

## Raport 2.

### 1.1. Badanie stanu własnego komputera

Windows IP Configuration

Ethernet adapter Ethernet:

Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . :

Wireless LAN adapter Połączenie lokalne\* 4:

Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . :

Wireless LAN adapter Połączenie lokalne\* 6:

Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . :

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . : fe80::485e:cebe:3dbb:9395%11  
IPv4 Address. . . . . : 192.168.1.101  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.1.1

Wireless LAN adapter Połączenie lokalne\* 7:

Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . : fe80::7cb5:3722:bc99:e90f%13  
IPv4 Address. . . . . : 192.168.137.1  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . :

### 1.2. Badanie serwera zajęciowego

eth0    Link encap:Ethernet   HWaddr 00:19:99:fd:ed:6b  
        inet addr:149.156.115.209   Bcast:149.156.115.255   Mask:255.255.255.0  
        inet6 addr: fe80::219:99ff:fefd:ed6b/64   Scope:Link  
        UP BROADCAST RUNNING MULTICAST   MTU:1500   Metric:1  
        RX packets:127009416 errors:0 dropped:1002747 overruns:0 frame:0  
        TX packets:55036256 errors:0 dropped:0 overruns:0 carrier:0  
        collisions:0 txqueuelen:1000  
        RX bytes:20749734533 (20.7 GB)   TX bytes:49551999856 (49.5 GB)  
        Interrupt:20   Memory:f7f00000-f7f20000

lo      Link encap:Local Loopback

```
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:65536 Metric:1
RX packets:317035 errors:0 dropped:0 overruns:0 frame:0
TX packets:317035 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1
RX bytes:28250546 (28.2 MB) TX bytes:28250546 (28.2 MB)
```

```
virbr0 Link encap:Ethernet HWaddr 52:54:00:32:0e:4b
inet addr:192.168.122.1 Bcast:192.168.122.255 Mask:255.255.255.0
UP BROADCAST MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
```

## 2. Terminy

adres fizyczny – sprzętowy adres karty sieciowej

DHCP – protokół, dzięki któremu host otrzymuje od serwera dane konfiguracyjne (np. adres IP)

Adres IP – unikalny, adres komputera, składający się z adresu sieci oraz adresu komputera

Maska podsieci – stała wartość określonej ilości bitów adresu dla wszystkich hostów w danej podsieci (8, 12 lub 16 bitów długości); podawany jest jej „rodzaj”, np. 255.255.255.0

Brama sieciowa – unikalny adres sieci, dzięki któremu sieć może komunikować się z inną siecią

Serwer DNS – serwer, który tłumaczy nazwy symboliczne na adres IP

### 3.1. Polecenie *netstat* dla własnego komputera

Active Connections

Proto	Local Address	Foreign Address	State
TCP	127.0.0.1:28000	Lenovo-PC:64320	ESTABLISHED
TCP	127.0.0.1:49672	Lenovo-PC:49673	ESTABLISHED
TCP	127.0.0.1:49673	Lenovo-PC:49672	ESTABLISHED
TCP	127.0.0.1:49691	Lenovo-PC:49701	ESTABLISHED
TCP	127.0.0.1:49691	Lenovo-PC:49704	ESTABLISHED
TCP	127.0.0.1:49691	Lenovo-PC:49705	ESTABLISHED
TCP	127.0.0.1:49691	Lenovo-PC:49707	ESTABLISHED
TCP	127.0.0.1:49691	Lenovo-PC:49709	ESTABLISHED
TCP	127.0.0.1:49694	Lenovo-PC:49695	ESTABLISHED
TCP	127.0.0.1:49695	Lenovo-PC:49694	ESTABLISHED
TCP	127.0.0.1:49696	Lenovo-PC:61900	ESTABLISHED
TCP	127.0.0.1:49697	Lenovo-PC:49698	ESTABLISHED
TCP	127.0.0.1:49698	Lenovo-PC:49697	ESTABLISHED
TCP	127.0.0.1:49701	Lenovo-PC:49691	ESTABLISHED
TCP	127.0.0.1:49704	Lenovo-PC:49691	ESTABLISHED
TCP	127.0.0.1:49705	Lenovo-PC:49691	ESTABLISHED

