



# CVE-2021-41138

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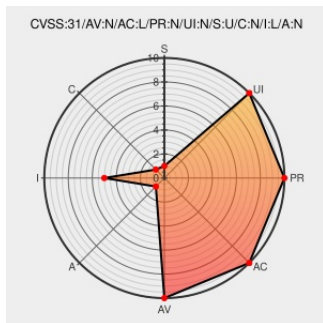
Last Modified on: 10/20/2021 04:45:00 PM UTC

## CVE-2021-41138 - advisory for GHSA-vj62-g63v-f8mf

[Source: Mitre](#)

[Source: Nist](#)

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Certain versions of **Frontier** from **Parity** contain the following vulnerability:

Frontier is Substrate's Ethereum compatibility layer. In the newly introduced signed Frontier-specific extrinsic for `pallet-ethereum`, a large part of transaction validation logic was only called in transaction pool validation, but not in block execution. Malicious validators can take advantage of this to put invalid transactions into a block. The attack is limited in that the signature is always validated, and the majority of the validation is done again in the subsequent `pallet-evm` execution logic. However, do note that a chain ID replay attack was possible. In addition, spamming attacks are of main concerns, while they are limited by Substrate block size limits and other factors. The issue is patched in commit `146bb48849e5393004be5c88beefe76fdf009aba`.

CVE-2021-41138 has been assigned by security-advisories@github.com to track the vulnerability - currently rated as **MEDIUM** severity.

Affected Vendor/Software: paritytech - frontier version < 146bb48

CVSS3 Score: **5.3 - MEDIUM**

Attack Vector	Attack Complexity	Privileges Required	User Interaction
<b>NETWORK</b>	<b>LOW</b>	<b>NONE</b>	<b>NONE</b>
Scope	Confidentiality Impact	Integrity Impact	Availability Impact
<b>UNCHANGED</b>	<b>NONE</b>	<b>LOW</b>	<b>NONE</b>

CVSS2 Score: **5 - MEDIUM**

Access Vector	Access Complexity	Authentication
<b>NETWORK</b>	<b>LOW</b>	<b>NONE</b>
Confidentiality Impact	Integrity Impact	Availability Impact

NONE

PARTIAL

NONE

## CVE References

Description	Tags	Link
Validity check for signed Frontier-specific extrinsic not called in block execution · Advisory · paritytech/frontier · GitHub	<a href="#">github.com</a> <a href="#">text/html</a>	CONFIRM <a href="https://github.com/paritytech/frontier/security/advisories/GHSA-vj62-g63v-f8mf">github.com/paritytech/frontier/security/advisories/GHSA-vj62-g63v-f8mf</a>
Ensure no error is possible in `apply_validated_transaction` and fix `correct_and_deposit_fee` by sorpaas · Pull Request #497 · paritytech/frontier · GitHub	<a href="#">github.com</a> <a href="#">text/html</a>	MISC <a href="https://github.com/paritytech/frontier/pull/497">github.com/paritytech/frontier/pull/497</a>
Fix security issue: transaction validity controls must be executed in... · paritytech/frontier@146bb48 · GitHub	<a href="#">github.com</a> <a href="#">text/html</a>	MISC <a href="https://github.com/paritytech/frontier/commit/146bb48849e5393004be5c88beefe76fdf009aba">github.com/paritytech/frontier/commit/146bb48849e5393004be5c88beefe76fdf009aba</a>

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There are currently no QIDs associated with this CVE

## Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Parity	Frontier	All	All	All	All

cpe:2.3:a:parity:frontier:\*:\*:\*:\*:\*:\*:

No vendor comments have been submitted for this CVE

## Social Mentions

Source	Title	Posted (UTC)
@CVEreport	CVE-2021-41138 : Frontier is Substrate's Ethereum compatibility layer. In the newly introduced signed Frontier-spec... <a href="https://twitter.com/i/web/status/1...">twitter.com/i/web/status/1...</a>	2021-10-13 15:20:30

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