## **Vulnerability Assessment Report**

#### **VULNERABILITY DETAILS**

VULNERABILITY	SEVERITY	CVSS SCORE
NAME		
Application is	Medium	5.4
vulnerable to Cross-		AV:N/AC:L/PR:N/UI:R/S:C/C:L/I:L/A:N
Site Scripting attack		
Application includes	Medium	5.1
Vulnerable and		AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:L/A:N
Outdated Components		
Missing Security	High	7.0
Header's and Banners		AV:N/AC:L/PR:N/UI:R/S:C/C:H/I:H/A:N
Weak SSL TLS Cipher	High	7.4
suite		AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:N
Server Header	Low	3.1
Disclosure		AV:N/AC:H/PR:N/UI:N/S:U/C:L/I:N/A:N
Host Header injection	Medium	5.3
		AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:L/A:N

The following table lists the OWASP Top 10 vulnerabilities and indicates which issues were identified in the **http://www.itsecgames.com/** application.

CATEGORY	FOUND
A1 - Broken Access Control	No
A2 - Cryptographic Failures	Yes
A3 - Injection	Yes
A4 - Insecure Design	Yes
A5 - Security Misconfiguration	Yes
A6 - Vulnerable and Outdated Components	Yes
A7 - Identification and Authentication	No
Failures	

## Application is Vulnerable to Cross-Site Scripting attack

Cross-site Scripting (XSS) is a client-side code injection attack. The adversary aims to execute malicious scripts in a web browser of the victim by including malicious code in a legitimate web page or web application. The web application help field was affected by cross site scripting.

**Tool Used**: Wappalyzer chrome extension.

Affected URL/IP: <a href="http://www.itsecgames.com/">http://www.itsecgames.com/</a>

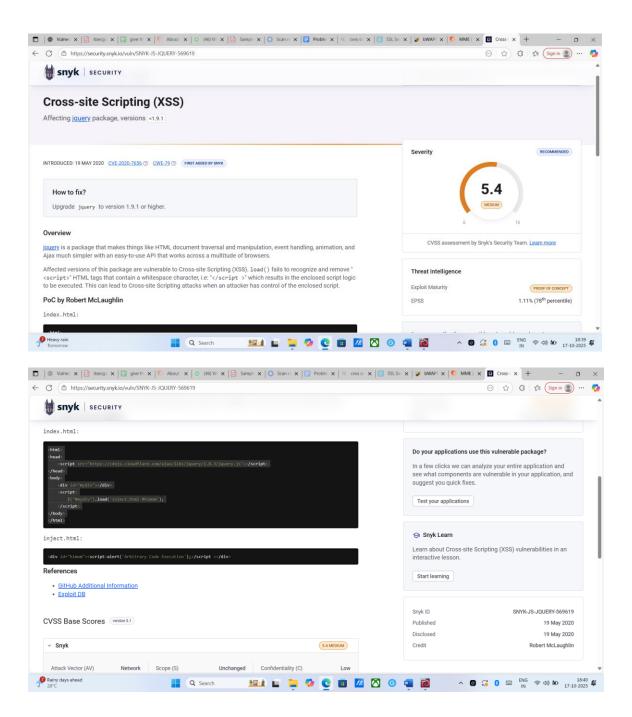
**Severity: Medium** 

CVSS Score: 5.4 ( AV:N/AC:L/PR:N/UI:R/S:C/C:L/I:L/A:N)

**Business Impact:** An adversary can execute code in a victim's browser and can perform malicious activity, posing serious security threat to the application.

**Technical Impact:** Adversary can affect the web application help field and perform other attacks like social engineering, cookie stealing etc.

- 1. **Input Validation** is the practice of checking user input against a strict definition of what is allowed (e.g., only alphanumeric characters, a specific length, etc.).
- 2. **Input Sanitization** involves cleaning or filtering user input to remove potentially malicious elements, such as <script> tags or JavaScript event handlers.
- 2. **Output Encoding** is the process of converting potentially dangerous characters into a non-executable, "safe" equivalent before they are rendered in a web page.
- 3. **A Content Security Policy** (CSP) is a browser-side security layer that helps detect and mitigate certain types of attacks, including XSS and data injection.
- 4. **Implement HTTPONLY flag in session cookie** HTTPOnly is a crucial flag for session cookie security, but it is not a direct Cross-Site Scripting (XSS) remediation technique. It is an mitigation that limits the damage caused by a successful XSS attack.



