



## Lost and 404 Not Found

Are you sometimes tooling around on the web, clicking your way through links, when suddenly you come to a dreaded dead end: the 404 Not Found page? Do you wonder what those darn error pages are all about? They are often brick walls that force you to back track, and they can be very annoying. If you have a website, you want to make sure that visitors to your site aren't led into one of these dead ends. If these dead links are exasperating to you when you are surfing the Net, they are exasperating to your guests as well, the last people you want to annoy. But, if utilized correctly, 404 pages can actually help your visitors find the content they were searching for. They do not need to be brick walls.

### **What is a 404 page?**

404 is a Hypertext Transfer Protocol status code. Hypertext Transfer Protocol is the protocol web servers use to communicate with web browsers. When you type in a URL to try to visit a web page, your computer sends a request message to the server and the server sends back the HTTP header to your browser, which includes a status message before you even see the web page. Normally, if everything is correct, the status code is "200 OK", but you don't see it because you see the page you were looking for. But if the server cannot find the page you are looking for, it reports the status as "404 Not Found".

### **But what does it really mean?**

The numbers 4-0-4 each actually mean something as individual digits. The first 4 is telling you, the client, that there is a mistake on your end, such as a possibly mistyped URL or a request for a page that no longer exists. The 0 just represents a syntax error- it basically just means "something isn't right". Now after the 4-0, the last number could be any one of several digits that indicates the type of error. The 4 in that section means that the page cannot be located. Another status messages could be 401, which means you are unauthorized to view that page.

There is a clever myth behind the 404 Not Found message. The story goes that 404 was the room number of the room where the very first web servers were located. But there story includes a mystery- there is no room 404 in that building at CERN, where the first web servers were held. So the 404 Not Found code is a bit of an inside joke for those who have heard the story.

### **How To Utilize Status Code Information**

You can use your log files to spot "404s" by reviewing the logs of your status codes. Take note any of 404 occurrences. If there seem to be quite a few, more than you could chalk up to user error, you might have a broken link in there somewhere. Check the referring page, the page the user was at just before arriving that the 404, then inspect that page to find the broken link and fix it. If you do not have access to your log files, you can request them from your website host.



## So why exactly do these 404 error pages exist?

The 404 Not Found Page comes up on your screen for several different reasons.

- 1) The page may have been moved. In this case, it is as though you are trying to visit a friend when you find a note taped to their door that says they have moved. But it doesn't tell you where they moved to. Not very helpful, is it? The 404 Not Found page is a note like that.
- 2) The hyperlink you followed may have a minor error in the URL.
- 3) The page may simply be gone. Not moved. Just taken down. And whatever linked you to it doesn't know it. This is a form of Linkrot.

Linkrot refers to outdated or abandoned URLs across the Internet. If you take a page down or change the URL, other sites that have links to your page will have the wrong URL, causing Linkrot to occur, and sending people who click on those links, expecting to come to your page, right for a lovely visit from the Error Page Fairy.

How do you avoid the Error Page? Help stop Linkrot. If links continue to lead to dead ends, the flow of the Internet will be interrupted, dramatically reducing the usability of the web. You may not be able to stop another site from screwing up URLs linking to your site and creating a dead link to your site, but you can at least maintain the links and pages on your own site.

You must regularly check the outgoing links from your site to make certain that they still lead to existing pages. It is your responsibility to ensure that the links on your site lead to actual destinations and not error pages. Internal links should be maintained as well. AlertBox's Jakob Nielsen believes that URLs should "live forever"; that there is no reason to let a page you built languish abandoned and outdated.

Of course, sometimes you cannot help but remove a page or change its URL, and you will not be able to always prevent the occurrence of an Error Page. But if you can't avoid an Error Page, at least make it work for you!



## Good Error Page: Not an Oxymoron

Turn an error into an advantage by designing your own error page for your site and making it interesting, informative, helpful, and even fun.

According to Jakob Nielsen there are 5 rules for making a good Error Page:

- 1) Design an error page specific to your site, rather than sending your visitors to the browser's standard Error page.
- 2) Politely apologize and tell your user that that page cannot be found on that URL, and apologize for the inconvenience.
- 3) Include a list of suggested links of pages that might hold the information they are looking for, after studying your log files to see which errors are made the most.
- 4) If you can, have your server automatically run a spelling check on the requested URL to search for any spelling mistakes and suggest possible corrections, and make those suggestions direct links to those pages.
- 5) Lastly, have your error page contain a search field so as a last resort your user can search your site for what they were looking for.

