

Network Security Lab 1

David Ayeke Jan 23. 2017

1. Google and Yahoo ip address

Google: 172.217.0.14

Yahoo : 206.190.36.45

Found by: nslookup <site> 8.8.8.8

2. Remapping host.

Attempting query <https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=cse%20571%20wustl>

The screenshot shows a Google search results page for the query "cse 571 wustl". The browser tabs at the top include "CSE 571", "CSE 571S", "L_00int.pdf", "networkin", and "cse 571 wustl". The address bar shows the URL "https://www.google.com/webhp?source". The search bar contains the text "cse 571 wustl". Below the search bar, the results are listed under the "All" tab. The results include:

- CSE571S: Network Security (Fall 2014)**
www.cse.wustl.edu/~jain/cse571-14/ ▼
 CSE571S: Network Security (Fall 2014). Instructor: Prof. Raj Jain ... Prerequisites: CSE 473S (Introduction to Computer Networking) or equivalent. Credits: 3 Units.
- [PDF] CSE 571S: Network Security - Washington University in St. Louis**
www.cse.wustl.edu/~jain/cse571-11/ftp/L_00int.pdf ▼
 CSE 571S: Network Security. Raj Jain. Washington University in Saint Louis. Saint Louis, MO 63130. Jain@cse.wustl.edu. These slides are available on-line at:
- CSE571S: Network Security (Fall 2011)**
www.cs.wustl.edu/~jain/cse571-11/index.html ▼
 Teaching Assistant: Mart Haitjema, Bryan 422, Email: mah5@cec.wustl.edu, Office Hours: Friday 3:00-4:00PM. All question about the labs, homeworks and ...
- Raj Jain - Computer Science & Engineering - Washington University in ...**
www.cse.wustl.edu/~jain/ ▼
 ... Engineering, Washington University in St. Louis, April 2010 ... Spring 2017 Course: CSE 571: Network Security ... WUSTL High-Definition Video Traces Library ...
- CSE 571S: Network Security**
www.cse.wustl.edu/~jain/cse571-09/L_01int.htm ▼
 Audio/Video Recording of Professor Raj Jain's class lecture on CSE 571S: Network Security. It covers Goal of This Course, CERT Statistics, Prerequisites, ...
- [PDF] CSE 571S: Network Security - Washington University in St. Louis**
www.cse.wustl.edu/~jain/cse571-07/ftp/L_01int.pdf ▼
 Washington University in St. Louis. CSE 571S: Network Security. Raj Jain. Washington University in Saint Louis. Saint Louis, MO 63130. Jain@cse.wustl.edu.
- A Survey of Industrial Control Systems Security**
www.cse.wustl.edu/~jain/cse571-11/ftp/ics/ ▼
 Dec 8, 2011 - Jayne Caswell, jcaswell@wustl.edu (A project report written under the on line at: http://www.cse.wustl.edu/~jain/cse571-11/index.html)
- [PDF] Cryptography and Network Security: Overview - Computer Science ...**
www.cse.wustl.edu/~jain/cse571-11/ftp/L_01ov.pdf ▼
 CSE571S Washington University in St. Louis. Cryptography and Network Security: Overview

