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How do I prevent the output of my JSP or Servlet pages from being cached by the browser?

Created May 3, 2012

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Govind Seshadri

You will need to set the appropriate HTTP header attributes to prevent the dynamic content output by the JSP page from being cached by the browser.

Just execute the following scriptlet at the beginning of your JSP pages to prevent them from being cached at the browser. You need both the statements to take care of some of the older browser versions.

```
<%
response.setHeader("Cache-Control","no-cache"); //HTTP 1.1
response.setHeader("Pragma","no-cache"); //HTTP 1.0
response.setDateHeader ("Expires", 0); //prevents caching at the proxy server
%>
```

[Based on feedback (below), I have changed this scriptlet slightly. If the above fails, try changing the first line to
```
response.setHeader("Cache-Control","no-store"); //HTTP 1.1
```
The difference between no-cache and no-store is a bit dodgy, but apparently no-cache is the more polite keyword. -Alex]

However, please note that there are some problems with disabling page caching under IE 5.0 due to the unique buffering requirements of the browser. Please see the Microsoft knowledge base for details:

http://support.microsoft.com/support/kb/articles/Q222/0/64.ASP
http://support.microsoft.com/support/kb/articles/Q234/2/47.ASP

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33 Comments (click to add your comment)

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By sravanik208March 21 2014

I have tried all those code i am not getting worked in IE9 and IE 10 not able to clear cache . Kindly tell me is there any other ways to clear cache i have used following code and meta tags in jsp page response.setDateHeader ("Expires", 0); response.setHeader("Cache-Control","private"); response.setHeader("Cache-Control","max-age=0"); // Set to expire far in the past. res.setHeader("Expires", "Sat, 6 May 1995 12:00:00 GMT"); // Set standard HTTP/1.1 no-cache headers. res.setHeader("Cache-Control", "no-store, no-cache, must-revalidate"); // Set IE extended HTTP/1.1 no-cache headers (use addHeader). res.addHeader("Cache-Control", "post-check=0, pre-check=0"); // Set standard HTTP/1.0 no-cache header. res.setHeader("Pragma", "no-cache"); The Expires header indicates that the page expired lo

Reply to this commentBy palaJanuary 7 2013

i have created a voting system.when i click on vote it goes to result page and session of user is destroyed..and when i go back to vote page and again vote it i get white page..how to avoid this white page ???please help me out with this problem

Reply to this commentBy MUHAMMED RAFISeptember 5 2012

Hi i am working on struts2 i am trying all above code but not work pls help me

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By neil youngApril 4 2012

When using a home trainer in your buy treadmill, know that your whole body temp will surge higher, faster. Simply because you aren't in a very significant gym, or exterior. Think about running in a very sweat (but to some lower stage). Because of this , your whole body will experience far more depleted treadmill on sale. Ethical from the narrative: Also have a h2o package in the areai a large towel way too.

By guo xingOctober 27 2011

<h1>usb ac charger adapter</h1> <h2>usb ac charger adapter</h2> usb ac charger adapter

By Shrishailkumar MaddarakiOctober 14 2010

Hi i am working on reports(using jasper reports) in struts. I am using tiles in the application. I am facing the problem--> whenever i used to load the page for first time the jsp select and other options will not populate for the first time, they will populate after i again hit to that menu button of page or if i hit to second and third menu button in that page. Plz guide me in this. Thanks in advance. Shrishailkumar.D.Maddaraki.

By Ramya KrishnamurthyAugust 10 2007

Hi, response.setHeader("Cache-Control","no-store"); //HTTP 1.1 response.setHeader("Pragma","no-cache"); //HTTP 1.0 response.setDateHeader ("Expires",-1); //prevents caching at the proxy server response.setHeader("Cache-Control","no-cache"); //HTTP 1.1 response.setHeader("Pragma","no-cache"); //HTTP 1.0 response.setDateHeader ("Expires",-1); //prevents caching at the proxy server Used the following the HTML meta tag <meta http-equiv="Pragma" content="no-cache"> <meta http-equiv="Cache-Control" content="no-store"> <meta http-equiv="expires" content=-1> Tried all these, But it no response.. Any one pls help me out.. Quick suggestions are appreciable... Thnx in advance

By Phil HaighJanuary 11 2006

lt;attr>" content="<value>"> and the order of the headers is not significant. Check out the official (theoretical) line at http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html - sections 14.9 and 14.21 Phil.

