

Comenzi Windows pentru configurare retea

1. Introducere

În continuare sunt prezentate următoarele comenzi:

- ipconfig;
- ping;
- tracert;
- netstat;
- route print.

2. Comanda *ipconfig*

Se intră în modul comandă prompter (command prompt) prin click pe butonul Start, selectarea opțiunii Run apoi tastarea comenzii *cmd* și Enter sau click pe butonul OK.

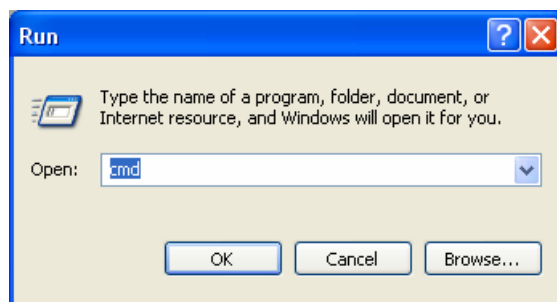


Fig. 1. Fereastra Run

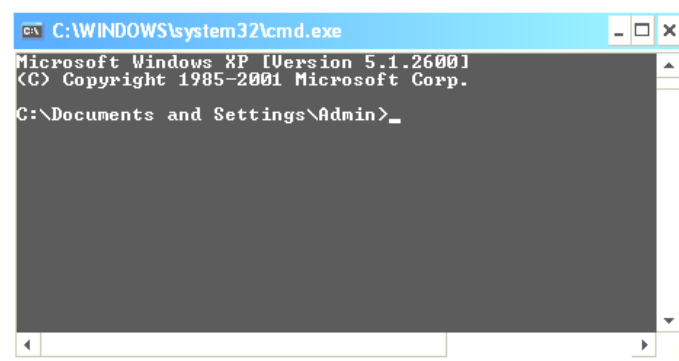


Fig. 2. Modul comandă prompter

Permite obținerea de informații despre configurația TCP/IP a rețelei.

Sintaxa

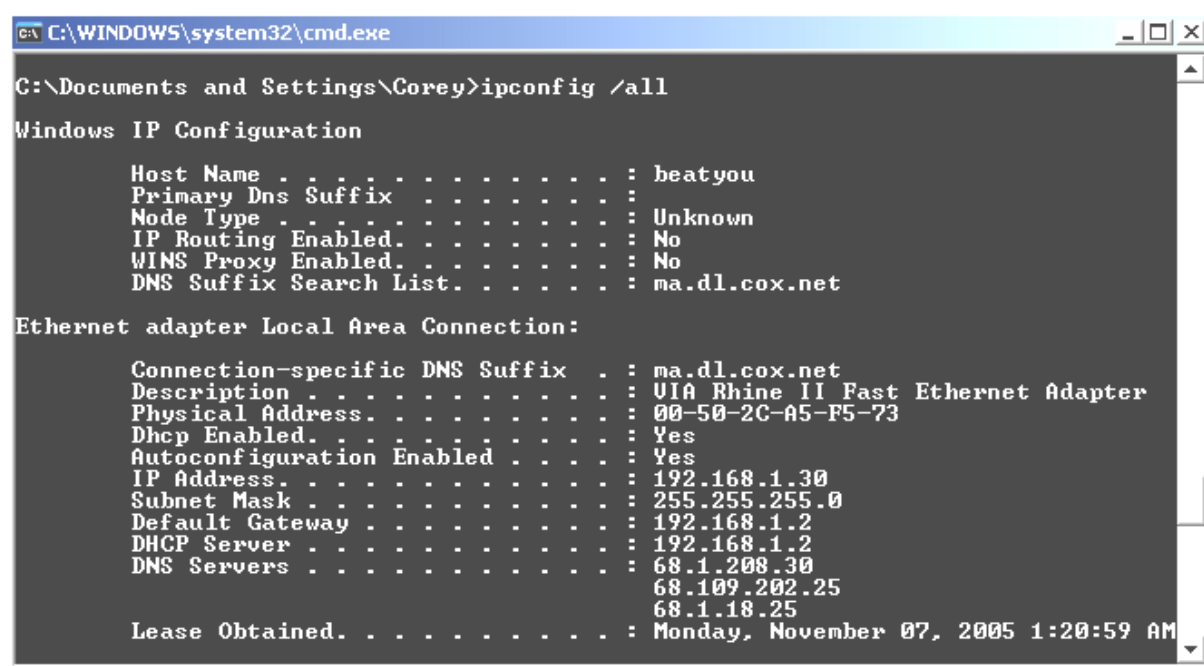
ipconfig [/all] [/renew *[Adapter]*] [/release *[Adapter]*] [/flushdns] [/displaydns] [/registerdns] [/showclassid *Adapter*] [/setclassid *Adapter* *[ClassID]*]

