Web Lab 0

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你的 IP 地址 (IP address)

```
以太网适配器 VMware Network Adapter VMnet1:

   连接特定的 DNS 后缀 . . . . . . . :
   本地链接 IPv6 地址. . . . . . . . : fe80::843a:4cf9:dfe8:3353%7
   IPv4 地址 . . . . . . . . . . . . : 192.168.78.1
   子网掩码  . . . . . . . . . . . . : 255.255.255.0
   默认网关. . . . . . . . . . . . . :

以太网适配器 VMware Network Adapter VMnet8:

   连接特定的 DNS 后缀 . . . . . . . :
   本地链接 IPv6 地址. . . . . . . . : fe80::f8a4:87fc:a883:8300%14
   IPv4 地址 . . . . . . . . . . . . : 192.168.42.1
   子网掩码  . . . . . . . . . . . . : 255.255.255.0
   默认网关. . . . . . . . . . . . . :

无线局域网适配器 WLAN:

   连接特定的 DNS 后缀 . . . . . . . :
   本地链接 IPv6 地址. . . . . . . . : fe80::e931:de05:48d2:3d39%20
   IPv4 地址 . . . . . . . . . . . . : 192.168.0.106
   子网掩码  . . . . . . . . . . . . : 255.255.255.0
   默认网关. . . . . . . . . . . . . : 192.168.0.1
```

