



CAIRO SECURITY  
CLAN

# FORGE YIELDS

SECURITY ASSESSMENT REPORT

SEPTEMBER 2025

Prepared for  
FORGE YIELDS



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## 1 About Cairo Security Clan

Cairo Security Clan is a leading force in the realm of blockchain security, dedicated to fortifying the foundations of the digital age. As pioneers in the field, we specialize in conducting meticulous smart contract security audits, ensuring the integrity and reliability of decentralized applications built on blockchain technology.

At Cairo Security Clan, we boast a multidisciplinary team of seasoned professionals proficient in blockchain security, cryptography, and software engineering. With a firm commitment to excellence, our experts delve into every aspect of the Web3 ecosystem, from foundational layer protocols to application-layer development. Our comprehensive suite of services encompasses smart contract audits, formal verification, and real-time monitoring, offering unparalleled protection against potential vulnerabilities.

Our team comprises industry veterans and scholars with extensive academic backgrounds and practical experience. Armed with advanced methodologies and cutting-edge tools, we scrutinize and analyze complex smart contracts with precision and rigor. Our track record speaks volumes, with a plethora of published research papers and citations, demonstrating our unwavering dedication to advancing the field of blockchain security.

At Cairo Security Clan, we prioritize collaboration and transparency, fostering meaningful partnerships with our clients. We believe in a customer-oriented approach, engaging stakeholders at every stage of the auditing process. By maintaining open lines of communication and soliciting client feedback, we ensure that our solutions are tailored to meet the unique needs and objectives of each project.

Beyond our core services, Cairo Security Clan is committed to driving innovation and shaping the future of blockchain technology. As active contributors to the ecosystem, we participate in the development of emerging technologies such as Starknet, leveraging our expertise to build robust infrastructure and tools. Through strategic guidance and support, we empower our partners to navigate the complexities of the blockchain landscape with confidence and clarity.

In summary, Cairo Security Clan stands at the forefront of blockchain security, blending technical prowess with a client-centric ethos to deliver unparalleled protection and peace of mind in an ever-evolving digital landscape. Join us in safeguarding the future of decentralized finance and digital assets with confidence and conviction.

## 2 Disclaimer

### Disclaimer Limitations of this Audit:

This report is based solely on the materials and documentation provided by you to Cairo Security Clan for the specific purpose of conducting the security review outlined in the [Summary of Audit](#) and [Scope](#). The findings presented here may not be exhaustive and may not identify all potential vulnerabilities. Cairo Security Clan provides this review and report on an "as-is" and "as-available" basis. You acknowledge that your use of this report, including any associated services, products, protocols, platforms, content, and materials, occurs entirely at your own risk.

### Inherent Risks of Blockchain Technology:

Blockchain technology remains in its developmental stage and is inherently susceptible to unknown risks and vulnerabilities. This review is specifically focused on the smart contract code and does not extend to the compiler layer, programming language elements beyond the reviewed code, or other potential security risks outside the code itself.

### Report Purpose and Reliance:

This report should not be construed as an endorsement of any specific project or team, nor does it guarantee the absolute security of the audited smart contracts. No third party should rely on this report for any purpose, including making investment or purchasing decisions.

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### 3 Executive Summary

This document presents the security review performed by **Cairo Security Clan** on the Forge Yields developed by **Forge Yields**.

ForgeYields is a cross-chain vault protocol that automates DeFi yield strategies by bridging assets from Starknet to Ethereum and deploying them into protocols like Aave, Curve, and Uniswap.

It built around three main components:

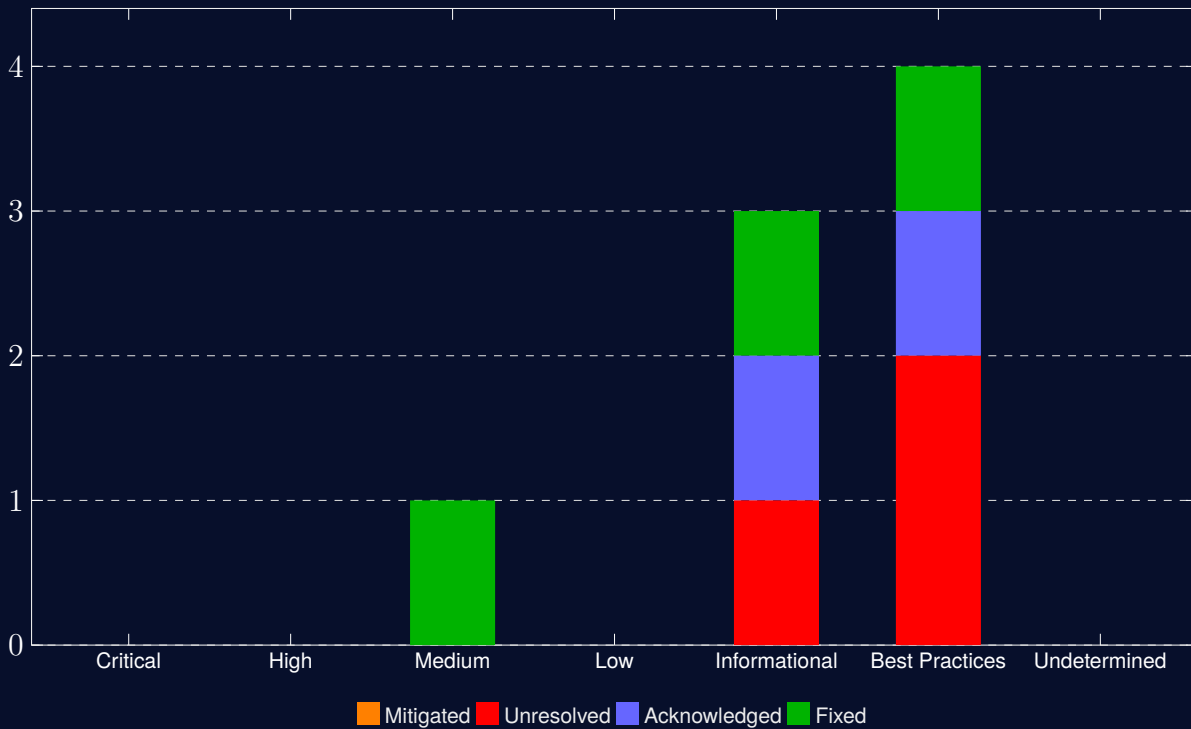
- TokenGateway, where users directly deposit and withdraw assets
- Vault on Ethereum, which receives bridged tokens and deploys them into DeFi strategies
- Controller on Starknet, which manages strategy logic and coordinates cross-chain operations

The audit was performed using

- manual analysis of the codebase,
- automated analysis tools,
- simulation of the smart contract,
- analysis of edge test cases

There are 8 points of attention, where 0 are classified as Critical, 0 as High, 1 as Medium, 0 as Low, 3 as Informational, 4 as Best Practices, and 0 as Undetermined. The issues are summarized in Fig. 1.

**This document is organized as follows.** Section 1 About Cairo Security Clan. Section 2 Disclaimer. Section 3 Executive Summary. Section 4 Summary of Audit. Section 5 Risk Classification. Section 6 Issues by Severity Levels. Section 7 Test Evaluation.



**Fig 1: Distribution of issues: Critical (0), High (0), Medium (1), Low (0), Informational (3), Best Practices (4), Undetermined (0).**  
**Distribution of status: Fixed (3), Acknowledged (2), Mitigated (0), Unresolved (3).**



## 4 Summary of Audit

<b>Audit Type</b>	Security Review
<b>Solidity Version</b>	0.8.22
<b>Cairo Version</b>	2.9.2
<b>Final Report</b>	23/09/2025
<b>EVM Repository</b>	ForgeYields/forge-contracts-evm
<b>Cairo Repository</b>	ForgeYields/forge-contracts-cvm
<b>EVM Initial Commit Hash</b>	f6f800a1dc60a6dca3d044a2cf46d9e6da2e9aba
<b>Cairo Initial Commit Hash</b>	9b10230bd0093e7f2bf84e8b1c361ab2f6ba5be1
<b>Documentation</b>	Not Available
<b>Test Suite Assessment</b>	Low

### 4.1 Scoped Files

	<b>EVM Contracts</b>
1	/src/vault/bridgeManager/BridgeManager.sol
2	/src/vault/bridgeManager/Errors.sol
3	/src/vault/bridgeManager/IBridgeManager.sol
4	/src/vault/factory/Errors.sol
5	/src/vault/factory/IVaultFactory.sol
6	/src/vault/factory/VaultFactory.sol
7	/src/vault/vault/main/IVault.sol
8	/src/vault/vault/main/Vault.sol
9	/src/vault/vault/proxy/IProxyVault.sol
10	/src/vault/vault/proxy/ProxyVault.sol
11	/src/vault/vault/BaseVault.sol
12	/src/vault/vault/Errors.sol
13	/src/vault/vault/IBaseVault.sol

	<b>Cairo Contracts</b>
1	/src/lib.cairo
2	/packages/controller/src/lib.cairo
3	/packages/controller/src/constants.cairo
4	/packages/controller/src/messages.cairo
5	/packages/controller/src/controller/controller.cairo
6	/packages/controller/src/controller/errors.cairo
7	/packages/controller/src/controller/interface.cairo
8	/packages/controller/src/factory/errors.cairo
9	/packages/controller/src/factory/factory.cairo
10	/packages/controller/src/factory/interface.cairo
11	/packages/token_gateway/src/factory/errors.cairo
12	/packages/token_gateway/src/factory/factory.cairo
13	/packages/token_gateway/src/factory/interface.cairo
14	/packages/token_gateway/src/redeem_request/errors.cairo
15	/packages/token_gateway/src/redeem_request/interface.cairo
16	/packages/token_gateway/src/redeem_request/redeem_request.cairo
17	/packages/token_gateway/src/token_gateway/errors.cairo
18	/packages/token_gateway/src/token_gateway/interface.cairo
19	/packages/token_gateway/src/token_gateway/token_gateway.cairo
20	/packages/token_gateway/src/utils/errors.cairo
21	/packages/token_gateway/src/utils/interface.cairo
22	/packages/token_gateway/src/utils/swap_deposit_helper.cairo
23	/packages/token_gateway/src/lib.cairo



## 4.2 Issues

	Findings	Severity	Update
1	Gas hook metadata domain mismatch in function <code>transfer_remote()</code>	Medium	Fixed
2	Missing return-value checks on ERC20 transfers/approvals	Informational	Acknowledged
3	Ownership inheritance inconsistency	Informational	Acknowledged
4	Misleading error on duplicate vault report	Informational	Fixed
5	Function <code>handle()</code> revert token gateway registration messages when no vault factory router set	Best Practices	Unresolved
6	Misleading "shares" naming while storing redeem request info	Best Practices	Acknowledged
7	Missing event emissions for critical configuration changes	Best Practices	Fixed
8	Missing <code>value</code> field in bridge transfer hash in function <code>hashBridgeTransferInfo()</code>	Best Practices	Unresolved



## 5 Risk Classification

The risk rating methodology used by **Cairo Security Clan** follows the principles established by the **CVSS risk rating methodology**. The severity of each finding is determined by two factors: **Likelihood** and **Impact**.

**Likelihood** measures how likely an attacker will uncover and exploit the finding. This factor will be one of the following values:

- a) **High**: The issue is trivial to exploit and has no specific conditions that need to be met;
- b) **Medium**: The issue is moderately complex and may have some conditions that need to be met;
- c) **Low**: The issue is very complex and requires very specific conditions to be met.

When defining the likelihood of a finding, other factors are also considered. These can include but are not limited to Motive, opportunity, exploit accessibility, ease of discovery, and ease of exploit.

**Impact** is a measure of the damage that may be caused if an attacker exploits the finding. This factor will be one of the following values:

- a) **High**: The issue can cause significant damage such as loss of funds or the protocol entering an unrecoverable state;
- b) **Medium**: The issue can cause moderate damage such as impacts that only affect a small group of users or only a particular part of the protocol;
- c) **Low**: The issue can cause little to no damage such as bugs that are easily recoverable or cause unexpected interactions that cause minor inconveniences.

When defining the impact of a finding other factors are also considered. These can include but are not limited to Data/state integrity, loss of availability, financial loss, and reputation damage. After defining the likelihood and impact of an issue, the severity can be determined according to the table below.

		Likelihood		
		High	Medium	Low
Impact	High	Critical	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Info/Best Practices

To address issues that do not fit a High/Medium/Low severity, **Cairo Security Clan** also uses three more finding severities: **Informational**, **Best Practices** and **Gas**

- a) **Informational** findings do not pose any risk to the application, but they carry some information that the audit team intends to formally pass to the client;
- b) **Best Practice** findings are used when some piece of code does not conform with smart contract development best practices;
- c) **Gas** findings are used when some piece of code uses more gas than it should be or have some functions that can be removed to save gas.



## 6 Issues by Severity Levels

### 6.1 Medium

#### 6.1.1 Gas hook metadata domain mismatch in function `transfer_remote()`

**File(s):** `/packages/token_gateway/src/token_gateway/token_gateway.cairo`

**Description:** In the `transfer_remote()` function of the TokenGateway contract, there is a mismatch between the actual message destination and the domain used for gas hook metadata calculation.

```
1 // @audit no guarantee always transfer to CONTROLLER_DOMAIN
2 let igp_hook = self.mailbox.get_hook();
3 if (igp_hook.is_non_zero()) {
4     hook = Option::Some(igp_hook);
5     hook_metadata =
6         Option::Some(self._Gas_router_hook_metadata(Constants::CONTROLLER_DOMAIN));
7 }
8 let message_id = mailbox_dispatcher
9     .dispatch(
10         destination, token_gateway_router, token_message, value, hook_metadata, hook,
11     );
```

The function uses `Constants::CONTROLLER_DOMAIN` for gas metadata calculation while the message is actually being sent to the `destination` parameter, which can be any registered token gateway domain.