By Ken Van CampFebruary 06 2008 11:20 PST

According to the servlet API, if you call setHeader() multiple times, each new value overwrites the old value. Since you've called setHeader() four times for the "Cache-Control" attribute, only the last one (max-stale=0) will take effect. Instead, you should either use addHeader() OR combine all your values into one call, e.g.

```
response.setHeader("Cache-Control", "no-cache, private, no-store, max-stale=0");
```

By pon murukesanMay 22 2007 22:44 PDT

Phil

Yes,You are correct .I have tried the code which is mentioned in your mail.This is working fine in Windows environment But when I tried with Solaris environment it got failed.Still the generated page is stored in the local Internet file directory .I have used IE6.0 Version .I am using Oracle 9i AS as Application server and Apache 1.3.Do you have any idea to prevent the generation(Storing) of cache file in Solaris 8.0.

Regards & Thanks

P.Murukesan

By Aravinth CMay 10 2007 05:27 PDT

Iam working in struts framework and i need to prevent the output of my JSP or Servlet pages from being cached by the browser? i have used all these codes and meta tags, still it doesn't work.

```
<%
response.setHeader("Pragma","no-cache"); //HTTP 1.0
response.setHeader("Cache-Control","no-cache"); //HTTP 1.1
response.setDateHeader("Expires", 0); //prevents caching at the proxy server
response.setHeader("Cache-Control", "private"); // HTTP 1.1
response.setHeader("Cache-Control", "no-store"); // HTTP 1.1
response.setHeader("Cache-Control", "max-stale=0"); // HTTP 1.1
%>
```

```html
<meta http-equiv="cache-control" content="max-age=0, must-revalidate, no-cache, no-store, private">
<meta http-equiv="expires" content="-1">
<meta http-equiv="pragma" content="-1">
```
Please Help!!!

By Ahmed MoharramMay 07 2007 07:46 PDT

Thx all for your help here, but i think some code snippet is not necessary ,what i've tried at the start of the jsp:
```jsp
<%
response.setDateHeader("Expires", 0); //prevents caching at the proxy server
response.setHeader("Cache-Control", "max-stale=0"); // HTTP 1.1
%>
```
and it's working alright with only these lines.
i've tried (response.setDateHeader("Expires", 0);) before alone and it was not working. but after adding the (response.setHeader("Cache-Control", "max-stale=0");) it now works!
and really thx for your time :)

By Thiyagarajan NaganDecember 28 2006 04:14 PST

Consider in a jsp page, im returning the current time. But if i refresh, the older(first) time is getting refreshed by the second time. and so further. I dont want that dynamic time in getting changed. what to do?

By naga rajuJune 08 2006 08:25 PDT

me too facing the same problem

By Shailesh GuptaMay 23 2006 00:31 PDT

Thanks a lot man. After incorporating suggestions made by you I added this code at top of my every JSP and now the appication is working fine.
```jsp
<% response.setHeader("Pragma","no-cache"); //HTTP 1.0
response.setHeader("Cache-Control","no-cache"); //HTTP 1.1
response.setDateHeader("Expires", 0); //prevents caching at the proxy server
response.setHeader("Cache-Control", "private"); // HTTP 1.1
response.setHeader("Cache-Control", "no-store"); // HTTP 1.1
response.setHeader("Cache-Control", "max-stale=0"); // HTTP 1.1
%>
```
Though now its running a bit slow as for every request an interaction takes place between client and server. but that i guess is the leeway which 1 has to give.
Thanks & Regards, Shailesh Gupta

By John PileJune 01 2005 16:57 PDT

I've got this working well in IE, however in Firefox I get the following message...
"The page you are trying to view contains POSTDATA that has expired from cache. If you resend the data, any action the form carried out (such as a search or online purchase) will be repeated. To resend the data, click OK. Otherwise, click Cancel."
This will not be an acceptable solution. Any ideas on how to prevent Firefox from allowing the data to be reposted?

