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Directory Traversal

Affecting elfinder.net.core package, versions [0,1.2.4)

INTRODUCED: 30 JUN 2021 CVE-2021-23407 ❓ CWE-22 ❓   FIRST ADDED BY SNYK

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How to fix?

Upgrade `elFinder.Net.Core` to version 1.2.4 or higher.
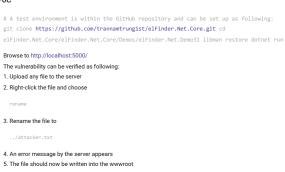
Overview

elFinder.Net.Core is an An elFinder backend connector with less magic code and more compatibility. This enables .NET Standard 2.0 projects to easily integrate elFinder functionalities.

Affected versions of this package are vulnerable to Directory Traversal. The user-controlled file name is not properly sanitized before it is used to create a file system path.

PoC

```
# A test environment is within the GitHub repository and can be set up as following:
git clone https://github.com/trannamtrung1st/elFinder.Net.Core.git cd
elFinder.Net.Core/elFinder.Net.Core/Demos/elFinder.Net.Demo31 libman restore dotnet run
```

Browse to http://localhost:5000/
The vulnerability can be verified as following:
1. Upload any file to the server
2. Right-click the file and choose

   `rename`

3. Rename the file to

   `../attacker.txt`

4. An error message by the server appears
5. The file should now be written into the wwwroot

   `ls wwwroot`

, instead of the expected volume folder

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/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
```

References

- GithHub Commit
- GitHub Release

Snyk CVSS

Exploit Maturity	Proof of concept ❓
Attack Complexity	Low ❓
Confidentiality	HIGH ❓

See more

> NVD   7.5 HIGH

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Snyk ID	SNYK-DOTNET-ELFINDERNETCORE-1315152
Published	14 Jul 2021
Disclosed	30 Jun 2021
Credit	Timo Mueller

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