**Recommendation(s):** Consider updating the gas hook metadata to use the actual `destination` parameter instead of the hardcoded `Constants::CONTROLLER_DOMAIN` to ensure correct gas accounting.

**Status:** Fixed

**Update from the client:** Fixed in commit [4d9b155](#)





## 6.2 Informational

### 6.2.1 Missing return-value checks on ERC20 transfers/approvals

**File(s):** /packages/token\_gateway/src/token\_gateway/token\_gateway.cairo

**Description:** Many ERC20 interactions assume success and ignore the boolean return value. While many tokens revert on failure, the ERC20 spec allows returning false without revert; ignoring the return can silently skip transfers/approvals and cause accounting drift or stuck flows with non-compliant tokens. Best practice is to assert success (e.g., check or require true) or handle failures explicitly.

```
1 ERC20ABIDispatcher { contract_address: self.asset.read() }
2     .transfer(owner_of_id, assets); // @audit should check return value
3 self.emit(RedeemClaimed { receiver: owner_of_id, shares, assets, id, epoch });
4 assets
5 ERC20ABIDispatcher { contract_address: self.asset.read() }
6     .transferFrom(caller, get_contract_address(), assets); // @audit should check return value
7 self.buffer.write(self.buffer.read() + assets);
8 self.erc20.mint(receiver, shares);
9 self.emit(Deposit { sender: caller, owner: receiver, assets, shares, referral_code });
```

**Recommendation(s):** Consider checking the boolean returned by the dispatcher calls and assert it is true (or handle failures).

**Status:** Acknowledged

**Update from the client:**

### 6.2.2 Ownership inheritance inconsistency

**File(s):** /packages/token\_gateway/src/factory/factory.cairo

**Description:** In the current design, when new components such as TokenGateway, Controller, or RedeemRequest are deployed through their respective factories, the owner of the factory at deployment time is automatically assigned as the owner of the new component. For example, during token gateway deployment, the factory retrieves its current owner via `self.ownable.owner()` and then passes that address as the owner of the newly deployed token gateway.

```
1 let owner = self.ownable.owner(); // Factory's current owner
2 let token_gateway = self._deploy_token_gateway(
3     current_salt,
4     owner, // Factory owner becomes token gateway owner
5     controller,
6     // ... other parameters
7 );
```

This creates an ownership inheritance problem. If the factory owner changes after deployment, the ownership of previously deployed components does not update accordingly. As a result, older components remain controlled by the factory's previous owner, while any new deployments will be owned by the current factory owner. This leads to fragmented governance where the current factory owner may not have authority over all components that originated from the factory, and the previous owner may retain unintended control over deployed contracts.

**Recommendation(s):** Consider redesigning ownership so that deployed components reference the factory directly for ownership, ensuring that changes to factory ownership automatically propagate to all components.

**Status:** Acknowledged

**Update from the client:** Indeed, there is a management inconsistency when the owner of the factories is changed.



### 6.2.3 Misleading error on duplicate vault report

**File(s):** `/packages/controller/src/controller/controller.cairo`

**Description:** In the `_handle_vault_report()` function, the code emits an error intended for token gateway reports when a duplicate vault report is detected. This is non-functional but reduces clarity for operators and tooling.

```
1 fn *handle*vault_report(ref self: ContractState, epoch: u256, origin: u32, message: @Bytes) {  
2     let domain_epoch = VaultReportMessageTrait::epoch(message);  
3     if (epoch != domain_epoch) { Errors::invalid_epoch(epoch, origin, domain_epoch); }  
4     let mut vault_report = self.vault_report.entry((epoch));  
5     if (vault_report.submitted.read()) {  
6         Errors::token_gateway_report_exists(epoch, origin); // @audit Wrong error for vault report  
7     }  
8     // [...]  
9 }
```

**Recommendation(s):** Consider replacing with a dedicated error (e.g., `Errors::vault_report_exists`) to improve observability and debugging.

**Status:** Fixed

**Update from the client:** Fixed in commit [4d9b155](#)



## 6.3 Best Practices

### 6.3.1 Function `handle()` revert token gateway registration messages when no vault factory router set

File(s): `/packages/controller/src/factory/factory.cairo`

**Description:** The `handle()` function has a logic flaw in determining message types. It uses `self._must_have_remote_vault_factory_router()` which panics if no vault factory router is configured, even for token gateway messages. If no vault factory router is configured, ALL incoming messages will fail, including legitimate token gateway registrations.

```

1 fn handle(ref self: ContractState, origin: u32, sender: u256, message: Bytes) {
2     self.mailbox.assert_only_mailbox();
3     // Handle vault registration messages
4     // @audit If vault_factory_router == 0 will panic even when the message is token gateway registration (not
      vault registration)
5     if (sender == self._must_have_remote_vault_factory_router()) {
6         self._handle_vault_registration(origin, message);
7     } else {
8         // Handle token gateway registration messages
9         self._handle_token_gateway_registration(origin, sender, message);
10    }
11 }
12 fn _must_have_remote_vault_factory_router(self: @ContractState) -> u256 {
13     let vault_factory_router = self.vault_factory_router.read();
14     if (vault_factory_router == 0) {
15         Errors::vault_factory_router_not_found();
16     }
17     vault_factory_router
18 }

```

**Recommendation(s):** Consider ensuring token gateway messages are not blocked by missing vault factory router configuration.

**Status:** Unresolved

**Update from the client:**

### 6.3.2 Misleading "shares" naming while storing redeem request info

File(s): `/packages/token_gateway/src/token_gateway/token_gateway.cairo`

**Description:** The redeem flow writes asset-denominated amounts into variables and fields named as if they are shares; for example, `redeem_shares` is incremented by assets and `RedeemRequestInfo.shares` is set to assets.

```

1 let epoch = self.epoch.read();
2 // @audit Using assets instead of remaining_shares
3 self.redeem_shares.write(epoch, self.redeem_shares.read(epoch) + assets);
4 let id = IRedeemRequestDispatcher { contract_address: self.redeem_request.read() }
5     .mint(receiver, RedeemRequestInfo { epoch, shares: assets });

```

While this unit mismatch does not currently harm accounting, proportionality between users' claims remains correct because all users are treated consistently. It can mislead maintainers or integrations into assuming share units and introduce future errors (e.g., double conversions, incorrect PPS-based logic, or misinterpreted analytics).

**Recommendation(s):** Consider either using `shares` unit or renaming storage variables and struct fields to `Assets` to reflect actual units.

**Status:** Acknowledged

**Update from the client:** We will consider rename it to nominal in a next version



### 6.3.3 Missing event emissions for critical configuration changes

**File(s):** `/packages/controller/src/factory/factory.cairo`

**Description:** Several critical functions that modify router configurations don't emit events, reducing transparency and making it difficult to track changes. Affected functions:

- `enroll_token_gateway_factory_router()` - Lines 361-365
- `unenroll_token_gateway_factory_router()` - Lines 367-372
- `enroll_vault_factory_router()` - Lines 374-378
- `unenroll_vault_factory_router()` - Lines 380-384
- `set_destination_gas()` - Lines 386-390
- `set_salt()` - Lines 392-396

In the case of the `enroll_token_gateway_factory_router()` function, only the `TokenGatewayFactoryRouterAdded` event is defined, but never emitted. Most configuration changes lack event emissions entirely.

```

1  #[derive(Drop, starknet::Event)]
2  struct TokenGatewayFactoryRouterAdded {
3      domain: u32,
4      router: ContractAddress,
5  }
6  fn enroll_token_gateway_factory_router(ref self: ContractState, domain: u32, router: u256) {
7      self.ownable.assert_only_owner();
8      let mut token_gateway_factory_routers = self.token_gateway_factory_routers.read();
9      let * = token_gateway_factory_routers.set(domain, router);
10 }

```

**Recommendation(s):** Consider adding event emissions for the critical function to increase transparency.

**Status:** Fixed

**Update from the client:** Fixed in commit [4d9b155](#)

### 6.3.4 Missing value field in bridge transfer hash in function `hashBridgeTransferInfo()`

**File(s):** `/src/vault/vault/main/Vault.sol`

**Description:** The function `hashBridgeTransferInfo()` is missing the `value` field when calculating the hash for `VaultWithdrawInfo` structures. The function currently only includes `domain`, `tokenGateway`, and `amount` in the hash calculation, but omits the `value` field which represents the ETH value required for bridge calls.

```

1  function hashBridgeTransferInfo(BridgeTransfersInfo calldata bridgeTransfersInfo) public pure returns (uint256) {
2      bytes memory encodedData;
3      uint256 withdrawalsLen = bridgeTransfersInfo.withdrawals.length;
4      encodedData = abi.encodePacked(bridgeTransfersInfo.totalDeposits, withdrawalsLen);
5      for (uint256 i = 0; i < withdrawalsLen;) {
6          encodedData = abi.encodePacked(
7              encodedData,
8              uint256(bridgeTransfersInfo.withdrawals[i].domain),
9              bridgeTransfersInfo.withdrawals[i].tokenGateway,
10             bridgeTransfersInfo.withdrawals[i].amount
11         );
12         unchecked {
13             ++i;
14         }
15     }
16 }

```

The hash is used to verify that the bridge transfer information in `processBridgeTransfers()` is matched with `bridgeInteractionHash`. However, since the `value` is not included in the hash, it creates possible collisions when two `VaultWithdrawInfo` structs have identical `domain`, `tokenGateway`, and `amount` but different `value` fields. The actual `value` used to process the bridge transfer might be different than what is intended in `bridgeInteractionHash`.

**Recommendation(s):** Consider including the `value` field in the hash calculation.

**Status:** Unresolved

**Update from the client:**



## 7 Compilation & Test

### 7.1 Cairo Compilation Output

```

1  scarb build
2      Updating git repository https://github.com/keep-starknet-strange/alexandria
3  Downloading openzeppelin v0.20.0
4  Downloading snforge_std v0.34.1
5  Downloading openzeppelin_security v0.20.0
6  Downloading openzeppelin_finance v0.20.0
7  Downloading openzeppelin_merkle_tree v0.20.0
8  Downloading openzeppelin_presets v0.20.0
9  Downloading openzeppelin_token v0.20.0
10 Downloading openzeppelin_governance v0.20.0
11 Downloading openzeppelin_account v0.20.0
12 Downloading openzeppelin_access v0.20.0
13 Downloading openzeppelin_upgrades v0.20.0
14 Downloading openzeppelin_utils v0.20.0
15 Downloading openzeppelin_introspection v0.20.0
16 Downloading snforge_scarb_plugin v0.34.1
17      Updating crates.io index
18      Locking 184 packages to latest compatible versions
19      Adding cairo-lang-debug v2.7.0 (available: v2.12.3)
20      Adding cairo-lang-diagnostics v2.7.0 (available: v2.12.3)
21      Adding cairo-lang-filesystem v2.7.0 (available: v2.12.3)
22      Adding cairo-lang-macro v0.1.0 (available: v0.1.1)
23      Adding cairo-lang-parser v2.7.0 (available: v2.12.3)
24      Adding cairo-lang-sierra v2.7.0 (available: v2.12.3)
25      Adding cairo-lang-syntax v2.7.0 (available: v2.12.3)
26      Adding cairo-lang-syntax-codegen v2.7.1 (available: v2.12.3)
27      Adding cairo-lang-utils v2.7.0 (available: v2.12.3)
28      Adding indoc v2.0.5 (available: v2.0.6)
29      Adding serde_json v1.0.132 (available: v1.0.145)
30      Adding smol_str v0.2.2 (available: v0.3.2)
31      Adding url v2.5.4 (available: v2.5.7)
32  Downloading crates ...
33  Downloaded indoc v2.0.5
34  Downloaded unicode-ident v1.0.19
35  Downloaded potential_utf v0.1.3
36  Downloaded serde v1.0.226
37  Downloaded url v2.5.4
38  Downloaded lazy_static v1.5.0
39  Downloaded smol_str v0.2.2
40  Downloaded redox_syscall v0.5.17
41  Downloaded winapi-util v0.1.11
42  Downloaded salsa-macros v0.16.0
43  Downloaded unescaper v0.1.6
44  Downloaded either v1.15.0
45  Downloaded crunchy v0.2.4
46  Downloaded libredox v0.1.10
47  Downloaded windows-link v0.2.0
48  Downloaded const-fnv1a-hash v1.1.0
49  Downloaded equivalent v1.0.2
50  Downloaded ahash v0.8.12
51  Downloaded instant v0.1.13
52  Downloaded parking_lot_core v0.8.6
53  Downloaded bitflags v1.3.2
54  Downloaded xxhash-rust v0.8.15
55  Downloaded linkme v0.3.33
56  Downloaded ena v0.14.3
57  Downloaded getrandom v0.2.16
58  Downloaded linkme-impl v0.3.33
59  Downloaded serde_derive_internals v0.29.1
60  Downloaded bit-set v0.5.3
61  Downloaded redox_syscall v0.2.16
62  Downloaded parking_lot v0.11.2
63  Downloaded dirs-sys-next v0.1.2