图 1.1：IP 地址

分析一个网页的组成部分

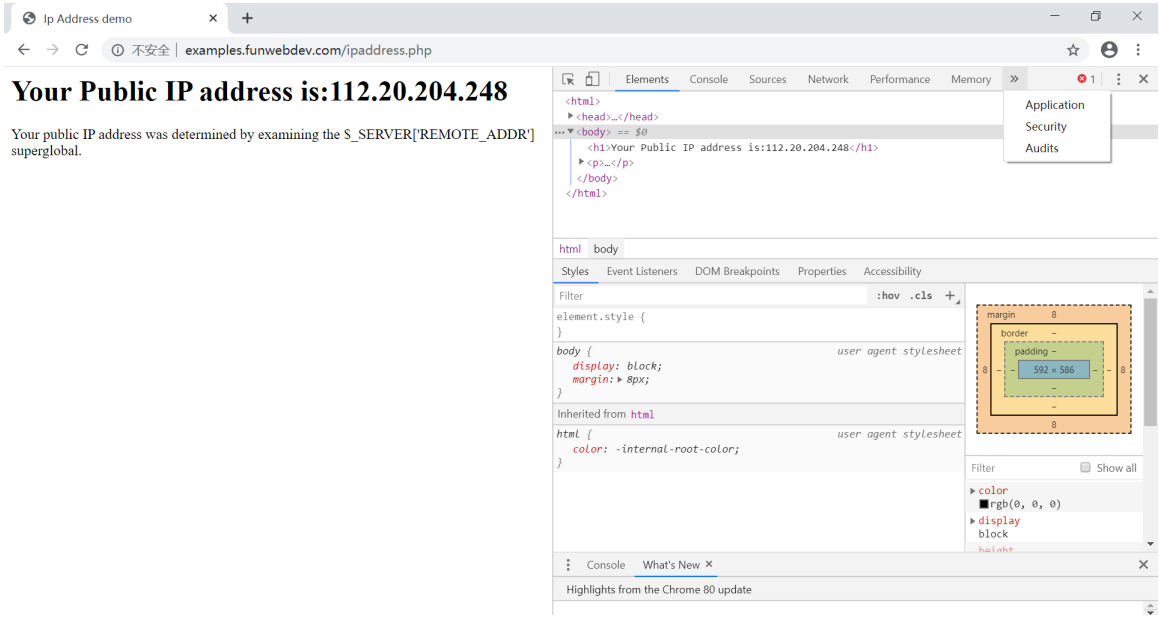

图 2.1：开发者工具界面

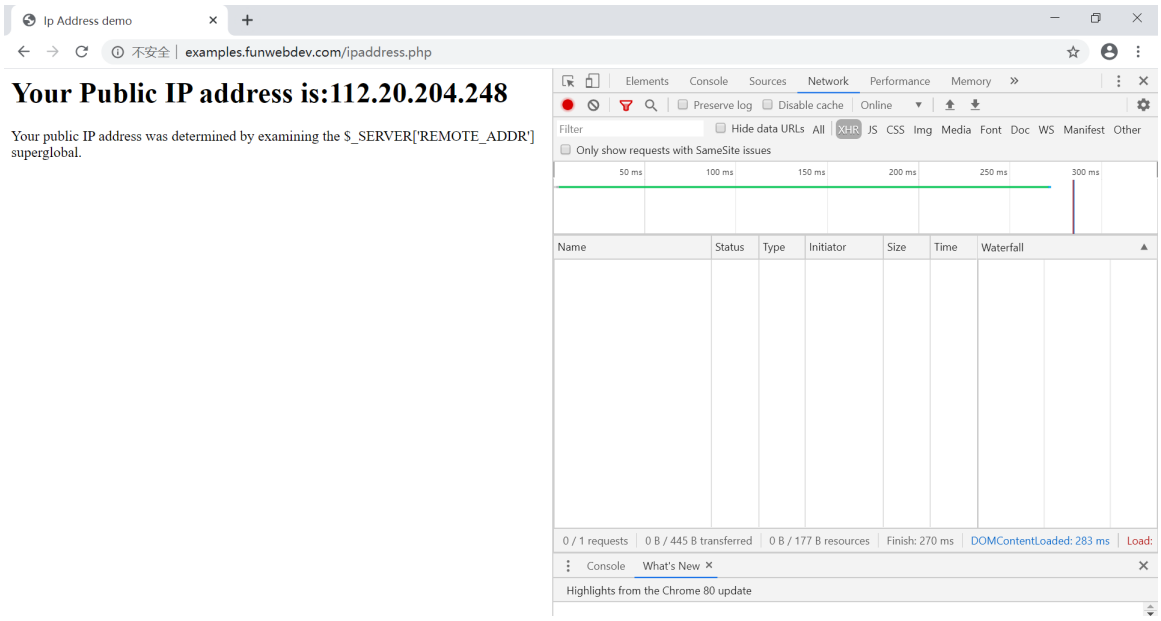

图 2.2：开发者工具界面 - 资源

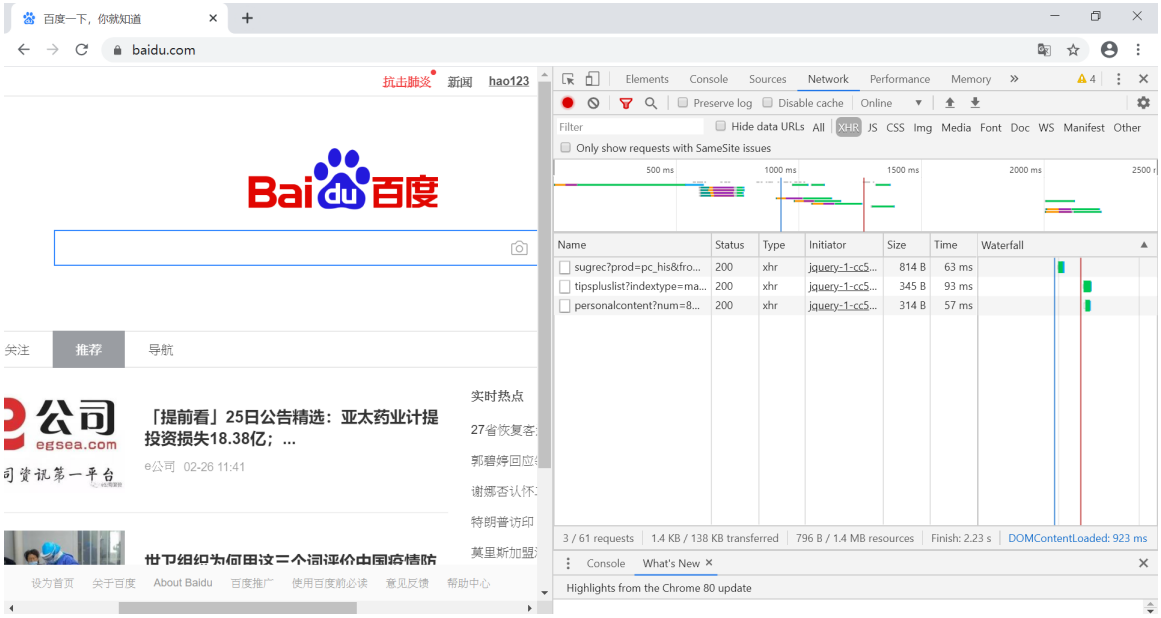

图 2.3：开发者工具界面 - 百度资源

域名服务器 (Name server)

```
PS C:\Users\lenovo> nslookup baidu.com
服务器:  192.168.1.1
Address:  192.168.1.1

非权威应答:
名称:    baidu.com
Addresses:  39.156.69.79
          220.181.38.148
```

图 3.1：baidu.com 的 A 地址记录

```
PS C:\Users\lenovo> nslookup -qt=ns baidu.com
服务器:  192.168.1.1
Address:  192.168.1.1

非权威应答:
baidu.com       nameserver = ns4.baidu.com
baidu.com       nameserver = ns2.baidu.com
baidu.com       nameserver = ns7.baidu.com
baidu.com       nameserver = ns3.baidu.com
baidu.com       nameserver = dns.baidu.com

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
```

