

Directory Traversal

Affecting marscode package, versions *

INTRODUCED: 20 JUN 2020
CVE-2020-7681 ⓘ
CWE-22 ⓘ
FIRST ADDED BY SNYK
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How to fix?

There is no fixed version for marscode .

Overview

marscode is a web editor created with monaco-editor, jquery file tree and nodejs file tree to read, write, edit, delete (CRUD) files.

Affected versions of this package are vulnerable to Directory Traversal. There is no path sanitization in the path provided at fs.readFile in index.js .

PoC by JHU System Security Lab

1. Start the server node index.js
2. Create a file test.js in the server's parent directory
3. curl -v --path-as-is http://127.0.0.1:8080/../../test.js

Details

A Directory Traversal attack (also known as path traversal) aims to access files and directories that are stored outside the intended folder. By manipulating files with "dot-dot-slash (../)" sequences and its variations, or by using absolute file paths, it may be possible to access arbitrary files and directories stored on file system, including application source code, configuration, and other critical system files.

Directory Traversal vulnerabilities can be generally divided into two types:

- Information Disclosure: Allows the attacker to gain information about the folder structure or read the contents of sensitive files on the system.

st is a module for serving static files on web pages, and contains a vulnerability of this type. In our example, we will serve files from the public route.

If an attacker requests the following URL from our server, it will in turn leak the sensitive private key of the root user.

```

curl http://localhost:8080/public/%2e%2e/%2e%2e/%2e%2e/%2e%2e/%2e%2e/%2e%2e/root/.ssh/id_rsa

```

Note %2e is the URL encoded version of . (dot).

- Writing arbitrary files: Allows the attacker to create or replace existing files. This type of vulnerability is also known as Zip-Slip .

One way to achieve this is by using a malicious zip archive that holds path traversal filenames. When each filename in the zip archive gets concatenated to the target extraction folder, without validation, the final path ends up outside of the target folder. If an executable or a configuration file is overwritten with a file containing malicious code, the problem can turn into an arbitrary code execution issue quite easily.

The following is an example of a zip archive with one benign file and one malicious file. Extracting the malicious file will result in traversing out of the target folder, ending up in /root/.ssh/ overwriting the authorized_keys file:

```

2018-04-15 22:04:29 ..... 19 19 good.txt 2018-04-15 22:04:42 ..... 20 20 ../../../../../../root/.ssh/authorized_keys

```

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