```



## Cairo Security Clan

```
64 Downloaded blake2 v0.10.6
65 Downloaded starknet-types-core v0.1.9
66 Downloaded oorandom v11.1.5
67 Downloaded serde_derive v1.0.226
68 Downloaded convert_case v0.6.0
69 Downloaded ascii-canvas v3.0.0
70 Downloaded fixedbitset v0.4.2
71 Downloaded redox_users v0.4.6
72 Downloaded dirs-next v2.0.0
73 Downloaded derivative v2.2.0
74 Downloaded colored v2.2.0
75 Downloaded anyhow v1.0.100
76 Downloaded allocator-api2 v0.2.21
77 Downloaded schemars v0.8.22
78 Downloaded indexmap v1.9.3
79 Downloaded wasi v0.11.1+wasi-snapshot-preview1
80 Downloaded term v0.7.0
81 Downloaded cairo-lang-parser v2.7.0
82 Downloaded log v0.4.28
83 Downloaded bitflags v2.9.4
84 Downloaded zeroize v1.8.1
85 Downloaded dyn-clone v1.0.20
86 Downloaded serde_core v1.0.226
87 Downloaded unicode-segmentation v1.12.0
88 Downloaded itertools v0.11.0
89 Downloaded itertools v0.12.1
90 Downloaded hashbrown v0.12.3
91 Downloaded serde_json v1.0.132
92 Downloaded hashbrown v0.16.0
93 Downloaded hashbrown v0.14.5
94 Downloaded lambdaworks-math v0.10.0
95 Downloaded zerocopy-derive v0.8.27
96 Downloaded lambdaworks-crypto v0.10.0
97 Downloaded indexmap v2.11.4
98 Downloaded lalrpop v0.20.2
99 Downloaded syn v1.0.109
100 Downloaded zerocopy v0.8.27
101 Downloaded bit-vec v0.6.3
102 Downloaded pico-args v0.5.0
103 Downloaded tiny-keccak v2.0.2
104 Downloaded unicode-xid v0.2.6
105 Downloaded lalrpop-util v0.20.2
106 Downloaded subtle v2.6.1
107 Downloaded keccak v0.1.5
108 Downloaded thiserror-impl v1.0.69
109 Downloaded thiserror v1.0.69
110 Downloaded heck v0.3.3
111 Downloaded schemars_derive v0.8.22
112 Downloaded salsa v0.16.1
113 Downloaded petgraph v0.6.5
114 Downloaded libc v0.2.176
115 Downloaded sha3 v0.10.8
116 Downloaded winapi v0.3.9
117 Downloaded windows-sys v0.59.0
118 Downloaded windows-sys v0.61.0
119 Downloaded winapi-i686-pc-windows-gnu v0.4.0
120 Downloaded winapi-x86_64-pc-windows-gnu v0.4.0
121 Downloaded cairo-lang-macro v0.1.0
122 Downloaded cairo-lang-filesystem v2.7.0
123 Downloaded cairo-lang-sierra v2.7.0
124 Downloaded cairo-lang-syntax v2.7.0
125 Downloaded cairo-lang-diagnostics v2.7.0
126 Downloaded cairo-lang-syntax-codegen v2.7.1
127 Downloaded size-of v0.1.5
128 Downloaded cairo-lang-debug v2.7.0
129 Downloaded cairo-lang-utils v2.7.0
130 Compiling snforge_scarb_plugin v0.34.1
131 Compiling proc-macro2 v1.0.101
132 Compiling unicode-ident v1.0.19
133 Compiling autocfg v1.5.0
```



```
134 Compiling libc v0.2.176
135 Compiling version_check v0.9.5
136 Compiling serde_core v1.0.226
137 Compiling serde v1.0.226
138 Compiling cfg-if v1.0.3
139 Compiling smallvec v1.15.1
140 Compiling stable_deref_trait v1.2.0
141 Compiling memchr v2.7.5
142 Compiling typenum v1.18.0
143 Compiling zerocopy v0.8.27
144 Compiling hashbrown v0.12.3
145 Compiling rand_core v0.6.4
146 Compiling serde_json v1.0.132
147 Compiling syn v1.0.109
148 Compiling generic-array v0.14.7
149 Compiling lock_api v0.4.13
150 Compiling num-traits v0.2.19
151 Compiling indexmap v1.9.3
152 Compiling ahash v0.8.12
153 Compiling rand v0.8.5
154 Compiling itoa v1.0.15
155 Compiling schemars v0.8.22
156 Compiling parking_lot_core v0.8.6
157 Compiling once_cell v1.21.3
158 Compiling ryu v1.0.20
159 Compiling quote v1.0.40
160 Compiling instant v0.1.13
161 Compiling parking_lot_core v0.9.11
162 Compiling scopeguard v1.2.0
163 Compiling either v1.15.0
164 Compiling syn v2.0.106
165 Compiling allocator-api2 v0.2.21
166 Compiling unicode-segmentation v1.12.0
167 Compiling equivalent v1.0.2
168 Compiling dyn-clone v1.0.20
169 Compiling crossbeam-utils v0.8.21
170 Compiling num-integer v0.1.46
171 Compiling hashbrown v0.16.0
172 Compiling crypto-common v0.1.6
173 Compiling heck v0.3.3
174 Compiling aho-corasick v1.1.3
175 Compiling block-buffer v0.10.4
176 Compiling dirs-sys-next v0.1.2
177 Compiling itertools v0.12.1
178 Compiling writeable v0.6.1
179 Compiling crunchy v0.2.4
180 Compiling litemap v0.8.0
181 Compiling subtle v2.6.1
182 Compiling regex-syntax v0.8.6
183 Compiling parking_lot v0.11.2
184 Compiling digest v0.10.7
185 Compiling dirs-next v2.0.0
186 Compiling icu_normalizer_data v2.0.0
187 Compiling oorandom v11.1.5
188 Compiling rustc-hash v1.1.0
189 Compiling tiny-keccak v2.0.2
190 Compiling icu_properties_data v2.0.1
191 Compiling log v0.4.28
192 Compiling siphasher v1.0.1
193 Compiling indexmap v2.11.4
194 Compiling phf_shared v0.11.3
195 Compiling term v0.7.0
196 Compiling parking_lot v0.12.4
197 Compiling fixedbitset v0.4.2
198 Compiling new_debug_unreachable v1.0.6
199 Compiling genco-macros v0.17.10
200 Compiling thiserror v2.0.16
201 Compiling precomputed-hash v0.1.1
202 Compiling bit-vec v0.6.3
203 Compiling same-file v1.0.6
```



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204 Compiling walkdir v2.5.0
205 Compiling bit-set v0.5.3
206 Compiling string_cache v0.8.9
207 Compiling ena v0.14.3
208 Compiling ascii-canvas v3.0.0
209 Compiling itertools v0.11.0
210 Compiling petgraph v0.6.5
211 Compiling unicode-xid v0.2.6
212 Compiling pico-args v0.5.0
213 Compiling linkme-impl v0.3.33
214 Compiling keccak v0.1.5
215 Compiling cpufeatures v0.2.17
216 Compiling path-clean v1.0.1
217 Compiling lazy_static v1.5.0
218 Compiling sha2 v0.10.9
219 Compiling sha3 v0.10.8
220 Compiling data-encoding v2.9.0
221 Compiling xxhash-rust v0.8.15
222 Compiling regex-automata v0.4.10
223 Compiling anyhow v1.0.100
224 Compiling xshell-macros v0.2.7
225 Compiling lambdaworks-math v0.10.0
226 Compiling relative-path v1.9.3
227 Compiling synstructure v0.13.2
228 Compiling serde_derive_internals v0.29.1
229 Compiling thiserror v1.0.69
230 Compiling xshell v0.2.7
231 Compiling scarb-stable-hash v1.0.0
232 Compiling blake2 v0.10.6
233 Compiling percent-encoding v2.3.2
234 Compiling size-of v0.1.5
235 Compiling utf8_iter v1.0.4
236 Compiling convert_case v0.6.0
237 Compiling form_urlencoded v1.2.2
238 Compiling colored v2.2.0
239 Compiling const-fnv1a-hash v1.1.0
240 Compiling cairo-lang-macro-stable v1.0.0
241 Compiling indoc v2.0.5
242 Compiling salsa-macros v0.16.0
243 Compiling lalrpop-util v0.20.2
244 Compiling regex v1.11.2
245 Compiling lambdaworks-crypto v0.10.0
246 Compiling serde_derive v1.0.226
247 Compiling zerofrom-derive v0.1.6
248 Compiling yoke-derive v0.8.0
249 Compiling zerovec-derive v0.11.1
250 Compiling displaydoc v0.2.5
251 Compiling schemars_derive v0.8.22
252 Compiling thiserror-impl v2.0.16
253 Compiling lalrpop v0.20.2
254 Compiling thiserror-impl v1.0.69
255 Compiling zerofrom v0.1.6
256 Compiling yoke v0.8.0
257 Compiling zerovec v0.11.4
258 Compiling zerotrie v0.2.2
259 Compiling genco v0.17.10
260 Compiling unescaper v0.1.6
261 Compiling linkme v0.3.33
262 Compiling cairo-lang-macro-attributes v0.1.0
263 Compiling derivative v2.2.0
264 Compiling tinystr v0.8.1
265 Compiling potential_utf v0.1.3
266 Compiling icu_locale_core v2.0.0
267 Compiling icu_collections v2.0.0
268 Compiling cairo-lang-syntax-codegen v2.7.1
269 Compiling cairo-lang-macro v0.1.0
270 Compiling icu_provider v2.0.0
271 Compiling num-bigint v0.4.6
272 Compiling hashbrown v0.14.5
273 Compiling salsa v0.16.1
```



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## 7.2 Cairo Tests Output

```

1  snforge test -p forge_controller --max-n-steps 4294967295
2  warn: failed to open local registry cache, trying to recreate it
3
4  Caused by:
5      Database repair aborted.
6  [WARNING] Package snforge_std version does not meet the recommended version requirement =0.34.0, it might result
   in unexpected behaviour
7  Compiling snforge_scarb_plugin v0.34.1
8  warning: hiding a lifetime that's elided elsewhere is confusing
9      --> src/args.rs:79:43
10     |
11 79 |     pub fn unnamed_only<T: AttributeInfo>(&self) -> Result<UnnamedArgs, Diagnostic> {
12     |     |           ^^^^^          ----- the same lifetime is hidden here
13     |     |           |
14     |     |           the lifetime is elided here
15     |
16     = help: the same lifetime is referred to in inconsistent ways, making the signature confusing
17     = note: '#[warn(mismatched_lifetime_syntaxes)]' on by default
18 help: use '_' for type paths
19     |
20 79 |     pub fn unnamed_only<T: AttributeInfo>(&self) -> Result<UnnamedArgs<'_>, Diagnostic> {
21     |                                           ++++
22 warning: hiding a lifetime that's elided elsewhere is confusing
23     --> src/args.rs:88:20
24     |
25 88 |     pub fn unnamed(&self) -> UnnamedArgs {
26     |     |           ^^^^^          ----- the same lifetime is hidden here
27     |     |           |
28     |     |           the lifetime is elided here
29     |
30     = help: the same lifetime is referred to in inconsistent ways, making the signature confusing
31 help: use '_' for type paths
32     |
33 88 |     pub fn unnamed(&self) -> UnnamedArgs<'_> {
34     |                                           ++++
35 warning: 'snforge_scarb_plugin' (lib) generated 2 warnings
36 Finished 'release' profile [optimized] target(s) in 0.03s
37 warning: the following packages contain code that will be rejected by a future version of Rust: size-of v0.1.5
38 note: to see what the problems were, use the option '--future-incompat-report', or run 'cargo report future-
   incompatibilities --id 1'
39 Compiling test(forge_controller_unittest) forge_controller v0.1.0 (/home/erim/csc/cvm/packages/controller/
   Scarb.toml)
40 warn[E0001]: Unused variable. Consider ignoring by prefixing with '_'.
41 --> /home/erim/csc/cvm/packages/controller/src/test/test_controller.cairo[proc_test][
   proc__internal_config_statement][proc_should_panic]:42:9
42     let force = false;
43     ^***^
44 note: this error originates in the attribute macro: 'should_panic'
45
46 warn[E0001]: Unused variable. Consider ignoring by prefixing with '_'.
47 --> /home/erim/csc/cvm/packages/controller/src/test/test_p2p.cairo[proc_test][proc__internal_config_statement
   ]:830:9
48     let current_shares_bob = ERC20ABIDispatcher { contract_address: token_gateway_remote.contract_address }.
   balance_of(test_utils::BOB());
49     ^*****^
50 note: this error originates in the attribute macro: '__internal_config_statement'
51
52 warn[E0001]: Unused variable. Consider ignoring by prefixing with '_'.
53 --> /home/erim/csc/cvm/packages/controller/src/test/test_controller.cairo[proc_test][
   proc__internal_config_statement][proc_should_panic]:42:9
54     let force = false;
55     ^***^
56 note: this error originates in the attribute macro: 'should_panic'
57
58 warn[E0001]: Unused variable. Consider ignoring by prefixing with '_'.
59 --> /home/erim/csc/cvm/packages/controller/src/test/test_p2p.cairo[proc_test][proc__internal_config_statement
   ]:830:9

```



