

Bazy Danych i Usługi Sieciowe

Ćwiczenia VI

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[http://bioexploratorium.pl/wiki/
Bazy_Danych_i_USlugi_Sieciowe_-_2011z](http://bioexploratorium.pl/wiki/Bazy_Danych_i_USlugi_Sieciowe_-_2011z)

Adres MAC

```
[pawel@labdb ~]$ /sbin/ifconfig
eth0      Link encap:Ethernet  HWaddr 00:16:36:26:4A:A5
          inet addr:212.87.8.59  Bcast:212.87.8.255  Mask:255.255.255.0
          inet6 addr: fe80::216:36ff:fe26:4aa5/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:19580563 errors:0 dropped:0 overruns:0 frame:0
          TX packets:801026 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1291695429 (1.2 GiB)  TX bytes:104853922 (99.9 MiB)

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:16436  Metric:1
          RX packets:3622 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3622 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:743840 (726.4 KiB)  TX bytes:743840 (726.4 KiB)
```

Inne adresy MAC – protokół ARP

```
[pawel@labdb ~]$ /sbin/arp
```

Address	HWtype	HWaddress	Flags	Mask
212.87.8.254	ether	00:19:E2:59:5F:F0	C	

```
[pawel@labdb ~]$ ping 212.87.8.60
```

```
PING 212.87.8.60 (212.87.8.60) 56(84) bytes of data.
```

```
64 bytes from 212.87.8.60: icmp_seq=1 ttl=255 time=1.51 ms
```

```
--- 212.87.8.60 ping statistics ---
```

```
3 packets transmitted, 3 received, 0% packet loss, time 2001ms
```

```
rtt min/avg/max/mdev = 0.242/0.686/1.515/0.586 ms
```

```
[pawel@labdb ~]$ /sbin/arp -n
```

Address	HWtype	HWaddress	Flags	Mask
212.87.8.60	ether	00:14:4F:2D:87:66	C	
212.87.8.254	ether	00:19:E2:59:5F:F0	C	

```
[pawel@labdb ~]$ /sbin/arp
```

Address	HWtype	HWaddress	Flags	Mask
gont.bioexploratorium.p	ether	00:14:4F:2D:87:66	C	
212.87.8.254	ether	00:19:E2:59:5F:F0	C	

Adres IP

```
[pawel@labdb ~]$ /sbin/ifconfig
eth0      Link encap:Ethernet  HWaddr 00:16:36:26:4A:A5
          inet addr:212.87.8.59  Bcast:212.87.8.255  Mask:255.255.255.0
          inet6 addr: fe80::216:36ff:fe26:4aa5/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:19580563 errors:0 dropped:0 overruns:0 frame:0
          TX packets:801026 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1291695429 (1.2 GiB)  TX bytes:104853922 (99.9 MiB)

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:16436  Metric:1
          RX packets:3622 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3622 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:743840 (726.4 KiB)  TX bytes:743840 (726.4 KiB)
```

Inne adresy IP – test połączenia

```
[pawel@labdb ~]$ ping 212.87.8.60
PING 212.87.8.60 (212.87.8.60) 56(84) bytes of data.
64 bytes from 212.87.8.60: icmp_seq=1 ttl=255 time=0.528 ms
64 bytes from 212.87.8.60: icmp_seq=2 ttl=255 time=0.313 ms
64 bytes from 212.87.8.60: icmp_seq=3 ttl=255 time=0.314 ms
64 bytes from 212.87.8.60: icmp_seq=4 ttl=255 time=0.333 ms
64 bytes from 212.87.8.60: icmp_seq=5 ttl=255 time=0.313 ms
64 bytes from 212.87.8.60: icmp_seq=6 ttl=255 time=0.341 ms
64 bytes from 212.87.8.60: icmp_seq=7 ttl=255 time=0.316 ms
64 bytes from 212.87.8.60: icmp_seq=8 ttl=255 time=0.332 ms

--- 212.87.8.60 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 6999ms
rtt min/avg/max/mdev = 0.313/0.348/0.528/0.072 ms
```