Folosind comanda sub forma

ipconfig

se afișează informații de bază despre configurația TCP/IP (adresa IP, masca de subrețea și gateway-ul), pentru toate plăcile de rețea.

/all, afișarea informațiilor complete despre configurația TCP/IP, pentru toate plăcile de rețea, suplimentar față de varianta precedentă afișează setările DNS (Domain Name System) și WINGS (Windows Internet Naming Service).



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Corey>ipconfig /all

Windows IP Configuration

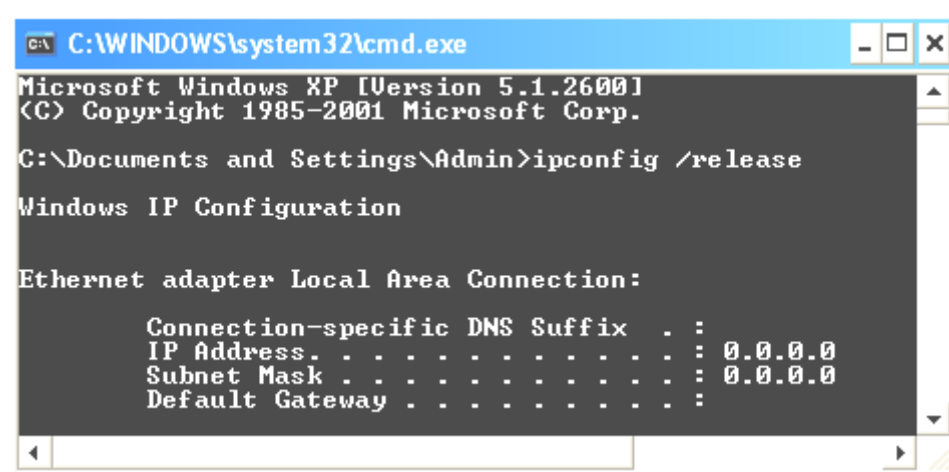
    Host Name . . . . . : beatyou
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Unknown
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No
    DNS Suffix Search List. . . . . : ma.dl.cox.net

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . : ma.dl.cox.net
    Description . . . . . : UIA Rhine II Fast Ethernet Adapter
    Physical Address. . . . . : 00-50-2C-A5-F5-73
    Dhcp Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    IP Address. . . . . : 192.168.1.30
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.2
    DHCP Server . . . . . : 192.168.1.2
    DNS Servers . . . . . : 68.1.208.30
                           68.109.202.25
                           68.1.18.25
    Lease Obtained. . . . . : Monday, November 07, 2005 1:20:59 AM
```

Fig. 3. Informații complete despre configurația TCP/IP

/release [Adapter], dezactivarea tuturor conexiunilor TCP/IP sau a unei conexiunii specificate (prin Adapter), pentru plăcile de rețea configurate să obțină adrese IP automat;



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>ipconfig /release

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . :
    IP Address. . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . :
```

Fig. 4. Dezactivarea conexiune TCP/IP

/renew [Adapter], reactivarea tuturor conexiunilor TCP/IP sau a unei conexiunii specificate (prin Adapter), pentru plăcile de rețea configurate să obțină adrese IP automat;