```

60     let current_shares_bob = ERC20ABIDispatcher { contract_address: token_gateway_remote.contract_address }.
        balance_of(test_utils::BOB());
61     ~*****~
62 note: this error originates in the attribute macro: '__internal_config_statement'
63
64     Finished 'dev' profile target(s) in 39 seconds
65
66
67 Collected 229 test(s) from forge_controller package
68 Running 229 test(s) from src/
69 [PASS] forge_controller::test::test_controller::test_apply_loss_for_redeem_pool_assets_div_up (gas: ~629)
70 [PASS] forge_controller::test::test_controller::test_calculate_delta (gas: ~6)
71 [PASS] forge_controller::test::test_controller::test_get_management_fees_long_period (gas: ~211)
72 [PASS] forge_controller::test::test_controller::test_apply_loss_for_redeem_pool_assets_profit (gas: ~2270)
73 [PASS] forge_controller::test::test_controller::test_apply_loss_for_redeem_pool_assets_no_profit_no_loss (gas:
    ~2269)
74 [PASS] forge_controller::test::test_controller::
    test_apply_loss_for_redeem_pool_assets_some_loss_handled_epoch_len_1 (gas: ~2257)
75 [PASS] forge_controller::test::test_controller::test_get_management_fees_small_values (gas: ~211)
76 [PASS] forge_controller::test::test_controller::test_get_management_fees_zero_time_elapsed (gas: ~205)
77 [PASS] forge_controller::test::test_controller::test_get_management_fees_zero_assets (gas: ~210)
78 [PASS] forge_controller::test::test_controller::test_get_management_fees_normal_case (gas: ~216)
79 [PASS] forge_controller::test::test_controller::test_get_management_fees_zero_rate (gas: ~147)
80 [PASS] forge_controller::test::test_controller::test_apply_loss_for_redeem_pool_assets_some_loss (gas: ~2279)
81 [PASS] forge_controller::test::test_controller::test_handle_invalid_router (gas: ~514)
82 [PASS] forge_controller::test::test_controller::test_handle_not_mailbox_caller (gas: ~155)
83 [PASS] forge_controller::test::test_controller::test_get_token_gateway_domains (gas: ~540)
84 [PASS] forge_controller::test::test_controller::test_handle_invalid_origin_for_vault (gas: ~230)
85 [PASS] forge_controller::test::test_controller::test_handle_oracle_report_loss_no_force (gas: ~704)
86 [PASS] forge_controller::test::test_controller::test_handle_oracle_report_invalid_epoch (gas: ~296)
87 [PASS] forge_controller::test::test_controller::test_handle_oracle_report_loss_delta_too_high (gas: ~732)
88 [PASS] forge_controller::test::test_controller::test_handle_local_multiple_epochs_full_redeem_pool_handled (gas:
    ~2346)
89 [PASS] forge_controller::test::test_controller::test_handle_global_multiple_epochs_not_full_redeem_pool_handled (
    gas: ~2927)
90 [PASS] forge_controller::test::test_controller::test_handle_oracle_report_not_owner (gas: ~144)
91 [PASS] forge_controller::test::test_controller::test_handle_oracle_report_win_delta_too_high (gas: ~732)
92 [PASS] forge_controller::test::test_controller::test_handle_token_gateway_report (gas: ~1648)
93 [PASS] forge_controller::test::test_controller::
    test_handle_token_gateway_report_depreciated_domain_other_domain_to_handle (gas: ~1499)
94 [PASS] forge_controller::test::test_controller::test_handle_scheduled_redeem (gas: ~1662)
95 [PASS] forge_controller::test::test_controller::test_handle_token_gateway_report_exists (gas: ~319)
96 stored_transfers: [(3, (0, 0))]
97 [PASS] forge_controller::test::test_controller::test_handle_token_gateway_report_depreciated_domain_to_handle (
    gas: ~1523)
98 [PASS] forge_controller::test::test_controller::test_handle_token_gateway_report_invalid_epoch (gas: ~71)
99 [PASS] forge_controller::test::test_controller::
    test_handle_token_gateway_report_only_controller_domain_delisting_other (gas: ~1117)
100 [PASS] forge_controller::test::test_controller::
    test_handle_token_gateway_report_only_controller_domain_depreciated (gas: ~822)
101 [PASS] forge_controller::test::test_controller::test_handle_valid_token_gateway_message (gas: ~1156)
102 [PASS] forge_controller::test::test_controller::test_harvest_fees_domain_not_set (gas: ~151)
103 [PASS] forge_controller::test::test_controller::test_handle_vault_router_not_set (gas: ~157)
104 [PASS] forge_controller::test::test_controller::test_handle_vault_report_exists (gas: ~283)
105 [PASS] forge_controller::test::test_controller::test_handle_vault_report (gas: ~257)
106 [PASS] forge_controller::test::test_controller::test_harvest_fees_not_owner (gas: ~13)
107 [PASS] forge_controller::test::test_controller::test_handle_vault_report_invalid_epoch (gas: ~50)
108 [PASS] forge_controller::test::test_controller::test_handle_unregistered_router (gas: ~246)
109 [PASS] forge_controller::test::test_controller::test_hash_vault_data (gas: ~944)
110 [PASS] forge_controller::test::test_controller::test_harvest_fees_success (gas: ~478)
111 [PASS] forge_controller::test::test_controller::test_set_destination_gas_not_owner (gas: ~144)
112 [PASS] forge_controller::test::test_controller::
    test_net_domains_with_redemptions_exceeding_buffer_pending_deposit_cover (gas: ~1117)
113 [PASS] forge_controller::test::test_controller::test_net_domains_pending_deposit_not_covering (gas: ~657)
114 [PASS] forge_controller::test::test_controller::test_net_domains_one_epoch_only_deposit_large_buffer_no_redeem (
    gas: ~1052)
115 [PASS] forge_controller::test::test_controller::test_set_destination_gas_success (gas: ~210)
116 [PASS] forge_controller::test::test_controller::test_set_lost_supply_threshold_not_owner (gas: ~145)
117 [PASS] forge_controller::test::test_controller::test_net_domains_one_epoch_only_deposit_mixed_buffer_no_redeem (
    gas: ~1051)

```



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118 [PASS] forge_controller::test::test_controller::test_set_management_fees_invalid_amount (gas: ~181)
119 [PASS] forge_controller::test::test_controller::test_set_oracle_not_owner (gas: ~144)
120 [PASS] forge_controller::test::test_controller::test_handle_valid_vault_message (gas: ~396)
121 [PASS] forge_controller::test::test_controller::test_set_lost_supply_threshold_success (gas: ~212)
122 [PASS] forge_controller::test::test_controller::test_set_max_delta_wad_not_owner (gas: ~144)
123 [PASS] forge_controller::test::test_controller::test_set_management_fees_success (gas: ~213)
124 [PASS] forge_controller::test::test_controller::test_set_management_fees_not_owner (gas: ~144)
125 [PASS] forge_controller::test::test_controller::test_set_oracle_success (gas: ~210)
126 [PASS] forge_controller::test::test_controller::test_set_max_delta_wad_success (gas: ~210)
127 [PASS] forge_controller::test::test_controller::test_net_domains_with_three_domains_partial_buffer_capacity (gas:
~4363)
128 [PASS] forge_controller::test::test_controller::test_set_send_assets_threshold_not_owner (gas: ~147)
129 [PASS] forge_controller::test::test_controller::test_set_send_assets_threshold_success (gas: ~215)
130 [PASS] forge_controller::test::test_controller::test_supply_info_token_gateway_report_not_submitted (gas: ~1335)
131 [PASS] forge_controller::test::test_controller::test_supply_info_token_gateway_report_supply_no_transfers (gas:
~1630)
132 [PASS] forge_controller::test::test_controller::test_sync_token_gateway_depreciated_domain_already_set (gas:
~219)
133 [PASS] forge_controller::test::test_controller::test_sync_token_gateway_not_factory (gas: ~142)
134 [PASS] forge_controller::test::test_controller::test_sync_vault_not_factory (gas: ~142)
135 [PASS] forge_controller::test::test_controller::test_sync_vault_success (gas: ~275)
136 [PASS] forge_controller::test::test_controller::test_sync_token_gateway_pending_domain_already_set (gas: ~210)
137 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_domain_already_processed (gas:
~654)
138 [PASS] forge_controller::test::test_controller::test_sync_token_gateway_success (gas: ~478)
139 [PASS] forge_controller::test::test_controller::test_try_finalizing_depreciation_epoch_not_handled (gas: ~277)
140 [PASS] forge_controller::test::test_controller::test_try_finalizing_depreciation_no_depreciated_domain (gas: ~19)
141 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_domain_status_not_pending (gas:
~204)
142 [PASS] forge_controller::test::test_controller::test_supply_info_token_gateway_report_supply_with_transfers (gas:
~3143)
143 [PASS] forge_controller::test::test_controller::test_sync_token_gateway_domain_zero (gas: ~142)
144 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_no_pending_domain (gas: ~9)
145 [PASS] forge_controller::test::test_controller::test_try_finalizing_depreciation_wrong_status (gas: ~273)
146 [PASS] forge_controller::test::test_controller::test_try_finalizing_depreciation_success (gas: ~856)
147 [PASS] forge_controller::test::test_controller::test_sync_token_gateway_token_gateway_router_already_enrolled (
gas: ~415)
148 [PASS] forge_controller::test::test_controller::test_try_removing_depreciation_handled_success (gas: ~33)
149 [PASS] forge_controller::test::test_controller::test_try_removing_depreciation_no_depreciated_domain (gas: ~18)
150 [PASS] forge_controller::test::test_controller::test_unsync_token_gateway_depreciated_domain_already_set (gas:
~483)
151 [PASS] forge_controller::test::test_controller::test_unsync_token_gateway_pending_domain_already_set (gas: ~474)
152 [PASS] forge_controller::test::test_controller::test_unsync_token_gateway_domain_not_found (gas: ~154)
153 [PASS] forge_controller::test::test_controller::test_unsync_token_gateway_not_owner (gas: ~406)
154 [PASS] forge_controller::test::test_controller::test_unsync_token_gateway_send_assets_threshold_not_zero (gas:
~477)
155 [PASS] forge_controller::test::test_controller::test_unsync_token_gateway_success (gas: ~491)
156 [PASS] forge_controller::test::test_controller::test_vault_reports_data_not_submitted (gas: ~730)
157 [PASS] forge_controller::test::test_controller::test_vault_reports_data_handled_false (gas: ~2242)
158 [PASS] forge_controller::test::test_controller::test_vault_reports_data_handled_true (gas: ~2512)
159 [PASS] forge_controller::test::test_factory::test_deploy_controller_invalid_management_fees (gas: ~4707)
160 [PASS] forge_controller::test::test_controller::test_vault_reports_data_non_zero_epoch (gas: ~3476)
161 [PASS] forge_controller::test::test_factory::test_deploy_controller_invalid_redeem_fees (gas: ~4705)
162 [PASS] forge_controller::test::test_factory::test_deploy_controller_factory (gas: ~4663)
163 [PASS] forge_controller::test::test_controller::test_try_removing_depreciation_not_handled (gas: ~345)
164 [PASS] forge_controller::test::test_factory::test_deploy_controller_not_owner (gas: ~4659)
165 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_factory (gas: ~5303)
166 [PASS] forge_controller::test::test_controller::test_try_removing_depreciation_wrong_status (gas: ~343)
167 [PASS] forge_controller::test::test_factory::test_deploy_controller (gas: ~5555)
168 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_handle_message_token_not_registered (gas:
~6960)
169 [PASS] forge_controller::test::test_factory::test_enroll_token_gateway_factory_router_not_owner (gas: ~4657)
170 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_handle_message (gas: ~9479)
171 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_remote_not_owner (gas: ~5645)
172 [PASS] forge_controller::test::test_factory::test_enroll_token_gateway_factory_router (gas: ~4937)
173 [PASS] forge_controller::test::test_factory::test_enroll_vault_factory_router (gas: ~4739)
174 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_remote_no_ethereum_router (gas: ~5901)
175 [PASS] forge_controller::test::test_factory::test_set_controller_class_hash (gas: ~4674)
176 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_remote_no_destination_router (gas: ~7730)
177 [PASS] forge_controller::test::test_factory::test_set_destination_gas (gas: ~4739)

