

CA169 Assignment 1 Lab Report

Submit these pages onwards.

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PROJECT NUMBER:	1
MODULE CODE:	CA169
DEGREE: [CA EC ECSA PSSD]	CA
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Declaration

In submitting this project, I declare that the project material, which I now submit, is my own work. Any assistance received by way of borrowing from the work of others has been cited and acknowledged within the work. I make this declaration in the knowledge that a breach of the rules pertaining to project submission may carry serious consequences.

Answer Sheets

Ipconfig exercise

IP address of the machine	192.168.1.12
MAC address	00-21-70-0A-45-66

Ping exercise 1

What is displayed?

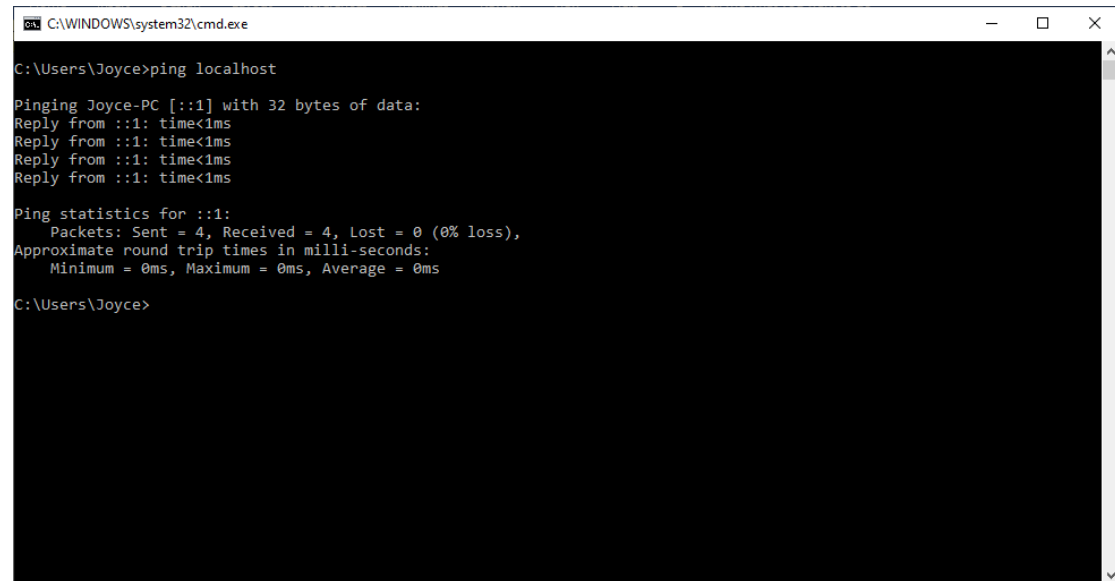
Usage for the ping command (all possible arguments, syntax, etc)

Ping exercise 2

First part exercise 2

Ping localhost

Paste window here.



```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce>ping localhost

Pinging Joyce-PC [::1] with 32 bytes of data:
Reply from ::1: time<1ms
Reply from ::1: time<1ms
Reply from ::1: time<1ms
Reply from ::1: time<1ms

Ping statistics for ::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Joyce>
```

1. What information is returned?
2. What is the localhost?

Answer 1

1. How long it takes to send a packet to localhost and get a response
2. Localhost is the current machine

Second part exercise 2

```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce>ping www.rte.ie

Pinging www.rte.ie [104.18.163.29] with 32 bytes of data:
Reply from 104.18.163.29: bytes=32 time=9ms TTL=59
Reply from 104.18.163.29: bytes=32 time=10ms TTL=59
Reply from 104.18.163.29: bytes=32 time=15ms TTL=59
Reply from 104.18.163.29: bytes=32 time=9ms TTL=59

Ping statistics for 104.18.163.29:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 15ms, Average = 10ms

C:\Users\Joyce>ping 74.125.193.100

Pinging 74.125.193.100 with 32 bytes of data:
Reply from 74.125.193.100: bytes=32 time=9ms TTL=49
Reply from 74.125.193.100: bytes=32 time=13ms TTL=49
Reply from 74.125.193.100: bytes=32 time=9ms TTL=49
Reply from 74.125.193.100: bytes=32 time=24ms TTL=49

Ping statistics for 74.125.193.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 24ms, Average = 13ms

C:\Users\Joyce>ping 74.125.193.100:80
Ping request could not find host 74.125.193.100:80. Please check the name and try again.

C:\Users\Joyce>_
```

