We Test Pens Incorporated

COMP90074 - Web Security Assignment 2

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**PENETRATION TEST REPORT FOR**

**Bank of UniMelb Pty. Ltd. - WEB APPLICATION**

**Report delivered: 04/06/2021**

# Executive Summary

We Test Pens Incorporated has carried out an exhaustive penetration test of web application <http://assignment-zeus.unimelb.life/> at the request of Bank of UniMelb Pty. Ltd.

At the conclusion of the test, five vulnerabilities (and their associated risks) have been uncovered:

1. Sensitive testing / development files / directories disclosure;
2. Bypassing Client-side authentication;
3. Privilege escalation;
4. Weak authentication; and
5. Insecure direct object references.

These risks range in severity from high to medium, with the most concern falling on the sensitive testing / development files / directories disclosure vulnerability in the Apache directory listing (Finding 1). This vulnerability exposes the entire system to the attacker and might lead to many other uncovered vulnerabilities and reveal system and database credentials, which will result in users’ personal information leakage and direct financial losses.

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# Summary of Findings

A brief summary of all findings appears in the table below, sorted by Risk rating.

|  |  |  |
| --- | --- | --- |
| **Risk** | **Reference** | **Vulnerability** |
| High | Finding 1 | Sensitive testing / development files / directories disclosure vulnerability presents in the Apache directory listing |
| High | Finding 2 | Client-side authentication bypassing vulnerability presents in the developer login functionality |
| High | Finding 3 | Privilege escalation vulnerability presents in the admin panel |
| High | Finding 4 | Weak authentication vulnerability presents in the password change functionality |
| Medium | Finding 5 | Insecure direct object references vulnerability presents in the user profile page |

# Detailed Findings

## Finding 1 - Sensitive testing / development files / directories disclosure vulnerability presents in the Apache directory listing

|  |  |
| --- | --- |
| **Description** | The **sensitive testing / development files / directories disclosure** vulnerabilitypresents in the Apache directory listing, which reveals the system code and expose everything to the attacker. The attacker could discover other vulnerabilities and exploit them further by inspecting the code. System and database credentials might be leaked as well, which would result in severe personal data breach and might lead to users’ direct financial losses.  The exploitation requires no authentication so the likelihood that it happens significantly increases. |
| **Proof of Concept** | <https://github.com/danielmiessler/SecLists/blob/4a2ab64/Discovery/Web-Content/common.txt> |
| **Impact** | **Negligible/Minor/Moderate/Major/Catastrophic: An attacker could do xyz with this vulnerability** |
| **Likelihood** | **Rare/Unlikely/Possible/Likely/Almost Certain: The possibility of the vulnerability being exploited** |
| **Risk Rating** | **Informational / Low / Medium / High / Extreme**  This is the reasoning behind my rating |
| **References** | **http://example.com** |
| **Recommendation** | The fix goes here |

## Finding 2 - Client-side authentication bypassing vulnerability presents in the developer login functionality

|  |  |
| --- | --- |
| **Description** | The **client-side authentication bypassing** vulnerability presents in the **developer login** functionality. |
| **Proof of Concept** |  |
| **Impact** | **Negligible/Minor/Moderate/Major/Catastrophic: An attacker could do xyz with this vulnerability** |
| **Likelihood** | **Rare/Unlikely/Possible/Likely/Almost Certain: The possibility of the vulnerability being exploited** |
| **Risk Rating** | **Informational / Low / Medium / High / Extreme**  This is the reasoning behind my rating |
| **References** | **http://example.com** |
| **Recommendation** | The fix goes here |

## Finding 3 - Privilege escalation vulnerability presents in the admin panel

|  |  |
| --- | --- |
| **Description** | Detailed description of the vulnerability, including a risk statement. |
| **Proof of Concept** | <https://github.com/danielmiessler/SecLists/blob/25d4ac4/Discovery/Web-Content/burp-parameter-names.txt> |
| **Impact** | **Negligible/Minor/Moderate/Major/Catastrophic: An attacker could do xyz with this vulnerability** |
| **Likelihood** | **Rare/Unlikely/Possible/Likely/Almost Certain: The possibility of the vulnerability being exploited** |
| **Risk Rating** | **Informational / Low / Medium / High / Extreme**  This is the reasoning behind my rating |
| **References** | **http://example.com** |
| **Recommendation** | The fix goes here |

## Finding 4 - Weak authentication vulnerability presents in the password change functionality

|  |  |
| --- | --- |
| **Description** | Detailed description of the vulnerability, including a risk statement. |
| **Proof of Concept** | <https://github.com/danielmiessler/SecLists/blob/25d4ac4/Discovery/Web-Content/burp-parameter-names.txt> |
| **Impact** | **Negligible/Minor/Moderate/Major/Catastrophic: An attacker could do xyz with this vulnerability** |
| **Likelihood** | **Rare/Unlikely/Possible/Likely/Almost Certain: The possibility of the vulnerability being exploited** |
| **Risk Rating** | **Informational / Low / Medium / High / Extreme**  This is the reasoning behind my rating |
| **References** | **http://example.com** |
| **Recommendation** | The fix goes here |

## Finding 5 - Insecure direct object references vulnerability presents in the user profile page

|  |  |
| --- | --- |
| **Description** | Detailed description of the vulnerability, including a risk statement. |
| **Proof of Concept** | <https://github.com/danielmiessler/SecLists/blob/25d4ac4/Discovery/Web-Content/burp-parameter-names.txt> |
| **Impact** | **Negligible/Minor/Moderate/Major/Catastrophic: An attacker could do xyz with this vulnerability** |
| **Likelihood** | **Rare/Unlikely/Possible/Likely/Almost Certain: The possibility of the vulnerability being exploited** |
| **Risk Rating** | **Informational / Low / Medium / High / Extreme**  This is the reasoning behind my rating |
| **References** | **http://example.com** |
| **Recommendation** | The fix goes here |

# Appendix I - Risk Matrix

All risks assessed in this report are in line with the ISO31000 Risk Matrix detailed below:



# Appendix 2 - Additional Information