```



```

178 [PASS] forge_controller::test::test_factory::test_deploy_vault (gas: ~7492)
179 [PASS] forge_controller::test::test_factory::test_set_controller_class_hash_not_owner (gas: ~4659)
180 [PASS] forge_controller::test::test_factory::test_enroll_vault_factory_router_not_owner (gas: ~4658)
181 [PASS] forge_controller::test::test_factory::test_deploy_token_gateway_remote (gas: ~11040)
182 [PASS] forge_controller::test::test_factory::test_set_salt_not_owner (gas: ~4658)
183 [PASS] forge_controller::test::test_factory::test_set_salt (gas: ~4737)
184 [PASS] forge_controller::test::test_factory::test_token_gateway_factory_set_token_gateway_class_hash (gas: ~4871)
185 [PASS] forge_controller::test::test_factory::test_token_gateway_factory_set_token_info_not_owner (gas: ~4855)
186 [PASS] forge_controller::test::test_factory::test_token_gateway_factory_set_token_gateway_class_hash_not_owner (
    gas: ~4855)
187 [PASS] forge_controller::test::test_factory::test_deploy_vault_not_owner (gas: ~5645)
188 [PASS] forge_controller::test::test_factory::test_unenroll_token_gateway_factory_router (gas: ~4766)
189 [PASS] forge_controller::test::test_factory::test_unenroll_token_gateway_factory_router_not_owner (gas: ~4657)
190 [PASS] forge_controller::test::test_factory::test_unenroll_vault_factory_router (gas: ~4692)
191 [PASS] forge_controller::test::test_factory::test_unenroll_vault_factory_router_not_owner (gas: ~4659)
192 [PASS] forge_controller::test::test_factory::test_upgrade_controller_factory (gas: ~4676)
193 [PASS] forge_controller::test::test_factory::test_upgrade_controller_factory_not_owner (gas: ~4659)
194 [PASS] forge_controller::test::test_factory::test_set_destination_gas_not_owner (gas: ~4659)
195 [PASS] forge_controller::test::test_factory::test_upgrade_token_gateway_factory_not_owner (gas: ~4855)
196 [PASS] forge_controller::test::test_token_gateway::test_admin_enroll_token_gateway_router (gas: ~9664)
197 [PASS] forge_controller::test::test_factory::test_token_gateway_factory_set_token_info (gas: ~5278)
198 [PASS] forge_controller::test::test_token_gateway::test_admin_enroll_token_gateway_router_not_owner (gas: ~9386)
199 [PASS] forge_controller::test::test_token_gateway::test_admin_unenroll_token_gateway_router (gas: ~9492)
200 [PASS] forge_controller::test::test_token_gateway::test_admin_unenroll_token_gateway_router_not_owner (gas:
    ~9386)
201 [PASS] forge_controller::test::test_factory::test_upgrade_token_gateway_factory (gas: ~4872)
202 [PASS] forge_controller::test::test_token_gateway::test_get_token_gateway_domains (gas: ~364)
203 [PASS] forge_controller::test::test_token_gateway::test_get_token_gateway_domains_key_does_not_exist (gas: ~150)
204 [PASS] forge_controller::test::test_token_gateway::test_deposit_stale (gas: ~9646)
205 [PASS] forge_controller::test::test_token_gateway::test_deposit_paused_admin_pause (gas: ~9713)
206 [PASS] forge_controller::test::test_token_gateway::test_deposit_depreciated (gas: ~9764)
207 [PASS] forge_controller::test::test_token_gateway::test_deposit_prepare_depreciated (gas: ~9713)
208 [PASS] forge_controller::test::test_token_gateway::test_deposit_zero_shares (gas: ~9442)
209 [PASS] forge_controller::test::test_token_gateway::test_handle_message_invalid_origin (gas: ~9434)
210 [PASS] forge_controller::test::test_token_gateway::test_handle_message_paused (gas: ~9501)
211 [PASS] forge_controller::test::test_token_gateway::test_handle_message_not_mailbox (gas: ~9406)
212 [PASS] forge_controller::test::test_token_gateway::test_handle_message_report_back_first_time_no_withdraw (gas:
    ~43810)
213 [PASS] forge_controller::test::test_p2p::test_one_token_gateway_deposit_and_redeem_yield_growing (gas: ~117365)
214 [PASS] forge_controller::test::test_p2p::test_one_token_gateway_deposit_and_redeem_loss (gas: ~117486)
215 [PASS] forge_controller::test::test_token_gateway::test_handle_message_report_back_invalid_epoch (gas: ~9663)
216 [PASS] forge_controller::test::test_p2p::test_one_token_gateway_depreciation (gas: ~128436)
217 [PASS] forge_controller::test::test_token_gateway::test_handle_message_report_back_report_not_ready (gas: ~9629)
218 [PASS] forge_controller::test::test_token_gateway::test_internal_convert_to_assets (gas: ~187)
219 [PASS] forge_controller::test::test_token_gateway::test_internal_convert_to_shares (gas: ~186)
220 [PASS] forge_controller::test::test_token_gateway::test_internal_handle_vault_withdraw_no_redeem_assets (gas:
    ~1738)
221 [PASS] forge_controller::test::test_token_gateway::
    test_internal_handle_vault_withdraw_one_redeem_bridge_not_ready (gas: ~1660)
222 [PASS] forge_controller::test::test_p2p::test_one_token_gateway_add_new_domains (gas: ~159977)
223 [PASS] forge_controller::test::test_token_gateway::test_mint_paused (gas: ~9726)
224 [PASS] forge_controller::test::test_token_gateway::test_mint_depreciated (gas: ~9777)
225 [PASS] forge_controller::test::test_token_gateway::test_mint_zero_assets (gas: ~9456)
226 [PASS] forge_controller::test::test_token_gateway::test_mint_prepare_depreciated (gas: ~9726)
227 [PASS] forge_controller::test::test_token_gateway::test_mint_stale (gas: ~9659)
228 [PASS] forge_controller::test::test_token_gateway::test_multiple_claim_redeem (gas: ~11056)
229 [PASS] forge_controller::test::test_token_gateway::test_multiple_mints (gas: ~10088)
230 [PASS] forge_controller::test::test_token_gateway::test_redeem_token_gateway_depreciated_exceeded_max (gas:
    ~9676)
231 [PASS] forge_controller::test::test_token_gateway::test_multiple_deposits (gas: ~10048)
232 [PASS] forge_controller::test::test_token_gateway::test_redeem_token_gateway_depreciated_not_depreciated (gas:
    ~9409)
233 [PASS] forge_controller::test::test_token_gateway::test_multiple_request_redeem (gas: ~10979)
234 [PASS] forge_controller::test::test_token_gateway::test_redeem_token_gateway_depreciated_paused (gas: ~9489)
235 [PASS] forge_controller::test::test_token_gateway::test_redeem_token_gateway_depreciated_zero_assets (gas: ~9611)
236 [PASS] forge_controller::test::test_token_gateway::test_redeem_token_gateway_depreciated_success (gas: ~10075)
237 [PASS] forge_controller::test::test_token_gateway::test_redeem_token_gateway_depreciated_zero_calculated_assets (
    gas: ~9676)
238 [PASS] forge_controller::test::test_p2p::test_one_token_gateway_add_new_domains_and_depreciate_domain (gas:
    ~348064)

```





```

239 [PASS] forge_controller::test::test_controller::test_get_domains_to_add_no_pending_domain (runs: 256, gas: {max:
    ~4961, min: ~201, mean: ~2561.00, std deviation: ~1480.75})
240 [PASS] forge_controller::test::test_token_gateway::test_set_allowance_for_transfer_remote (gas: ~9426)
241 [PASS] forge_controller::test::test_token_gateway::test_set_destination_gas_not_owner (gas: ~9387)
242 [PASS] forge_controller::test::test_token_gateway::test_set_destination_gas (gas: ~9472)
243 [PASS] forge_controller::test::test_token_gateway::test_set_allowance_for_transfer_remote_not_owner (gas: ~9386)
244 [PASS] forge_controller::test::test_token_gateway::test_set_is_transfer_remote_public_not_owner (gas: ~9386)
245 [PASS] forge_controller::test::test_token_gateway::test_set_redeem_fees_not_owner (gas: ~9386)
246 [PASS] forge_controller::test::test_token_gateway::test_set_redeem_fees (gas: ~9422)
247 [PASS] forge_controller::test::test_token_gateway::test_set_max_transfer_remote_per_domain_not_owner (gas: ~9387)
248 [PASS] forge_controller::test::test_token_gateway::test_set_is_transfer_remote_public (gas: ~9422)
249 [PASS] forge_controller::test::test_token_gateway::test_set_redeem_fees_invalid_amount (gas: ~9432)
250 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_depreciated (gas: ~9521)
251 [PASS] forge_controller::test::test_token_gateway::test_transfer_invalid_domain (gas: ~9797)
252 [PASS] forge_controller::test::test_token_gateway::test_set_max_transfer_remote_per_domain (gas: ~9472)
253 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_not_allowed_to_transfer_remote (gas:
    ~10077)
254 [PASS] forge_controller::test::test_token_gateway::
    test_transfer_remote_not_allowed_to_transfer_remote_with_allowance (gas: ~10168)
255 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_prepare_depreciated (gas: ~9469)
256 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_paused (gas: ~9470)
257 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_zero_amount (gas: ~9390)
258 [PASS] forge_controller::test::test_token_gateway::test_upgrade_token_gateway (gas: ~9403)
259 [PASS] forge_controller::test::test_token_gateway::test_upgrade_token_gateway_not_owner (gas: ~9388)
260 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_zero_supply_in_depreciated_domain
    (gas: ~777)
261 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_stale (gas: ~9402)
262 [PASS] forge_controller::test::test_controller::test_get_domains_to_add_some_pending_domain (runs: 256, gas: {max
    : ~5251, min: ~397, mean: ~2618.00, std deviation: ~1427.81})
263 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_exact_threshold_boundary (runs:
    256, gas: {max: ~1174, min: ~1174, mean: ~1174.00, std deviation: ~0.00})
264 [PASS] forge_controller::test::test_token_gateway::test_internal_handle_vault_withdraw_one_redeem_global (runs:
    256, gas: {max: ~1872, min: ~1872, mean: ~1872.00, std deviation: ~0.00})
265 [PASS] forge_controller::test::test_controller::
    test_try_initiate_depreciation_has_pending_transfer_to_other_domains_too_high (runs: 256, gas: {max: ~825,
    min: ~761, mean: ~824.00, std deviation: ~4.06})
266 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_has_redeem_pool_assets (gas: ~207)
267 [PASS] forge_controller::test::test_token_gateway::test_handle_message_token_transfer_tg_not_enrolled (gas:
    ~9422)
268 [PASS] forge_controller::test::test_controller::test_try_initiate_depreciation_single_token_gateway (runs: 256,
    gas: {max: ~622, min: ~558, mean: ~621.00, std deviation: ~4.06})
269 [PASS] forge_controller::test::test_token_gateway::test_handle_message_report_back_first_time_withdraw_unhandled
    (runs: 256, gas: {max: ~11394, min: ~11394, mean: ~11394.00, std deviation: ~0.00})
270 [PASS] forge_controller::test::test_token_gateway::test_claim_redeem_invalid_token_id (runs: 256, gas: {max:
    ~9387, min: ~9387, mean: ~9387.00, std deviation: ~0.00})
271 [PASS] forge_controller::test::test_token_gateway::test_handle_message_token_transfer_stale (runs: 256, gas: {max
    : ~9712, min: ~9712, mean: ~9712.00, std deviation: ~0.00})
272 [PASS] forge_controller::test::test_token_gateway::test_claim_redeem_paused (runs: 256, gas: {max: ~9480, min:
    ~9480, mean: ~9480.00, std deviation: ~0.00})
273 [PASS] forge_controller::test::test_token_gateway::test_report_not_ready (runs: 256, gas: {max: ~9407, min:
    ~9407, mean: ~9407.00, std deviation: ~0.00})
274 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_zero_assets (runs: 256, gas: {max: ~9837,
    min: ~9837, mean: ~9837.00, std deviation: ~0.00})
275 [PASS] forge_controller::test::test_token_gateway::test_transfer_remote_domain (runs: 256, gas: {max: ~11897, min
    : ~11897, mean: ~11897.00, std deviation: ~0.00})
276 [PASS] forge_controller::test::test_controller::
    test_try_initiate_depreciation_has_pending_transfer_to_other_domains_not_too_high (runs: 256, gas: {max:
    ~1046, min: ~1046, mean: ~1046.00, std deviation: ~0.00})
277 [PASS] forge_controller::test::test_controller::
    test_try_initiate_depreciation_with_incoming_transfers_to_depreciated_domain (runs: 256, gas: {max: ~1173,
    min: ~1109, mean: ~1172.00, std deviation: ~4.06})
278 [PASS] forge_controller::test::test_token_gateway::
    test_transfer_remote_max_transfer_with_initial_max_transfer_remote_per_domain_per_epoch (runs: 256, gas: {max
    : ~10316, min: ~10316, mean: ~10316.00, std deviation: ~0.00})
279 [PASS] forge_controller::test::test_token_gateway::test_unhandled_redeem_liquidity (runs: 256, gas: {max: ~9699,
    min: ~9571, mean: ~9698.00, std deviation: ~8.00})
280 [PASS] forge_controller::test::test_token_gateway::
    test_handle_message_report_back_first_time_withdraw_handled_locally (runs: 256, gas: {max: ~43623, min:
    ~43495, mean: ~43622.00, std deviation: ~8.00})