Inne adresy IP – test połączenia

```
[pawel@labdb ~]$ ping 193.0.80.28
PING 193.0.80.28 (193.0.80.28) 56(84) bytes of data.
64 bytes from 193.0.80.28: icmp_seq=1 ttl=61 time=1.60 ms
64 bytes from 193.0.80.28: icmp_seq=2 ttl=61 time=1.87 ms
64 bytes from 193.0.80.28: icmp_seq=3 ttl=61 time=1.46 ms
64 bytes from 193.0.80.28: icmp_seq=4 ttl=61 time=1.92 ms
64 bytes from 193.0.80.28: icmp_seq=5 ttl=61 time=1.84 ms
64 bytes from 193.0.80.28: icmp_seq=6 ttl=61 time=1.47 ms
64 bytes from 193.0.80.28: icmp_seq=7 ttl=61 time=1.91 ms
64 bytes from 193.0.80.28: icmp_seq=8 ttl=61 time=1.47 ms

--- 193.0.80.28 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7002ms
rtt min/avg/max/mdev = 1.464/1.698/1.928/0.201 ms
```

Trasowanie – którą do wyjścia?

```
[pawel@labdb ~]$ /sbin/route -n
```

```
Kernel IP routing table
```

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
212.87.8.0	0.0.0.0	255.255.255.0	U	0	0	0	eth0
169.254.0.0	0.0.0.0	255.255.0.0	U	0	0	0	eth0
0.0.0.0	212.87.8.254	0.0.0.0	UG	0	0	0	eth0

```
[root@xen4 ~]# /sbin/route -n
```

```
Kernel IP routing table
```

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.3.0.0	0.0.0.0	255.255.0.0	U	0	0	0	eth1
10.0.0.0	0.0.0.0	255.255.0.0	U	0	0	0	eth0
10.100.0.0	0.0.0.0	255.255.0.0	U	0	0	0	eth2
169.254.0.0	0.0.0.0	255.255.0.0	U	0	0	0	eth2
0.0.0.0	10.0.1.5	0.0.0.0	UG	0	0	0	eth0

Trasowanie – którą do celu?

```
[pawel@labdb ~]$ traceroute -I 212.87.8.60
traceroute to 212.87.8.60 (212.87.8.60), 30 hops max, 40 byte packets
 1  gont.bioexploratorium.pl (212.87.8.60)  0.618 ms  0.651 ms  0.710 ms
```

```
[pawel@labdb ~]$ traceroute -I 193.0.80.28
traceroute to 193.0.80.28 (193.0.80.28), 30 hops max, 40 byte packets
 1  212.87.8.254 (212.87.8.254)  0.724 ms  0.797 ms  0.862 ms
 2  fuw-r1-193-0-64-118.rtr.net.icm.edu.pl (193.0.64.118)  6.976 ms  7.449 ms  7.905 ms
 3  anotek.fuw.edu.pl (193.0.80.28)  4.290 ms  4.273 ms  4.297 ms
```

```
[pawel@labdb ~]$ traceroute -I google.com
traceroute to google.com (209.85.148.105), 30 hops max, 40 byte packets
 1  212.87.8.254 (212.87.8.254)  10.268 ms  10.235 ms  10.208 ms
 2  z-ochoty.poznan-gw.10Gb.rtr.pionier.gov.pl (212.191.224.33)  15.281 ms  15.023 ms  15.023 ms
 3  pionier.rtl.poz.pl.geant.net (62.40.124.181)  15.047 ms  15.188 ms  15.174 ms
 4  so-7-1-0.rtl.fra.de.geant2.net (62.40.112.61)  27.546 ms  27.657 ms  27.467 ms
 5  google-gw.rtl.fra.de.geant.net (62.40.125.202)  27.454 ms  27.443 ms  27.406 ms
 6  209.85.241.110 (209.85.241.110)  27.511 ms  17.984 ms  17.825 ms
 7  209.85.254.41 (209.85.254.41)  23.212 ms  18.968 ms  18.932 ms
 8  fra07s07-in-f105.1e100.net (209.85.148.105)  18.428 ms  18.160 ms  18.260 ms
```