By Abhishek MishraFebruary 23 2005 03:12 PST

I have put all the code lines : response.setHeader("Expires", "Sat, 6 May 1990 12:00:00 GMT"); // Set standard HTTP/1.1 no-cache headers.
response.setHeader("Cache-Control", "no-store, no-cache, must-revalidate"); // Set IE extended HTTP/1.1 no-cache headers (use addHeader).
response.addHeader("Cache-Control", "post-check=0, pre-check=0"); // Set standard HTTP/1.0 no-cache header. response.setHeader("Pragma", "no-cache");
But still my JSP page link is viewable in the history. could any one suggest the solutions. Abhishek

By Sayeed AnjumJuly 23 2003 00:05 PDT

I don't recall where I picked this tip but this might help:
After spending hours attempting to disable caching, programmers can feel like magicians searching in vain for the right magic spell. Well, Harry Potter, Example 3-8 provides that magic spell, gathered from personal experience and the recommendations of the Net Wizards.
Example 3-8: The magic spell to disable caching
```java
  // Set to expire far in the past.
  res.setHeader("Expires", "Sat, 6 May 1995 12:00:00 GMT");

  // Set standard HTTP/1.1 no-cache headers.
  res.setHeader("Cache-Control", "no-store, no-cache, must-revalidate");

  // Set IE extended HTTP/1.1 no-cache headers (use addHeader).
  res.addHeader("Cache-Control", "post-check=0, pre-check=0");
```

```
    // Set standard HTTP/1.0 no-cache header.
  res.setHeader("Pragma", "no-cache");
```
The Expires header indicates that the page expired long ago, thus making the page a poor cache candidate. The first Cache-Control header sets three directives that each disable caching. One tells caches not to store this content, another not to use the content to satisfy another request, and the last to always revalidate the content on a later request if it's expired (which, conveniently, it always is). One directive might be fine, but in magic spells and on the Web, it's always good to play things safe.

The second Cache-Control header sets two caching "extensions" supported by Microsoft Internet Explorer. Without getting into the details on nonstandard directives, suffice to say that setting pre-check and post-check to 0 indicates that the content should always be refetched. Because it's adding another value to the Cache-Control header, we use addHeader( ), introduced in Servlet API 2.2. For servlet containers supporting earlier versions, you can combine the two calls onto one line.

The last header, Pragma, is defined in HTTP/1.0 and supported by some caches that don't understand Cache-Control. Put these headers together, and you have a potent mix of directives to disable caching. Some programmers also add a getLastModified( ) method that returns a time in the past.

By Java Man SkullJune 19 2003 16:12 PDT

The second link is broken Also, HOWTO: Prevent Caching in Internet Explorer Microsoft Knowledge Base Article - 234067
http://support.microsoft.com/default.aspx?scid=kb;EN-US;234067 JMS

By Rachel ClarkApril 18 2003 08:30 PDT

Help.... I've tried the codes listed and the suggestions all made here, but the page is still caching..... :(Does this code work on .asf files? That maybe the problem. If so, does anyone no away to prevent the caching of these types of files? Any help is appreciated. :) Thanks.

By Adrian CanevaApril 04 2003 12:52 PST

(Updated with some tech facts)
Expire header is not mandatory (see History Lists)
But (Cache-control, no-cache) is (see What is cacheable) and no intermediate cache in the chain should store de response.
The problem with these statement is that is an HTTP/1.1 header.
Internet Explorer would evaluate this header only if it comes in an HTTP/1.1 response.
If a Proxy server HTTP/1.0 like Squid is between the web application and the browser, MSIE would receive this header into an HTTP/1.0 response block and will ignore it. No matter if the original web server is HTTP/1.1.
Additionaly Internet Explorer by default needs, in order to place HTTP/1.1 requests, advanced setting "Use HTTP 1.1 through proxy connections".
The simplistic workaround is based on MSKB 234067 where Microsoft states that for HTTP 1.0 servers (pragma, no cache) header would prevent MSIE from storing local copies of the response if it comes from a secure site.