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>ipconfig /renew

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 1.3.11.108
    Subnet Mask . . . . . : 255.255.255.224
    Default Gateway . . . . . :
```

Fig. 5. Rezultatul comenzii

Opțiunile */release* și */renew* funcționează numai în cazul utilizării protocolului pentru alocarea dinamică de adrese IP, DHCP-Dynamic Host Configuration Protocol.

/?, afișarea sintaxei complete a comenzii.

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

C:\Documents and Settings\Admin>ipconfig /?

USAGE:
ipconfig [/? ! /all ! /renew [adapter] ! /release [adapter] !
        /flushdns ! /displaydns ! /registerdns !
        /showclassid adapter !
        /setclassid adapter [classid] ]

where
adapter      Connection name
              (wildcard characters * and ? allowed, see examples)

Options:
/?           Display this help message
/all         Display full configuration information.
/release     Release the IP address for the specified adapter.
/renew       Renew the IP address for the specified adapter.
/flushdns    Purges the DNS Resolver cache.
/registerdns Refreshes all DHCP leases and re-registers DNS names
/displaydns  Display the contents of the DNS Resolver Cache.
/showclassid Displays all the dhcp class IDs allowed for adapter.
/setclassid  Modifies the dhcp class id.

The default is to display only the IP address, subnet mask and
default gateway for each adapter bound to TCP/IP.

For Release and Renew, if no adapter name is specified, then the IP address
leases for all adapters bound to TCP/IP will be released or renewed.

For Setclassid, if no ClassId is specified, then the ClassId is removed.

Examples:
> ipconfig          ... Show information.
> ipconfig /all     ... Show detailed information
> ipconfig /renew   ... renew all adapters
> ipconfig /renew EL* ... renew any connection that has its
                        name starting with EL
> ipconfig /release *Con* ... release all matching connections,
                        eg. "Local Area Connection 1" or
                        "Local Area Connection 2"

C:\Documents and Settings\Admin>
```

Fig. 6. Sintaxa comenzii ipconfig

3. Comanda *ping*

Programul prin care se implementează această comandă a fost creat de Mike Muuss în decembrie 1983, denumirea provine de la sunetul pulsurilor emise de sonarul unui submarin care se reflectă când întâlnește ținta.

Se utilizează pentru testarea unei conexiuni la Internet, prin transmiterea de mesaje ICMP (Internet Control Message Protocol) "echo request", în traducere *solicitare de răspuns*,

sub formă de pachete de date spre o anumită gazdă (TargetName), apoi se așteaptă răspunsurile ICMP “echo response”, de la gazda destinație și se estimează durata și rata de pierdere a pachetelor.

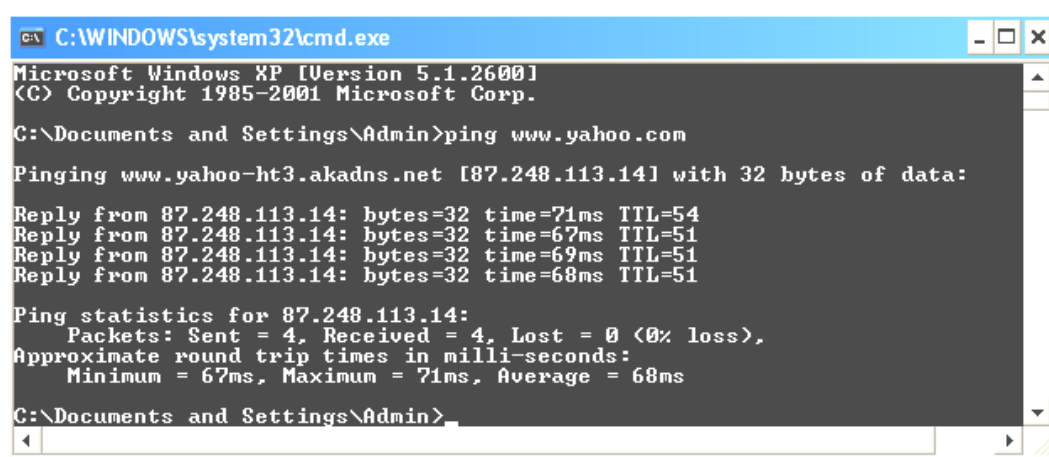
Sintaxa

ping [-t] [-a] [-n Count] [-l Size] [-f] [-i TTL] [-v TOS] [-r Count] [-s Count] [{-j HostList | -k HostList}] [-w Timeout] [TargetName]

Testarea unei conexiuni (fig. 7) se realizează folosind forma

ping [TargetName]

unde *TargetName* este destinația și poate fi o adresă IP sau o adresă web.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>ping www.yahoo.com

Pinging www.yahoo-ht3.akadns.net [87.248.113.14] with 32 bytes of data:

Reply from 87.248.113.14: bytes=32 time=71ms TTL=54
Reply from 87.248.113.14: bytes=32 time=67ms TTL=51
Reply from 87.248.113.14: bytes=32 time=69ms TTL=51
Reply from 87.248.113.14: bytes=32 time=68ms TTL=51