Changing host file

```
david@yogata: ~  
GNU nano 2.5.3 File: /etc/hosts  
127.0.0.1 localhost  
127.0.1.1 yogata  
206.190.36.45 google.com  
# The following lines are desirable for IPv6 capable hosts  
::1 ip6-localhost ip6-loopback  
fe00::0 ip6-localnet  
ff00::0 ip6-mcastprefix  
ff02::1 ip6-allnodes  
ff02::2 ip6-allrouters  
  
192.168.1.11 rpi0 rpi0.local rpi0.lan  
192.168.1.12 rpi1 rpi1.local rpi0.lan  
192.168.1.14 rpi2 rpi2.local rpi2.lan  
192.168.1.15 rpi3 rpi3.local rpi3.lan  
  
# 127.0.0.1 fe.airzaar.com  
  
[ Read 17 lines ]  
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

• Chrome:

Retrying query

- Firefox:

The screenshot shows a Mozilla Firefox browser window with the title 'cse 571 wustl - Google Search - Mozilla Firefox'. The address bar shows 'https://www.google.com/webhp?sourceid=chro...'. The search bar contains 'cse 571 wustl'. Below the search bar, the results show 'About 22,000 results (0.37 seconds)'. The first result is 'CSE571S: Network Security (Fall 2014)' with a link to 'www.cse.wustl.edu/~jain/cse571-14/'. The second result is '[PDF] CSE 571S: Network Security - Washington University in St. Louis' with a link to 'www.cse.wustl.edu/~jain/cse571-11/ftp/l_00int.pdf'. The third result is 'CSE571S: Network Security (Fall 2011)' with a link to 'www.cs.wustl.edu/~jain/cse571-11/index.html'. The fourth result is 'Raj Jain - Computer Science & Engineering - Washington University in ...' with a link to 'www.cse.wustl.edu/~jain/'. The fifth