TCP	127.0.0.1:49707	Lenovo-PC:49691	ESTABLISHED
TCP	127.0.0.1:49709	Lenovo-PC:49691	ESTABLISHED
TCP	127.0.0.1:61900	Lenovo-PC:49696	ESTABLISHED
TCP	127.0.0.1:64318	Lenovo-PC:64319	ESTABLISHED
TCP	127.0.0.1:64319	Lenovo-PC:64318	ESTABLISHED
TCP	127.0.0.1:64320	Lenovo-PC:28000	ESTABLISHED
TCP	192.168.1.101:64271	52.170.194.77:https	ESTABLISHED
TCP	192.168.1.101:64302	88:http	CLOSE_WAIT
TCP	192.168.1.101:64322	lo-in-f188:5228	ESTABLISHED
TCP	192.168.1.101:64424	r-147-58-45-5:https	CLOSE_WAIT
TCP	192.168.1.101:64440	a2-23-111-38:https	CLOSE_WAIT
TCP	192.168.1.101:64444	ams10-004:http	ESTABLISHED
TCP	192.168.1.101:64486	prg39-013:https	ESTABLISHED
TCP	192.168.1.101:64490	r-171-58-45-5:http	FIN_WAIT_1
TCP	:::1:27275	Lenovo-PC:64487	TIME_WAIT
TCP	:::1:27275	Lenovo-PC:64488	TIME_WAIT
TCP	:::1:27275	Lenovo-PC:64489	TIME_WAIT
TCP	:::1:27275	Lenovo-PC:64493	TIME_WAIT
TCP	:::1:27275	Lenovo-PC:64494	TIME_WAIT
TCP	:::1:27275	Lenovo-PC:64495	TIME_WAIT
TCP	:::1:49669	Lenovo-PC:49670	ESTABLISHED
TCP	:::1:49670	Lenovo-PC:49669	ESTABLISHED
TCP	:::1:49676	Lenovo-PC:49677	ESTABLISHED
TCP	:::1:49677	Lenovo-PC:49676	ESTABLISHED
TCP	:::1:49679	Lenovo-PC:49680	ESTABLISHED
TCP	:::1:49680	Lenovo-PC:49679	ESTABLISHED
TCP	:::1:49681	Lenovo-PC:49682	ESTABLISHED
TCP	:::1:49682	Lenovo-PC:49681	ESTABLISHED
TCP	:::1:49685	Lenovo-PC:49688	ESTABLISHED
TCP	:::1:49688	Lenovo-PC:49685	ESTABLISHED
TCP	:::1:49713	Lenovo-PC:49714	ESTABLISHED
TCP	:::1:49714	Lenovo-PC:49713	ESTABLISHED

### 3.2. Polecenie netstat dla serwera

Active Internet connections (w/o servers)

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State
tcp	0	0	mts.wibro.a:netbios-ssn	fenix.wibro.agh.e:53948	ESTABLISHED
tcp	0	240	mts.wibro.agh.edu.p:ssh	host6-1.multi-ip.p:1650	ESTABLISHED
getnameinfo failed					
tcp6	0	0	mts.wibro.agh.edu.:http	[UNKNOWN]:24531	TIME_WAIT
getnameinfo failed					
tcp6	0	0	mts.wibro.agh.edu.:http	[UNKNOWN]:29561	TIME_WAIT

Active UNIX domain sockets (w/o servers)

