

Stacks Download State Machine

Executive Summary

This audit report was prepared by Quantstamp, the leader in blockchain security.

Type	Bitcoin L2	Documentation quality	High
Timeline	2024-03-26 through 2024-04-19	Test quality	Medium
Language	Rust	Total Findings	12 Unresolved: 2 Fixed: 10
Methods	Architecture Review, Unit Testing, Functional Testing, Manual Review	High severity findings ⓘ	2 Fixed: 2
Specification	Stacks Documentation	Medium severity findings ⓘ	1 Fixed: 1
Source Code	<ul style="list-style-type: none"> stacks-network/stacks-core #78b76f3 	Low severity findings ⓘ	3 Fixed: 3
Auditors	<ul style="list-style-type: none"> Ed Zulkoski Senior Auditing Engineer Michael Boyle Auditing Engineer Rabib Islam Auditing Engineer 	Undetermined severity findings ⓘ	1 Fixed: 1
		Informational findings ⓘ	5 Unresolved: 2 Fixed: 3

Summary of Findings

This report outlines the security audit conducted by Quantstamp on Stacks -- a smart contract layer built on top of Bitcoin -- specifically focusing on the Nakamoto download state machine. The download state machine facilitates interactions with neighbor Stacks nodes in order to track the blockchain state, primarily as it relates to blocks, sortition data, tenures, and reward cycles. As the state machine operates in a peer-to-peer environment, it must be robust against malicious actors (e.g., dishonest or malfunctioning neighbors), and must also handle non-standard chain states (e.g., after a Bitcoin reorg). In order to verify data integrity in these situations, the state machine utilizes verified information from its local state, such as referenced from the `SortitionDB`, or the peer-to-peer network.

Overall, the code is well-written and sufficiently documented. The inline comments and test cases were quite helpful in understanding the code, and discussions with the Stacks team were invaluable in ramping up on the audit. At the architecture/design level, the download state machine appears well-constructed, and no issues were found that would warrant large changes to the implementation. However, some issues were discovered which would affect the current functionality. Of note, an issue with the while loop in

`NakamotoDownloadStateMachine::make_unconfirmed_tenure_downloaders()` could cause it to loop infinitely in certain scenarios. We also describe a way in which malicious neighbors could append additional arbitrary blocks to a tenure (as received by `NakamotoUnconfirmedTenureDownloader::try_accept_unconfirmed_tenure_blocks()`), which could potentially corrupt internal chain state. The full set of findings are detailed below.

Last, we note that while the implemented tests were quite useful, we recommend improving the overall test coverage of the project. The `tarpaulin` results indicate an overall line coverage of 62% (for the entire project), however the files within our scope roughly align with this percentage. We suggest adding additional unit and end-to-end tests focusing on the uncovered lines.

Update: Most issues, with the exception of [STA-8](#), [STA-11](#), and [STA-12](#), have been resolved as of commit `506a301`.

ID	DESCRIPTION	SEVERITY	STATUS
STA-1	Infinite Loop when Making Unconfirmed Tenure Downloaders	• High ⓘ	Fixed
STA-2	Unconfirmed Tenure Downloader May Return Unverified Blocks	• High ⓘ	Fixed
STA-3	Inconsistent <code>last_block_height</code> Computation	• Medium ⓘ	Fixed

ID	DESCRIPTION	SEVERITY	STATUS
STA-4	Not Checking if Learning New Tenure-Start Block	• Low ⓘ	Fixed
STA-5	Incorrect Ordering of Tenure Downloader Set Clear Calls	• Low ⓘ	Fixed
STA-6	Streamed Block Data Should Be Limited by MAX_PAYLOAD_LEN	• Low ⓘ	Fixed
STA-7	Improper Log Statement	• Informational ⓘ	Fixed
STA-8	Incorrect Count of Available Tenure Neighbors	• Informational ⓘ	Unresolved
STA-9	Imprecise Loop Break Conditional	• Informational ⓘ	Fixed
STA-10	The Enum NakamotoInvState Is Not Fully Used	• Informational ⓘ	Fixed
STA-11	Vulnerable Dependencies	• Informational ⓘ	Unresolved
STA-12	Unclear State Machine Transition if Wanted Tenure Is Unavailable	• Undetermined ⓘ	Fixed

Assessment Breakdown

Quantstamp's objective was to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices.

Possible issues we looked for included (but are not limited to):

- Mishandled exceptions and call stack limits
- Signature malleability
- Transaction replay
- Man-in-the-middle attack
- Integer overflow / underflow
- Denial of service / logical oversights
- Access control
- Centralization of power
- Business logic contradicting the specification
- Code clones, functionality duplication
- Gas usage

Methodology

1. The Quantstamp auditing process follows a routine series of steps:
 1. Code review that includes the following:
 2. Review of the specifications, sources, and instructions provided to Quantstamp to make sure we understand the size, scope, and functionality of the web application.
 3. Manual review of code, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
 4. Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to Quantstamp describe.
2. Testing and automated analysis that includes the following:
 1. Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
 2. Symbolic execution, which is analyzing a program to determine what inputs cause each part of a program to execute.
3. Best practices review, which is a review of the input files to improve efficiency, effectiveness, clarity, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
4. Specific, itemized, and actionable recommendations to help you take steps to secure your application.

Scope

Only the following files related to the Nakamoto-release download state machine were included in scope.

Files Included

- stackslib/src/net/inv/nakamoto.rs
- stackslib/src/net/download/nakamoto/*

- stackslib/src/net/neighbors/comms.rs
- stackslib/src/net/chat.rs (restricted to functions related to `handle_getnakamotoinv()`)
- stackslib/src/net/neighbors/rpc.rs
- stackslib/src/net/api/getblock_v3.rs
- stackslib/src/net/api/gettenure.rs
- stackslib/src/net/api/gettenureinfo.rs

Findings

STA-1 Infinite Loop when Making Unconfirmed Tenure Downloaders • High ⓘ Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 .

File(s) affected: stackslib/src/net/download/nakamoto/download_state_machine.rs

Description: In the `while` loop of `make_unconfirmed_tenure_downloaders()`, we see that if `downloaders.contains_key(naddr)`, the loop continues to the next iteration, again checking `schedule.front()` which should be the same as the last iteration. This may, in principle, result in an infinite loop if the schedule contains an address that already has a downloader.

Recommendation: Use `pop_front()` instead of `front()` in the first statement of the `while` loop. Remove the `pop_front()` at the end of the loop.

STA-2

Unconfirmed Tenure Downloader May Return Unverified Blocks • High ⓘ Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 . Whenever the loop breaks, the index is recorded, and only the blocks from `tenure_blocks` up to and including the index are kept.

File(s) affected: stackslib/src/net/download/nakamoto/tenure_downloader_unconfirmed.rs

Description: The function `try_accept_unconfirmed_tenure_blocks()` loops over the vector `tenure_blocks`, performs validation, and eventually appends validated blocks to `self.unconfirmed_tenure_blocks`. There are several scenarios where the loop breaks, such as when the tenure start block is reached, or if the `highest_processed_block_id` has been reached.

However, the full vector `tenure_blocks` is appended to the state:

```
if let Some(blocks) = self.unconfirmed_tenure_blocks.as_mut() {
    blocks.append(&mut tenure_blocks);
} else {
    self.unconfirmed_tenure_blocks = Some(tenure_blocks);
}
```

Consider, for example, a vector of the following form:

```
tenure_blocks = < valid_block_1, valid_block_2, ..., tenure_start_block, malicious_block_1, ... >
```

The current implementation would allow a malicious neighbor to propagate arbitrary unverified blocks to other parts of the state machine, as the only check on these extra blocks is to ensure that their `chain_length` value is not too low:

```
return Ok(self.unconfirmed_tenure_blocks.take().map(|blocks| {
    blocks
        .into_iter()
        .filter(|block| block.header.chain_length > highest_processed_block_height)
        .rev()
        .collect()
}));
```

These unverified blocks do not appear to be checked anywhere within the download state machine context, and persist even when `consume_nakamoto_blocks()` is invoked, which could have negative effects on the node's chain state.

Recommendation: Record the index at which the loop breaks, and append only up to that index from `tenure_blocks`.

STA-3 Inconsistent `last_block_height` Computation

• Medium ⓘ Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 .

File(s) affected: stackslib/src/net/download/nakamoto/download_state_machine.rs

Description: The `last_block_height` is computed in several functions with slightly different expressions.

In `update_wanted_tenures_for_reward_cycle()`:

```
let last_block_height = sortdb
    .pox_constants
    .reward_cycle_to_block_height(sortdb.first_block_height, cur_rc.saturating_add(1))
    .saturating_sub(1)
    .min(tip.block_height.saturating_add(1));
```

In `load_wanted_tenures_at_tip()`:

```
let last_block_height = sortdb
    .pox_constants
    .reward_cycle_to_block_height(sortdb.first_block_height, tip_rc.saturating_add(1))
    .saturating_sub(1)
    .min(tip.block_height)
    .saturating_add(1);
```

Note that in the first case, `.saturating_add(1)` only applies to the argument of `min()`, whereas in the second case it is at a different parentheses nesting and therefore applies to both cases.

Since `last_block_height` should always be only one greater than the last block to be loaded, we believe the second case in `load_wanted_tenures_at_tip()` to be incorrect.

Recommendation: Revise the `last_block_height` computation in `load_wanted_tenures_at_tip()`, and move the `.saturating_add(1)` expression within the `min()` argument.

STA-4 Not Checking if Learning New Tenure-Start Block

• Low ⓘ Fixed

✓ Update

Addressed in [506a301a8d8261dccc1e9f8f65dbfdcde0fd6f35](#). The comments were corrected to reflect the true intentions behind the function, and the function was not changed.

File(s) affected: stacks-core/stackslib/src/net/inv/nakamoto.rs

Description: `NakamotoTenureInv::merge_tenure_inv()` is specified as returning `true` if a new tenure start block is part of the inserted `tenure_inv` in comparison to the current `tenure_inv` for the `reward_cycle`, and `false` otherwise. However, this does not occur: instead, for `true` to be returned, it is only required that the new `tenure_inv` is not equal to the current `tenures_inv.get(&reward_cycle)`. This may lead to an incorrect `learned` value being propagated, causing incorrect local reporting.

Recommendation: Ensure that at least one bit has flipped from `false` to `true`.

STA-5 Incorrect Ordering of Tenure Downloader Set Clear Calls

• Low ⓘ Fixed

✓ Update

Addressed in [506a301a8d8261dccc1e9f8f65dbfdcde0fd6f35](#).

File(s) affected: stackslib/src/net/download/nakamoto/tenure_downloader_set.rs

Description: The function `clear_finished_downloaders()` cleans out downloaders that are in the `Done` state, and a comment suggests that "the caller should follow this up with a call to `clear_available_peers()`". However, the `make_tenure_downloaders()` functions invokes these two functions in the reverse order:

```
self.clear_available_peers();
self.clear_finished_downloaders();
```

This will lead to inefficiencies in re-assigning peers to live downloaders.

Recommendation: Reverse the order of the two function calls.

STA-6 Streamed Block Data Should Be Limited by

MAX_PAYLOAD_LEN

• Low ⓘ Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 .

File(s) affected: stackslib/src/net/api/gettenure.rs , stacks-common/src/codec/mod.rs

Description: In next_block() , the following lines prevent sending too much data in the stream buffer:

```
if self.total_sent.saturating_add(parent_size) > MAX_MESSAGE_LEN.into() {  
    // out of space to send this  
    return Ok(false);  
}
```

Note that MAX_MESSAGE_LEN , as defined in .../codec/mod.rs includes both the MAX_PAYLOAD_LEN along with the preamble and relayers data:

```
// messages can't be bigger than 16MB plus the preamble and relayers  
pub const MAX_PAYLOAD_LEN: u32 = 1 + 16 * 1024 * 1024;  
pub const MAX_MESSAGE_LEN: u32 =  
    MAX_PAYLOAD_LEN + (PREAMBLE_ENCODED_SIZE + MAX_RELAYERS_LEN * RELAY_DATA_ENCODED_SIZE);
```

Since the total_sent variable includes nothing other than block size (i.e., the payload), MAX_PAYLOAD_LEN should be the maximum allowable value in this context.

Recommendation: Update the conditional to use MAX_PAYLOAD_LEN .

STA-7 Improper Log Statement

• Informational ⓘ Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 .

File(s) affected: stackslib/src/net/download/nakamoto/tenure_downloader_unconfirmed.rs

Description: The function try_accept_tenure_info() tries to get the aggregate public keys for the unconfirmed tenure and highest-complete tenure sortitions. However, the warning message "No aggregate public key for confirmed tenure" is used in both places, which may cause the logs to be misleading.

Recommendation: Update the second log statement to instead say "... unconfirmed tenure".

STA-8 Incorrect Count of Available Tenure Neighbors

• Informational ⓘ Unresolved

ⓘ Alert

Not resolved as of commit 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 .

File(s) affected: stackslib/src/net/download/nakamoto/download_state_machine.rs

Description: In count_available_tenure_neighbors() , if a neighbor has multiple consensus hashes available, it will be counted multiple times in the fold . Since the only current usage of the function occurs in update_available_tenures() , and in particular this only checks that the count is non-zero, this currently has no negative effect. However, if the function were to be reused in a different context, the actual count may be important.

Recommendation: Given the limited usage of the function, consider only returning a Boolean instead of the count and renaming to has_available_tenure_neighbors() .

STA-9 Imprecise Loop Break Conditional

• Informational ⓘ Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35 .

File(s) affected: stackslib/src/net/download/nakamoto/tenure_downloader_unconfirmed.rs

Description: In `try_accept_unconfirmed_tenure_blocks()`, we break out of the loop when `&block.header.chain_length < highest_processed_block_height`. This can be changed to use `==` (potentially shortening the number of loop iterations by one), since the later filter conditional is `.filter(|block| block.header.chain_length > highest_processed_block_height)`.

Recommendation: Change the conditional to use `==`.

STA-10 The Enum NakamotoInvState Is Not Fully Used

• **Informational** ⓘ

Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35.

File(s) affected: stackslib/src/net/inv/nakamoto.rs

Description: The enum `NakamotoInvState` contains three possible values. However, only the value `GetNakamotoInvBegin` is used; `GetNakamotoInvFinish` and `Done` remain unused.

It has been confirmed by the Stacks team that this is an artifact from earlier iterations of the code.

Recommendation: Consider updating or removing the enum if it is no longer necessary.

STA-11 Vulnerable Dependencies

• **Informational** ⓘ

Unresolved

ℹ Alert

Not resolved as of commit 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35. cargo audit now returns 6 vulnerabilities found.

Description: The `stacks-core` project currently presents three identified vulnerabilities and seven warnings as reported by the Cargo Audit tool. Maintaining updated dependencies is considered a best practice in software development to ensure security and efficiency.

Recommendation: Consider updating the vulnerable dependencies. The full output of `cargo audit` is available in the Automated Analysis section below.

STA-12

Unclear State Machine Transition if Wanted Tenure Is Unavailable

• **Undetermined** ⓘ

Fixed

✓ Update

Addressed in 506a301a8d8261dccc1e9f8f65dbfdcd0fd6f35. Inline docs have been added.

File(s) affected: stackslib/src/net/download/nakamoto/download_state_machine.rs

Description: In `need_unconfirmed_tenures()`, we have the following check:

```
if is_available && !wt.processed {  
    return false;  
}
```

Consider the scenario where a wanted tenure is not available nor processed. It seems that the state machine could advance to the `Unconfirmed` state, potentially skipping the tenure entirely. Is this accurate, or do separate checks prevent this from occurring?

In other words, why is the conditional not more simply `!wt.processed`?

Recommendation: Clarify this case in `need_unconfirmed_tenures()`, possibly through inline documentation.

Definitions

- **High severity** – High-severity issues usually put a large number of users' sensitive information at risk, or are reasonably likely to lead to catastrophic impact for client's reputation or serious financial implications for client and users.

- **Medium severity** – Medium-severity issues tend to put a subset of users' sensitive information at risk, would be detrimental for the client's reputation if exploited, or are reasonably likely to lead to moderate financial impact.
- **Low severity** – The risk is relatively small and could not be exploited on a recurring basis, or is a risk that the client has indicated is low impact in view of the client's business circumstances.
- **Informational** – The issue does not post an immediate risk, but is relevant to security best practices or Defence in Depth.
- **Undetermined** – The impact of the issue is uncertain.
- **Fixed** – Adjusted program implementation, requirements or constraints to eliminate the risk.
- **Mitigated** – Implemented actions to minimize the impact or likelihood of the risk.
- **Acknowledged** – The issue remains in the code but is a result of an intentional business or design decision. As such, it is supposed to be addressed outside the programmatic means, such as: 1) comments, documentation, README, FAQ; 2) business processes; 3) analyses showing that the issue shall have no negative consequences in practice (e.g., gas analysis, deployment settings).

Appendix

File Signatures

The following are the SHA-256 hashes of the reviewed files. A file with a different SHA-256 hash has been modified, intentionally or otherwise, after the security review. You are cautioned that a different SHA-256 hash could be (but is not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of the review.

Files

- 06d...8cf ./stackslib/src/blockstack_cli.rs
- d12...534 ./stackslib/src/clarity_cli.rs
- abf...c55 ./stackslib/src/clarity_cli_main.rs
- 7ef...f85 ./stackslib/src/lib.rs
- 40f...255 ./stackslib/src/main.rs
- fc8...9ad ./stackslib/src/util_lib/bloom.rs
- 7b8...d42 ./stackslib/src/util_lib/boot.rs
- 914...7cc ./stackslib/src/util_lib/db.rs
- b5e...179 ./stackslib/src/util_lib/mod.rs
- 567...d70 ./stackslib/src/util_lib/signed_structured_data.rs
- 589...067 ./stackslib/src/util_lib/strings.rs
- a61...df6 ./stackslib/src/net/asn.rs
- f0b...b4f ./stackslib/src/net/chat.rs
- 5fe...940 ./stackslib/src/net/codec.rs
- 214...ed0 ./stackslib/src/net/connection.rs
- 751...800 ./stackslib/src/net/db.rs
- 58d...5b5 ./stackslib/src/net/dns.rs
- 0b3...41d ./stackslib/src/net/httpcore.rs
- 502...250 ./stackslib/src/net/mod.rs
- 86b...806 ./stackslib/src/net/p2p.rs
- d20...e98 ./stackslib/src/net/poll.rs
- a78...5c7 ./stackslib/src/net/prune.rs
- b7a...dd4 ./stackslib/src/net/relay.rs
- 5e3...575 ./stackslib/src/net/rpc.rs
- 572...c31 ./stackslib/src/net/server.rs
- 20a...3d8 ./stackslib/src/net/tests/httpcore.rs
- 838...620 ./stackslib/src/net/tests/mod.rs
- b9c...670 ./stackslib/src/net/tests/neighbors.rs
- af8...202 ./stackslib/src/net/tests/inv/epoch2x.rs
- a82...bbb ./stackslib/src/net/tests/inv/mod.rs
- 793...0b9 ./stackslib/src/net/tests/inv/nakamoto.rs
- c41...b2d ./stackslib/src/net/tests/download/epoch2x.rs
- 776...dc4 ./stackslib/src/net/tests/download/mod.rs
- 036...956 ./stackslib/src/net/tests/download/nakamoto.rs
- 666...ae1 ./stackslib/src/net/stackerdb/config.rs

- 5f7...647 ./stackslib/src/net/stackerdb/db.rs
- 946...94f ./stackslib/src/net/stackerdb/mod.rs
- 6b7...a72 ./stackslib/src/net/stackerdb/sync.rs
- 030...889 ./stackslib/src/net/stackerdb/tests/config.rs
- f52...f67 ./stackslib/src/net/stackerdb/tests/db.rs
- af1...0aa ./stackslib/src/net/stackerdb/tests/mod.rs
- 04d...dec ./stackslib/src/net/stackerdb/tests/sync.rs
- 208...393 ./stackslib/src/net/neighbors/comms.rs
- 9a8...fa1 ./stackslib/src/net/neighbors/db.rs
- 7b4...525 ./stackslib/src/net/neighbors/mod.rs
- a88...95b ./stackslib/src/net/neighbors/neighbor.rs
- 8da...425 ./stackslib/src/net/neighbors/rpc.rs
- e47...3db ./stackslib/src/net/neighbors/walk.rs
- 394...e6c ./stackslib/src/net/inv/epoch2x.rs
- 4dc...985 ./stackslib/src/net/inv/mod.rs
- 108...633 ./stackslib/src/net/inv/nakamoto.rs
- 945...634 ./stackslib/src/net/http/common.rs
- 5f2...21d ./stackslib/src/net/http/error.rs
- 357...697 ./stackslib/src/net/http/mod.rs
- 7ef...203 ./stackslib/src/net/http/request.rs
- 4b3...e44 ./stackslib/src/net/http/response.rs
- 505...c27 ./stackslib/src/net/http/stream.rs
- 626...668 ./stackslib/src/net/http/tests.rs
- 55b...ee7 ./stackslib/src/net/download/epoch2x.rs
- 0cc...fcc ./stackslib/src/net/download/mod.rs
- fe7...00c ./stackslib/src/net/download/nakamoto/download_state_machine.rs
- ef8...c56 ./stackslib/src/net/download/nakamoto/mod.rs
- e29...579 ./stackslib/src/net/download/nakamoto/tenure.rs
- 6eb...e55 ./stackslib/src/net/download/nakamoto/tenure_downloader.rs
- a41...95d ./stackslib/src/net/download/nakamoto/tenure_downloader_set.rs
- 441...5c1 ./stackslib/src/net/download/nakamoto/tenure_downloader_unconfirmed.rs
- e84...0e7 ./stackslib/src/net/atlas/db.rs
- 8ec...11d ./stackslib/src/net/atlas/download.rs
- d48...529 ./stackslib/src/net/atlas/mod.rs
- c7e...90e ./stackslib/src/net/atlas/tests.rs
- ef7...c34 ./stackslib/src/net/api/callreadonly.rs
- c31...2fd ./stackslib/src/net/api/getaccount.rs
- e10...e45 ./stackslib/src/net/api/getattachment.rs
- b7a...d17 ./stackslib/src/net/api/getattachmentsinv.rs
- 99b...615 ./stackslib/src/net/api/getblock.rs
- e85...b40 ./stackslib/src/net/api/getblock_v3.rs
- 058...717 ./stackslib/src/net/api/getconstantval.rs
- e7a...af9 ./stackslib/src/net/api/getcontractabi.rs
- d10...e1e ./stackslib/src/net/api/getcontractsrs.rs
- d0b...021 ./stackslib/src/net/api/getdatavar.rs
- 45e...bc1 ./stackslib/src/net/api/getheaders.rs
- 767...b85 ./stackslib/src/net/api/getinfo.rs
- d36...44e ./stackslib/src/net/api/getistraitimplemented.rs
- bca...02a ./stackslib/src/net/api/getmapentry.rs
- c06...5a8 ./stackslib/src/net/api/getmicroblocks_confirmed.rs
- 46a...e6a ./stackslib/src/net/api/getmicroblocks_indexed.rs
- 4c4...220 ./stackslib/src/net/api/getmicroblocks_unconfirmed.rs
- b5b...669 ./stackslib/src/net/api/getneighbors.rs
- ded...cb9 ./stackslib/src/net/api/getpoxinfo.rs
- 026...4b7 ./stackslib/src/net/api/getstackerdbchunk.rs

- ffc...af9 ./stackslib/src/net/api/getstackerdbmetadata.rs
- 926...12c ./stackslib/src/net/api/getstackers.rs
- a71...f02 ./stackslib/src/net/api/getstxtransfercost.rs
- 847...d02 ./stackslib/src/net/api/gettenure.rs
- 793...2b3 ./stackslib/src/net/api/gettenureinfo.rs
- 096...bdd ./stackslib/src/net/api/gettransaction_unconfirmed.rs
- 6c5...00f ./stackslib/src/net/api/liststackerdbreplicas.rs
- 603...b86 ./stackslib/src/net/api/mod.rs
- 5f7...780 ./stackslib/src/net/api/postblock.rs
- 028...194 ./stackslib/src/net/api/postblock_proposal.rs
- da6...528 ./stackslib/src/net/api/postfeerate.rs
- 4f6...5c1 ./stackslib/src/net/api/postmempoolquery.rs
- d85...55a ./stackslib/src/net/api/postmicroblock.rs
- 5b4...a12 ./stackslib/src/net/api/poststackerdbchunk.rs
- 38f...cb2 ./stackslib/src/net/api/posttransaction.rs
- a7e...a01 ./stackslib/src/net/api/tests/callreadonly.rs
- 7ae...3c8 ./stackslib/src/net/api/tests/getaccount.rs
- d47...59d ./stackslib/src/net/api/tests/getattachment.rs
- d60...627 ./stackslib/src/net/api/tests/getattachmentsinv.rs
- 03a...cb0 ./stackslib/src/net/api/tests/getblock.rs
- ce1...80d ./stackslib/src/net/api/tests/getblock_v3.rs
- 37a...233 ./stackslib/src/net/api/tests/getconstantval.rs
- 330...bf5 ./stackslib/src/net/api/tests/getcontractabi.rs
- 0de...14f ./stackslib/src/net/api/tests/getcontractsrs.cs
- 239...010 ./stackslib/src/net/api/tests/getdatavar.rs
- be5...75f ./stackslib/src/net/api/tests/getheaders.rs
- 698...8bf ./stackslib/src/net/api/tests/getinfo.rs
- f62...3c4 ./stackslib/src/net/api/tests/getistraitimplemented.rs
- 24f...01f ./stackslib/src/net/api/tests/getmapentry.rs
- 7b7...3fa ./stackslib/src/net/api/tests/getmicroblocks_confirmed.rs
- af9...54c ./stackslib/src/net/api/tests/getmicroblocks_indexed.rs
- bac...aba ./stackslib/src/net/api/tests/getmicroblocks_unconfirmed.rs
- 10d...49f ./stackslib/src/net/api/tests/getneighbors.rs
- 6ab...492 ./stackslib/src/net/api/tests/getpoxinfo.rs
- e46...51c ./stackslib/src/net/api/tests/getstackerdbchunk.rs
- 798...a85 ./stackslib/src/net/api/tests/getstackerdbmetadata.rs
- 6ac...8a4 ./stackslib/src/net/api/tests/getstxtransfercost.rs
- 162...a64 ./stackslib/src/net/api/tests/gettenure.rs
- 001...df9 ./stackslib/src/net/api/tests/gettenureinfo.rs
- ad5...e4e ./stackslib/src/net/api/tests/gettransaction_unconfirmed.rs
- 86b...b3a ./stackslib/src/net/api/tests/liststackerdbreplicas.rs
- 93e...902 ./stackslib/src/net/api/tests/mod.rs
- df3...13e ./stackslib/src/net/api/tests/postblock.rs
- 6c2...f79 ./stackslib/src/net/api/tests/postfeerate.rs
- 62d...f71 ./stackslib/src/net/api/tests/postmempoolquery.rs
- 570...6b6 ./stackslib/src/net/api/tests/postmicroblock.rs
- eb0...0c8 ./stackslib/src/net/api/tests/poststackerdbchunk.rs
- 9e9...979 ./stackslib/src/net/api/tests/posttransaction.rs
- 335...dd0 ./stackslib/src/monitoring/mod.rs
- 36c...325 ./stackslib/src/monitoring/prometheus.rs
- 745...549 ./stackslib/src/deps/mod.rs
- bca...c82 ./stackslib/src/cost_estimates/fee_medians.rs
- 050...5e4 ./stackslib/src/cost_estimates/fee_rate_fuzzer.rs
- 9ab...1b6 ./stackslib/src/cost_estimates/fee_scalar.rs
- dc6...592 ./stackslib/src/cost_estimates/metrics.rs

