT.

**19. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

As for retail investors, it won't have a huge effect on them in the short time frame. This is about network security

**20. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

The renewal fee trigger reward payment as such a huge impact on the decentralization and security of the network that I don't think anyone thought of the 100 years timeframe

**21. By Supremax67#5749 in the Developer General Channel on 11/05/2022**

it means a person could have died a long time ago and the account never depletes, just keeps accumulating effect which leads to A, that leads to B, that leads to C and eventually security issue for the network.

**22. By Capt\_Brando#0157 in the Developer General Channel on 11/05/2022**

I still have the original Hedera wallet. Is it safe to use? Seems to work fine I just wonder if there could be security vulnerabilities?

**23. By Supremax67#5749 in the Developer General Channel on 11/03/2022**

Security being the other factor

**24. By Supremax67#5749 in the Javascript Channel on 11/03/2022**

@RaphaelM I have to add comments to a HIP due to a huge design flaw surrounding proxy staking and potential security risk to the network. You wouldn't have the HIP #?

**25. By Liebenfiels#7895 in the Developer General Channel on 11/03/2022**

The worst thing is to use word minimum node requirement. These companies have 2x3 years term, of course they will go for minimum. Minimum does not mean optimal. We tested at work so called not even minimum but recommended specs for demanding AI work. We put effort and tested in environment multiple GPUs cards and we went much higher than recommended by vendor as optimal.

Our rig 'node' for limited number of users has much higher specs than min Hedera node. Planning infrastructure takes effort, CAPEX and time as that's how corporates work, their Hedera node is small part of their infrastructure.

Otherwise you end up unintentionally with slow node (sybil) that will slow down network TPS scaling.

The risk is not council members to act malicious, that's absurd statement and Hedera founders should never even indicate such as people repeat the nonsense. They said that they have high number so to lower risk even if they wish to collude.

They will not collude ever, they have as corporates cyber security mandatory training for all employees how to mitigate risk, they could school some Hedera staff what cyber security is.

The risk comes they have not been told in advance what network requires for scaling and optimal (not min, if IT sees word minimum they will go for minimum) node must have. Then you don't end up with offline nodes.

**26. By Supremax67#5749 in the Developer General Channel on 11/01/2022**

Sometimes that is good, but also means 1 access key to access all investments. Tradeoff of convenience for security

**27. By Liebenfiels#7895 in the Developer General Channel on 10/29/2022**

yes sooner than better as no risk, many still not stake as wait for ledger integration as are paranoid using other wallets. I don't use ledger wallet and will never use, no higher security than phone wallet that is turned off and you stake once really. So they afraid to even open wallet and use network which is ridiculous.

**28. By G. de Balboa#0001 in the Developer General Channel on 10/25/2022**

interesting, so the thing about Cardano is the improvement proposal standard which gives the community power to make changes on the protocol level. Still a ways out before its fully decentralized (the keys to make those changes are in the hands of Hoskinson and co) but there have been several community led proposals that have been implemented on the protocol level to help with scaling, security yada yada .... So if this recovery thing is safe and do-able on our protocol, the community will write a CIP to implement it.

**29. By DM#6713 in the Developer General Channel on 10/25/2022**

is there an estimated date of being able to stake with ledger?

hedera that boasts of being such a safe network, should solve this, people can not remove their HBAR from ledger to be able to stake... it generates insecurity.

**30. By johnda98#4728 in the Smart Contracts Channel on 10/15/2022**

yes.. if you wish to obtain true truths ie current state of a public getter (at time of call) you use ContractCallQuery like I said .. and yes like I said that costs gas .. mostly approx 30k tbar ... because Truth is not free, if it was it would be valueless and therefore not a truth as defined by data that could not be held as 'true'. right ... the problem is yes like you said you wish to see the current state of the truth at time of call at no cost(albeit not a change of state).

yep.. as suggested perhaps you can solve it like database people do .. that is abstract up your thoughts and remove the 'truth' ie consensus security measure from your 'need'... if you do that then you wont need a smart contract.. right just rely on Cloud security.. speed and zero cost of free-tier.

**31. By Toxo#9678 in the Developer General Channel on 10/14/2022**

How did he bypass the inbuilt security?

**32. By Liebenfiels#7895 in the Developer General Channel on 10/14/2022**

I don't know and I don't use ledger and never will- single company single point of failure to me, some say is the most secure way, but other experts in security strongly disagree. I prefer mobile phone with wallet- that is turned off and used for crypto only not social apps. There is tons of mobile phone providers and even models per each- very low chance of any attack as they cannot exploit cover all these phones. Where you have single device that you have to trust that is not a security for me. Phone you can connect to WFi streamed from other phone mobile internet, that is more secure that using home WiFi as you may have many devices using it including security cameras, WiFi sockets etc.

**33. By Supremax67#5749 in the Developer General Channel on 10/11/2022**

The total staking requirement would have to be high to offer both security to the node and to prevent dilution. You don't want 2 millions nodes only doing 200,000 TPS, that is the same as 1 node doing 0.1 TPS. No economical incentive.

**34. By johnda98#4728 in the Smart Contracts Channel on 10/10/2022**

@hutchinson True.. even many so called marketing 'DEX's say they are decentralized.. even Uniswap.. but they still censor/control via frontend certain tokens even if they are present in the native Contracts.. Erik Vorhees's Shapeshift comes very close. In a DApp sense, a webapp - a single jurisdictionally domiciled point of entry is a weakness in a DEX's implementation in a purist definition. For Hedera, its ABFT coq math measure of consensus security reach is a unique Gold standard amongst Public and almost-Public ledgers; Gov Council member nodes about as decentralized as they can be in a pure sense also.. in that context.

no different though than the Truth is a relative measure that aligns to a frame of reference. e.g Mercator map square co-ordinates or Polar map concentric circular co-ordinates .. both are true within their own context... but then of course we're getting into

Pirsig Philosophy of fractals of truth. Of course in wider context both maps are 'true' and all maps must align for each to be valid in a pure sense.

**35. By Supremax67#5749 in the Developer General Channel on 09/28/2022**

@AviatorSea You need a slow release of token to prevent a single party of accumulating all the tokens. If you released all the tokens at once, you risk compromising security as 1 single group of bad actors could acquire enough to affect the consensus mechanism. All Proof of Stake chains follows a similar release pattern to prevent a Sybil attack. The public ledgers that don't, usually ends up compromised or/and centralized.

**36. By albertbogoraz#9640 in the Developer General Channel on 09/28/2022**

security, its a network secured by billion dollar companies

**37. By woobay#5814 in the Developer General Channel on 09/13/2022**

I think hedera dumped retail since its launch 3-4 years by now so that is the decision that had to be made in order to grow organically.

For BTC I wont comment in here due to security reasons.

I just hope some dev can pinpoint the above-mentioned aspects in which the entire system is designed I am not python naive it shud be understandable to me I do hope.

**38. By Supremax67#5749 in the Developer General Channel on 09/13/2022**

Honestly, I don't care which path they take. People at Hedera just want the senate to make up their mind, even if that means it is a security. Hedera is ready for it.

**39. By woobay#5814 in the Developer General Channel on 09/13/2022**

I just hope hedera can reverse such happening (tax-free/security), IF in case of otherwise ruled by the senate.

**40. By Supremax67#5749 in the Developer General Channel on 09/13/2022**

\*"...with memo saying cud you please return but it is not the case with the hedera..."\*  
\*"...what will happen if HBAR is ruled as a security..."\*

Both of these are statements based on speculation. The #1 problem in crypto is the spread of misinformation. If someone don't know, they should ask.

**41. By woobay#5814 in the Developer General Channel on 09/13/2022**

I think you misread what I was trying to tell, If hbar is ruled as a security not due to ICO but due to other reasons (which I will not "speculate" anymore here any longer) then I wonder what will happen...

Nothing is impossible It can be ruled as security than no longer in the future...

**42. By woobay#5814 in the Developer General Channel on 09/13/2022**

If I had sent out an individual , I can send another transaction with memo saying cud you please return but it is not the case with the hedera owned address...

I wonder what will hapen if hbar is ruled as a security...

**43. By woobay#5814 in the Developer General Channel on 09/11/2022**

have no clue about Haspack but I was planning on switching to new wallets for security reasons

**44. By B.#3004 in the Developer General Channel on 09/10/2022**

Thanks for your reply. Yes I have asked this question and right now no it does not need that immutable record. However if things play out as hoped then possibly it will in future but more so ensuring security of sensitive records. At present I want to be sure I'm setting things up to allow for future applications involving the transferring & updating/ time stamping of smart contracts.

**45. By woobay#5814 in the Developer General Channel on 09/10/2022**

If that is the case I don't think Hedera should be for everyone education and security is just as important as tech

**46. By teacoat#2092 in the Developer General Channel on 09/08/2022**

we've got another dev that is mostly security focused and helps with architecture decisions, but i've written 96% of the hashpack + hashconnect code so please bear with my ruthless prioritization

**47. By Eidan#5160 in the Developer General Channel on 08/20/2022**

also security its important too

**48. By Spud#2689 in the Developer General Channel on 08/17/2022**

Mine only has Recovery phrase under security. V 1.4.170

**49. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 08/08/2022**

Happy Monday everybody! Lots of drama in the crypto sphere this week! Thousands of Solana wallets hacked and millions stolen.. Exploits coming from fake Hedera browser extensions.. Users all over the world are asking themselves.. 'Is my crypto secure?!'

Join us in about 1.5 hours, at 12 noon EDT to learn more about how these hacks are happening, and how Wallawallet's bulletproof security practices are keeping your alternative money safe. And don't forget to drop by our Twitter page @wallawallet to enter to win some awesome JAM tokens! <https://www.youtube.com/watch?v=THdSk4FUVeU>

**50. By Mythageros#4763 in the Developer General Channel on 08/08/2022**

Thanks for answer. Pitty... Lets hope it will be soon. What is more than a security. Like hodling HBARS secured through ledger is nice, but when you want to use them and invest them, it is not secured

**51. By Mythageros#4763 in the Developer General Channel on 08/08/2022**

Thanks, I got one account through Ledger, but on that Ledger guarded account you cannot stake HBAR, even participate in liquidity pool on Saucerswap - which is quite a problem. We have HW wallets for our security, and we can't fully use it

**52. By johnda98#4728 in the Smart Contracts Channel on 07/22/2022**

i used to have a issue where my ide didnt refresh from disk - with the new bytecode from remix - after a copy over.. prior to deploy via HH sdk calls.. so I was assuming the bytecode I was deploying and the sdk calls were hitting the right function names etc after recent updates I had made to the .sol.. So yes I assumed the bytecode loaded up to HH file was the latest version.. incorrect. Also ensure you dont compile above the HH



supported 0.8.9 .. I rarely use the pragma ^ for exactly that reason.. and for security of contract/solidity upgrades.. design to one specific target version.

**53. By johnda98#4728 in the Smart Contracts Channel on 07/21/2022**

you have a py wrapper for the entire hh java sdk ?.. and look up the meaning of the word Hedera in latin.. its not a Merkle DAG in a traditional definition ie a Merkle Tree ... its a Vine.. Ivy... fast to grow, shallow roots.. needs far less water(gas/tranfees) than a Tree of heavy 'blocks'.. so it is defined by what a heavy Blockchain is NOT.. in many ways and thus is a niche fast efficient micro-pay public ledger(almost public nodes in times ahead) .. however despite its fast cost efficient nature, it carries most Usecases of Contracts quite well and even integrates in-protocol tokens(like SOL programs but Rust is not reqd, unlike SOL)

and... and.. wait for it.. unlike ALL Chains.. Hedera's consensus security measure is math proofed by Carnegie Mellon, indepedently, as being ABFT.. not just BFT as with most chains ie confirmations until. etc) .. ABFT rocks.. finality of finality, period.. the highest math measure of precision of consensus.

**54. By Supremax67#5749 in the Smart Contracts Channel on 07/19/2022**

Every transaction on the network as a cost. Hedera is being transparent about those fees. Networks that are not charging for that operational cost are charging it elsewhere as either hidden fees, hyper inflation or something else much worse (such as compromising security to make transactions cheaper).

**55. By Claudiu#2700 in the Developer General Channel on 06/30/2022**

One of the main problems on blockchain is passphrase security - how to store it.

Question: I was thinking if it's possible, for example, to create a virtual world (VR), on hashgraph/blockchain, in which you solve some puzzle to retrieve your passphrase. Being on blockchain, you know for sure you could always go to retrieve it given that you know the puzzle.

E.g. Say you solve 3 puzzles (designed too complex for AI) and collect the three parts of your passphrase. The movie ready player one gives a good insight into what I am aiming at.

I find comforting the idea that I could never lose my passphrase due to unforeseen circumstances in the real world.

**56. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

so, security wise it's just too scary... but let's avoid this right now

**57. By Tomachi Anura#8370 in the Token Service Channel on 06/24/2022**

if you're right with that, it's a very huge security concerning then

**58. By i-hack#2940 in the Javascript Channel on 06/23/2022**

Folks: I posted this question in general but I think it might be more appropriate here. This question is on security. In building a react app to interact with hedera, it seems we need to have the account id and private key to do anything with hedra. If a user comes to the website, I dont expect them to remember their accountId and privatekey. Is there

a solution around this? Once we get the account Id and private key, how does one store this securely on the client side? Cookies can be hacked I presume.

**59. By i-hack#2940 in the Developer General Channel on 06/23/2022**

Hi - quick newbie question on security. In building a react app to interact with hedera, it seems that we need to first obtain the account id and private key someplace and then persist it someplace for session management. Since the whole point is security in DLT, are there best practices to obtaining and storing security information

**60. By Greg Scullard#5365 in the Developer General Channel on 06/16/2022**

It's not set in stone, depends on many parameters that are outside of the Council's control. Ultimately it's their call and it will happen when they're comfortable it won't carry a risk to security or performance.

**61. By Michael L#3462 in the Developer General Channel on 06/10/2022**

OpenZeppelin Defender now supports Sentinels on Hedera and Hedera Testnet for transaction monitoring and security alerts!

The Sentinel create/edit flow is nearly identical to our other networks. There are a couple considerations specific to Hedera you can find in the Defender docs.

<https://docs.openzeppelin.com/defender/sentinel#hedera-support>

**62. By tinkerm#4293 in the Smart Contracts Channel on 06/07/2022**

Hey @a.s.h! This is a great use case that isn't supported by the current `HederaTokenService` precompile, which assumes hbar transfers will be done through the `address.send()` / `address.transfer()` EVM mechanisms

It would be quite simple to give `HederaTokenService.cryptoTransfer()` full power to perform hbar transfers among arbitrary parties, as you need it to

The security concerns are, of course, less trivial; and I suspect this change needs to go through the full HIP process and get council approval

**63. By VR#1587 in the Token Service Channel on 05/28/2022**

It's for umm... Security reasons, mostly. Also to allow for future updates, when all parties agree to replace the trigger with different one supply token should be different

**64. By Master Oogway | HeadStarter#8757 in the Developer General Channel on 05/25/2022**

Stader is the only platform currently offering staking (liquid staking to be exact). They have taken many measures to ensure high security, but it would be unreasonable to say there is no risk.