```



```

281 [PASS] forge_controller::test::test_token_gateway::
    test_handle_message_report_back_first_time_withdraw_unhandled_and_handled_globally (runs: 256, gas: {max:
    ~12337, min: ~12209, mean: ~12336.00, std deviation: ~8.00})
282 [PASS] forge_controller::test::test_token_gateway::test_request_redeem (runs: 256, gas: {max: ~10350, min:
    ~10276, mean: ~10339.00, std deviation: ~11.66})
283 [PASS] forge_controller::test::test_token_gateway::test_report (runs: 256, gas: {max: ~14301, min: ~14109, mean:
    ~14298.00, std deviation: ~18.21})
284 [PASS] forge_controller::test::test_token_gateway::test_report_paused (runs: 256, gas: {max: ~9477, min: ~9477,
    mean: ~9477.00, std deviation: ~0.00})
285 [PASS] forge_controller::test::test_token_gateway::test_mint (runs: 256, gas: {max: ~9833, min: ~9833, mean:
    ~9833.00, std deviation: ~0.00})
286 [PASS] forge_controller::test::test_token_gateway::test_claim_redeem (runs: 256, gas: {max: ~10312, min: ~10312,
    mean: ~10312.00, std deviation: ~0.00})
287 [PASS] forge_controller::test::test_token_gateway::test_internal_handle_vault_withdraw_multiple_redeem_global (
    runs: 256, gas: {max: ~2014, min: ~2014, mean: ~2014.00, std deviation: ~0.00})
288 [PASS] forge_controller::test::test_token_gateway::test_claim_redeem_not_claimable (runs: 256, gas: {max: ~10092,
    min: ~10092, mean: ~10092.00, std deviation: ~0.00})
289 [PASS] forge_controller::test::test_token_gateway::test_deposit (runs: 256, gas: {max: ~9820, min: ~9820, mean:
    ~9820.00, std deviation: ~0.00})
290 [PASS] forge_controller::test::test_controller::test_net_domains_with_redemptions_local_netting (runs: 256, gas:
    {max: ~1185, min: ~1185, mean: ~1185.00, std deviation: ~0.00})
291 [PASS] forge_controller::test::test_token_gateway::test_internal_handle_token_transfer (runs: 256, gas: {max:
    ~341, min: ~341, mean: ~341.00, std deviation: ~0.00})
292 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_max_redeem (runs: 256, gas: {max: ~9826,
    min: ~9826, mean: ~9826.00, std deviation: ~0.00})
293 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_paused (runs: 256, gas: {max: ~9895, min:
    ~9895, mean: ~9895.00, std deviation: ~0.00})
294 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_depreciated (runs: 256, gas: {max: ~9946,
    min: ~9946, mean: ~9946.00, std deviation: ~0.00})
295 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_stale (runs: 256, gas: {max: ~9827, min:
    ~9827, mean: ~9827.00, std deviation: ~0.00})
296 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_insufficient_allowance (runs: 256, gas: {
    max: ~9827, min: ~9827, mean: ~9827.00, std deviation: ~0.00})
297 [PASS] forge_controller::test::test_token_gateway::test_handle_message_token_transfer (runs: 256, gas: {max:
    ~9958, min: ~9958, mean: ~9958.00, std deviation: ~0.00})
298 [PASS] forge_controller::test::test_token_gateway::test_request_redeem_prepare_depreciated (runs: 256, gas: {max:
    ~9894, min: ~9894, mean: ~9894.00, std deviation: ~0.00})
299 Tests: 229 passed, 0 failed, 0 skipped, 0 ignored, 0 filtered out
300 Fuzzer seed: 7210705605280850146
301
302
303 snforge test -p forge_token_gateway --max-n-steps 4294967295
304 [WARNING] Package snforge_std version does not meet the recommended version requirement =0.34.0, it might result
    in unexpected behaviour
305     Compiling snforge_scarb_plugin v0.34.1
306 warning: hiding a lifetime that's elided elsewhere is confusing
307 --> src/args.rs:79:43
308 |
309 79 |     pub fn unnamed_only<T: AttributeInfo>(&self) -> Result<UnnamedArgs, Diagnostic> {
310 |         |                                     ~~~~~ the same lifetime is hidden here
311 |         |
312 |         the lifetime is elided here
313 |
314 = help: the same lifetime is referred to in inconsistent ways, making the signature confusing
315 = note: '#[warn(mismatched_lifetime_syntaxes)]' on by default
316 help: use '_' for type paths
317 |
318 79 |     pub fn unnamed_only<T: AttributeInfo>(&self) -> Result<UnnamedArgs<'_>, Diagnostic> {
319 |         |                                     ++++
320 warning: hiding a lifetime that's elided elsewhere is confusing
321 --> src/args.rs:88:20
322 |
323 88 |     pub fn unnamed(&self) -> UnnamedArgs {
324 |         |             ~~~~~ the same lifetime is hidden here
325 |         |
326 |         the lifetime is elided here
327 |
328 = help: the same lifetime is referred to in inconsistent ways, making the signature confusing
329 help: use '_' for type paths
330 |

```



## Cairo Security Clan

```
331 88 | pub fn unnamed(&self) -> UnnamedArgs<'_> {
332 |                                     ++++
333 warning: 'snforge_scarb_plugin' (lib) generated 2 warnings
334 Finished 'release' profile [optimized] target(s) in 0.03s
335 warning: the following packages contain code that will be rejected by a future version of Rust: size-of v0.1.5
336 note: to see what the problems were, use the option '--future-incompat-report', or run 'cargo report future-
incompatibilities --id 1'
337 Compiling test(forge_token_gateway_unittest) forge_token_gateway v0.1.0 (/home/erim/csc/cvm/packages/
token_gateway/Scarb.toml)
338 warn: Unused import: 'forge_token_gateway::utils::interface::ClassHash'
339 --> /home/erim/csc/cvm/packages/token_gateway/src/utils/interface.cairo:5:16
340 use starknet::{ClassHash, ContractAddress};
341 ^*****^
342
343 warn: Unused import: 'forge_token_gateway::utils::interface::ClassHash'
344 --> /home/erim/csc/cvm/packages/token_gateway/src/utils/interface.cairo:5:16
345 use starknet::{ClassHash, ContractAddress};
346 ^*****^
347
348 Finished 'dev' profile target(s) in 28 seconds
349
350
351 Collected 0 test(s) from forge_token_gateway package
352 Running 0 test(s) from src/
353 Tests: 0 passed, 0 failed, 0 skipped, 0 ignored, 0 filtered out
```





## 7.3 EVM Compilation Output

```

1  forge build
2  Compiling...
3  Compiling 5 files with Solc 0.8.30
4  Solc 0.8.30 finished in 6.24s
5  Compiler run successful!
6  note[unused-import]: unused imports should be removed
7    --> /home/src/mocks/EthStrategyDecoderAndSanitizerMock.sol:10:9
8    |
9    10 | import {BaseDecoderAndSanitizer} from "../vault/decodersAndSanitizers/BaseDecoderAndSanitizer.sol";
10   |     -----
11   |
12   = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
13
14  note[unaliased-plain-import]: use named imports '{A, B}' or alias 'import ".." as X'
15    --> /home/src/mocks/StarknetBridgeMock.sol:10:8
16    |
17    10 | import "../vault/bridgeAdaptors/starknet/ISTarknetBridge.sol";
18    |     -----
19    |
20    = help: https://book.getfoundry.sh/reference/forge/forge-lint#unaliased-plain-import
21
22  note[unaliased-plain-import]: use named imports '{A, B}' or alias 'import ".." as X'
23    --> /home/src/mocks/StarknetBridgeMock.sol:11:8
24    |
25    11 | import "@openzeppelin/contracts/token/ERC20/IERC20.sol";
26    |     -----
27    |
28    = help: https://book.getfoundry.sh/reference/forge/forge-lint#unaliased-plain-import
29
30  note[unaliased-plain-import]: use named imports '{A, B}' or alias 'import ".." as X'
31    --> /home/src/mocks/StarknetBridgeMock.sol:12:8
32    |
33    12 | import "@openzeppelin/contracts/token/ERC20/utils/SafeERC20.sol";
34    |     -----
35    |
36    = help: https://book.getfoundry.sh/reference/forge/forge-lint#unaliased-plain-import
37
38  note[mixed-case-variable]: mutable variables should use mixedCase
39    --> /home/src/interfaces/DecoderCustomTypes.sol:195:17
40    |
41    195 |         address YT;
42    |         --
43    |
44    = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
45
46  note[unused-import]: unused imports should be removed
47    --> /home/src/vault/decodersAndSanitizers/strategies/ForgeEthDecoderAndSanitizer.sol:4:9
48    |
49    4 | import {BaseDecoderAndSanitizer} from "../BaseDecoderAndSanitizer.sol";
50    |     -----
51    |
52    = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
53
54  note[unused-import]: unused imports should be removed
55    --> /home/src/vault/bridgeManager/BridgeManager.sol:16:9
56    |
57    16 | import {console} from "forge-std/console.sol";
58    |     -----
59    |
60    = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
61
62  note[unaliased-plain-import]: use named imports '{A, B}' or alias 'import ".." as X'
63    --> /home/src/mocks/StarknetEthBridgeMock.sol:10:8
64    |
65    10 | import "../vault/bridgeAdaptors/starknet/ISTarknetBridge.sol";
66    |     -----
67    |
68    = help: https://book.getfoundry.sh/reference/forge/forge-lint#unaliased-plain-import

```



```

69
70 note[unused-import]: unused imports should be removed
71 --> /home/src/vault/decodersAndSanitizers/strategies/ForgeEthUnichainDecoderAndSanitizer.sol:4:9
72 |
73 4 | import {BaseDecoderAndSanitizer} from "../BaseDecoderAndSanitizer.sol";
74 |     -----
75 |
76 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
77
78 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
79 --> /home/src/vault/manager/umanager/DexAggregatorUManager.sol:43:45
80 |
81 43 |     IAggregationRouterV5 internal immutable router;
82 |     -----
83 |
84 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
85
86 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
87 --> /home/src/vault/factory/VaultFactory.sol:27:29
88 |
89 27 |     uint32 public immutable controllerDomain;
90 |     -----
91 |
92 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
93
94 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
95 --> /home/src/vault/manager/ManagerWithMerkleVerification.sol:61:32
96 |
97 61 |     BaseVault public immutable vault;
98 |     -----
99 |
100 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
101
102 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
103 --> /home/src/vault/manager/ManagerWithMerkleVerification.sol:66:36
104 |
105 66 |     BalancerVault public immutable balancerVault;
106 |     -----
107 |
108 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
109
110 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
111 --> /home/src/vault/manager/umanager/DexAggregatorUManager.sol:48:37
112 |
113 48 |     IPriceRouter internal immutable priceRouter;
114 |     -----
115 |
116 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
117
118 note[screaming-snake-case-const]: constants should use SCREAMING_SNAKE_CASE
119 --> /home/test/ChainValues.sol:12:28
120 |
121 12 |     string public constant mainnet = "mainnet";
122 |     -----
123 |
124 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-const
125
126 note[unused-import]: unused imports should be removed
127 --> /home/src/vault/decodersAndSanitizers/strategies/BlueChipsStrategyDecoderAndSanitizer.sol:4:9
128 |
129 4 | import {BaseDecoderAndSanitizer} from "../BaseDecoderAndSanitizer.sol";
130 |     -----
131 |
132 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
133
134 note[mixed-case-function]: function names should use mixedCase
135 --> /home/src/vault/decodersAndSanitizers/protocols/CurveDecoderAndSanitizer.sol:15:14
136 |
137 15 |     function add_liquidity(uint256[] calldata, uint256) external pure virtual returns (bytes memory
    |     addressesFound) {

```



```

138 |             -----
139 |
140 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-function
141
142 note[unused-import]: unused imports should be removed
143 --> /home/src/vault/decodersAndSanitizers/protocols/ConvexDecoderAndSanitizer.sol:4:9
144 |
145 4 | import {DecoderCustomTypes} from "../../interfaces/DecoderCustomTypes.sol";
146 |             -----
147 |
148 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
149
150 note[screaming-snake-case-const]: constants should use SCREAMING_SNAKE_CASE
151 --> /home/test/ChainValues.sol:13:28
152 |
153 13 |     string public constant unichain = "unichain";
154 |                                     -----
155 |
156 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-const
157
158 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
159 --> /home/src/vault/manager/umanager/UManager.sol:74:54
160 |
161 74 |     ManagerWithMerkleVerification internal immutable manager;
162 |                                     -----
163 |
164 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
165
166 note[screaming-snake-case-immutable]: immutables should use SCREAMING_SNAKE_CASE
167 --> /home/src/vault/manager/umanager/UManager.sol:79:32
168 |
169 79 |     address internal immutable vault;
170 |                                     -----
171 |
172 = help: https://book.getfoundry.sh/reference/forge/forge-lint#screaming-snake-case-immutable
173
174 note[unused-import]: unused imports should be removed
175 --> /home/test/fork/ExploitHyperlane.t.sol:5:9
176 |
177 5 | import {Vm} from "forge-std/Vm.sol";
178 |     --
179 |
180 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
181
182 note[mixed-case-function]: function names should use mixedCase
183 --> /home/test/ChainValues.sol:28:14
184 |
185 28 |     function getERC20(string memory chainName, string memory valueName) public view returns (ERC20 erc20) {
186 |             -----
187 |
188 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-function
189
190 note[pascal-case-struct]: structs should use PascalCase
191 --> /home/src/interfaces/DecoderCustomTypes.sol:269:12
192 |
193 269 |     struct EVM2AnyMessage {
194 |             -----
195 |
196 = help: https://book.getfoundry.sh/reference/forge/forge-lint#pascal-case-struct
197
198 note[mixed-case-function]: function names should use mixedCase
199 --> /home/src/vault/decodersAndSanitizers/protocols/CurveDecoderAndSanitizer.sol:20:14
200 |
201 20 |     function remove_liquidity(uint256, uint256[] calldata)
202 |             -----
203 |
204 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-function
205
206 note[mixed-case-function]: function names should use mixedCase
207 --> /home/src/vault/decodersAndSanitizers/protocols/CurveDecoderAndSanitizer.sol:39:14

```



```

208 |
209 39 |     function claim_rewards(address _addr) external pure virtual returns (bytes memory addressesFound) {
210 |         -----
211 |
212     = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-function
213
214 note[unused-import]: unused imports should be removed
215 --> /home/src/vault/decodersAndSanitizers/protocols/CurveDecoderAndSanitizer.sol:4:9
216 |
217 4 | import {DecoderCustomTypes} from ".././././interfaces/DecoderCustomTypes.sol";
218 |     -----
219 |
220     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
221
222 note[unused-import]: unused imports should be removed
223 --> /home/src/vault/manager/umanager/DexAggregatorUManager.sol:10:38
224 |
225 10 | import {UManager, FixedPointMathLib, ManagerWithMerkleVerification, ERC20} from "./UManager.sol";
226 |         -----
227 |
228     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
229
230 warning[erc20-unchecked-transfer]: ERC20 'transfer' and 'transferFrom' calls should check the return value
231 --> /home/test/units/BridgeManager.t.sol:109:9
232 |
233 109 |         token.transfer(to, amount);
234 |         -----
235 |
236     = help: https://book.getfoundry.sh/reference/forge/forge-lint#erc20-unchecked-transfer
237
238 note[pascal-case-struct]: structs should use PascalCase
239 --> /home/src/interfaces/DecoderCustomTypes.sol:278:12
240 |
241 278 |     struct EVMTokenAmount {
242 |         -----
243 |
244     = help: https://book.getfoundry.sh/reference/forge/forge-lint#pascal-case-struct
245
246 note[unused-import]: unused imports should be removed
247 --> /home/test/integration/VaultManagement.t.sol:9:9
248 |
249 9 | import {BridgeTransfersInfo, VaultDepositInfo, VaultWithdrawInfo} from ".././src/vault/vault/main/IVault.sol
250 |     ";
251 |         -----
252     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
253
254 note[unused-import]: unused imports should be removed
255 --> /home/test/units/BaseVault.t.sol:6:9
256 |
257 6 | import {IBaseVault} from ".././src/vault/vault/IBaseVault.sol";
258 |     -----
259 |
260     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
261
262 note[unused-import]: unused imports should be removed
263 --> /home/test/fork/DeployFlow.sol:7:9
264 |
265 7 | import {IVault} from ".././src/vault/vault/main/IVault.sol";
266 |     -----
267 |
268     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
269
270 note[unused-import]: unused imports should be removed
271 --> /home/test/fork/DeployFlow.sol:12:9
272 |
273 12 | import {StarknetBridgeMock} from ".././src/mocks/StarknetBridgeMock.sol";
274 |     -----
275 |
276     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import