- 139...a89 ./stackslib/src/cost_estimates/mod.rs
- 40b...cb4 ./stackslib/src/cost_estimates/pessimistic.rs
- e83...948 ./stackslib/src/cost_estimates/tests/common.rs
- b61...e23 ./stackslib/src/cost_estimates/tests/cost_estimators.rs
- fe2...0e0 ./stackslib/src/cost_estimates/tests/fee_medians.rs
- 900...eab ./stackslib/src/cost_estimates/tests/fee_rate_fuzzer.rs
- 1c6...589 ./stackslib/src/cost_estimates/tests/fee_scalar.rs
- d45...f37 ./stackslib/src/cost_estimates/tests/metrics.rs
- df6...ec6 ./stackslib/src/cost_estimates/tests/mod.rs
- 873...56f ./stackslib/src/core/mempool.rs
- ae4...19e ./stackslib/src/core/mod.rs
- 4ec...fb9 ./stackslib/src/core/tests/mod.rs
- 6e9...a2d ./stackslib/src/clarity_vm/clarity.rs
- afb...85e ./stackslib/src/clarity_vm/mod.rs
- 52e...efe ./stackslib/src/clarity_vm/special.rs
- e40...4a7 ./stackslib/src/clarity_vm/tests/analysis_costs.rs
- c7a...eb6 ./stackslib/src/clarity_vm/tests/ast.rs
- e1a...887 ./stackslib/src/clarity_vm/tests/contracts.rs
- 87c...88d ./stackslib/src/clarity_vm/tests/costs.rs
- 72f...812 ./stackslib/src/clarity_vm/tests/epoch_switch.rs
- 3e3...252 ./stackslib/src/clarity_vm/tests/events.rs
- 253...9bb ./stackslib/src/clarity_vm/tests/forking.rs
- 6e7...87c ./stackslib/src/clarity_vm/tests/large_contract.rs
- 860...e50 ./stackslib/src/clarity_vm/tests/mod.rs
- 537...aee ./stackslib/src/clarity_vm/tests/simple_tests.rs
- 45b...7be ./stackslib/src/clarity_vm/database/marf.rs
- 13c...b68 ./stackslib/src/clarity_vm/database/mod.rs
- 8a1...210 ./stackslib/src/chainstate/mod.rs
- 833...5ec ./stackslib/src/chainstate/stacks/address.rs
- 928...bec ./stackslib/src/chainstate/stacks/auth.rs
- 9bf...ace ./stackslib/src/chainstate/stacks/block.rs
- f14...d63 ./stackslib/src/chainstate/stacks/events.rs
- e98...d17 ./stackslib/src/chainstate/stacks/miner.rs
- 9c9...81b ./stackslib/src/chainstate/stacks/mod.rs
- baf...83e ./stackslib/src/chainstate/stacks/transaction.rs
- c2e...596 ./stackslib/src/chainstate/stacks/tests/accounting.rs
- 6c2...077 ./stackslib/src/chainstate/stacks/tests/block_construction.rs
- c1e...ac7 ./stackslib/src/chainstate/stacks/tests/chain_histories.rs
- 542...62c ./stackslib/src/chainstate/stacks/tests/mod.rs
- 069...08a ./stackslib/src/chainstate/stacks/index/bits.rs
- fd9...a6a ./stackslib/src/chainstate/stacks/index/cache.rs
- 901...4de ./stackslib/src/chainstate/stacks/index/file.rs
- 935...a4e ./stackslib/src/chainstate/stacks/index/marf.rs
- 2be...bd6 ./stackslib/src/chainstate/stacks/index/mod.rs
- 237...4b9 ./stackslib/src/chainstate/stacks/index/node.rs
- 4d6...7b1 ./stackslib/src/chainstate/stacks/index/profile.rs
- b29...052 ./stackslib/src/chainstate/stacks/index/proofs.rs
- a54...d73 ./stackslib/src/chainstate/stacks/index/storage.rs
- 8a4...43d ./stackslib/src/chainstate/stacks/index/trie.rs
- 785...33b ./stackslib/src/chainstate/stacks/index/trie_sql.rs
- cd2...e2f ./stackslib/src/chainstate/stacks/index/test/cache.rs
- 046...722 ./stackslib/src/chainstate/stacks/index/test/file.rs
- e0d...a21 ./stackslib/src/chainstate/stacks/index/test/marf.rs
- e92...7e0 ./stackslib/src/chainstate/stacks/index/test/mod.rs
- fb8...6df ./stackslib/src/chainstate/stacks/index/test/node.rs

- cdc...24c ./stackslib/src/chainstate/stacks/index/test/proofs.rs
- 11e...9bf ./stackslib/src/chainstate/stacks/index/test/storage.rs
- 7e6...f1e ./stackslib/src/chainstate/stacks/index/test/trie.rs
- 79c...01a ./stackslib/src/chainstate/stacks/db/accounts.rs
- ae2...5c8 ./stackslib/src/chainstate/stacks/db/blocks.rs
- 22d...c6c ./stackslib/src/chainstate/stacks/db/contracts.rs
- 431...8ff ./stackslib/src/chainstate/stacks/db/headers.rs
- 49e...7fb ./stackslib/src/chainstate/stacks/db/mod.rs
- 941...3df ./stackslib/src/chainstate/stacks/db/transactions.rs
- d9b...0a7 ./stackslib/src/chainstate/stacks/db/unconfirmed.rs
- 570...da5 ./stackslib/src/chainstate/stacks/boot/contract_tests.rs
- 9f5...9df ./stackslib/src/chainstate/stacks/boot/docs.rs
- e8d...7d2 ./stackslib/src/chainstate/stacks/boot/mod.rs
- 482...9d2 ./stackslib/src/chainstate/stacks/boot/pox_2_tests.rs
- b3d...9b9 ./stackslib/src/chainstate/stacks/boot/pox_3_tests.rs
- 01e...714 ./stackslib/src/chainstate/stacks/boot/pox_4_tests.rs
- 916...a50 ./stackslib/src/chainstate/stacks/boot/signers_tests.rs
- 59c...58d ./stackslib/src/chainstate/stacks/boot/signers_voting_tests.rs
- 098...b29 ./stackslib/src/chainstate/nakamoto/miner.rs
- 376...8b4 ./stackslib/src/chainstate/nakamoto/mod.rs
- 29e...7ac ./stackslib/src/chainstate/nakamoto/signer_set.rs
- 0e3...02f ./stackslib/src/chainstate/nakamoto/staging_blocks.rs
- 292...371 ./stackslib/src/chainstate/nakamoto/tenure.rs
- 148...5fc ./stackslib/src/chainstate/nakamoto/test_signers.rs
- 3ad...6d1 ./stackslib/src/chainstate/nakamoto/tests/mod.rs
- da1...951 ./stackslib/src/chainstate/nakamoto/tests/node.rs
- 080...524 ./stackslib/src/chainstate/nakamoto/coordinator/mod.rs
- 7f8...282 ./stackslib/src/chainstate/nakamoto/coordinator/tests.rs
- bd6...a73 ./stackslib/src/chainstate/coordinator/comm.rs
- f03...892 ./stackslib/src/chainstate/coordinator/mod.rs
- c90...602 ./stackslib/src/chainstate/coordinator/tests.rs
- 6f0...4d3 ./stackslib/src/chainstate/burn/distribution.rs
- c71...d85 ./stackslib/src/chainstate/burn/mod.rs
- 2ea...976 ./stackslib/src/chainstate/burn/sortition.rs
- cfa...bcc ./stackslib/src/chainstate/burn/operations/delegate_stx.rs
- fe9...b35 ./stackslib/src/chainstate/burn/operations/leader_block_commit.rs
- 6fb...11d ./stackslib/src/chainstate/burn/operations/leader_key_register.rs
- 559...57e ./stackslib/src/chainstate/burn/operations/mod.rs
- e46...f3e ./stackslib/src/chainstate/burn/operations/stack_stx.rs
- 5a8...5b3 ./stackslib/src/chainstate/burn/operations/transfer_stx.rs
- 1a3...4a5 ./stackslib/src/chainstate/burn/operations/vote_for_aggregate_key.rs
- 765...5c1 ./stackslib/src/chainstate/burn/operations/test/mod.rs
- a4b...405 ./stackslib/src/chainstate/burn/operations/test/serialization.rs
- 003...f75 ./stackslib/src/chainstate/burn/db/mod.rs
- c23...b2b ./stackslib/src/chainstate/burn/db/processing.rs
- 14f...ed2 ./stackslib/src/chainstate/burn/db/sortdb.rs
- 117...1eb ./stackslib/src/burnchains/affirmation.rs
- 40b...c8e ./stackslib/src/burnchains/burnchain.rs
- be5...70b ./stackslib/src/burnchains/db.rs
- 235...273 ./stackslib/src/burnchains/indexer.rs
- dfc...113 ./stackslib/src/burnchains/mod.rs
- df7...c23 ./stackslib/src/burnchains/tests/affirmation.rs
- 960...e54 ./stackslib/src/burnchains/tests/burnchain.rs
- 31a...92e ./stackslib/src/burnchains/tests/db.rs
- 681...7fa ./stackslib/src/burnchains/tests/mod.rs

- dd4...fe0 ./stackslib/src/burnchains/bitcoin/address.rs
- a1c...7fa ./stackslib/src/burnchains/bitcoin/bits.rs
- 1db...26a ./stackslib/src/burnchains/bitcoin/blocks.rs
- c3d...cd1 ./stackslib/src/burnchains/bitcoin/indexer.rs
- f4b...15c ./stackslib/src/burnchains/bitcoin/keys.rs
- bcc...c9d ./stackslib/src/burnchains/bitcoin/messages.rs
- e73...6b5 ./stackslib/src/burnchains/bitcoin/mod.rs
- 5d3...af5 ./stackslib/src/burnchains/bitcoin/network.rs
- 22f...998 ./stackslib/src/burnchains/bitcoin/spv.rs

Toolset

The notes below outline the setup and steps performed in the process of this audit.

Setup

Tool Setup:

- [Cargo Audit](#) 0.16.0

Steps taken to run the tools:

- Installed via `cargo install cargo-audit`
- Ran `cargo audit`

Automated Analysis

Cargo Audit

```
Title: Degradation of service in h2 servers with CONTINUATION Flood
Date: 2024-04-03
ID: RUSTSEC-2024-0332
URL: https://rustsec.org/advisories/RUSTSEC-2024-0332
Solution: Upgrade to ^0.3.26 OR >=0.4.4

Dependency tree:
h2 0.3.24
└── reqwest 0.11.24
    ├── stacks-signer 0.0.1
    │   └── stacks-node 0.1.0
    └── stacks-node 0.1.0
    └── hyper 0.14.28
        ├── warp 0.3.6
        │   └── stacks-node 0.1.0
        ├── reqwest 0.11.24
        └── hyper-rustls 0.24.2
            └── reqwest 0.11.24

Crate: libsqlite3-sys
Version: 0.20.1
Title: `libsqlite3-sys` via C SQLite CVE-2022-35737
Date: 2022-08-03
ID: RUSTSEC-2022-0090
URL: https://rustsec.org/advisories/RUSTSEC-2022-0090
Severity: 7.5 (high)
Solution: Upgrade to >=0.25.1

Dependency tree:
libsqlite3-sys 0.20.1
└── rusqlite 0.24.2
    ├── stackslib 0.0.1
    │   ├── stacks-signer 0.0.1
    │   │   └── stacks-node 0.1.0
    │   ├── stacks-node 0.1.0
    │   └── libsigner 0.0.1
    │       ├── stacks-signer 0.0.1
    │       └── stacks-node 0.1.0
    └── stacks-signer 0.0.1
```

```
├── stacks-node 0.1.0
├── stacks-common 0.0.1
│   ├── stackslib 0.0.1
│   ├── stacks-signer 0.0.1
│   ├── stacks-node 0.1.0
│   ├── pox-locking 2.4.0
│   │   └── stackslib 0.0.1
│   ├── libstacerdb 0.0.1
│   │   ├── stackslib 0.0.1
│   │   ├── stacks-signer 0.0.1
│   │   └── libsigner 0.0.1
│   ├── libsigner 0.0.1
│   └── clarity 0.0.1
│       ├── stackslib 0.0.1
│       ├── stacks-signer 0.0.1
│       ├── stacks-node 0.1.0
│       ├── pox-locking 2.4.0
│       ├── libstacerdb 0.0.1
│       └── libsigner 0.0.1
└── clarity 0.0.1
```

Crate: mio
Version: 0.8.10
Title: Tokens for named pipes may be delivered after deregistration
Date: 2024-03-04
ID: RUSTSEC-2024-0019
URL: <https://rustsec.org/advisories/RUSTSEC-2024-0019>
Solution: Upgrade to >=0.8.11

Dependency tree:

```
mio 0.8.10
└── tokio 1.36.0
    ├── warp 0.3.6
    │   └── stacks-node 0.1.0
    ├── tokio-util 0.7.10
    │   ├── warp 0.3.6
    │   └── h2 0.3.24
    │       ├── reqwest 0.11.24
    │       │   ├── stacks-signer 0.0.1
    │       │   │   └── stacks-node 0.1.0
    │       │   └── stacks-node 0.1.0
    │       ├── hyper 0.14.28
    │       │   ├── warp 0.3.6
    │       │   ├── reqwest 0.11.24
    │       │   └── hyper-rustls 0.24.2
    │       └── reqwest 0.11.24
    ├── tokio-tungstenite 0.20.1
    │   └── warp 0.3.6
    ├── tokio-stream 0.1.14
    │   └── warp 0.3.6
    ├── tokio-rustls 0.24.1
    │   ├── reqwest 0.11.24
    │   └── hyper-rustls 0.24.2
    ├── stacks-node 0.1.0
    ├── reqwest 0.11.24
    ├── hyper-rustls 0.24.2
    ├── hyper 0.14.28
    └── h2 0.3.24
```

Crate: aes-soft
Version: 0.6.4
Warning: unmaintained
Title: `aes-soft` has been merged into the `aes` crate
Date: 2021-04-29
ID: RUSTSEC-2021-0060
URL: <https://rustsec.org/advisories/RUSTSEC-2021-0060>
Dependency tree:

```
aes-soft 0.6.4
└── aes 0.6.0
    └── aes-gcm 0.8.0
        └── cookie 0.14.4
            └── http-types 2.12.0
                └── stacks-node 0.1.0
```

```
    └── async-h1 2.3.4
        └── stacks-node 0.1.0

Crate:      aesni
Version:  0.10.0
Warning:    unmaintained
Title:     `aesni` has been merged into the `aes` crate
Date:    2021-04-29
ID:        RUSTSEC-2021-0059
URL:       https://rustsec.org/advisories/RUSTSEC-2021-0059
Dependency tree:
aesni 0.10.0
└── aes 0.6.0
    └── aes-gcm 0.8.0
        └── cookie 0.14.4
            └── http-types 2.12.0
                ├── stacks-node 0.1.0
                └── async-h1 2.3.4
                    └── stacks-node 0.1.0

Crate:      cpuid-bool
Version:  0.2.0
Warning:    unmaintained
Title:     `cpuid-bool` has been renamed to `cpufeatures`
Date:    2021-05-06
ID:        RUSTSEC-2021-0064
URL:       https://rustsec.org/advisories/RUSTSEC-2021-0064
Dependency tree:
cpuid-bool 0.2.0
└── polyval 0.4.5
    └── ghash 0.3.1
        └── aes-gcm 0.8.0
            └── cookie 0.14.4
                └── http-types 2.12.0
                    ├── stacks-node 0.1.0
                    └── async-h1 2.3.4
                        └── stacks-node 0.1.0

Crate:      net2
Version:  0.2.39
Warning:    unmaintained
Title:     `net2` crate has been deprecated; use `socket2` instead
Date:    2020-05-01
ID:        RUSTSEC-2020-0016
URL:       https://rustsec.org/advisories/RUSTSEC-2020-0016
Dependency tree:
net2 0.2.39
├── mio 0.2.2
│   └── mio 0.6.23
│       └── stackslib 0.0.1
│           ├── stacks-signer 0.0.1
│           │   └── stacks-node 0.1.0
│           ├── stacks-node 0.1.0
│           └── libsigner 0.0.1
│               ├── stacks-signer 0.0.1
│               └── stacks-node 0.1.0
└── mio 0.6.23

Crate:      serde_cbor
Version:  0.11.2
Warning:    unmaintained
Title:     serde_cbor is unmaintained
Date:    2021-08-15
ID:        RUSTSEC-2021-0127
URL:       https://rustsec.org/advisories/RUSTSEC-2021-0127
Dependency tree:
serde_cbor 0.11.2
└── criterion 0.3.6
    └── stackslib 0.0.1
        ├── stacks-signer 0.0.1
        │   └── stacks-node 0.1.0
        └── stacks-node 0.1.0
```

```
  └── libsigner 0.0.1
      ├── stacks-signer 0.0.1
      └── stacks-node 0.1.0

Crate: stdweb
Version: 0.4.20
Warning: unmaintained
Title: stdweb is unmaintained
Date: 2020-05-04
ID: RUSTSEC-2020-0056
URL: https://rustsec.org/advisories/RUSTSEC-2020-0056
Dependency tree:
stdweb 0.4.20
└── time 0.2.27
    ├── stackslib 0.0.1
    │   ├── stacks-signer 0.0.1
    │   │   └── stacks-node 0.1.0
    │   ├── stacks-node 0.1.0
    │   └── libsigner 0.0.1
    │       ├── stacks-signer 0.0.1
    │       └── stacks-node 0.1.0
    ├── stacks-common 0.0.1
    │   ├── stackslib 0.0.1
    │   ├── stacks-signer 0.0.1
    │   ├── stacks-node 0.1.0
    │   ├── pox-locking 2.4.0
    │   │   └── stackslib 0.0.1
    │   ├── libstackerdः 0.0.1
    │   │   ├── stackslib 0.0.1
    │   │   ├── stacks-signer 0.0.1
    │   │   └── libsigner 0.0.1
    │   ├── libsigner 0.0.1
    │   └── clarity 0.0.1
    │       ├── stackslib 0.0.1
    │       ├── stacks-signer 0.0.1
    │       ├── stacks-node 0.1.0
    │       ├── pox-locking 2.4.0
    │       ├── libstackerdः 0.0.1
    │       └── libsigner 0.0.1
    ├── cookie 0.14.4
    └── http-types 2.12.0
        ├── stacks-node 0.1.0
        └── async-h1 2.3.4
            └── stacks-node 0.1.0
    └── clarity 0.0.1
```

```
Crate: atty
Version: 0.2.14
Warning: unsound
Title: Potential unaligned read
Date: 2021-07-04
ID: RUSTSEC-2021-0145
URL: https://rustsec.org/advisories/RUSTSEC-2021-0145
Dependency tree:
```

```
atty 0.2.14
└── slog-term 2.9.0
    ├── stackslib 0.0.1
    │   ├── stacks-signer 0.0.1
    │   │   └── stacks-node 0.1.0
    │   ├── stacks-node 0.1.0
    │   └── libsigner 0.0.1
    │       ├── stacks-signer 0.0.1
    │       └── stacks-node 0.1.0
    ├── stacks-signer 0.0.1
    ├── stacks-common 0.0.1
    │   ├── stackslib 0.0.1
    │   ├── stacks-signer 0.0.1
    │   ├── stacks-node 0.1.0
    │   ├── pox-locking 2.4.0
    │   │   └── stackslib 0.0.1
    │   ├── libstackerdः 0.0.1
    │   │   ├── stackslib 0.0.1
```

```
|   └── stacks-signer 0.0.1
|       └── libsigner 0.0.1
|
|   └── libsigner 0.0.1
|       └── clarity 0.0.1
|           ├── stackslib 0.0.1
|           ├── stacks-signer 0.0.1
|           ├── stacks-node 0.1.0
|           ├── pox-locking 2.4.0
|           ├── libstackerd़ 0.0.1
|           └── libsigner 0.0.1
|
|   └── libsigner 0.0.1
|
└── criterion 0.3.6
    └── stackslib 0.0.1

error: 3 vulnerabilities found!
warning: 7 allowed warnings found
```