Pinging <url> <IP> with 32 bytes of data (a packet)
Reply from <IP>: bytes:32 (a packet) time=(however long it took)ms ttl (time-to-live, tells whether or not the packet has been in the network too long)
Statistics: packets sent, received, lost
Approx. ping times in ms: min, max, average

For higher marks

- | | | |
|----|--|---|
| 1. | www.rte.ie | 104.18.163.29 |
| | Owner: | RTE Commercial Enterprises Limited |
| | Phone: | (01) 2083111 |
| | Address: | RTÉ, Donnybrook, Dublin 4 |
| | Identifying Info: | Use CloudFlare and Blacknight IP address in the US |
| | How I found out: | whois lookup and contact page |
| 2. | 74.125.193.100 | google.com |
| | Owner: | Google LLC |
| | Phone: | +1.2083895740 (registrar abuse number) |
| | Address: | Google LLC , 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA |
| | Identifying Info: | MarkMonitor is registrar, IP is in Mountain View, California |
| | How I found out: | whois lookup and contact page |
| 3. | 74.125.193.100:80 | also returns google.com |

rte.ie -

RTE Ireland's National Television

RTÉ News Sport Entertainment Business Lifestyle Culture Player TV Radio More Weather 14°C

Coronavirus - Latest Listen Drivetime Paddy's Day TV RTÉ Learn - a resource for Teachers

Effects of Covid-19 will last for many months - Harris
CORONAVIRUS

Live 19 out of 30 new test centres now open, Harris
CORONAVIRUS

Group expects 200,000 more job losses due to Covid-19
CORONAVIRUS

UK enacts tougher measures after virus deaths warning
WORLD

RTE **CREATE** Don't Contaminate
CORONAVIRUS

RTE uses cookies in accordance with our [Cookie Policy](#)
[More Info](#) [I Understand](#)

Waiting for cache...
74.125.193.100 -

Google

Google

Google Search I'm Feeling Lucky

Google offered in: [Gaeilge](#)

Ireland
Advertising Business About How Search works Privacy Terms Settings
74.125.193.100:80 -

Google

Google

Google Search I'm Feeling Lucky

Google offered in: [Gaeilge](#)

Ireland
Advertising Business About How Search works Privacy Terms Settings

Explain output here, item by item.

rte.ie	returns rte.ie
104.18.163.29	returns google.com (this is google's ip address)
104.18.163.29:80	returns google.com (google's ip, and http port 80 – also why ping didn't work)

Exercise 3

Paste window 1

```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce>ping kotaku.com

Pinging kotaku.com [151.101.66.166] with 32 bytes of data:
Reply from 151.101.66.166: bytes=32 time=53ms TTL=57
Reply from 151.101.66.166: bytes=32 time=53ms TTL=57
Reply from 151.101.66.166: bytes=32 time=39ms TTL=57
Reply from 151.101.66.166: bytes=32 time=41ms TTL=57

Ping statistics for 151.101.66.166:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 39ms, Maximum = 53ms, Average = 46ms

C:\Users\Joyce>
```

Paste window 2

```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce>ping howtogeek.com

Pinging howtogeek.com [151.101.130.217] with 32 bytes of data:
Reply from 151.101.130.217: bytes=32 time=10ms TTL=57
Reply from 151.101.130.217: bytes=32 time=65ms TTL=57
Reply from 151.101.130.217: bytes=32 time=40ms TTL=57
Reply from 151.101.130.217: bytes=32 time=21ms TTL=57

Ping statistics for 151.101.130.217:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 65ms, Average = 34ms

C:\Users\Joyce>
```


	Website 1	Website 2
Name of the website pinged	Kotaku	How-To Geek
What is the IP address returned?	151.101.66.166	151.101.130.217
What is the TTL figure?	57	57
Average round trip time	45ms	34ms

Your comments on **administrative information** that you found by searching on the Internet about the websites from experiment 3. Things like, who owns it, phone numbers, email addresses, registered addresses etc, anything at all that tells us about the website and its administration.