# Application includes Vulnerable and Outdated Components

The application is running on **outdated software components** that may contain **known security vulnerabilities**. These outdated libraries, frameworks, or server modules increase the attack surface and can be exploited by attackers using publicly available exploits..

The web application JavaScript Libraries(JQuery 1.5.1) was affected by this issue.

**Tool Used**: Wappalyzer chrome extension.

Affected URL/IP: http://www.itsecgames.com/

**Severity: Medium** 

CVSS Score: 5.1 (AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:L/A:N)

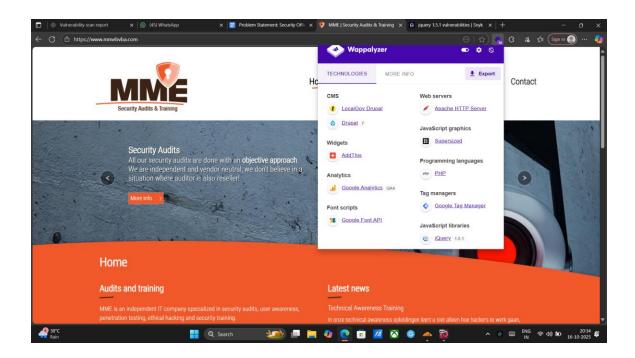
#### **Business Impact**

Using vulnerable and outdated components in the application poses a significant risk to business operations, data integrity, and reputation. Attackers can exploit known flaws in outdated software to compromise the system without needing to discover new vulnerabilities.

#### **Technical Impact**

Using outdated or vulnerable components introduces known weaknesses into the application's technology stack. These components may contain publicly disclosed vulnerabilities (CVEs) that attackers can easily exploit to compromise the system.

- 1. Update All Outdated Components.
- 2. Implement a Component Inventory and Monitoring Process.
- 3. Remove Unused or Deprecated Components.
- 4. Strengthen Update and Deployment Practices
- 5. Improve Cryptographic and Server Configurations



## JavaScript libraries



## **Application Missing Security Header's and Banners**

The application's HTTP responses are missing several **important security headers and server banner configurations** that help protect against common web-based attacks. Security headers play a vital role in hardening web applications by instructing browsers on how to handle content, reducing the risk of **Cross-Site Scripting (XSS)**, **Clickjacking**, and **MIME-type sniffing** attacks.

**Tool Used**: <a href="https://securityheaders.com">https://securityheaders.com</a> (Website)

Affected URL/IP: http://www.itsecgames.com/

Severity: High

CVSS Score: 7.0 (AV:N/AC:L/PR:N/UI:R/S:C/C:H/I:H/A:N)