**65. By VR#1587 in the Developer General Channel on 05/21/2022**

Very interesting discussion, very on point explanation of security and fairness. I assume it's fine to reference this in some documentation (or white paper like) stuff? Is there a write up of ~~speed~~ security fairness somewhere?

**66. By VR#1587 in the Developer General Channel on 05/17/2022**

Ayy I'm not the only Vladimir concerned about security and wanting Hedera take on it

**67. By Blockchic#9248 in the Smart Contracts Channel on 05/10/2022**

I've never heard of depositing into a contract... However ya never know that might be a thing.

I like to think of asynchronous Byzantine Fault Tolerance as the Sergio Leone of smart systems:

"The fact that hashgraph is asynchronous Byzantine Fault Tolerant (ABFT) means that as long as an attacker has less than 1/3 of the total stake, they will be unable to either stop consensus from proceeding, or cause an inconsistent consensus, or inappropriately skew the consensus order and consensus timestamps that hashgraph delivers. The more honest actors that commit their tokens as stake, the more secure the overall security of the network will be - as honest stake raises the bar for a malicious actor to be able to reach the 1/3 threshold."

<https://hedera.com/blog/proxy-staking-on-hedera>

**68. By jokertrader#3541 in the Smart Contracts Channel on 05/03/2022**

i saw this posted in general and would be interested in the answer as well.

Is it any way possible to control the hbar withdrawal even if someone compromised the private key ?

Like a mandate multi-sign for a withdraw transaction

We have controlled in our dApp withdrawal using multi-sign but eventually if I can directly use any wallet to withdraw without sign if I have the private key

Any additional level of authorization/security check possible for this ?

**69. By YellowCoin#3511 in the Developer General Channel on 05/03/2022**

Hi Team

Is it any way possible to control the hbar withdrawal even if someone compromised the private key ?

Like a mandate multi-sign for a withdraw transaction

We have controlled in our dApp withdrawal using multi-sign but eventually if I can directly use any wallet to withdraw without sign if I have the private key

Any additional level of authorization/security check possible for this ?

**70. By reg.cs#2829 in the Smart Contracts Channel on 05/01/2022**

So, does that essentially mean: Planning to use blockchain technology with a non-browser-based app is not reasonable from a security point of view?

**71. By littletarzan#5253 in the Smart Contracts Channel on 04/25/2022**

you can remove payable from this function signature unless im missing something below;

you should probably declare a storage variable called recipient that only owner may modify, in case the hardcoded address is compromised; and a vulnerability from a NFT buyer's POV is this function can be called by onlyOwner repeatedly until address(this) is drained

**72. By Supremax67#5749 in the Developer General Channel on 04/15/2022**

There's a video about the simple explanation on Hashgraph on Youtube. Let me know if you need the link.

As for Bitcoin continuing without a hitch goes under the assumption that no one took advantage of it and didn't brute force attack. If the Bitcoin network were ever to go down in hashing power, even for 20 mins; this would be enough for an illicit enterprise or government to fork the blockchain. More than a decade of chains could be gone in a matter of mins. This is why PoW is not viable, it requires constant power dump into it to assure its security. Proof of stake is the way forward as a PoS could go down and come back up without losing a beat. More and more chains are moving on to Proof of Stake or trying to (see Ethereum 2.0).

**73. By Greg Scullard#5365 in the Consensus Service Channel on 04/01/2022**

Not everyone developing on hedera necessarily wants to divulge who they are, their account ids, etc... for various reasons. Some work with public utility companies for example and highlighting what they do could be a security risk so best keep it quiet.

**74. By Greg Scullard#5365 in the Smart Contracts Channel on 03/31/2022**

@mamorite individual would be per contract, aggregate would be system wide. These settings may be increased in the future, Hedera usually implements limits on services on release for stability and security purposes.

**75. By Master Oogway | HeadStarter#8757 in the Developer General Channel on 03/27/2022**

How does this Chrome vulnerability affect a wallet extension? What are the risks?

**76. By jassie78#5988 in the Developer General Channel on 03/16/2022**

Hi guys, just looking for some advice. Im just about to create a hashpack wallet and its asking for password. I see the following message " Your password is only stored on this device for security purposes and cannot be recovered." lets say my Hard drive crashed and i had to replace it would i be able to input same password on the new hard drive? reason im asking is I seen the above message

**77. By Greg Scullard#5365 in the Token Service Channel on 03/15/2022**

Thank you @Rocket. I think that given time people will realise this is a good thing (although you can opt out with automatic associations). There are security as well as reputational reasons why in my opinion it makes sense, even if it adds some burden in terms of UX.

**78. By AbsolutelyNot#3226 in the Smart Contracts Channel on 03/14/2022**

In addition, there is significant security aspect. If there is no cost to store perpetually, everything comes to a halt. Once we have a 'renewals & expiry', we take into consideration the state-size and duration the entity be available and subsequently can make an argument to increase the maximum state-size of a smart-contract.

**79. By Bart#1307 in the Smart Contracts Channel on 03/06/2022**

Exactly, all the verified tick on ether scan proves is that this source code when compiled equals the bytecode on chain, but no assurance about the security of its logic

**80. By Rocket#2012 in the Developer General Channel on 02/24/2022**

So then when you evaluate rollup technology you have to evaluate \*how\* it manages to offer security and where the vulnerabilities lie, if any

**81. By Rocket#2012 in the Developer General Channel on 02/24/2022**

The statement that rollups offer equal security to a mainnet has to be qualified. It's not an intrinsic property of rollups by any means

**82. By Bart#1307 in the Developer General Channel on 02/24/2022**

Thanks Greg, are you sure you're not misrepresenting the security guarantees rollups offer? I've heard differing opinions many like yours but reputable voices like Vitalik(not that I've read any of his blogs on rollups, but I've come across some interviews) claim that rollups offer equal security to the Mainnet.

**83. By SpideyBreacher#4054 in the Developer General Channel on 02/17/2022**

@Supremax67 He just took information about the vulnerability, but i deleted as soon as i saw he's just a normal user, cause he sounded really sus to me.

Now can you please assist me to whom to discuss that vulnerability with?

**84. By SpideyBreacher#4054 in the Developer General Channel on 02/17/2022**

Hello @Deleted User is there anyone here from your security team, as i want to discuss about a Vulnerability i found on one of your endpoint.

I reported the issue to the hackerone form there but i think i might need some assistance from your side.

**85. By bugbytes#0817 in the Token Service Channel on 02/08/2022**

Yes, you're spot on for the main reason. The other one is to pay the miniscule storage fee for tracking how many tokens the account has. Also, there is the concept of auto-association you can attach to your account, but that carries some security implications (I think discussed above in this channel).

**86. By Bart#1307 in the Smart Contracts Channel on 02/02/2022**

From what I know you can't really use HCS for DeFi applications that use HTS tokens with the same degree of security offered with HSCS

**87. By Gab#2898 in the Smart Contracts Channel on 02/01/2022**

Random number in smart contract, how simple it is? found this thread having some security concerns and I find it very complicated: <https://ethereum.stackexchange.com/questions/191/how-can-i-securely-generate-a-random-number-in-my-smart-contract>

**88. By Master Oogway | HeadStarter#8757 in the Developer General Channel on 01/24/2022**

Here is a snippet from the SVET review:

The most controversial part of Hedera is its term limited, 39-members Governing Council, which has an authority over the codebase and overall direction of the network. The

council's power to vote seems to deliver an outsized influence and potentially greatly undermines network's immutability, which, obviously, is one of the most important characteristics of DLT. That makes for "b-" on the "Security" scale of the sub-rating.

That's all that needs to be said lol

**89. By Dian#1456 in the Developer General Channel on 01/24/2022**

Guys, did you read SVET review about Hedera?

Hedera SVET review. System (Security-Velocity-Engineering-Transparency) Rating: Rating: a- / b / b- / b +

**90. By Deleted User#0000 in the Developer General Channel on 01/24/2022**

it increases over all security in my view

**91. By Supremax67#5749 in the Consensus Service Channel on 01/23/2022**

Proxy staking means they can have a high requirement for a node operator, that is what you need for security, a high stake. The official number hasn't been announced yet.

**92. By Supremax67#5749 in the Consensus Service Channel on 01/23/2022**

@Eidorb The limit isn't just for addressing latency, but also network security. You get to a point where more nodes doesn't make it more secure, just makes it more slow.

**93. By Master Oogway | HeadStarter#8757 in the Developer General Channel on 01/19/2022**

The patent was never intended to secure the technology only for Hedera forever, but to maintain security until Hedera establishes itself enough. Even with everything now open source, no competitor can catch up to Hedera and offer everything that they do.

This is my understanding at least.

**94. By johnda98#4728 in the Java Channel on 01/12/2022**

err.. nope "Your new Public Key is :  
302a300506032b6570032100a4472aa4d2b5c8cf7233171412a31ee1f339ec8784e38f19cb626a10015b943c

Your new Private Key is :  
302e020100300506032b657004220420b1fb3e3177078d11ba0745cb9cecd00793a6f89ab10fc44bc10915c6736618aa

Your key Recover key word set is : boost beyond sell popular forward winner hole replace bus rally frog angry wonder tumble dad square west attend love hundred vocal they mind breeze

\*\*\* WRITE down or record, or take a picture of ALL the keyword set above \*\*\*

\*\*\* KEEP the ABOVE items Private and Personal to you, Secured ! \*\*\*

You can now deposit HBAR funds to your new Trading AccountID number : 0.0.26148

Now secure this new AccountID to you by creating a Password below !

Do not loose your new AccountID number. it is NOT your Logon account - which is a Hedera FileID.

You will then receive this Hedera FileID after you enter a new password; Your password

hash will be

held safely encrypted to this file as a hash and held on Hedera itself to ABFT consensus security.

Please enter a new Password below and click the button. (minimum 8 characters long) ..

Hedera Msg : Precheck Status : com.hedera.hashgraph.sdk.PrecheckStatusException:  
Hedera transaction `0.0.26148@1642024835.112275580` failed pre-check with the status  
`PAYER\_ACCOUNT\_NOT\_FOUND` 0.0.26148

"

**95. By Supremax67#5749 in the Developer General Channel on 01/10/2022**

In several interviews, Dr. Leemon Baird mentioned he would rather sacrifice speed if security was at risk. Thankfully, Hashgraph allows them to offer both.

**96. By Supremax67#5749 in the Developer General Channel on 01/10/2022**

True, none that you might come across of. We are entering speculative territory here as nothing was confirmed, but Hedera will have minimum amount of HBAR required staked and proxy stake to a node before that node can connect to a shard. They have always said security was their primary goal from day 1.

**97. By Bart#1307 in the Developer General Channel on 01/10/2022**

This assumes shards are created/destroyed dynamically based on global demand, which isn't how Hedera sharding or any other sharding mechanism that I've come across works. Say you have 10 shards with significantly uneven HBAR distributions say some shards have >15% of the stake and <5%, this will lead to users preferring to move their HBAR to shards that have a higher stake for greater security, leading to centralisation of HBAR into a few shards making the overwhelming majority of shards unusable

**98. By Bart#1307 in the Developer General Channel on 01/10/2022**

The issue with sharding is security is split amongst all shards, so with a single shard you have a max of 50B HBAR potentially securing the network, but with sharding you have 50B/N where N is the number of shards assuming HBAR is split evenly across shards, which as far as I know isn't how Hedera plans on sharding, so you could have a single shard having significantly less HBAR than another making is much less secure

**99. By nube#7126 in the Developer General Channel on 01/09/2022**

Xact just updated after someone noticed a security issue with their wallet

**100. By nube#7126 in the Developer General Channel on 01/08/2022**

xact wallet is in still in maintenance afaik after someone found a security issue with their wallet.

**101. By Ed Marquez#6403 in the Developer General Channel on 01/08/2022**

there is no security risk in sharing your public key.

Just make sure you don't accidentally send the private key as well.

As long as you **\*\*don't share your private key\*\*** or **\*\*recovery words\*\*** with anyone, your account is safe.

**102. By Supremax67#5749 in the Developer General Channel on 01/08/2022**

@fenlapien This server has a captcha. You forget how resilient scammers can be. The issue is not lack of security but the people who is allowing themselves to be scam time after time.

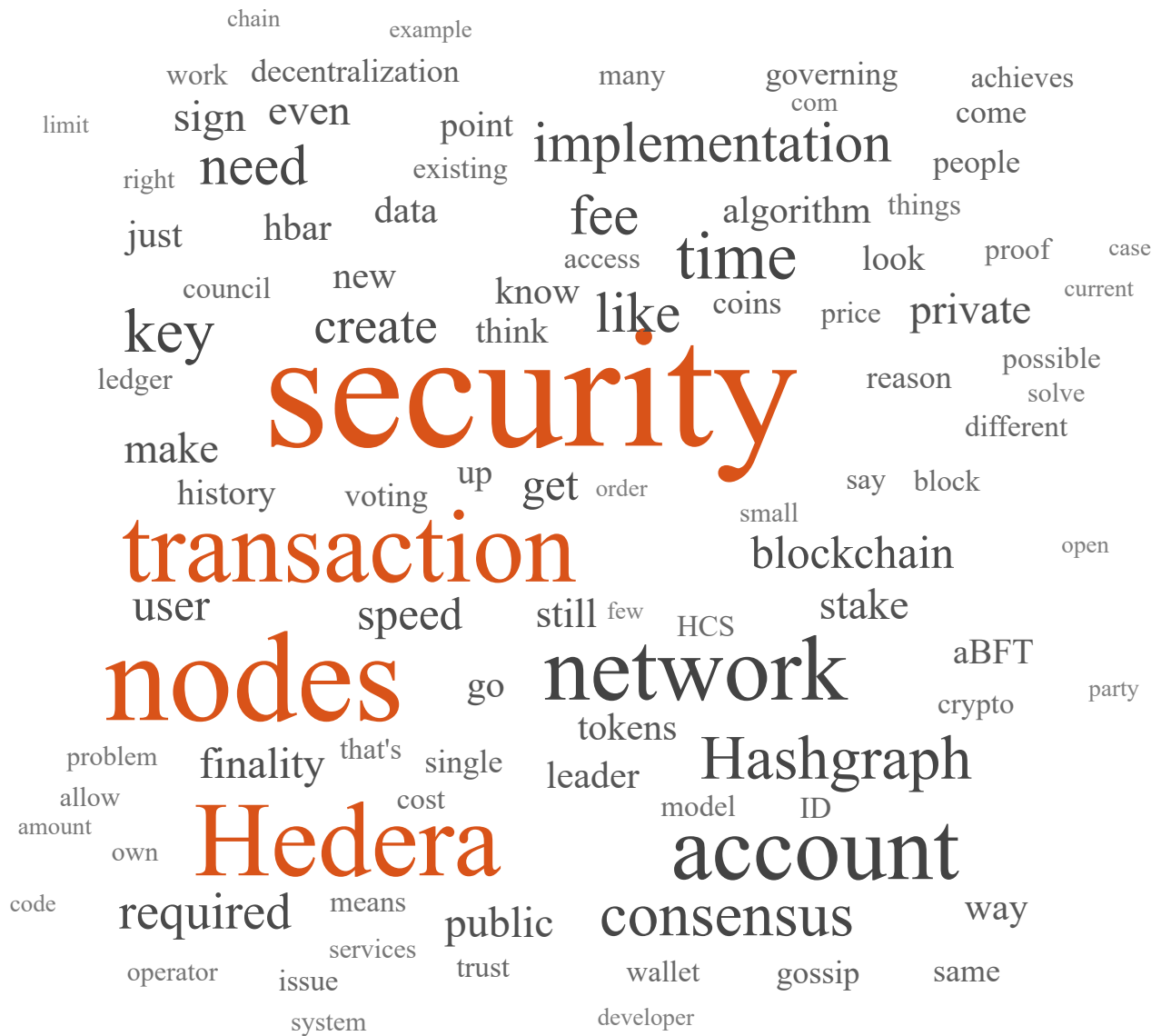
No Fish in the sea, no fisherman. It's that simple. As long as they are fish in the seas, fisherman will keep coming with their baits.