```



```

277
278 note[unused-import]: unused imports should be removed
279 --> /home/test/fork/DeployFlow.sol:13:9
280 |
281 13 | import {StarknetEthBridgeMock} from "../../src/mocks/StarknetEthBridgeMock.sol";
282 |     -----
283 |
284 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
285
286 note[pascal-case-struct]: structs should use PascalCase
287 --> /home/src/interfaces/DecoderCustomTypes.sol:283:12
288 |
289 283 |     struct EVMExtraArgsV1 {
290 |         -----
291 |
292 = help: https://book.getfoundry.sh/reference/forge/forge-lint#pascal-case-struct
293
294 note[unused-import]: unused imports should be removed
295 --> /home/test/integration/VaultManagement.t.sol:9:30
296 |
297 9 | import {BridgeTransfersInfo, VaultDepositInfo, VaultWithdrawInfo} from "../../src/vault/vault/main/IVault.sol
298 |     ";
299 |     -----
300 |
301 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
302
303 warning[erc20-unchecked-transfer]: ERC20 'transfer' and 'transferFrom' calls should check the return value
304 --> /home/test/units/BridgeManager.t.sol:113:9
305 |
306 113 |         token.transferFrom(msg.sender, address(this), amount);
307 |         -----
308 |
309 = help: https://book.getfoundry.sh/reference/forge/forge-lint#erc20-unchecked-transfer
310
311 note[unused-import]: unused imports should be removed
312 --> /home/test/units/BaseVault.t.sol:8:9
313 |
314 8 | import {IERC721} from "@openzeppelin/contracts/interfaces/IERC721.sol";
315 |     -----
316 |
317 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
318
319 note[unused-import]: unused imports should be removed
320 --> /home/test/fork/DeployFlow.sol:15:9
321 |
322 15 | import {ProxyAdmin} from "@openzeppelin/contracts/proxy/transparent/ProxyAdmin.sol";
323 |     -----
324 |
325 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
326
327 note[mixed-case-variable]: mutable variables should use mixedCase
328 --> /home/src/interfaces/DecoderCustomTypes.sol:292:17
329 |
330 292 |         uint256 amountLD; // Amount to send in local decimals.
331 |         -----
332 |
333 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
334
335 note[unused-import]: unused imports should be removed
336 --> /home/test/integration/VaultManagement.t.sol:9:48
337 |
338 9 | import {BridgeTransfersInfo, VaultDepositInfo, VaultWithdrawInfo} from "../../src/vault/vault/main/IVault.sol
339 |     ";
340 |     -----
341 |
342 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
343
344 note[unused-import]: unused imports should be removed
345 --> /home/test/integration/VaultBridgeInteractions.t.sol:19:9
346 |

```



```
345 | 19 | import {Errors} from "../../src/vault/vault/Errors.sol";
346 |     -----
347 |
348 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
349
350 note[unaliased-plain-import]: use named imports '{A, B}' or alias 'import ".." as X'
351 --> /home/test/MerkleTreeHelper.sol:12:8
352 |
353 | 12 | import "forge-std/Base.sol";
354 |     -----
355 |
356 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unaliased-plain-import
357
358 note[unused-import]: unused imports should be removed
359 --> /home/test/units/Vault.t.sol:6:9
360 |
361 | 6 | import {IVault, BridgeTransfersInfo, VaultDepositInfo, VaultWithdrawInfo} from "../../src/vault/vault/main/
    IVVault.sol";
362 |     -----
363 |
364 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
365
366 note[unused-import]: unused imports should be removed
367 --> /home/test/units/VaultFactory.t.sol:4:9
368 |
369 | 4 | import {console, Test} from "forge-std/Test.sol";
370 |     -----
371 |
372 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
373
374 note[unused-import]: unused imports should be removed
375 --> /home/test/units/BaseVault.t.sol:9:9
376 |
377 | 9 | import {IERC1155} from "@openzeppelin/contracts/interfaces/IERC1155.sol";
378 |     -----
379 |
380 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
381
382 note[unused-import]: unused imports should be removed
383 --> /home/test/fork/DeployFlow.sol:16:9
384 |
385 | 16 | import {MockMailbox} from "@hyperlane-xyz/contracts/mock/MockMailbox.sol";
386 |     -----
387 |
388 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
389
390 note[unaliased-plain-import]: use named imports '{A, B}' or alias 'import ".." as X'
391 --> /home/test/MerkleTreeHelper.sol:13:8
392 |
393 | 13 | import "forge-std/console.sol";
394 |     -----
395 |
396 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unaliased-plain-import
397
398 note[unused-import]: unused imports should be removed
399 --> /home/test/integration/VaultManagement.t.sol:19:9
400 |
401 | 19 | import {Errors} from "../../src/vault/vault/Errors.sol";
402 |     -----
403 |
404 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
405
406 note[unused-import]: unused imports should be removed
407 --> /home/test/units/VaultFactory.t.sol:10:9
408 |
409 | 10 | import {IMailbox} from "@hyperlane-xyz/contracts/interfaces/IMailbox.sol";
410 |     -----
411 |
412 | = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
413
```



```

414 note[unused-import]: unused imports should be removed
415 --> /home/test/fork/DeployFlow.sol:17:9
416 |
417 17 | import {MockToken} from "@hyperlane-xyz/contracts/mock/MockToken.sol";
418 |     -----
419 |
420 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
421
422 note[unused-import]: unused imports should be removed
423 --> /home/test/fork/DeployFlow.sol:19:9
424 |
425 19 | import {Errors} from "../../src/vault/vault/Errors.sol";
426 |     -----
427 |
428 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
429
430 note[unused-import]: unused imports should be removed
431 --> /home/test/units/VaultFactory.t.sol:11:9
432 |
433 11 | import {IPostDispatchHook} from "@hyperlane-xyz/contracts/interfaces/hooks/IPostDispatchHook.sol";
434 |     -----
435 |
436 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
437
438 note[mixed-case-variable]: mutable variables should use mixedCase
439 --> /home/test/MerkleTreeHelper.sol:57:17
440 |
441 57 |         uint256 merkleTreeIn_length = merkleTreeIn.length;
442 |             -----
443 |
444 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
445
446 note[unused-import]: unused imports should be removed
447 --> /home/test/integration/VaultBridgeInteractions.t.sol:20:9
448 |
449 20 | import {console} from "forge-std/console.sol";
450 |     -----
451 |
452 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
453
454 note[mixed-case-variable]: mutable variables should use mixedCase
455 --> /home/src/interfaces/DecoderCustomTypes.sol:293:17
456 |
457 293 |         uint256 minAmountLD; // Minimum amount to send in local decimals.
458 |             -----
459 |
460 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
461
462 note[unused-import]: unused imports should be removed
463 --> /home/test/integration/VaultManagement.t.sol:20:9
464 |
465 20 | import {console} from "forge-std/console.sol";
466 |     -----
467 |
468 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
469
470 note[mixed-case-variable]: mutable variables should use mixedCase
471 --> /home/test/MerkleTreeHelper.sol:59:17
472 |
473 59 |         uint256 layer_length;
474 |             -----
475 |
476 = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
477
478 note[unused-import]: unused imports should be removed
479 --> /home/test/fork/DeployFlow.sol:20:9
480 |
481 20 | import {console} from "forge-std/console.sol";
482 |     -----
483 |

```



```
484 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
485
486 note[unused-import]: unused imports should be removed
487 --> /home/test/units/VaultFactory.t.sol:12:9
488 |
489 12 | import {IInterchainSecurityModule} from "@hyperlane-xyz/contracts/interfaces/IInterchainSecurityModule.sol";
490 |     -----
491 |
492 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
493
494 note[unused-import]: unused imports should be removed
495 --> /home/test/fork/DeployFlow.sol:21:9
496 |
497 21 | import {Message} from "@hyperlane-xyz/contracts/libs/Message.sol";
498 |     -----
499 |
500 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
501
502 note[unused-import]: unused imports should be removed
503 --> /home/test/units/VaultFactory.t.sol:16:9
504 |
505 16 | import {TestPostDispatchHook} from "@hyperlane-xyz/contracts/test/TestPostDispatchHook.sol";
506 |     -----
507 |
508 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
509
510 note[unused-import]: unused imports should be removed
511 --> /home/test/fork/DeployFlow.sol:24:9
512 |
513 24 | import {WETH9} from "../src/mocks/Weth.sol";
514 |     -----
515 |
516 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
517
518 note[unused-import]: unused imports should be removed
519 --> /home/test/units/VaultFactory.t.sol:17:9
520 |
521 17 | import {TestIsm} from "@hyperlane-xyz/contracts/test/TestIsm.sol";
522 |     -----
523 |
524 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
525
526 note[unused-import]: unused imports should be removed
527 --> /home/test/fork/DeployFlow.sol:25:9
528 |
529 25 | import {ManagerWithMerkleVerification} from "../src/vault/manager/ManagerWithMerkleVerification.sol";
530 |     -----
531 |
532 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
533
534 note[unused-import]: unused imports should be removed
535 --> /home/test/units/VaultFactory.t.sol:18:9
536 |
537 18 | import {Message} from "@hyperlane-xyz/contracts/libs/Message.sol";
538 |     -----
539 |
540 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
541
542 note[unused-import]: unused imports should be removed
543 --> /home/test/fork/DeployFlow.sol:26:9
544 |
545 26 | import {EthStrategyFullDecoderAndSanitizerMock} from "../src/mocks/EthStrategyDecoderAndSanitizerMock.sol";
546 |     -----
547 |
548 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
549
550 note[unused-import]: unused imports should be removed
551 --> /home/test/units/VaultFactory.t.sol:19:9
552 |
```





```
553 | 19 | import {TypeCasts} from "@hyperlane-xyz/contracts/libs/TypeCasts.sol";
554 |     |
555 |     |
556 |     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
557 |
558 | note[unused-import]: unused imports should be removed
559 | --> /home/test/units/VaultFactory.t.sol:27:9
560 |     |
561 | 27 | import {Ownable} from "openzeppelin/contracts/access/Ownable.sol";
562 |     |
563 |     |
564 |     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
565 |
566 | note[unused-import]: unused imports should be removed
567 | --> /home/test/units/VaultFactory.t.sol:33:9
568 |     |
569 | 33 | import {IVault} from "../../src/vault/vault/main/IVault.sol";
570 |     |
571 |     |
572 |     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
573 |
574 | note[mixed-case-variable]: mutable variables should use mixedCase
575 | --> /home/test/MerkleTreeHelper.sol:69:17
576 |     |
577 | 69 |         uint256 next_layer_length;
578 |         |
579 |         |
580 |         = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
581 |
582 | note[mixed-case-function]: function names should use mixedCase
583 | --> /home/test/MerkleTreeHelper.sol:296:14
584 |     |
585 | 296 |         function _addERC4626Leafs(ManageLeaf[] memory leafs, ERC4626 vault) internal {
586 |         |
587 |         |
588 |         = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-function
589 |
590 | note[mixed-case-variable]: mutable variables should use mixedCase
591 | --> /home/test/MerkleTreeHelper.sol:749:17
592 |     |
593 | 749 |         uint256 leftSideLLTV = marketParams.lltv / 1e16;
594 |         |
595 |         |
596 |         = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
597 |
598 | note[mixed-case-variable]: mutable variables should use mixedCase
599 | --> /home/test/MerkleTreeHelper.sol:750:17
600 |     |
601 | 750 |         uint256 rightSideLLTV = (marketParams.lltv / 1e14) % 100;
602 |         |
603 |         |
604 |         = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
605 |
606 | note[mixed-case-variable]: mutable variables should use mixedCase
607 | --> /home/test/MerkleTreeHelper.sol:1105:17
608 |     |
609 | 1105 |         uint256 tree_length = tree.length;
610 |         |
611 |         |
612 |         = help: https://book.getfoundry.sh/reference/forge/forge-lint#mixed-case-variable
613 |
614 | note[unused-import]: unused imports should be removed
615 | --> /home/test/MerkleTreeHelper.sol:10:9
616 |     |
617 | 10 | import {BaseDecoderAndSanitizer} from "../../src/vault/decodersAndSanitizers/BaseDecoderAndSanitizer.sol";
618 |     |
619 |     |
620 |     = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
621 |
622 | note[unused-import]: unused imports should be removed
```



```
623 --> /home/test/MerkleTreeHelper.sol:11:9
624 |
625 11 | import {AaveV3DecoderAndSanitizer} from "../src/vault/decodersAndSanitizers/protocols/
    | AaveV3DecoderAndSanitizer.sol";
626 | -----
627 |
628 = help: https://book.getfoundry.sh/reference/forge/forge-lint#unused-import
629
630 note[asm-keccak256]: use of inefficient hashing mechanism; consider using inline assembly
631 --> /home/src/vault/manager/ManagerWithMerkleVerification.sol:178:30
632 |
633 178 |         bytes32 intentHash = keccak256(userData);
634 |         -----
635 |
636 = help: https://book.getfoundry.sh/reference/forge/forge-lint#asm-keccak256
637
638 note[asm-keccak256]: use of inefficient hashing mechanism; consider using inline assembly
639 --> /home/src/vault/manager/ManagerWithMerkleVerification.sol:255:13
640 |
641 255 |         keccak256(abi.encodePacked(decoderAndSanitizer, target, valueNonZero, selector,
    | packedArgumentAddresses));
642 | -----
643 |
644 = help: https://book.getfoundry.sh/reference/forge/forge-lint#asm-keccak256
```