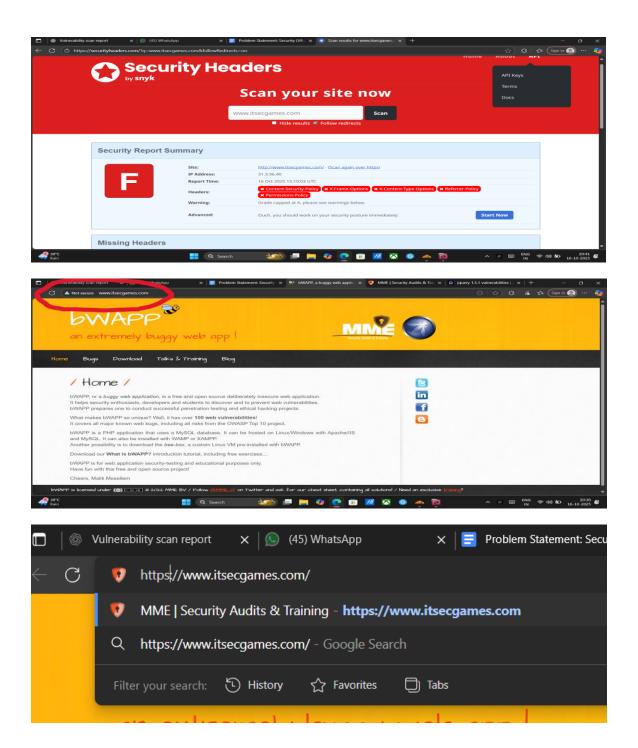
#### **Business Impact**

The absence of key security headers and the exposure of server banners can have a significant impact on the organization's overall security posture. Although these issues may seem low-level or configuration-related, they can indirectly lead to data compromise, reputational harm, and compliance violations if exploited by attackers in conjunction with other vulnerabilities.

#### **Technical Impact**

The absence of essential HTTP security headers and the exposure of server banners can lead to multiple technical risks that weaken the security posture of the web application. These configurations help protect users and the application from various client-side and reconnaissance-based attacks.

- 1. Implement Essential Security Headers.
- 2. Enforce HTTPS Across the Application.
- 3. Enforce HTTPS Across the Application.
- 4. Test and Validate Headers.



## Weak SSL TLS Cipher suite

The application's web server supports **weak or outdated SSL/TLS cipher suites and protocols** that do not provide adequate encryption strength or protection against modern cryptographic attacks. These insecure configurations can allow attackers to **decrypt, manipulate, or intercept sensitive data** transmitted between the client and the server.

**Tool Used**: https://www.ssllabs.com/ssltest(Website)

Affected URL/IP: <a href="http://www.itsecgames.com/">http://www.itsecgames.com/</a>

**Severity: High** 

CVSS Score: 7.4 (AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:N)

#### **Business Impact**

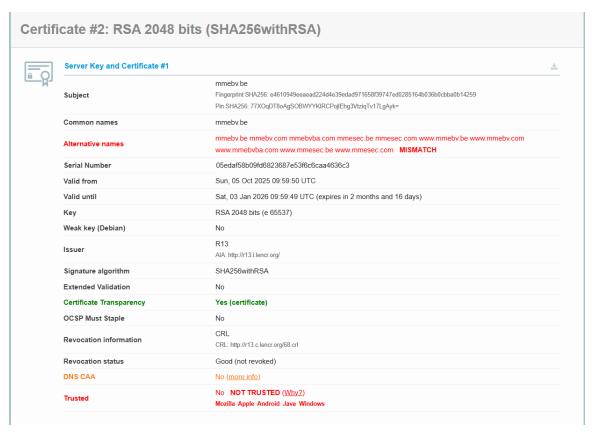
The presence of weak or outdated SSL/TLS cipher suites poses a serious risk to the confidentiality and integrity of data exchanged between the web application and its users. If attackers successfully exploit these weaknesses, it can lead to data breaches, loss of customer trust, and potential legal or regulatory penalties.

#### **Technical Impact**

The support of weak or deprecated SSL/TLS protocols and cipher suites significantly undermines the security of encrypted communications between the client and the server. Attackers can exploit these weaknesses to compromise the confidentiality, integrity, and authenticity of transmitted data.

- 1. Disable Deprecated Protocols.
- 2. Use Strong Cipher Suites Only.
- 3. Enable Perfect Forward Secrecy (PFS).
- 4. Use a Strong SSL/TLS Certificate.
- 5. Regularly Test SSL/TLS Configuration.

#### Certificate #1: RSA 2048 bits (SHA256withRSA) Server Key and Certificate #1 web.mmebvba.com Fingerprint SHA256: 9e7276cb84903692044a0e1f9b64d1426869813b55b28167913b7e49e778f87e Subject Pin SHA256: moilG7Pck7rm7Q7pJpb+auqA9cuCc0eOAxVrTFBhY0M= Common names web.mmebvba.com Serial Number 00ba5e79e0c2f743cb Valid from Mon, 25 May 2015 09:07:54 UTC Thu, 22 May 2025 09:07:54 UTC (expired 4 months and 25 days ago) EXPIRED Valid until RSA 2048 bits (e 65537) Weak key (Debian) Issuer web.mmebvba.com Self-signed Signature algorithm SHA256withRSA **Extended Validation** Certificate Transparency OCSP Must Staple No Revocation information None DNS CAA No NOT TRUSTED (Why?) Trusted Mozilla Apple Android Java Windows



