Threat Modeling Report

Created on 2/28/2022 1:31:08 PM

Threat Model Name: Login Authorization - from a web application using an external authorization provider

Owner: Noel Varghese

Reviewer: -

Contributors: -

Description: Several vulnerabilities exist in this architecture model - such as Cross Site Scripting, Weak SSO Configuration and attacks like Denial of Service, though the connection is secured (using HTTPS) Significant steps to identify and justify the vulnerabilities have been applied.

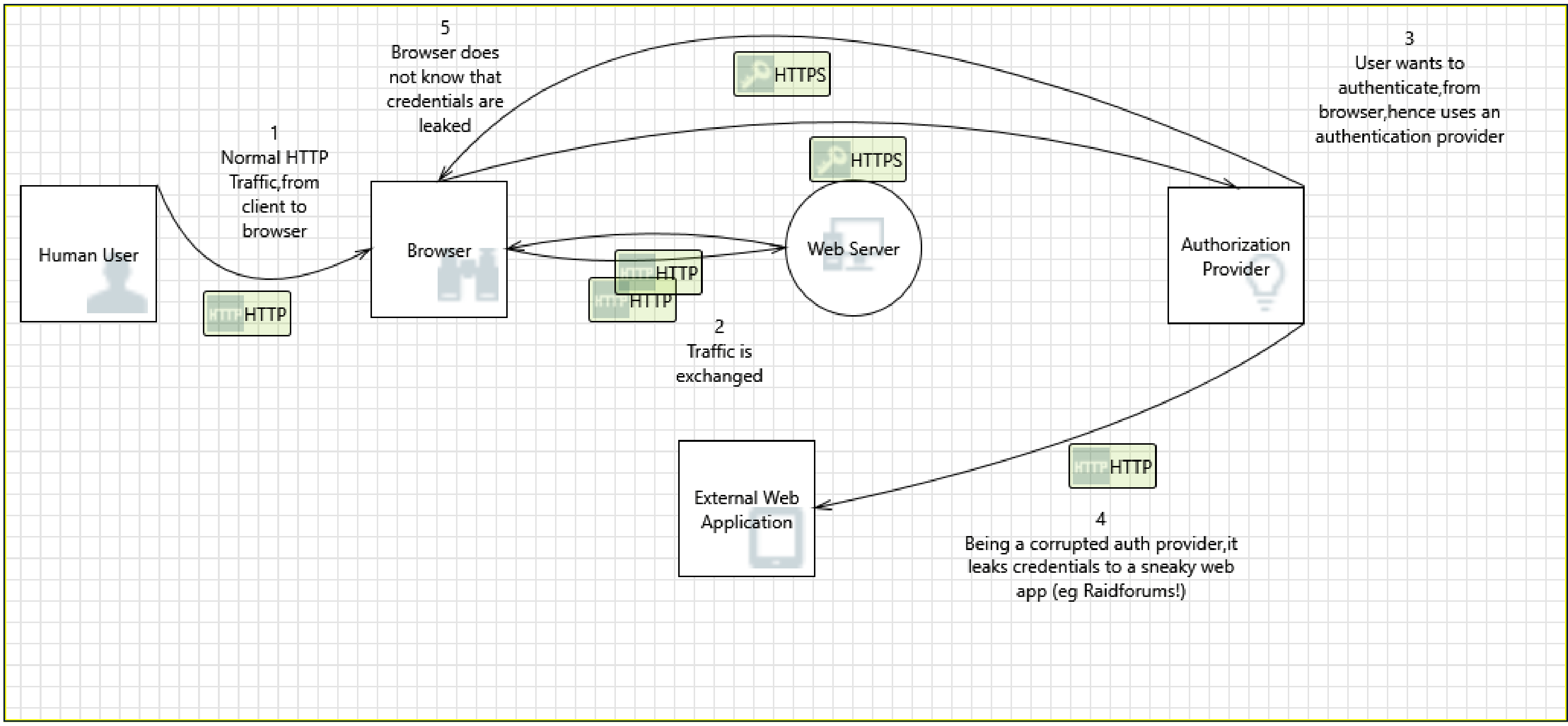
Assumptions:

External Dependencies: None

Threat Model Summary:

Not Started	0
Not Applicable	1
Needs Investigation	3
Mitigation Implemented	0
Total	4
Total Migrated	0

Diagram: Diagram 1



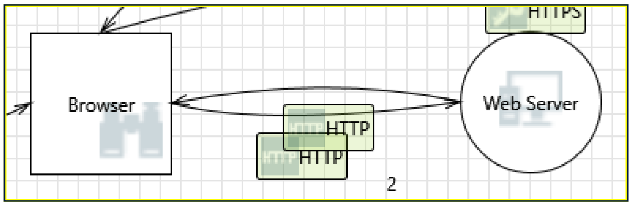
5
Browser does not know that credentials are leaked
HTTPS
3
User wants to authenticate,from browser,hence uses an authentication provider
1
Normal HTTP Traffic,from client to browser
HTTPS
Human User
Browser
Web Server
Authorization Provider
HTTP
HTTP
HTTP
2
Traffic is exchanged
HTTP
External Web Application
4
Being a corrupted auth provider,it leaks credentials to a sneaky web app (eg Raidforums!)

Diagram 1 Diagram Summary:

Not Started	0
Not Applicable	1
Needs Investigation	3

Mitigation Implemented	0
Total	4
Total Migrated	0

Interaction: HTTP



1. Cross Site Scripting [State: Needs Investigation] [Priority: High]

Category: Information Disclosure

Description: The web server 'Web Server' could be a subject to a cross-site scripting attack because it does not sanitize untrusted input.

Justification: XSS attack is a possibility,if browser does&#39;nt sanitize the input properly

2. Spoofing the Browser External Entity [State: Needs Investigation] [Priority: High]

Category: Spoofing

Description: Browser may be spoofed by an attacker and this may lead to unauthorized access to Web Server. Consider using a standard authentication mechanism to identify the external entity.

Justification: Spoofing of browser requests

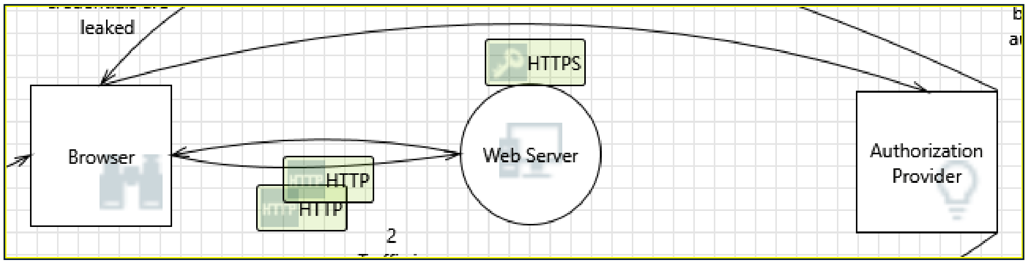
3. Elevation Using Impersonation [State: Not Applicable] [Priority: High]

Category: Information Disclosure

Description: Web Server may be able to impersonate the context of Browser in order to gain additional privilege.

Justification: A user would not want to attack his own web server that is hosted on his VM

Interaction: HTTPS



4. Weakness in SSO Authorization [State: Needs Investigation] [Priority: High]

Category: Elevation Of Privilege

Description: Common SSO implementations such as OAUTH2 and OAUTH Wrap are vulnerable to MitM attacks.

Justification: Weak SSO solutions are not acceptable in today&#39;s tech advancement,as identity of users are made vulnerable to the CIA triad