Proto	RefCnt	Flags	Type	State	I-Node	Path
unix	2	[ ]	DGRAM		54276884	/run/user/2369/systemd/notify
unix	2	[ ]	DGRAM		53585453	/var/lib/samba/private/msg.sock/13801
unix	2	[ ]	DGRAM		43275093	/run/user/2342/systemd/notify
unix	2	[ ]	DGRAM		42865391	/run/user/2324/systemd/notify
unix	2	[ ]	DGRAM		5449035	/var/lib/samba/private/msg.sock/15256
unix	2	[ ]	DGRAM		5444570	/var/lib/samba/private/msg.sock/15257
unix	2	[ ]	DGRAM		5448559	/var/lib/samba/private/msg.sock/15275

unix	2	[ ]	DGRAM	5450074	/var/lib/samba/private/msg.sock/15334
unix	2	[ ]	DGRAM	5450938	/var/lib/samba/private/msg.sock/15484
unix	2	[ ]	DGRAM	5451898	/var/lib/samba/private/msg.sock/15485
unix	9	[ ]	DGRAM	437	/run/systemd/journal/socket
unix	17	[ ]	DGRAM	442	/run/systemd/journal/dev-log
unix	2	[ ]	DGRAM	446	/run/systemd/journal/syslog
unix	2	[ ]	DGRAM	17432	/var/spool/postfix/dev/log
unix	3	[ ]	DGRAM	425	/run/systemd/notify
unix	3	[ ]	STREAM	CONNECTED	52377875 /var/run/dbus/system_bus_socket
unix	2	[ ]	DGRAM	43275084	
unix	2	[ ]	DGRAM	43777982	
unix	3	[ ]	STREAM	CONNECTED	54278076
unix	2	[ ]	DGRAM	54278058	
unix	2	[ ]	STREAM	CONNECTED	39728381
unix	3	[ ]	STREAM	CONNECTED	19172562 /var/run/dbus/system_bus_socket
unix	3	[ ]	STREAM	CONNECTED	19175671 /run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	54278075
unix	2	[ ]	DGRAM	54263687	
unix	3	[ ]	STREAM	CONNECTED	19176849
unix	3	[ ]	STREAM	CONNECTED	52376979
unix	3	[ ]	STREAM	CONNECTED	20908
unix	2	[ ]	DGRAM	42869137	
unix	3	[ ]	STREAM	CONNECTED	20668
unix	2	[ ]	DGRAM	42865382	
unix	3	[ ]	STREAM	CONNECTED	20890
unix	3	[ ]	STREAM	CONNECTED	20868
unix	3	[ ]	STREAM	CONNECTED	20843
unix	3	[ ]	STREAM	CONNECTED	20887
unix	3	[ ]	STREAM	CONNECTED	20896
unix	3	[ ]	STREAM	CONNECTED	20848
unix	3	[ ]	STREAM	CONNECTED	20884
unix	3	[ ]	STREAM	CONNECTED	16529
unix	3	[ ]	STREAM	CONNECTED	20902
unix	3	[ ]	STREAM	CONNECTED	17690
unix	3	[ ]	STREAM	CONNECTED	14857
unix	3	[ ]	STREAM	CONNECTED	17299
unix	3	[ ]	DGRAM	19170799	
unix	3	[ ]	STREAM	CONNECTED	20877
unix	3	[ ]	STREAM	CONNECTED	16215 /var/run/dbus/system_bus_socket
unix	3	[ ]	STREAM	CONNECTED	16788 /run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20907
unix	3	[ ]	STREAM	CONNECTED	20889
unix	3	[ ]	STREAM	CONNECTED	20878
unix	3	[ ]	STREAM	CONNECTED	20849
unix	3	[ ]	STREAM	CONNECTED	20898
unix	2	[ ]	DGRAM	54278570	
unix	3	[ ]	STREAM	CONNECTED	20892
unix	3	[ ]	STREAM	CONNECTED	20869
unix	3	[ ]	STREAM	CONNECTED	42865370 /run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	43778014 /run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20871
unix	3	[ ]	STREAM	CONNECTED	18373