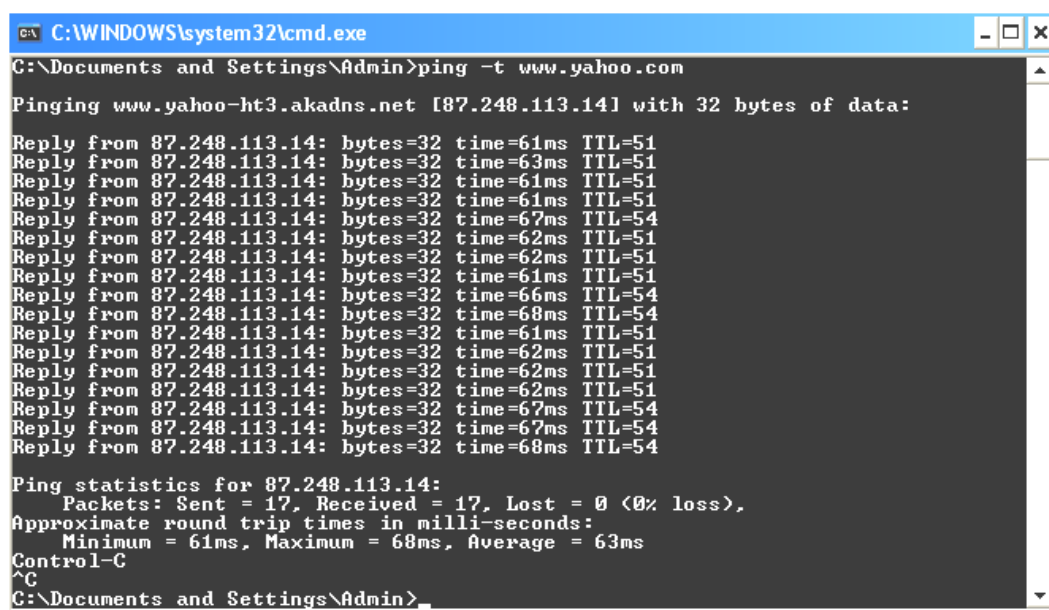
Ping statistics for 87.248.113.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 67ms, Maximum = 71ms, Average = 68ms

C:\Documents and Settings\Admin>
```

Fig. 7. Ping spre www.yahoo.com

Parametrii

-t, pentru transmiterea de mesaje în continuu, până se folosește combinația de taste CTRL+C;



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Admin>ping -t www.yahoo.com

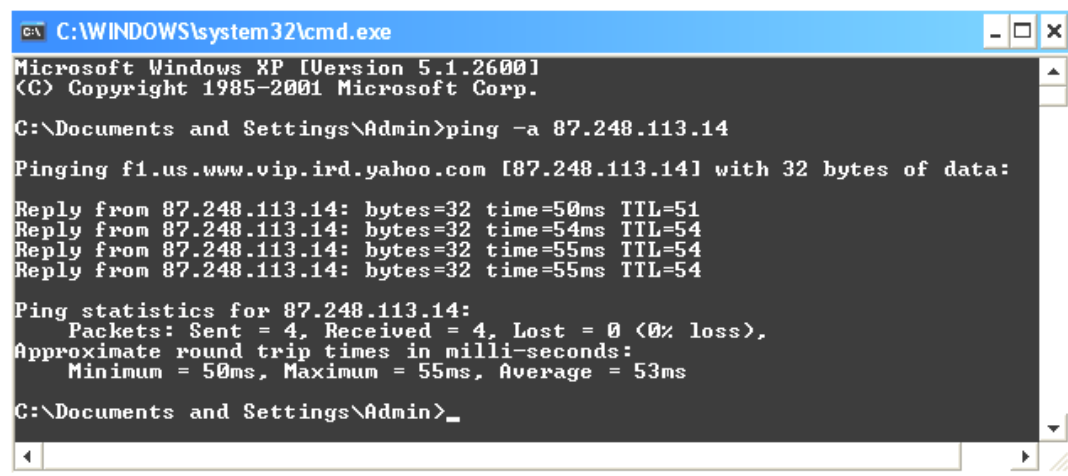
Pinging www.yahoo-ht3.akadns.net [87.248.113.14] with 32 bytes of data:

Reply from 87.248.113.14: bytes=32 time=61ms TTL=51
Reply from 87.248.113.14: bytes=32 time=63ms TTL=51
Reply from 87.248.113.14: bytes=32 time=61ms TTL=51
Reply from 87.248.113.14: bytes=32 time=61ms TTL=51
Reply from 87.248.113.14: bytes=32 time=67ms TTL=54
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Reply from 87.248.113.14: bytes=32 time=61ms TTL=51
Reply from 87.248.113.14: bytes=32 time=66ms TTL=54
Reply from 87.248.113.14: bytes=32 time=68ms TTL=54
Reply from 87.248.113.14: bytes=32 time=61ms TTL=51
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Reply from 87.248.113.14: bytes=32 time=67ms TTL=54
Reply from 87.248.113.14: bytes=32 time=67ms TTL=54
Reply from 87.248.113.14: bytes=32 time=68ms TTL=54

Ping statistics for 87.248.113.14:
    Packets: Sent = 17, Received = 17, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 61ms, Maximum = 68ms, Average = 63ms
Control-C
^C
C:\Documents and Settings\Admin>
```