System nazw domen

```
[pawel@labdb ~]$ dig bioexploratorium.pl

; <<> DiG 9.3.6-P1-RedHat-9.3.6-16.P1.el5_7.1 <<> bioexploratorium.pl
;; global options: printcmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 3011
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 3, ADDITIONAL: 3

;; QUESTION SECTION:
bioexploratorium.pl.      IN      A

;; ANSWER SECTION:
bioexploratorium.pl.     86400  IN      A       212.87.8.60

;; AUTHORITY SECTION:
bioexploratorium.pl.     86400  IN      NS      ns.bioexploratorium.pl.
bioexploratorium.pl.     86400  IN      NS      ns1.uw.edu.pl.
bioexploratorium.pl.     86400  IN      NS      ns2.uw.edu.pl.

;; ADDITIONAL SECTION:
ns.bioexploratorium.pl.  86400  IN      A       212.87.8.11
ns1.uw.edu.pl.           86400  IN      A       193.0.71.133
ns2.uw.edu.pl.           86400  IN      A       212.87.0.71

;; Query time: 2 msec
;; SERVER: 212.87.0.72#53(212.87.0.72)
;; WHEN: Tue Nov 22 21:28:45 2011
;; MSG SIZE rcvd: 161
```

System nazw domen c.d.

```
[pawel@labdb ~]$ dig festiwalnauki.edu.pl

; <<> DiG 9.3.6-P1-RedHat-9.3.6-16.P1.el5_7.1 <<> festiwalnauki.edu.pl
;; global options: printcmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 38550
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 3, ADDITIONAL: 3

;; QUESTION SECTION:
festiwalnauki.edu.pl.      IN      A

;; ANSWER SECTION:
festiwalnauki.edu.pl.    86400  IN      A      212.87.8.60

;; AUTHORITY SECTION:
festiwalnauki.edu.pl.    86400  IN      NS      ns1.uw.edu.pl.
festiwalnauki.edu.pl.    86400  IN      NS      ns2.uw.edu.pl.
festiwalnauki.edu.pl.    86400  IN      NS      ns.festiwalnauki.edu.pl.

;; ADDITIONAL SECTION:
ns.festiwalnauki.edu.pl. 86400  IN      A      212.87.8.11
ns1.uw.edu.pl.           86400  IN      A      193.0.71.133
ns2.uw.edu.pl.           86400  IN      A      212.87.0.71

;; Query time: 2 msec
;; SERVER: 212.87.0.72#53(212.87.0.72)
;; WHEN: Tue Nov 22 21:29:42 2011
;; MSG SIZE rcvd: 158
```

System nazw domen c.d.

```
[pawel@labdb ~]$ dig www.fuw.edu.pl
```

```
; <<> DiG 9.3.6-P1-RedHat-9.3.6-16.P1.el5_7.1 <<> www.fuw.edu.pl
;; global options: printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 48260
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 3, ADDITIONAL: 3

;; QUESTION SECTION:
www.fuw.edu.pl.                IN      A

;; ANSWER SECTION:
www.fuw.edu.pl.                394     IN      CNAME   anotek.fuw.edu.pl.
anotek.fuw.edu.pl.            145     IN      A        193.0.80.28

;; AUTHORITY SECTION:
fuw.edu.pl.                    2344    IN      NS       dns.fuw.edu.pl.
fuw.edu.pl.                    2344    IN      NS       ns1.uw.edu.pl.
fuw.edu.pl.                    2344    IN      NS       dns2.fuw.edu.pl.

;; ADDITIONAL SECTION:
dns.fuw.edu.pl.                2344    IN      A        193.0.80.11
ns1.uw.edu.pl.                 86400   IN      A        193.0.71.133
dns2.fuw.edu.pl.              2863    IN      A        193.0.80.12

;; Query time: 2 msec
;; SERVER: 212.87.0.72#53(212.87.0.72)
;; WHEN: Tue Nov 22 21:30:14 2011
;; MSG SIZE rcvd: 175
```