图 3.2：baidu.com 的域名服务器

```
PS C:\Users\lenovo> nslookup baidu.com ns4.baidu.com
服务器:  UnKnown
Address:  14.215.178.80

非权威应答:
名称:    baidu.com
Addresses:  39.156.69.79
          220.181.38.148

PS C:\Users\lenovo> nslookup baidu.com ns2.baidu.com
服务器:  UnKnown
Address:  220.181.33.31

名称:    baidu.com
Addresses:  220.181.38.148
          39.156.69.79

PS C:\Users\lenovo> nslookup baidu.com ns7.baidu.com
服务器:  UnKnown
Address:  180.76.76.92

名称:    baidu.com
Addresses:  39.156.69.79
          220.181.38.148

PS C:\Users\lenovo> nslookup baidu.com ns3.baidu.com
服务器:  UnKnown
Address:  112.80.248.64

名称:    baidu.com
Addresses:  220.181.38.148
          39.156.69.79

PS C:\Users\lenovo> nslookup baidu.com dns.baidu.com
服务器:  UnKnown
Address:  202.108.22.220

非权威应答:
名称:    baidu.com
Addresses:  39.156.69.79
          220.181.38.148
```

图 3.3：使用授权服务器查询 baidu.com 的 IP 地址

```
PS C:\Users\lenovo> nslookup 114.114.114.114
服务器:  192.168.1.1
Address:  192.168.1.1

名称:    public1.114dns.com
Address:  114.114.114.114

PS C:\Users\lenovo>
```

图 3.4：114.114.114.114 匹配的主机名

观察 HTTP 标头 (HTTP headers)

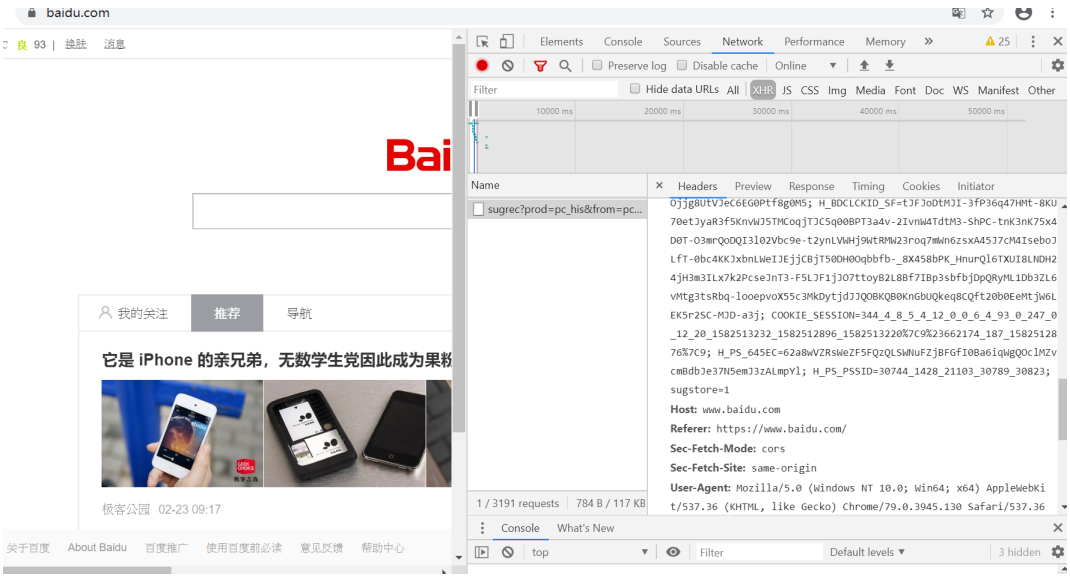

图 4.1：Headers 标签整体截图

User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/79.0.3945.130 Safari/537.36

