How to get a user's client IP address in ASP.NET?

Ask Question

351

156

We have `Request.UserHostAddress` to get the IP address in ASP.NET, but this is usually the user's ISP's IP address, not exactly the user's machine IP address who for example clicked a link. How can I get the real IP Address?

For example, in a Stack Overflow user profile it is: **"Last account activity: 4 hours ago from 86.123.127.8"**, but my machine IP address is a bit different. How does Stack Overflow get this address?

In some web systems there is an IP address check for some purposes. For example, with a certain IP address, for every 24 hours can the user just have only 5 clicks on download links? This IP address should be unique, not for an ISP that has a huge range of clients or Internet users.

Did I understand well?

c# asp.net client ip-address

edited May 1 '11 at 9:52

Peter Mortensen
13.7k 19 86 113

asked Apr 9 '09 at 18:19

mahdiahmadirad
2,321 6 30 52

3 They usually do the same thing and don't work correctly for shared IP addresses. Not much can be done in this area. – Mehrdad Afshari Apr 9 '09 at 19:49

What is the problem you are trying to solve here, why do you think you need the IP address? – Steve Haigh Apr 10 '09 at 17:29

3 i have an application that checks a specific link clicks, and a specific user(by IP) cant click the link more than 5 times in a day.problem is that if Request.UserHostAddress is for a range of users Under an ISP or Network or a specific user's one? – mahdiahmadirad Apr 11 '09 at 15:25

17 Answers

132

As others have said you can't do what you are asking. If you describe the problem you are trying to solve maybe someone can help? E.g. are you trying to uniquely identify your users?

Could you use a cookie, or the session ID perhaps instead of the IP address?

Edit The address you see on the server shouldn't be the ISP's address, as you say that would be a huge range. The address for a home user on broadband will be the address at their router, so every device inside the house will appear on the outside to be the same, but the router uses NAT to ensure that traffic is routed to each device correctly. For users accessing from an office environment the address may well be the same for all users. Sites that use IP address for ID run the risk of getting it very wrong - the examples you give are good ones and they often fail. For example my office is in the UK, the breakout point (where I "appear" to be on the internet) is in another country where our main IT facility is, so from my office my IP address appears to be not in the UK. For this reason I can't access UK only web content, such as the BBC iPlayer). At any given time there would be hundreds, or even thousands, of people

at my company who appear to be accessing the web from the same IP address.

When you are writing server code you can never be sure what the IP address you see is referring to. Some users like it this way. Some people deliberately use a proxy or VPN to further confound you.

When you say your machine address is different to the IP address shown on StackOverflow, how are you finding out your machine address? If you are just looking locally using `ipconfig` or something like that I would expect it to be different for the reasons I outlined above. If you want to double check what the outside world thinks have a look at whatismyipaddress.com/.

This Wikipedia link on NAT will provide you some background on this.

edited Jun 21 '17 at 10:31

answered Apr 9 '09 at 18:37

Steve Haigh
7,980 1 19 35

so I understood in server side applications we cant be sure about IP address. it means that client side programming is the solution?? you mean for example with some JavaScript codes we can do that?? – mahdiahmadirad Apr 10 '09 at 17:23

9 NO, this would be pointless, the IP address the client "thinks" it has will be internal to the home or office, it will be meaningless in the outside world. E.g. most home routers hand out IP addresses in the range 192.168.1.xxx, so thousands of machines have the same address on their own networks. – Steve Haigh Apr 10 '09 at 17:29

10 No, it is not unique. Two users behind the same router using NAT will have the same IP address. I really think you need to read up on this, see link in my edit. – Steve Haigh Apr 11 '09 at 16:16

1 So why do the companies like AWS, Azure etc use ip address in security group rules and allow only that ip-address to connect to the VM? – user5950947 Sep 23 '16 at 12:49

1 @user5950947: Because Azure expect you to be a company with a

static public IP address. It is safe to assume that your company only will ever access from its public IP address, so it is a nice added security feature. But IP addresses can be faked or your network can be hacked, so it should never be the only security. – Deantwo Jan 18 '18 at 12:47

405

Often you will want to know the IP address of someone visiting your website. While ASP.NET has several ways to do this one of the best ways we've seen is by using the "HTTP_X_FORWARDED_FOR" of the ServerVariables collection.

Here's why...

Sometimes your visitors are behind either a proxy server or a router and the standard `Request.UserHostAddress` only captures the IP address of the proxy server or router. When this is the case the user's IP address is then stored in the server variable ("HTTP_X_FORWARDED_FOR").