By Adrian CanevaApril 3 2003

Behind a proxy server Internet Explorer (5.0, 5.5, 6.0 tested) gets the page from local disk cache when BACK or FORWARD buttons are used. Although Expire header -1 should force it to ask the web server for an updated version of the requested page.

See Microsoft Knowledge Base Article - 234067 / HOWTO: Prevent Caching in Internet Explorer

The only workaround I've found was to place .jsp pages in an SSL environment where https:// and PRAGMA - NO CACHE header prevents IE from storing in local cache the response.

Reply to this commentBy Amritha ShettyMay 13 2002

Hi I have tried the code <% response.setHeader("Cache-Control","no-cache"); response.setHeader("Pragma","no-cache"); response.setDateHeader ("Expires", 0); %> for not cacheing. But it is not working. Could you please help in solving my problem. I am using Internet Explorer 5.0. I put this code at the starting of the JSP page. Please suggest me solution for my problem.

Reply to this commentBy Vivek BhandarkarFebruary 17 2010 23:13 PST

Please refer to the link below:
http://streamingserve.blogspot.com/

To avoid caching of media files....Use specific media servers like Windows media services 9 or Red5 or Darwins open source media server.....

By bell bellOctober 09 2009 13:20 PDT

If you try to check whether is checked or not using the back button that this is my understanding of what it is happening: It is possible by setting response.setHeader ("Expires", "0"); which is the value checked first by the browser against other attributes like "Cache-Control", when you press the back button of the browser, because it finds the page already expired instead of doing a new request to the server it retrieves FROM CASH the last known page that successfully hit the server. In order to have a new request to the server when use back button, you should not have an expiration date set, but only response.setHeader("Cache-Control","no-cache"); //HTTP 1.1 and/or response.setHeader("Pragma","no-cache"); //HTTP 1.0 if you use specific application navigation then you should play around with that attributes or do an IE upgrade:))

By Alexander MenAugust 15 2007 10:24 PDT

Just add this:
response.setHeader("Cache-Control","no-cache");
response.setHeader("Pragma","no-cache");
response.setDateHeader ("Expires", 0);

in the servlet not jsp

By Ramya KrishnamurthyAugust 10 2007 01:54 PDT

i tried using the above solutions.. But still it reads from the browser cache.. Cache is not getting cleared until i explicitly done.. Its doesnt work even in IE6.0 can anyone pls help me out...

By anant sapreJuly 30 2007 07:39 PDT

Hi, i also have same problem, I am using safari 1.3 on Mac i tried <% response.setHeader("Cache-Control","no-cache"); //HTTP 1.1 response.setHeader("Pragma","no-cache"); //HTTP 1.0 response.setDateHeader ("Expires", -1); %> I am also doing this at the very bottom of the JSP file: </body> <!-- end of the content body --> <HEAD> <META HTTP-EQUIV="PRAGMA" CONTENT="NO-CACHE"> </HEAD> </html> It work fine for some time but again its problematic

By Srimannarayana RamisettiJuly 18 2006 01:39 PDT

It is not working in Mozilla or Netscape. Kindly suggest any other way.

By Sandip PrasharJuly 07 2005 14:14 PDT

Here is the solution to all of your problems:
http://www-106.ibm.com/developerworks/java/library/j-jsp04293.html#test

By taruna lokhandeApril 04 2005 00:49 PDT

Hi I am having an application which reads the bytes of media files and send it to browser. As the file which is opening in media server i dont want to be get downloaded to temporary folder. I want to prevent this catching for media files. Is there any metod which will open the file directly in media server. I want to stream the bytes directly to media server from my application. Please suggest me some solution Tahnk you in advance Regards Taruna

By Peter LamJanuary 02 2003 23:58 PST

Have you remove all the cache in your machine before testing the jsp again. I have experienced it before. Once I delete the cache and request the JSP with the fixed code, it works fine.