**103. By TikZ#3753 in the Developer General Channel on 01/02/2022**

Alternatively one could use localStorage although I'm not so sure of security perspective



## Comments in 2021



### 1. By Greg Scullard#5365 in the Consensus Service Channel on 12/24/2021

Mainnet nodes push files to aws and GCP for mirrors to download. The files are signed by all consensus nodes and each file contains a hash of the previous one for security purposes. Mirrors process the files, persist in a database and serve APIs / data via subscriptions

### 2. By xMicoz#5902 in the Developer General Channel on 12/22/2021

Holy shit this security verification even on discord is sexy

### 3. By Supremax67#5749 in the Developer General Channel on 12/16/2021

Any accounts you have on Hedera needs to be associated to an account ID, it is not possible to only have a private key to access your account, an Hedera account ID would already be associated to that private key.

If you care about wallet security, Wallawallet source code was reviewed by an independent security audit. You could access your account ID there and through the app, request a new private key in the event you feel your current private key is no longer safe.

**4. By Supremax67#5749 in the Token Service Channel on 12/07/2021**

Hashport will most likely create a bridge with sustainable chains. I would assume Solana 14 hours downtime they experienced due to an exploit would give second doubts to anyone wanting to create a bridge. An independent security audit of the chain would put that doubt to rest.

**5. By johnsonb-oci#6673 in the Developer General Channel on 12/02/2021**

Problem is that quantum hackers will be able to subvert any algorithm that can eventually be brute-forced. It is a problem for the whole security industry and I'm surprised that there isn't more published research at least showing that experts are spending time thinking about it.

**6. By Totohm Shanti#6955 in the Javascript Channel on 11/29/2021**

it's a nice idea, i can make a step-by-step UI where they have to introduce the id, so there's no security risks cause i don't ask for private key, but at least i can check if the token has been associated or not

**7. By johnda98#4728 in the Java Channel on 11/22/2021**

see... thats what Gilder mentioned.. this google speed of light crap and instant instagram stuff, will fade away as Security and Privacy assume greater value than speed.. humanoids will soon look back with a eye-roll to the old days of impatience, junk centralized AI and data abuse & subtle platform monetization of user data.

**8. By Supremax67#5749 in the Consensus Service Channel on 11/10/2021**

I am not currently aware of what the threshold is for 1 node, however, it would make more sense to spread to different nodes.

In terms of internet security, you are relying on only 1 node uptime for all of your services, so there's that too.

**9. By Jarek#7980 in the Developer General Channel on 11/07/2021**

Digital world needs to introduce security first then wallets

**10. By Justin Atwell#0583 in the Developer General Channel on 10/31/2021**

So right now we don't allow anonymous nodes (for network security) and staking isn't yet ready. Still early. Follow the roadmap for updates.

**11. By WW#0305 in the Token Service Channel on 10/21/2021**

@Greg Scullard @AlexTaylor I think Shamir's No-key Protocol is a good solution. It allows to transfer the file and do the encryption and decryption with the first user key and the second user key without both knowing eachother's keys. Hence, transferring ownership of the file: <https://medium.com/asecuritysite-when-bob-met-alice/in-a-world-with-no-encryption-keys-shamirs-no-key-protocol-123bc7a4c0c1> . @Greg Scullard Thank you for the suggestion of Diffie-Hellman! It send me through the right path

**12. By Supremax67#5749 in the Developer General Channel on 10/16/2021**

Your analyst is on the basis of a typical blockchain, not a Hashgraph.

Not to mention once you have reached a sufficient level of security, more nodes doesn't translate into more security.

**13. By Myridium#8284 in the Developer General Channel on 10/16/2021**

More nodes = more security. The difference between  $O(\log N)$  and  $O(N)$  is the difference between 30 nodes and 3000 nodes per shard. It's an important difference.

**14. By mickeymond#2952 in the Developer General Channel on 10/14/2021**

I see both HCS & HTS have >10,000 txn/sec according to the docs and I am assuming they should all be at the same security level.

I want to know why one will choose HCS over HTS for a CBDC Use Case and Vice-Versa.

**15. By Han#4288 in the Developer General Channel on 10/14/2021**

Because it basically could run at native speed (theoretically a million transactions per second) and security.

**16. By Deagle#1163 in the Developer General Channel on 10/12/2021**

I would say that Eth and Cardano are much more centralized. Just look how many of their nodes are on one centralized cloud provider: AWS.

Hedera's nodes belong to different countries, in different industries, on different continents under different governments. Permissioned community nodes are coming in Q2 2022 as per the roadmap - which will expand the nodes outside of the governing council for the very first time.

Many popular cryptocurrencies started with their nodes/validators/etc all centralized, but slowly spread them out over time to the community. I would suggest you read up on Hedera's 'Road To Decentralization' video on youtube, where Leemon talks about this. Saying that the network structure is centralized means that there is a single point of failure - there isn't. This is completely untrue. The network runs in parallel and there is no 'leader node'.

Hedera's goals seem to be to provide the market with the fastest, most secure, most compliant, AND most decentralized network there is - solving the trilemma without sacrificing security or speed.

Also I would say that depending on what you are looking to do, smart contracts aren't even always necessary - especially with HCS and HTS; however things will get more interesting once Smart Contracts 2.0 gets a full release next year.

**17. By Justin Atwell#0583 in the Developer General Channel on 10/06/2021**

I try to think about use cases that would benefit from decentralization. Things where transparency and security are important. Hedera is especially great when it comes to high transactions.

**18. By TheSorcerer#7771 in the Developer General Channel on 09/23/2021**

Hey guys. I was wondering if it was possible to leverage the hedera network for speed and security to integrate with a face recognition application for example.

**19. By will.yijinin#9079 in the Javascript Channel on 09/23/2021**

Thank you for clarification. We are an exchange so for security reasons, for all the chains, we sign offline first and then broadcast online.

In your js sdk, everything is wrapped up. So I basically break up the signing logic and the broadcasting logic. My problem right now is that I have never successfully broadcasted for even once. For this code:

```
...
const _client = new grpc.Client("1.testnet.hedera.com:50211",
grpc.credentials.createInsecure());
const response = await _client.makeUnaryRequest(
 `/proto.CryptoService/createAccount`,
 (value) => value,
 (value) => value,
 Buffer.from(tx.signedTransactionBytes),
 (err, result) => {
 console.log({err, result});
 }
);
...
```

The console.log prints `{ err: null, result: <Buffer 08 32> }` So I wonder how you decide if the result is success or failed.

**20. By Merz#6556 in the Developer General Channel on 09/17/2021**

Yeah I went into the place where assets, settings, security, etc.. and then opened assets and, as I mentioned, bitcoin does have a gear icon but not hbar.

**21. By Supremax67#5749 in the Developer General Channel on 09/17/2021**

@Zaid \*"As the security, stability, and incentives of the Hedera network mature, the network will relax permissions by opening node operations to more entities and individual"\*

**22. By dotat#4801 in the Developer General Channel on 09/16/2021**

> It's already at the theoretical limit of bandwidth, throughput, time to finality, security, and decentralization. In short, it's optimal.

nope, zk steps past that boundary and goes beyond (well, SNARKs to be specific, and whatever comes next), succinct proofs of computation really does solve the bandwidth & throughput problems but it's early days yet

**23. By BroManTech#2938 in the Developer General Channel on 09/16/2021**

Hashgraph isn't just another consensus algorithm which makes different tradeoffs. It's already at the theoretical limit of bandwidth, throughput, time to finality, security, and decentralization. In short, it's optimal. Specifically, Hashgraph utilizes gossip-about-gossip (peers gossip history alongside transactions) and virtual voting (use gossip history to simulate how other nodes vote on consensus without polling them) to come to formally-verified, leaderless, aBFT consensus as transactions are being gossiped. As a consequence, no additional bandwidth is consumed voting, finality is achieved as quickly as transactions can be gossiped (logarithmic time), any number of nodes can participate in consensus, and throughput is limited only by the rate at which nodes can communicate transactions.

To put it another way, any consensus algorithm will need to propagate transactions to nodes (otherwise, what are they coming to consensus on?) as a bare minimum requirement, but with Hashgraph that's all it needs. Transactions are gossiped out exponentially fast, in parallel, with no bottlenecks, and by the sheer act of doing so we are able to reach consensus.

Blockchain was invented to solve a security problem: how to prevent double spending without a trusted third party. Not only does Hashgraph solve this problem to the highest possible standard, which no other network achieves (formally-verified, aBFT), it eliminates leaders entirely. With blockchain, instead of having a single trusted third party, we hold an election of sorts (in Bitcoin, this is called mining). Whoever wins gets to be the next leader (IE propose the next block). At any given point in time, however, we still have a leader! This leader can still censor transactions or manipulate their order. This leader is still a single point of failure. Unlike blockchains, Hashgraph doesn't need a leader because transactions are processed in parallel. In effect, every node can produce blocks simultaneously!

**24. By WinstonWolfe#0421 in the Developer General Channel on 09/16/2021**

Well, your original concern around security, and giving away credentials to one entity is super legitimate, but the way you go about it and how adamant you are to get an answer here screams fearmongering to me. Then mentioning Fantom was the cherry on top.

**25. By dotat#4801 in the Developer General Channel on 09/16/2021**

yes, as a developer I'm digging into why nodes are so troublesome to deploy and the security risks around them, and why it's not useful to use Hedera for smart contracts (slow EVM, low gas limits) - while other projects started at same time & went live the same time with the same tech don't have those issues

**26. By dotat#4801 in the Developer General Channel on 09/16/2021**

Even if you, personally, do not see a reason for it to happen, it can, has and may happen to companies that follow lax internal security processes - Hedera shouldn't be the single point of failure because they may have access to all the servers (or, whoever has access to their servers). The node deployment document is a great example of this kind of lack of oversight

**27. By dotat#4801 in the Developer General Channel on 09/16/2021**

You are making unsubstantiated claims about the internal security processes of a company that you apparently don't work with

**28. By Supremax67#5749 in the Developer General Channel on 09/16/2021**

You stated passwords in plain text in an email somewhere, which is making assumptions that they don't encrypt their data. I strongly encourage you take a long look at the CTO & CEO background and tell me they don't take privacy and security seriously. (I get it, there has been tons of crypto scam project out there, Hedera is just isn't one of them.)

**29. By Supremax67#5749 in the Developer General Channel on 09/15/2021**

For anyone else reading this, we are talking about the price in terms of security of the network, since it is a proof of stake model. #rules still applies, no price speculation allowed

**30. By Bralz#7521 in the Developer General Channel on 09/14/2021**

ill just put this on the backburner until the app is finished. i can add the security stuff after mvp is out

**31. By Supremax67#5749 in the Developer General Channel on 09/11/2021**

Wallawallet has a pretty high security

**32. By BroManTech#2938 in the Developer General Channel on 09/07/2021**

I made a post discussing fair ordering through the Hashgraph algorithm at one point: "Blockchain was invented to solve a security problem: how to prevent double spending without a trusted third party. Not only does Hashgraph solve this problem to the highest possible standard, which no other network achieves (formally-verified, aBFT), it eliminates leaders entirely. With blockchain, instead of having a single trusted third party, we hold an election of sorts (in Bitcoin, this is called mining). Whoever wins gets to be the next leader (IE propose the next block). At any given point in time, however, we still have a leader! This leader can still censor transactions or manipulate their order. This leader is still a single point of failure. Unlike blockchains, Hashgraph doesn't need a leader because transactions are processed in parallel. In effect, every node can produce blocks simultaneously!"

**33. By Greg Scullard#5365 in the Javascript Channel on 09/06/2021**

that would add a layer of security yes, provided the encryption key isn't visible in the js code through developer tools and the front end isn't open source (meaning the encryption key is public...).

I'm sure there are best practices for securely storing private keys on a browser (how do browser extensions like metamask do it ?)

**34. By thom#9570 in the Developer General Channel on 08/25/2021**

Hello, I have been looking into hedera, but still struggle where and how exactly it can be utilized in real applications.

Currently I am working on app, where people can upload medicine lab results which we then analyze, extrapolate etc.

What I would like to is:

- 1) Users have complete control over their data - they can choose who can see them
- 2) max security and privacy of these data - the relation between the data and users should be completely hidden even for us as a service providers or anyone having access to the production server/databases, the relation is "uncovered" only for users themselves and people who they gave the access to.

I know how to implement this without hedera, but I suppose hedera could bring some more assurance and transparency to this. Can you help me with ideas about where and how exactly hedera could help with this?

**35. By Rocket#2012 in the Developer General Channel on 08/17/2021**

I'm concerned about the security of L2 platforms

**36. By Rocket#2012 in the Developer General Channel on 08/13/2021**

given the assumption that you are looking for the highest security for your chess match

**37. By Greg Scullard#5365 in the Developer General Channel on 08/04/2021**

One thing to add to Cody's excellent explanation is that the DAG in Hashgraph is only used to hold a short amount of transactions/events at any one time. Once an event has served its purpose in consensus calculations it can be discarded (and eventually is) from the DAG.