result is 'CSE 571S: Network Security' with a link to 'www.cse.wustl.edu/~jain/cse571-09/l_01int.htm'. The sixth result is '[PDF] CSE 571S: Network Security - Washington University in St. Louis' with a link to 'www.cse.wustl.edu/~jain/cse571-07/ftp/l_01int.pdf'. The seventh result is 'A Survey of Industrial Control Systems Security' with a link to 'www.cse.wustl.edu/~jain/cse571-11/ftp/ics/'. The eighth result is '[PDF] Cryptography and Network Security: Overview - Computer Science ...' with a link to 'www.cse.wustl.edu/~jain/cse571-11/ftp/l_01ov.pdf'.

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 ... Engineering, Washington University in St. Louis, April 2010 ... Spring 2017 Course: CSE 571: Network Security ... WUSTL High-Definition Video Traces Library ...

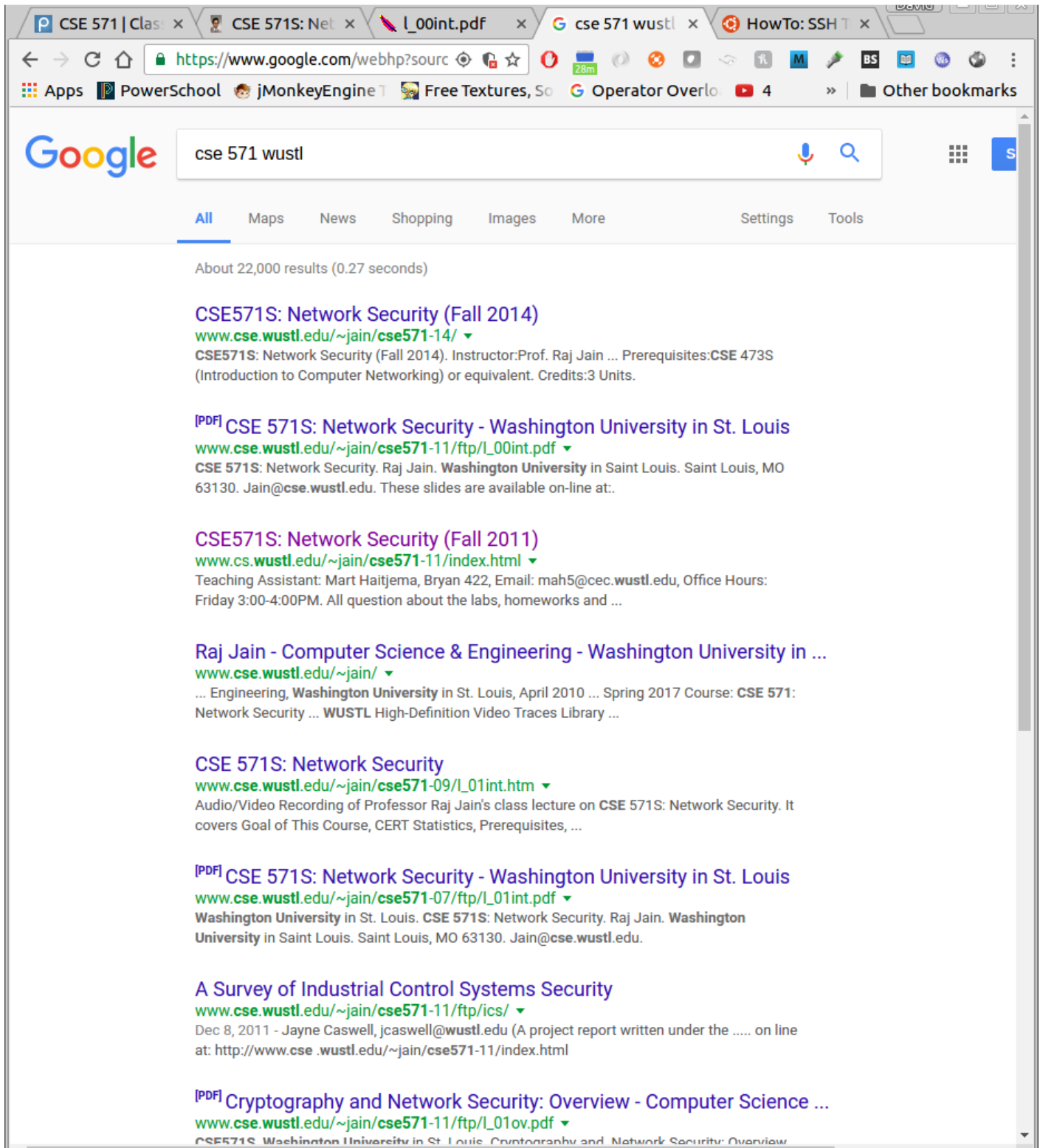
CSE 571S: Network Security
www.cse.wustl.edu/~jain/cse571-09/l_01int.htm
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 Dec 8, 2011 - Jayne Caswell, jcaswell@wustl.edu (A project report written under the on line at: <http://www.cse.wustl.edu/~jain/cse571-11/index.html>)

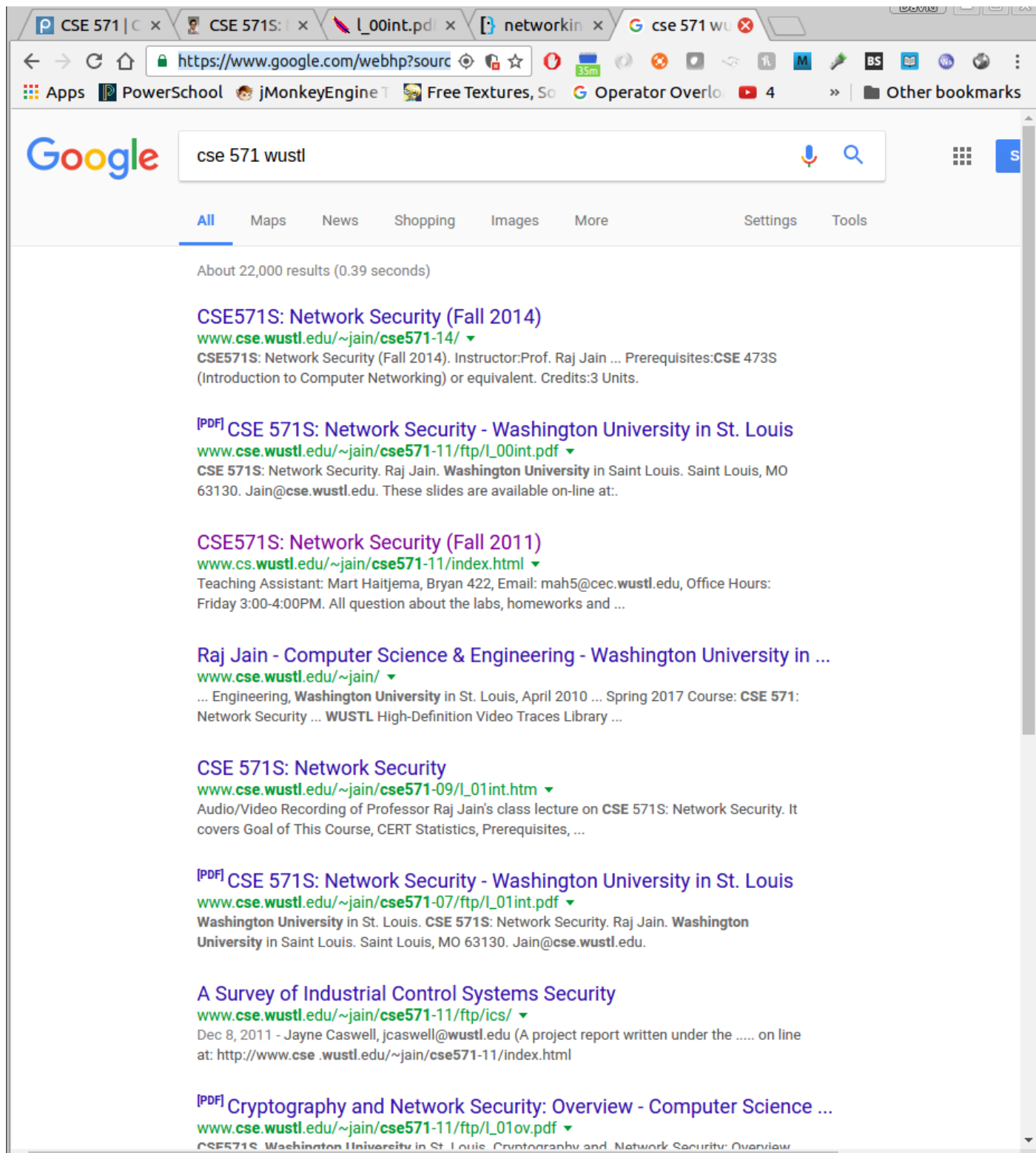
[PDF] Cryptography and Network Security: Overview - Computer Science ...
www.cse.wustl.edu/~jain/cse571-11/ftp/l_01ov.pdf
 CSE571S. Washington University in St. Louis. Cryptography and. Network Security:

- Chrome:



Removing Host file changes and retrying query

- Chrome:



3. Domain of 128.252.21.114

128.252.21.114 maps to seas-print.seas.wustl.edu.

