Penetration Testing Report

Document Properties

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Version control

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V 1.0	05.10, 2021	thinking	Final Draft

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1.Basic information

The SlowMist security team conducted the penetration testing on the GasNow chrome extension project under the authorization of GasNow team. This report is written based on the test process and results, to help GasNow team understand the safety of the target business system, and guide GasNow team to fix and rectify.

1.1 Scope of work

This security assessment covers the penetration testing of GasNow chrome extension The assessment was carried out from a black box perspective, with the only supplied information being the tested chrome extension. No other information was assumed at the start of the assessment.

FileName and SHA256：

gasnow-mainnet-0.3.1.zip:
e2c6557262e46ad55eceb71c497ebc6c5c0fa99f0fa060968834b80f9c8896b6

Version： gasnow-mainnet-0.3.1

1.2 Tester and Timeline

This penetration testing is carried out within the timeline agreed in advance as follows:

Timeline			
Start Date/Time	05.06,2021	**End Date/Time**	05.10,2021

The participants of this penetration testing are shown as follows:

List of Testers			
Organization	**Role**	**Name**	**Contact**
SlowMist Security Team	Leader of Business Security Team	thinking	thinking@slowmist.com

1.3 Test content

The content of this test is the chrome-extension wallet security test of SlowMist, which is carried out in accordance with the OWASP security test guide, with reference to the CVSS vulnerability rating standard. The SlowMist security team adopts the strategy of "mainly black box, supplemented by grey box" to conduct a complete security test of the project in the way that is closest to the real attack.

1.4 Other explanatory information

Application security test method of SlowMist:

Black box testing	Conduct security tests externally from the attacker's perspective.
Grey box testing	Through communication with the person in charge of the project, investigate the internal security construction of the project, conduct the security assessment and the security test according to the investigation results, observe the internal operation status, and mining weaknesses.
White box testing	Based on open source and non-open source code, mining vulnerability(ies) in nodes, SDK, sites and other programs.

Application security risk level of SlowMist standard:

Critical	The critical vulnerability can have a significant impact on the security of business systems or user information, and it is strongly recommended to fix the critical vulnerability(ies).
High	The high-risk vulnerability will affect the normal operation of the business system. It is strongly recommended to fix the high-risk vulnerability.
Medium	Medium vulnerability will affect the operation of the business system. It is suggested to fix the medium vulnerability.
Low	Low-risk vulnerabilities may affect the operation of the business system in certain scenarios. It is recommended that the project party evaluate and consider whether these issues need to be fixed.
Weakness	Theoretically there are security risks, but it is very difficult to reproduce in engineering, the system will be more robust after adding security policy.

Enhancement suggestion	There will be no problems at present, but as the system develops, it may become a vulnerability in the future.

2.Test summary

2.1 Summary of Findings

Level	Number of Risks
Critical	0
High	0
Medium	0
Low	0
Weakness	1
Enhancement suggestion	1

2.2 Total Risks

3.Test Results

3.1 Transaction Process Security Test

NO.	Check	Response	Threat	OK
1	Does the signature have a clear reminder?	● DApp's signature request will be reminded. ● Reminder does not contains domain. ● Request needs confirmation.	Enhancement	√
2	Where is the implementation location of the signature?	● The transaction signature operation is performed in "hardware wallet".	Passed	√
3	Is there an issue about the transfer prompt?	● No "false top-up" vulnerabilities found.	Passed	√
4	How to configure the broadcast node?	● When the broadcast RPC interface is initialized, the configuration of Node is read by "backgroundscript". ● Broadcast RPC can not be set through popup. ● DApp cannot modify the RPC interface of transaction broadcast.	Passed	√

3.2 Private Key/Mnemonic Phrase Security Test

NO.	Check	Response	Threat	OK
1	How is the Private key/Mnemonic Phrase generated ?	● Generated in the "hardware wallet".	Passed	√
2	How is the Private key/Mnemonic Phrase stored ?	● Stored in the "hardware wallet".	Passed	√
3	How is the Private key/Mnemonic Phrase used ?	● Can't export Private key/Mnemonic Phrase from "hardware wallet".	Passed	√
4	How to get random seeds ?	● The random seeds are obtained by using the "hardware wallet" to generate.	Passed	√

5	What encryption method is used ?	● Encryption and decryption are implemented by hardware wallets.	Passed	√

3.3 Web Front End Security Test

NO.	Check	Response	Threat	OK
1	Is there any XSS issue found ?	● No security issues found.	Passed	√
2	What is the result of checking the third-party JS ?	● No security issues found.	Passed	√

3.4 Communications Security Test

NO.	Check	Response	Threat	OK
1	Does RPC use encryption for communication ?	● Use HTTPS for encrypted communication.	Passed	√
2	How does the extension communicate with the DApp ?	● the extension uses addEventListener to communicate with the DApp.	Passed	√
3	How does the extension communicate with itself internal wallet?	● the extension uses runtime.connect to communicate with the itself.	Passed	√

3.5 Business Logic Test

NO.	Check	Response	Threat	OK
1	Is there an access control check for export Private key/Mnemonic Phrase ?	● Can't export Private key/Mnemonic Phrase from "hardware wallet".	Passed	√

2	Does the wallet object set null after the wallet is locked ?	● Wallet lock is implemented by the "hardware wallet".	Passed	√
3	Is the business logic performed as expected ?	● The window.addEventListener judge the origin of the message, and the authorized site can initiate a signature request. ● There is no mechanism to cancel site authorization. ● Authorization has no expiration time	Weakness	√

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Reference

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[6]"Web3 Secret Storage Definition":https://github.com/ethereum/wiki/wiki/Web3-Secret-Storage-Definition

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