Other DLTs use DAGs instead of chains of blocks to hold their transaction history which grows as more transactions are added to the ledger. At any given TPS, the Hedera DAG remains the same size (give or take).

This is because Hashgraph has 100% finality, once a transaction is applied to state, it's done, never to be undone. Contrast that with non final consensus which needs the history of transactions to prove their current state and security.

Consequently, the Hashgraph DAG doesn't need to hold 1.5B transactions, only a few recent ones

This is why all DAG based DLTs aren't the same, too often is a technology label used to put several systems in the same bucket and infer they are the same or similar.

**38. By Cody (Swirllds)#4217 in the Developer General Channel on 07/29/2021**

It's a security thing. Anything that is free is an attack vector. Each account requires some memory on each node in the network. So if accounts are free, it becomes quite easy for an attacker to create millions and billions of them, which could severely impact network performance.

**39. By Johnda98#0683 in the Java Channel on 07/28/2021**

```
implementation 'androidx.appcompat:appcompat:1.2.0'
implementation 'com.google.android.material:material:1.3.0'
implementation 'androidx.constraintlayout:constraintlayout:2.0.4'
```

```
// as below jda added
```

```
annotationProcessor 'org.apache.logging.log4j:log4j-core:2.8.2'
implementation 'org.slf4j:slf4j-simple:1.7.29'
```

```
// Android, Corda DJVM, Java 7+
```

```
// implementation 'com.hedera.hashgraph:sdk-jdk7:2.0.5'
```

```
implementation 'com.hedera.hashgraph:sdk-jdk7:2.0.9'
```

```
// okhttp transport (for lighter-weight applications or Android)
```

```
//implementation 'io.grpc:grpc-okhttp:1.35.0'
```

```
implementation 'io.grpc:grpc-okhttp:1.38.0'
```

```
implementation "androidx.security:security-crypto:1.1.0-alpha03"
```

```
implementation 'com.github.GoodieBag:Pinview:v1.4'
```

```
implementation 'com.google.android.gms:play-services-auth:19.0.0'
```

```
implementation 'com.yakivmospan:scytale:1.0.1'
```

**40. By Svetoslav#8161 in the Developer General Channel on 07/27/2021**

Hello guys, Is it possible to create token using HTS so it can leverage the security of Hbar and to bridge the newly created token to BSC/Eth so it can be tradable at PancakeSwap/ UniSwap?

**41. By Supremax67#5749 in the Developer General Channel on 07/20/2021**

@Rocket I wouldn't bet on something like this. Either I am wrong and I'll end up being disappointed with their decisions as it goes everything they have said about more HBAR = security. Or, I'll win the bet and not feeling any better because I stole an easy win from a community member.

So no bets, but let's watch and see what happens.

**42. By Rocket#2012 in the Developer General Channel on 07/20/2021**

and they would also not even be able to disrupt the security of the shard

**43. By Rocket#2012 in the Developer General Channel on 07/20/2021**

in the grand scheme of things, the number of nodes on a shard doesn't technically matter when it comes to security. It's about having no single entity (or group of entities working together) controlling one third of the hbar staked to that shard

**44. By Rocket#2012 in the Developer General Channel on 07/20/2021**

to raise the security of a shard you would want to have millions of hbar staked to that specific shard

**45. By Supremax67#5749 in the Developer General Channel on 07/20/2021**

@Rocket I expect a minimum to run a node and for 2 reasons.

- A node with no minimum will dilute the TPS across the network and will cause geo-centralization as seen with Bitcoin, where only the places where people can afford to run one, will.

- HBAR = security in a PoS model. Allowing any amount for a node won't inspire security of said shard.

**46. By Johnda98#0683 in the Java Channel on 07/19/2021**

here is my app level build for my most recent HH droid api 26+ based mobile DApp work - no diff from a desktop build except use the lighter transport dependency, so if this helps your frame.. u can also clone the Opencrowd built HH wallet.. if its still up on HH repo - that (was) a Kotlin/java hybrid. n

```
plugins {
 id 'com.android.application'
}

android {
 compileSdkVersion 30
 buildToolsVersion "30.0.3"

 defaultConfig {
 applicationId "com.example.runit"
 minSdkVersion 26
```



```
targetSdkVersion 30
versionCode 1
versionName "1.0"

testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
}

buildTypes {
 release {
 minifyEnabled false
 proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-
rules.pro'
 }
}

compileOptions {
 sourceCompatibility JavaVersion.VERSION_1_8
 targetCompatibility JavaVersion.VERSION_1_8
}

packagingOptions {
 exclude 'META-INF/DEPENDENCIES'
 exclude 'META-INF/LICENSE'
 exclude 'META-INF/LICENSE.txt'
 exclude 'META-INF/license.txt'
 exclude 'META-INF/NOTICE'
 exclude 'META-INF/NOTICE.txt'
 exclude 'META-INF/notice.txt'
 exclude 'META-INF/ASL2.0'
}
}

dependencies {

 implementation 'androidx.appcompat:appcompat:1.2.0'
 implementation 'com.google.android.material:material:1.3.0'
 implementation 'androidx.constraintlayout:constraintlayout:2.0.4'

 // as below jda added
 annotationProcessor 'org.apache.logging.log4j:log4j-core:2.8.2'
 // Android, Corda DJVM, Java 7+
 implementation 'com.hedera.hashgraph:sdk-jdk7:2.0.5'
 // okhttp transport (for lighter-weight applications or Android)
 implementation 'io.grpc:grpc-okhttp:1.35.0'

 implementation "androidx.security:security-crypto:1.1.0-alpha03"

 implementation 'com.github.GoodieBag:Pinview:v1.4'
```

---

**47. By Supremax67#5749 in the Developer General Channel on 07/08/2021**

I know they are not the only solution, it's just the best solution when it comes to compliance and security. If government wishes to go with a different option, they can. It wouldn't be the first time government cuts corners.

**48. By Supremax67#5749 in the Developer General Channel on 07/08/2021**

@Rocket I have seen some public DLT claiming aBFT in their white papers. However, when a separate security audit was issued for that same ledger, they made no such claims. aBFT is thrown around like it's no big deal, but it actually is.

Unless you know of a network that has no block producing nodes, that doesn't become rotating leaders or have special statuses at any point in time, only then is aBFT achievable.

**49. By Supremax67#5749 in the Developer General Channel on 07/08/2021**

The world isn't, but security is.

**50. By Supremax67#5749 in the Developer General Channel on 07/08/2021**

@Rocket If CBDC requires a trust layer and aBFT security, then they can't do any better than Hedera's network, regardless of possible latency issues. Their only recourse is to go with something less secure or centralized. Not a viable alternative for CBDC.

Dr. Leemon Baird said it best, above all else you need security & trust. Their algorithm already works at the limits of what the internet allows. People will have to accept the latencies wherever they may lie. (On a side note, we are still early game)

**51. By Liberated#0417 in the Consensus Service Channel on 07/01/2021**

Attica voting is a great example.

I envision a vote being casted, a new message is sent in an HCS topic with the event in the message.

Sure. Ok now you have a transactionID that you can go look at the history and track it all down.

Finally the question: what (besides consensus obviously) can we use to tout HCS other than just security?

**52. By Supremax67#5749 in the Developer General Channel on 06/25/2021**

@Gambaru They are, but coming to consensus finality within seconds, not really. The approach Dr. Leemon Baird took to get to Hashgraph is well thought out and was battle tested before they even introduced a public version. Considering it is patented, they will never be an algorithm like Hashgraph out there. You could make it faster by compromising security, or you could make it more secure by compromising speed/cost.

I was bullish on this project when I saw their algorithm in November 2017, they were not talking about a crypto coin or investment possibilities at the time. And I am definitely not an accredited investor. I waited and waited to see if a public version would come out, but since seeing that algorithm and downloading the SDK to play around with, I couldn't look at another algorithm without ending up comparing it to Hashgraph every single time. (with 2000+ cryptos out there, it wasn't an easy task).

**53. By Supremax67#5749 in the Developer General Channel on 06/25/2021**

Hashgraph is the only Public DLT algorithm that has no leaders, not even for a fraction of second and still come to consensus with finality. That's how they can achieve aBFT security.

@Gambaru

**54. By Greg Scullard#5365 in the Token Service Channel on 06/22/2021**

-more recently Vitalik complained about being sent tokens to his cold wallet. This required him to unfreeze his keys and could be a security risk.

**55. By Liberated#0417 in the Consensus Service Channel on 06/21/2021**

Consider this: I'm a large company. I have folks yelling at me day and night about how decentralization is the future. Ok, great. I have like 2 or 3 thousand repositories, no single account that I can use to login to all of these disparate systems (Don't tell me it doesn't exist because It does everywhere lol), and code in like four languages. What can I do right now to solve my security issues while still adding value to my existing infrastructure?

I **think** a great leap forward for these large dinosaur companies is HCS and the supported nested key hierarchy Hedera Supports.

Whoever can map multiple "Real World" identities and roll those all up into a nice Hedera Public key (Like an api gateway for users or something) will have a winning product.

**56. By AlexTaylor#3551 in the Consensus Service Channel on 06/21/2021**

@Liberated Great question, i think a huge sell is reduction in security and audit costs, as protection layers can be stripped away once the data is tied to HCS

Provendb have a great graphic for this  
<https://youtu.be/3oY2gYQke6Y?t=803>

**57. By Greg Scullard#5365 in the Developer General Channel on 06/19/2021**

@Dmitry1987 this will happen in a few years most likely. With POS you need to be mindful of the security of the network as it's opened up to members of the public who could be malicious. It's a combination on coin distribution, market cap and price. When the stars are aligned the food gates will open

**58. By BroManTech#2938 in the Developer General Channel on 06/18/2021**

I'm just thinking social networks are vulnerable to sybil attacks because there's no cost, so why not adopt a more rigorous security model?

**59. By BroManTech#2938 in the Developer General Channel on 06/18/2021**

yeah, confiscating would be a greater security risk, so no need

**60. By BroManTech#2938 in the Developer General Channel on 06/18/2021**

Could we create a Hedera forum with a de minimis security deposit (say, 50 HBARs?), and slash the deposit for misbehavior (bannable offenses)? Should go a long way to discourage spammers/scammers

**61. By lillianday#0699 in the Token Service Channel on 06/16/2021**

Is there a list of HTS coins people have minted and are selling (even in the discord would

make sense to promote)? I was checking out the HEX exchange but no coins are listed. I'm looking to connect with some people who have already done this. We are specifically going to go through the SEC as a security so would really like to see if anyone else has done this with HTS. Ours is a fungible coin but would love to talk to anyone who has some insight. Thanks!!!

**62. By Supremax67#5749 in the Developer General Channel on 06/15/2021**

If you are comparing it with other blockchain with much shorter block time, that's a misconception. Short Block time is by no means a sign of speed but a sign of compromising security to achieve such results. Hedera achieves finality within seconds, any chains that offers faster performance is either centralized or does not offer finality within seconds.

**63. By Supremax67#5749 in the Developer General Channel on 06/13/2021**

Tokens are distributed over time until they are all in circulation. This is a proof of stake model, so having too many tokens in the hands of a single entity is a security concern, so a slow release is the best approach.

**64. By Greg Scullard#5365 in the Javascript Channel on 06/09/2021**

@b\_xt\_r Hedera is indeed different in many many ways to other distributed ledgers, let's say we wiped the slate clean of any prior assumptions and started from scratch.

Transaction history is an interesting one, firstly I like to think that history on blockchains isn't so much a feature as a byproduct of security. With blockchain, history is what enables security, without it, you cannot be sure any block is as it should be, and that's also because most blockchains don't have finality of transactions, finality gets nearer 100% as the transaction is buried deep within the blockchain (like min 6 blocks), but technically, that transaction is never 100% final, a reversal of the chain is always possible (hard, but possible).

Hedera transactions are 100% final, there is no way to roll them back, so history isn't strictly necessary from a node/consensus point of view.

There are also space considerations for nodes, the current history of Hedera transactions is several terabytes already and we're just ticking over. At 10,000 tps we'll be producing 247Gb of transaction data per day (assuming a 300byte transaction and not including transaction records). This amount of data is too much to expect a node to hold, so we have mirror nodes which are readonly nodes which will process transactions to consensus from gossip (like consensus nodes) and will be able to store the history of transactions they're interested in (e.g. your accounts, your topics, etc...). Mirror nodes may offer services to hold data their subscribers are interested in too.

For now, mirror nodes get transaction data via files we host on S3 and GCP, they are able to fully verify the files have not been tampered with.

We will also have state proofs (our mirror does beta state proofs) which are a small payload of data with which you can prove the existence of a transaction, account balance at a time. State proofs can be verified off chain and even remain valid if Hedera no longer exists.

**65. By Greg Scullard#5365 in the Developer General Channel on 06/03/2021**

However you look at it, the current "crypto system" is still very small and very few enterprises are (really) using public ledgers for a number of reasons Hedera is trying to solve for (Scale, security, stability and Governance).

That said, there is space for many ledgers, not all have to be like Hedera and Hedera doesn't need to be like all the others.

(on a personal note), I don't buy the "this is not what crypto is for", it's akin to saying the wheel was invented for bicycles and that's all it should be used for.

**66. By Rocket#2012 in the Developer General Channel on 06/01/2021**

its part of the decentralization and security

**67. By Greg Scullard#5365 in the Token Service Channel on 06/01/2021**

higher security as far as I know, Hedera generally uses SHA-384 for all its services whenever a hash is required, so I follow the same convention.

**68. By Hieroglyphic#6709 in the Developer General Channel on 05/26/2021**

Trying to understand where Hedera fits into the existing Ethereum ecosystem, if at all. For example, Decentraland is based on an ERC20 token MANA but the gas fees to participate in the game writing back to Eth chain made it unworkable. Enter MATIC to process in-game transactions outside of Ethereum mainnet at rapid speeds and low fees but using Eth as core security foundation. Just trying to figure out what Hedera will do to support Decentraland and Sandbox development, or if we will see an alternative ecosystem arise that develops new apps and protocols on Hedera and consensus services will enable cross protocol trust and interactions. I'm new to this if it isn't obvious in my questions.

**69. By Rocket#2012 in the Developer General Channel on 05/18/2021**

Ethereum developers definitely care deeply about decentralization and have made decisions to keep the security of the network high at the cost of other things such as speed/fees

**70. By Supremax67#5749 in the Developer General Channel on 05/18/2021**

Strangely enough, Developers don't care for centralization occurring, they only care that it works. Which is sad when you think about it; what is a public DLT without security?