“Area 404”, a website dedicated to creativity and usability of error pages, has performed what they call a “highly scientific” survey of 1375 people regarding the usability of error pages. Their survey consisted of one question:

When you encounter a 404 do you:

- A) Hit the back button and forget about it.
- B) Try to get to the homepage to locate the missing page.
- C) Write to the Webmaster.
- D) Weep uncontrollably.

The results were: 36.92% hit the back button and forgot about it. 20.37% tried to get to the homepage to locate the missing page. Only 2.82% actually took the time to write to the Webmaster (Webmasters take note of this). And 39.88% of those surveyed said they wept uncontrollably. What have we learned from this ultra-scientific survey? People do not like error pages! But if you can make your page catchy and helpful, you will keep people on your site.

Area 404 has their own guidelines to what makes a good 404 page. In addition to the ones listed by Jakob Nielsen, they add that you could include a link to contact the Webmaster to inform them of the error. They definitely suggest that you at the very least include a link to your homepage.



## **Make Sure They See Your Error Page**

Sometimes you may find that the Internet Explorer browser does not display your own homemade error page and instead insists on displaying it's own friendly version. Though their version may be nicer to look at than the classic "404 Not Found" page, it is not as helpful or useful for your customers as your own page, so you will want to make sure your page is the one that is displayed.

You can force Internet Explorer to stop ignoring your page and start displaying it by making sure it is greater than 512 bytes, not including graphics. At that size, IE will not ignore it and will display your page instead of its standard one. 512 bytes gives you a great deal of space to work with, which you can fill up with text on the actual page or in comments in the source code.

### **Examples**

Ok, so we know what sort of information you should include on your error pages to make them usable for your visitors. But what creative ways can you make your 404 pages a pleasure rather than a pain? Here are some examples from Area 404:



## 404 Something went screwy!

I have all good intentions that you should never, ever see this page, but the best-laid schemes of mice and men oft' go astray...uh...in this case, it's the URL you were attempting to access that seems to have gone astray.

If the link you followed resides on foo.net,  
please send e-mail to [example@foo.net](mailto:example@foo.net).

You can return to familiar territory by using your browser's BACK button, or start fresh at the front door and perhaps you'll find what you were looking for.  
[www.foo.net](http://www.foo.net)

Of course if you just found this page because you're hooked on 404's, you'll enjoy following these other links instead:

[404 Error](#)

[404 Research Lab](#)

To see other examples of how creative 404 pages can be, either purposefully go out and look for them by mistyping URLs willy-nilly, or check out Area 404's treasure trove of examples at <http://www.plinko.net/404/area404.asp>.

Now there is an alternative to displaying an error page. If you find there is a page that is consistently getting mistyped, or if you have moved a page that you know many people will be trying to view, instead of just showing them an error page you can automatically redirect them to the correct page. You can use a 404 in correlation with redirection, by having a 404 page that informs you visitor “We’re sorry, that page has moved. In a few second you will be automatically redirect to the correct page.” That makes it easy for your visitors, since they just have to sit back and wait, rather than having to click links to find the new page themselves. Have that page be displayed for about 4 or 5 seconds, and then have the server send them to the right page.

The HTML for redirects is simple. It will tell the server to automatically “refresh” the page, but by refreshing it will bring up a different URL. Here is the code:

```
<HTML>
<head>
<meta HTTP-EQUIV="Refresh" CONTENT="5; URL=not404.htm">
</head>
</HTML>
```

The “CONTENT” is the amount of seconds before the page is refreshed. In this example, it is 5 seconds.

### **Conclusion: 404s CAN be fun**

As you can see, there is more to error pages than the boring, dreaded, stereotypical 404 Not Found page. Website usability extends even beyond your working pages and into the realm of Pages Lost And 404 Not Found! Make it ALL work for you.



## Related Articles and Resources:

[Usability Testing](#)

[Website Usability and Navigation](#)

[Website Content Usability](#)

### **References:**

[Jakob Nielsen](#)

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