Test Suite Results

```
Running unittests src/libclarity.rs (target/debug/deps/clarity-ecfcb7477d38a0f2)

running 2724 tests
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_05_Epoch22 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_08_Epoch23 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_04_Epoch21 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_03_Epoch21 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_06_Epoch22 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_07_Epoch23 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_09_Epoch24 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_10_Epoch24 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_11_Epoch25 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_12_Epoch25 ... ok
test vm::analysis::arithmetic_checker::tests::test_functions_clarity2 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_01_Epoch20 ... ok
test vm::analysis::arithmetic_checker::tests::test_bad_defines::case_02_Epoch2_05 ... ok
test vm::analysis::arithmetic_checker::tests::test_functions_clarity1 ... ok
test vm::analysis::arithmetic_checker::tests::test_variables_fail_arithmetic_check_clarity2 ... ok
test vm::analysis::contract_interface_builder::test_string_rename_ascii ... ok
test vm::analysis::arithmetic_checker::tests::test_variables_fail_arithmetic_check_clarity1 ... ok
test vm::analysis::contract_interface_builder::test_string_rename_utf8 ... ok
test vm::analysis::read_only_checker::tests::test_argument_count_violations ... ok
test vm::analysis::read_only_checker::tests::test_at_block_violations ... ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_05_Epoch22 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_03_Epoch21 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_01_Epoch20 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_04_Epoch21 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_02_Epoch2_05 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_08_Epoch23 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_06_Epoch22 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_07_Epoch23 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_10_Epoch24 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_09_Epoch24 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_12_Epoch25 ...
ok
test vm::analysis::read_only_checker::tests::test_contract_call_read_only_violations::case_11_Epoch25 ...
ok
test vm::analysis::read_only_checker::tests::test_nested_writing_closure ... ok
test vm::analysis::arithmetic_checker::tests::test_functions_contract ... ok
```

```
test vm::analysis::read_only_checker::tests::test_simple_read_only_violations ... ok
test vm::analysis::tests::test_bad_syntax_binding ... ok
test vm::analysis::tests::test_bad_function_name_2 ... ok
test vm::analysis::tests::test_bad_tuple_field_name ... ok
test vm::analysis::tests::test_bad_tuple_construction ... ok
test vm::analysis::tests::test_bad_function_name ... ok
test vm::analysis::tests::test_contract_call_expect_name ... ok
test vm::analysis::tests::test_bad_map_name ... ok
test vm::analysis::tests::test_bad_let_syntax ... ok
test vm::analysis::tests::test_could_not_determine_response_err_type ... ok
test vm::analysis::tests::test_could_not_determine_response_ok_type ... ok
test vm::analysis::tests::test_default_types_must_match ... ok
test vm::analysis::tests::test_define_function_bad_signature ... ok
test vm::analysis::tests::test_expected_list_or_buff ... ok
test vm::analysis::tests::test_get_block_info_expect_property_name ... ok
test vm::analysis::tests::test_define_variable_bad_signature ... ok
test vm::analysis::tests::test_expected_response_type ... ok
test vm::analysis::tests::test_expected_optional_type ... ok
test vm::analysis::tests::test_if_arms_must_match ... ok
test vm::analysis::tests::test_expected_tuple ... ok
test vm::analysis::tests::test_incorrect_argument_count ... ok
test vm::analysis::tests::test_no_such_tuple_field ... ok
test vm::analysis::tests::test_list_types_must_match ... ok
test vm::analysis::tests::test_no_such_map ... ok
test vm::analysis::tests::test_no_function_application ... ok
test vm::analysis::tests::test_no_such_variable ... ok
test vm::analysis::tests::test_no_such_block_info_property ... ok
test vm::analysis::tests::test_name_already_used ... ok
test vm::analysis::tests::test_public_function_must_return_response ... ok
test vm::analysis::tests::test_variadic_needs_one_argument ... ok
test vm::analysis::tests::test_return_types_must_match ... ok
test vm::analysis::tests::test_write_attempt_in_READONLY ... ok
test vm::analysis::tests::test_unbound_variable ... ok
test vm::analysis::tests::test_tuple_expects_pairs ... ok
test vm::analysis::tests::test_union_type_error ... ok
test vm::analysis::tests::test_type_error ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_04_EPOCH21 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_05_EPOCH22 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_01_EPOCH20 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_07_EPOCH23 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_03_EPOCH21 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_02_EPOCH2_05 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_06_EPOCH22 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_08_EPOCH23 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_09_EPOCH24 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_11_EPOCH25 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_10_EPOCH24 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_01_EPOCH20 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_04_EPOCH21 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_03_EPOCH21 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_02_EPOCH2_05 ... ok
test vm::analysis::trait_checker::tests::test_bad_call_with_trait::case_12_EPOCH25 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_06_EPOCH22 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_05_EPOCH22 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_09_EPOCH24 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_07_EPOCH23 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_11_EPOCH25 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_12_EPOCH25 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_10_EPOCH24 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait::case_08_EPOCH23 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_04_EPOCH21 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_02_EPOCH2_05 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_01_EPOCH20 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_03_EPOCH21 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_07_EPOCH23 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_05_EPOCH22 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_06_EPOCH22 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_08_EPOCH23 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_10_EPOCH24 ... ok
test vm::analysis::trait_checker::tests::test_complete_impl_trait_mixing_READONLY::case_12_EPOCH25 ... ok
test vm::analysis::trait_checker::tests::test_contract_of_good::case_04_EPOCH21 ... ok
```



```
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_04_Epoch21
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_03_Epoch21
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_01_Epoch20
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_05_Epoch22
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_begin::case_11_Epoch25
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_begin::case_12_Epoch25
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_02_Epoch2_05
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_06_Epoch22
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_08_Epoch23
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_07_Epoch23
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_11_Epoch25
... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_10_Epoch24
... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_02_Epoch2_05 ... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_09_Epoch24
... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_01_Epoch20 ... ok
test
vm::analysis::trait_checker::tests::test_return_trait_with_contract_of_wrapped_in_let::case_12_Epoch25
... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_05_Epoch22 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_04_Epoch21 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_06_Epoch22 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_08_Epoch23 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_03_Epoch21 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_07_Epoch23 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_09_Epoch24 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_11_Epoch25 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_10_Epoch24 ... ok
test vm::analysis::trait_checker::tests::test_trait_contract_not_found::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_05::tests::contracts::test_same_function_name ... ok
test vm::analysis::type_checker::v2_05::tests::assets::test_names_tokens_contracts ... ok
test vm::analysis::type_checker::v2_05::tests::test_accessing_unknown_data_var_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::contracts::test_names_tokens_contracts ... ok
test vm::analysis::type_checker::v2_05::tests::contracts::test_names_tokens_contracts_interface ... ok
test vm::analysis::type_checker::v2_05::tests::contracts::test_names_tokens_contracts_bad ... ok
test vm::analysis::type_checker::v2_05::tests::test_bound_tuple_map ... ok
test vm::analysis::type_checker::v2_05::tests::contracts::test_expects ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff_filter ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff_concat ... ok
test vm::analysis::type_checker::v2_05::tests::test_at_block ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff_as_max_len ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff_map ... ok
test vm::analysis::type_checker::v2_05::tests::test_asserts ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff_negative_len ... ok
test vm::analysis::type_checker::v2_05::tests::contracts::test_bad_map_usage ... ok
test vm::analysis::type_checker::v2_05::tests::test_data_var_shadowed_by_let_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff_fold ... ok
```

```
test vm::analysis::type_checker::v2_05::tests::test_define_constant_shadowed_by_argument_should_fail ...
ok
test vm::analysis::type_checker::v2_05::tests::test_define ... ok
test vm::analysis::type_checker::v2_05::tests::test_define_constant_shadowed_by_let_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_delete_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_05::tests::test_concat_append_supertypes ... ok
test vm::analysis::type_checker::v2_05::tests::test_direct_access_to_persisted_var_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_delete_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_delete_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_empty_tuple_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_explicit_tuple_map ... ok
test vm::analysis::type_checker::v2_05::tests::test_combine_tuples ... ok
test vm::analysis::type_checker::v2_05::tests::test_define_trait ... ok
test vm::analysis::type_checker::v2_05::tests::test_factorial ... ok
test vm::analysis::type_checker::v2_05::tests::test_fetch_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_05::tests::test_element_at ... ok
test vm::analysis::type_checker::v2_05::tests::test_function_order_tuples ... ok
test vm::analysis::type_checker::v2_05::tests::test_eqs ... ok
test vm::analysis::type_checker::v2_05::tests::test_fetch_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_fetch_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_buff ... ok
test vm::analysis::type_checker::v2_05::tests::test_high_order_map ... ok
test vm::analysis::type_checker::v2_05::tests::test_function_arg_names ... ok
test vm::analysis::type_checker::v2_05::tests::test_get_block_info ... ok
test vm::analysis::type_checker::v2_05::tests::test_destructuring_opts ... ok
test vm::analysis::type_checker::v2_05::tests::assets::test_bad_asset_usage ... ok
test vm::analysis::type_checker::v2_05::tests::test_impl_trait ... ok
test vm::analysis::type_checker::v2_05::tests::test_let_shadowed_by_let_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_list_nones ... ok
test vm::analysis::type_checker::v2_05::tests::test_let_shadowed_by_nested_let_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_lists_in_defines ... ok
test vm::analysis::type_checker::v2_05::tests::test_mismatching_type_on_update_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_mismatching_type_on_declaration_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_insert_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_05::tests::test_mutating_unknown_data_var_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_missing_value_on_declaration_should_fail ... ok
test vm::analysis::type_checker::v2_05::tests::test_insert_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_non_tuple_map_get_set ... ok
test vm::analysis::type_checker::v2_05::tests::test_non_tuple_map_kv_store ... ok
test vm::analysis::type_checker::v2_05::tests::test_insert_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_bool_variable ... ok
test vm::analysis::type_checker::v2_05::tests::test_options ... ok
test vm::analysis::type_checker::v2_05::tests::test_native_as_max_len ... ok
test vm::analysis::type_checker::v2_05::tests::test_native_concat ... ok
test vm::analysis::type_checker::v2_05::tests::test_native_append ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_buffer_variable ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_int_variable ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_list_variable ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_tuple_variable ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_set_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_05::tests::test_response_inference ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_ascii_as_max_len ... ok
test vm::analysis::type_checker::v2_05::tests::test_simple_ifs ... ok
test vm::analysis::type_checker::v2_05::tests::test_simple_arithmetic_checks ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_ascii_concat ... ok
test vm::analysis::type_checker::v2_05::tests::test_simple_lets ... ok
test vm::analysis::type_checker::v2_05::tests::test_index_of ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_ascii_negative_len ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_ascii_fold ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_utf8_concat ... ok
test vm::analysis::type_checker::v2_05::tests::test_trait_reference_unknown ... ok
test vm::analysis::type_checker::v2_05::tests::test_simple_uints ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_utf8_negative_len ... ok
test vm::analysis::type_checker::v2_05::tests::test_tuple_map ... ok
test vm::analysis::type_checker::v2_05::tests::test_use_trait ... ok
test vm::analysis::type_checker::v2_05::tests::test_unexpected_use_of_field_or_trait_reference ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_utf8_fold ... ok
test vm::analysis::type_checker::v2_05::tests::test_string_utf8_as_max_len ... ok
test vm::analysis::type_checker::v2_05::tests::test_using_merge ... ok
test vm::analysis::type_checker::v2_1::tests::assets::test_names_tokens_contracts::case_01_Epoch20 ... ok
```



```
e_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_3_ok::cas
e_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_3_ok::cas
e_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_3_ok::cas
e_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
1_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_3_ok::cas
e_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_3_ok::cas
e_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
2_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
3_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
5_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
4_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::assets::test_bad_asset_usage ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
6_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
7_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
8_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_0
9_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_1
1_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_1
0_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_nested_trait_4::case_1
2_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait::
case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait::
case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait::
case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait::
case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait::
case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait::
case_03_Epoch21 ... ok
test
```

```
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait:::  
case_02_Epoch2_05 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait:::  
case_08_Epoch23 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait:::  
case_10_Epoch24 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait:::  
case_12_Epoch25 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait:::  
case_09_Epoch24 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_partial_double_trait:::  
case_11_Epoch25 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_03_  
Epoch21 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_01_  
Epoch20 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_02_  
Epoch2_05 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_04_  
Epoch21 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_05_  
Epoch22 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_09_  
Epoch24 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_11_  
Epoch25 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_07_  
Epoch23 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_06_  
Epoch22 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_10_  
Epoch24 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_return_trait::case_08_  
Epoch23 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_03_  
Epoch21 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_02_  
Epoch2_05 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_01_  
Epoch20 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_05_  
Epoch22 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_12_  
Epoch25 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_04_  
Epoch21 ... ok  
test  
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_06_  
Epoch22 ... ok  
test
```

```
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_07
_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_09
_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_01_Epoch20
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_10
_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_12
_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_03_Epoch21
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_call_use_principal::case_11
_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_02_Epoch2_05
_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_04_Epoch21
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_07_Epoch23
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_09_Epoch24
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_05_Epoch22
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_08_Epoch23
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_06_Epoch22
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_10_Epoch24
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_11_Epoch25
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_circular::case_12_Epoch25
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_call::case_03_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_call::case_01_Epoc
h20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_call::case_04_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_call::case_05_Epoc
h22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_call::case_02_Epoc
h2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_call::case_06_Epoc
h22 ... ok
test
```



```
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_to_trait::case_05_
Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_to_trait::case_09_
Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_to_trait::case_10_
Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_to_trait::case_08_
Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_to_trait::case_11_
Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_constant_to_trait::case_12_
Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_03_Epoch
21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_01_Epoch
20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_02_Epoch
2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_05_Epoch
22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_04_Epoch
21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_06_Epoch
22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_07_Epoch
23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_08_Epoch
23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_09_Epoch
24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_10_Epoch
24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_11_Epoch
25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_cross_epochs::case_12_Epoch
25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_double_trait::case_01_Epoch
20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_double_trait::case_03_Epoch
21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_double_trait::case_02_Epoch
2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_double_trait::case_07_Epoch
23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_double_trait::case_06_Epoch
22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_double_trait::case_05_Epoch
22 ... ok
test
```



```
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_duplicate_trait::case_04_Ep
och21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_duplicate_trait::case_09_Ep
och24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_duplicate_trait::case_08_Ep
och23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_duplicate_trait::case_11_Ep
och25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_duplicate_trait::case_10_Ep
och24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_duplicate_trait::case_12_Ep
och25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_not_implemented::c
ase_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_01_Epo
ch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_02_Epo
ch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_03_Epo
ch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_05_Epo
ch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_04_Epo
ch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_06_Epo
ch22 ... ok
test
```

```
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_07_Epo
ch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_08_Epo
ch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_09_Epo
ch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_11_Epo
ch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_10_Epo
ch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait::case_12_Epo
ch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_01_Epoch2
0 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_dyn_call_trait_partial::cas
e_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_02_Epoch2
_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_04_Epoch2
1 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_05_Epoch2
2 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_03_Epoch2
1 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_10_Epoch2
4 ... ok
test
```

```
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_07_Epoch2
3 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_06_Epoch2
2 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_11_Epoch2
5 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_09_Epoch2
4 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_12_Epoch2
5 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_empty_trait::case_08_Epoch2
3 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_double_trait::cas
e_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_trait_cast::case_
01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_trait_cast::case_
02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_trait_cast::case_
03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_trait_cast::case_
04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_trait_cast::case_
07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_identical_trait_cast::case_
05_Epoch22 ... ok
test
```



```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_impl_math_trait_incomplete:
:case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_impl_math_trait_incomplete:
:case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_03_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_mixed_list_to_traits_list::
case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_04_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_06_Epoc
h22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_05_Epoc
h22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_02_Epoc
h2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_07_Epoc
h23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_01_Epoc
h20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_08_Epoc
h23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_10_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_01_Epoch2
0 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_09_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_11_Epoc
h25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_nested_traits::case_12_Epoc
h25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_03_Epoch2
1 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_02_Epoch2
_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_04_Epoch2
1 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_05_Epoch2
2 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_06_Epoch2
2 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_07_Epoch2
3 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_08_Epoch2
3 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_09_Epoch2
4 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_11_Epoch2
5 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_10_Epoch2
4 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_no_response::case_12_Epoch2
5 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_01_Epoch
20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_02_Epoch
2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_03_Epoch
21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_04_Epoch
21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_10_Epoch
24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_06_Epoch
22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_09_Epoch
24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_07_Epoch
23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_05_Epoch
22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_08_Epoch
23 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_11_Epoch
25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_out_of_order::case_12_Epoch
25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_pass_let_rename_trait::case
_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_l
ist::case_10_Epoch24 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_list::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_principals_list_to_traits_list::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_CALL_TRAIT::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_PASS_TRAIT::case_10_Epoch24 ... ok
```



```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_STATIC_CALL_TRAIT:
:case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_STATIC_CALL_TRAIT:
:case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_02
_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_04
_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_01
_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_03
_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_05
_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_06
_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_07
_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_12
_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_09
_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_10
_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_11
_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_READONLY_USE_TRAIT::case_08
_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_01
_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_03
_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_02
_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_05
_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_08
_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_07
_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_04
_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_06
_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RENAMED_TRAIT_CAST::case_09
_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_RETURN_TRAIT::case_04_Epoch
21 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_renamed_trait_cast::case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_renamed_trait_cast::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_renamed_trait_cast::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_return_trait::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_01_Epoch20 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_09_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_12_Epoc
h25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_04_Epoch21
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_selfret_trait::case_10_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_02_Epoch2_
05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_03_Epoch21
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_06_Epoch22
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_05_Epoch22
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_08_Epoch23
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_09_Epoch24
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_10_Epoch24
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_07_Epoch23
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast::case_12_Epoch25
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_cast_incompatible::ca
se_11_Epoch25 ... ok
```



```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_data_2::case_11_Epoch
25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_data_2::case_12_Epoch
25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_02_Epoc
h2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_04_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_06_Epoc
h22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_01_Epoc
h20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_03_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_05_Epoc
h22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_07_Epoc
h23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_08_Epoc
h23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_10_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_11_Epoc
h25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal::case_12_Epoc
h25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_08_Epoch23 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_literal_incomplete::c
ase_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_02_Ep
och2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_03_Ep
och21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_01_Ep
och20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_05_Ep
och22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_04_Ep
och21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_06_Ep
och22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_07_Ep
och23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_08_Ep
och23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_12_Ep
och25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_11_Ep
och25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_10_Ep
och24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_trait_recursion::case_09_Ep
och24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_10_Epoch24 ... ok
```

```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_traits_list_to_traits_list:
:case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_04_Epo
ch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_01_Epo
ch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_02_Epo
ch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_05_Epo
ch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_03_Epo
ch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_06_Epo
ch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_07_Epo
ch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_09_Epo
ch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_11_Epo
ch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_10_Epo
ch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_08_Epo
ch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_renamed::case_12_Epo
ch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_01_Epo
ch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_03_Epo
ch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_02_Epo
ch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_04_Epo
ch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_05_Epo
ch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_08_Epo
ch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_06_Epo
ch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_07_Epo
ch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_09_Epo
ch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_upcast_trait_1::case_11_Epo
ch25 ... ok
```



```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_02_E
poch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_04_E
poch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_a_trait_transitive_rede
fined::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_03_E
poch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_01_E
poch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_05_E
poch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_06_E
poch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_10_E
poch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_08_E
poch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_07_E
poch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_09_E
poch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_11_E
poch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_double_trait::case_12_E
poch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_math_trait_transitive_a
lias::case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_math_trait_transitive_a
lias::case_02_Epoch2_05 ... ok
```



```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_math_trait_transitive_n
ame::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_math_trait_transitive_n
ame::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_02_Epoch2_05 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_original_and_define_a_t
rait::case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_05_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_04_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_06_Epoch22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_03_Epoch21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_07_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_09_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_11_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_08_Epoch23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_10_Epoch24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_1:
:case_12_Epoch25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_2:
:case_01_Epoch20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_partial_double_trait_2:
:case_02_Epoch2_05 ... ok
```



```
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_01_Epoc
h20 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_04_Epoc
h21 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_05_Epoc
h22 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_07_Epoc
h23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_10_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_08_Epoc
h23 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_09_Epoc
h24 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_12_Epoc
h25 ... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::clarity_trait_experiments_use_undefined::case_06_Epoc
h22 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_bad_embedded_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_bad_other_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_if_branches_with_compatible_trait_types ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_embedded_trait_compatible ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_embedded_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_bad_principal_to_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_if_branches_with_incompatible_trait_types
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_let3_compound_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_let3_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_let3_compound_trait_call ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_let_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_01_Epoch20 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_04_Epoch21 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_02_Epoch2_05
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_03_Epoch21 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_05_Epoch22 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_06_Epoch22 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_expects ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_07_Epoch23 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_bad_map_usage ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_08_Epoch23 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_09_Epoch24 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_10_Epoch24 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_04_Epoch21
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_12_Epoch25 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_05_Epoch22
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts::case_11_Epoch25 ...
```

```
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_03_Epoch21
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_01_Epoch20
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_06_Epoch22
... ok
test
vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_02_Epoch2_05
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_07_Epoch23
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_10_Epoch24
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_09_Epoch24
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_08_Epoch23
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_interface ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_11_Epoch25
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_names_tokens_contracts_bad::case_12_Epoch25
... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_02_Epoch2_05 ...
ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_same_function_name::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_args_differ ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_arg_counts_differ2 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_arg_counts_differ1 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_to_compatible_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_list_to_map ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_ret_ty_differ ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_to_subtrait_and_back ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_to_trait ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_with_duplicate_method ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_traits_multi_contract::case_2 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_traits_multi_contract::case_1 ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_with_compatible_trait_arg ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_with_superset_trait_arg ... ok
test vm::analysis::type_checker::v2_1::tests::test_accessing_unknown_data_var_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_with_bad_trait_arg ... ok
test vm::analysis::type_checker::v2_1::tests::contracts::test_trait_with_subset_trait_arg ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff_concat ... ok
test vm::analysis::type_checker::v2_1::tests::test_bound_tuple_map ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff_filter ... ok
test vm::analysis::type_checker::v2_1::tests::test_at_block ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff_as_max_len ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff_fold ... ok
test vm::analysis::type_checker::v2_1::tests::test_asserts ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff_map ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff_negative_len ... ok
test vm::analysis::type_checker::v2_1::tests::test_data_var_shadowed_by_let_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_define ... ok
test vm::analysis::type_checker::v2_1::tests::test_bitwise_good_checks ... ok
test vm::analysis::type_checker::v2_1::tests::test_concat_append_supertypes ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_constant_shadowed_by_let_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_constant_shadowed_by_argument_should_fail ...
ok
test vm::analysis::type_checker::v2_1::tests::test_bitwise_bad_checks ... ok
test vm::analysis::type_checker::v2_1::tests::test_combine_tuples ... ok
test vm::analysis::type_checker::v2_1::tests::test_buffer_to_ints ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_02_Epoch2_05 ... ok
```

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test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_buff ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_delete_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_delete_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_delete_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_comparison_types ... ok
test vm::analysis::type_checker::v2_1::tests::test_define_trait::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_direct_access_to_persisted_var_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_empty_tuple_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_element_at ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_explicit_tuple_map ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_factorial ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_fetch_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_1::tests::test_fetch_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_fetch_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_eqs::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_function_order_tuples ... ok
test vm::analysis::type_checker::v2_1::tests::test_function_arg_names ... ok
test vm::analysis::type_checker::v2_1::tests::test_high_order_map ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_get_burn_block_info ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_impl_trait::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_from_consensus_buff ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_insert_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_1::tests::test_let_bind_trait ... ok
test vm::analysis::type_checker::v2_1::tests::test_insert_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_let_shadowed_by_let_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_let_shadowed_by_nested_let_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_destructuring_opts::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_insert_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_01_Epoch20 ... ok
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test vm::analysis::type_checker::v2_1::tests::test_get_block_info ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_nones ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_lists_in_defines ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_mismatching_type_on_declaration_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_list_arg::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_mutating_unknown_data_var_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_missing_value_on_declaration_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_mismatching_type_on_update_should_fail ... ok
test vm::analysis::type_checker::v2_1::tests::test_non_tuple_map_get_set ... ok
test vm::analysis::type_checker::v2_1::tests::test_non_tuple_map_kv_store ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_native_concat ... ok
test vm::analysis::type_checker::v2_1::tests::test_native_as_max_len ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_native_append ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_options::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_principal_admits ... ok
test vm::analysis::type_checker::v2_1::tests::test_principal_destruct ... ok
test vm::analysis::type_checker::v2_1::tests::test_replace_at_ascii ... ok
test vm::analysis::type_checker::v2_1::tests::test_replace_at_buff ... ok
test vm::analysis::type_checker::v2_1::tests::test_index_of ... ok
test vm::analysis::type_checker::v2_1::tests::test_principal_construct ... ok
test vm::analysis::type_checker::v2_1::tests::test_replace_at_list ... ok
test vm::analysis::type_checker::v2_1::tests::test_replace_at_utf8 ... ok
test vm::analysis::type_checker::v2_1::tests::test_lists ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_bool_variable ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_buffer_variable ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_int_variable ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_entry_unbound_variables ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_list_variable ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_tuple_variable ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_entry_matching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_set_entry_mismatching_type_signatures ... ok
test vm::analysis::type_checker::v2_1::tests::test_response_inference::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_slice_ascii ... ok
test vm::analysis::type_checker::v2_1::tests::test_slice_buff ... ok
test vm::analysis::type_checker::v2_1::tests::test_simple_ifs ... ok
test vm::analysis::type_checker::v2_1::tests::test_simple_uints ... ok
test vm::analysis::type_checker::v2_1::tests::test_simple_arithmetic_checks ... ok
test vm::analysis::type_checker::v2_1::tests::test_simple_lets ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_ascii_concat ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_ascii_as_max_len ... ok
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test vm::analysis::type_checker::v2_1::tests::test_string_ascii_negative_len ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_ascii_fold ... ok
test vm::analysis::type_checker::v2_1::tests::test_slice_list ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_utf8_concat ... ok
test vm::analysis::type_checker::v2_1::tests::test_slice_utf8 ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_utf8_negative_len ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_utf8_fold ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_reference_unknown::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_utf8_as_max_len ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_args ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_simple_hash_checks ... ok
test vm::analysis::type_checker::v2_1::tests::test_trait_same_contract::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_tuple_map ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_01_Epoch20 ... ok
test vm::analysis::type_checker::v2_1::tests::test_unexpected_use_of_field_or_trait_reference ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_03_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_02_Epoch2_05 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_04_Epoch21 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_05_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_06_Epoch22 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_07_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_08_Epoch23 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_09_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_10_Epoch24 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_11_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_use_trait::case_12_Epoch25 ... ok
test vm::analysis::type_checker::v2_1::tests::test_using_merge ... ok
test vm::analysis::types::test::test_canonicalize_contract_analysis ... ok
test vm::analysis::type_checker::v2_1::tests::test_tuple_arg ... ok
test vm::ast::definition_sorter::tests::should_not_build_cycle_within_defined_args_types::case_1 ... ok
test vm::ast::definition_sorter::tests::should_fix_2123 ... ok
test vm::ast::definition_sorter::tests::should_not_build_cycle_within_defined_args_types::case_2 ... ok
test vm::analysis::type_checker::v2_1::tests::test_tx_sponsor ... ok
test vm::ast::definition_sorter::tests::should_not_conflict_with_atoms_from_trait_definitions::case_1 ...
ok
test vm::ast::definition_sorter::tests::should_not_conflict_with_atoms_from_trait_definitions::case_2 ...
ok
test vm::analysis::type_checker::v2_1::tests::test_tuples ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_delete_entry::case_2 ...
ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_fetch_entry::case_1 ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_delete_entry::case_1 ...
ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_fetch_entry::case_2 ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_get::case_1 ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_insert_entry::case_1 ...
ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_get::case_2 ... ok
test vm::analysis::type_checker::v2_1::tests::test_wrapped_trait ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_insert_entry::case_2 ...
```

```
ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_let::case_1 ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_let::case_2 ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_set_entry::case_1 ... ok
test vm::analysis::type_checker::v2_1::tests::test_stx_ops ... ok
test vm::analysis::type_checker::v2_1::tests::test_string_to_ints ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_1::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_1::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_2::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_delete_entry::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_fetch_contract_entry::case_1
... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_delete_entry::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_2::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_fetch_contract_entry::case_2
... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_fetch_entry::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_fetch_entry::case_2 ... ok
test vm::ast::definition_sorter::tests::should_not_raise_dependency_cycle_case_set_entry::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_get::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_get::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_insert_entry::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_insert_entry::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_let::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_let::case_1 ... ok
test vm::ast::definition_sorter::tests::should_reorder_traits_references::case_1 ... ok
test vm::ast::definition_sorter::tests::should_succeed_sorting_contract_call::case_1 ... ok
test vm::ast::definition_sorter::tests::should_reorder_traits_references::case_2 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_set_entry::case_1 ... ok
test vm::ast::definition_sorter::tests::should_raise_dependency_cycle_case_set_entry::case_2 ... ok
test vm::ast::definition_sorter::tests::should_succeed_sorting_contract_call::case_2 ... ok
test vm::ast::definition_sorter::tests::should_succeed_sorting_contract_case_1::case_1 ... ok
test vm::ast::definition_sorter::tests::should_succeed_sorting_contract_case_1::case_2 ... ok
test vm::analysis::type_checker::v2_1::tests::test_to_consensus_buff ... ok
test vm::ast::parser::v1::test::test_parse_contract_principals ... ok
test vm::ast::parser::v1::test::test_long_contract_name ... ok
test vm::ast::parser::v1::test::test_parse_generics ... ok
test vm::ast::parser::v1::test::test_parse_sugared_field_identifiers ... ok
test vm::ast::parser::v1::test::test_parse_field_identifiers ... ok
test vm::ast::parser::v2::lexer::tests::check_error_span ... ok
test vm::ast::parser::v2::lexer::tests::read_contract_identifier ... ok
test vm::ast::parser::v2::lexer::tests::check_span ... ok
test vm::ast::parser::v1::test::test_parse_tuple_literal ... ok
test vm::ast::parser::v1::test::test_parse_let_expression ... ok
test vm::ast::parser::v2::lexer::tests::read_multiple_tokens ... ok
test vm::ast::parser::v2::lexer::tests::read_tokens ... ok
test vm::ast::parser::v2::lexer::tests::read_trait_reference ... ok
test vm::ast::definition_sorter::tests::should_succeed_sorting_contract_case_2::case_1 ... ok
test vm::ast::definition_sorter::tests::should_succeed_sorting_contract_case_2::case_2 ... ok
test vm::ast::sugar_expander::test::test_transform_sugared_contract_identifier ... ok
test vm::ast::sugar_expander::test::test_transform_pre_ast ... ok
test vm::ast::sugar_expander::test::test_transform_tuple_literal ... ok
test vm::callables::test::test_canonicalize_defined_function ... ok
test vm::contexts::test::test_asset_map_abort ... ok
test vm::callables::test::test_implicit_cast ... ok
test vm::ast::test::test_expression_identification_tuples ... ok
test vm::ast::test::test_cost_tracking_deep_contracts_2_1 ... ok
test vm::contexts::test::test_canonicalize_contract_context ... ok
test vm::costs::unit_tests::test_simple_log2s ... ok
test vm::contexts::test::test_asset_map_combinations ... ok
test vm::costs::unit_tests::test_simple_overflows ... ok
test vm::costs::unit_tests::test_simple_sub ... ok
test vm::docs::test::test_get_input_type_string_variadic ... ok
test vm::docs::test::test_get_input_type_string_binary ... ok
test vm::docs::test::test_get_input_type_string_unionargs ... ok
test vm::docs::test::test_get_output_type_string_binary ... ok
test vm::errors::test::equality ... ok
test vm::docs::test::ensure_docgen_runs ... ok
test vm::docs::test::test_get_output_type_string_binary_arg_at_pos_out_of_range_panics - should panic ...
ok
test vm::ast::parser::v1::test::test_parse_failures ... ok
test vm::test::test_simple_user_function ... ok
```

```
test vm::ast::test::test_cost_tracking_deep_contracts_2_05 ... ok
test vm::tests::assets::test_native_stx_ops::case_1_Epoch20 ... ok
test vm::tests::assets::test_native_stx_ops::case_5_Epoch23 ... ok
test vm::tests::assets::test_native_stx_ops::case_2_Epoch2_05 ... ok
test vm::tests::assets::test_native_stx_ops::case_6_Epoch24 ... ok
test vm::tests::assets::test_native_stx_ops::case_4_Epoch22 ... ok
test vm::tests::assets::test_native_stx_ops::case_3_Epoch21 ... ok
test vm::tests::assets::test_native_stx_ops::case_7_Epoch25 ... ok
test vm::tests::assets::test_overlapping_nfts::case_3_Epoch21 ... ok
test vm::tests::assets::test_overlapping_nfts::case_5_Epoch23 ... ok
test vm::tests::assets::test_overlapping_nfts::case_4_Epoch22 ... ok
test vm::tests::assets::test_overlapping_nfts::case_7_Epoch25 ... ok
test vm::tests::assets::test_overlapping_nfts::case_6_Epoch24 ... ok
test vm::tests::assets::test_overlapping_nfts::case_1_Epoch20 ... ok
test vm::tests::assets::test_overlapping_nfts::case_2_Epoch2_05 ... ok
test vm::tests::assets::test_simple_naming_system::case_02_Epoch2_05 ... ok
test vm::tests::assets::test_simple_naming_system::case_01_Epoch20 ... ok
test vm::tests::assets::test_simple_naming_system::case_05_Epoch22 ... ok
test vm::tests::assets::test_simple_naming_system::case_04_Epoch21 ... ok
test vm::tests::assets::test_simple_naming_system::case_07_Epoch23 ... ok
test vm::tests::assets::test_simple_naming_system::case_03_Epoch21 ... ok
test vm::tests::assets::test_simple_naming_system::case_06_Epoch22 ... ok
test vm::tests::assets::test_simple_token_system::case_1_Epoch20 ... ok
test vm::tests::assets::test_simple_token_system::case_2_Epoch2_05 ... ok
test vm::tests::assets::test_simple_naming_system::case_08_Epoch23 ... ok
test vm::tests::assets::test_simple_token_system::case_3_Epoch21 ... ok
test vm::tests::assets::test_simple_token_system::case_4_Epoch22 ... ok
test vm::tests::assets::test_simple_naming_system::case_09_Epoch24 ... ok
test vm::tests::assets::test_simple_naming_system::case_11_Epoch25 ... ok
test vm::tests::assets::test_simple_naming_system::case_12_Epoch25 ... ok
test vm::tests::assets::test_simple_naming_system::case_10_Epoch24 ... ok
test vm::tests::assets::test_simple_token_system::case_5_Epoch23 ... ok
test vm::tests::assets::test_total_supply::case_1_Epoch20 ... ok
test vm::tests::assets::test_simple_token_system::case_6_Epoch24 ... ok
test vm::tests::assets::test_simple_token_system::case_7_Epoch25 ... ok
test vm::tests::assets::test_total_supply::case_2_Epoch2_05 ... ok
test vm::tests::assets::test_total_supply::case_4_Epoch22 ... ok
test vm::tests::assets::test_total_supply::case_3_Epoch21 ... ok
test vm::tests::assets::test_total_supply::case_5_Epoch23 ... ok
test vm::tests::contracts::test_aborts::case_5_Epoch23 ... ok
test vm::tests::contracts::test_aborts::case_1_Epoch20 ... ok
test vm::tests::assets::test_total_supply::case_6_Epoch24 ... ok
test vm::tests::contracts::test_aborts::case_4_Epoch22 ... ok
test vm::tests::contracts::test_aborts::case_2_Epoch2_05 ... ok
test vm::tests::assets::test_total_supply::case_7_Epoch25 ... ok
test vm::tests::contracts::test_aborts::case_3_Epoch21 ... ok
test vm::tests::contracts::test_aborts::case_6_Epoch24 ... ok
test vm::tests::contracts::test_aborts::case_7_Epoch25 ... ok
test vm::tests::contracts::test_as_max_len::case_1_Epoch20 ... ok
test vm::tests::contracts::test_as_max_len::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_as_max_len::case_3_Epoch21 ... ok
test vm::tests::contracts::test_as_max_len::case_6_Epoch24 ... ok
test vm::tests::contracts::test_arg_stack_depth ... ok
test vm::tests::contracts::test_as_max_len::case_5_Epoch23 ... ok
test vm::tests::contracts::test_as_max_len::case_4_Epoch22 ... ok
test vm::tests::contracts::test_at_unknown_block::case_1_Epoch20 ... ok
test vm::tests::contracts::test_at_unknown_block::case_5_Epoch23 ... ok
test vm::tests::contracts::test_at_unknown_block::case_3_Epoch21 ... ok
test vm::tests::contracts::test_at_unknown_block::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_at_unknown_block::case_4_Epoch22 ... ok
test vm::tests::contracts::test_ast_stack_depth ... ok
test vm::tests::contracts::test_as_max_len::case_7_Epoch25 ... ok
test vm::tests::contracts::test_at_unknown_block::case_7_Epoch25 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_03_Epoch21 ... ok
test vm::tests::contracts::test_at_unknown_block::case_6_Epoch24 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_04_Epoch21 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_05_Epoch22 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_01_Epoch20 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_02_Epoch2_05 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_06_Epoch22 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_07_Epoch23 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_09_Epoch24 ... ok
```

