

Stream Ripper 32 Frigate

VULNERABILITY REPORT

Monday, May 17, 2021



VIT-AP
UNIVERSITY

MODIFICATIONS HISTORY

| Version | Date | Author | Description |
|---------|------------|---------------------|-----------------|
| 1.0 | 05/17/2021 | Ratna Rajiv Mulpuri | Initial Version |
| | | | |
| | | | |
| | | | |

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GENERAL INFORMATION

SCOPE

VIT-AP University has mandated us to perform security tests on the following scope:

- Software Security

ORGANISATION

The testing activities were performed between 05/17/2021 and 05/17/2021.

EXECUTIVE SUMMARY{#SUMMARY}

VULNERABILITIES SUMMARY

Following vulnerabilities have been discovered:

| Risk | ID | Vulnerability | Affected Scope |
|--------|----------|----------------------|----------------|
| High | IDX-003 | Shell Code Injection | |
| High | IDX-001 | Buffer Overflow | |
| Medium | VULN-002 | Denial of service | |

TECHNICAL DETAILS{#FINDINGS}

SHELL CODE INJECTION

| CVSS SEVERITY | High | | CVSSv3 SCORE | 8.2 |
|------------------|---|----------|-------------------|---------|
| CVSSv3 CRITERIAS | Attack Vector : | Network | Scope : | Changed |
| | Attack Complexity : | High | Confidentiality : | High |
| | Required Privileges : | None | Integrity : | Low |
| | User Interaction : | Required | Availability : | High |
| AFFECTED SCOPE | | | | |
| DESCRIPTION | <p>Shell code injection is a hacking technique where the hacker exploits vulnerable programs. The hacker infiltrates into the vulnerable programs and makes it execute their own code. he injection is used by an attacker to introduce (or "inject") code into a vulnerable computer program and change the course of execution.this injection can result in data loss or corruption, lack of accountability, or denial of access. Injection can sometimes lead to complete host takeover.</p> | | | |
| OBSERVATION | <p>We have identified that this Vulnerability can execute different malicious code and can even trigger different applications including Command Prompt.</p> | | | |

TEST DETAILS

```
Microsoft Windows [Version 10.0.19041.985]
(c) Microsoft Corporation. All rights reserved.

C:\windows\system32>
```

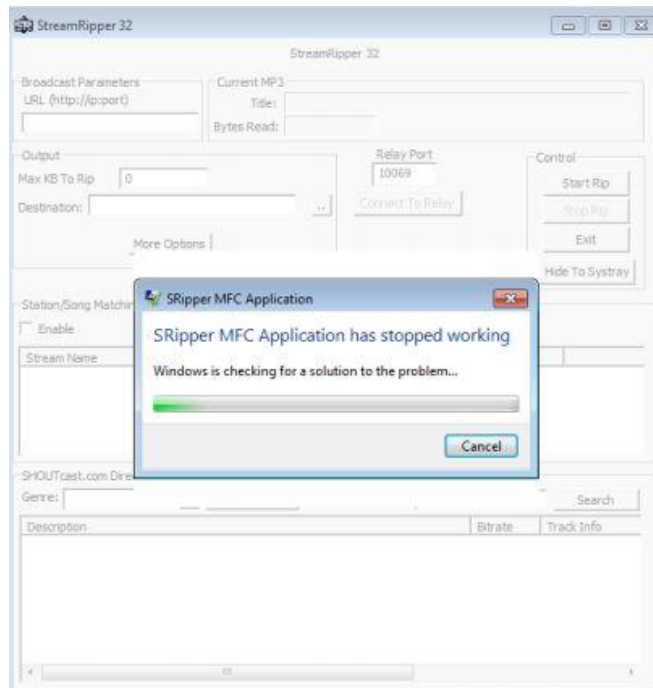


| | |
|-------------|--|
| | |
| REMEDIATION | <ol style="list-style-type: none">1. Addressing Buffer Overflow Vulnerability2. Input Sanitization3. Implementing ASLR, DEP, SEH |
| REFERENCES | |

BUFFER OVERFLOW

| | | | |
|-------------------------|---|---|------------|
| CVSS SEVERITY | High | CVSSv3 SCORE | 7.6 |
| CVSSv3 CRITERIAS | Attack Vector : Local Attack Complexity : High Required Privileges : None User Interaction : Required | Scope : Changed Confidentiality : High Integrity : Low Availability : High | |
| AFFECTED SCOPE | | | |
| DESCRIPTION | A buffer overflow, or buffer overrun, is an anomaly where a program, while writing data to a buffer, overruns the buffer's boundary and overwrites adjacent memory locations. It exists when a program attempts to put more data in a buffer than it can hold or when a program attempts to put data in a memory area past a buffer. In this case, a buffer is a sequential section of memory allocated to contain anything from a character string to an array of integers. Writing outside the bounds of a block of allocated memory can corrupt data, crash the program, or cause the execution of malicious code. | | |
| OBSERVATION | We have observed that this buffer overflow can potentially crash an application and unknowingly allows command injection attacks. | | |

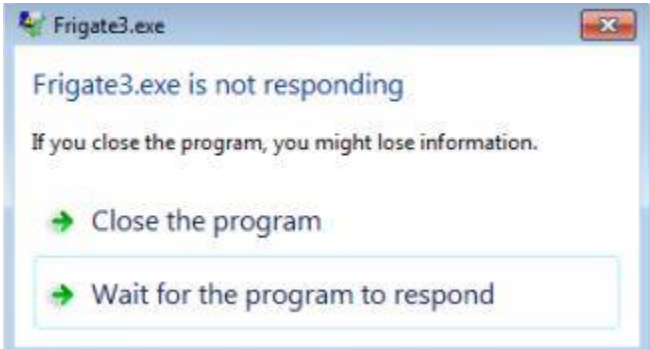
TEST DETAILS



| | |
|--------------------|---|
| REMEDIATION | 1. Address space randomization (ASLR) 2. Data execution prevention (DEP) |
|--------------------|---|

| | |
|------------|--|
| | 3. Structured exception handler overwrite protection (SEHOP) |
| REFERENCES | |

BUFFER OVERFLOW

| CVSS SEVERITY | Medium | | CVSSv3 SCORE | 5.5 |
|--|---|----------|-------------------|----------|
| CVSSv3 CRITERIAS | Attack Vector : | Local | Scope : | Unhanged |
| | Attack Complexity : | Low | Confidentiality : | None |
| | Required Privileges : | None | Integrity : | None |
| | User Interaction : | Required | Availability : | High |
| AFFECTED SCOPE | | | | |
| DESCRIPTION | The Denial of Service (DoS) attack is focused on making software unavailable for the purpose it was designed. If a service receives a very large number of requests, it may cease to be available to legitimate users. In the same way, a service may stop if a programming vulnerability is exploited, or the way the service handles resources it uses. | | | |
| OBSERVATION | We have observed that the software crashes immediately as a result of large string input due to Buffer overflow vulnerability. This could impact the availability of software | | | |
| TEST DETAILS | | | | |
| <div></div> | | | | |
| REMEDIATION | 1. Input Sanitization 2. Addressing Buffer Overflow | | | |
| REFERENCES | | | | |