CVE-2018-12234: Reflected Cross Site Scripting(XSS) in Adrenalin 5.4.0 HRMS Software | GeneralInfo [issue 1 of 5]

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As a cybersecurity expert, I come across a wide variety of vulnerabilities, ranging from critical severity to low severity and sometimes informative (Classification - CVSS v3). Some time ago, I was performing my security assessment as usual for a (confidential) customer for their HRMS web application, a third-party software whose vendor is " Adrenaline".

CVE ID: CVE-2018-12234

Vulnerability Name: Reflected Cross Site Scripting(XSS)

Product: Adrenalin HRMS

Affected Version: 5.4.0

Source: MITRE

Credits: Rishu Ranjan

CVE-2018-12234 Details

The Common Vulnerabilities and Exposures (CVE) project has assigned the ID CVE-2018-12234 to this issue provided by MITRE Corporation (MITRE)(As Vendor is not CVE Numbering Authorities (CNAs))

CVSS Score

CVSS Base Score: 6.1

Vector:

AV:N/AC:L/PR:N/UI:R/S:C/C:L/I:L/A:N

Impact Subscore:2.7

Exploitability Subscore: 2.8

Current Description

A Reflected Cross Site Scripting(XSS) Vulnerability was discovered in Adrenalin 5.4.0 HRMS which is publically available. The user supplied input containing JavaScript code is echoed back in javascript code in HTML response without any output encoding performed which allows an attacker to input malicious JavaScript which can steal cookie, redirect them to other malicious website, etc.

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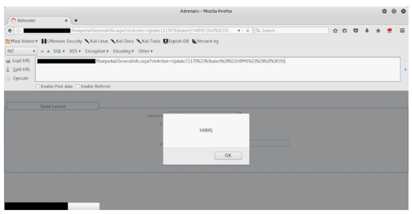
CVE-ID	***CVE-2018-12234***
Description	***Request Method(s): [+] GET*** ***Vulnerable Product: [+] Adrenalin HRMS Software 5.4.0***
URL	***/flexiportal/GeneralInfo.aspx?strAction=Update0%22[Javascript code]22HRMS%22%29%2f%2f1***
Parameter	***strAction***

"

POCs



Impact

In Reflected Cross Site Scripting, the malicious payload has to be send as a part of URL and user should be tricked to visit that URL. However, it has the same impact as that of a persistent XSS.

XSS can be used to hijack victim's session and thereby gaining complete access to his/her user account. Additionally, it can be used to redirect victim to a malicious website which may contain browser exploits or a phishing page.

Remediation, Solution

At a basic level XSS works by tricking your application into inserting a <script> tag into your rendered page, or by inserting an On* event into an element. Developers should use the following prevention steps to avoid introducing XSS into their application.

1. Never put untrusted data into your HTML input, unless you follow the rest of the steps below. Untrusted

data is any data that may be controlled by an attacker, HTML form inputs, query strings, HTTP headers, even data sourced from a database as an attacker may be able to breach your database even if they cannot breach your application.

2. Before putting untrusted data inside an HTML element ensure it's HTML encoded. HTML encoding takes characters such as < and changes them into a safe form like <
3. Before putting untrusted data into an HTML attribute ensure it's HTML

attribute encoded. HTML attribute encoding is a superset of HTML encoding and encodes additional characters such as " and '.

4. Before putting untrusted data into JavaScript place the data in an HTML element whose contents you retrieve at runtime. If this isn't possible then ensure the data is JavaScript encoded. JavaScript encoding takes dangerous characters for JavaScript and replaces them with their hex, for example < would be encoded as \u003C.

5. Before putting untrusted data into a URL query string ensure it's URL encoded.

Reference

https://cwe.mitre.org/data/definitions/79.html
https://www.owasp.org/index.php/Testing_for_Reflected_Cross_site_scripting_(OTG-INPVAL-001)
https://docs.microsoft.com/en-us/aspnet/core/security/cross-site-scripting?view=aspnetcore-2.1
https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2018-12234

Update Timelines

12th June,2018- Reflected XSS Vulnerability found in the software.

12th June,2018- Few query asked about the CVE process with same information reported to Mitre without Vendor name and version information.

12th June,2018- Mitre replied with the CVE-ID and asked to inform the vendor about the vulnerability and CVE-ID is generated.

28th June,2018- The Vendor Replied and the full report of the vulnerability sent to the Vendor.

2nd July,2018- The XSS Instance was patched on cloud version of the software.

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Part 2 covers 1 - Account Takeover via Forgot Password—A Practical Attack Scenario of Host Header Injection 2 - IP Spoofing (Bypass Whitelisting)
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Part 1 covers 1 - HTTP response header injection 2 - Server-side request forgery (SSRF) - Out-of-band resource load (HTTP) 3 - HTTP PUT method is enabled
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