Kotaku

Owner: G/O Media Inc
Contact: DNS Admin
G/O Media Inc
New York, NY, 10036, us
dnsadmin@gizmodomedia.com
(p) 16464175893 (f) 16464175893
IP:  - California - San Francisco – Fastly
Registrar: CSC CORPORATE DOMAINS, INC.

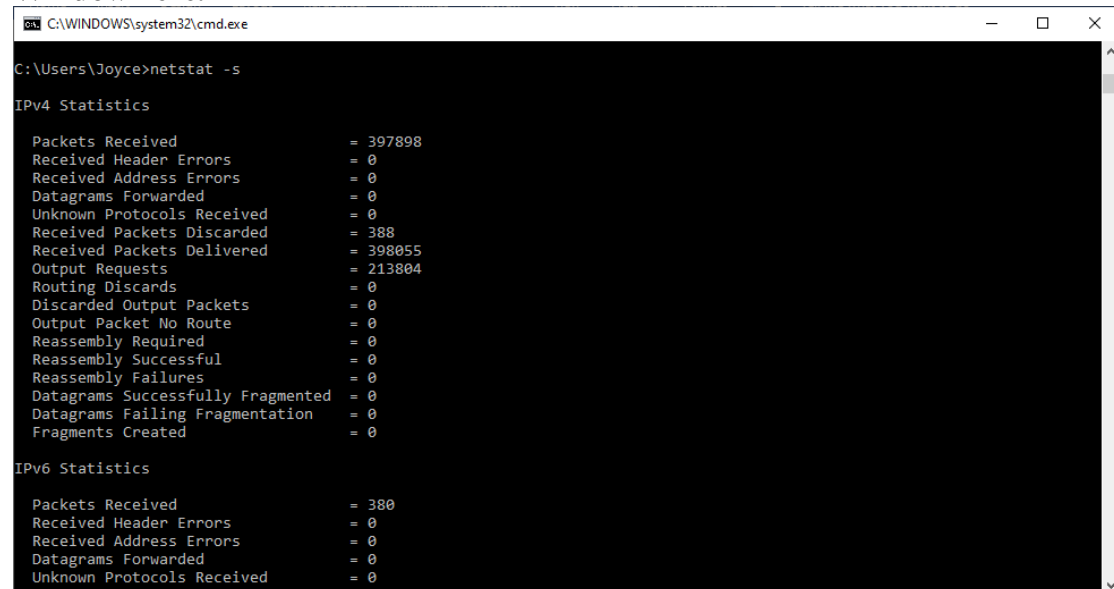
How-To Geek

Contact: Contact Privacy Inc. Customer 124293465
96 Mowat Ave,
Toronto, ON, M4K 3K1, ca
cvscbif7f4ye@contactprivacy.email
(p) 14165385487
IP:  - California - San Francisco – Fastly
Registrar: Google LLC