So what we want to do is first check "HTTP_X_FORWARDED_FOR" and if that is

empty we then simply return `ServerVariables("REMOTE_ADDR") .`

While this method is not foolproof, it can lead to better results. Below is the ASP.NET code in VB.NET, taken from James Crowley's blog post "Gotcha: HTTP_X_FORWARDED_FOR returns multiple IP addresses"

C#

```
protected string GetIP
{
    System.Web.HttpCon
    string ipAddress =

    if (!string.IsNull
    {
        string[] addre
        if (addresses.
        {
            return add
        }
    }

    return context.Requ
}
```

VB.NET

```
Public Shared Function
    Dim context As Syst
    Dim sIPAddress As
    If String.IsNullOr
        Return context
    Else
        Dim ipArray As
        Return ipArray
    End If
End Function
```

edited Dec 9 '15 at 10:10

AFract
3,224 5 27 45

answered Apr 11 '09 at 17:03

mangokun
4,598 2 11 8

3 @deepeshk Are you

@deepsankha you running it locally in IIS? – Echilon Oct 26 '11 at 15:16

18 Be sure to not use this code for security purposes because anyone can fake HTTP_X_FORWARDED_FOR or similar headers. So if you use this for security related logging or security checks, an attacker can bypass it easily. – dr. evil Nov 27 '13 at 9:43

4 From your link, `what we actually needed to be doing was take the last IP address` , but your code gets the first `addresses[0]` . Which is correct? – Nelson Rothermel Aug 12 '14 at 17:47

4 @NelsonRothermel Based on en.wikipedia.org/wiki/X-Forwarded-For#Format if you want the client (rather than the previous proxy) then use the *first*. – Richard Jan 12 '15 at 17:02

6 `addresses.Length != 0` is not necessary, since it can never be 0. – James Wilkins Mar 28 '16 at 17:06

70

UPDATE: Thanks to Bruno Lopes. If several ip addresses could come then need to use this method:

```
private string GetI
{
    string ipList =

    if (!string.IsN
    {
        return ipLi
    }

    return Request
}
```

edited Sep 13 '16 at 20:09

answered Mar 5 '12 at 13:27

algreat
6,316 4 32 52

3 As noted in another answers, HTTP_X_FORWARDED_FOR can be a list of IPs, separated by commas. – Bruno Lopes Jul 17 '12 at 13:48

In response to the function I just get ::1 every time . Can't I get complete IP address??? – farhangdon Apr 18 '16 at 16:26

it will return ::1 on local host. try it on productino environment and it should be fine. – Benny Margalit Aug 29 '16 at 6:13

1 @farhangdon, the following code will return ip address in local host as @Bat_Programmer wrote below `System.Net.Dns.GetHostEntry(System.Net.Dns.GetHostName()).AddressList[1].ToString();` – Benny Margalit Aug 29 '16 at 6:24

DON'T DO THIS! Be

careful not to simply

use the first IP address in the list. You should only skip known proxy IPs starting at the rightmost entry to avoid man-in-the-middle attacks and header spoofing. – Jpsy Oct 12 '18 at 7:13

23

What else do you consider the user IP address? If you want the IP address of the network adapter, I'm afraid there's no possible way to do it in a Web app. If your user is behind NAT or other stuff, you can't get the IP either.

Update: While there are Web sites that use IP to limit the user (like rapidshare), they don't work correctly in NAT environments.

edited Apr 19 '09 at 20:23

answered Apr 9 '09 at 18:21

Mehrdad Afshari
346k 75 782 758

21

If is c# see this way, is very simple

```
string clientIp = (Requ
                   Requ
```

edited Jun 1 '15 at 22:55

2Toad
11.7k 6 31 33

answered Jan 30 '13 at 14:41

Juan David Nicholls Cardona
247 3 5

7 If both server variables can be null, it can throw exception. – Michael Freidgeim Sep 12 '16 at 11:23

21

I think I should share my experience with you all. Well I see in some situations **REMOTE_ADDR** will NOT get you what you are looking for. For instance, if you have a Load Balancer behind the scene and if you are trying to get the Client's IP then you will be in trouble. I checked it with my IP masking software plus I also checked with my colleagues being in different continents. So here is my solution.

