

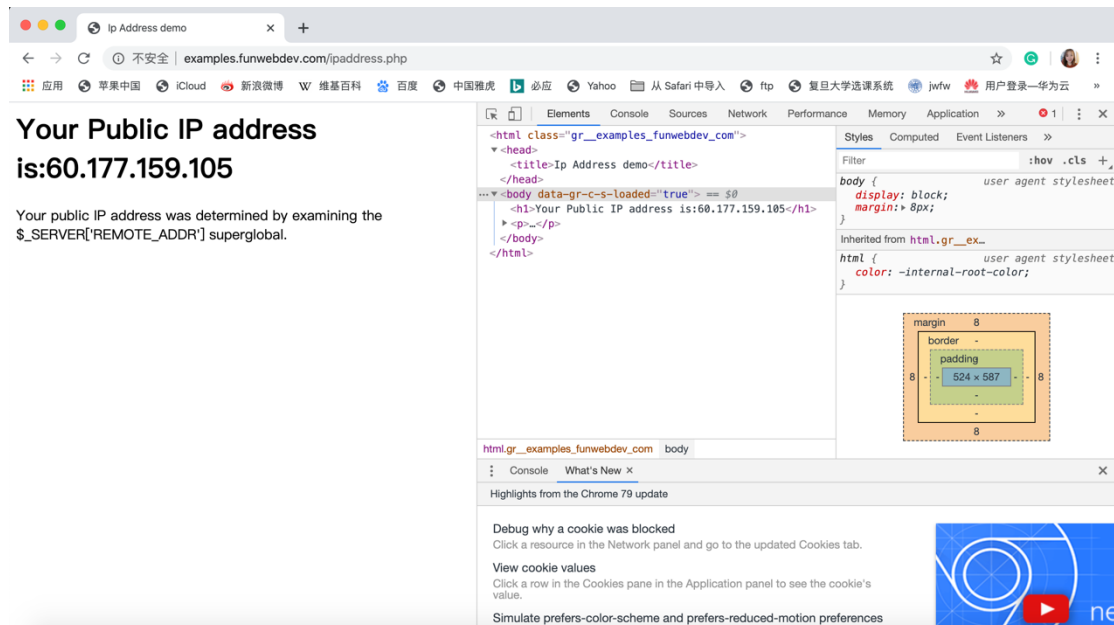
## 一、IP 地址：

```
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=400<CHANNEL_IO>
    ether dc:a9:04:97:54:86
    inet6 fe80::86b:cb41:67e5:e3de%en0 prefixlen 64 secured scopeid 0x4
    inet 192.168.0.105 netmask 0xffffffff00 broadcast 192.168.0.255
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active

awd10: flags=8943<UP,BROADCAST,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1484
    options=400<CHANNEL_IO>
    ether e6:e6:2a:5a:61:ca
    inet6 fe80::e4e6:2aff:fe5a:61ca%awd10 prefixlen 64 scopeid 0x6
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active

llw0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=400<CHANNEL_IO>
    ether e6:e6:2a:5a:61:ca
    inet6 fe80::e4e6:2aff:fe5a:61ca%llw0 prefixlen 64 scopeid 0x7
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
```

## 二、网页的组成部分：



### 三、域名服务器:

#### 1、查询 baidu.com 的 A 地址记录

```
[wuyanqi0822@wuyanqideMacBook ~ % nslookup -type=A baidu.com
Server:          192.168.0.1
Address:         192.168.0.1#53

Non-authoritative answer:
Name:   baidu.com
Address: 220.181.38.148
Name:   baidu.com
Address: 39.156.69.79
```