```
Non-authoritative answer:
114.21.252.128.in-addr.arpa    name = seas-print.seas.wustl.edu.
```

- Found through nslookup

```
david@yogata: ~  
--- google.com ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 2003ms  
rtt min/avg/max/mdev = 79.768/90.266/110.014/13.975 ms  
david@yogata:~$ ping google.com  
PING google.com (206.190.36.45) 56(84) bytes of data.  
64 bytes from google.com (206.190.36.45): icmp_seq=1 ttl=47 time=76.9 ms  
64 bytes from google.com (206.190.36.45): icmp_seq=2 ttl=47 time=92.5 ms  
64 bytes from google.com (206.190.36.45): icmp_seq=3 ttl=47 time=81.5 ms  
64 bytes from google.com (206.190.36.45): icmp_seq=4 ttl=47 time=84.9 ms  
64 bytes from google.com (206.190.36.45): icmp_seq=5 ttl=47 time=94.2 ms  
^C  
--- google.com ping statistics ---  
5 packets transmitted, 5 received, 0% packet loss, time 4006ms  
rtt min/avg/max/mdev = 76.991/86.065/94.257/6.538 ms  
david@yogata:~$ nslookup 128.252.21.114  
Server:      127.0.0.1  
Address:     127.0.0.1#53  
  
Non-authoritative answer:  
114.21.252.128.in-addr.arpa      name = seas-print.seas.wustl.edu.  
  
Authoritative answers can be found from:  
  
david@yogata:~$
```

Querying 128.252.21.11.in-addr.arpa or seas-print.seas.wustl.edu gives no such domain.

4. Finding the administrative contact for wustl.edu