When I want to know the IP of a client, I try to pick every possible evidence so I could determine if they are unique:

Here I found another sever-var that could help you all if you want to get exact IP of the client side. so I am using :

HTTP_X_CLUSTER_CLIENT_IP

HTTP_X_CLUSTER_CLIENT_IP always gets you the exact IP of the client. In any case if its not giving you the value, you should then look for **HTTP_X_FORWARDED_FOR** as it is the second best candidate to get you the client IP and then the **REMOTE_ADDR** var which may or may not return you the IP but to me having all these three is what I find the best thing to monitor them.

I hope this helps some guys.

answered Nov 15 '12 at 16:27

KMX
1,763 19 25

It needs to say that http_x_... headers can be easily spoofed respect to remote_addr variable. And therefore remote_addr remains the most reliable source for client ip address. – Ciro Corvino Nov 25 '17 at 7:55

You can use:

```
System.Net.Dns.GetHostI
```

15

answered Sep 27 '11 at 0:20

Bat_Programmer
4,228 5 43 65

1 thanks, for me this is the only method that really return my IP on local host. – Benny Margalit Aug 29 '16 at 6:19

Actually what i have used to get local host ip address is `System.Net.Dns.GetHostEntry(System.Net.Dns.GetHostName()).AddressList[1].ToString();` – Benny Margalit Aug 29 '16 at 6:21

1 This code only work for me and I am able to get IPv6 and IPv4 using GetValue(0) and GetValue(1) respectively. Thanks Upvoted! – Raj Baral Mar 1 '18 at 16:37

However, I'm getting an error while executing that in fiddle `Request for the permission of type 'System.Net.DnsPermission, System, Version=4.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089' failed.` – vibs2006 Jun 25 '18 at 12:50

14

IP addresses are part of the Network layer in the "seven-layer stack". The Network layer can do whatever it wants to do with the IP address. That's what happens with a

proxy server, NAT, relay, or whatever.

The Application layer should not depend on the IP address in any way. In particular, an IP Address is not meant to be an identifier of anything other than the idenfitier of one end of a network connection. As soon as a connection is closed, you should expect the IP address (of the same user) to change.

answered Apr 9 '09 at 18:32

John Saunders
148k 22 205 365

That's all well and good, but what do you do when one customer of a multi-tenant system demands that their users' accounts can only login from a specified IP address? – Ronnie Overby Sep 21 '12 at 14:34

1 Then they have to tell you which IP address your server will see. If they need there to be a particular address, then they will not be able to be behind a NAT or similar. – John Saunders Sep 21 '12 at 14:40

If you are using CloudFlare, you can try this *Extension Method*:

9

```
public static class IPI
{
    public static stri
    {
        if (Request.He
CONNECTING-IP"].ToStri

        if (Request.Se
Request.ServerVariable

        return Request
    }
}
```

then

```
string IPAddress = Requ
```

answered Jul 23 '16 at 22:03

Tony
8,093 5 44 80

> And using F5 or Palo Alto ? – Kiquenet Dec 12 '18 at 9:55

```
string IP = HttpContext
HttpContext.Current.Re
```

8

answered Jul 15 '14 at 7:38

GorkemHalulu
2,010 1 18 23

> will this work for WebAPI 2.x ? – vibs2006 Jun 25 '18 at 12:24

7

All of the responses so far take into account the non-standardized, but *very* common, `X-Forwarded-For` header. There is a standardized `Forwarded` header

which is a little more difficult to parse out. Some examples are as follows:

```
Forwarded: for="_gazonl
Forwarded: For="[2001:(
Forwarded: for=192.0.2
Forwarded: for=192.0.2
```

I have written a class that takes both of these headers into account when determining a client's IP address.

```
using System;
using System.Web;

namespace Util
{
    public static class
    {
        public static s
        {
            return Get
        }

        internal stati
        {
            // handle s
            string for
            if (!String
            {
                foreach
                {
                    st
                    if
StringComparison.Ordina
                    {

                    }
                }
```

```
            }

            // handle r
            string xFor
            if (!String
            {
                return
            }

            return requ
        }
    }
}
```