#### 2、查询 baidu.com 的域名服务器

```
[wuyanqi0822@wuyanqideMacBook ~ % nslookup -type=ns baidu.com
Server:          192.168.0.1
Address:         192.168.0.1#53

Non-authoritative answer:
baidu.com       nameserver = ns3.baidu.com.
baidu.com       nameserver = ns2.baidu.com.
baidu.com       nameserver = ns4.baidu.com.
baidu.com       nameserver = dns.baidu.com.
baidu.com       nameserver = ns7.baidu.com.

Authoritative answers can be found from:
dns.baidu.com   internet address = 202.108.22.220
ns2.baidu.com   internet address = 220.181.33.31
ns3.baidu.com   internet address = 112.80.248.64
ns4.baidu.com   internet address = 14.215.178.80
ns7.baidu.com   internet address = 180.76.76.92
```

#### 3、使用授权服务器查询 baidu.com 的 IP 地址

```
[wuyanqi0822@wuyanqideMacBook ~ % nslookup baidu.com ns2.baidu.com ]
Server:          ns2.baidu.com
Address:         220.181.33.31#53

Name:   baidu.com
Address: 39.156.69.79
Name:   baidu.com
Address: 220.181.38.148
```

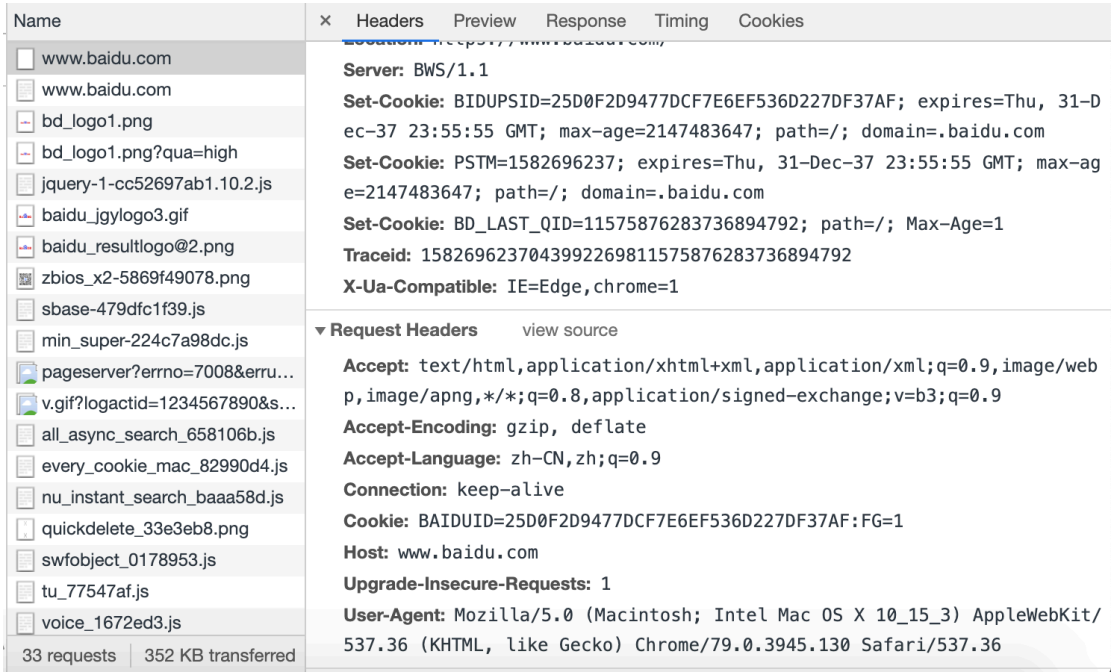
4、查询 114.114.114.114 匹配的主机名

```
[wuyanqi0822@wuyanqideMacBook ~ % nslookup 114.114.114.114
Server:          192.168.0.1
Address:         192.168.0.1#53

Non-authoritative answer:
114.114.114.114.in-addr.arpa      name = public1.114dns.com.

Authoritative answers can be found from:
```

四、观察 HTTP 标头：



```
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_3) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/79.0.3945.130 Safari/537.36
```