Fig. 8. Ping spre www.yahoo.com folosind opțiunea -t

-a, dacă *TargetName* este o adresă IP și se dorește afișarea numelui corespunzător;



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>ping -a 87.248.113.14

Pinging fl.us.www.vip.ird.yahoo.com [87.248.113.14] with 32 bytes of data:

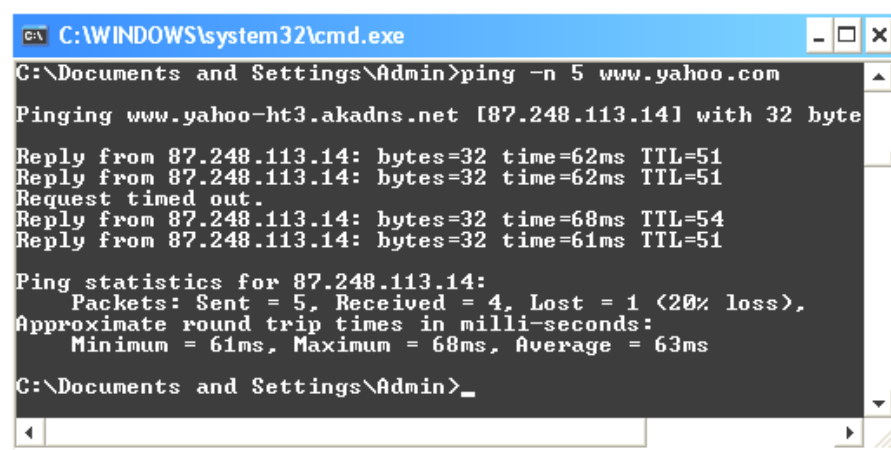
Reply from 87.248.113.14: bytes=32 time=50ms TTL=51
Reply from 87.248.113.14: bytes=32 time=54ms TTL=54
Reply from 87.248.113.14: bytes=32 time=55ms TTL=54
Reply from 87.248.113.14: bytes=32 time=55ms TTL=54

Ping statistics for 87.248.113.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 50ms, Maximum = 55ms, Average = 53ms