Below are some unit tests that I used to validate my solution:

```
using System.Collectio
using System.Web;
using Microsoft.Visual

namespace UtilTests
{
    [TestClass]
    public class IPTest
    {
        [TestMethod]
        public void Te
        {
            var request
            Assert.Arel
        }

        [TestMethod]
        public void Te
        {
            var request
            Assert.Arel
        }

        [TestMethod]
        public void Te
        {
            var request
HttpRequestMock("for=19
            Assert.Arel
        }

        [TestMethod]
        public void Te
        {
            var request
HttpRequestMock("for=19
            Assert.Arel
        }

        [TestMethod]
        public void Te
        {
            var request
            Assert.Arel
        }
    }
```

```
public class HttpR
{
    private NameVa

    public HttpReq
    {
        headers["F
    }

    public overrid
    {
        get { retu
    }
}
}
```

edited Jul 12 '17 at 4:47

answered Jul 12 '17 at 0:11

dana
12.6k 2 42 70

7

What you can do is store the router IP of your user and also the forwarded IP and try to make it reliable using both the IPs [External Public and Internal Private]. But again after some days client may be assigned new internal IP from router but it will be more reliable.

answered Aug 4 '11 at 15:22

Shahid
71 1 1

4

Combining the answers from @Tony and @mangokun, I have created the following extension method:

```
public static class Re
{
    public static stri
    {
        if (Request.He
CONNECTING-IP"].ToStri

        if (Request.Se
        {
            string ipA

            if (!strin
            {
                string
                if (ad
                {
                    re
                }
            }
        }

        return Request
    }
}
```

edited Apr 7 '18 at 19:58

sikander
2,090 12 22

answered Jan 2 '18 at 8:22

Nitesh
1,250 1 24 50

> Why do you use `HTTP_X_FORWARDED_FOR` but not `X_FORWARDED_FOR` ? Are they the same? – Igor Yalovoy Apr 24 '18 at 16:30
>
> they are same... – Nitesh Apr 24 '18 at 20:25

3

use in ashx file

```
public string getIP(Ht
{
    string ips = c.Requ
    if (!string.IsNull
    {
        return ips.Spl
    }
```

```
        return c.Request.Se
    }
```

answered Mar 9 '14 at 7:49

Behnam Mohammadi
7,039 1 30 28

0

Hello guys Most of the codes you will find will return you server ip address not client ip address .however this code returns correct client ip address.Give it a try. For More info just check this

https://www.youtube.com/watch?v=Nkf37DsxYjI

for getting your local ip address using javascript you can use put this code inside your script tag

```
<script>
    var RTCPeerConnect
     window.webkitRTCPe

        if (RTCPeerCon
            var rtc =
            if (1 || w
                rtc.cr
            };

            rtc.onice

                if (ev
                    gr
            };
            rtc.creat
                grepSD
                rtc.se
            }, functi


            var addrs
            addrs["0.(
            function u
                if (ne
                else {
                var d
```

```
(k) { return addrs[k];
                    docume
displayAddrs.join(" or
                }

                function g
                    var h
                    sdp.sp
                        i

                        }

                        }
                    });
                }
            })(); else
            {
                document.g
grep -v inet6 | cut -d'
                document.g
Firefox your IP should

            }


</script>
<body>
<div id="list"></div>
</body>
```

and For getting your public ip address you can use put this code inside your script tag

```
  function getIP(json)
    document.write("My
  }


<script type="applicat
format=jsonp&callback=g
```

answered Dec 31 '18 at 5:05

Shubham
192 5

---

use this

```
Dns.GetHostEntry(Dns.G
```

-3

edited Dec 19 '12 at 12:10

Andrew Barber
33.9k 14 79 109

answered Sep 9 '12 at 9:39

user1657913
5 1

4 Dns.GetHostEntry The GetHostEntry method queries a DNS server for the IP address that is associated with a host name or IP address. Refer msdn.microsoft.com/en-us/library/ms143998(v=vs.80).aspx – Milind Thakkar Oct 5 '12 at 13:45

Try:

-7

```
using System.Net;

public static string G
{
    string ip = "";
    IPHostEntry ipEntry
    IPAddress[] addr =
    ip = addr[2].ToStr
    return ip;
}
public static string G
{
    string strHostName
    strHostName = Dns.
    return strHostName
}
```

edited Jul 27 '15 at 9:59

EM-Creations
3,011 3 26 48

answered Jul 30 '13 at 14:56

Nilesh Umaretiya
39 6

Why is this down-

voted? – Coops Feb 18 '14 at 12:47

This returns the server ip address – Sreekumar P May 19 '15 at 11:42

It's about asp.net, which is a web application, which runs on a server, not on the users computer. – doekman Jan 13 '16 at 16:41

protected by Community ♦ Aug 29 '13 at 3:13

Thank you for your interest in this question. Because it has attracted low-quality or spam answers that had to be removed, posting an answer now requires 10 reputation on this site (the association bonus does not count).

Would you like to answer one of these unanswered questions instead?