五、追踪数据包：

## 1、跟踪计算机发往 microsoft.com 的数据包

```
wuyanqi0822@wuyanqideMacBook ~ % traceroute microsoft.com
traceroute: Warning: microsoft.com has multiple addresses; using 104.215.148.63
traceroute to microsoft.com (104.215.148.63), 64 hops max, 52 byte packets
 1  192.168.0.1 (192.168.0.1)  3.048 ms  3.360 ms  1.246 ms
 2  1.152.177.60.broad.hz.zj.dynamic.163data.com.cn (60.177.152.1)  4.360 ms  4
411 ms  6.128 ms
 3  61.164.4.220 (61.164.4.220)  6.477 ms  4.278 ms  3.909 ms
 4  61.164.22.109 (61.164.22.109)  6.656 ms
    61.164.22.101 (61.164.22.101)  5.247 ms
    61.164.22.105 (61.164.22.105)  5.439 ms
 5  202.97.26.9 (202.97.26.9)  9.860 ms  15.467 ms
    202.97.68.137 (202.97.68.137)  14.650 ms
 6  202.97.57.149 (202.97.57.149)  11.191 ms  7.422 ms  7.616 ms
 7  202.97.90.29 (202.97.90.29)  13.451 ms
    202.97.74.5 (202.97.74.5)  30.446 ms
    202.97.90.29 (202.97.90.29)  17.211 ms
 8  202.97.6.50 (202.97.6.50)  40.883 ms * 48.326 ms
 9  183.91.34.126 (183.91.34.126)  52.036 ms  139.456 ms  52.948 ms
10  * ae24-0.icr01.hkg20.ntwk.msn.net (104.44.237.201)  51.680 ms  46.285 ms
11  be-120-0.ibr02.hkg20.ntwk.msn.net (104.44.11.151)  72.697 ms  73.754 ms *
12  be-6-0.ibr02.sg3.ntwk.msn.net (104.44.16.238)  84.145 ms  82.118 ms
    be-4-0.ibr01.sg3.ntwk.msn.net (104.44.16.236)  75.533 ms
13  ae122-0.icr02.sg3.ntwk.msn.net (104.44.20.18)  80.503 ms
    ae120-0.icr01.sg3.ntwk.msn.net (104.44.20.22)  81.315 ms  88.032 ms
14  * * *
15  * * *
16  * * *
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21  * * *
22  * * *
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64  * * *
wuyanqi0822@wuyanqideMacBook ~ %
```