C:\Documents and Settings\Admin>
```

Fig. 9. Ping spre adresa IP 87.248.113.14 folosind opțiunea -a

-n *Count*, pentru a se transmite un anumit număr de pachete (standard numărul este 4);



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Admin>ping -n 5 www.yahoo.com

Pinging www.yahoo-ht3.akadns.net [87.248.113.14] with 32 byte

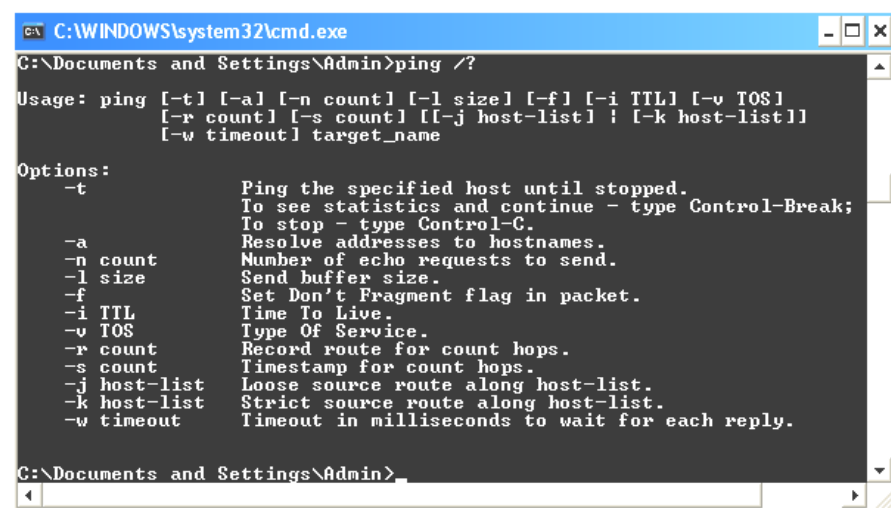
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Reply from 87.248.113.14: bytes=32 time=62ms TTL=51
Request timed out.
Reply from 87.248.113.14: bytes=32 time=68ms TTL=54
Reply from 87.248.113.14: bytes=32 time=61ms TTL=51

Ping statistics for 87.248.113.14:
    Packets: Sent = 5, Received = 4, Lost = 1 (20% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 61ms, Maximum = 68ms, Average = 63ms

C:\Documents and Settings\Admin>
```

Fig. 10. Ping spre www.yahoo.com folosind opțiunea -n *Count*

/?, pentru afișarea sintaxei



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Admin>ping /?

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v IOS]
           [-r count] [-s count] [[-j host-list] ! [-k host-list]]
           [-w timeout] target_name

Options:
    -t             Ping the specified host until stopped.
                   To see statistics and continue - type Control-Break;
                   To stop - type Control-C.
    -a             Resolve addresses to hostnames.
    -n count       Number of echo requests to send.
    -l size        Send buffer size.
    -f            Set Don't Fragment flag in packet.
    -i TTL         Time To Live.
    -v IOS         Type Of Service.
    -r count       Record route for count hops.
    -s count       Timestamp for count hops.
    -j host-list   Loose source route along host-list.
    -k host-list   Strict source route along host-list.
    -w timeout     Timeout in milliseconds to wait for each reply.

