NHS.uk security vulnerability
protection from http-accept header forgery
This document contains a proof of concept code to help developer test for this issue on local development server. **Do not run it against the live site.** Author is not responsible for any damage caused by misuse of this report.

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Introduction

While researching family planning I noticed a random webpage of NHS choices does not render, only returns code. See Figure 1.

It’s an interesting problem, because HTTP Content-Type header for the page looks correct: "Content-Type: text/html", when checked using "curl -i" and the error does not expose itself. This is misleading. The Content-Type header a user agent gets when the error appears is: “Content-Type: text/vnd.wap.wml”

So what is broken

This is due to broken/badly implemented IIS/ASP.NET behaviour where it tries to accommodate for old feature phones, and BREAKS things when such response happens to get cached and subsequently fed to users who were expecting "text/html".

This bug opens a security issue for caches generated on demand because an insisting crawler (or just wget --recursive) with forged http accept header (full code below) can mislead the NHS.uk to regenerate broken cache and take the site down.
How to fix it

Specify content-type explicitly.
E.g. change the content-type in the _ViewStart.cshtml (or other shared view start)

    Response.ContentType = "text/html";

your actual views can still override this:

    @{
        Layout = null;
        Response.ContentType = "application/atom+xml";
    }

To test for this issue on your local development server
(with a clean cache to avoid false results by previous cached data), use wget or curl:

    wget yourpage --header="Accept: text/vnd.wap.wml"
        --server-response
        --header="Accept-Encoding: gzip, deflate"

and look for:

    Content-Type: text/vnd.wap.wml; charset=utf-8

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