## 2、利用 whois 查询 tencent.com 的相关信息

```
wuyanqi0822@wuyanqideMacBook ~ % whois tencent.com
% IANA WHOIS server
% for more information on IANA, visit http://www.iana.org
% This query returned 1 object

refer:      whois.verisign-grs.com
domain:     COM

organisation: VeriSign Global Registry Services
address:    12061 Bluemont Way
address:    Reston Virginia 20190
address:    United States

contact:    administrative
name:       Registry Customer Service
organisation: VeriSign Global Registry Services
address:    12061 Bluemont Way
address:    Reston Virginia 20190
address:    United States
phone:      +1 703 925-6999
fax-no:     +1 703 948 3978
e-mail:     info@verisign-grs.com

contact:    technical
name:       Registry Customer Service
organisation: VeriSign Global Registry Services
address:    12061 Bluemont Way
address:    Reston Virginia 20190
address:    United States
phone:      +1 703 925-6999
fax-no:     +1 703 948 3978
e-mail:     info@verisign-grs.com

nservers:   A.GTLD-SERVERS.NET 192.5.6.30 2001:503:a83e:0:0:0:2:30
nservers:   B.GTLD-SERVERS.NET 192.33.14.30 2001:503:231d:0:0:0:2:30
nservers:   C.GTLD-SERVERS.NET 192.26.92.30 2001:503:83eb:0:0:0:0:30
nservers:   D.GTLD-SERVERS.NET 192.31.80.30 2001:500:856e:0:0:0:0:30
nservers:   E.GTLD-SERVERS.NET 192.12.94.30 2001:502:1cal:0:0:0:0:30
nservers:   F.GTLD-SERVERS.NET 192.35.51.30 2001:503:d414:0:0:0:0:30
nservers:   G.GTLD-SERVERS.NET 192.42.93.30 2001:503:eea3:0:0:0:0:30
nservers:   H.GTLD-SERVERS.NET 192.54.112.30 2001:502:8cc:0:0:0:0:30
nservers:   I.GTLD-SERVERS.NET 192.43.172.30 2001:503:39c1:0:0:0:0:30
nservers:   J.GTLD-SERVERS.NET 192.48.79.30 2001:502:7094:0:0:0:0:30
nservers:   K.GTLD-SERVERS.NET 192.52.178.30 2001:503:d2d:0:0:0:0:30
nservers:   L.GTLD-SERVERS.NET 192.41.162.30 2001:500:d937:0:0:0:0:30
nservers:   M.GTLD-SERVERS.NET 192.55.83.30 2001:501:b1f9:0:0:0:0:30
ds-rdata:   30909 8 2 E2D3C916F6DEEAC73294E8268FB5885044A833FC5459588F4A9184CFC41A5766

whois:      whois.verisign-grs.com

status:     ACTIVE
remarks:    Registration information: http://www.verisigninc.com

created:    1985-01-01
changed:    2017-10-05
source:     IANA

# whois.verisign-grs.com

Domain Name: TENCENT.COM
Registry Domain ID: 3216596_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.markmonitor.com
Registrar URL: http://www.markmonitor.com
Updated Date: 2019-08-12T09:11:43Z
Creation Date: 1998-09-14T04:00:00Z
Registry Expiry Date: 2021-09-13T04:00:00Z
Registrar: MarkMonitor Inc.
Registrar IANA ID: 292
Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
Registrar Abuse Contact Phone: +1.2083895740
Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
Name Server: NS1.QQ.COM
Name Server: NS2.QQ.COM
Name Server: NS3.QQ.COM
Name Server: NS4.QQ.COM
DNSSEC: unsigned
URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2020-02-26T06:15:50Z <<<

# whois.markmonitor.com

Domain Name: tencent.com
Registry Domain ID: 3216596_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.markmonitor.com
Registrar URL: http://www.markmonitor.com
Updated Date: 2019-08-12T02:11:43-0700
Creation Date: 1998-09-13T21:00:00-0700
Registrar Registration Expiration Date: 2021-09-12T00:00:00-0700
Registrar: MarkMonitor, Inc.
Registrar IANA ID: 292
Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
Registrar Abuse Contact Phone: +1.2083895770
Domain Status: clientUpdateProhibited (https://www.icann.org/epp#clientUpdateProhibited)
Domain Status: clientTransferProhibited (https://www.icann.org/epp#clientTransferProhibited)
Domain Status: clientDeleteProhibited (https://www.icann.org/epp#clientDeleteProhibited)
Domain Status: serverUpdateProhibited (https://www.icann.org/epp#serverUpdateProhibited)
Domain Status: serverTransferProhibited (https://www.icann.org/epp#serverTransferProhibited)
Domain Status: serverDeleteProhibited (https://www.icann.org/epp#serverDeleteProhibited)
Registrant Organization: Tencent Technology (shenzhen) Co.Ltd.
Registrant State/Province: Guang Dong
Registrant Country: CN
Registrant Email: Select Request Email Form at https://domains.markmonitor.com/whois/tencent.com
Admin Organization: Tencent Technology (shenzhen) Co.Ltd.
Admin State/Province: Guang Dong
Admin Country: CN
Admin Email: Select Request Email Form at https://domains.markmonitor.com/whois/tencent.com
Tech Organization: Tencent Technology (shenzhen) Co.Ltd.
Tech State/Province: Guang Dong
Tech Country: CN
Tech Email: Select Request Email Form at https://domains.markmonitor.com/whois/tencent.com
Name Server: ns2.qq.com
Name Server: ns3.qq.com
Name Server: ns1.qq.com
Name Server: ns4.qq.com
DNSSEC: unsigned
URL of the ICANN WHOIS Data Problem Reporting System: http://wdprs.internic.net/
>>> Last update of WHOIS database: 2020-02-25T22:16:03-0800 <<<

wuyanqi0822@wuyanqideMacBook ~ %
```