**71. By Supremax67#5749 in the Developer General Channel on 05/18/2021**

When they were mining hardware, it wasn't as easy to move them around, geographically that is. But if you move to a proof of stake model, greed will turn that network into a more centralized model at a much more rapid pace. I guess trading security for speed.

**72. By Greg Scullard#5365 in the Token Service Channel on 05/18/2021**

The world of blockchain is premised on keeping everything because it has to, it's how it proves its security model, imo it's not a feature, it's a byproduct of blockchain which has no absolute finality. Hedera's consensus is 100% final, history does not need to be kept, data can be deleted and still be proven to have existed with state proofs. It's a shift from conventional thinking I'll give you that.

**73. By Fenix#3599 in the Developer General Channel on 05/17/2021**

But my view is that for the same 'price' you get a lot more security and stability from

hosting on ETH rather than yourself, lets say you use Azure or someone to host your servers, and what happens if Azure dies for a few minutes/hours? Smart contracts are always available to the users

**74. By codemaster#1043 in the Javascript Channel on 05/17/2021**

Hi guys, I have a few questions:

<https://docs.hedera.com/guides/getting-started/javascript/create-an-account#step-2-generate-keys-for-the-new-account>

- I see Hedera Requires an operator to initialize the account on

Hedera. Now the implementations I saw for this require the account

ID and the private key of the operator to be sent to the node for the first transaction.

#1 - Does the SDK sign the transaction before sending it to the node?

#2 - What to do if our private key for the operator is in a Hardware Security Module?

#3 - Is there a reason why Hedera does not use addresses generated by the private key but needs the account ID returned by the

"create account" transaction? It kind of poses a hindrance if a use case is only for airgapped modules (but I do get a lot of blockchains like to do reveal transactions) but in this specific case you cannot even get back the address to say do the transaction at a later time i.e. you would need to store the signed transaction right? Correct me if I am wrong?

**75. By codemaster#1043 in the Developer General Channel on 05/17/2021**

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**76. By BroManTech#2938 in the Developer General Channel on 05/16/2021**

@Bidniz to add to what others have said, I was initially intrigued by the Hashgraph consensus algorithm, having become convinced that there is no "next big thing" beyond Hashgraph in terms of public DLT platforms because it's already at the theoretical limit on bandwidth, throughput, time to finality, security, and decentralization. Specifically, the Hashgraph algorithm utilizes gossip-about-gossip (peers gossip history alongside transactions) and virtual voting (use gossip history to simulate how other nodes vote on consensus without polling them) to come to formally-verified, leaderless, aBFT consensus as transactions are being gossiped. As a consequence, no additional bandwidth is consumed voting, finality is achieved as quickly as transactions can be gossiped (logarithmic time), any number of nodes can participate in consensus, and throughput is limited only by the rate at which nodes can communicate transactions.

**77. By Supremax67#5749 in the Developer General Channel on 05/16/2021**

@Bidniz Fair enough. What Dr. Leemon Baird invented is the invention of the "wheel", it can't be improved upon without sacrificing fairness, speed, cost or security. This what qualifies it as a game changer.

**78. By Rocket#2012 in the Javascript Channel on 05/14/2021**

it's definitely important to get a grasp on the security aspect

**79. By rhyshed#6748 in the Javascript Channel on 05/14/2021**

So the main issue you will have afaics is allowing the user to sign the transaction.

Currently I think there are 4 options (potentially more that I have missed):

1) allow the user to just paste their key in to sign a transaction (bad for the user's security, many users will not trust this system)

2) use the SDK to generate a transaction which can then be converted to bytes, handed off to the user to sign, with the return bytes then processed (quite complex, need to develop or use an existing signing tool, limitations around the time between generating the bytes, signing and submitting)

3) build in support for one of the Hedera browser extensions (only downside being none of them seem to have become the defacto one to use, not sure about how much interoperability there is or whether each one needs a bespoke integration, no mobile support?)

4) leverage the new scheduled transaction feature to generate the purchase transaction and let the user sign it asynchronously (only downsides here are potentially you may waste money on fees if users keep cancelling orders, also not sure how much third party support their is for it yet)

**80. By Supremax67#5749 in the Token Service Channel on 05/14/2021**

Hedera doesn't decide pricing, their main concern is security of the network. In a world where a rich billionaire can affect pricing by a simple Tweet, no project can guarantee you a pricing schedule.

**81. By Rocket#2012 in the Developer General Channel on 05/12/2021**

they might not even release the full supply if they decide it might harm the security of the network

**82. By Rocket#2012 in the Developer General Channel on 05/12/2021**

it's slow for the purpose of network security

**83. By Krulknul#6373 in the Developer General Channel on 05/12/2021**

aBFT just means BFT with fair ordering right? that's just how hashgraph works. it's not just some kind of security buzzword.

**84. By Supremax67#5749 in the Developer General Channel on 05/12/2021**

@sfsfs Much smarter men has looked into this before developing their app on the network. Same applies for governing members, they have a reputation to maintain and they would have never assumed temporary ownership if they didn't see the importance of such a project.

Your concerns may seem relevant from your point of view, but this had been addressed by countless of third parties.

Any network has a security concerns, especially a network as large as Bitcoin which is assumed secure.

**85. By Greg Scullard#5365 in the Developer General Channel on 05/12/2021**

A Transaction is sent to the network and gossiped to all nodes.

As gossip happens, nodes determine if the transaction has been "seen" by more than 2/3 (simplifying things here).

The 2/3 is not determined by the number of nodes, but by the relative weight applied to each node based on the node's own stake (what's in the node's account) + what is proxied to it (your + others' stake).

Staking means you're "adding" your coins to those of the node you stake to such that the node's vote weight is increased by your stake and it consequently carries more weight in voting.

So, if there are four nodes and they have an equal stake (theirs + proxy staked to them) of 25% of total coins (50b), when the algorithm sees that 3 of them have witnessed the transaction (75% vote in this case), they apply the transaction to state (they make the necessary modifications to the ledger to indicate for example that I sent you 5 hbar), they can do that because they know the other nodes will do that too (they too are calculating 75%).

If a single node held 50% and it decided not to gossip out, the remaining nodes would forever wait to see 66.6% of "witnessing" which would never happen, so in that way, consensus is stopped since no transaction is every witnessed by more than 2/3.

If a single node holds more than 66.6%, it can unilaterally decide what to put in the ledger, it doesn't need the others to vote on transactions since it has all the necessary votes to itself and the other nodes will follow what it says.

So while Hedera's council holds more than 1/3 or 2/3, that's equally split between all the council's nodes, from a security of the network point of view (consensus), it would require more than 1/3 of the council members to stop operating a node or more than 2/3 to collude to subvert consensus.

**86. By sfsfs#7487 in the Developer General Channel on 05/12/2021**

So the aBFT security feature is not existant then???

**87. By sfsfs#7487 in the Developer General Channel on 05/12/2021**

You are missing my question a bit. Right now security and whether your contract remains on the hashgraph is based on nodes/council voting. You can trust them if you like, that's OK. BUT Once staking is implemented, the issue is the release rate of the tokens and the total supply that theoretically exists. I'm looking for a clear answer that when staking is implemented, and 2/3rd of the total supply (2/3rd of 50 bill) is not distributed, then that means that Hedera (who has the ability to issue the tokens) can assume control of the sytem for that time being by owning 1/3rd or more of the tokens if it wants to.

**88. By sfsfs#7487 in the Developer General Channel on 05/12/2021**

Well i looked at the white paper and also the tokenomics page, and it's fairly transparent.



But the release rate of 250 million per month is not enough to distribute the tokens sufficiently, if 1/3rd is required to guarantee security

**89. By sfsfs#7487 in the Developer General Channel on 05/12/2021**

@Greg Scullard Accounts dealing with illegal stuff, supporting illegal activity etc. Also 8.5 years seems like a way too long time. So the security features don't really matter for that time period? Isn't it very dishonest to advertise them then?

**90. By Cody (Swirls)#4217 in the Developer General Channel on 05/11/2021**

I don't have working knowledge on the security protocols in place here, I work on a completely different part of the code. Here are a few things that might be helpful to know:

- It's possible to change the private key associated with an account without sending anybody your new private key.
- Any account can create a new account without KYC (as long as they pay the ~\$0.05 fee)
- You can create a new account with your KYC'd account without sending anybody a copy of the new account's private key

**91. By Rocket#2012 in the Javascript Channel on 05/07/2021**

on the security side, how does the js sdk do verification to ensure that it is connecting to a valid mainnet/testnet node? is there a risk of a node being spoofed and sensitive information being intercepted

**92. By Cody (Swirls)#4217 in the Developer General Channel on 05/07/2021**

There is actually a network security problem we have to consider with account creation. Each account requires a small amount of memory on each node in the network (on the order of 100 bytes I think). If accounts are created by spammers in exceptionally large numbers, those accounts could negatively impact the performance of the network as a whole. So to compensate we require a fee that is small enough as to not financially burden "real" users, but expensive enough as to make large scale denial of service attacks not cost effective.

Free = DOS vulnerability, unfortunately

As the ecosystem grows, my hope is that we will see a variety of 3rd party on-ramps that make it easy for new users to get started.

**93. By Cody (Swirls)#4217 in the Developer General Channel on 05/03/2021**

You only have to use KYC if you create an account through the Hedera portal. Anybody can bootstrap an account for anybody else without KYC, as long as the ~\$0.05 creation fee is paid. I'm under the impression that there are a few wallets that do so for free as a service, don't remember which ones (somebody else can chime in if they have used one of those services).

Long story short, we require a fee to be paid for an account to be created as a security measure. Each account requires a small amount of storage for the network, and if spammers could create billions of them for free it could impact network performance. And in order to pay that fee you must do so from an existing account.

**94. By MikeG#0508 in the Developer General Channel on 05/03/2021**

I submitted my passport during the mainnet account creation process and after about 5 days I went back to mainnet to check the status and it says "Verification failed", with no other reason as to why or next steps. What gives? Is this my new existential dilemma, I'm not who my identity documents say I am? Should I call Homeland Security and check that I'm even a citizen? Nice job Hedera!

**95. By coltsfanatic07#0179 in the Developer General Channel on 04/29/2021**

Certainly. The speed and security, not to mention the low fee structure, lends the consensus service to a huge amount of possibilities. You would probably have some offchain components in your build, but 100% feasible.

**96. By Cody (SwirlDs)#4217 in the Developer General Channel on 04/28/2021**

New accounts require a small fee to be created. This is a security feature, not a cash grab. Since each account on the network requires a small amount of memory on each node (on the order of 100 bytes), unbounded creation of accounts can eat up network resources. Eventually that could slow or even disrupt functionality.

The fee is designed to be small enough as to not burden regular users (I think it's \$0.05 right now... somebody correct me if I'm wrong), but if you are creating millions of them it becomes expensive.

KYC is required if hedera creates an account for you but not required if a third party creates your account.

**97. By Supremax67#5749 in the Developer General Channel on 04/23/2021**

@Myridium That would be a very broad answer. You do gain the benefit of using smart contracts on an aBFT system. So security wise, make sense.

But the cost will always be high due the way smart contracts operate. Most Developers using Hedera is using the consensus service instead.

**98. By Supremax67#5749 in the Developer General Channel on 04/22/2021**

@B ħ abadook(GrelfMy401k) Some networks have no fees, however, without fees, you can't cover cost. (You end up with hidden fees)

Some networks promises higher speed, but at the cost of security.

Hedera charges for what it cost and doesn't compromise security, for speed.

**99. By Cody (SwirlDs)#4217 in the Developer General Channel on 04/22/2021**

My personal opinion on java as a language:

- Sufficiently easy to use. During a regular work day I spend my time fighting algorithmic problems, not fighting the language (not true for all languages)
- Sufficiently performant. If you spend the same amount of time writing an algorithm in Java and C++ you will get roughly similar performance. Maybe you could squeeze a few extra percent out of C++ by dumping 100s of hours into it, but usually there are much more useful optimizations (such as improving algorithms). This was not true historically, but modern java has come a long way.
- There are lots of libraries available
- It runs on pretty much anything
- Strong documentation
- Lots of people know it

- Security issues? Not that I am aware of... Crappy code will have security holes regardless of language, and so the only solution is to not write crappy code.

Is it perfect? No. But it is a solid tool that can do all the things we need to do with it.

**100. By Greg Scullard#5365 in the Developer General Channel on 04/22/2021**

It doesn't necessarily mean Java is the wrong choice when you take all the requirements into account (such as security audits of libraries we use which aren't a given with other languages).

**101. By BroManTech#2938 in the Developer General Channel on 04/20/2021**

Could HCS be used to bootstrap a validator set for Cosmos zones? I think the idea is that zones (Tendermint blockchains) can communicate with each other, but there is no shared security model, so they are each responsible for recruiting their own validators, which can be a large hurdle. It seems like HCS would essentially allow them to outsource that, so could be an interesting integration/partnership.

**102. By Supremax67#5749 in the Developer General Channel on 04/19/2021**

@Instafluff You'll see some blockchain achieving higher speed than Hedera, but they compromise security to be able to achieve such performance.

**103. By Supremax67#5749 in the Developer General Channel on 04/19/2021**

@Instafluff The real reason Hedera is such a good project is because it achieves consensus while all nodes remains equal. They are no validators, block producers or temporary leaders.

A public DLT must achieve security as its primary goal. Unfortunately, no blockchain today is both aBFT, Fast & Fair, except for Hedera.

**104. By Cody (SwirlDs)#4217 in the Developer General Channel on 04/15/2021**

@discordion There is actually a very important reason why this is necessary, and it's not "we want money mwua ha ha ha".

"Free" is a security risk. If anything is free, an attacker can spam that operation to slow down or even destabilize the network. If account creation was free, a malicious entity could create billions and billions of them. Each account requires a little bit of space on each node (perhaps on the order of 100 bytes), and with enough of them there would be non-trivial burden on each node. The available memory on a node is finite, and so if the number of accounts grows too large then eventually

To combat this, a small fee is required to create an account. This fee is sufficiently small as to not hurt regular users (~\$0.05 USD if I recall correctly), but quite expensive if you are creating millions of them for no reason. And that fee has to come from somewhere... hence the requirement that an existing user scans the QR code and pays the fee.

**105. By Koin#5839 in the Consensus Service Channel on 04/12/2021**

But the security falls off, so im wondering how to bridge that gap

**106. By Greg Scullard#5365 in the Developer General Channel on 03/22/2021**

Or, HCS, open source public non permissioned and you have scale, speed, security and

trust. Smart contracts were the only way to do it, HCS enables the same without the burden if you let go of the shackles

**107. By Supremax67#5749 in the Developer General Channel on 03/21/2021**

\_\_\*\*\*"So I'm interested to know if the main net is decentralised and permissionless. Are the nodes owned by the governing council, if so, does this mean its a permissioned network only. "\*\*\*\_\_

Permission network, yes, but decentralized; no single party is able to act without the consent of others. To go permissionless over time.