图 4.2：User - Agent 截图

追踪数据包 (Tracing a packet)

```
PS C:\Users\lenovo> tracert microsoft.com

通过最多 30 个跃点跟踪
到 microsoft.com [40.113.200.201] 的路由:

  1     5 ms    <1 毫秒    12 ms  192.168.0.1 [192.168.0.1]
  2     2 ms    32 ms     19 ms  192.168.1.1 [192.168.1.1]
  3    10 ms    14 ms     13 ms  100.118.240.1
  4    69 ms    22 ms     14 ms  221.131.161.217
  5    14 ms    15 ms     13 ms  29.25.207.183.static.js.chinamobile.com [183.207.25.29]
  6    16 ms    16 ms     22 ms  221.183.51.61
  7    45 ms    44 ms     46 ms  221.176.20.86
  8    95 ms     *        74 ms  221.176.22.234
  9   104 ms    93 ms     97 ms  221.176.24.58
 10   107 ms   115 ms    110 ms  221.183.21.6
 11   101 ms   115 ms      *     223.118.2.202
 12   108 ms   121 ms    102 ms  223.119.0.174
 13   131 ms   110 ms    109 ms  ae26-0.icr01.hkg31.ntwk.msn.net [104.44.237.197]
 14   247 ms   249 ms    246 ms  be-120-0.ibr02.hkg31.ntwk.msn.net [104.44.11.141]
 15   305 ms   304 ms      *     be-10-0.ibr02.tyo79.ntwk.msn.net [104.44.17.192]
 16   245 ms   246 ms      *     be-5-0.ibr02.pdx30.ntwk.msn.net [104.44.19.85]
 17   246 ms   248 ms    249 ms  be-4-0.ibr04.mwh01.ntwk.msn.net [104.44.16.68]
 18   249 ms   247 ms    248 ms  be-2-0.ibr01.mwh01.ntwk.msn.net [104.44.16.84]
 19   253 ms   253 ms    249 ms  be-8-0.ibr01.cys04.ntwk.msn.net [104.44.18.222]
 20     *      247 ms    249 ms  be-5-0.ibr01.dsm05.ntwk.msn.net [104.44.19.87]
 21     *      265 ms    284 ms  ae142-0.icr02.dsm05.ntwk.msn.net [104.44.22.180]
 22     *        *         *     请求超时。
 23     *        *         *     请求超时。
 24     *        *         *     请求超时。
 25     *        *         *     请求超时。
 26     *        *         *     请求超时。
 27     *        *         *     请求超时。
 28     *        *         *     请求超时。
 29     *        *         *     请求超时。
 30     *        *         *     请求超时。

跟踪完成。
```

图 5.1：跟踪发往 microsoft.com 的数据包

```
duanxinran@duanxinran-virtual-machine:~$ whois tencent.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: 2020-02-26T03:51:02Z <<<

For more information on Whois status codes, please visit https://icann.org/epp

NOTICE: The expiration date displayed in this record is the date the
registrar's sponsorship of the domain name registration in the registry is
currently set to expire. This date does not necessarily reflect the expiration
date of the domain name registrant's agreement with the sponsoring
registrar.  Users may consult the sponsoring registrar's Whois database to
view the registrar's reported date of expiration for this registration.
```

图 5.2：利用 whois 查询 tencent.com 的相关信息 - 1

```
TERMS OF USE: You are not authorized to access or query our Whois
database through the use of electronic processes that are high-volume and
automated except as reasonably necessary to register domain names or
modify existing registrations; the Data in VeriSign Global Registry
Services' ("VeriSign") Whois database is provided by VeriSign for
information purposes only, and to assist persons in obtaining information
about or related to a domain name registration record. VeriSign does not
guarantee its accuracy. By submitting a Whois query, you agree to abide
by the following terms of use: You agree that you may use this Data only
for lawful purposes and that under no circumstances will you use this Data
to: (1) allow, enable, or otherwise support the transmission of mass
unsolicited, commercial advertising or solicitations via e-mail, telephone,
or facsimile; or (2) enable high volume, automated, electronic processes
that apply to VeriSign (or its computer systems). The compilation,
repackaging, dissemination or other use of this Data is expressly
prohibited without the prior written consent of VeriSign. You agree not to
use electronic processes that are automated and high-volume to access or
query the Whois database except as reasonably necessary to register
domain names or modify existing registrations. VeriSign reserves the right
to restrict your access to the Whois database in its sole discretion to ensure
operational stability.  VeriSign may restrict or terminate your access to the
Whois database for failure to abide by these terms of use. VeriSign
reserves the right to modify these terms at any time.

The Registry database contains ONLY .COM, .NET, .EDU domains and
Registrars.
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
```

图 5.3：利用 whois 查询 tencent.com 的相关信息 - 2

```
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: ns1.qq.com
Name Server: ns3.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: 2020-02-25T19:45:50-0800 <<<

For more information on WHOIS status codes, please visit:
  https://www.icann.org/resources/pages/epp-status-codes

If you wish to contact this domain’s Registrant, Administrative, or Technical
contact, and such email address is not visible above, you may do so via our web
form, pursuant to ICANN’s Temporary Specification. To verify that you are not a
robot, please enter your email address to receive a link to a page that
facilitates email communication with the relevant contact(s).
```

图 5.4：利用 whois 查询 tencent.com 的相关信息 - 3