unix	3	[]	STREAM	CONNECTED	19171656	
unix	3	[]	STREAM	CONNECTED	20874	
unix	3	[]	STREAM	CONNECTED	20893	
unix	2	[]	DGRAM		20821	
unix	2	[]	DGRAM		17578	
unix	2	[]	DGRAM		43777005	
unix	3	[]	STREAM	CONNECTED	20895	
unix	3	[]	STREAM	CONNECTED	16530	/run/systemd/journal/stdout
unix	3	[]	STREAM	CONNECTED	20886	
unix	2	[]	DGRAM		18970	
unix	3	[]	STREAM	CONNECTED	43779963	
unix	3	[]	STREAM	CONNECTED	16768	/var/run/dbus/system_bus_socket
unix	3	[]	DGRAM		19170800	
unix	3	[]	STREAM	CONNECTED	20904	
unix	2	[]	DGRAM		14698	
unix	2	[]	DGRAM		17438	
unix	3	[]	STREAM	CONNECTED	43780503	/run/systemd/journal/stdout
unix	3	[]	STREAM	CONNECTED	19636	/var/run/dbus/system_bus_socket
unix	3	[]	DGRAM		19170798	
unix	2	[]	DGRAM		18682	
unix	3	[]	STREAM	CONNECTED	15547	/run/systemd/journal/stdout
unix	3	[]	STREAM	CONNECTED	17442	
unix	3	[]	STREAM	CONNECTED	20910	
unix	3	[]	STREAM	CONNECTED	20853	
unix	3	[]	STREAM	CONNECTED	17441	
unix	3	[]	STREAM	CONNECTED	15612	
unix	3	[]	STREAM	CONNECTED	20899	
unix	3	[]	STREAM	CONNECTED	19170228	/run/systemd/journal/stdout
unix	3	[]	STREAM	CONNECTED	17300	
unix	3	[]	STREAM	CONNECTED	20883	
unix	3	[]	STREAM	CONNECTED	20852	
unix	3	[]	STREAM	CONNECTED	17601	
unix	3	[]	STREAM	CONNECTED	20911	
unix	3	[]	STREAM	CONNECTED	43781231	
unix	3	[]	STREAM	CONNECTED	42869131	
unix	3	[]	STREAM	CONNECTED	5450945	
unix	3	[]	STREAM	CONNECTED	20872	
unix	3	[]	STREAM	CONNECTED	12702	
unix	3	[]	STREAM	CONNECTED	20901	
unix	3	[]	STREAM	CONNECTED	20881	
unix	2	[]	DGRAM		19170793	
unix	3	[]	STREAM	CONNECTED	20844	
unix	3	[]	STREAM	CONNECTED	20875	
unix	2	[]	DGRAM		17295	
unix	3	[]	STREAM	CONNECTED	522	/run/systemd/journal/stdout
unix	3	[]	STREAM	CONNECTED	5450944	
unix	3	[]	STREAM	CONNECTED	20905	
unix	3	[]	STREAM	CONNECTED	19172635	
unix	3	[]	STREAM	CONNECTED	20880	
unix	2	[]	DGRAM		43781278	
unix	3	[]	DGRAM		19170797	
unix	3	[]	STREAM	CONNECTED	43781299	/var/run/dbus/system_bus_socket