\_\_\*\*\*"Also, would the fees associated with running the network be determined by the governing council or are they fixed forever at the current rate."\*\*\*\_\_

Determined by a temporary governing council. The governing council as you know it today will be completely different 6 years from now; a charter set in place that no council member can serve more than 2 consecutive terms of 3 years.

\_\_\*\*\*Is the network infinitely scalable. If Hashgraph has these 3 variables of decentralised, scalability and security, then it is the only dlt to solve the trilemma. In which case it is undervalued\*\*\*\_\_

Undervalue is an understatement. Hedera is very new to the space especially when you compare that with how long it took for people to recognize Bitcoin and that was during a time where almost no crypto was around. Today, I call it the crypto noise and its going to take time for people to notice this project in a very flooded market. (That hasn't stopped companies to start seeing its value)

**108. By Macr#5750 in the Developer General Channel on 03/21/2021**

@Supremax67 thanks for the reply, im sure you see a lot of benefit with Hashgraph and I'm keen to understand it. So I'm interested to know if the main net is decentralised and permissionless. Are the nodes owned by the governing council, if so, does this mean its a permissioned network only. Also, would the fees associated with running the network be determined by the governing council or are they fixed forever at the current rate. Is the network infinitely scalable. If Hashgraph has these 3 variables of decentralised, scalability and security, then it is the only dlt to solve the trilemma. In which case it is undervalued.

**109. By Supremax67#5749 in the Developer General Channel on 03/20/2021**

@Macr The reason Hashgraph resonated with me back in November 2017 is their genius approach to reach consensus which by first, not trying to be a blockchain. Of course, there might be some cases where you might need a blockchain, but for the better part, Hedera Hashgraph of choice if you care about the golden standard in security (aBFT), true decentralization, no forks guarantee, speed and low cost. I can go in the details of each if you wish.

**110. By Fizzy#6440 in the Developer General Channel on 03/14/2021**

Sooo. Moon = Super security?

**111. By Supremax67#5749 in the Developer General Channel on 03/14/2021**

@Tooting Hedera uses a proof of stake model which means the security of their token is tied in to the value of the token. It would work against Hedera to release tokens faster than it can gain value.

**112. By LukesLogic#6474 in the Developer General Channel on 03/14/2021**

Everytime I try to debit card/wired transfer on Binance.US it says it fails, then I get my bank account locked due to "incorrect security question answers"

**113. By siem#8085 in the Developer General Channel on 03/11/2021**

No problem. The continuation of the argument was that the COQ proof of security was within a permissioned system, not an anonymous system, and that this raises doubts about how feasible anonymous nodes would really be. Therefore: ' a. There is no coq proof of the claim in the last sentence, b. the answer is tautological (as to know about a nodes influence from the ledger you'd need to know how many nodes there are, or that's the idea) and c. 'What prevents a node from lying that is has really much stake? Thus Sybiling and taking it over. Hm? What prevents me from making 100 [or whatever number of] nodes all claiming to have much high fraction of the total stake [if the consensus is not sure of the amount of nodes there are]?' That's all beyond me, haha

**114. By you\_ate\_my\_food#4494 in the Java Channel on 03/11/2021**

@kyousuke afak the 300k limit won't be changing anytime soon. It has to be with security as well

**115. By Supremax67#5749 in the Developer General Channel on 03/05/2021**

The important thing to note is that Hedera has no special nodes. Any nodes that becomes a validator at one point or another is a security risk and considered a good target for DDOS. All Hedera nodes are equal.

**116. By Greg Scullard#5365 in the Developer General Channel on 03/05/2021**

@Arrowhead117 if 100% finality in 3-5s, fairness of access and transaction order, fixed low transaction fees in USD, the highest possible grade of security and a strong governance decentralised in more ways than one aren't useful to you, then yes Hedera's main benefit is a no fork guarantee

**117. By Bart#1307 in the Developer General Channel on 02/28/2021**

I understand, the security issue isn't necessarily with a widely known entity such as the Hedera where IP addresses and SSL certificates/public keys are hardcoded into applications/browsers or even the OS, but with lessor known entities on the internet where DNS requests are necessary, which opens up a whole host of attacks, privacy concerns etc, with multiple potential solutions such as DANE, DNSSEC, DNS over HTTPS/ TLS, however these systems are still centralised and more susceptible to attacks in its chain of trust in comparison to a decentralised distributed ledger such as Hedera which implements decentralised equivalents of those services. In addition existing DNS and PKI suffer from issues that could easily be resolved by a similar implementation on Hedera such as near instant domain registration and updates(in comparison to 24+ hours), near instant CA revokation, etc.

**118. By yezzer#8110 in the Developer General Channel on 02/27/2021**

Regarding blog post here <https://www.hedera.com/blog/migrating-tokens-on-hts-from-testnet-to-mainnet> by @Cooper, this wonderful phrase "follow standard security practices". Any chance of any blog posts or examples of implementing security practices for Hedera apps on MainNet?

**119. By Supremax67#5749 in the Developer General Channel on 02/24/2021**

@SethV I already have an issue with Fantom's claims from their own official video. "... thousands of networks can be deployed with no compromise in speed or security..." It doesn't matter what network you build, the more you add to a network, the more you affect the speed and/or security. Hedera is no exception, it is shown in their initial testing back in March 2018 presentation. Another issue with their platform is that its open source. No serious Dapp developer wants to make something on a platform that could end up forking endlessly. Another thing Hedera got right, an unforkable platform provides stability. Fantom also states they don't have any special nodes, but they also refer to validators, which are considered special nodes. They are contradicting themselves on their own Github wiki. I haven't looked deeper, but that is already 3 red flags in my book.

**120. By Paul Madsen (Hedera Hashgraph)#1582 in the Developer General Channel on 02/22/2021**

hi all, this is early notification of an upcoming price increase for account creation transactions

**\*\*Account Creation Fee Increase \*\***

The Hedera Network's fee model is designed to price transactions in proportion to the burden (in bandwidth, compute, and storage) they place on the network nodes for their processing – both to contribute to the security of the network and to ensure that the Hedera network is financially sustainable.

The Hedera Governing Council Treasury Management and Token Economics Committee has concluded that the current fee of \$0.01 for creating an account does not adequately reflect recent demand or the network resources consumed.

Accordingly, the price of account creation will be increasing to \$0.05 - the new fee will take effect as part of the April release.

**121. By SethV#8086 in the Developer General Channel on 02/19/2021**

Yea I def agree about fairness and security

**122. By KenTheJr#6963 in the Developer General Channel on 02/19/2021**

the more nodes you add, the slower transactions take because of the 2/3 requirements (2/3 of nodes have to see the transaction for consensus to be final)..so there is a balance between having more nodes for security and fewer nodes for lower latency. So the real question is, "How many nodes is secure enough and what latency is everyone okay with?"

**123. By KenTheJr#6963 in the Developer General Channel on 02/19/2021**

More nodes theoretically = more security but higher latency (though not by much because gossip is exponentially fast)

**124. By Supremax67#5749 in the Developer General Channel on 02/19/2021**

@Bart Security also plays a factor and without it, no fee models would make sense. Achieving aBFT is by all means, no small feat.

**125. By Robbie#5743 in the Developer General Channel on 02/18/2021**

Gotcha. Two years out is about the amount of time required to turn some hardware. If I were to make a public node capable of potentially hosting a decentralized internet and more, I would make a node that people could buy off the shelf and ensure that the hardware, software, and firmware fingerprints were added to the distributed ledger for authentication in addition to bio-metric data for the user to ensure that one person per node is allowed to help prevent attacks.

Is security the main reason behind the wait for public nodes? Because it seems like a hardware system with controls like mentioned above would solve a lot of that.

One of my concerns with Hedera Hashgraph is lack of accessibility to the people. I get that it isn't just a crypto but half of the excitement behind crypto and this field is in the mining and feeling like you are part of something. If Amazon, Google, and Microsoft jump on board and all of a sudden there is never a need for public nodes it seems like the whole point of decentralization and community is missed because the system is controlled by a few key players which kind of goes against the whole spirit of decentralization and crypto currencies.

I've read the Hashgraph white paper along with other block chain technologies and this one seems to be the technology front runner by a long shot and I want to do what I can to support it but in this industry the best technology solution doesn't always win and I would hate for this tech to lose to something like Dogecoin over lack of accessibility and community.

I'm certainly up for future discussion if the hardware path is something you want to do in the future. Let me know and I'll private message you my contact info.

**126. By rhyssied#6748 in the Developer General Channel on 02/12/2021**

usually with wallets even if they do go out of business or are discontinued you still have access to the application (its normally just an interface for talking with the network). Even if it didnt work for some reason (i.e. their server is down so you cant sign in), as you would have access to the private key(s) for the actual Hedera account, you could use an alternative wallet or even use the SDKs directly to transfer your funds and manage your account.

As for wallet security, a lot of them have an open source / review codebase so people can verify the code, however not that many people actually do that so its still mainly on a reputational trust basis.

**127. By sasha grey#6877 in the Developer General Channel on 02/12/2021**

Thanks for the reply Greg! I wanted to follow up, what if the wallet company goes out of business then? You mentioned that the exchange can go out of business, but can't the company that has my wallet also go out of business? OKCoin has been around for over 10 years so it's not a new company. Can someone check their security? They said they had standard security just like any other wallet.

**128. By Greg Scullard#5365 in the Developer General Channel on 02/11/2021**

@sasha grey there is a saying in crypto "not your keys, not your crypto" or something

along those lines. If you keep your coins in an account that belongs to an exchange (any exchange) and that exchange were to go out of business or suffer a security breach, your coins could be lost for ever.

It's good practice to move your coins to an account managed by a 3rd party wallet application so that you are protected from these risks unless you are actively trading.

When you want to sell some coins, you move them from your account to the exchange and put them up for sale, thus reducing your "risk exposure" to a smaller time window.

However, you are then totally responsible for your coins, if you lose your recovery words or forget to record them and your phone is damaged beyond repair, you have lost your coins, nobody can recover them for you (you are your own bank !).

**129. By Skorcher#3107 in the Developer General Channel on 02/10/2021**

hedera is literally at the limit of security and speed

**130. By Nacer Abdelhak#3587 in the Developer General Channel on 02/03/2021**

Security and decentralisation are fine

**131. By Greg Scullard#5365 in the Developer General Channel on 02/03/2021**

@Nacer Abdelhak I don't disagree with your assertion, however public ledgers suffer not from a trilemma, but a quadrilemma. If you need layer-1 (on ledger) execution, you have to sacrifice scale, there is no way round it. At some point, the demand from compute capability will overwhelm the nodes, leading to increased transaction costs, lack of scalability or security... (see my 1% analogy above).

We realised layer-2 was the way forward (many other networks are heading that way too). What if you could run your solidity in an EVM that's not on a node, but you had guarantees the EVM is receiving transactions in the right sequence after reaching consensus (that's what HCS does) ? Would that not serve the purpose ? Make the EVM/ solidity code public, allow anyone to run it, trust is rebuilt.

If there is a dispute, get an arbiter to run the EVM from the very beginning of the message history and the truth will come out.

**132. By IronGuards#2474 in the Developer General Channel on 02/02/2021**

Ah ok. And does that affect security in any way? I read that HBARs are released gradually to avoid one bad player getting control of 33%+ of HBARs. But sharding a network, does that change anything? I would say, you only need 33 out of 100 computers in any given network/shard, or does it remain 33% of all HBARs?

**133. By Supremax67#5749 in the Developer General Channel on 02/02/2021**

@0xDroid.eth || c3p0.hbar I believe that stands for Wrap HBAR, I saw a couple devs talk about it. It was my understanding to provide Ethereum access at the speed and security of the Hedera network. Hopefully a dev can go in a more technical detail.

**134. By Greg Scullard#5365 in the Javascript Channel on 02/01/2021**

key management is tough... ideally wallets would have an api that you can call upon to sign a transaction on behalf of the user (with the user's approval of course), similar to



how bank apps are used to validate transfers and payments.

In the mean time, you should be able to use cookies in a browser app, maybe with a little encryption so the data in the cookie isn't clear text, or if mobile, use the hardware encryption (not all mobiles) to encrypt/decrypt the private key so it's not kept in plain text.

(there may be other ways, I'm unfortunately not a web/mobile security expert).

In the SDKs examples, there is an example of how to create a transaction, convert it to a byte array and pass it to a client to sign (the server creates the TX, gives it to the client which signs) and return to the server (or the client can send to Hedera direct)

js: sign-transaction.js

java: MultiAppTransferExample.java

go: multi\_app\_transfer

these examples show how the server would never know the private key (which is best)

### **135. By Supremax67#5749 in the Developer General Channel on 01/30/2021**

@sasha grey All I can say for certain is that they care about the price stability of HBAR. As it is a proof of stake model, it is necessary for a slow deployment to make sure the price aligns with security. Once 1/3 of the tokens reaches the market, the price needs to be high enough to make it difficult for any single entity to own them.

### **136. By Greg Scullard#5365 in the Developer General Channel on 01/25/2021**

@Avanish not at the moment now, being a POS system we need a bootstrap period to enable a wide distribution of hBar such that opening node operation to the public doesn't put the security of the network at risk.