Exercise 4: Netstat exercise

Number of packets received by workstation: 397898

Window here.



```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce>netstat -s

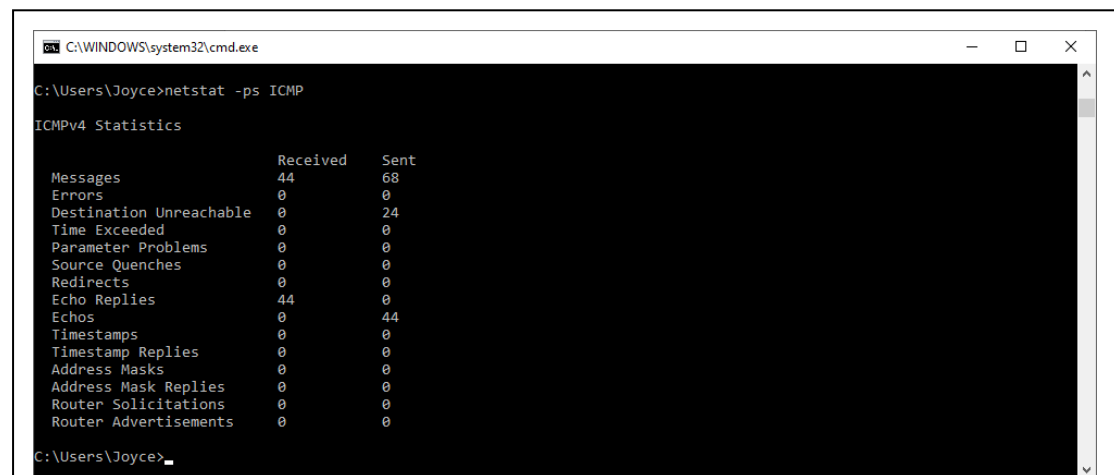
IPv4 Statistics

Packets Received                = 397898
Received Header Errors          = 0
Received Address Errors         = 0
Datagrams Forwarded             = 0
Unknown Protocols Received      = 0
Received Packets Discarded      = 388
Received Packets Delivered      = 398055
Output Requests                 = 213804
Routing Discards                = 0
Discarded Output Packets        = 0
Output Packet No Route          = 0
Reassembly Required             = 0
Reassembly Successful           = 0
Reassembly Failures             = 0
Datagrams Successfully Fragmented = 0
Datagrams Failing Fragmentation = 0
Fragments Created               = 0

IPv6 Statistics

Packets Received                = 380
Received Header Errors          = 0
Received Address Errors         = 0
Datagrams Forwarded             = 0
Unknown Protocols Received      = 0
```

ICMP packets explained:



```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce>netstat -ps ICMP

ICMPv4 Statistics

      Received  Sent
Messages          44    68
Errors             0     0
Destination Unreachable 0    24
Time Exceeded      0     0
Parameter Problems 0     0
Source Quenches    0     0
Redirects           0     0
Echo Replies       44     0
Echos              0    44
Timestamps         0     0
Timestamp Replies  0     0
Address Masks      0     0
Address Mask Replies 0     0
Router Solicitations 0     0
Router Advertisements 0     0

C:\Users\Joyce>
```

Internet Control Message Protocol:

ICMP gives feedback. Common use is Echo and Echo Reply (used by ping)

Discuss the connections opened by visiting the DCU website here.
Also, grab the window, showing connections opened as a result of visiting the DCU website.

Netstat result before opening dcu.ie: (goes up to port 50057)

```

C:\WINDOWS\system32\cmd.exe
C:\Users\Joyce\Desktop\conor>netstat

Active Connections

Proto Local Address          Foreign Address         State
TCP    192.168.1.12:49736      13.107.21.200:https     ESTABLISHED
TCP    192.168.1.12:49780      40.67.254.36:https     ESTABLISHED
TCP    192.168.1.12:50038      192.168.1.1:37215      TIME_WAIT
TCP    192.168.1.12:50041      ig-in-f84:https        TIME_WAIT
TCP    192.168.1.12:50042      ig-in-f105:https       TIME_WAIT
TCP    192.168.1.12:50043      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50044      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50045      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50048      dh-in-f95:https        TIME_WAIT
TCP    192.168.1.12:50049      ig-in-f95:https        TIME_WAIT
TCP    192.168.1.12:50050      ig-in-f102:https       TIME_WAIT
TCP    192.168.1.12:50052      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50055      ig-in-f138:https       TIME_WAIT
TCP    192.168.1.12:50056      172.253.116.188:5228   FIN_WAIT_2
TCP    192.168.1.12:50057      dh-in-f94:https        TIME_WAIT
TCP    [fe80::d9f9:8e75:f4a5:3f66%4]:50014 [fe80::1%4]:37215      TIME_WAIT
TCP    [fe80::d9f9:8e75:f4a5:3f66%4]:50021 [fe80::1%4]:37215      TIME_WAIT
C:\Users\Joyce\Desktop\conor>