```
test vm::tests::contracts::test_cc_stack_depth::case_10_Epoch24 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_08_Epoch23 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_11_Epoch25 ... ok
test vm::tests::contracts::test_cc_stack_depth::case_12_Epoch25 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_05_Epoch22 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_04_Epoch21 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_03_Epoch21 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_07_Epoch23 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_02_Epoch2_05 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_01_Epoch20 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_08_Epoch23 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_06_Epoch22 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_09_Epoch24 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_11_Epoch25 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_10_Epoch24 ... ok
test vm::tests::contracts::test_cc_trait_stack_depth::case_12_Epoch25 ... ok
test vm::tests::contracts::test_contract_caller::case_1_Epoch20 ... ok
test vm::tests::contracts::test_contract_caller::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_contract_caller::case_3_Epoch21 ... ok
test vm::tests::contracts::test_contract_caller::case_5_Epoch23 ... ok
test vm::tests::contracts::test_contract_caller::case_4_Epoch22 ... ok
test vm::tests::contracts::test_contract_caller::case_6_Epoch24 ... ok
test vm::tests::contracts::test_contract_caller::case_7_Epoch25 ... ok
test vm::tests::contracts::test_factorial_contract::case_1_Epoch20 ... ok
test vm::tests::contracts::test_factorial_contract::case_3_Epoch21 ... ok
test vm::tests::contracts::test_factorial_contract::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_factorial_contract::case_6_Epoch24 ... ok
test vm::tests::contracts::test_factorial_contract::case_4_Epoch22 ... ok
test vm::tests::contracts::test_factorial_contract::case_5_Epoch23 ... ok
test vm::tests::contracts::test_factorial_contract::case_7_Epoch25 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_5_Epoch23 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_4_Epoch22 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_1_Epoch20 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_3_Epoch21 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_6_Epoch24 ... ok
test vm::tests::contracts::test_fully_qualified_contract_call::case_7_Epoch25 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_1_Epoch20 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_6_Epoch24 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_3_Epoch21 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_4_Epoch22 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_5_Epoch23 ... ok
test vm::tests::contracts::test_get_block_info_eval::case_7_Epoch25 ... ok
test vm::tests::contracts::test_simple_contract_call::case_3_Epoch21 ... ok
test vm::tests::contracts::test_simple_contract_call::case_4_Epoch22 ... ok
test vm::tests::contracts::test_simple_contract_call::case_1_Epoch20 ... ok
test vm::tests::contracts::test_simple_contract_call::case_6_Epoch24 ... ok
test vm::tests::contracts::test_simple_contract_call::case_5_Epoch23 ... ok
test vm::tests::contracts::test_simple_contract_call::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_simple_contract_call::case_7_Epoch25 ... ok
test vm::tests::contracts::test_simple_naming_system::case_3_Epoch21 ... ok
test vm::tests::contracts::test_simple_naming_system::case_4_Epoch22 ... ok
test vm::tests::contracts::test_simple_naming_system::case_1_Epoch20 ... ok
test vm::tests::contracts::test_simple_naming_system::case_5_Epoch23 ... ok
test vm::tests::contracts::test_simple_naming_system::case_2_Epoch2_05 ... ok
test vm::tests::contracts::test_simple_naming_system::case_7_Epoch25 ... ok
test vm::tests::contracts::test_simple_naming_system::case_6_Epoch24 ... ok
test vm::tests::contracts::test_tx_sponsor::case_3_Epoch21 ... ok
test vm::tests::contracts::test_tx_sponsor::case_1_Epoch20 ... ok
test vm::tests::contracts::test_tx_sponsor::case_2_Epoch2_05 ... ok
test vm::docs::test::test_examples ... ok
test vm::tests::datamaps::datamap_errors ... ok
test vm::tests::datamaps::lists_system_2 ... ok
test vm::tests::contracts::test_tx_sponsor::case_6_Epoch24 ... ok
test vm::tests::contracts::test_tx_sponsor::case_4_Epoch22 ... ok
test vm::tests::contracts::test_tx_sponsor::case_7_Epoch25 ... ok
test vm::tests::contracts::test_tx_sponsor::case_5_Epoch23 ... ok
test vm::tests::datamaps::silly_naming_system ... ok
test vm::tests::datamaps::bad_define_maps ... ok
test vm::tests::datamaps::test_get_list_max_len ... ok
test vm::tests::datamaps::test_factorial_contract ... ok
```

```
test vm:::tests:::datamaps:::test_explicit_syntax_tuple ... ok
test vm:::tests:::datamaps:::bad_tuples ... ok
test vm:::tests:::datamaps:::test_set_bool_variable ... ok
test vm:::tests:::datamaps:::test_non_tuple_map_kv_store ... ok
test vm:::tests:::datamaps:::test_implicit_syntax_tuple ... ok
test vm:::tests:::datamaps:::test_bound_tuple ... ok
test vm:::tests:::datamaps:::test_set_string_variable ... ok
test vm:::tests:::datamaps:::test_set_list_variable ... ok
test vm:::tests:::datamaps:::test_combines_tuples ... ok
test vm:::tests:::datamaps:::lists_system ... ok
test vm:::tests:::datamaps:::test_set_int_variable ... ok
test vm:::tests:::datamaps:::test_set_tuple_variable ... ok
test vm:::tests:::datamaps:::test_set_response_variable ... ok
test vm:::tests:::datamaps:::test_simple_tea_shop ... ok
test vm:::tests:::datamaps:::test_non_tuple_map_get_set ... ok
test vm:::tests:::defines:::test_accept_options:::case_01_EPOCH20 ... ok
test vm:::tests:::defines:::test_accept_options:::case_02_EPOCH2_05 ... ok
test vm:::tests:::defines:::test_accept_options:::case_04_EPOCH21 ... ok
test vm:::tests:::defines:::test_accept_options:::case_03_EPOCH21 ... ok
test vm:::tests:::defines:::test_accept_options:::case_05_EPOCH22 ... ok
test vm:::tests:::defines:::test_accept_options:::case_07_EPOCH23 ... ok
test vm:::tests:::defines:::test_accept_options:::case_06_EPOCH22 ... ok
test vm:::tests:::defines:::test_accept_options:::case_08_EPOCH23 ... ok
test vm:::tests:::defines:::test_accept_options:::case_09_EPOCH24 ... ok
test vm:::tests:::defines:::test_accept_options:::case_10_EPOCH24 ... ok
test vm:::tests:::defines:::test_accept_options:::case_12_EPOCH25 ... ok
test vm:::tests:::defines:::test_accept_options:::case_11_EPOCH25 ... ok
test vm:::tests:::datamaps:::tuples_system ... ok
test vm:::tests:::defines:::test_define_parse_panic ... ok
test vm:::tests:::defines:::test_bad_variables ... ok
test vm:::tests:::defines:::test_bad_define_names ... ok
test vm:::tests:::defines:::test_define_parse_panic_2 ... ok
test vm:::tests:::defines:::test_define_constant_arg_count ... ok
test vm:::tests:::defines:::test_define_fungible_token_arg_count ... ok
test vm:::tests:::defines:::test_define_non_fungible_token_arg_count ... ok
test vm:::tests:::defines:::test_define_data_var_arg_count ... ok
test vm:::tests:::defines:::test_define_map_arg_count ... ok
test vm:::tests:::defines:::test_define_private_arg_count ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_01_EPOCH20 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_02_EPOCH2_05 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_03_EPOCH21 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_04_EPOCH21 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_05_EPOCH22 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_06_EPOCH22 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_07_EPOCH23 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_08_EPOCH23 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_09_EPOCH24 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_10_EPOCH24 ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_11_EPOCH25 ... ok
test vm:::tests:::defines:::test_define_public_arg_count ... ok
test vm:::tests:::defines:::test_recursive_panic:::case_12_EPOCH25 ... ok
test vm:::tests:::defines:::test_define_read_only_arg_count ... ok
test vm:::tests:::defines:::test_define_read_only ... ok
test vm:::tests:::epoch_clarity_pairs_covered ... ok
test vm:::tests:::epochs_covered ... ok
test vm:::tests:::defines:::testDefines ... ok
test vm:::tests:::defines:::test_define_trait_arg_count ... ok
test vm:::tests:::defines:::testImpl_trait_arg_count ... ok
test vm:::tests:::defines:::test_use_trait_arg_count ... ok
test vm:::tests:::principals:::test_principal_construct_version_byte_future ... ok
test vm:::tests:::principals:::test_principal_construct_check_errors ... ok
test vm:::tests:::defines:::test_variable_shadowing ... ok
test vm:::tests:::principals:::test_simple_is_standard_check_inputs ... ok
test vm:::tests:::defines:::test_stack_depth ... ok
test vm:::tests:::defines:::test_unwrap_ret ... ok
test vm:::tests:::principals:::test_principal_construct_response_errors ... ok
test vm:::tests:::sequences:::test_buff_len ... ok
test vm:::tests:::principals:::test_simple_is_standard_undefined_cases ... ok
test vm:::tests:::principals:::test_principal_construct_good ... ok
test vm:::tests:::principals:::test_principal_destruct_bad_version_byte ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_02_EPOCH2_05 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_01_EPOCH20 ... ok
```

```
test vm:::tests:::principals:::test_principal_destruct_good ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_03_Epoch21 ... ok
test vm:::tests:::principals:::test_simple_is_standard_testnet_cases ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_04_Epoch21 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_05_Epoch22 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_06_Epoch22 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_08_Epoch23 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_07_Epoch23 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_09_Epoch24 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_10_Epoch24 ... ok
test vm:::tests:::sequences:::test_native_len ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_12_Epoch25 ... ok
test vm:::tests:::sequences:::test_construct_bad_list:::case_11_Epoch25 ... ok
test vm:::tests:::sequences:::test_eval_func_arg_panic ... ok
test vm:::tests:::sequences:::test_list_tuple_admission ... ok
test vm:::tests:::sequences:::test_simple_filter_buffer ... ok
test vm:::tests:::sequences:::test_simple_folds_list ... ok
test vm:::tests:::sequences:::test_simple_folds_string ... ok
test vm:::tests:::sequences:::test_simple_buff_concat ... ok
test vm:::tests:::sequences:::test_simple_buff_assert_max_len ... ok
test vm:::tests:::sequences:::test_simple_list_admission ... ok
test vm:::tests:::sequences:::test_element_at ... ok
test vm:::tests:::sequences:::test_simple_filter_list ... ok
test vm:::tests:::sequences:::test_simple_list_assert_max_len ... ok
test vm:::tests:::sequences:::test_simple_map_buffer ... ok
test vm:::tests:::sequences:::test_simple_map_list ... ok
test vm:::tests:::sequences:::test_simple_map_append ... ok
test vm:::tests:::sequences:::test_index_of ... ok
test vm:::tests:::sequences:::test_simple_buff_replace_at ... ok
test vm:::tests:::sequences:::test_simple_list_concat ... ok
test vm:::tests:::sequences:::test_string_ascii_admission ... ok
test vm:::tests:::sequences:::test_slice_ascii ... ok
test vm:::tests:::sequences:::test_string_ascii_concat ... ok
test vm:::tests:::sequences:::test_slice_buff ... ok
test vm:::tests:::sequences:::test_slice_utf8 ... ok
test vm:::tests:::sequences:::test_slice_list ... ok
test vm:::tests:::sequences:::test_string_ascii_fold ... ok
test vm:::tests:::sequences:::test_string_ascii_filter ... ok
test vm:::tests:::sequences:::test_simple_string_ascii_replace_at ... ok
test vm:::tests:::sequences:::test_simple_list_replace_at ... ok
test vm:::tests:::sequences:::test_string_ascii_get_len ... ok
test vm:::tests:::sequences:::test_string_ascii_map ... ok
test vm:::tests:::sequences:::test_string_utf8_concat ... ok
test vm:::tests:::sequences:::test_string_utf8_admission ... ok
test vm:::tests:::sequences:::test_string_utf8_get_len ... ok
test vm:::tests:::sequences:::test_string_utf8_fold ... ok
test vm:::tests:::sequences:::test_string_utf8_filter ... ok
test vm:::tests:::sequences:::test_string_utf8_map ... ok
test vm:::tests:::simple_apply_eval:::test_2053_stacked_user_funcs ... ok
test vm:::tests:::sequences:::test_string_ascii_max_len ... ok
test vm:::tests:::simple_apply_eval:::test_asserts_short_circuit ... ok
test vm:::tests:::simple_apply_eval:::test_asserts ... ok
test vm:::tests:::sequences:::test_string_utf8_max_len ... ok
test vm:::tests:::sequences:::test_simple_string_utf8_replace_at ... ok
test vm:::tests:::sequences:::test_variadic_map_list ... ok
test vm:::tests:::simple_apply_eval:::test_chain_id ... ok
test vm:::tests:::simple_apply_eval:::test_buffer_equality ... ok
test vm:::tests:::simple_apply_eval:::merge_update_type_signature_2239 ... ok
test vm:::tests:::simple_apply_eval:::test_bad_lets ... ok
test vm:::tests:::simple_apply_eval:::test_concat_append_supertype ... ok
test vm:::tests:::simple_apply_eval:::test_from_consensus_buff_type_checks ... ok
test vm:::tests:::simple_apply_eval:::test_doubly_defined_persisted_vars ... ok
test vm:::tests:::simple_apply_eval:::test_lets ... ok
test vm:::tests:::simple_apply_eval:::test_keccak256 ... ok
test vm:::tests:::simple_apply_eval:::test_bool_functions ... ok
test vm:::tests:::simple_apply_eval:::test_is_mainnet ... ok
test vm:::tests:::simple_apply_eval:::test_principal_equality ... ok
test vm:::tests:::simple_apply_eval:::test_principal_of_fix ... ok
test vm:::tests:::simple_apply_eval:::test_hash_errors ... ok
test vm:::tests:::simple_apply_eval:::test_from_consensus_buff_missed_expectations ... ok
test vm:::tests:::simple_apply_eval:::test_secp256k1 ... ok
test vm:::tests:::simple_apply_eval:::test_sha256 ... ok
```

```
test vm::tests::simple_apply_eval::test_sequence_comparisons_clarity1 ... ok
test vm::tests::simple_apply_eval::test_secp256k1_errors ... ok
test vm::tests::simple_apply_eval::test_options_errors ... ok
test vm::tests::simple_apply_eval::test_sequence_comparisons_mismatched_types ... ok
test vm::tests::simple_apply_eval::test_sha512 ... ok
test vm::tests::simple_apply_eval::test_sha512trunc256 ... ok
test vm::tests::simple_apply_eval::test_option_destructs ... ok
test vm::tests::simple_apply_eval::test_bitwise ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_02_EPOCH2_05 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_03_EPOCH21 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_01_EPOCH20 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_04_EPOCH21 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_05_EPOCH22 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_06_EPOCH22 ... ok
test vm::tests::simple_apply_eval::test_sequence_comparisons_clarity2 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_07_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_02_EPOCH2_05 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_01_EPOCH20 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_03_EPOCH21 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_04_EPOCH21 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_06_EPOCH22 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_05_EPOCH22 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_07_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_08_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_09_EPOCH24 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_10_EPOCH24 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_12_EPOCH25 ... ok
test vm::tests::simple_apply_eval::test_simple_if_functions::case_11_EPOCH25 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_01_EPOCH20 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_02_EPOCH2_05 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_03_EPOCH21 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_04_EPOCH21 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_05_EPOCH22 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_06_EPOCH22 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_07_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_09_EPOCH24 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_08_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_11_EPOCH25 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_10_EPOCH24 ... ok
test vm::tests::simple_apply_eval::test_simple_let::case_12_EPOCH25 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_08_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_10_EPOCH24 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_11_EPOCH25 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_12_EPOCH25 ... ok
test vm::tests::simple_apply_eval::test_simple_arithmetic_errors::case_09_EPOCH24 ... ok
test vm::tests::simple_apply_eval::test_to_consensus_buff_too_big ... ok
test vm::tests::traits::test_bad_call_with_trait::case_01_EPOCH20 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_03_EPOCH21 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_02_EPOCH2_05 ... ok
test vm::tests::simple_apply_eval::test_some ... ok
test vm::tests::simple_apply_eval::test_unsigned_arithmetic ... ok
test vm::tests::traits::test_bad_call_with_trait::case_05_EPOCH22 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_06_EPOCH22 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_04_EPOCH21 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_07_EPOCH23 ... ok
test vm::tests::simple_apply_eval::test_stx_ops_errors ... ok
test vm::tests::traits::test_bad_call_with_trait::case_10_EPOCH24 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_08_EPOCH23 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_11_EPOCH25 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_09_EPOCH24 ... ok
test vm::tests::traits::test_bad_call_with_trait::case_12_EPOCH25 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_02_EPOCH2_05 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_01_EPOCH20 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_03_EPOCH21 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_04_EPOCH21 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_05_EPOCH22 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_06_EPOCH22 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_08_EPOCH23 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_07_EPOCH23 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_11_EPOCH25 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_09_EPOCH24 ... ok
test vm::tests::traits::test_contract_of_no_impl::case_10_EPOCH24 ... ok
```



```
test vm::types::serialization::tests::test_string_utf8::case_01_Epoch20 ... ok
test vm::types::serialization::tests::test_string_utf8::case_03_Epoch21 ... ok
test vm::types::serialization::tests::test_string_utf8::case_02_Epoch2_05 ... ok
test vm::types::serialization::tests::test_string_utf8::case_04_Epoch21 ... ok
test vm::types::serialization::tests::test_string_utf8::case_05_Epoch22 ... ok
test vm::types::serialization::tests::test_string_utf8::case_06_Epoch22 ... ok
test vm::types::serialization::tests::test_string_utf8::case_07_Epoch23 ... ok
test vm::types::serialization::tests::test_string_utf8::case_08_Epoch23 ... ok
test vm::types::serialization::tests::test_string_utf8::case_09_Epoch24 ... ok
test vm::types::serialization::tests::test_string_utf8::case_10_Epoch24 ... ok
test vm::types::serialization::tests::test_string_utf8::case_11_Epoch25 ... ok
test vm::types::serialization::tests::test_string_utf8::case_12_Epoch25 ... ok
test vm::types::serialization::tests::test_uints ... ok
test vm::types::serialization::tests::test_tuples ... ok
test vm::types::serialization::tests::try_deser_large_list ... ok
test vm::types::serialization::tests::try_deser_large_tuple ... ok
test vm::types::serialization::tests::test_vectors ... ok
test vm::types::serialization::tests::try_overflow_stack ... ok
test vm::types::signatures::test::test_construction::case_03_Epoch21 ... ok
test vm::types::signatures::test::test_construction::case_04_Epoch21 ... ok
test vm::types::signatures::test::test_construction::case_05_Epoch22 ... ok
test vm::types::signatures::test::test_construction::case_07_Epoch23 ... ok
test vm::types::signatures::test::test_construction::case_06_Epoch22 ... ok
test vm::types::signatures::test::test_construction::case_08_Epoch23 ... ok
test vm::types::signatures::test::test_construction::case_09_Epoch24 ... ok
test vm::types::signatures::test::test_construction::case_10_Epoch24 ... ok
test vm::types::signatures::test::test_construction::case_01_Epoch20 ... ok
test vm::types::signatures::test::test_construction::case_11_Epoch25 ... ok
test vm::types::signatures::test::test_construction::case_12_Epoch25 ... ok
test vm::types::signatures::test::test_construction::case_02_Epoch2_05 ... ok
test vm::types::signatures::test::test_least_supertype ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_01_Epoch20 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_04_Epoch21 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_03_Epoch21 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_02_Epoch2_05 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_07_Epoch23 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_05_Epoch22 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_06_Epoch22 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_08_Epoch23 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_11_Epoch25 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_12_Epoch25 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_09_Epoch24 ... ok
test vm::types::signatures::test::type_of_list_of_buffs::case_10_Epoch24 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_03_Epoch21 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_01_Epoch20 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_04_Epoch21 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_02_Epoch2_05 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_05_Epoch22 ... ok
test vm::types::test::expect_buff ... ok
test vm::types::test::expect_buff_too_small - should panic ... ok
test vm::types::test::simple_size_test ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_06_Epoch22 ... ok
test vm::types::test::simple_tuple_get_test ... ok
test vm::types::test::test_some_displays ... ok
test vm::types::test::test_constructors ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_07_Epoch23 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_08_Epoch23 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_09_Epoch24 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_10_Epoch24 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_11_Epoch25 ... ok
test vm::types::signatures::test::type_signature_way_too_big::case_12_Epoch25 ... ok
```

```
test result: ok. 2724 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 1.70s
```

```
Running unittests src/libsigner.rs (target/debug/deps/libsigner-18ee99e4974bb527)
```

```
running 17 tests
test events::tests::test_get_signers_db_signer_set_message_id ... ok
test messages::test::signer_slots_count_is_sane ... ok
test messages::test::serde_block_response ... ok
test tests::http::test_decode_http_body ... ok
test messages::test::serde_block_rejection ... ok
```

```
test tests::http::test_decode_http_request_err ... ok
test messages::test::serde_point_scalar ... ok
test tests::http::test_decode_http_response_err ... ok
test tests::http::test_decode_http_response_ok ... ok
test tests::http::test_decode_http_request_ok ... ok
test tests::http::test_run_http_request_with_body ... ok
test tests::http::test_run_http_request_no_body ... ok
test messages::test::serde_reject_code ... ok
test messages::test::serde_signer_message ... ok
test messages::test::serde_packet ... ok
test tests::test_status_endpoint ... ok
test tests::test_simple_signer ... ok
```

```
test result: ok. 17 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 5.01s
```

```
Running unittests src/libstackerdb.rs (target/debug/deps/libstackerdb-587a8bef191fd315)
```

```
running 2 tests
test tests::test_stackerdb_paths ... ok
test tests::test_stackerdb_slot_metadata_sign_verify ... ok
```

```
test result: ok. 2 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s
```

```
Running unittests src/lib.rs (target/debug/deps/pox_locking-c069268e8f82935e)
```

```
running 0 tests
```

```
test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s
```

```
Running unittests src/main.rs (target/debug/deps/relay_server-ef8b168683758ae4)
```

```
running 12 tests
test http::tests::incomplete_content_test ... ok
test http::tests::incomplete_message_test ... ok
test http::tests::invalid_message_test ... ok
test http::tests::no_content_test ... ok
test http::tests::test ... ok
test server::test::test ... ok
test state::tests::state_test ... ok
test url::tests::empty_test ... ok
test url::tests::no_query_test ... ok
test url::tests::one_item_test ... ok
test url::tests::three_items_test ... ok
test url::tests::two_items_test ... ok
```

```
test result: ok. 12 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s
```

```
Running unittests src/libcommon.rs (target/debug/deps/stacks_common-dfe7a0757cd5ffea)
```

```
running 413 tests
test address::c32::test::test_ascii_only ... ok
test address::c32::test::test_normalize ... ok
test address::c32::test::test_simple ... ok
test address::b58::tests::test_base58_decode ... ok
test address::b58::tests::test_base58_encode ... ok
test address::b58::tests::test_base58_roundtrip ... ok
test address::c32::test::test_addresses ... ok
test address::test::test_public_keys_to_address_hash ... ok
test bitvec::test::zeros_constructor ... ok
test deps_common::bech32::tests::check_base32 ... ok
test deps_common::bech32::tests::from_base32 ... ok
test deps_common::bech32::tests::getters ... ok
test deps_common::bech32::tests::invalid_conversion ... ok
test deps_common::bech32::tests::invalid_strings ... ok
test deps_common::bech32::tests::reverse_charset ... ok
test deps_common::bech32::tests::convert_bits_invalid_bit_size ... ok
test deps_common::bech32::tests::roundtrip_without_checksum ... ok
test deps_common::bech32::tests::test_encode ... ok
test deps_common::bech32::tests::test_hrp_case ... ok
test deps_common::bech32::tests::to_base32 ... ok
test deps_common::bech32::tests::valid_checksum ... ok
test deps_common::bech32::tests::valid_conversion ... ok
```

```
test deps_common::bech32::tests::write_with_checksum ... ok
test deps_common::bech32::tests::write_without_checksum ... ok
test deps_common::bech32::tests::write_with_checksum_on_drop ... ok
test deps_common::bitcoin::blockdata::block::tests::block_test ... ok
test deps_common::bitcoin::blockdata::block::tests::compact_roundtrip_test ... ok
test deps_common::bitcoin::blockdata::block::tests::segwit_block_test ... ok
test deps_common::bitcoin::blockdata::constants::test::testnet_genesis_full_block ... ok
test deps_common::bitcoin::blockdata::constants::test::bitcoin_genesis_first_transaction ... ok
test deps_common::bitcoin::blockdata::script::test::op_return_test ... ok
test deps_common::bitcoin::blockdata::constants::test::bitcoin_genesis_full_block ... ok
test deps_common::bitcoin::blockdata::script::test::script ... ok
test deps_common::bitcoin::blockdata::script::test::p2sh_p2wsh_conversion ... ok
test deps_common::bitcoin::blockdata::script::test::provably_unspendable_test ... ok
test deps_common::bitcoin::blockdata::script::test::script_builder ... ok
test deps_common::bitcoin::blockdata::script::test::script_debug_display ... ok
test deps_common::bitcoin::blockdata::script::test::script_ord ... ok
test deps_common::bitcoin::blockdata::script::test::script_p2sh_p2p2k_template ... ok
test deps_common::bitcoin::blockdata::script::test::script_serialize ... ok
test deps_common::bitcoin::blockdata::script::test::scriptint_round_trip ... ok
test deps_common::bitcoin::blockdata::script::test::test_iterator ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_is_coinbase ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_ntxid ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_segwit_signature_hash ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_transaction ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_txid ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_txin ... ok
test deps_common::bitcoin::network::address::test::deserialize_address_test ... ok
test deps_common::bitcoin::network::address::test::onion_test ... ok
test deps_common::bitcoin::network::address::test::serialize_address_test ... ok
test deps_common::bitcoin::network::constants::tests::serialize_test ... ok
test deps_common::bitcoin::network::address::test::test_socket_addr ... ok
test deps_common::bitcoin::network::constants::tests::string_test ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_box_test ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_checkeddata_test ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_int_test ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_nonminimal_vec ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_option_test ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_strbuf_test ... ok
test deps_common::bitcoin::network::encodable::tests::deserialize_vec_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_box_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_checkeddata_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_int_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_option_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_strbuf_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_varint_test ... ok
test deps_common::bitcoin::network::encodable::tests::serialize_vector_test ... ok
test deps_common::bitcoin::network::message::test::deserialize_commandstring_test ... ok
test deps_common::bitcoin::blockdata::transaction::tests::test_sighash ... ok
test deps_common::bitcoin::network::message::test::serialize_commandstring_test ... ok
test deps_common::bitcoin::network::message::test::serialize_getaddr_test ... ok
test deps_common::bitcoin::network::message::test::serialize_mempool_test ... ok
test deps_common::bitcoin::network::message::test::serialize_ping_test ... ok
test deps_common::bitcoin::network::message::test::serialize_verack_test ... ok
test deps_common::bitcoin::network::message_blockdata::tests::getblocks_message_test ... ok
test deps_common::bitcoin::network::message_blockdata::tests::getheaders_message_test ... ok
test deps_common::bitcoin::network::message_network::tests::version_message_test ... ok
test deps_common::bitcoin::util::hash::tests::test_consensus_encode_roundtrip ... ok
test deps_common::bitcoin::util::hash::tests::test_sighash_single_vec ... ok
test deps_common::bitcoin::util::hash::tests::test_sha256d ... ok
test deps_common::bitcoin::util::hash::tests::test_sha256d_data ... ok

test deps::ctrlc::tests::test_set_handler ... test deps_common::httpparse::tests::test_chunk_size ... ok
test deps_common::httpparse::tests::test_request_empty_lines_prefix ... ok
test deps_common::httpparse::tests::test_request_empty_lines_prefix_lf_only ... ok
ok

test deps_common::httpparse::tests::test_request_header_value_htab_long ... ok
test deps_common::bitcoin::util::hash::tests::sha256d_encoder ... ok
test deps_common::httpparse::tests::test_request_header_value_htab_short ... ok
test deps_common::ctrlc::tests::test_signal_handler ... ok
test deps_common::httpparse::tests::test_request_header_value_htab_med ... ok
test deps_common::httpparse::tests::test_request_headers ... ok
```