## 7.4 EVM Test Output

```
1 forge test
2 Compiling...
3 No files changed, compilation skipped
4
5 Ran 2 tests for test/integration/VaultManagement.t.sol:VaultBridgeInteractionsTest
6 [PASS] test_BridgeManagerDepositWeth() (gas: 3485795)
7 [PASS] test_DeployVaultAndBridgeManager() (gas: 1407438)
8 Suite result: ok. 2 passed; 0 failed; 0 skipped; finished in 1.80ms (936.61s CPU time)
9
10 Ran 14 tests for test/units/BridgeManager.t.sol:BridgeManagerTest
11 [PASS] test_approveBridgeUnderlyingTransfer_RevertWhenBridgeNotContract() (gas: 58673)
12 [PASS] test_approveBridgeUnderlyingTransfer_RevertWhenNoBridge() (gas: 30433)
13 [PASS] test_approveBridgeUnderlyingTransfer_RevertWhenNotOwner() (gas: 21034)
14 [PASS] test_approveBridgeUnderlyingTransfer_Success() (gas: 68516)
15 [PASS] test_processBridgeOrder_ComplexScenario() (gas: 160167)
16 [PASS] test_processBridgeOrder_NoExcessTransferWhenDeltaZero() (gas: 67216)
17 [PASS] test_processBridgeOrder_NoExcessTransferWhenNotExcess() (gas: 67096)
18 [PASS] test_processBridgeOrder_RevertWhenBridgeDepositFails() (gas: 81988)
19 [PASS] test_processBridgeOrder_RevertWhenBridgeWithdrawFails() (gas: 177073)
20 [PASS] test_processBridgeOrder_RevertWhenInsufficientBalance() (gas: 31394)
21 [PASS] test_processBridgeOrder_RevertWhenNotVault() (gas: 22245)
22 [PASS] test_processBridgeOrder_SuccessWithExcessTransfer() (gas: 89835)
23 [PASS] test_processBridgeOrder_SuccessWithVaultDeposits() (gas: 81103)
24 [PASS] test_processBridgeOrder_SuccessWithVaultWithdrawals() (gas: 125880)
25 Suite result: ok. 14 passed; 0 failed; 0 skipped; finished in 2.21ms (1.11ms CPU time)
26
27 Ran 6 tests for test/integration/VaultBridgeInteractions.t.sol:VaultBridgeInteractionsTest
28 [PASS] test_ControllerOrderProcessing() (gas: 1468738)
29 [PASS] test_DeployVaultAndBridgeManager() (gas: 1406967)
30 [PASS] test_VaultReceiveAssetsFromControllerTokenGateway() (gas: 1586739)
31 [PASS] test_VaultReceiveAssetsFromMultipleTokenGateways() (gas: 1640970)
32 [PASS] test_VaultReceiveAssetsFromMultipleTokenGatewaysReportAndSendToOneTokenGateway() (gas: 3369659)
33 [PASS] test_VaultReportingCycle() (gas: 1683025)
34 Suite result: ok. 6 passed; 0 failed; 0 skipped; finished in 2.35ms (2.20ms CPU time)
35
36 Ran 35 tests for test/units/VaultFactory.t.sol:VaultFactoryTest
37 [PASS] testDomain() (gas: 2574)
38 [PASS] testGetBridgeAndBridgeCallAdapter() (gas: 117693)
39 [PASS] testGetBridgeAndBridgeCallAdapterNoAdapter() (gas: 56803)
40 [PASS] testGetBridgeAndBridgeCallAdapterNoBridge() (gas: 88127)
41 [PASS] testHandleInvalidOrigin() (gas: 58453)
42 [PASS] testHandleInvalidSender() (gas: 58636)
43 [PASS] testHandleOnlyMailbox() (gas: 58608)
44 [PASS] testHandleSuccessful() (gas: 1347342)
45 [PASS] testHandleUnderlyingNotRegistered() (gas: 27939)
46 [PASS] testInitialization() (gas: 53432)
47 [PASS] testInitializationWithZeroControllerFactory() (gas: 2124304)
48 [PASS] testParseVaultInitData() (gas: 6050)
49 [PASS] testProxyDeployment() (gas: 1331421)
50 [PASS] testRegisterVaultToController() (gas: 1610876)
51 [PASS] testSetBridgeManagerImplementation() (gas: 788361)
52 [PASS] testSetBridgeManagerImplementationWithRandomAddress() (gas: 24826)
53 [PASS] testSetControllerGas() (gas: 48553)
54 [PASS] testSetControllerGasAccessControl() (gas: 22261)
55 [PASS] testSetControllerGasInitialValue() (gas: 18429)
56 [PASS] testSetControllerGasMaxValue() (gas: 48903)
57 [PASS] testSetControllerGasZero() (gas: 29896)
58 [PASS] testSetDomainAndUnderlyingToBridge() (gas: 125258)
59 [PASS] testSetDomainAndUnderlyingToBridgeNoBridgeCallAdapter() (gas: 61677)
60 [PASS] testSetDomainAndUnderlyingToBridgeNoUnderlying() (gas: 61502)
61 [PASS] testSetDomainAndUnderlyingToBridgeWithRandomAddress() (gas: 87832)
62 [PASS] testSetDomainToBridgeCallAdapter() (gas: 63067)
63 [PASS] testSetDomainToBridgeCallAdapterWithRandomAddress() (gas: 26678)
64 [PASS] testSetIdToUnderlying() (gas: 61226)
65 [PASS] testSetIdToUnderlyingWithETH() (gas: 49364)
66 [PASS] testSetIdToUnderlyingWithRandomAddress() (gas: 24803)
67 [PASS] testSetProxyAdmin() (gas: 402596)
68 [PASS] testSetProxyAdminWithRandomAddress() (gas: 24023)
```



```
69 [PASS] testSetVaultImplementation() (gas: 1719120)
70 [PASS] testSetVaultImplementationWithRandomAddress() (gas: 24892)
71 [PASS] testUnderlying() (gas: 2658)
72 Suite result: ok. 35 passed; 0 failed; 0 skipped; finished in 5.23ms (2.28ms CPU time)
73
74 Ran 28 tests for test/units/BaseVault.t.sol:BaseVaultTest
75 [PASS] testCanReceiveERC1155() (gas: 46318)
76 [PASS] testCanReceiveERC1155Batch() (gas: 88008)
77 [PASS] testCanReceiveERC721() (gas: 39532)
78 [PASS] testFuzzManageWithValue(uint256,uint256) (runs: 256, : 70744, ~: 71109)
79 [PASS] testFuzzMultipleManageCalls(uint8) (runs: 256, : 671198, ~: 536620)
80 [PASS] testFuzzSetManager(address) (runs: 256, : 21461, ~: 21461)
81 [PASS] testManageMultipleCalls() (gas: 243376)
82 [PASS] testManageMultipleCallsEmptyArrays() (gas: 16306)
83 [PASS] testManageMultipleCallsRevertWhenNotManager() (gas: 21157)
84 [PASS] testManageMultipleCallsRevertWhenOneTargetReverts() (gas: 80448)
85 [PASS] testManageMultipleCallsWithReturnData() (gas: 75530)
86 [PASS] testManageMultipleCallsWithValues() (gas: 252889)
87 [PASS] testManagePreservesRevertReason() (gas: 22410)
88 [PASS] testManageSingleCall() (gas: 66588)
89 [PASS] testManageSingleCallRevertWhenNotManager() (gas: 18732)
90 [PASS] testManageSingleCallRevertWhenTargetReverts() (gas: 22168)
91 [PASS] testManageSingleCallWithReturnData() (gas: 21763)
92 [PASS] testManageSingleCallWithValue() (gas: 70639)
93 [PASS] testManageWithSelfCall() (gas: 29470)
94 [PASS] testManagerCanCallManageButNotSetManager() (gas: 69491)
95 [PASS] testManagerCannotBeSetToZeroAddress() (gas: 13699)
96 [PASS] testManagerInitialState() (gas: 13165)
97 [PASS] testOnlyPrivilegedCanSetManager() (gas: 34218)
98 [PASS] testPrivilegedAddressCanBeChanged() (gas: 26795)
99 [PASS] testReceiveEther() (gas: 19710)
100 [PASS] testSetManager() (gas: 23058)
101 [PASS] testSetManagerRevertWhenNotPrivileged() (gas: 13888)
102 [PASS] testSetManagerRevertWhenZeroAddress() (gas: 14029)
103 Suite result: ok. 28 passed; 0 failed; 0 skipped; finished in 22.63ms (31.42ms CPU time)
104
105 Ran 38 tests for test/units/Vault.t.sol:VaultTest
106 [PASS] testCannotProcessSameOrderTwice() (gas: 269180)
107 [PASS] testConstructor() (gas: 1687225)
108 [PASS] testFullCycle() (gas: 685651)
109 [PASS] testFuzzHashBridgeTransferInfo(uint256,uint256,bool) (runs: 256, : 17957, ~: 17952)
110 [PASS] testFuzzReport(uint64,uint256) (runs: 256, : 2588825, ~: 2588825)
111 [PASS] testHandle() (gas: 86628)
112 [PASS] testHandleInvalidEpoch() (gas: 28874)
113 [PASS] testHandleMessageDeliveryAndVerification() (gas: 85225)
114 [PASS] testHandleOnlyController() (gas: 25687)
115 [PASS] testHandleOnlyControllerDomain() (gas: 25812)
116 [PASS] testHandleOnlyMailbox() (gas: 26420)
117 [PASS] testHashBridgeTransferExact() (gas: 25538)
118 [PASS] testHashBridgeTransferInfoConsistency() (gas: 21144)
119 [PASS] testHashBridgeTransferInfoDifferentInputs() (gas: 22084)
120 [PASS] testHashBridgeTransferInfoEmpty() (gas: 17584)
121 [PASS] testHashBridgeTransferInfoExcess() (gas: 18551)
122 [PASS] testHashBridgeTransferInfoWithWithdrawals() (gas: 22929)
123 [PASS] testInitialize() (gas: 53532)
124 [PASS] testInitializeCannotBeCalledTwice() (gas: 25384)
125 [PASS] testInitializeOnlyFactory() (gas: 2326577)
126 [PASS] testIsReadyToReportFalse() (gas: 20081)
127 [PASS] testIsReadyToReportTrue() (gas: 20299)
128 [PASS] testIsReadyToReportTrueAfterTimestamp() (gas: 19366)
129 [PASS] testMessageDeliveryVerification() (gas: 292376)
130 [PASS] testMultipleHandleCalls() (gas: 113216)
131 [PASS] testParseVaultReport() (gas: 19456)
132 [PASS] testProcessBridgeTransfers() (gas: 376225)
133 [PASS] testProcessBridgeTransfersInvalidOrder() (gas: 90119)
134 [PASS] testProcessBridgeTransfersNoNewOrder() (gas: 24484)
135 [PASS] testProcessBridgeTransfersReportTimestampPassed() (gas: 89943)
136 [PASS] testProcessBridgeTransfersWithExcess() (gas: 227439)
137 [PASS] testReport() (gas: 285448)
138 [PASS] testReportNotReadyToReport() (gas: 22267)
```



```
139 [PASS] testReportWithManagedStatus() (gas: 527097)
140 [PASS] testSetBridgeManager() (gas: 362818)
141 [PASS] testSetBridgeManagerOnlyFactory() (gas: 356050)
142 [PASS] testSetControllerGas() (gas: 48044)
143 [PASS] testSetControllerGasOnlyOwner() (gas: 21653)
144 Suite result: ok. 38 passed; 0 failed; 0 skipped; finished in 27.06ms (32.49ms CPU time)
145
146 Ran 1 test for test/fork/ExploitHyperlane.t.sol:ExploitHyperlaneTest
147 [PASS] test_HookDrainsWithoutPayment() (gas: 133860)
148 Suite result: ok. 1 passed; 0 failed; 0 skipped; finished in 9.24s (7.98s CPU time)
149
150 Ran 5 tests for test/fork/DeployFlow.sol:VaultBridgeInteractionsTest
151 [PASS] test_ForkDeployVaultAndBridgeManager() (gas: 1418553)
152 [PASS] test_RegisterVaultToControllerGasHook() (gas: 1584716)
153 [PASS] test_RegisterVaultToControllerNoHook() (gas: 1597099)
154 [PASS] test_VaultReport() (gas: 1722039)
155 [PASS] test_VaultReportBack() (gas: 1895150)
156 Suite result: ok. 5 passed; 0 failed; 0 skipped; finished in 10.51s (23.43s CPU time)
157
158 Ran 8 test suites in 10.51s (19.80s CPU time): 129 tests passed, 0 failed, 0 skipped (129 total tests)
```