### **137. By Matt Smithies#7285 in the Token Service Channel on 01/21/2021**

Just an idea, not entirely sure on the security concerns could be, thinking from an automated trading point of view

### **138. By Nicholas#6381 in the Developer General Channel on 01/20/2021**

hedera is organisation of NWO. professor zer zer and his partner got investment from PENTAGON. dr. zer zer, (partner of the professor zer zer, professor of mathematics, the guy was IT security consultant for pentagon. ibm from hell is their investor. hbar is a 100% SURVEILLANCE COIN. hbar will be enforced on the planet by GUN by United Nation. you are sharpening a knife that will chop your own head. i am observing you with happiness. billions will be slave and die. and this is GOOD. stupid people must die. it is justice.....

global id

i give you a couple of more clues, key words

1- hydrogel, digital tatto. (where is it? in the bill gates vaccines)

2- search in the public patent office website. who patented (cryptocurrency connected to biological id) microsoft

3- look at major projects of hedera in their own website (global id)

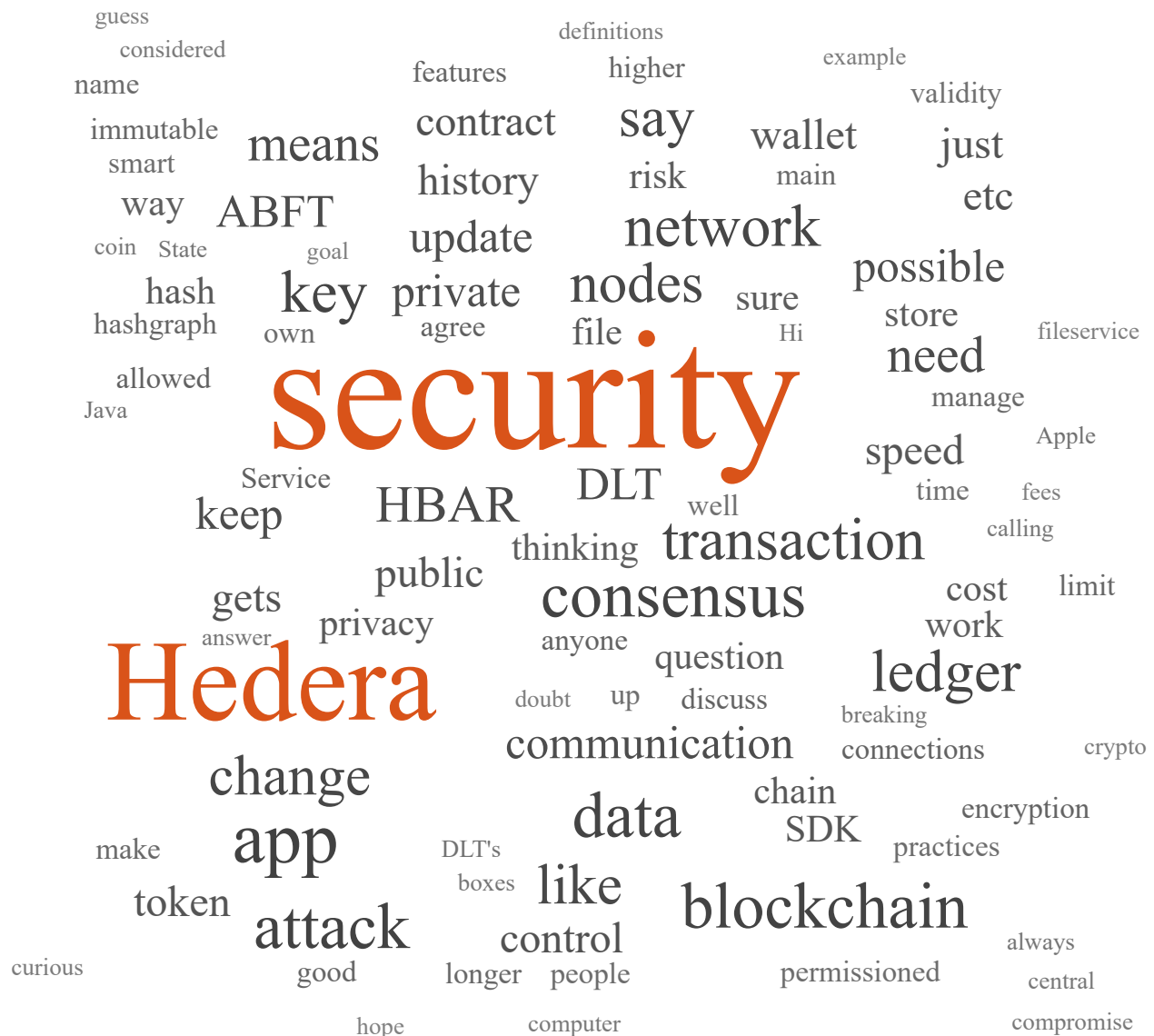
4- is global id means slavery? (hell no)

5- are those (1,2 and 3), connected to each other? (hell no)

**139. By JR Fletcher, Ledgerama#2545 in the Developer General Channel on 01/19/2021**

@yezzer Wallawallet <https://wallawallet.com> allows you to create and manage as many Hedera accounts as you want and it is quite secure, it has been through external security audits and passed without issue. I think Ivy lets you manage more than one account also but I am not 100% on that, I haven't used it in a while. Disclaimer: Ledgerama built Wallawallet so I am biased for obvious reasons

## Comments in 2020



### 1. By Mannon#6660 in the Developer General Channel on 10/21/2020

@Jonathan Monroe make sure to update your iPhone as well. I have seen older versions that don't update have a similar problem as well. So delete wallet app. Make sure phone is up to date and then shut down phone and restart to insure all cache files are deleted Then reinstall app with 24 words and acct id. Use pin vs face for security on the app.

### 2. By Supremax67#5749 in the Developer General Channel on 10/20/2020

@Johnda98 Those Polkadot syncing of chains worries me. I guess no one is familiar with the expression you are only as strong as your weakest link. They are no shortcuts when it comes to security. Unfortunately people are opting for convenience over stability.

### 3. By Cody (SwirlDs)#4217 in the Developer General Channel on 10/14/2020

@Nour You will always need an OS running locally to manage hardware and processes. I

am confident in saying that Hedera (and every other DLT that exists or probably will exist) will never be a suitable tool for replacing an OS.

That isn't to say that you couldn't have some apps that leverage Hedera. For example, an instant message app could utilize hedera for communication, or a banking app could use the network for security, etc.

**4. By matrix.hh (creator of Byz Punks)#6440 in the Developer General Channel on 09/19/2020**

Howdy — i opened someone an account with their public key from the telegram community. Im worried now this could have been a security risk?

**5. By matrix.hh (creator of Byz Punks)#6440 in the Developer General Channel on 09/09/2020**

Would logging into the hedera mobile wallet app risk my security at all if my current protocol is to only sign transactions in myhbarwallet with ledger?

**6. By Nicholas#7698 in the Java Channel on 09/02/2020**

Hi, I hope newbie questions are allowed XD

So I'm currently working on my thesis, essentially an app that would implement blockchain as its main security framework - so like a e-consultation app, with chatting, video calling, and payment features and protocols.

Blockchain implementation will mean logging in all kinds of activity and transaction within the app. Do you think it's possible as a one-man job? If it's possible, I'm interested in doing it with Hedera...

**7. By Republigun#8843 in the Developer General Channel on 08/19/2020**

> Unless Apple goes for crypto

@0xholman Apple being security and privacy buffs would lead me to believe that they would want to run a permissioned apple coin on top of something like HCS

**8. By Greg Scullard#5365 in the Developer General Channel on 08/18/2020**

@Xi195 no need to apologies for what is a great question imo. My answer will be a small wall of text, so bear with me :)

Immutability is considered a property of all **blockchain** ledgers, it is what guarantees the validity of a transaction past consensus over time, but, given the right circumstances, no computer system is truly immutable. If enough malicious actors take control of any blockchain, they can collude to rewrite history. Not saying this is easy or without consequences, just saying it's theoretically possible.

Transaction history is often touted as a feature of blockchain, I'd argue it's a byproduct of the security of the network rather than a feature. You need that history to prove a transaction is valid post consensus, you couldn't do without the history. And if you agree that it's theoretically possible to change the chain, the validity of a transaction can never be considered to be 100% final. It gets closer to 100% over time because it would be harder to change history further back, but it's always theoretically possible.

Hedera's consensus on the other hand is final. When a transaction reaches consensus,

it's 100% guaranteed not to be reverted. This means there is no need to keep history of transactions for the ledger to be valid and we will provide means to prove this unequivocally in the near future (State Proofs).

So, the Hedera ledger is no longer shackled to an immutable chain of data, this opens up a number of possibilities such as controlled mutability.

Say I don't trust you, but we need to enter into a contract. Who keeps a copy of the contract ? You don't trust I wouldn't collude with a third party. Say we hash the contract and store a copy of that hash in a Hedera file with both our keys on that file meaning that it cannot be updated unless \*\*you and I\*\* approve the change.

We have controlled mutability, only an agreement between you and me allows for a change.

### **9. By AlexTaylor#3551 in the Consensus Service Channel on 07/13/2020**

@Greg Scullard Thanks, good question. I'm also thinking of hacks or other types of risk. Security management is likely to be different to centralised models, so I'm wondering what best practices or guidelines are out there, or might emerge.

### **10. By AlexTaylor#3551 in the Consensus Service Channel on 07/10/2020**

Are there any best practices in appnet encryption key management?

Key rotation is sometimes mentioned for added security, but this seems to be at odds with recent data privacy and compliance material (since historic data is available from mirror nodes, and at greater risk because it is decentralised)

And/or is obfuscation an option? eg choosing 1 of n operators at random to send to 1 of m topics at random generates n x m options. Provided the owner of the operator entities are unknown this adds some protection. I guess this is used with many blockchains. Another rabbit hole no doubt!

### **11. By IronGuards#2474 in the Developer General Channel on 07/03/2020**

Hi, I'm not very familiar with computer science and building stuff. But I am very interested in the Hedera characteristics, speed, security etc etc...

I have a question though, I keep hearing, as long as 2/3 of the network is honest. Does that mean, if someone or a group of people manage to acquire 1/3 of the outstanding HBAR (approx 16.67b), then the network will no longer work as intended and no longer be secure?

### **12. By Supremax67#5749 in the Developer General Channel on 07/01/2020**

@Republigun I'm sure they wouldn't disclose that information, even if the form of communication was considered secured, you never share how you privately send information. So I doubt they will acknowledge or deny what they use internally.

On the other hand, you have a platform that is aBFT, the leading DLT in security. I highly doubt they be that negligent with internal communications

### **13. By 0xJepsen#5735 in the Developer General Channel on 06/30/2020**

Really excited to talk about voting security at tonights virtual meetup, would love to see

some of you there! <https://www.meetup.com/Hedera-Hashgraph-Virtual-Meetup/events/271314001/?isFirstPublish=true>

**14. By Johnda98#0683 in the Java Channel on 06/20/2020**

Ok with SDK 1.1.2 but 1.1.5 returns Exception in thread "main"

java.lang.ClassFormatError: Duplicate method name "getSignatureCase" with signature "()LjavaSignaturePair.SignatureCase;" in class file com/hedera/hashgraph/sdk/crypto/Ed25519/Ed25519PublicKey

at java.base/java.lang.ClassLoader.defineClass1(Native Method)

at java.base/java.lang.ClassLoader.defineClass(ClassLoader.java:1016)

at java.base/java.security.SecureClassLoader.defineClass(SecureClassLoader.java:174)

at java.base/

jdk.internal.loader.BuiltinClassLoader.defineClass(BuiltinClassLoader.java:800)

at java.base/

jdk.internal.loader.BuiltinClassLoader.findClassOnClassPathOrNull(BuiltinClassLoader.java:698)

at java.base/

jdk.internal.loader.BuiltinClassLoader.loadClassOrNull(BuiltinClassLoader.java:621)

at java.base/

jdk.internal.loader.BuiltinClassLoader.loadClass(BuiltinClassLoader.java:579)

at java.base/

jdk.internal.loader.ClassLoaders\$AppClassLoader.loadClass(ClassLoaders.java:178)

at java.base/java.lang.ClassLoader.loadClass(ClassLoader.java:521)

at leveridgesystems.GetAccountBalance.<clinit>(GetAccountBalance.java:19)

**15. By Supremax67#5749 in the Developer General Channel on 05/28/2020**

They been meticulous so far with security of the network, that is not a mistake they would miss

**16. By Cody (SwirlDs)#4217 in the Developer General Channel on 05/24/2020**

@wayne Ditto on that -- there is no security risk in sharing your public key. Just make sure you don't accidentally send the private key as well.

**17. By bugbytes#0817 in the Developer General Channel on 05/05/2020**

For today's \*\*testnet\*\* upgrade to v 0.5, will this have any impact:

```\n

In Hedera Services v0.5.0, we've added TLS for trusted communication

with nodes on the Hedera network. For better security, only

TLS v1.2 and v1.3 with TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 and

TLS_RSA_WITH_AES_256_GCM_SHA384 cipher suites are allowed.

```\n

?

**18. By Nikolay#9708 in the Developer General Channel on 05/02/2020**

> @Nikolay On a side note, you may want to remove Credit on your list. Project has been proven to be a scam. When I call them out on it, they removed some data from their site. You cannot achieve decentralized consensus under 0.1 sec which is their claim. Data flows through the internet with latency.

@Supremax67 Yes, I also suspected something like that about Credits. But I don't agree that Hedera is a security champion, for that matter. And I agree, that we should discuss

BFT-based DLT's separately. Let's discuss this and everything else on BTT, where did I create a thread to discuss this table. It's not about Hedera and I don't want to disappoint Hedera fans here. )))

<https://bitcointalk.org/index.php?topic=5219074>

**19. By Supremax67#5749 in the Developer General Channel on 05/02/2020**

@Nikolay I see mentions of a lot of blockchains in that spreadsheet. Did you account to the overall increasing cost over time of what a blockchain incurs? As the chain gets longer, the cost goes up. In some cases, so does the efficiency. Now you can truncate the branch at some point, but who gets to arbitrarily decide this? Hedera does not make any such compromise. Performance is not the main goal of a DLT, security is, without security, the speed is meaningless. Now show me an aBFT protocol comparison and then we can have a sensible discussion of speed comparison.

**20. By Gavin#4900 in the Developer General Channel on 04/25/2020**

@Supremax67 the security > recovery phrase option doesn't work. It crashes the app.

**21. By Supremax67#5749 in the Developer General Channel on 04/25/2020**

@Gavin @sabrinn I've had the wallet through the keywords being updated, twice. Whenever the app would update and you would launch the app, it would regenerate new words and ask that you write them down. Some people were quick to skip that very important screen, however, keywords are also found under **\*\*Security\*\*** - **\*\*Recovery Phrase\*\***. Also states **"Like a password, this recovery phrase is the only way to recover a Hedera Wallet"**. Asking Hedera to recover your wallet would be impossible as this is not store in the same fashion as a central database would keep your info. At some level, that should bring you comfort to know that Hedera has no control over your wallet private key. Just don't lose that key.

**22. By sabrinn#4439 in the Developer General Channel on 04/25/2020**

That would be a vulnerability

**23. By mehcode#0963 in the Java Channel on 04/15/2020**

My team and I have been iterating in a vacuum for a bit on the Java SDK. The end result is it's looking like the next version will be a v2. There are breaking changes, very, very minor breaking changes.. but they are still technically breaking. I think the experiment has reached a good point and I'd appreciate some community feedback from those that use the Java SDK.

To be clear, whatever happens here doesn't affect my commitment to support v1 for the foreseeable future with proto updates, security updates, etc.

Check it out. Skim through the readme. There are some justifications listed there. A large one is proper and complete Android support for 99% of devices.