```
test deps_common::httpparse::tests::test_request_headers_max ... ok
test deps_common::httpparse::tests::test_request_headers_optional_whitespace ... ok
test deps_common::httpparse::tests::test_request_multibyte ... ok
test deps_common::httpparse::tests::test_request_newlines ... ok
test deps_common::httpparse::tests::test_request_partial ... ok
test deps_common::httpparse::tests::test_request_partial_version ... ok
test deps_common::httpparse::tests::test_request_path_backslash ... ok
test deps_common::httpparse::tests::test_request_simple ... ok
test deps_common::httpparse::tests::test_request_simple_with_query_params ... ok
test deps_common::httpparse::tests::test_request_with_invalid_but_short_version ... ok
test deps_common::httpparse::tests::test_request_simple_with_whatwg_query_params ... ok
test deps_common::httpparse::tests::test_request_with_invalid_token_delimiter ... ok
test deps_common::httpparse::tests::test_response_code_missing_space ... ok
test deps_common::httpparse::tests::test_response_empty_lines_prefix_lf_only ... ok
test deps_common::httpparse::tests::test_response_newlines ... ok
test deps_common::httpparse::tests::test_response_reason_missing ... ok
test deps_common::httpparse::tests::test_response_reason_missing_no_space ... ok
test deps_common::httpparse::tests::test_response_reason_missing_no_space_with_headers ... ok
test deps_common::httpparse::tests::test_response_reason_with_nul_byte ... ok
test deps_common::httpparse::tests::test_response_reason_with_obsolete_text_byte ... ok
test deps_common::httpparse::tests::test_response_reason_with_space_and_tab ... ok
test deps_common::httpparse::tests::test_response_simple ... ok
test deps_common::httpparse::tests::test_response_version_missing_space ... ok
test deps_common::httpparse::tests::test_shrink ... ok
test deps_common::httpparse_tests::urltest_001 ... ok
test deps_common::httpparse_tests::urltest_002 ... ok
test deps_common::httpparse_tests::urltest_003 ... ok
test deps_common::httpparse_tests::urltest_004 ... ok
test deps_common::httpparse_tests::urltest_005 ... ok
test deps_common::httpparse_tests::urltest_006 ... ok
test deps_common::httpparse_tests::urltest_007 ... ok
test deps_common::httpparse_tests::urltest_008 ... ok
test deps_common::httpparse_tests::urltest_009 ... ok
test deps_common::httpparse_tests::urltest_010 ... ok
test deps_common::httpparse_tests::urltest_011 ... ok
test deps_common::httpparse_tests::urltest_012 ... ok
test deps_common::httpparse_tests::urltest_013 ... ok
test deps_common::httpparse_tests::urltest_014 ... ok
test deps_common::httpparse_tests::urltest_015 ... ok
test deps_common::httpparse_tests::urltest_016 ... ok
test deps_common::httpparse_tests::urltest_017 ... ok
test deps_common::httpparse_tests::urltest_018 ... ok
test deps_common::httpparse_tests::urltest_019 ... ok
test deps_common::httpparse_tests::urltest_020 ... ok
test deps_common::httpparse_tests::urltest_021 ... ok
test deps_common::httpparse_tests::urltest_022 ... ok
test deps_common::httpparse_tests::urltest_023 ... ok
test deps_common::httpparse_tests::urltest_024 ... ok
test deps_common::httpparse_tests::urltest_025 ... ok
test deps_common::httpparse_tests::urltest_026 ... ok
test deps_common::httpparse_tests::urltest_027 ... ok
test deps_common::httpparse_tests::urltest_028 ... ok
test deps_common::httpparse_tests::urltest_029 ... ok
test deps_common::httpparse_tests::urltest_030 ... ok
test deps_common::httpparse_tests::urltest_031 ... ok
test deps_common::httpparse_tests::urltest_032 ... ok
test deps_common::httpparse_tests::urltest_033 ... ok
test deps_common::httpparse_tests::urltest_034 ... ok
test deps_common::httpparse_tests::urltest_035 ... ok
test deps_common::httpparse_tests::urltest_036 ... ok
test deps_common::httpparse_tests::urltest_037 ... ok
test deps_common::httpparse_tests::urltest_038 ... ok
test deps_common::httpparse_tests::urltest_039 ... ok
test deps_common::httpparse_tests::urltest_040 ... ok
test deps_common::httpparse_tests::urltest_041 ... ok
test deps_common::httpparse_tests::urltest_042 ... ok
test deps_common::httpparse_tests::urltest_043 ... ok
test deps_common::httpparse_tests::urltest_046 ... ok
test deps_common::httpparse_tests::urltest_044 ... ok
test deps_common::httpparse_tests::urltest_047 ... ok
test deps_common::httpparse_tests::urltest_045 ... ok
test deps_common::httpparse_tests::urltest_048 ... ok
```



```
test util::chunked_encoding::test::test_http_chunked_encode ... ok
test util::chunked_encoding::test::test_http_chunked_decode_multi ... ok
test util::chunked_encoding::test::test_http_chunked_encode_multi ... ok
test util::hash::test::test_bin_str_roundtrip ... ok
test util::chunked_encoding::test::test_segment_reader ... ok
test util::hash::test::make_merkle_tree ... ok
test util::pipe::test::test_connection_pipe_oneshot ... ok
test util::retry::test::test_bound_reader ... ok
test util::retry::test::test_retry_reader ... ok
test util::secp256k1::tests::sk_from_seed ... ok
test util::secp256k1::tests::test_parse_serialize ... ok
test util::secp256k1::tests::test_parse_serialize_compressed ... ok
test util::secp256k1::tests::test_verify_benchmark_roundtrip ... ignored
test util::uint::tests::hex_codec ... ok
test util::uint::tests::mul_u32_test ... ok
test util::uint::tests::multiplication_test ... ok
test util::pipe::test::test_pipe_nonblocking_try_flush ... ok
test util::uint::tests::uint256_bits_test ... ok
test util::uint::tests::uint256_arithmetic_test ... ok
test util::uint::tests::uint256_comp_test ... ok
test util::uint::tests::uint256_bitslice_test ... ok
test util::uint::tests::uint256_display_test ... ok
test util::uint::tests::uint256_extreme_bitshift_test ... ok
test util::secp256k1::tests::test_verify ... ok
test util::uint::tests::uint_increment_test ... ok
test util::vrf::tests::check_valid_public_key ... ok
test util::vrf::tests::test_proof_codec ... ok
test util::vrf::tests::test_vrf_rfc ... ok
test util::pipe::test::test_connection_pipe_producer_consumer ... ok
test util::chunked_encoding::test::test_http_chunked_encode_decode_roundtrip ... ok
test address::c32::test::old_c32_validation ... ok
test util::pipe::test::test_pipe_nonblocking_try_flush_multiple_write ... ok
test util::vrf::tests::test_random_proof_roundtrip ... ok
test bitvec::test::vectors ... ok
```

test result: ok. 412 passed; 0 failed; 1 ignored; 0 measured; 0 filtered out; finished in 43.23s

Running unitests src/stacks_events.rs (target/debugdeps/stacks_events-[95b5c285ffa1e485](#))

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Running unitests src/main.rs (target/debugdeps/stacks_node-[1638423ab35339d0](#))

```
running 134 tests
test chain_data::tests::test_get_spend_and_win_distribution ... ok
test chain_data::tests::test_burn_dist_to_prob_dist ... ok
test config::tests::should_load_legacy_mstx_balances_toml ... ok
test config::tests::should_fail_to_load_invalid_affirmation_map ... ok
test config::tests::should_load_block_proposal_token ... ok
test config::tests::should_load_empty_affirmation_map ... ok
test config::tests::should_include_xenon_default_affirmation_overrides ... ok
test config::tests::should_load_affirmation_map ... ok
test config::tests::test_config_file ... ok
test keychain::tests::test_get_transaction_auth ... ok
test keychain::tests::test_get_address ... ok
test keychain::tests::test_origin_address ... ok
test tests::bitcoin_regtest::bitcoind_integration_test ... ignored
test tests::bitcoin_regtest::bitcoind_integration_test_segwit ... ignored
test operations::test::test_wif ... ok
test tests::epoch_205::bigger_microblock_streams_in_2_05 ... ignored
test tests::epoch_205::test_cost_limit_switch_version205 ... ignored
test tests::epoch_205::test_dynamic_db_method_costs ... ignored
test tests::epoch_205::test_exact_block_costs ... ignored
test tests::epoch_205::transition_empty_blocks ... ignored
test tests::epoch_21::test_pox_missing_five_anchor_blocks ... ignored
test tests::epoch_21::test_pox_reorg_flap_duel ... ignored
test tests::epoch_21::test_pox_reorg_flap_reward_cycles ... ignored
test tests::epoch_21::test_pox_reorg_one_flap ... ignored
test tests::epoch_21::test_pox_reorgs_three_flaps ... ignored
test tests::epoch_21::test_sortition_divergence_pre_21 ... ignored
```

```
test event_dispatcher::test::build_block_processed_event ... ok
test keychain::tests::test_sign_as_origin ... ok
test tests::epoch_21::test_v1_unlock_height_with_current_stackers ... ignored
test tests::epoch_21::test_v1_unlock_height_with_delay_and_current_stackers ... ignored
test tests::epoch_21::trait_invocation_cross_epoch ... ignored
test tests::epoch_21::transition_adds_burn_block_height ... ignored
test tests::epoch_21::transition_adds_get_pox_addr_recipients ... ignored
test tests::epoch_21::transition_adds_mining_from_segwit ... ignored
test tests::epoch_21::transition_adds_pay_to_alt_recipient_contract ... ignored
test tests::epoch_21::transition_adds_pay_to_alt_recipient_principal ... ignored
test tests::epoch_21::transition_empty_blocks ... ignored
test tests::epoch_21::transition_fixes_bitcoin_rigidity ... ignored
test tests::epoch_21::transition_removes_pox_sunset ... ignored
test tests::epoch_22::disable_pox ... ignored
test tests::epoch_22::pox_2_unlock_all ... ignored
test tests::epoch_22::test_pox_reorg_one_flap ... ignored
test tests::epoch_23::trait_invocation_behavior ... ignored
test tests::epoch_24::fix_to_pox_contract ... ignored
test tests::epoch_24::verify_auto_unlock_behavior ... ignored
test tests::epoch_25::microblocks_disabled ... ignored
test tests::integrations::integration_test_get_info ... ignored
test burnchains::bitcoin_regtest_controller::tests::test_get_satoshis_per_byte ... ok
test config::tests::test_config ... ok
test chain_data::tests::test_get_unconfirmed_commits ... ok
test tests::nakamoto_integrations::block_proposal_api_endpoint ... ignored
test tests::nakamoto_integrations::correct_burn_outs ... ignored
test tests::nakamoto_integrations::follower_bootup ... ignored
test tests::nakamoto_integrations::mine_multiple_per_tenure_integration ... ignored
test tests::nakamoto_integrations::miner_writes_proposed_block_to_stackerdb ... ignored
test tests::nakamoto_integrations::simple_neon_integration ... ignored
test tests::nakamoto_integrations::stack_stx_burn_op_integration_test ... ignored
test tests::nakamoto_integrations::vote_for_aggregate_key_burn_op ... ignored
test tests::neon_integrations::antientropy_integration_test ... ignored
test tests::neon_integrations::atlas_integration_test ... ignored
test tests::neon_integrations::atlas_stress_integration_test ... ignored
test tests::neon_integrations::bad_microblock_pubkey ... ignored
test tests::neon_integrations::bitcoin_reorg_flap ... ignored
test tests::neon_integrations::bitcoind_forking_test ... ignored
test tests::neon_integrations::bitcoind_integration_test ... ignored
test tests::neon_integrations::bitcoind_resubmission_test ... ignored
test tests::neon_integrations::block_large_tx_integration_test ... ignored
test tests::neon_integrations::block_limit_hit_integration_test ... ignored
test tests::neon_integrations::block_replay_integration_test ... ignored
test tests::neon_integrations::confirm_unparsed_ongoing_ops ... ignored
test tests::neon_integrations::cost_voting_integration ... ignored
test tests::neon_integrations::deep_contract ... ignored
test tests::neon_integrations::filter_long_runtime_tx_integration_test ... ignored
test tests::neon_integrations::filter_low_fee_tx_integration_test ... ignored
test tests::neon_integrations::filter_txs_by_origin ... ignored
test tests::neon_integrations::filter_txs_by_type ... ignored
test tests::neon_integrations::fuzzed_median_fee_rate_estimation_test_window10 ... ignored
test tests::neon_integrations::fuzzed_median_fee_rate_estimation_test_window5 ... ignored
test tests::neon_integrations::liquid_ustx_integration ... ignored
test tests::neon_integrations::lockup_integration ... ignored
test tests::neon_integrations::microblock_fork_poison_integration_test ... ignored
test tests::neon_integrations::microblock_integration_test ... ignored
test tests::neon_integrations::microblock_large_tx_integration_test_FLAKY ... ignored
test tests::neon_integrations::microblock_limit_hit_integration_test ... ignored
test tests::neon_integrations::microblock_miner_multiple_attempts ... ignored
test tests::neon_integrations::min_txs ... ignored
test tests::neon_integrations::miner_submit_twice ... ignored
test tests::neon_integrations::mining_events_integration_test ... ignored
test tests::neon_integrations::most_recent_utxo_integration_test ... ignored
test tests::neon_integrations::pox_integration_test ... ignored
test tests::neon_integrations::push_boot_receipts ... ignored
test tests::neon_integrations::run_with_custom_wallet ... ignored
test tests::neon_integrations::runtime_overflow_unconfirmed_microblocks_integration_test ... ignored
test tests::neon_integrations::should_fix_2771 ... ignored
test tests::neon_integrations::size_check_integration_test ... ignored
test tests::neon_integrations::size_overflow_unconfirmed_invalid_stream_microblocks_integration_test ...
ignored
test tests::neon_integrations::size_overflow_unconfirmed_microblocks_integration_test ... ignored
```

```
test tests::neon_integrations::size_overflow_unconfirmed_stream_microblocks_integration_test ... ignored
test tests::neon_integrations::stack_stx_burn_op_test ... ignored
test tests::neon_integrations::stx_delegate_btc_integration_test ... ignored
test tests::neon_integrations::stx_transfer_btc_integration_test ... ignored
test tests::neon_integrations::test_chainwork_first_intervals ... ignored
test tests::neon_integrations::test_chainwork_partial_interval ... ignored
test tests::neon_integrations::test_competing_miners_build_anchor_blocks_and_microblocks_on_same_chain
... ignored
test tests::neon_integrations::test_competing_miners_build_anchor_blocks_on_same_chain_without_rbf ...
ignored
test tests::neon_integrations::test_flash_block_skip_tenure ... ignored
test tests::neon_integrations::test_one_miner_build_anchor_blocks_on_same_chain_without_rbf ... ignored
test tests::neon_integrations::test_problematic_blocks_are_not_mined ... ignored
test tests::neon_integrations::test_problematic_blocks_are_not_relayed_or_stored ... ignored
test tests::neon_integrations::test_problematic_microblocks_are_not_mined ... ignored
test tests::neon_integrations::test_problematic_microblocks_are_not_relayed_or_stored ... ignored
test tests::neon_integrations::test_problematic_txs_are_not_stored ... ignored
test tests::neon_integrations::use_latest_tip_integration_test ... ignored
test tests::neon_integrations::vote_for_aggregate_key_burn_op_test ... ignored
test tests::should_succeed_handling malformed_and_valid_txs ... ignored
test tests::integrations::mine_contract_twice ... ok
test tests::signer::stackerdः_block_proposal ... ignored
test tests::signer::stackerdः_dkg ... ignored
test tests::signer::stackerdः_filter_bad_transactions ... ignored
test tests::signer::stackerdः_mine_2_nakamoto_reward_cycles ... ignored
test tests::signer::stackerdः_sign ... ignored
test tests::stackerdः::test_stackerdः_event_observer ... ignored
test tests::stackerdः::test_stackerdः_load_store ... ignored
test tests::test_btc_to_sat ... ok
test tests::test_btc_to_sat_errors ... ok
test tests::test_inner_pick_best_tip ... ok
test tests::test_sort_and_populate_candidates ... ok
test tests::mempool::mempool_setup_chainstate ... ok
test tests::integrations::mempool_errors ... ok
test tests::integrations::bad_contract_tx_rollback ... ok
test tests::integrations::mine_transactions_out_of_order ... ok
test tests::integrations::contract_stx_transfer ... ok
test tests::should_succeed_mining_valid_txs ... ok
test tests::integrations::block_limit_runtime_test ... ok
```

```
test result: ok. 30 passed; 0 failed; 104 ignored; 0 measured; 0 filtered out; finished in 34.49s
```

```
Running unitests src/lib.rs (target/debug/deps/stacks_signer-d0d651f2e006613e)
```

```
running 36 tests
test client::stacks_client::tests::broadcast_vote_for_aggregate_public_key_should_succeed ... ignored
test client::stacks_client::tests::build_vote_for_aggregate_public_key_should_succeed ... ignored
test cli::tests::test_parse_pox_addr ... ok
test client::stackerdः::tests::get_signer_transactions_with_retry_should_succeed ... ok
test client::stacks_client::tests::core_info_call_for_burn_block_height_should_fail ... ok
test client::stacks_client::tests::get_account_nonce_should_succeed ... ok
test client::stacks_client::tests::get_account_nonce_should_fail ... ok
test client::stacks_client::tests::get_node_epoch_should_fail ... ok
test client::stacks_client::tests::core_info_call_for_burn_block_height_should_succeed ... ok
test client::stacks_client::tests::get_last_round_should_succeed ... ok
test client::stacks_client::tests::get_aggregate_public_key_should_succeed ... ok
test client::stacks_client::tests::get_reward_set_should_succeed ... ok
test client::stacks_client::tests::parse_invalid_aggregate_public_key_should_fail ... ok
test client::stacks_client::tests::invalid_reward_cycle_should_fail ... ok
test client::stacks_client::tests::get_peer_info_should_succeed ... ok
test client::stacks_client::tests::parse_valid_signer_slots_should_succeed ... ok
test client::stacks_client::tests::parse_valid_aggregate_public_key_should_succeed ... ok
test client::stacks_client::tests::read_only_contract_call_200_failure ... ok
test client::stacks_client::tests::read_only_contract_call_200_success ... ok
test client::stacks_client::tests::read_only_contract_call_400_failure ... ok
test client::stacks_client::tests::get_vote_for_aggregate_public_key_should_succeed ... ok
test client::stacks_client::tests::get_node_epoch_should_succeed ... ok
test client::stacks_client::tests::transaction_contract_call_should_send_bytes_to_node ... ignored
test config::tests::build_signer_config_tomls_should_produce_deserializable_strings ... ok
test client::stacks_client::tests::read_only_contract_call_404_failure ... ok
test client::stacks_client::tests::read_only_contract_call_with_function_args_200_success ... ok
test client::stacks_client::tests::submit_block_for_validation_should_fail ... ok
```

```
test client::stacks_client::tests::submit_block_for_validation_should_succeed ... ok
test client::stacks_client::tests::valid_reward_cycle_should_succeed ... ok
test coordinator::tests::calculate_coordinator_different_consensus_hashes_produces_unique_results ... ok
test runloop::tests::parse_nakamoto_signer_entries_test ... ok
test signerdb::tests::test_basic_signer_db_in_memory ... ok
test coordinator::tests::calculate_coordinator_results_should_vary_or_match_based_on_hash ... ok
test signerdb::tests::test_update_block ... ok
test signerdb::tests::test_basic_signer_db ... ok
test client::stackerdb::tests::send_signer_message_with_retry_should_succeed ... ok
```

```
test result: ok. 33 passed; 0 failed; 3 ignored; 0 measured; 0 filtered out; finished in 0.52s
```

```
Running unitests src/main.rs (target/debug/deps/stacks_signer-13e4986e94bcbe45)
```

```
running 2 tests
test tests::test_generate_stacking_signature ... ok
test tests::test_stacking_signature_with_pox_code ... ok
```

```
test result: ok. 2 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.04s
```

```
Running unitests src/lib.rs (target/debug/deps/blockstack_lib-766d5973b8a5b761)
```

```
running 1167 tests
test burnchains::bitcoin::address::tests::test_from_b58 ... ok
test burnchains::bitcoin::address::tests::test_from_scriptpubkey ... ok
test burnchains::bitcoin::bits::tests::tx_input_segwit_p2wpkh_p2sh_structured ... ok
test burnchains::bitcoin::bits::tests::tx_input_multisig_structured ... ok
test burnchains::bitcoin::bits::tests::tx_input_segwit_p2wsh_multisig_p2sh_structured ... ok
test burnchains::bitcoin::address::tests::test_from_bech32 ... ok
test burnchains::bitcoin::bits::tests::tx_input_singlesig_structured ... ok
test burnchains::bitcoin::bits::tests::tx_input_strange_structured ... ok
test burnchains::bitcoin::bits::tests::test_input_taproot ... ok
test burnchains::bitcoin::bits::tests::tx_input_strange_raw ... ok
test burnchains::bitcoin::bits::tests::tx_output_p2pkh ... ok
test burnchains::bitcoin::bits::tests::tx_output_p2sh ... ok
test burnchains::bitcoin::bits::tests::tx_output_segwit ... ok
test burnchains::bitcoin::bits::tests::tx_output_strange_legacy ... ok
test burnchains::bitcoin::blocks::tests::maybe_burnchain_tx_test_2_05 ... ok
test burnchains::bitcoin::blocks::tests::parse_tx_strange_2_05 ... ok
test burnchains::bitcoin::blocks::tests::parse_tx_test_2_05 ... ok
test burnchains::bitcoin::blocks::tests::parse_tx_test_2_1 ... ok
test burnchains::bitcoin::indexer::test::test_indexer_sync_headers ... ok
test burnchains::bitcoin::indexer::test::test_spv_check_work_reorg_accepted ... ok
test burnchains::bitcoin::indexer::test::test_spv_check_work_reorg_ignored ... ok
test burnchains::bitcoin::blocks::tests::parse_block ... ok
test burnchains::bitcoin::spv::test::test_spv_check_pow ... ok
test burnchains::bitcoin::spv::test::test_spv_check_work_bad_blocks_rejected ... ok
test burnchains::bitcoin::spv::test::test_spv_mainnet_genesis_header ... ok
test burnchains::bitcoin::spv::test::test_handle_headers_empty ... ok
test burnchains::bitcoin::spv::test::test_spv_load_store_header ... ok
test burnchains::bitcoin::spv::test::test_spv_store_headers_after ... ok
test burnchains::bitcoin::spv::test::test_spv_store_headers_before ... ok
test burnchains::tests::affirmation::affirmation_map_encode_decode ... ok
test burnchains::tests::affirmation::affirmation_map_find_divergence ... ok
test burnchains::tests::affirmation::affirmation_map_find_inv_search ... ok
test burnchains::bitcoin::indexer::test::test_check_header_timestamp ... ok
test burnchains::tests::affirmation::test_filter_missed_block_commits ... ok
test burnchains::tests::affirmation::test_find_heaviest_block_commit ... ok
test burnchains::tests::affirmation::test_filter_orphan_block_commits ... ok
test burnchains::bitcoin::indexer::test::test_indexer_find_bitcoin_reorg_genesis ... ok
test burnchains::bitcoin::indexer::test::test_indexer_find_bitcoin_reorg_midpoint ... ok
test burnchains::tests::affirmation::test_find_heaviest_parent_commit_many_commits ... ok
test burnchains::tests::affirmation::test_parent_block_commits ... ok
test burnchains::tests::affirmation::test_read_prepare_phase_commits ... ok
test burnchains::tests::affirmation::test_update_pox_affirmation_fork_2_cycles ... ok
test burnchains::tests::affirmation::test_update_pox_affirmation_fork_duel ... ok
test burnchains::bitcoin::spv::test::test_witness_size ... ok
test burnchains::tests::affirmation::test_update_pox_affirmation_maps_unique_anchor_block ... ok
test burnchains::tests::db::test_classify_delegate_stx ... ok
test burnchains::tests::affirmation::test_update_pox_affirmation_maps_3_forks ... ok
test burnchains::tests::db::test_classify_stack_stx ... ok
test burnchains::tests::affirmation::test_update_pox_affirmation_maps_nothing ... ok
```