unix	3	[ ]	STREAM	CONNECTED	14683	/run/systemd/journal/stdout
unix	2	[ ]	DGRAM		496	
unix	3	[ ]	STREAM	CONNECTED	20855	
unix	3	[ ]	STREAM	CONNECTED	16789	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20866	
unix	3	[ ]	STREAM	CONNECTED	20862	
unix	3	[ ]	STREAM	CONNECTED	43780609	
unix	2	[ ]	DGRAM		19174805	
unix	3	[ ]	STREAM	CONNECTED	43777935	/run/systemd/journal/stdout
unix	3	[ ]	DGRAM		19174810	
unix	3	[ ]	STREAM	CONNECTED	17577	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	14256	
unix	3	[ ]	STREAM	CONNECTED	43780468	
unix	3	[ ]	STREAM	CONNECTED	14328	
unix	3	[ ]	STREAM	CONNECTED	20859	
unix	3	[ ]	STREAM	CONNECTED	18374	/var/run/dbus/system_bus_socket
unix	3	[ ]	STREAM	CONNECTED	20865	
unix	3	[ ]	STREAM	CONNECTED	16531	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	16217	
unix	3	[ ]	STREAM	CONNECTED	15773	
unix	3	[ ]	DGRAM		19174809	
unix	3	[ ]	STREAM	CONNECTED	20856	
unix	2	[ ]	DGRAM		52378698	
unix	3	[ ]	STREAM	CONNECTED	20860	
unix	3	[ ]	STREAM	CONNECTED	16674	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20863	
unix	3	[ ]	STREAM	CONNECTED	15704	
unix	3	[ ]	STREAM	CONNECTED	54276873	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20916	
unix	3	[ ]	STREAM	CONNECTED	20913	
unix	3	[ ]	STREAM	CONNECTED	15705	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20923	
unix	3	[ ]	STREAM	CONNECTED	17774	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20929	
unix	3	[ ]	STREAM	CONNECTED	20928	
unix	2	[ ]	DGRAM		23026070	
unix	2	[ ]	DGRAM		54274953	
unix	3	[ ]	STREAM	CONNECTED	20926	
unix	3	[ ]	STREAM	CONNECTED	20917	
unix	2	[ ]	DGRAM		20967	
unix	3	[ ]	STREAM	CONNECTED	43276943	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	20922	
unix	3	[ ]	STREAM	CONNECTED	20914	
unix	3	[ ]	STREAM	CONNECTED	54274947	
unix	3	[ ]	STREAM	CONNECTED	15637	/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	16607	
unix	3	[ ]	STREAM	CONNECTED	20925	
unix	2	[ ]	DGRAM		43273943	
unix	3	[ ]	STREAM	CONNECTED	16867	
unix	3	[ ]	STREAM	CONNECTED	20920	
unix	3	[ ]	STREAM	CONNECTED	20932	
unix	2	[ ]	DGRAM		17875	

```

unix 3  [ ]  STREAM  CONNECTED  20931
unix 3  [ ]  STREAM  CONNECTED  16741
unix 3  [ ]  STREAM  CONNECTED  20934
unix 3  [ ]  STREAM  CONNECTED  43273937
unix 3  [ ]  STREAM  CONNECTED  20919
unix 2  [ ]  DGRAM    20942
unix 3  [ ]  STREAM  CONNECTED  20935

```

#### 4. Polecenie *ping*

PING mts.wibro.agh.edu.pl (149.156.115.209) 56(84) bytes of data.

```

64 bytes from mts.wibro.agh.edu.pl (149.156.115.209): icmp_seq=1 ttl=64 time=0.052 ms
64 bytes from mts.wibro.agh.edu.pl (149.156.115.209): icmp_seq=2 ttl=64 time=0.040 ms
64 bytes from mts.wibro.agh.edu.pl (149.156.115.209): icmp_seq=3 ttl=64 time=0.031 ms
64 bytes from mts.wibro.agh.edu.pl (149.156.115.209): icmp_seq=4 ttl=64 time=0.031 ms

```

PING google.com (216.58.215.78) 56(84) bytes of data.

```

64 bytes from waw02s16-in-f14.1e100.net (216.58.215.78): icmp_seq=1 ttl=55 time=12.6 ms
64 bytes from waw02s16-in-f14.1e100.net (216.58.215.78): icmp_seq=2 ttl=55 time=12.7 ms
64 bytes from waw02s16-in-f14.1e100.net (216.58.215.78): icmp_seq=3 ttl=55 time=12.6 ms
64 bytes from waw02s16-in-f14.1e100.net (216.58.215.78): icmp_seq=4 ttl=55 time=12.7 ms

```

PING wp.pl (212.77.98.9) 56(84) bytes of data.

```

64 bytes from www.wp.pl (212.77.98.9): icmp_seq=1 ttl=57 time=13.2 ms
64 bytes from www.wp.pl (212.77.98.9): icmp_seq=2 ttl=57 time=13.2 ms
64 bytes from www.wp.pl (212.77.98.9): icmp_seq=3 ttl=57 time=13.2 ms
64 bytes from www.wp.pl (212.77.98.9): icmp_seq=4 ttl=57 time=13.2 ms