```

Netstat result after opening dcu.ie: (everything after port 50057 is from dcu)

```

C:\WINDOWS\system32\cmd.exe
C:\Users\Joyce\Desktop\conor>netstat

Active Connections

Proto Local Address          Foreign Address         State
TCP    192.168.1.12:49736      13.107.21.200:https     ESTABLISHED
TCP    192.168.1.12:49780      40.67.254.36:https     ESTABLISHED
TCP    192.168.1.12:50041      ig-in-f84:https        TIME_WAIT
TCP    192.168.1.12:50042      ig-in-f105:https       TIME_WAIT
TCP    192.168.1.12:50043      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50044      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50048      dh-in-f95:https        TIME_WAIT
TCP    192.168.1.12:50049      ig-in-f95:https        TIME_WAIT
TCP    192.168.1.12:50050      ig-in-f102:https       TIME_WAIT
TCP    192.168.1.12:50052      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50055      ig-in-f138:https       TIME_WAIT
TCP    192.168.1.12:50057      dh-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50061      ig-in-f84:https        ESTABLISHED
TCP    192.168.1.12:50062      ig-in-f94:https        ESTABLISHED
TCP    192.168.1.12:50063      ig-in-f94:https        ESTABLISHED
TCP    192.168.1.12:50064      ig-in-f94:https        TIME_WAIT
TCP    192.168.1.12:50068      ig-in-f105:https       ESTABLISHED
TCP    192.168.1.12:50072      ig-in-f102:https       TIME_WAIT
TCP    192.168.1.12:50075      ig-in-f94:https        ESTABLISHED
TCP    192.168.1.12:50076      dh-in-f188:5228        ESTABLISHED
TCP    192.168.1.12:50078      dh-in-f94:https        ESTABLISHED
C:\Users\Joyce\Desktop\conor>

```


Netstat -r explained

```
C:\WINDOWS\system32\cmd.exe

C:\Users\Joyce\Desktop\conor>netstat -r

=====
Interface List
  4...00 21 70 0a 45 66 .....Intel(R) 82562V-2 10/100 Network Connection
  1.....Software Loopback Interface 1
=====

IPv4 Route Table
=====
Active Routes:
  Network Destination        Netmask          Gateway           Interface        Metric
    0.0.0.0                0.0.0.0        192.168.1.1       192.168.1.12     35
    127.0.0.0            255.0.0.0           On-link          127.0.0.1       331
    127.0.0.1        255.255.255.255           On-link          127.0.0.1       331
  127.255.255.255  255.255.255.255           On-link          127.0.0.1       331
    192.168.1.0        255.255.255.0           On-link          192.168.1.12     291
    192.168.1.12  255.255.255.255           On-link          192.168.1.12     291
    192.168.1.255  255.255.255.255           On-link          192.168.1.12     291
    224.0.0.0            240.0.0.0           On-link          127.0.0.1       331
    224.0.0.0            240.0.0.0           On-link          192.168.1.12     291
    255.255.255.255  255.255.255.255           On-link          127.0.0.1       331
    255.255.255.255  255.255.255.255           On-link          192.168.1.12     291
=====
Persistent Routes:
  None

IPv6 Route Table
=====
Active Routes:
  If Metric Network Destination      Gateway
    1   331  ::1/128               On-link
    4   291  fe80::/64              On-link
    4   291  fe80::d9f9:8e75:f4a5:3f66/128
                                On-link
    1   331  ff00::/8               On-link
    4   291  ff00::/8               On-link
=====
Persistent Routes:
  None

C:\Users\Joyce\Desktop\conor>
```

Displays routing table

0.0.0.0

Is for websites outside my network, gateway is my router, interface is my computer

127.0.0.1

is loopback, aka localhost. Used for hosting servers locally on a machine

192.168.1.0

is my local network as a whole

192.168.1.12

is my computer

255.255.255.255

is to broadcast to all devices