```
test burnchains::tests::db::test_store_and_fetch ... ok
test burnchains::tests::db::test_get_commit_at ... ok
test burnchains::tests::db::test_get_set_check_anchor_block ... ok
test burnchains::tests::db::test_update_block_descendancy ... ok
test burnchains::tests::db::test_update_block_descendancy_with_fork ... ok
test burnchains::tests::burnchain::test_process_block_ops ... ok
test chainstate::burn::db::processing::tests::test_initial_block_reward ... ok
test burnchains::tests::affirmation::test_update_pox_affirmation_maps_absent ... ok
test chainstate::burn::db::sortdb::tests::get_block_burn_amount ... ok
test chainstate::burn::db::sortdb::tests::has_VRF_public_key ... ok
test chainstate::burn::db::sortdb::tests::get_last_snapshot_with_sortition ... ok
test chainstate::burn::db::sortdb::tests::test_bad_epochs_discontinuous - should panic ... ok
test chainstate::burn::db::sortdb::tests::test_bad_epochs_invalid - should panic ... ok
test chainstate::burn::db::sortdb::tests::test_bad_epochs_missing_future - should panic ... ok
test chainstate::burn::db::sortdb::tests::test_bad_epochs_missing_past - should panic ... ok
test chainstate::burn::db::sortdb::tests::test_bad_epochs_overlapping - should panic ... ok
test burnchains::tests::burnchain::test_burn_snapshot_sequence ... ok
test burnchains::tests::mine_10_stacks_blocks_1_fork ... ok
test chainstate::burn::db::sortdb::tests::test_descended_from ... ok
test burnchains::tests::mine_10_stacks_blocks_2_forks_disjoint_same_blocks ... ok
test burnchains::tests::mine_10_stacks_blocks_2_forks_disjoint ... ok
test chainstate::burn::db::sortdb::tests::test_epoch_switch_205 ... ok
test chainstate::burn::db::sortdb::tests::test_get_ancestor_burnchain_header_hashes ... ok
test chainstate::burn::db::sortdb::tests::test_get_set_ast_rules ... ok
test chainstate::burn::db::sortdb::tests::test_epoch_switch_21 ... ok
test chainstate::burn::db::sortdb::tests::test_insert_block_commit ... ok
test chainstate::burn::db::sortdb::tests::test_insert_leader_key ... ok
test chainstate::burn::db::sortdb::tests::test_get_chosen_pox_anchor ... ok
test chainstate::burn::db::sortdb::tests::test_instantiate ... ok
test chainstate::burn::db::sortdb::tests::test_load_store_burnchain_ops ... ok
test chainstate::burn::db::sortdb::tests::test_stacks_tip_tiebreaker ... ok
test chainstate::burn::db::sortdb::tests::test_tx_begin_end ... ok
test chainstate::burn::db::sortdb::tests::test_stacks_block_accepted_out_of_order ... ok
test chainstate::burn::distribution::tests::make_burn_distribution ... ok
test chainstate::burn::distribution::tests::make_mean_min_median ... ok
test chainstate::burn::distribution::tests::make_mean_min_median_sunset_in_window ... ok
test chainstate::burn::distribution::tests::missed_block_commits ... ok
test chainstate::burn::operations::delegate_stx::tests::test_parse_delegate_stx ... ok
test chainstate::burn::operations::delegate_stx::tests::test_parse_delegate_stx_height_is_none ... ok
test chainstate::burn::operations::delegate_stx::tests::test_parse_delegate_stx_pox_addr_is_none ... ok
test chainstate::burn::operations::delegate_stx::tests::test_parse_delegate_stx_too_short ... ok
test chainstate::burn::operations::delegate_stx::tests::test_parse_delegate_stx_wrong_op_code ... ok
test chainstate::burn::operations::delegate_stx::tests::test_parse_delegate_stx_zero_outputs ... ok
test chainstate::burn::db::sortdb::tests::test_v1_to_v2_migration ... ok
test chainstate::burn::operations::leader_block_commit::tests::test_check ... ok
test chainstate::burn::db::sortdb::tests::test_set_stacks_block_accepted ... ok
test chainstate::burn::operations::leader_block_commit::tests::test_parse ... ok
test chainstate::burn::operations::leader_block_commit::tests::test_parse_pox_commits ... ok
test chainstate::burn::operations::leader_block_commit::tests::test_parse_sunset_end ... ok
test chainstate::burn::operations::leader_block_commit::tests::test_check_2_1 ... ok
test chainstate::burn::operations::leader_key_register::tests::test_parse ... ok
test chainstate::burn::operations::stack_stx::tests::test_parse_pre_stack_stx ... ok
test chainstate::burn::operations::stack_stx::tests::test_parse_pre_stack_stx_sunset ... ok
test chainstate::burn::operations::stack_stx::tests::test_parse_stack_stx ... ok
test chainstate::burn::operations::stack_stx::tests::test_parse_stack_stx_signer_key_is_none ... ok
test chainstate::burn::operations::stack_stx::tests::test_parse_stack_stx_sunset ... ok
test chainstate::burn::operations::stack_stx::tests::test_stack_stx_op_script_len ... ok
test chainstate::burn::operations::test::serialization::test_serialization_delegate_stx_op ... ok
test chainstate::burn::operations::test::serialization::test_serialization_pre_stx_op ... ok
test chainstate::burn::operations::test::serialization::test_serialization_stack_stx_op ... ok
test chainstate::burn::operations::test::serialization::test_serialization_stack_stx_op_with_signer_key ... ok
test chainstate::burn::operations::test::serialization::test_serialization_transfer_stx_op ... ok
test chainstate::burn::operations::test::serialization::test_serialization_vote_for_aggregate_key_op ... ok
test chainstate::burn::operations::transfer_stx::tests::test_parse_transfer_stx ... ok
test chainstate::burn::operations::vote_for_aggregate_key::tests::test_key_validation ... ok
test chainstate::burn::operations::vote_for_aggregate_key::tests::test_parse_vote_tx_signer_key ... ok
test chainstate::burn::operations::vote_for_aggregate_key::tests::test_raw_input_signer_key ... ok
test chainstate::burn::operations::vote_for_aggregate_key::tests::test_vote_tx_data ... ok
test chainstate::burn::operations::leader_key_register::tests::test_check ... ok
test chainstate::burn::sortition::test::make_snapshot_no_sortition ... ok
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test chainstate::burn::operations::leader_block_commit::tests::test_epoch_marker ... ok
test chainstate::burn::db::sortdb::tests::is_fresh_consensus_hash ... ok
test chainstate::burn::db::sortdb::tests::test_get_stacks_header_hashes ... ok
test chainstate::burn::tests::get_prev_consensus_hashes ... ok
test chainstate::coordinator::tests::atlas_stop_start ... ok
test chainstate::burn::db::sortdb::tests::test_chain_reorg ... ok
test chainstate::coordinator::tests::test_check_chainstate_db_versions ... ok
test chainstate::burn::db::sortdb::tests::get_consensus_at ... ok
test chainstate::coordinator::tests::test_epoch_switch_cost_contract_instantiation ... ok
test chainstate::coordinator::tests::test_epoch_switch_pox_2_contract_instantiation ... ok
test chainstate::coordinator::tests::test_epoch_switch_pox_3_contract_instantiation ... ok
test chainstate::coordinator::tests::test_epoch_verify_active_pox_contract ... ok
test chainstate::coordinator::tests::test_initial_coinbase_reward_distributions ... ok
test chainstate::coordinator::tests::missed_block_commits_2_05 ... ok
test chainstate::coordinator::tests::late_block_commits_2_1 ... ok
test chainstate::coordinator::tests::test_delegate_stx_btc_ops ... ok
test burnchains::bitcoin::indexer::test::test_should_keep_running_halts_handshake ... ok
test chainstate::coordinator::tests::missed_block_commits_2_1 ... ok
test chainstate::coordinator::tests::test_pox_no_anchor_selected ... ok
test chainstate::coordinator::tests::test_pox_fork_out_of_order ... ok
test chainstate::coordinator::tests::test_pox_processable_block_in_different_pox_forks - should panic ...
ok
test chainstate::coordinator::tests::test_pox_btc_ops ... ok
test chainstate::nakamoto::coordinator::tests::test_nakamoto_chainstate_getters ... ok
test chainstate::coordinator::tests::test_sortition_with_burner_reward_set ... ok
test chainstate::coordinator::tests::test_sortition_with_reward_set ... ok
test chainstate::coordinator::tests::test_stx_transfer_btc_ops ... ok
test chainstate::nakamoto::tests::codec_nakamoto_header ... ok
test chainstate::nakamoto::tests::filter_one_transaction_per_signer_duplicate_nonces ... ok
test chainstate::nakamoto::tests::filter_one_transaction_per_signer_multiple_addresses ... ok
test chainstate::nakamoto::tests::parse_vote_for_aggregate_public_key_invalid ... ok
test chainstate::nakamoto::tests::parse_vote_for_aggregate_public_key_valid ... ok
test chainstate::nakamoto::coordinator::tests::test_simple_nakamoto_coordinator_bootup ... ok
test chainstate::nakamoto::tests::test_load_store_update_nakamoto_blocks ... ok
test chainstate::nakamoto::tests::test_get_highest_nakamoto_tenure ... ok
test chainstate::nakamoto::tests::test_nakamoto_block_static_verification ... ok
test chainstate::nakamoto::tests::test_nakamoto_first_tenure_block_syntactic_validation ... ok
test chainstate::nakamoto::tests::valid_vote_transaction ... ok
test chainstate::nakamoto::tests::valid_vote_transaction_malformed_transactions ... ok
test chainstate::stacks::address::test::test_as_clarity_tuple ... ok
test chainstate::stacks::address::test::test_pox_addr_from_b58 ... ok
test chainstate::stacks::address::test::test_to_bitcoin_tx_out ... ok
test chainstate::stacks::address::test::try_from_bitcoin_output ... ok
test chainstate::stacks::address::test::test_try_from_pox_tuple ... ok
test chainstate::stacks::address::test::tx_stacks_address_codec ... ok
test chainstate::stacks::address::test::tx_stacks_address_valid_p2pkh ... ok
test chainstate::stacks::address::test::tx_stacks_address_valid_p2sh ... ok
test chainstate::stacks::address::test::tx_stacks_address_valid_p2wpkh ... ok
test chainstate::stacks::address::test::tx_stacks_address_valid_p2wsh ... ok
test chainstate::stacks::auth::test::tx_stacks_auth ... ok
test chainstate::stacks::auth::test::tx_stacks_invalid_spending_conditions ... ok
test chainstate::stacks::auth::test::tx_stacks_signature ... ok
test chainstate::stacks::auth::test::tx_stacks_spending_condition_p2pkh ... ok
test chainstate::stacks::auth::test::tx_stacks_spending_condition_p2sh ... ok
test chainstate::stacks::auth::test::tx_stacks_spending_condition_p2wpkh ... ok
test chainstate::stacks::auth::test::tx_stacks_spending_condition_p2wsh ... ok
test chainstate::stacks::block::test::codec_stacks_block ... ok
test chainstate::stacks::block::test::codec_stacks_block_ecvrf_proof ... ok
test chainstate::stacks::block::test::codec_stacks_block_header ... ok
test chainstate::stacks::block::test::codec_stacks_block_work_score ... ok
test chainstate::stacks::block::test::codec_stacks_microblock ... ok
test chainstate::stacks::block::test::codec_stacks_microblock_header ... ok
test chainstate::stacks::block::test::stacks_block_invalid ... ok
test chainstate::stacks::block::test::stacks_header_validate_burnchain ... ok
test chainstate::stacks::block::test::stacks_microblock_invalid ... ok
test chainstate::stacks::block::test::stacks_microblock_sign_verify ... ok
test chainstate::stacks::block::test::stacks_microblock_sign_verify_uncompressed ... ok
test chainstate::stacks::block::test::test_block_validate_transactions_static ... ok
test chainstate::stacks::boot::contract_tests::cost_2_contract_is_arithmetic_only ... ok
test chainstate::stacks::boot::contract_tests::cost_contract_is_arithmetic_only ... ok
test chainstate::stacks::boot::contract_tests::delegation_tests ... ok
test chainstate::stacks::boot::contract_tests::max_stackerdb_list ... ok
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test chainstate::stacks::boot::contract_tests::pox_2_contract_caller_units ... ok
test chainstate::stacks::boot::contract_tests::pox_2_delegate_extend_units ... ok
test chainstate::stacks::boot::contract_tests::pox_2_lock_extend_units ... ok
test chainstate::stacks::boot::contract_tests::recency_tests ... ok
test chainstate::stacks::boot::contract_tests::simple_epoch21_test ... ok
test chainstate::coordinator::tests::test_sortition_with_sunset_and_epoch_switch ... ok
test chainstate::stacks::boot::contract_tests::test_vote_fail ... ok
test chainstate::nakamoto::tests::test_make_miners_stackerdb_config ... ok
test chainstate::coordinator::tests::test_simple_setup ... ok
test chainstate::stacks::boot::docs::tests::test_make_boot_contracts_reference ... ok
test chainstate::nakamoto::coordinator::tests::test_simple_nakamoto_coordinator_1_tenure_10_blocks ... ok
test chainstate::nakamoto::coordinator::tests::test_nakamoto_coordinator_10_tenures_10_sortitions ... ok
test chainstate::nakamoto::coordinator::tests::test_nakamoto_coordinator_2_tenures_3_sortitions ... ok
test
chainstate::nakamoto::coordinator::tests::test_nakamoto_coordinator_10_tenures_and_extensions_10_blocks
... ok
test chainstate::stacks::boot::pox_2_tests::stack_in_both_pox1_and_pox2 ... ok
test chainstate::stacks::boot::contract_tests::test_vote_withdrawal ... ok
test chainstate::stacks::boot::contract_tests::test_vote_confirm ... ok
test chainstate::stacks::boot::pox_2_tests::delegate_stack_increase ... ok
test chainstate::stacks::boot::pox_2_tests::stack_aggregation_increase ... ok
test chainstate::stacks::boot::pox_2_tests::test_lock_periodInvariant_extend_transition ... ok
test chainstate::stacks::boot::pox_2_tests::test_get_pox_addrs ... ok
test chainstate::stacks::boot::contract_tests::test_vote_too_many_confirms ... ok
test chainstate::stacks::boot::pox_2_tests::stack_increase ... ok
test chainstate::stacks::boot::pox_2_tests::test_pox_2_delegate_stx_addr_validation ... ok
test chainstate::stacks::boot::pox_2_tests::test_pox_2_getters ... ok
test chainstate::stacks::boot::pox_2_tests::test_delegate_extend_transition_pox_2 ... ok
test chainstate::stacks::boot::pox_2_tests::test_simple_pox_2_auto_unlock_ab ... ok
test chainstate::stacks::boot::pox_2_tests::test_simple_pox_2_auto_unlock_ba ... ok
test chainstate::stacks::boot::pox_2_tests::test_stack_with_segwit ... ok
test chainstate::stacks::boot::pox_2_tests::test_pox_extend_transition_pox_2 ... ok
test chainstate::stacks::boot::pox_2_tests::test_simple_pox_lockup_transition_pox_2 ... ok
test chainstate::stacks::boot::pox_3_tests::delegate_extend_pox_3 ... ok
test chainstate::stacks::boot::pox_3_tests::pox_3_delegate_stx_addr_validation ... ok
test chainstate::stacks::boot::pox_3_tests::pox_3_getters ... ok
test chainstate::stacks::boot::pox_3_tests::pox_auto_unlock_ab ... ok
test chainstate::stacks::boot::pox_3_tests::get_pox_addrs ... ok
test chainstate::stacks::boot::pox_3_tests::delegate_stack_increase ... ok
test chainstate::stacks::boot::pox_3_tests::pox_auto_unlock_ba ... ok
test chainstate::stacks::boot::pox_3_tests::pox_extend_transition ... ok
test chainstate::stacks::boot::pox_3_tests::simple_pox_lockup_transition_pox_2 ... ok
test chainstate::stacks::boot::pox_3_tests::stack_increase ... ok
test chainstate::stacks::boot::pox_3_tests::stack_aggregation_increase ... ok
test chainstate::stacks::boot::pox_3_tests::stack_with_segwit ... ok
test chainstate::stacks::boot::pox_4_tests::delegate_stack_increase ... ok
test chainstate::stacks::boot::pox_4_tests::delegate_stack_stx_extend_signer_key ... ok
test chainstate::stacks::boot::pox_4_tests::missed_slots_no_unlock ... ok
test chainstate::stacks::boot::pox_4_tests::delegate_stack_stx_signer_key ... ok
test chainstate::stacks::boot::pox_4_tests::no_lockups_2_5 ... ok
test chainstate::stacks::boot::pox_4_tests::pox_3_unlocks ... ok
test chainstate::stacks::boot::pox_4_tests::pox_4_check_cycle_id_range_in_print_events ... ok
test chainstate::stacks::boot::pox_4_tests::pox_3_defunct ... ok
test chainstate::stacks::boot::pox_4_tests::pox_4_check_cycle_id_range_in_print_events_in_prepare_phase
... ok
test chainstate::stacks::boot::pox_4_tests::pox_4_revoke_delegate_stx_events ... ok
test chainstate::stacks::boot::pox_4_tests::stack_agg_commit_signer_auth ... ok
test chainstate::stacks::boot::pox_4_tests::pox_extend_transition ... ok
test chainstate::stacks::boot::pox_4_tests::pox_lock_unlock ... ok
test chainstate::stacks::boot::pox_4_tests::stack_agg_commit_verify_sig ... ok
test chainstate::stacks::boot::pox_4_tests::stack_extend_signer_auth ... ok
test chainstate::stacks::boot::pox_4_tests::stack_extend_signer_key ... ok
test chainstate::stacks::boot::pox_4_tests::stack_extend_verify_sig ... ok
test chainstate::stacks::boot::pox_4_tests::stack_increase ... ok
test chainstate::stacks::signers_tests::make_signer_sanity_panic_0 - should panic ... ok
test chainstate::stacks::signers_tests::make_signer_sanity_panic_1 - should panic ... ok
test chainstate::stacks::signers_tests::make_signer_units ... ok
test chainstate::stacks::boot::pox_4_tests::stack_increase_different_signer_keys ... ok
test chainstate::stacks::boot::pox_4_tests::stack_increase_verify_signer_key ... ok
test chainstate::stacks::boot::pox_4_tests::stack_stx_signer_auth ... ok
test chainstate::stacks::boot::signers_tests::signers_db_get_slots ... ok
test chainstate::stacks::boot::signers_tests::signers_get_signer_keys_from_stackerdb ... ok
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test chainstate::stacks::boot::signers_voting_tests::test_get_round_info ... ok
test chainstate::stacks::boot::pox_4_tests::stack_stx_signer_key ... ok
test chainstate::stacks::boot::signers_voting_tests::test_get_threshold_weight ... ok
test chainstate::stacks::boot::pox_4_tests::stack_stx_verify_signer_sig ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_early ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_in_first_block ... ok
test chainstate::stacks::boot::pox_4_tests::test_set_signer_key_auth ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_in_last_block ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_mixed_rounds ... ok
test chainstate::stacks::boot::test::get_reward_threshold_units ... ok
test chainstate::stacks::boot::test::make_reward_set_units ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_out_of_window ... ok
test chainstate::stacks::boot::test::test_liquid_ustx ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_success ... ok
test chainstate::stacks::boot::test::test_hook_special_contract_call ... ok
test chainstate::stacks::boot::pox_4_tests::verify_signer_key_signatures ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_with_errors ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_aggregate_public_key_two_rounds ... ok
test chainstate::stacks::boot::signers_voting_tests::vote_for_duplicate_aggregate_public_key ... ok
test chainstate::stacks::boot::test::test_lockups ... ok
test chainstate::stacks::boot::test::test_liquid_ustx_burns ... ok
test chainstate::stacks::boot::test::test_pox_lockup_no_double_stacking ... ok
test chainstate::stacks::boot::test::test_pox_lockup_contract ... ok
test chainstate::stacks::boot::test::test_pox_lockup_multi_tx_sender ... ok
test chainstate::stacks::db::accounts::test::get_tip_ancestor ... ok
test chainstate::stacks::db::accounts::test::load_store_miner_payment_schedule ... ok
test chainstate::stacks::boot::test::test_pox_lockup_single_tx_sender_unlock ... ok
test chainstate::stacks::db::accounts::test::miner_reward_one_miner_no_tx_fees_no_users ... ok
test chainstate::stacks::db::accounts::test::miner_reward_one_miner_no_tx_fees_no_users_pay_contract ...
ok
test chainstate::stacks::db::accounts::test::miner_reward_one_miner_one_user_no_tx_fees ... ok
test chainstate::stacks::db::accounts::test::miner_reward_tx_fees ... ok
test chainstate::stacks::db::accounts::test::load_store_miner_payment_schedule_pay_contract ... ok
test chainstate::stacks::db::blocks::test::stacks_db_block_load_store_empty ... ok
test chainstate::stacks::db::blocks::test::stacks_db_block_load_store ... ok
test chainstate::stacks::db::blocks::test::stacks_db_drop_staging_microblocks ... ok
test chainstate::stacks::boot::test::test_pox_lockup_single_tx_sender ... ok
test chainstate::stacks::boot::test::test_pox_lockup_reject ... ok
test chainstate::stacks::db::blocks::test::stacks_db_has_blocks_and_microblocks ... ok
test chainstate::stacks::db::blocks::test::stacks_db_load_store_microblock_stream ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_block_load_store_accept ... ok
test chainstate::stacks::db::blocks::test::stacks_db_get_blocks_inventory ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_block_load_store_accept_attachable ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_block_load_store_accept_attachable_fork ...
ok
test chainstate::stacks::boot::signers_tests::signers_get_config ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_block_load_store_accept_attachable_reversed ...
ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_block_load_store_reject ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_microblock_stream_load_continuous_streams ...
ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_blocks_orphaned ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_microblocks_fork ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_microblock_stream_load_store_confirm_all ...
ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_microblock_stream_load_store_partial_confirm ...
ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_microblocks_multiple_descendants ... ok
test chainstate::stacks::db::blocks::test::stacks_db_validate_parent_microblock_stream ... ok
test chainstate::stacks::db::blocks::test::stacks_db_staging_microblocks_multiple_forks ... ok
test chainstate::stacks::db::test::test_chainstate_full_genesis_consistency ... ok
test chainstate::stacks::db::test::test_chainstate_sampled_genesis_consistency ... ok
test chainstate::stacks::db::test::test_instantiate_chainstate ... ok
test chainstate::stacks::db::transactions::test::contract_publish_runtime_error ... ok
test chainstate::stacks::db::transactions::test::process_contract_call_long_contract_name_transaction ...
ok
test chainstate::stacks::db::transactions::test::process_fee_gating ... ok
test chainstate::stacks::db::transactions::test::process_fee_gating_sponsored ... ok
test chainstate::stacks::db::transactions::test::process_poison_microblock_invalid_transaction ... ok
test chainstate::stacks::db::transactions::test::process_poison_microblock_multiple_same_block ... ok
test chainstate::stacks::db::transactions::test::process_poison_microblock_same_block ... ok
test chainstate::stacks::boot::test::test_pox_lockup_single_tx_sender_100 ... ok
```

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test chainstate::stacks::boot::test::test_pox_lockup_unlock_on_spend ... ok
test chainstate::stacks::db::transactions::test::process_post_conditions_tokens_deny_2097 ... ok
test chainstate::stacks::db::transactions::test::process_post_conditions_tokens ... ok
test chainstate::stacks::db::transactions::test::process_post_conditions_tokens_deny ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_contract_call_invalid ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_contract_call_runtime_error ...
ok
test
chainstate::stacks::db::transactions::test::process_smart_contract_contract_call_sponsored_transaction
... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_contract_call_transaction ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_fee_check ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_transaction ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_sponsored_transaction ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_transaction_syntax_error ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_transaction_invalid ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_transaction_runtime_error ... ok
test chainstate::stacks::boot::test::test_pox_lockup_unlock_relock ... ok
test chainstate::stacks::db::transactions::test::process_token_transfer_stx_sponsored_transaction ... ok
test chainstate::stacks::db::transactions::test::process_token_transfer_stx_transaction ... ok
test chainstate::stacks::db::transactions::test::test_check_postconditions_multiple_nfts ... ok
test chainstate::stacks::db::transactions::test::process_smart_contract_user_aborts_2257 ... ok
test chainstate::stacks::db::transactions::test::test_check_postconditions_multiple_fts ... ok
test chainstate::stacks::db::transactions::test::test_check_postconditions_stx ... ok
test chainstate::stacks::db::transactions::test::process_token_transfer_stx_transaction_invalid ... ok
test chainstate::stacks::db::transactions::test::test_get_tx_clarity_version_v205 ... ok
test chainstate::stacks::db::transactions::test::test_embedded_trait ... ok
test chainstate::stacks::db::transactions::test::test_get_tx_clarity_version_v210 ... ok
test chainstate::stacks::db::transactions::test::test_checkerrors_at_runtime ... ok
test chainstate::stacks::db::transactions::test::test_transitive_trait ... ok
test chainstate::stacks::db::blocks::test::test_get_stacking_and_transfer_and_delegate_burn_ops_v210 ...
ok
test chainstate::stacks::db::blocks::test::stacks_db_get_blocks_inventory_for_reward_cycle ... ok
test chainstate::stacks::db::unconfirmed::test::test_unconfirmed_refresh_invalid_microblock ... ok
test
chainstate::stacks::db::blocks::test::test_get_stacking_and_transfer_and_delegate_burn_ops_v210_expiratio
n ... ok
test chainstate::stacks::db::unconfirmed::test::test_unconfirmed_refresh_10_microblocks_10_stx_transfers
... ok
test chainstate::stacks::db::blocks::test::test_get_parent_block_header ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_everything_deferred ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_node256_deferred ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_everything ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_node256 ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_noop ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_noop_deferred ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_everything ... ok
test chainstate::stacks::index::test::file::test_load_store_trie_blob ... ok
test chainstate::stacks::index::test::file::test_migrate_existing_trie_blobs ... ok
test chainstate::stacks::index::test::marf::marf_insert_128_32 ... ok
test chainstate::stacks::index::test::marf::marf_insert_256_16 ... ok
test chainstate::stacks::index::test::marf::marf_insert_4096_128 ... ignored
test chainstate::stacks::index::test::marf::marf_insert_4096_128_seq_high ... ignored
test chainstate::stacks::index::test::marf::marf_insert_4096_128_seq_low ... ignored
test chainstate::stacks::index::test::marf::marf_insert_different_leaf_different_path_different_block_100
... ok
test chainstate::stacks::index::test::marf::marf_insert_different_leaf_same_block_100 ... ok
test chainstate::stacks::index::test::marf::marf_insert_flush_to_different_block ... ignored
test chainstate::stacks::index::test::marf::marf_insert_get_128_fork_256 ... ignored
test chainstate::stacks::index::test::cache::test_marf_node_cache_everything_deferred ... ok
test chainstate::stacks::index::test::marf::marf_insert_leaf_sequence_2 ... ok
test chainstate::stacks::index::test::marf::marf_insert_random_10485760_4096_file_storage ... ok
test chainstate::stacks::index::test::marf::marf_insert_random_4096_128_merkle_proof ... ignored
test chainstate::stacks::index::test::marf::marf_insert_random_65536_2048 ... ignored
test chainstate::stacks::index::test::marf::marf_insert_leaf_sequence_100 ... ok
test chainstate::stacks::index::test::marf::marf_invalid_ancestor ... ok
test chainstate::stacks::index::test::marf::marf_merkle_verify_backptrs ... ok
test chainstate::stacks::index::test::marf::marf_read_random_1048576_4096_file_storage ... ok
test chainstate::stacks::index::test::marf::marf_split_leaf_path ... ok
test chainstate::stacks::index::test::marf::marf_walk_cow_4 ... ignored
test chainstate::stacks::index::test::marf::marf_walk_cow_4_reversed ... ignored
test chainstate::stacks::index::test::marf::marf_walk_cow_node4_20 ... ignored
```

```
test chainstate::stacks::index::test::marf::marf_walk_cow_node4_20_reversed ... ignored
test chainstate::stacks::index::test::marf::test_marf_begin_from_sentinel_twice ... ok
test chainstate::stacks::index::test::marf::test_marf_read_only ... ok
test chainstate::stacks::index::test::marf::test_marf_unconfirmed ... ok
test chainstate::stacks::index::test::node::read_write_leaf ... ok
test chainstate::stacks::index::test::node::read_write_node16 ... ok
test chainstate::stacks::index::test::node::read_write_node16_hashes ... ok
test chainstate::stacks::index::test::node::read_write_node256 ... ok
test chainstate::stacks::index::test::node::read_write_node256_hashes ... ok
test chainstate::stacks::index::test::marf::marf_insert_same_leaf_different_block_100 ... ok
test chainstate::stacks::index::test::node::read_write_node4 ... ok
test chainstate::stacks::index::test::node::read_write_node48_hashes ... ok
test chainstate::stacks::index::test::node::read_write_node48 ... ok
test chainstate::stacks::index::test::node::read_write_node4_hashes ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_1 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_10 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_2 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_20 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_32 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_3 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_5 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_4 ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_6 ... ok
test chainstate::stacks::index::test::node::trie_leaf_to_bytes ... ok
test chainstate::stacks::index::test::node::trie_node16_to_bytes ... ok
test chainstate::stacks::index::test::node::trie_cursor_walk_full ... ok
test chainstate::stacks::index::test::node::trie_node16_to_consensus_bytes ... ok
test chainstate::stacks::index::test::node::trie_node256_to_bytes ... ok
test chainstate::stacks::index::test::node::trie_node256_to_consensus_bytes ... ok
test chainstate::stacks::index::test::node::trie_node48_to_bytes ... ok
test chainstate::stacks::index::test::node::trie_node48_to_consensus_bytes ... ok
test chainstate::stacks::index::test::node::trie_node4_to_bytes ... ok
test chainstate::stacks::index::test::node::trie_node4_to_consensus_bytes ... ok
test chainstate::stacks::index::test::node::trieptr_to_bytes ... ok
test chainstate::stacks::index::test::proofs::verifier_catches_stale_proof ... ok
test chainstate::stacks::index::test::proofs::ncc_verifier_catches_stale_proof ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_16_same ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_16_unique ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_256_same ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_48_same ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_256_unique ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_4_same ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_4_unique ... ok
test chainstate::stacks::index::test::storage::load_store_trie_4_48_unique ... ok
test chainstate::stacks::index::cache::test::test_marf_node_cache_node256_deferred_15500 ... ok
test chainstate::stacks::index::test::trie::insert_1024_random_deterministic_merkle_proof ... ok
test chainstate::stacks::index::test::trie::insert_1024_seq_high ... ok
test chainstate::stacks::index::test::trie::insert_65536_random_deterministic ... ignored
test chainstate::stacks::index::test::trie::trie_cursor_promote_leaf_to_node4 ... ok
test chainstate::stacks::index::test::trie::insert_1024_seq_mid ... ok
test chainstate::stacks::index::test::trie::trie_cursor_promote_node16_to_node48 ... ok
test chainstate::stacks::index::test::trie::insert_1024_seq_low ... ok
test chainstate::stacks::index::test::trie::trie_cursor_promote_node4_to_node16 ... ok
test chainstate::stacks::index::test::trie::trie_cursor_splice_leaf_2 ... ok
test chainstate::stacks::index::test::trie::trie_cursor_splice_leaf_4 ... ok
test chainstate::stacks::index::test::cache::test_marf_node_cache_node256_deferred ... ok
test chainstate::stacks::index::test::trie::trie_cursor_try_attach_leaf ... ok
test chainstate::stacks::index::test::trie::trie_cursor_promote_node48_to_node256 ... ok
test chainstate::stacks::index::test::cache::test_marf_node_cache_node256 ... ok
test chainstate::stacks::tests::accounting::test_bad_microblock_fees_fix_transition ... ok
test chainstate::stacks::tests::accounting::test_bad_microblock_fees_pre_v210 ... ok
test chainstate::stacks::tests::accounting::test_coinbase_pay_to_alt_principal_v210 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_10_rounds_3_cache_size_2000_null_p
rob_0 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_10_rounds_3_cache_size_2000_null_p
rob_100 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_10_rounds_3_cache_size_2000_null_p
rob_50 ... ok
test
```

```
chainstate::stacks::tests::block_construction::mempool_walk_test_users_10_rounds_3_cache_size_2_null_prob_0 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_10_rounds_3_cache_size_2_null_prob_100 ... ok
test chainstate::stacks::tests::accounting::test_get_block_info_v210_no_microblocks ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_1_rounds_10_cache_size_2_null_prob_0 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_10_rounds_3_cache_size_2_null_prob_50 ... ok
test chainstate::stacks::tests::accounting::test_coinbase_pay_to_contract_v210 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_1_rounds_10_cache_size_2_null_prob_100 ... ok
test
chainstate::stacks::tests::block_construction::mempool_walk_test_users_1_rounds_10_cache_size_2_null_prob_50 ... ok
test chainstate::stacks::tests::block_construction::mempool_incorporate_pox_unlocks ... ok
test chainstate::stacks::index::test::cache::test_marf_node_cache_noop ... ok
test chainstate::stacks::index::test::cache::test_marf_node_cache_noop_deferred ... ok
test chainstate::stacks::tests::accounting::test_get_block_info_v210 ... ok
test
chainstate::stacks::tests::block_construction::test_build_anchored_blocks_connected_by_microblocks_across_epoch_invalid - should panic ... ok
test
chainstate::stacks::tests::block_construction::test_build_anchored_blocks_connected_by_microblocks_across_epoch ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_empty ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_empty_chaintips ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_incrementing_nonces ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_empty_with_builder_timeout ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_invalid ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_multiple_chaintips ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_skip_too_expensive ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_stx_transfers_single ... ok
test chainstate::stacks::tests::block_construction::test_build_microblock_stream_forks ... ok
test chainstate::stacks::tests::block_construction::test_fee_order_mismatch_nonce_order ... ok
test chainstate::stacks::tests::block_construction::test_build_microblock_stream_forks_with_descendants ... ok
test chainstate::stacks::tests::block_construction::test_contract_call_across_clarity_versions ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_burnchain_fork ... ok
test chainstate::stacks::tests::block_construction::test_is_tx_problematic ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_burnchain_fork_stacks_fork ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_multiple_miners ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_burnchain_fork_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_burnchain_fork_stacks_fork_random ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_bad_nonces ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_single ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_multiple_miners_random ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_random ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_invalid_token_transfer_blocks_single ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_stacks_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_burnchain_fork ... ok
test chainstate::stacks::index::test::cache::test_marf_node_cache_node256_deferred_15500 ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_burnchain_fork_stacks_fork ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_empty_blocks_stacks_fork_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_burnchain_fork_random ... ok
test
```

```
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_burnchain_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_burnchain_fork_stacks_fork_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_burnchain_fork_stacks_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_multiple_miners ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_single ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_stacks_fork_random ... ignored
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_burnchain_fork_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_multiple_miners_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_burnchain_fork_stacks_fork_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_stacks_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_multiple_miners ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_stacks_fork_random ... ignored
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_exception_single_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_single ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_too_expensive_transactions ... ok
test chainstate::stacks::tests::block_construction::test_build_anchored_blocks_stx_transfers_multi ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_multiple_miners_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_burnchain_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_stacks_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_block_contract_call_microblock_single_random ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_burnchain_fork_stacks_fork ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_multiple_miners ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_burnchain_fork_random ... ok
test chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_single ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_multiple_miners_random ... ok
test chainstate::stacks::transaction::test::tx_stacks_asset ... ok
test chainstate::stacks::transaction::test::tx_stacks_postcondition ... ok
```

```
test chainstate::stacks::transaction::test::tx_stacks_postcondition_invalid ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_codec ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_coinbase ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_contracts ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_invalid ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_invalid_contract_name ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_invalid_function_name ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_microblock_poison ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_nakamoto_coinbase ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_nakamoto_coinbase_alt_recipient
... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_payload_tokens ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_stacks_fork
... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2pkh ... ok
test
chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2pkh_uncompressed ...
ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_single_random
... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_burnchain_f
ork_stacks_fork_random ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2sh ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2wpkh ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2sh_mixed ... ok
test
chainstate::stacks::tests::chain_histories::mine_empty_anchored_block_deterministic_pubkeyhash_burnchain_
fork ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2pkh ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2pkh_uncompressed
... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2sh_uncompressed
... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2wpkh ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2sh_mixed ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2sh ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2sh_uncompressed
... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_standard_p2wsh ... ok
test chainstate::stacks::transaction::test::tx_stacks_transaction_sign_verify_sponsored_p2wsh ... ok
test clarity_cli::test::test_init_mainnet ... ok
test clarity_cli::test::test_init_testnet ... ok
test
chainstate::stacks::tests::chain_histories::mine_empty_anchored_block_deterministic_pubkeyhash_stacks_for
k ... ok
test clarity_cli::test::test_assets ... ok
test clarity_vm::clarity::tests::simple_test ... ok
test clarity_vm::clarity::tests::bad_syntax_test ... ok
test clarity_vm::clarity::tests::test_block_limit ... ok
test clarity_cli::test::test_initial_alloc ... ok
test clarity_vm::clarity::tests::test_block_roll_back ... ok
test clarity_vm::clarity::tests::test_initialize_contract_tx_sender_contract_caller ... ok
test clarity_vm::clarity::tests::test_post_condition_failure_contract_publish ... ok
test clarity_vm::clarity::tests::test_tx_roll_backs ... ok
test clarity_vm::clarity::tests::tx_rollback ... ok
test clarity_vm::clarity::tests::test_unconfirmed ... ok
test
chainstate::stacks::tests::chain_histories::mine_empty_anchored_block_deterministic_pubkeyhash_stacks_for
k_at_genesis ... ok
test clarity_cli::test::test_samples ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_01_EPOCH20 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_02_EPOCH2_05 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_03_EPOCH21 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_04_EPOCH21 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_05_EPOCH22 ... ok
test clarity_vm::tests::analysis_costs::epoch_205_test_all_testnet ... ok
test
chainstate::stacks::tests::chain_histories::mine_anchored_smart_contract_contract_call_blocks_stacks_fork
_random ... ok
```

```
test clarity_vm::tests::analysis_costs::epoch_205_test_all_mainnet ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_06_Epoch22 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_07_Epoch23 ... ok
test clarity_vm::tests::contracts::test_get_block_info_eval_v210 ... ok
test clarity_vm::tests::contracts::test_get_burn_block_info_eval ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_08_Epoch23 ... ok
test clarity_vm::tests::contracts::trait_invocation_205_with_stored_principal ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_11_Epoch25 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_10_Epoch24 ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_09_Epoch24 ... ok
test clarity_vm::tests::contracts::trait_invocation_cross_epoch ... ok
test clarity_vm::tests::ast::test_edge_counting_runtime::case_12_Epoch25 ... ok
test clarity_vm::tests::contracts::trait_with_trait_invocation_cross_epoch ... ok
test clarity_vm::tests::costs::epoch205_concat_mainnet ... ok
test clarity_vm::tests::costs::epoch205_eq_input_size_testnet ... ok
test clarity_vm::tests::costs::epoch205_eq_input_size_mainnet ... ok
test clarity_vm::tests::costs::epoch205_concat_testnet ... ok
test clarity_vm::tests::analysis_costs::epoch_21_test_all_mainnet ... ok
test clarity_vm::tests::analysis_costs::epoch_21_test_all_testnet ... ok
test clarity_vm::tests::costs::epoch205_map_delete_testnet ... ok
test clarity_vm::tests::costs::epoch205_map_delete_mainnet ... ok
test clarity_vm::tests::costs::epoch205_map_get_mainnet ... ok
test clarity_vm::tests::costs::epoch205_map_get_testnet ... ok
test clarity_vm::tests::costs::epoch205_index_of_input_size_mainnet ... ok
test clarity_vm::tests::costs::epoch205_map_insert_testnet ... ok
test clarity_vm::tests::costs::epoch205_index_of_input_size_testnet ... ok
test clarity_vm::tests::costs::epoch205_map_insert_mainnet ... ok
test clarity_vm::tests::costs::epoch205_map_set_testnet ... ok
test clarity_vm::tests::costs::epoch205_map_set_mainnet ... ok
test clarity_vm::tests::costs::epoch205_var_get_mainnet ... ok
test clarity_vm::tests::costs::epoch205_var_get_testnet ... ok
test clarity_vm::tests::costs::epoch205_tuple_merge_input_size_testnet ... ok
test clarity_vm::tests::costs::epoch205_tuple_merge_input_size_mainnet ... ok
test clarity_vm::tests::costs::epoch205_var_set_mainnet ... ok
test clarity_vm::tests::costs::epoch205_var_set_testnet ... ok
test clarity_vm::tests::costs::epoch_205_test_all_mainnet ... ok
test clarity_vm::tests::costs::epoch_205_test_all_testnet ... ok
test clarity_vm::tests::costs::epoch205_nfts_mainnet ... ok
test clarity_vm::tests::costs::epoch_20_test_all_mainnet ... ok
test clarity_vm::tests::costs::epoch_20_test_all_testnet ... ok
test clarity_vm::tests::costs::epoch_21_test_all_testnet ... ok
test clarity_vm::tests::costs::epoch_21_test_all_mainnet ... ok
test clarity_vm::tests::costs::test_cost_contract_short_circuits_mainnet ... ok
test clarity_vm::tests::costs::epoch205_nfts_testnet ... ok
test clarity_vm::tests::costs::test_cost_contract_short_circuits_testnet ... ok
test clarity_vm::tests::costs::test_cost_voting_integration_mainnet ... ok
test clarity_vm::tests::epoch_switch::test_vm_epoch_switch ... ok
test clarity_vm::tests::events::test_emit_ft_mint_nok ... ok
test clarity_vm::tests::events::test_emit_ft_mint_ok ... ok
test clarity_vm::tests::events::test_emit_ft_transfer_ok ... ok
test clarity_vm::tests::events::test_emit_nested_print_nok ... ok
test clarity_vm::tests::events::test_emit_ft_transfer_nok ... ok
test clarity_vm::tests::costs::test_cost_voting_integration_testnet ... ok
test clarity_vm::tests::events::test_emit_nft_mint_nok ... ok
test clarity_vm::tests::events::test_emit_nft_transfer_nok ... ok
test clarity_vm::tests::events::test_emit_print_nok ... ok
test clarity_vm::tests::events::test_emit_nft_mint_ok ... ok
test clarity_vm::tests::events::test_emit_nft_transfer_ok ... ok
test clarity_vm::tests::events::test_emit_print_ok ... ok
test clarity_vm::tests::events::test_emit_stx_burn_nok ... ok
test clarity_vm::tests::forking::test_at_block_good::case_01_Epoch20 ... ok
test clarity_vm::tests::forking::test_at_block_good::case_02_Epoch2_05 ... ok
test clarity_vm::tests::forking::test_at_block_good::case_03_Epoch21 ... ok
test clarity_vm::tests::events::test_emit_stx_burn_ok ... ok
test clarity_vm::tests::forking::test_at_block_good::case_04_Epoch21 ... ok
test clarity_vm::tests::events::test_emit_stx_transfer_ok ... ok
test clarity_vm::tests::events::test_emit_stx_transfer_nok ... ok
test clarity_vm::tests::events::test_emit_stx_transfer_memo_ok ... ok
test clarity_vm::tests::forking::test_at_block_good::case_07_Epoch23 ... ok
test clarity_vm::tests::forking::test_at_block_good::case_05_Epoch22 ... ok
test clarity_vm::tests::forking::test_at_block_good::case_06_Epoch22 ... ok
test clarity_vm::tests::forking::test_at_block_good::case_10_Epoch24 ... ok
```



```
test clarity_vm::tests::large_contract::fcall_memory_test::case_11_Epoch25 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_01_Epoch20 ... ok
test clarity_vm::tests::large_contract::fcall_memory_test::case_12_Epoch25 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_02_Epoch2_05 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_03_Epoch21 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_04_Epoch21 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_05_Epoch22 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_06_Epoch22 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_07_Epoch23 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_08_Epoch23 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_09_Epoch24 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_10_Epoch24 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_11_Epoch25 ... ok
test clarity_vm::tests::large_contract::let_memory_test::case_12_Epoch25 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_03_Epoch21 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_01_Epoch20 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_02_Epoch2_05 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_04_Epoch21 ... ok
test clarity_vm::tests::large_contract::ccall_memory_test::case_09_Epoch24 ... ok
test clarity_vm::tests::large_contract::ccall_memory_test::case_10_Epoch24 ... ok
test clarity_vm::tests::large_contract::ccall_memory_test::case_12_Epoch25 ... ok
test clarity_vm::tests::large_contract::ccall_memory_test::case_11_Epoch25 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_06_Epoch22 ... ok
test clarity_vm::tests::large_contract::test_deep_tuples ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_05_Epoch22 ... ok
test clarity_vm::tests::large_contract::test_deep_tuples_ast_precheck ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_01_Epoch20 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_07_Epoch23 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_02_Epoch2_05 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_03_Epoch21 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_04_Epoch21 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_06_Epoch22 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_07_Epoch23 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_05_Epoch22 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_08_Epoch23 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_09_Epoch24 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_10_Epoch24 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_11_Epoch25 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_01_Epoch20 ... ok
test clarity_vm::tests::large_contract::test_simple_naming_system::case_12_Epoch25 ... ok
test clarity_vm::tests::large_contract::test_deep_type_nesting ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_08_Epoch23 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_09_Epoch24 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_02_Epoch2_05 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_03_Epoch21 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_05_Epoch22 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_04_Epoch21 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_10_Epoch24 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_06_Epoch22 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_08_Epoch23 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_09_Epoch24 ... ok
test core::test_ord_for_stacks_epoch ... ok
test core::test_ord_for_stacks_epoch_id ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_07_Epoch23 ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_10_Epoch24 ... ok
test clarity_vm::tests::simple_tests::test_at_unknown_block ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_11_Epoch25 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_12_Epoch25 ... ok
test clarity_vm::tests::large_contract::rollback_log_memory_test::case_11_Epoch25 ... ok
test core::tests::mempool_db_test_rbf ... ok
test core::tests::mempool_db_init ... ok
test clarity_vm::tests::large_contract::test_simple_token_system::case_12_Epoch25 ... ok
test core::tests::mempool_do_not_replace_tx ... ok
test core::tests::mempool_walk_over_fork ... ok
test core::tests::test_drop_and_blacklist_txs_by_size ... ok
test core::tests::test_drop_and_blacklist_txs_by_time ... ok
test core::tests::test_filter_txs_by_type ... ok
test core::tests::test_iterate_candidates_consider_no_estimate_tx_prob ... ok
test core::tests::test_make_mempool_sync_data ... ignored
test core::tests::test_iterate_candidates_problematic_transaction ... ok
test cost_estimates::tests::cost_estimators::pessimistic_estimator_contract_owner_separation ... ok
test cost_estimates::tests::cost_estimators::test_cost_estimator_dont_affect_previous ... ok
```

```
test cost_estimates::tests::cost_estimators::test_cost_estimator_epochs_independent ... ok
test cost_estimates::tests::cost_estimators::test_cost_estimator_forget_previous ... ok
test cost_estimates::tests::cost_estimators::test_cost_estimator_notify_block ... ok
test cost_estimates::tests::cost_estimators::test_empty_pessimistic_estimator ... ok
test core::tests::test_iterate_candidates_processing_error_transaction ... ok
test cost_estimates::tests::cost_estimators::test_pessimistic_cost_estimator ... ok
test core::tests::test_iterate_candidates_skipped_transaction ... ok
test cost_estimates::tests::cost_estimators::test_pessimistic_cost_estimator_declining_average ... ok
test cost_estimates::tests::fee_medians::test_fee_rate_estimate_100 ... ok
test cost_estimates::tests::fee_medians::test_fee_rate_estimate_20 ... ok
test cost_estimates::tests::fee_medians::test_fee_rate_estimate_50_vs_50 ... ok
test cost_estimates::tests::fee_medians::test_fee_rate_estimate_5_vs_95 ... ok
test cost_estimates::tests::fee_medians::test_fee_rate_estimate_95_vs_5 ... ok
test cost_estimates::tests::fee_medians::test_empty_block_returns_minimum ... ok
test cost_estimates::tests::fee_medians::test_empty_fee_estimator ... ok
test cost_estimates::tests::fee_medians::test_one_block_mostly_filled ... ok
test cost_estimates::tests::fee_medians::test_one_block_partially_filled ... ok
test cost_estimates::tests::fee_rate_estimate_math_units ... ok
test cost_estimates::tests::fee_rate_fuzzer::test_fuzzing_seed1 ... ok
test cost_estimates::tests::fee_rate_fuzzer::test_fuzzing_seed2 ... ok
test cost_estimates::tests::fee_medians::test_window_size_forget_nothing ... ok
test cost_estimates::tests::fee_scalar::test_empty_fee_estimator ... ok
test cost_estimates::tests::metrics::test_proportional_dot_product ... ok
test cost_estimates::tests::metrics::test_proportional_dot_product_near_zero ... ok
test cost_estimates::tests::metrics::test_proportional_dot_product_with_mainnet_lims ... ok
test monitoring::test_convert_uint256_to_f64 ... ok
test cost_estimates::tests::fee_medians::test_window_size_forget_something ... ok
test cost_estimates::tests::fee_scalar::test_fee_estimator ... ok
test net::api::tests::callreadonly::test_try_parse_request ... ok
test net::api::tests::getaccount::test_try_parse_request ... ok
test net::api::tests::getattachment::test_try_make_response ... ok
test net::api::tests::getattachment::test_try_parse_request ... ok
test core::tests::test_add_txs_bloom_filter ... ok
test net::api::tests::getattachmentsinv::test_try_parse_request ... ok
test net::api::tests::getaccount::test_try_make_response ... ok
test net::api::tests::getblock::test_stream_blocks ... ok
test net::api::tests::getblock::test_try_parse_request ... ok
test net::api::tests::callreadonly::test_try_make_response ... ok
test core::tests::test_txtags ... ok
test net::api::tests::getblock_v3::test_try_parse_request ... ok
test core::tests::mempool_db_load_store_replace_tx ... ok
test net::api::tests::getconstantval::test_try_parse_request ... ok
test net::api::tests::getattachmentsinv::test_try_make_response ... ok
test net::api::tests::getcontractabi::test_try_parse_request ... ok
test net::api::tests::getblock::test_try_make_response ... ok
test net::api::tests::getcontracts::test_try_parse_request ... ok
test net::api::tests::getconstantval::test_try_make_response ... ok
test net::api::tests::getdatavar::test_try_parse_request ... ok
test net::api::tests::getheaders::test_stream_getheaders ... ok
test net::api::tests::getcontractabi::test_try_make_response ... ok
test net::api::tests::getheaders::test_try_parse_request ... ok
test net::api::tests::getinfo::test_getinfo_compat ... ok
test net::api::tests::getcontracts::test_try_make_response ... ok
test net::api::tests::getinfo::test_try_parse_request ... ok
test net::api::tests::getdatavar::test_try_make_response ... ok
test net::api::tests::getistraitimplemented::test_try_parse_request ... ok
test net::api::tests::getinfo::test_try_make_response ... ok
test net::api::tests::getmapentry::test_try_parse_request ... ok
test net::api::tests::getheaders::test_try_make_response ... ok
test net::api::tests::getmicroblocks_confirmed::test_stream_confirmed_microblocks ... ok
test net::api::tests::getmicroblocks_confirmed::test_try_parse_request ... ok
test net::api::tests::getmicroblocks_indexed::test_stream_indexed_microblocks ... ok
test core::tests::test_iterate_candidates_concurrent_write_lock ... ok
test net::api::tests::getmicroblocks_indexed::test_try_parse_request ... ok
test net::api::tests::getistraitimplemented::test_try_make_response ... ok
test net::api::tests::getmapentry::test_try_make_response ... ok
test net::api::tests::getmicroblocks_unconfirmed::test_try_parse_request ... ok
test net::api::tests::getmicroblocks_confirmed::test_try_make_response ... ok
test net::api::tests::getneighbors::test_try_parse_request ... ok
test net::api::tests::getmicroblocks_indexed::test_try_make_response ... ok
test net::api::tests::getpoxinfo::test_try_parse_request ... ok
```

```
test net::api::tests::getmicroblocks_unconfirmed::test_try_make_response ... ok
test net::api::tests::getstackerdbchunk::test_try_parse_request ... ok
test net::api::tests::getneighbors::test_try_make_response ... ok
test net::api::tests::getstackerdbmetadata::test_try_parse_request ... ok
test net::api::tests::getmicroblocks_unconfirmed::test_stream_unconfirmed_microblocks ... ok
test net::api::tests::getstxtransfercost::test_try_parse_request ... ok
test net::api::tests::getpoxinfo::test_try_make_response ... ok
test net::api::tests::getblock_v3::test_stream_nakamoto_blocks ... ok
test net::api::tests::gettenure::test_try_parse_request ... ok
test net::api::tests::getstackerdbchunk::test_try_make_response ... ok
test net::api::tests::gettenureinfo::test_try_parse_request ... ok
test net::api::tests::getstxtransfercost::test_try_make_response ... ok
test net::api::tests::gettransaction_unconfirmed::test_try_parse_request ... ok
test net::api::tests::getstackerdbmetadata::test_try_make_response ... ok
test net::api::tests::liststackerdbreplicas::test_try_parse_request ... ok
test net::api::tests::gettransaction_unconfirmed::test_try_make_response ... ok
test net::api::tests::postblock::test_try_parse_request ... ok
test net::api::tests::liststackerdbreplicas::test_try_make_response ... ok
test net::api::tests::postfeerate::test_try_parse_request ... ok
test net::api::tests::postmempoolquery::test_decode_tx_stream ... ok
test net::api::tests::postmempoolquery::test_stream_mempool_txs ... ok
test net::api::tests::postblock::test_try_make_response ... ok
test net::api::tests::postmempoolquery::test_try_parse_request ... ok
test net::api::tests::postfeerate::test_try_make_response ... ok
test net::api::tests::postmicroblock::test_try_parse_request ... ok
test net::api::tests::postmempoolquery::test_try_make_response ... ok
test net::api::tests::poststackerdbchunk::test_try_parse_request ... ok
test net::api::tests::postmicroblock::test_try_make_response ... ok
test net::api::tests::posttransaction::test_try_parse_request ... ok
test net::asn::test::test_parse_asn4 ... ok
test net::atlas::tests::schema_2_migration ... ok
test net::atlas::tests::test_attachment_instance_parsing ... ok
test net::atlas::tests::test_attachment_requests_ordering ... ok
test net::atlas::tests::test_attachments_batch_constructs ... ok
test net::atlas::tests::test_attachments_batch_ordering ... ok
test net::atlas::tests::test_attachments_batch_pages ... ok
test net::atlas::tests::test_attachments_inventory_requests_hashing ... ok
test net::atlas::tests::test_attachments_inventory_requests_ordering ... ok
test net::atlas::tests::test_bit_vectors ... ok
test net::atlas::tests::test_downloader_context_attachment_inventories_requests ... ok
test net::atlas::tests::test_downloader_context_attachment_requests ... ok
test net::api::tests::poststackerdbchunk::test_try_make_response ... ok
test net::api::tests::posttransaction::test_try_make_response ... ok
test net::atlas::tests::test_evict_k.oldest.uninstantiated_attachments ... ok
test net::atlas::tests::test_get_minmax_heights_atlasdb ... ok
test net::atlas::tests::test_keep_uninstantiated_attachments ... ok
test net::api::tests::getblock_v3::test_try_make_response ... ok
test net::chat::test::convo_handshake_accept ... ok
test net::chat::test::convo_handshake_accept_stackerdb ... ok
test net::api::tests::gettenure::test_stream_nakamoto_tenure ... ok
test net::chat::test::convo_handshake_accept_stackerdb_bad_consensus_hash ... ok
test net::chat::test::convo_handshake_accept_stackerdb_legacy ... ok
test net::chat::test::convo_handshake_badpeeraddress ... ok
test net::chat::test::convo_handshake_badsignature ... ok
test net::chat::test::convo_handshake_ping_loop ... ok
test net::chat::test::convo_handshake_getblocksinv ... ok
test net::chat::test::convo_handshake_getnakamotoinv ... ok
test net::chat::test::convo_handshake_reject ... ok
test net::chat::test::convo_handshake_self ... ok
test net::chat::test::convo_handshake_update_key ... ok
test net::chat::test::convo_is_preamble_valid ... ok
test net::chat::test::convo_nack_unsolicited ... ok
test net::chat::test::convo_natpunch ... ok
test net::chat::test::convo_process_relayers ... ok
test net::chat::test::convo_ping ... ok
test net::chat::test::test_neighbor_stats_healthpoint ... ok
test net::chat::test::convo_ignore_unsolicited_handshake ... ok
test net::api::tests::gettenureinfo::test_try_make_response ... ok
test net::api::tests::gettenure::test_try_make_response ... ok
test net::chat::test::test_sign_and_forward ... ok
test net::chat::test::test_sign_relay_forward_message ... ok
test net::chat::test::test_validate_block_push ... ok
```