#### Server Header Disclosure

The web application discloses **server information and version details** in its HTTP response headers. This information typically appears in fields such as Server, X-Powered-By, or X-AspNet-Version. it was observed that the application's HTTP responses include detailed server and technology information (e.g., Server: Apache/2.4.38 (Debian) or X-Powered-By: PHP/7.4.3). Exposing these details provides valuable insights to attackers during the **reconnaissance phase**, helping them identify specific software versions and potential vulnerabilities associated with them.

Tool Used: PortSwigger Burp Suite.

Affected URL/IP: http://www.itsecgames.com/

**Severity: Low** 

CVSS Score: 3.1 (AV:N/AC:H/PR:N/UI:N/S:U/C:L/I:N/A:N)

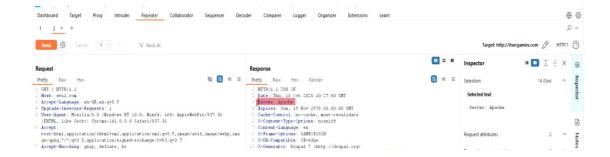
#### **Business Impact**

The exposure of detailed server information and version numbers through HTTP headers can have a **significant impact on the organization's overall security posture**. While this issue may appear low in isolation, it provides **valuable intelligence to attackers**, enabling them to identify and exploit specific weaknesses in the organization's technology stack.

#### **Technical Impact**

The disclosure of detailed server and technology information through HTTP response headers allows attackers to **accurately fingerprint the application's backend environment**. This information is highly valuable during the **reconnaissance phase** of an attack, as it helps identify potential vulnerabilities specific to the disclosed software versions.

- 1. Disable or Modify Server Identification Headers
- 2. Use a Reverse Proxy or Web Application Firewall (WAF)
- 3. Remove Framework or Platform Disclosure
- 4. Regular Security Header Review
- 5. Apply Principle of Minimal Disclosure



## **Host Header injection**

**Host Header Injection** occurs when an application uses the incoming Host HTTP header in a security-sensitive context (URL generation, password resets, redirects, or logging) without proper validation. An attacker can supply a malicious Host value to manipulate links, cause cache poisoning, bypass access controls, or craft malicious emails and password-reset links that point to attacker-controlled domains.

**Tool Used**: PortSwigger Burp Suite.

Affected URL/IP: http://www.itsecgames.com/

**Severity: Medium** 

CVSS Score: 5.3 (AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:L/A:N)

#### **Business Impact**

Exploitation of a Host Header Injection vulnerability can have serious business and reputational consequences. Although it may seem like a low-level technical flaw, its impact can escalate significantly when the application uses the Host header for generating dynamic links, password reset URLs, or security tokens.

#### **Technical Impact**

A **Host Header Injection** vulnerability allows an attacker to manipulate the Host HTTP header, which the application uses for generating URLs, redirects, or security-sensitive operations, without proper validation. This misconfiguration can lead to multiple **technical security issues** and facilitate more advanced attacks..

- 1. Validate Host Header Against a Whitelist.
- 2. Use Application-Configured Base URLs.
- 3. Sanitize and Canonicalize Input.
- 4. Secure Reverse Proxies and CDNs.
- 5. Monitor and Log Suspicious Requests.
- 6. Test and Verify Remediation.



## NMAP Vulnerability Scan Report — itsecgames.com

#### **Executive summary:**

A network-level assessment identified several service exposures and misconfigurations: Critical: Exposed database service (MySQL/MariaDB) on TCP/3306. Medium: Weak TLS/SSL configuration and support for outdated ciphers/protocols on HTTPS. Low/Medium: Server version disclosure (Apache 2.4.x) visible in headers. Other: Open/filtered SSH and general exposure of HTTP/HTTPS.