System nazw domen c.d.

```
[pawel@labdb ~]$ dig google.com

; <<> DiG 9.3.6-P1-RedHat-9.3.6-16.P1.el5_7.1 <<> google.com
;; global options: printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 44692
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 4, ADDITIONAL: 4

;; QUESTION SECTION:
;google.com.                IN      A

;; ANSWER SECTION:
google.com.                120     IN      A      209.85.148.104
google.com.                120     IN      A      209.85.148.105
google.com.                120     IN      A      209.85.148.106
google.com.                120     IN      A      209.85.148.147
google.com.                120     IN      A      209.85.148.99
google.com.                120     IN      A      209.85.148.103

;; AUTHORITY SECTION:
google.com.                2164    IN      NS     ns4.google.com.
google.com.                2164    IN      NS     ns1.google.com.
google.com.                2164    IN      NS     ns2.google.com.
google.com.                2164    IN      NS     ns3.google.com.

;; ADDITIONAL SECTION:
ns1.google.com.           715     IN      A      216.239.32.10
ns2.google.com.           3264    IN      A      216.239.34.10
ns3.google.com.           3264    IN      A      216.239.36.10
ns4.google.com.           2502    IN      A      216.239.38.10

;; Query time: 2 msec
;; SERVER: 212.87.0.72#53(212.87.0.72)
```

System nazw domen c.d.

```
[pawel@labdb ~]$ dig @ns.bioexploratorium.pl google.com

; <<> DiG 9.3.6-P1-RedHat-9.3.6-16.P1.el5_7.1 <<> @ns.bioexploratorium.pl google.com
; (1 server found)
;; global options: printcmd
;; Got answer:
;; ->HEADER<<- opcode: QUERY, status: REFUSED, id: 3063
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;google.com.                IN      A

;; Query time: 138 msec
;; SERVER: 212.87.8.11#53(212.87.8.11)
;; WHEN: Tue Nov 22 21:32:05 2011
;; MSG SIZE rcvd: 28
```

HTTP

```
[pawel@labdb ~]$ telnet www.fuw.edu.pl 80
Trying 193.0.80.28...
Connected to www.fuw.edu.pl (193.0.80.28).
Escape character is '^]'.
GET /informacje-ogolne.html HTTP/1.1
Host: www.fuw.edu.pl

HTTP/1.1 200 OK
Date: Tue, 22 Nov 2011 20:59:45 GMT
Server: Apache/2.2.8 (Fedora)
X-Powered-By: PHP/5.2.6
Set-Cookie: PHPSESSID=7nurrleentc4a90pkphi153211; path=/
Expires: Wed, 28 Jan 1976 11:52:00 GMT
Cache-Control: no-cache
Pragma: no-cache
Cache-Control: pre-check=0, post-check=0
Last-Modified: Tue, 22 Nov 2011 20:59:58 GMT
Connection: close
Transfer-Encoding: chunked
Content-Type: text/html; charset=UTF-8
```

64f4

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="pl" lang="pl">
```

Wysyłamy e-mail

```
[pawel@labdb ~]$ telnet localhost 25
Trying 127.0.0.1...
Connected to localhost.localdomain (127.0.0.1).
Escape character is '^]'.
220 labdb.bioexploratorium.pl ESMTP Sendmail 8.13.8/8.13.8; Tue, 22 Nov 2011 22:32:15 +0100
HELO labdb
250 labdb.bioexploratorium.pl Hello localhost.localdomain [127.0.0.1], pleased to meet you
MAIL FROM: johndoe@wp.pl
250 2.1.0 johndoe@wp.pl... Sender ok
RCPT TO: pawelld@gmail.com
250 2.1.5 pawelld@gmail.com... Recipient ok
DATA
354 Enter mail, end with "." on a line by itself
From: "John Doe" <johndoe@wp.pl>
To: pawelld@gmail.com
Subject: My first e-mail

Hello Pawel,
This is a test message.

Cheers,

Joe
.
250 2.0.0 pAMLWF3m010557 Message accepted for delivery
QUIT
221 2.0.0 labdb.bioexploratorium.pl closing connection
Connection closed by foreign host.
```