```

PING allegro.pl (5.134.210.134) 56(84) bytes of data.

```

64 bytes from 5.134.210.134: icmp_seq=1 ttl=249 time=12.4 ms
64 bytes from 5.134.210.134: icmp_seq=2 ttl=249 time=12.3 ms
64 bytes from 5.134.210.134: icmp_seq=3 ttl=249 time=12.3 ms
64 bytes from 5.134.210.134: icmp_seq=4 ttl=249 time=12.3 ms

```

PING przegladSPORTOWY.pl (213.180.141.155) 56(84) bytes of data.

```

64 bytes from oa155.any.onet.pl (213.180.141.155): icmp_seq=1 ttl=58 time=0.774 ms
64 bytes from oa155.any.onet.pl (213.180.141.155): icmp_seq=2 ttl=58 time=0.756 ms
64 bytes from oa155.any.onet.pl (213.180.141.155): icmp_seq=3 ttl=58 time=0.754 ms
64 bytes from oa155.any.onet.pl (213.180.141.155): icmp_seq=4 ttl=58 time=0.739 ms

```

#### 5. Translacja adresów

```

youtube.com → (172.217.16.14)
ebay.com → (66.135.216.190)
onet.pl → (213.180.141.140)
facebook.com → (31.13.81.36)
wikipedia.com → (91.198.174.192)

```

Translacji odwrotnej można dokonać poprzez '-a'.

## 6. Polecenie *nslookup*

nslookup mts.wibro.agh.edu.pl

Server: 149.156.96.9

Address: 149.156.96.9#53

Name: mts.wibro.agh.edu.pl

Address: 149.156.115.209

nslookup google.com

Server: 149.156.96.9

Address: 149.156.96.9#53

Non-authoritative answer:

Name: google.com

Address: 216.58.215.78

nslookup wp.pl

Server: 149.156.96.9

Address: 149.156.96.9#53

Non-authoritative answer:

Name: wp.pl

Address: 212.77.98.9

nslookup allegro.pl

Server: 149.156.96.9

Address: 149.156.96.9#53

Non-authoritative answer:

Name: allegro.pl

Address: 5.134.210.137

nslookup przegladsportowy.pl

Server: 149.156.96.9

Address: 149.156.96.9#53

Non-authoritative answer:

Name: przegladsportowy.pl

Address: 213.180.141.155



## 7. Polecenie *tracert*

tracert mts.wibro.agh.edu.pl

Tracing route to mts.wibro.agh.edu.pl [149.156.115.209]  
over a maximum of 30 hops:

1	2 ms	3 ms	2 ms	192.168.252.1
2	2 ms	2 ms	3 ms	192.168.252.1
3	14 ms	16 ms	15 ms	10.255.0.1
4	18 ms	17 ms	19 ms	host0-89.multi-ip.pl [62.122.120.89]
5	15 ms	16 ms	17 ms	83-168-83-45.static.espol.com.pl [83.168.83.45]
6	274 ms	255 ms	276 ms	giganetua.ip4.epix.net.pl [178.216.40.95]
7	50 ms	50 ms	49 ms	uarnet-ix.giganet.ua [185.1.62.22]
8	49 ms	47 ms	48 ms	194.44.212.57
9	259 ms	272 ms	*	194.44.212.254
10	65 ms	87 ms	72 ms	z-UARNET.poznan-gw2-amsix.rtr.pionier.gov.pl [212.191.237.33]
11	61 ms	57 ms	54 ms	z-poznan-gw2-amsix.Krakow-COM.rtr.pionier.gov.pl [212.191.237.62]
12	59 ms	53 ms	64 ms	149.156.0.54
13	52 ms	53 ms	54 ms	149.156.6.226
14	54 ms	61 ms	55 ms	b1rtr.agh.edu.pl [149.156.6.219]
15	51 ms	49 ms	50 ms	mts.wibro.agh.edu.pl [149.156.115.209]

Trace complete.

tracert google.com

Tracing route to google.com [172.217.20.174]  
over a maximum of 30 hops:

1	2 ms	3 ms	2 ms	192.168.252.1
2	6 ms	2 ms	2 ms	192.168.252.1
3	20 ms	18 ms	14 ms	10.255.0.1
4	19 ms	17 ms	17 ms	host0-89.multi-ip.pl [62.122.120.89]
5	18 ms	17 ms	20 ms	83-168-83-45.static.espol.com.pl [83.168.83.45]
6	28 ms	27 ms	27 ms	206.59.126.176.ip4.epix.net.pl [176.126.59.206]
7	42 ms	38 ms	*	ae4-153.cr1-waw1.ip4.gtt.net [46.33.93.153]
8	39 ms	36 ms	32 ms	ip4.gtt.net [77.67.83.98]
9	31 ms	30 ms	38 ms	108.170.250.209
10	34 ms	34 ms	29 ms	216.239.41.167
11	35 ms	35 ms	32 ms	waw02s07-in-f14.1e100.net [172.217.20.174]

Trace complete.

tracert wp.pl

Tracing route to wp.pl [212.77.98.9]  
over a maximum of 30 hops:

1	2 ms	2 ms	2 ms	192.168.252.1
2	2 ms	2 ms	2 ms	192.168.252.1
3	147 ms	135 ms	117 ms	10.255.0.1
4	55 ms	41 ms	46 ms	host0-89.multi-ip.pl [62.122.120.89]
5	89 ms	72 ms	64 ms	83-168-83-45.static.espol.com.pl [83.168.83.45]
6	135 ms	130 ms	243 ms	netia-gw.pozix.pl [185.1.4.44]
7	184 ms	207 ms	244 ms	83.238.250.128
8	240 ms	*	*	warsc001rt12.inetia.pl [83.238.248.175]
9	*	72 ms	400 ms	87.204.224.71
10	85 ms	81 ms	76 ms	83.238.6.13
11	373 ms	144 ms	161 ms	www.wp.pl [212.77.98.9]

Trace complete.

tracert allegro.pl

Tracing route to allegro.pl [5.134.213.80]  
over a maximum of 30 hops:

1	2 ms	2 ms	2 ms	192.168.252.1
2	2 ms	2 ms	2 ms	192.168.252.1
3	24 ms	25 ms	19 ms	10.255.0.1
4	33 ms	23 ms	32 ms	host0-89.multi-ip.pl [62.122.120.89]
5	25 ms	31 ms	32 ms	83-168-83-45.static.espol.com.pl [83.168.83.45]
6	42 ms	39 ms	*	allegropl.ip4.epix.net.pl [178.216.40.177]
7	49 ms	41 ms	40 ms	5.134.208.245
8	*	49 ms	43 ms	5.134.208.17
9	38 ms	37 ms	39 ms	5.134.213.80

Trace complete.

tracert przegladSPORTOWY.pl

Tracing route to przegladSPORTOWY.pl [213.180.141.155]  
over a maximum of 30 hops:

1	2 ms	2 ms	2 ms	192.168.252.1
2	3 ms	2 ms	2 ms	192.168.252.1
3	28 ms	20 ms	19 ms	10.255.0.1
4	17 ms	17 ms	18 ms	host0-89.multi-ip.pl [62.122.120.89]
5	24 ms	23 ms	22 ms	83-168-83-45.static.espol.com.pl [83.168.83.45]
6	36 ms	30 ms	31 ms	onet-gw.pozix.pl [185.1.4.84]
7	*	*	*	Request timed out.

8 \* 37 ms 37 ms oa155.any.onet.pl [213.180.141.155]

Trace complete.

## **8., 9. Wireshark – badanie sieci**

Prędkość przybywania pakietów przy wyłączonej przeglądarce to jeden lub kilka na sekundę. Polecenie ping powoduje przyrost liczby pakietów do kilku na sekundę. Po włączeniu jakiegokolwiek strony w przeglądarce liczba pakietów skacze do ponad 700 w sekundę i rośnie. Po kilkunastu sekundach są już ich tysiące. Widać zatem, że łączenie się z internetem powoduje większy ruch w sieci lokalnej.