```
Administrative Contact:  
Network Technology Services  
Washington University  
1 Brookings Dr, Campus Box 1048  
St. Louis, MO 63130-4899  
UNITED STATES  
(314) 935-7048  
nts-admin@wustl.edu
```


Found on whois.icann.org:

harvest information from this server is generally prohibited except as reasonably necessary to register or modify .edu domain names.

You may use "%" as a wildcard in your search. For further information regarding the use of this WHOIS server, please type: help

Domain Name: WUSTL.EDU

Registrant:
 Washington University in St. Louis
 Network Technology Services
 One Brookings Drive Campus Box 1048
 St. Louis, MO 63130-4899
 UNITED STATES

Administrative Contact:
 Network Technology Services
 Washington University
 1 Brookings Dr, Campus Box 1048
 St. Louis, MO 63130-4899
 UNITED STATES
 (314) 935-7048
 nts-admin@wustl.edu

Technical Contact:
 Network Technology Services
 Washington University
 1 Brookings Dr Campus Box 1048
 St. Louis, MO 63130-4899
 UNITED STATES
 (314) 935-7048
 noc@wustl.edu

Name Servers:
 NS00.IP.WUSTL.EDU 128.252.0.1
 NS01.IP.WUSTL.EDU 128.252.0.9
 NS02.IP.WUSTL.EDU 128.252.0.17
 NS03.IP.WUSTL.EDU 128.252.0.25
 ALPHA.LOUISIANA.EDU

Domain record activated: 07-Dec-1987
 Domain record last updated: 22-Feb-2013

5. Route from my computer to google.com

```

traceroute to google.com (172.217.0.14), 30 hops max, 60 byte packets
 1 192.168.1.1 (192.168.1.1) 4.147 ms 4.604 ms 4.560 ms
 2 * * *
 3 dtr02ovldmo-tge-0-6-0-3.ovld.mo.charter.com (96.34.56.153) 22.076 ms 22.500 ms 23.263 ms
 4 crr02ovldmo-tge-0-7-0-8.ovld.mo.charter.com (96.34.48.204) 23.245 ms crr02ovldmo-tge-0-7-0-9.ovld.mo.charter.com (96.34.50.0) 23.896 ms
 5 crr02olvemo-bue-200.olve.mo.charter.com (96.34.76.137) 23.080 ms 23.801 ms 23.787 ms
 6 bbr01olvemo-bue-70.olve.mo.charter.com (96.34.2.164) 27.681 ms 22.795 ms 23.476 ms
 7 bbr02chcgil-bue-2.chcg.il.charter.com (96.34.0.12) 33.899 ms 29.644 ms 29.352 ms

```

```

 8 prr01chcgil-bue-4.chcg.il.charter.com (96.34.3.11) 28.556 ms 28.508 ms 28.450 ms
 9 96-34-152-30.static.unas.mo.charter.com (96.34.152.30) 27.821 ms 37.111 ms 35.852 ms
10 108.170.243.193 (108.170.243.193) 37.044 ms 108.170.243.161 (108.170.243.161) 33.183 ms 28.658 ms
11 216.239.42.33 (216.239.42.33) 28.521 ms 58.089 ms 47.535 ms
12 ord38s04-in-f14.1e100.net (172.217.0.14) 46.892 ms 47.351 ms 47.331 ms

```

6. Find computer MAC address

Found through `ifconfig -a`

MAC: 54:ee:75:c:b7:15

7. arp

7.a Printing ARP cache

Address	Hwtype	Hwaddress	Flags	Mask	Iface
rpi1		(incomplete)			wlp3s0
192.168.1.1	ether	a0:63:91:ab:f1:2c	C		wlp3s0
rpi0	ether	b8:27:eb:57:cd:0f	C		wlp3s0

8. Print Routing Table

```

david@yogata:~$ sudo route -n
Kernel IP routing table
Destination      Gateway         Genmask        Flags Metric Ref    Use Iface
0.0.0.0          192.168.1.1    0.0.0.0        UG        600    0      0 wlp3s0
169.254.0.0      0.0.0.0        255.255.0.0    U         1000   0      0 docker0
172.17.0.0        0.0.0.0        255.255.0.0    U         0      0      0 docker0
192.168.1.0       0.0.0.0        255.255.255.0  U         600    0      0 wlp3s0
david@yogata:~$

```

Destination : Network id. *Gateway* : The location through which the network id can be accessed. *Genmask* : Used with the destination to get the Network id.

The first row describes accessing the internet. The gateway is my router, and allows access to any ip. The next two rows describe docker containers I currently have running. They are accessed through my computer (gateway is 0.0.0.0).

9. Number of packets with "Destination Unreachable"