By Peter LeeDecember 31 2002 00:38 PST

It's work for me. I suggest using IE 5.5 or higher

By Dan FinemanOctober 15 2002 13:28 PDT

I'm also unable to stop IE5.0 (on mac OSX) from caching, using any or all of the tricks outlined in this page. Does anyone have a definitive answer out there? Please let me know, if so.

By kennedy alagappanAugust 08 2002 12:47 PDT

Josh, I am using IE5.0 and I cleared the cache before testing. I did include this in the begining and end of my jsp <HEAD> <META HTTP-EQUIV="PRAGMA" CONTENT="NO-CACHE"> </HEAD> and used this on top of my jsp <% response.setHeader("Cache-Control","no-cache"); //HTTP 1.1 response.setHeader("Pragma","no-cache"); //HTTP 1.0 response.setHeader ("Expires", "0"); //prevents caching at the proxy server %> It still taking the data

from cache. Do you have any clue, what might be wrong here. I will appreciate your help. Thank you, Kind Regards, Kalagappan

By kennedy alagappanAugust 08 2002 10:57 PDT

I tried the same. But it doesn't work for me. Could you please give me little more details. what IE version you used. Mine is IE5.0 I appreciate your help. kind Regards, kennedy alagappan

By Josh RAugust 02 2002 11:25 PDT

My posted solution does work, but if you are still having trouble, remember to clear the cache (tools: Internet Options...) before testing it.

By Josh RAugust 02 2002 11:21 PDT

ok I got it!!! I used the: <head> <META HTTP-EQUIV="PRAGMA" CONTENT="NO-CACHE"> </head> I put that at both the beginning and end of the page (just to be sure :)) as well as: <% response.setHeader("Cache-Control","no-cache"); //HTTP 1.1 response.setHeader("Pragma","no-cache"); //HTTP 1.0 response.setDateHeader ("Expires", 0); //prevents caching response.setHeader("Cache-Control","no-store"); //HTTP 1.1 %> It doesn't cache the page. YEA!!!

By Josh RAugust 02 2002 11:17 PDT

Yep, I'm having the same problem. The solutions posted on this page do not keep the jsp page from caching. The only way I've found to keep it from caching is to change the cache settings on the internet browser. This is not a good solution for an enterprise level application (I can't expect my clients to set their browsers when they use the application). There must be a way to keep the page from caching, but except for the random param generation suggested above (which is bad since there still the chance that it will randomly generate the same number twice), I've yet to find any that works.

By Lotzy DavidJuly 25 2002 07:26 PDT

It seems that only if you have submits on page with method post, it functioning the code below suplied as solution for the problem

```
response.setHeader("Cache-Control","no-cache"); //HTTP 1.1 response.setHeader("Pragma","no-
cache"); //HTTP 1.0 response.setDateHeader ("Expires", 0); //prevents caching at the proxy
server
```

and the page expires.

By Amritha ShettyMay 24 2002 07:43 PDT

Thanks B B for your reply. I tried this code. But it didn't work. Is there any other way to solve this problem.

By B BMay 23 2002 05:18 PDT

I have solved this problem by following one of the MSDN articles referred above. I am using IE5.0. Besides doing this at the top of the JSP:

```
<%
response.setHeader("Cache-Control","no-cache"); //HTTP 1.1
response.setHeader("Pragma","no-cache"); //HTTP 1.0
response.setDateHeader ("Expires", -1);
%>
```

I am also doing this at the very bottom of the JSP file:

```
</body>  <!-- end of the content body -->
<HEAD>
<META HTTP-EQUIV="PRAGMA" CONTENT="NO-CACHE">
</HEAD>
</html>
```

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