<https://github.com/hashgraph/hedera-sdk-java/tree/develop>

**24. By BallerBTC#4034 in the Developer General Channel on 04/14/2020**

@you\_ate\_my\_food That would be nice if nothing changed should HBAR be ruled a security. It would be helpful to get some insight from the core team

**25. By BallerBTC#4034 in the Developer General Channel on 04/14/2020**

I'm curious if we would need to develop using a completely different token for fees and payments etc if HBAR is deemed a security

**26. By BallerBTC#4034 in the Developer General Channel on 04/14/2020**

Can anyone shed some light on the Security token vs utility token cases.

- 1) What would be the effect should HBAR be deemed a security by the SEC like it just did for Telegram
- 2) Would it change the way HBARS are used, as in would Hedera need to issue a new type of coin to use for transactions and fees?

**27. By AlexTaylor#3551 in the Javascript Channel on 04/08/2020**

hi, I'm thinking to try out the JS SDK, can anyone help confirm/clarify:

1. JS is a client script so presumably Hedera transactions are issued directly from the client
2. How would you typically control private keys and where would these be stored?
3. If combined with a server side security, eg php login, what are the main steps/design elements

Thanks for any tips/ pointers.

PS I'm not a full-time dev so noddly language is good for me

**28. By Johnda98#0683 in the Consensus Service Channel on 03/13/2020**

of course if the Box ends up in a crooks garage in La Paz or with Citibank Execs in NYC.. lol. ... then the 'cost' of security could be much much higher than paying ahead in hbars for fileservice

**29. By Johnda98#0683 in the Consensus Service Channel on 03/13/2020**

@you\_ate\_my\_food My answer is.. if the goal is ledger security standard for that data.. then SOMEONE must pay for that security.. ie yep.. sure u agree.. keep the data immutable to ABFT on fileservice. as you and i both know.. if the the platform seeks 'free' security.. then it is at odds with the definition itself.

**30. By nateo#7017 in the Developer General Channel on 03/12/2020**

In thinking of the "big picture" : Let's say Hashgraph/hbar is adopted and used worldwide. After supply is all distributed - There could be a country(s) that could get control of enough supply that it would compromise security ? I guess that would hold true for any other coin in the same situation too?

**31. By revenga69#1815 in the Developer General Channel on 03/07/2020**

Again, your trying to take one thing out of my argument and talk about security which had nothing to do about what I was talking about. There really hasn't been any good uses of dlt/blockchain/hashgraph besides crypto. I was really hoping to be proven wrong

**32. By Supremax67#5749 in the Developer General Channel on 03/07/2020**

@revenga69 You are confusing under laying tech security with services build on-top security. Not the same thing



**33. By Supremax67#5749 in the Developer General Channel on 03/07/2020**

@revenga69 Enterprises don't care about speed, they care about security. If security is not there, then speed is meaningless.

**34. By 0xjepsen#5735 in the Developer General Channel on 02/28/2020**

@Greg Scullard @Cooper-Kunz I had a thought and am curious about the network architecture related to hedera. For context I work in cyber security, to which I believe DLT's to be a massive asset. However there are known attacks on DLT's one of which raised a question for me. The such attack is called an Eclipse Attack in which a would be bad actor attempts to isolate a specific user or group of users rather than attack the whole network (which is of course incredibly difficult but has been demonstrated as in a Sybil Attack(which does depend on the permissions of the DLT and it's consensus algorithm)). So an Eclipse attack is made possible because of the scenario in which nodes are not connected to every other node. For example bitcoin has 8 outgoing node connections, Ethereum 13. An attacker would only have to only need to hijack all of these connections in order to isolate a user. Once isolated an attacker can then carry out a 0 confirmation double spend attack. There are measures that can be taken to prevent these sorts of exploits such as implementing a Random Node Selection function. However I was curious how many out going connections do hedera Nodes have?

**35. By Supremax67#5749 in the Developer General Channel on 02/25/2020**

@Sams95 A few reasons a KYC would fail is a recent change of address, social security number, name not quite matching such as name at birth vs name on id, etc. I deal with KYC on a regular basis and those are all determining factor.

**36. By Craig Drabik#8023 in the Javascript Channel on 01/23/2020**

yeah, gonna have to disagree on that The native cryptography features have gotten at-best a "meh" from the security community, and any key that's in a place that's accessible to the browser is, well, accessible to the browser. Susceptible to attack by SQL injection or just poor security practices.

**37. By Craig Drabik#8023 in the Javascript Channel on 01/23/2020**

I would not recommend using a client-side proxying technique for interacting with nodes. It's insecure. If your app is targeted at enterprises with any kind of application security review, you will likely fail it.

**38. By Nistrim#1750 in the Developer General Channel on 01/17/2020**

So how do you see Hedera solve the IoT security problem?

**39. By UnknownSoul#0545 in the Developer General Channel on 01/17/2020**

Hashgraph Consensus Timing Vulnerability

**40. By UnknownSoul#0545 in the Developer General Channel on 01/15/2020**

Can we issue security tokens Hedera?

**41. By Johnda98#0683 in the Developer General Channel on 01/11/2020**

@Canjo42 firstly, explore your own personal semantic definitions of those words.. 'security' and 'privacy' and thus their differentiation in your own minds eye. Simply, 'privacy' on any public ledger chain or hashggraph.. can be achieved by selective encryption. Common practice is to keep just a hash .. multi-hash sha2 .. can be stored

as bytes32 in any smart contract mapping - a few examples out there. Which is a hash link to an file you encrypt say via gpg (asymmetric) .. or encrypt and store on HH Fileservice (means you wont have to run a IPFS daemon . remember .. 'open targets' as you say.. are all around you.. ie centralized web hubs/ boxes and clouds.. Its a present day narrative that tell your own frame of reference that 'banks.. central boxes, institutions, clouds.. are somehow 'more secure and private' than public decentralized consensus machines. In fact public DLTs IMHO are more secure in both definitions than permissioned/private DLTs

**42. By Craig Drabik#8023 in the Java Channel on 01/09/2020**

I have a security framework for Aviator that works similarly - using a cert hierarchy for determining who can do what with which set of nodes.

**43. By Craig Drabik#8023 in the Java Channel on 01/06/2020**

Put simply, HCS is a way to offload smart contract execution and data storage without compromising ABFT security. It's an exciting development, but it seems like there's a ways to go to get there.

**44. By Vikdo#4957 in the Developer General Channel on 01/06/2020**

I hope this is the relevant sub for this. Can anyone answer me, does the value of the HBAR-tokens mean anything? Fees to use the network are pegged to USD.

Was selling HBAR-tokens simply a smart way of funding Hedera(the business)?

I understand the value of the token acts as a security against 1/3 attacks, but the token doesn't have to be valued much higher than now, for it to be secure when the supply is fully diluted.

How will Hedera incentivize people to invest in HBARs to keep the price at a respectable level, if price has no effect on ability to use the network? You are then relying on speculators to maintain market-cap?

**45. By Supremax67#5749 in the Developer General Channel on 01/05/2020**

@SerialBlockchainer The limit is only set by the internet's own limit to transfer data. Your typical blockchain limit is computational which means a faster internet does not improve blockchain speed. As it stands, Hedera as the potential to verify signatures faster than data can flow; within a shard, internet only allows at around 100k TRX/sec worldwide. Anyone who accomplishes higher does so at the cost of weaker security.

**46. By Johnda98#0683 in the Developer General Channel on 01/04/2020**

Ok.. Hedera Consensus Service... "ABFT As A Service" .. Figured out the purpose at higher abstract.. TBD .. a trustless solution to the envelope of smart contract limits defined by the goals to maintain peak TPS with ABFT security of consensus. Basically a reinvent of the EVM on ledger ' "consensus of hash of process" ie logic and state of.

**47. By Johnda98#0683 in the Developer General Channel on 01/02/2020**

Yes.. Always worth clarifying ones definitions of security & privacy .. Imho..DApps held on Public ledgers to or near ABFT with selective encryption of data held on ledger or links to off-ledger (e.g to IPFS), are more secure and more private and often lower cost to operate than DApps on permissioned ledgers.





## Comments in 2023



re testnet reset confusion, wallet ux could be improved by tagging testnet accounts with some kind of refresh id (eg first consensus time of that refresh) and disable or remove old accounts

**2. By johnda98#4728 in the Developer General Channel on 02/04/2023**

testnet is testnet I guess and should not be offered to a DApps Customers to play on - includes hashpack @Rocket etc .. as it seems ALL testnet accounts will get wiped every Qtr ?

thinking on... May.. you may have to offer Hashpack as Mainnet only.. as Layperson - customers who choose to play with it - might think its the product at fault.. not simply a testnet reset... Make is a 'dev' only option.. tricky.

I had millions on my hashpack ;). ... and now hashscan says no such account.... Scullard took it.. probably in Argentina by now.

which is fair ... as yes testnet DApps should not really go into 'production' operating DApps - strictly speaking as testnets are for build testing.. not real Customers' DApp testing.

sooooo.. we will remove the TESTNET or MAINNET option for our traders.. no playing in a 'Dev' only sandbox for them I guess.. thats fine.. probly wise.

**3. By yongtauf00123#9006 in the Developer General Channel on 02/01/2023**

thanks! you're right, i used another email to create a new HDP account and it worked. May i ask what happens to the HDP account i created before the testnet reset? Is that account permanently deprecated?

**4. By DeeJay#0076 in the Token Service Channel on 01/30/2023**

did you regenerate your private keys after the testnet reset?

**5. By vishaloneto11#5548 in the Token Service Channel on 01/30/2023**

there is an error occur while associate token , this error occur after testnet reset please help me on this ????

**6. By ssl#7354 in the Smart Contracts Channel on 01/26/2023**

Testnet reset means Txns go to zero as well?



**3. By reg.cs#2829 in the Token Service Channel on 06/11/2022**

And the doc states:

```The mirror node and consensus node test network are scheduled to reset once a quarter starting July 2022. When a testnet reset occurs all account, token, contract, topic, schedule, and file data are wiped```

4. By samuelnihoul#9657 in the Token Service Channel on 06/05/2022

I heard there is testnet reset from time to time? Anyways I am referring to my credentials as per given in my hedera dev account dashboard (I do copy-paste)

5. By samuelnihoul#9657 in the Developer General Channel on 05/22/2022

I heard there is testnet reset from time to time? Anyways I am referring to my credentials as per given in my hedera dev account

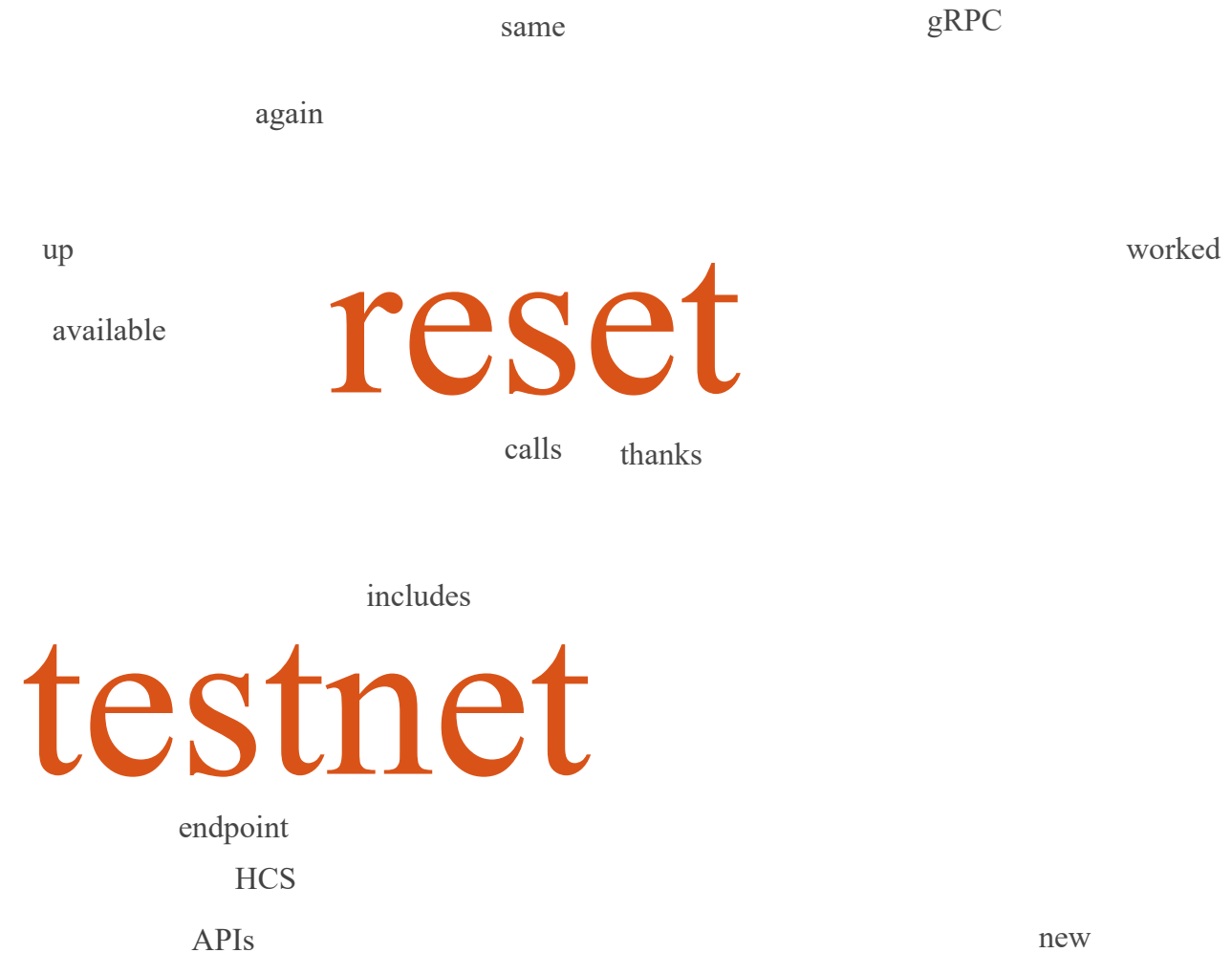
Comments in 2021

reset
account
trying
id seems
pre-testnet

1. By pablo12335#8946 in the Token Service Channel on 02/08/2021

It seems he was trying to use an account id pre-testnet reset

Comments in 2020



1. By Paul Madsen (Hedera Hashgraph)#1582 in the Java Channel on 04/14/2020
thanks, and these same calls worked before the testnet reset?

2. By mehcode#0963 in the Developer General Channel on 04/13/2020
<https://explorer.kabuto.sh/testnet> is up and available again with the new testnet reset,
that includes all the APIs such as the gRPC HCS endpoint.