```

david@yogata:~$ netstat -s
Ip:
 216758 total packets received
 0 forwarded
 0 incoming packets discarded
216448 incoming packets delivered
198527 requests sent out
 40 outgoing packets dropped
 500 dropped because of missing route
Icmp:
 228 ICMP messages received
 1 input ICMP message failed.
ICMP input histogram:
 destination unreachable: 133
 timeout in transit: 72
 echo replies: 23
150 ICMP messages sent
 0 ICMP messages failed
ICMP output histogram:
 destination unreachable: 127
 echo request: 23

```

packets with "destination unreachable": 133

10. ipaddresslocation.org

ipaddresslocation.org clearly stated the city I was in.

www.ipaddresslocation.org

home ip address checkpoint ip ranges ip2country

IP ADDRESS LOCATION

My IP: **68.184.9.62**

Bookmark this site!

Advertisements

Do you use and like IP Address Location? Please show us your support by linking to this website.
<http://www.ipaddresslocation.org>>IP Address Locator

IP Locator for your site - January 10, 2011

Hello, visitor from: **Saint Louis, United States**
 Your Country Code: **US**
 Your IP State: **Missouri**
 Your IP Address: **68.184.9.62**
 Your Hostname: **68-184-9-62.dhcp.wrbg.mo.charter.com**
 Your ISP: **Charter Communications**
 Your Organization: **Charter Communications**

To display 'what is my IP address' example above into your site to your visitors simple paste IP tracking line code below:

```
<script language="JavaScript"
src="http://www.ipaddresslocation.org/my-ip-address.php"
type="text/JavaScript">
</script><br />Powered by <a
rel="nofollow"
href="http://www.ipaddresslocation.org">IPAddressLocation.org</a
>
```

December 01, 2012 IP Locator

Along with IP address you can now also lookup domain names to get more information's about their IP location for example www.ipaddresslocation.org or ipaddresslocation.org or any other domain that is up and working.

January 04, 2011 Who Is IP

We have launched new **IP Who Is** tool and dropped old one. With our new IP Whois lookup you can get now much more information's about registered owner of any domain or any IP address. Visual IP Location Map has been upgraded. Locating of the IP Address on IP Location Map is now much faster than before.

Search IP Address - What is my IP address?

Have you ever wondered "what is my IP address" and how to search, trace and locate IP address from yourself or find IP address from anybody else?

Advertisements

Or thought about finding IP addresses ranges block that belong to a specific country?

Have you ever used a web-based IP address lookup location tool to trace and locate IP and find the geographical location of an IP address?

Maybe you are looking for an IP address location, DNS lookup, IP address range etc... Or you simply wish to learn more about how networking protocols, like UDP and TCP/IP, work?

We can help with all of this and more.

Free IP Location Service

Our free IP to location service and impressive collection of IP tools:

- [email lookup](#) (IP & Email tool to verify and lookup email addresses),
- [trace Email](#) (track and trace email sender on basis of email header),
- [Whois IP](#) (find out more information about owner of any domain name)
- and tips [how to change IP](#) or [hide IP address](#) will help you to find anything what you would like to know about IP addressing.

How to Find IP address and Lookup IP address with our IP Locator?

Using IP address finder from IP Address Location and all our other IP tools for tracking IP addresses is free.

Our IP finder as part of our IP to location service is the fastest, easiest and most precise way to search and find the exact IP to location of any public IP address, OS, DNS, IP country, country code and country flag.

Just enter any computer IP address and perform IP address search without any limitation.

Furthermore, we have integrated Geolocator and a world map to display your results by city and country.

IP database used by our IP lookup is updated every 48 hours so you can be sure the IP2location information we provide is up to date.

Our web based **IP Lookup** tool has analyzed and traced your public IP address and detected next informations about your computer:

My IP Address (Public, External or WAN IP Address)
68.184.9.62

My Internal IP Address (LAN or Router IP Address)
Find Out Your LAN IP Address

My Hostname (DNS Lookup)