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test net:::chat:::test:::test_validate_microblocks_push ... ok
test net:::chat:::test:::test_validate_stackerdb_push ... ok
test net:::chat:::test:::test_validate_transaction_push ... ok
test net:::codec:::test:::blocks_inv_compress_bools ... ok
test net:::codec:::test:::codec_BlocksAvailable ... ok
test net:::codec:::test:::codec_BlocksInvData ... ok
test net:::codec:::test:::codec_GetBlocksInv ... ok
test net:::codec:::test:::codec_GetNakamotoInv ... ok
test net:::codec:::test:::codec_GetPoxInv ... ok
test net:::codec:::test:::codec_HandshakeAcceptData ... ok
test net:::codec:::test:::codec_HandshakeData ... ok
test net:::codec:::test:::codec_NackData ... ok
test net:::codec:::test:::codec_NakamotoInv ... ok
test net:::codec:::test:::codec_NatPunch ... ok
test net:::codec:::test:::codec_NeighborAddress ... ok
test net:::codec:::test:::codec_NeighborsData ... ok
test net:::codec:::test:::codec_PoxInvData ... ok
test net:::codec:::test:::codec_Preamble ... ok
test net:::codec:::test:::codec_RelayData ... ok
test net:::codec:::test:::codec_StackerDBChunkData ... ok
test net:::codec:::test:::codec_StackerDBChunkInvData ... ok
test net:::codec:::test:::codec_StackerDBGetChunkData ... ok
test net:::codec:::test:::codec_StackerDBGetChunkInvData ... ok
test net:::codec:::test:::codec_StackerDBHandshakeAccept ... ok
test net:::codec:::test:::codec_StackerDBPushChunkData ... ok
test net:::codec:::test:::codec_StacksMessage ... ok
test net:::codec:::test:::codec_primitive_types ... ok
test net:::codec:::test:::codec_primitive_vector ... ok
test net:::codec:::test:::codec_sign_and_verify ... ok
test net:::codec:::test:::codec_stacks_public_key_roundtrip ... ok
test net:::connection:::test:::connection_relay_send ... ok
test net:::connection:::test:::connection_relay_send_recv ... ok
test net:::connection:::test:::connection_send_recv ... ignored
test net:::atlas:::tests:::test_evict_expired_uninstantiated_attachments ... ok
test net:::connection:::test:::test_connection_ping_relay_producer_consumer ... ok
test net:::connection:::test:::test_connection_ping_request_producer_consumer ... ok
test net:::db:::test:::asn4_insert_lookup ... ok
test net:::db:::test:::test_connect_new_key ... ok
test net:::db:::test:::test_db_instantiation ... ok
test net:::db:::test:::test_find_stacker_db_replicas ... ok
test net:::db:::test:::test_get_neighbors_in_current_epoch ... ok
test net:::db:::test:::test_initial_neighbors ... ok
test net:::db:::test:::test_insert_or_replace_stacker_dbs ... ok
test net:::db:::test:::test_local_peer ... ok
test net:::db:::test:::test_peer_cidr_lists ... ok
test net:::db:::test:::test_peer_deny_allow_cidr ... ok
test net:::db:::test:::test_peer_insert_and_retrieval ... ok
test net:::db:::test:::test_peer_is_denied ... ok
test net:::db:::test:::test_peer_preemptive_deny_allow ... ok
test net:::db:::test:::test_peer_refresh_cidr ... ok
test net:::db:::test:::test_try_insert_peer ... ok
test net:::db:::test:::test_try_insert_peer_with_stackerdbs ... ok
test net:::atlas:::tests:::test_evict_expired_unresolved_attachment_instances ... ok
test net:::connection:::test:::connection_send_recv_timeout ... ok
test net:::dns:::test:::dns_resolve_no_such_name ... ok
test net:::dns:::test:::dns_resolve_invalid_name ... ok
test net:::dns:::test:::dns_resolve_one_name ... ok
test net:::dns:::test:::dns_start_stop ... ok
test net:::http:::tests:::test_http_headers_too_big ... ok
test net:::http:::tests:::test_http_headers_too_many ... ok
test net:::http:::tests:::test_http_live_headers ... ok
test net:::http:::tests:::test_http_parse_host_header_value ... ok
test net:::http:::tests:::test_http_request_preamble_headers ... ok
test net:::http:::tests:::test_http_request_version_keep_alive ... ok
test net:::http:::tests:::test_http_response_preamble_headers ... ok
test net:::http:::tests:::test_http_response_version_keep_alive ... ok
test net:::http:::tests:::test_parse_http_request_options ... ok
test net:::http:::tests:::test_parse_http_request_preamble_case_ok ... ok
test net:::http:::tests:::test_parse_http_request_preamble_err ... ok
test net:::http:::tests:::test_parse_http_request_preamble_ok ... ok
test net:::http:::tests:::test_parse_http_response_case_ok ... ok
test net:::http:::tests:::test_parse_http_response_preamble_err ... ok
```

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test net::http::tests::test_parse_http_response_preamble_ok ... ok
test net::http::tests::test_parse_reserved_header ... ok
test net::p2p::test::test_dispatch_requests_connect_and_ban ... ignored
test net::p2p::test::test_dispatch_requests_connect_and_message_relay ... ignored
test net::dns::test::dns_resolve_timeout ... ok
test net::dns::test::dns_resolve_10_names ... ok
test net::p2p::test::test_mempool_sync_2_peers ... ok
test net::p2p::test::test_mempool_sync_2_peers_blacklisted ... ok
test net::p2p::test::test_mempool_sync_2_peers_paginated ... ok
test net::poll::test::test_bind ... ok
test net::poll::test::test_register_deregister ... ok
test net::poll::test::test_register_deregister_stress ... ok
test net::poll::test::test_register_too_many_peers ... ok
test net::p2p::test::test_mempool_sync_2_peers_problematic ... ok
test net::chat::test::test_neighbor_stats_block_push_bandwidth ... ok
test net::relay::test::process_new_blocks_rejects_problematic_ast ... ok
test net::relay::test::test_block_pay_to_contract_gated_at_v210 ... ok
test net::relay::test::test_get_blocks_and_microblocks_2_peers_antientropy ... ignored
test net::relay::test::test_get_blocks_and_microblocks_2_peers_buffered_messages ... ignored
test net::relay::test::test_get_blocks_and_microblocks_2_peers_push_blocks_and_microblocks_inbound ... ignored
test net::relay::test::test_get_blocks_and_microblocks_2_peers_push_blocks_and_microblocks_inbound_direct ... ignored
test net::relay::test::test_get_blocks_and_microblocks_2_peers_push_blocks_and_microblocks_outbound ... ignored
test
net::relay::test::test_get_blocks_and_microblocks_2_peers_push_blocks_and_microblocks_outbound_direct ... ignored
test net::relay::test::test_get_blocks_and_microblocks_2_peers_push_transactions ... ignored
test net::relay::test::test_get_blocks_and_microblocks_3_peers_push_available ... ignored
test net::relay::test::test_get_blocks_and_microblocks_peers_broadcast ... ignored
test net::relay::test::test_get_blocks_and_microblocks_upload_blocks_http ... ignored
test net::relay::test::test_relay_inbound_peer_rankings ... ok
test net::relay::test::test_relay_outbound_peer_rankings ... ok
test net::relay::test::test_relayer_merge_stats ... ok
test net::relay::test::test_relayer_stats_add_relyed_messages ... ok
test net::relay::test::test_static_problematic_tests ... ok
test net::server::test::test_http_10_threads_getblock ... ignored
test net::server::test::test_http_10_threads_getinfo ... ignored
test net::chat::test::test_neighbor_stats_microblocks_push_bandwidth ... ok
test net::relay::test::test_block_versioned_smart_contract_gated_at_v210 ... ok
test net::server::test::test_http_400 ... ok
test net::relay::test::test_block_versioned_smart_contract_mempool_rejection_until_v210 ... ok
test net::server::test::test_http_404 ... ok
test net::server::test::test_http_getblock ... ok
test net::server::test::test_http_noop ... ok
test net::server::test::test_http_slow_client ... ignored
test net::server::test::test_http_too_many_clients ... ignored
test net::server::test::test_http_getinfo ... ok
test net::stackerdb::tests::db::test_reconfigure_stackerdb ... ok
test net::stackerdb::tests::db::test_stackerdb_connect ... ok
test net::stackerdb::tests::db::test_stackerdb_create_list_delete ... ok
test net::stackerdb::tests::db::test_stackerdb_insert_query_chunks ... ok
test net::server::test::test_http_endless_data_client ... ok
test net::stackerdb::tests::sync::test_stackerdb_10_replicas_10_neighbors_line_10_chunks ... ignored
test net::stackerdb::tests::sync::test_stackerdb_10_replicas_10_neighbors_line_push_10_chunks ... ignored
test net::stackerdb::tests::sync::test_stackerdb_replica_2_neighbors_10_chunks ... ignored
test net::stackerdb::tests::sync::test_stackerdb_replica_2_neighbors_10_push_chunks ... ignored
test net::stackerdb::tests::db::test_stackerdb_prepare_clear_slots ... ok
test net::chat::test::test_neighbor_stats_stackerdb_push_bandwidth ... ok
test net::stackerdb::tests::config::test_valid_and_invalid_stackerdb_configs ... ok
test
net::tests::download::epoch2x::test_get_blocks_and_microblocks_2_peers_download_multiple_microblock_descendants ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_2_peers_download_plain ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_2_peers_download_plain_100_blocks ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_5_peers_line ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_5_peers_star ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_ban_url ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_overwhelmed_connections ... ignored
test net::tests::download::epoch2x::test_get_blocks_and_microblocks_overwhelmed_sockets ... ignored
```

```
test net:::chat:::test:::test_neighbor_stats_transaction_push_bandwidth ... ok
test net:::stackerdb:::tests:::sync:::test_stackerdb_replica_2_neighbors_1_chunk ... ok
test net:::tests:::download:::nakamoto:::test_nakamoto_tenure_downloader ... ok
test net:::tests:::download:::epoch2x:::test_get_block_availability ... ok
test net:::stackerdb:::tests:::sync:::test_stackerdb_replica_2_neighbors_1_chunk_stale_view ... ok
test net:::tests:::download:::nakamoto:::test_tenure_start_end_from_inventory ... ok
test net:::tests:::httpcore:::test_http_duplicate_concurrent_streamed_response_fails ... ok
test net:::tests:::httpcore:::test_http_parse_proof_request_query ... ok
test net:::tests:::httpcore:::test_http_parse_proof_tip_query ... ok
test net:::tests:::httpcore:::test_http_request_type_codec ... ok
test net:::tests:::httpcore:::test_http_request_type_codec_err ... ok
test net:::tests:::httpcore:::test_http_response_type_codec ... ok
test net:::tests:::httpcore:::test_http_response_type_codec_err ... ok
test net:::tests:::httpcore:::test_parse_stacks_http_preamble_request_err ... ok
test net:::tests:::httpcore:::test_parse_stacks_http_preamble_response_err ... ok
test net:::tests:::inv:::epoch2x:::peerblocksinv_has_iith_block ... ok
test net:::tests:::inv:::epoch2x:::peerblocksinv_merge ... ok
test net:::tests:::inv:::epoch2x:::peerblocksinv_merge_clear_bits ... ok
test net:::tests:::inv:::epoch2x:::test_inv_merge_pox_inv ... ok
test net:::tests:::inv:::epoch2x:::test_inv_set_block_microblock_bits ... ok
test net:::tests:::inv:::epoch2x:::test_inv_truncate_pox_inv ... ok
test net:::tests:::inv:::epoch2x:::test_sync_inv_2_peers_different_pox_vectors ... ignored
test net:::tests:::inv:::epoch2x:::test_sync_inv_2_peers_plain ... ignored
test net:::tests:::inv:::epoch2x:::test_sync_inv_2_peers_stale ... ignored
test net:::tests:::inv:::epoch2x:::test_sync_inv_2_peers_unstable ... ignored
test net:::tests:::inv:::epoch2x:::test_sync_inv_diagnose_nack ... ok
test net:::tests:::inv:::epoch2x:::test_sync_inv_make_inv_messages ... ok
test net:::tests:::download:::nakamoto:::test_make_tenure_downloaders ... ok
test net:::tests:::inv:::epoch2x:::test_sync_inv_set_blocks_microblocks_available ... ok
test net:::tests:::download:::nakamoto:::test_nakamoto_unconfirmed_tenure_downloader ... ok
test net:::server:::test:::test_http_no_connecting_event_id_leak ... ok
test core:::tests:::test_find_missing_transactions has been running for over 60 seconds
test net:::tests:::inv:::nakamoto:::test_nakamoto_inv_10_tenures_10_sortitions ... ok
test net:::tests:::download:::nakamoto:::test_nakamoto_unconfirmed_download_run_2_peers ... ok
test net:::tests:::inv:::nakamoto:::test_nakamoto_inv_2_tenures_3_sortitions ... ok
test net:::tests:::inv:::nakamoto:::test_nakamoto_inv_10_extended_tenures_10_sortitions ... ok
test net:::p2p:::test:::test_event_id_no_connecting_leaks ... ok
test net:::tests:::download:::nakamoto:::test_nakamoto_download_run_2_peers has been running for over 60 seconds
test core:::tests:::test_find_missing_transactions ... ok
test net:::tests:::inv:::nakamoto:::test_nakamoto_tenure_inv ... ok
test net:::tests:::neighbors:::test_step_walk_10_neighbors_of_neighbor_bootstrapping ... ignored
test net:::tests:::neighbors:::test_step_walk_10_neighbors_of_neighbor_plain ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_bad_epoch ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_behind ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_bootstrapping ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_denied ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_heartbeat_ping ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_plain ... ignored
test net:::tests:::neighbors:::test_step_walk_1_neighbor_plain_no_natpunch ... ignored
test net:::tests:::neighbors:::test_step_walk_2_neighbors_different_networks ... ok
test net:::tests:::download:::nakamoto:::test_nakamoto_download_run_2_peers ... ok
test net:::tests:::neighbors:::test_step_walk_2_neighbors_rekey ... ignored
test net:::tests:::inv:::nakamoto:::test_nakamoto_inv_sync_across_epoch_change has been running for over 60 seconds
test net:::tests:::neighbors:::test_step_walk_2_neighbors_plain ... ok
test net:::tests:::inv:::nakamoto:::test_nakamoto_invs_alternating ... ok
test net:::tests:::neighbors:::test_step_walk_3_neighbors_inbound ... ignored
test net:::tests:::neighbors:::test_walk_inbound_line_15 ... ignored
test net:::tests:::neighbors:::test_walk_line_15_org_biased ... ignored
test net:::tests:::neighbors:::test_walk_line_15_pingback ... ignored
test net:::tests:::neighbors:::test_walk_line_15_plain ... ignored
test net:::tests:::neighbors:::test_walk_line_allowed_15 ... ignored
test net:::tests:::neighbors:::test_walk_ring_15_org_biased ... ignored
test net:::tests:::neighbors:::test_walk_ring_15_pingback ... ignored
test net:::tests:::neighbors:::test_walk_ring_15_plain ... ignored
test net:::tests:::neighbors:::test_walk_ring_allow_15 ... ignored
test net:::tests:::neighbors:::test_walk_star_15_org_biased ... ignored
test net:::tests:::neighbors:::test_walk_star_15_pingback ... ignored
test net:::tests:::neighbors:::test_walk_star_15_plain ... ignored
test net:::tests:::neighbors:::test_walk_star_allowed_15 ... ignored
test net:::tests:::inv:::nakamoto:::test_nakamoto_invs_full ... ok
```

```
test util_lib::bloom::test::test_bloom_bitfield_codec ... ok
test util_lib::bloom::test::test_bloom_counter_has_all_inserted_items_with_error_rate ... ok
test net::tests::inv::nakamoto::test_nakamoto_inv_sync_state_machine has been running for over 60 seconds
test util_lib::bloom::test::test_bloom_counter_is_invertible ... ok
test net::tests::inv::nakamoto::test_nakamoto_invs_different_anchor_blocks has been running for over 60 seconds
test util_lib::bloom::test::test_bloom_counter_is_invertible_over_iterations ... ok
test util_lib::bloom::test::test_bloom_counter_to_filter ... ok
test net::tests::inv::nakamoto::test_nakamoto_invs_different_anchor_blocks ... ok
test util_lib::bloom::test::test_bloom_filter_has_all_inserted_items_with_error_rate ... ok
test util_lib::bloom::test::test_bloom_hash_count ... ok
test util_lib::db::tests::test_pragma ... ok
test util_lib::signed_structured_data::pox4::tests::test_make_pox_4_message_hash ... ok
test util_lib::signed_structured_data::pox4::tests::test_sig_hash_fixture ... ok
test util_lib::signed_structured_data::test::test_prefix_bytes ... ok
test util_lib::signed_structured_data::test::test_sip18_ref_message_hashing ... ok
test util_lib::signed_structured_data::test::test_sip18_ref_signing ... ok
test util_lib::signed_structured_data::test::test_sip18_ref_structured_data_hash ... ok
test util_lib::strings::test::test_contract_name_invalid ... ok
test util_lib::strings::test::test_url_parse ... ok
test util_lib::strings::test::tx_stacks_string_invalid ... ok
test util_lib::strings::test::tx_stacks_strings_codec ... ok
test util_lib::bloom::test::test_bloom_filter_codec ... ok
test util_lib::test::test_timeout_panic - should panic ... ok
test util_lib::test::test_timeout ... ok
test util_lib::test::test_timeout_timeout - should panic ... ok
test net::tests::inv::nakamoto::test_nakamoto_inv_sync_across_epoch_change ... ok
test net::tests::inv::nakamoto::test_nakamoto_invs_sparse ... ok
test net::tests::inv::nakamoto::test_nakamoto_inv_sync_state_machine ... ok
test net::tests::test_nakamoto_peer ... ok
test net::tests::neighbors::test_step_walk_2_neighbors_state_timeout ... ok
test net::tests::neighbors::test_step_walk_2_neighbors_walk_timeout has been running for over 60 seconds
test net::tests::neighbors::test_step_walk_2_neighbors_walk_timeout ... ok
```

