User Interface Security - Google Chrome HTTP AUTH Dialog Spoofing through Realm Manipulation

User Interface Security - Google Chrome HTTP AUTH Dialog Spoofing through Realm Manipulation - Aditya K Sood, zeroknock.blogspot.com.

- Published: date not stated
- Original: <https://zeroknock.blogspot.com/2010/08/google-chrome-http-auth-dialog-through.html>
- Preserved from: https://zeroknock.blogspot.com/2010/08/google-chrome-http-auth-dialog-through.html (live) on 2026-08-10
- Licence: unknown

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Google Chrome (5.0.375.127 and previous versions) suffers from HTTP Auth Dialog spoofing vulnerability due to possible realm manipulation in the HTTP header. Previously, Google chrome has got a similar bug which can be seen HERE

This bug was actually patched. The issue mentioned in this bug was dialog spoofing due to long sub domain names. The patch worked only for that specific case which was outlined in that bug. There are number of tests have been conducted on Google Chrome which verifies the inefficiency of Google Chrome to scrutinize the type of realm value set in the header. It can be tampered with double quotes and single quotes used in a definite manner.

Another related scenario: HERE

Note: Different variants have shown that these issues are still open and not patched yet.

As mentioned in RFC 2617: "The realm directive (case-insensitive) is required for all authentication schemes that issue a challenge.The realm value (case-sensitive), in combination with the canonical root URL (the absolute URI for the server whose abs_path is empty;of the server being accessed, defines the protection space. These realms allow the protected resources on a server to be partitioned into a set of protection spaces, each with its own authentication scheme and/or authorization database.//The realm value is a string,generally assigned by the origin server, which may have additional semantics specific to the authentication scheme. Note that there may be multiple challenges with the same auth-scheme but different realm/s"

So, realm value plays critical role in determining the framework of HTTP Access authentication for a particular resource. It has been analyzed that it is possible to spoof the HTTP Auth dialog by playing around realm values. This attack scenario can be used to launch phishing attacks and stealing sensitive information from the legitimate websites.

As it has been released before, Google Chrome fails to sanitize the obfuscated URL and redirect it to the different domain. This potential flaw can be combined with the HTTP Auth dialog spoofing to launch attacks against legitimate websites. Looking at this particular point of time, certain solutions can be presented as

1. A new model of HTTP authentication dialog which shows the clarity between realm value and domain.
1. Setting a limit on size of strings to be passed as Realm value. This should not be applied on the string size of domain name.
1. Application of appropriate parameters in scrutinizing the strings passed in double quotes and single quotes.

Further: Tim from Vsecurity notifies about similar work related to HTTP Authentication. A very good paper has been presented HERE which covers lot of issues of HTTP authentication

The video is embedded below