#### Methodology (recommended commands)-

Host & port discovery: nmap -sS -Pn -p- itsecgames.com – Service/version and default scripts: nmap -sV -sC -p 22,80,443,3306 itsecgames.com - TLS/SSL enumeration: nmap-script ssl-enum-ciphers -p 443 itsecgames.com - MySQL checks: nmap --script mysql info,mysql-empty-password -p 3306

#### **Findings**

**Finding A** — Exposed database service (TCP/3306): Severity: Critical/High Description: TCP port 3306 reported open and serving MySQL/MariaDB. Internet-accessible DB servers risk data theft and exploitation. Recommended remediation: • Block port 3306 at the perimeter; restrict access to management hosts or VPN only. • Use bastion hosts/SSH tunnels or VPN for remote DB access. • Update DB engine, enforce strong passwords, disable remote root, audit accounts.

**Finding B** — Weak TLS/SSL ciphers (HTTPS / 443): Severity: Medium Description: TLS service may allow weak ciphers or older protocol versions (TLS1.0) as reported by sslenum ciphers. Recommended remediation: • Support TLS 1.2 and TLS 1.3 only; remove weak ciphers (3DES, RC4). • Use ECDHE key exchange and AEAD ciphers; enable HSTS. • Test with SSL Labs or testssl.sh.

**Finding C** — Server version disclosure (Apache 2.4.x): Severity: Low/Medium Description: HTTP headers reveal server and likely Apache 2.4.x; this aids attacker fingerprinting. Recommended remediation: • Hide/generalize Server header (ServerTokens Prod; ServerSignature Off), or strip via proxy/WAF. • Patch Apache and OS packages.

**Finding D** — SSH open/filtered (22): Severity: Medium Description: SSH reachable or filtered; remote management service must be hardened. Recommended remediation: • Restrict SSH to management IPs or use bastion/VPN. • Enforce key-based auth, disable password auth and root login; use fail2ban

**Risk prioritization & remediation roadmap Immediate** (24–72h): • Block inbound 3306; enforce strong DB credentials. Short-term (1–2 weeks): • Harden TLS, remove weak ciphers, enable HSTS; hide server headers; restrict SSH. Medium-term (2–6 weeks): • Patch/upgrade Apache, MySQL, OS; run full authenticated scans. Long-term (1–3 months):

```
hmap -sV -sC -p 22,80,443,3306 itsecgames.com
Starting Nmap 7.95 ( https://nmap.org ) at 2025-10-18 09:21 IST
Nmap scan report for itsecgames.com (31.3.96.40)
Host is up (0.060s latency).
rDNS record for 31.3.96.40: web.mmebvba.com
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH
                                     OpenSSH 6.7p1 (protocol 2.0)
 ssh-hostkey:
     1024 cc:27:db:28:f4:85:35:8d:b9:a6:5f:81:93:3e:ef:5a (DSA)
      2048 ba:84:0f:0a:52:7e:e8:59:6f:e7:5c:d6:e2:b1:b8:c6 (RSA)
     256 9e:d1:3d:1f:19:26:ea:5d:44:2d:56:58:86:58:89:5a (ECDSA)
     256 5e:12:90:7b:68:ac:e2:e2:53:37:d1:b5:ac:3c:de:af (ED25519)
| 230 sec. 12.90.70.60.ac.e2.e2.33.37.d1.133.ac.3c.d6
80/tcp open http Apache httpd
|-http-title: bWAPP, a buggy web application!
443/tcp open ssl/http Apache httpd
| http-robots.txt: 36 disallowed entries (15 shown)
| /includes/ /misc/ /modules/ /profiles/ /scripts/
  /themes/ /CHANGELOG.txt /cron.php /INSTALL.mysql.txt /INSTALL.pgsql.txt /INSTALL.sqlite.txt /install.php /INSTALL.txt
  _/LICENSE.txt /MAINTAINERS.txt
   ssl-cert: Subject: commonName=web.mmebvba.com
   Not valid before: 2015-05-25T09:07:54
|_Not valid after: 2025-05-22T09:07:54
|3306/tcp filtered mysql
Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 64.78 seconds
```