test result: ok. 1095 passed; 0 failed; 72 ignored; 0 measured; 0 filtered out; finished in 625.03s

Running unitests src/blockstack_cli.rs (target/debug/deps/blockstack_cli-[665785810a8303cf](#))

```
running 8 tests
test test::generate_should_work ... ok
test test::simple_decode_header ... ok
test test::simple_addresses ... ok
test test::simple_decode_block ... ok
test test::simple_token_transfer ... ok
test test::simple_publish ... ok
test test::simple_decode_tx ... ok
test test::simple_cc ... ok
```

test result: ok. 8 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.01s

Running unitests src/clarity_cli_main.rs (target/debug/deps/clarity_cli-[48c921f6601bdf36](#))

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Running unitests src/main.rs (target/debug/deps/stacks_inspect-e9b926c0d16da1bd)

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Running unitests src/lib.rs (target/debug/deps/stx_genesis-[0aa94abe8d0d4d67](#))

```
running 5 tests
test tests::test_names_read ... ok
test tests::test_name_zonefiles_read ... ok
test tests::test_namespaces_read ... ok
test tests::test_lockups_read ... ok
test tests::test_balances_read ... ok
```

test result: ok. 5 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.17s

```

Doc-tests clarity

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Doc-tests libsigner

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Doc-tests libstackerdbs

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Doc-tests pox_locking

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Doc-tests stacks_common

running 6 tests
test stacks-common./src/address/c32.rs - address::c32::C32_CHARACTERS_MAP (line 32) ... ok
test stacks-common./src/deps_common/bitcoin/network/constants.rs -
deps_common::bitcoin::network::constants::Network::from_magic (line 68) ... ok
test stacks-common./src/deps_common/bitcoin/network/constants.rs -
deps_common::bitcoin::network::constants::Network::magic (line 89) ... ok
test stacks-common./src/deps_common/bitcoin/blockdata/transaction.rs -
deps_common::bitcoin::blockdata::transaction::OutPoint::is_null (line 66) ... ok
test stacks-common./src/deps_common/bitcoin/network/constants.rs -
deps_common::bitcoin::network::constants (line 30) ... ok
test stacks-common./src/deps_common/bech32/mod.rs - deps_common::bech32::convert_bits (line 720) ... ok

test result: ok. 6 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 5.89s

Doc-tests stacks_signer

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Doc-tests blockstack_lib

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

Doc-tests stx_genesis

running 0 tests

test result: ok. 0 passed; 0 failed; 0 ignored; 0 measured; 0 filtered out; finished in 0.00s

```

Code Coverage

We recommend improving the overall line coverage to at least 90%.

```

|| Tested/Total Lines:
|| clarity/src/libclarity.rs: 7/20
|| clarity/src/vm/analysis/analysis_db.rs: 81/90
|| clarity/src/vm/analysis/arithmetic_checker/mod.rs: 85/124
|| clarity/src/vm/analysis/contract_interface_builder/mod.rs: 136/146

```

|| clarity/src/vm/analysis/errors.rs: 125/187
|| clarity/src/vm/analysis/mod.rs: 47/51
|| clarity/src/vm/analysis/read_only_checker/mod.rs: 122/174
|| clarity/src/vm/analysis/trait_checker/mod.rs: 13/14
|| clarity/src/vm/analysis/type_checker/contexts.rs: 39/43
|| clarity/src/vm/analysis/type_checker/mod.rs: 8/17
|| clarity/src/vm/analysis/type_checker/v2_05/contexts.rs: 102/104
|| clarity/src/vm/analysis/type_checker/v2_05/mod.rs: 365/484
|| clarity/src/vm/analysis/type_checker/v2_05/natives/assets.rs: 83/91
|| clarity/src/vm/analysis/type_checker/v2_05/natives/maps.rs: 49/56
|| clarity/src/vm/analysis/type_checker/v2_05/natives/mod.rs: 323/362
|| clarity/src/vm/analysis/type_checker/v2_05/natives/options.rs: 142/155
|| clarity/src/vm/analysis/type_checker/v2_05/natives/sequences.rs: 148/175
|| clarity/src/vm/analysis/type_checker/v2_1/contexts.rs: 149/149
|| clarity/src/vm/analysis/type_checker/v2_1/mod.rs: 589/806
|| clarity/src/vm/analysis/type_checker/v2_1/natives/assets.rs: 108/118
|| clarity/src/vm/analysis/type_checker/v2_1/natives/conversions.rs: 12/12
|| clarity/src/vm/analysis/type_checker/v2_1/natives/maps.rs: 50/56
|| clarity/src/vm/analysis/type_checker/v2_1/natives/mod.rs: 441/492
|| clarity/src/vm/analysis/type_checker/v2_1/natives/options.rs: 144/155
|| clarity/src/vm/analysis/type_checker/v2_1/natives/sequences.rs: 172/197
|| clarity/src/vm/analysis/types.rs: 85/94
|| clarity/src/vm/ast/definition_sorter/mod.rs: 207/210
|| clarity/src/vm/ast/errors.rs: 61/122
|| clarity/src/vm/ast/expression_identifier/mod.rs: 19/20
|| clarity/src/vm/ast/mod.rs: 79/126
|| clarity/src/vm/ast/parser/v1.rs: 254/292
|| clarity/src/vm/ast/parser/v2/lexer/error.rs: 5/30
|| clarity/src/vm/ast/parser/v2/lexer/mod.rs: 489/572
|| clarity/src/vm/ast/parser/v2/lexer/token.rs: 11/58
|| clarity/src/vm/ast/parser/v2/mod.rs: 314/689
|| clarity/src/vm/ast/stack_depth_checker.rs: 21/21
|| clarity/src/vm/ast/sugar_expander/mod.rs: 44/46
|| clarity/src/vm/ast/traits_resolver/mod.rs: 74/78
|| clarity/src/vm/ast/types.rs: 25/27
|| clarity/src/vm/callables.rs: 189/198
|| clarity/src/vm/clarity.rs: 98/139
|| clarity/src/vm/context.rs: 676/805
|| clarity/src/vm/contracts.rs: 9/9
|| clarity/src/vm/costs/mod.rs: 415/553
|| clarity/src/vm/coverage.rs: 0/91
|| clarity/src/vm/database/clarity_db.rs: 592/911
|| clarity/src/vm/database/clarity_store.rs: 71/113
|| clarity/src/vm/database/key_value_wrapper.rs: 129/196
|| clarity/src/vm/database/sqlite.rs: 67/97
|| clarity/src/vm/database/structures.rs: 493/691
|| clarity/src/vm/diagnostic.rs: 24/27
|| clarity/src/vm/docs/contracts.rs: 72/77
|| clarity/src/vm/docs/mod.rs: 227/230
|| clarity/src/vm/errors.rs: 36/50
|| clarity/src/vm/events.rs: 25/124
|| clarity/src/vm/functions/arithmetic.rs: 205/229
|| clarity/src/vm/functions/assets.rs: 434/500
|| clarity/src/vm/functions/boolean.rs: 21/22
|| clarity/src/vm/functions/conversions.rs: 96/120
|| clarity/src/vm/functions/crypto.rs: 78/89
|| clarity/src/vm/functions/database.rs: 262/337
|| clarity/src/vm/functions/define.rs: 150/167
|| clarity/src/vm/functions/mod.rs: 285/298
|| clarity/src/vm/functions/options.rs: 100/111
|| clarity/src/vm/functions/principals.rs: 106/118
|| clarity/src/vm/functions/sequences.rs: 165/183
|| clarity/src/vm/functions/tuples.rs: 26/32
|| clarity/src/vm/mod.rs: 197/232
|| clarity/src/vm/representations.rs: 127/167
|| clarity/src/vm/test_util/mod.rs: 56/108
|| clarity/src/vm/tests/assets.rs: 2/2
|| clarity/src/vm/tests/contracts.rs: 32/32
|| clarity/src/vm/tests/datamaps.rs: 4/4
|| clarity/src/vm/tests/defines.rs: 3/3
|| clarity/src/vm/tests/mod.rs: 43/49
|| clarity/src/vm/tests/principals.rs: 24/109

|| clarity/src/vm/types/mod.rs: 578/666
|| clarity/src/vm/types/serialization.rs: 490/637
|| clarity/src/vm/types/signatures.rs: 741/855
|| clarity/src/vm/variables.rs: 42/44
|| clarity/src/vm/version.rs: 12/27
|| contrib/tools/relay-server/src/http.rs: 32/39
|| contrib/tools/relay-server/src/main.rs: 0/6
|| contrib/tools/relay-server/src/server.rs: 18/30
|| contrib/tools/relay-server/src/state.rs: 11/11
|| contrib/tools/relay-server/src/to_io_result.rs: 6/6
|| contrib/tools/relay-server/src/url.rs: 5/5
|| libsigner/src/events.rs: 80/194
|| libsigner/src/http.rs: 81/102
|| libsigner/src/messages.rs: 391/672
|| libsigner/src/runloop.rs: 42/90
|| libsigner/src/session.rs: 28/79
|| libsigner/src/signer_set.rs: 26/47
|| libstacerdb/src/libstacerdb.rs: 69/82
|| pox-locking/src/events.rs: 157/176
|| pox-locking/src/events_24.rs: 93/108
|| pox-locking/src/lib.rs: 49/58
|| pox-locking/src/pox_1.rs: 54/65
|| pox-locking/src/pox_2.rs: 165/204
|| pox-locking/src/pox_3.rs: 120/169
|| pox-locking/src/pox_4.rs: 102/142
|| stacks-common/src/address/b58.rs: 56/66
|| stacks-common/src/address/c32.rs: 96/102
|| stacks-common/src/address/mod.rs: 59/79
|| stacks-common/src/bitvec.rs: 65/78
|| stacks-common/src/codec/macros.rs: 25/25
|| stacks-common/src/codec/mod.rs: 56/77
|| stacks-common/srcdeps_common/bech32/mod.rs: 201/244
|| stacks-common/srcdeps_common/bitcoin/blockdata/block.rs: 28/41
|| stacks-common/srcdeps_common/bitcoin/blockdata/constants.rs: 24/28
|| stacks-common/srcdeps_common/bitcoin/blockdata/opcodes.rs: 36/45
|| stacks-common/srcdeps_common/bitcoin/blockdata/script.rs: 175/298
|| stacks-common/srcdeps_common/bitcoin/blockdata/transaction.rs: 209/263
|| stacks-common/srcdeps_common/bitcoin/internal_macros.rs: 27/37
|| stacks-common/srcdeps_common/bitcoin/network/address.rs: 30/44
|| stacks-common/srcdeps_common/bitcoin/network/constants.rs: 17/17
|| stacks-common/srcdeps_common/bitcoin/network/encodable.rs: 101/150
|| stacks-common/srcdeps_common/bitcoin/network/message.rs: 30/83
|| stacks-common/srcdeps_common/bitcoin/network/message_blockdata.rs: 0/20
|| stacks-common/srcdeps_common/bitcoin/network/mod.rs: 0/9
|| stacks-common/srcdeps_common/bitcoin/network/serialize.rs: 24/68
|| stacks-common/srcdeps_common/bitcoin/util/hash.rs: 143/196
|| stacks-common/srcdeps_common/bitcoin/util/mod.rs: 0/19
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Changelog

- 2024-04-19 - Initial report
- 2024-06-20 - Final report

About Quantstamp

Quantstamp is a global leader in blockchain security. Founded in 2017, Quantstamp's mission is to securely onboard the next billion users to Web3 through its best-in-class Web3 security products and services.

Quantstamp's team consists of cybersecurity experts hailing from globally recognized organizations including Microsoft, AWS, BMW, Meta, and the Ethereum Foundation. Quantstamp engineers hold PhDs or advanced computer science degrees, with decades of combined experience in formal verification, static analysis, blockchain audits, penetration testing, and original leading-edge research.

To date, Quantstamp has performed more than 500 audits and secured over \$200 billion in digital asset risk from hackers. Quantstamp has worked with a diverse range of customers, including startups, category leaders and financial institutions. Brands that Quantstamp has worked

with include Ethereum 2.0, Binance, Visa, PayPal, Polygon, Avalanche, Curve, Solana, Compound, Lido, MakerDAO, Arbitrum, OpenSea and the World Economic Forum.

Quantstamp's collaborations and partnerships showcase our commitment to world-class research, development and security. We're honored to work with some of the top names in the industry and proud to secure the future of web3.

Notable Collaborations & Customers:

- Blockchains: Ethereum 2.0, Near, Flow, Avalanche, Solana, Cardano, Binance Smart Chain, Hedera Hashgraph, Tezos
- DeFi: Curve, Compound, Maker, Lido, Polygon, Arbitrum, SushiSwap
- NFT: OpenSea, Parallel, Dapper Labs, Decentraland, Sandbox, Axie Infinity, Illuvium, NBA Top Shot, Zora
- Academic institutions: National University of Singapore, MIT

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