C:\Documents and Settings\Admin>
```

Fig. 11. Sintaxa comenzii ping

4. Comanda *tracert*

Denumirea provine de la trace route, în traducere trasează ruta.

Permite testarea unei conexiuni Internet prin transmiterea de mesaje ICMP (Internet Control Message Protocol) "echo request" (ca și în cazul comenzii anterioare) și afișarea listei de noduri prin care trec.

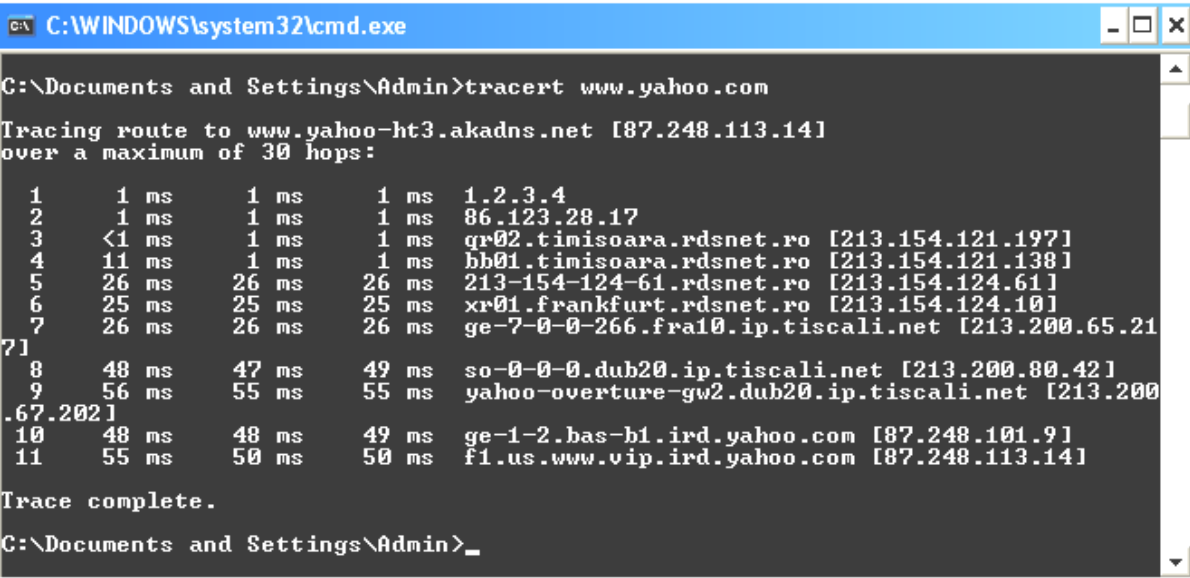
Sintaxa

tracert [-d] [-h *MaximumHops*] [-j *HostList*] [-w *Timeout*] [*TargetName*]

Afișarea unei rute (fig. 12) se realizează folosind forma

tracert [target_name]

unde *target_name* este destinația și poate fi o adresă IP sau o adresă web.



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

C:\Documents and Settings\Admin>tracert www.yahoo.com

Tracing route to www.yahoo-ht3.akadns.net [87.248.113.14]
over a maximum of 30 hops:

  0  1 ms    1 ms    1 ms    1.2.3.4
  1  1 ms    1 ms    1 ms    86.123.28.17
  2  <1 ms   1 ms    1 ms    qr02.timisoara.rdsnet.ro [213.154.121.197]
  3  11 ms   1 ms    1 ms    bb01.timisoara.rdsnet.ro [213.154.121.138]
  4  26 ms   26 ms   26 ms   213-154-124-61.rdsnet.ro [213.154.124.61]
  5  25 ms   25 ms   25 ms   xr01.frankfurt.rdsnet.ro [213.154.124.10]
  6  26 ms   26 ms   26 ms   ge-7-0-0-266.fra10.ip.tiscali.net [213.200.65.21]
  7  48 ms   47 ms   49 ms   so-0-0-0.dub20.ip.tiscali.net [213.200.80.42]
  8  56 ms   55 ms   55 ms   yahoo-overture-gw2.dub20.ip.tiscali.net [213.200.67.202]
  9  48 ms   48 ms   49 ms   ge-1-2.bas-b1.ird.yahoo.com [87.248.101.9]
 10  55 ms   50 ms   50 ms   fl.us.www.vip.ird.yahoo.com [87.248.113.14]
 11

Trace complete.

C:\Documents and Settings\Admin>
```

Fig. 12. Ruta spre adresa www.yahoo.com cu numele nodurilor

Parametrii

-d, pentru a nu afișa numele nodurilor și o viteză sporită;

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

C:\Documents and Settings\Admin>tracert -d www.yahoo.com

Tracing route to www.yahoo-ht3.akadns.net [87.248.113.14]
over a maximum of 30 hops:

  1    1 ms    1 ms    1 ms    1.2.3.4
  2    1 ms    2 ms    1 ms    86.123.28.17
  3    1 ms    1 ms    1 ms    213.154.121.197
  4    2 ms    1 ms    2 ms    213.154.121.138
  5   26 ms   26 ms   26 ms    213.154.124.61
  6   25 ms   24 ms   25 ms    213.154.124.10
  7   26 ms   26 ms   26 ms    213.200.65.217
  8   48 ms   48 ms   49 ms    213.200.80.42
  9   56 ms   55 ms   55 ms    213.200.67.202
 10   50 ms   50 ms   50 ms    87.248.101.15
 11   54 ms   55 ms   52 ms    87.248.113.14

Trace complete.

C:\Documents and Settings\Admin>_
```

Fig. 13. Ruta spre adresa www.yahoo.com fără numele nodurilor

-h *MaximumHops*, se precizează numărul de noduri dorit (*MaximumHops*), valoarea standard este 30;

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

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>tracert -h 6 www.yahoo.com

Tracing route to www.yahoo-ht3.akadns.net [87.248.113.14]
over a maximum of 6 hops:

  1    1 ms    1 ms    1 ms    1.2.3.4
  2    6 ms   20 ms    1 ms    86.123.28.17
  3    1 ms    2 ms    1 ms    gr02.timisoara.rdsnet.ro [213.154.121.197]
  4    2 ms    1 ms    2 ms    bb01.timisoara.rdsnet.ro [213.154.121.138]
  5   25 ms    *   215 ms    213-154-124-61.rdsnet.ro [213.154.124.61]
  6   25 ms   25 ms   25 ms    xr01.frankfurt.rdsnet.ro [213.154.124.14]

Trace complete.

C:\Documents and Settings\Admin>_
```

