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Web Parameter Tampering

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Thank you for visiting OWASP.org. We recently migrated our community to a new web platform and regrettably the content for this page needed to be programmatically ported from its previous wiki page. There's still some work to be done.

Description

The Web Parameter Tampering attack is based on the manipulation of parameters exchanged between client and server in order to modify application data, such as user credentials and permissions, price and quantity of products, etc. Usually, this information is stored in cookies, hidden form fields, or URL Query Strings, and is used to increase application functionality and control.

This attack can be performed by a malicious user who wants to exploit the application for their own benefit, or an attacker who wishes to attack a third-person using a [Man-in-the-middle attack](#). In both cases, tools like WebScarab and Paros proxy are mostly used.

The attack success depends on integrity and logic validation mechanism errors, and its exploitation can result in other consequences including [XSS](#), [SQL Injection](#), file inclusion, and path disclosure attacks.

For a short video clip describing the vulnerability, [click here](#) (Courtesy of Checkmarx)

Examples

Example 1

The parameter modification of form fields can be considered a typical example of Web Parameter Tampering attack.

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For example, consider a user who can select form field values (combo box, check box, etc.) on an application page. When these values are submitted by the user, they could be acquired and arbitrarily manipulated by an attacker.

Example 2

When a web application uses hidden fields to store status information, a malicious user can tamper with the values stored on his browser and change the referred information. For example, an e-commerce shopping site uses hidden fields to refer to its items, as follows:

```
<input type="hidden" id="1008" name="cost" value="70.00">
```

In this example, an attacker can modify the "value" information of a specific item, thus lowering its cost.

Example 3

An attacker can tamper with URL parameters directly. For example, consider a web application that permits a user to select his profile from a combo box and debit the account:

```
http://www.attackbank.com/default.asp?profile=741&debit=1000
```

In this case, an attacker could tamper with the URL, using other values for profile and debit:

```
http://www.attackbank.com/default.asp?profile=852&debit=2000
```

Other parameters can be changed including attribute parameters. In the following example, it's possible to tamper with the status variable and delete a page from the server:

```
http://www.attackbank.com/savepage.asp?nr=147&status=read
```

Modifying the status variable to delete the page:

```
http://www.attackbank.com/savepage.asp?nr=147&status=del
```

Related Threat Agents

- [:Category:Client-side Attacks](#)
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Related Attacks

- [SQL Injection](#)
- [XSS Attacks](#)
- [Path Traversal](#)

Related Vulnerabilities

- :Category: Input Validation Vulnerability

Related Controls

- :Category: Input Validation

References

- <http://cwe.mitre.org/data/definitions/472.html> - Web Parameter Tampering
- http://www.imperva.com/application_defense_center/glossary/parameter_tampering.html
 - Parameter Tampering Imperva - Application Defense Center
- <http://www.cgisecurity.com/owasp/html/ch11s04.html> - Parameter Manipulation - Chapter 11. Preventing Common Problems

Category:OWASP ASDR Project Category: Injection Category: Attack

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Spotlight: Avatao

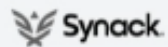
avatao

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