Fig. 14. Primele 6 noduri ale rutei spre adresa www.yahoo.com

-j *HostList*, pentru specificarea unei liste de gazde, în acest caz mesajele "echo request" vor utiliza opțiunea LSRR-Loose Source Route, din headerul IP, care permite precizarea a maxim 9 gazde;

-w *Timeout*, se precizează în ms timpul pentru așteptarea mesajului de răspuns (echo replay) de tip ICMP corespunzător unui mesaj cerere de răspuns (echo request). Dacă nu este primit se afișează un asterix. Valoarea standard este de 4s;

/? , pentru afișarea sintaxei sau *tracert* fără nici un parametru.

```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>tracert

Usage: tracert [-d] [-h maximum_hops] [-j host-list] [-w timeout] target_name

Options:
    -d          Do not resolve addresses to hostnames.
    -h maximum_hops  Maximum number of hops to search for target.
    -j host-list  Loose source route along host-list.
    -w timeout    Wait timeout milliseconds for each reply.

C:\Documents and Settings\Admin>

```

Fig. 15. Sintaxa comenzii tracert

5. Comanda netstat

Afișează informații despre starea rețelei: conexiunile TCP active, statistici Ethernet, tabelul de rutare IP, statistici Ipv4 (pentru protocoalele IP, ICMP, TCP, și UDP) și Ipv6 (pentru protocoalele IP, ICMP, TCP, și UDP). Folosită fără parametri afișează conexiunile TCP active.

Sintaxa

netstat [-a] [-e] [-n] [-o] [-p Protocol] [-r] [-s] [Interval]

Parametrii

-a, afișează conexiunile TCP active și porturile TCP, UDP folosite;

```

C:\Documents and Settings\Admin>netstat -a

Active Connections

Proto Local Address           Foreign Address         State
TCP   ra t rei 7:epmap         ra t rei 7:0           LISTENING
TCP   ra t rei 7:microsoft-ds  ra t rei 7:0           LISTENING
TCP   ra t rei 7:2869          ra t rei 7:0           LISTENING
TCP   ra t rei 7:5101          ra t rei 7:0           LISTENING
TCP   ra t rei 7:1028          ra t rei 7:0           LISTENING
TCP   ra t rei 7:1030          ra t rei 7:0           LISTENING
TCP   ra t rei 7:11500         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11526         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11526         localhost:2926         TIME_WAIT
TCP   ra t rei 7:11526         localhost:2927         TIME_WAIT
TCP   ra t rei 7:11526         localhost:2928         TIME_WAIT
TCP   ra t rei 7:11526         localhost:2932         TIME_WAIT
TCP   ra t rei 7:11527         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11528         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11529         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11530         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11531         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11532         ra t rei 7:0           LISTENING
TCP   ra t rei 7:11533         ra t rei 7:0           LISTENING
TCP   ra t rei 7:netbios-ssn   ra t rei 7:0           LISTENING
TCP   ra t rei 7:2239          cs8.msg.dcn.yahoo.com:5050 ESTABLISHED
TCP   ra t rei 7:2668          205.188.7.152:5190    ESTABLISHED
TCP   ra t rei 7:2669          oam-m12b.blue.aol.com:5190 ESTABLISHED
TCP   ra t rei 7:2788          www.rrsecurity-abuse.com:ftp ESTABLISHED
TCP   ra t rei 7:2893          re2wmcontent35.bcst.re2.yahoo.com:http TIME_WAIT
TCP   ra t rei 7:2914          www.rrsecurity-abuse.com:ftp ESTABLISHED
TCP   ra t rei 7:2931          dalwmod029.bcst.yahoo.com:http ESTABLISHED
TCP   ra t rei 7:4388          66.246.127.81:http    CLOSE_WAIT
UDP   ra t rei 7:microsoft-ds  *:.*
UDP   ra t rei 7:isakmp        *:.*
UDP   ra t rei 7:1064          *:.*
UDP   ra t rei 7:1087          *:.*
UDP   ra t rei 7:1088          *:.*
UDP   ra t rei 7:1281          *:.*

```

Fig. 16. Conexiuni netstat -a

-e, statistici Ethernet (numărul de biți și pachetele trimise și recepționate), se poate combina cu **-s**;

```
C:\Documents and Settings\>netstat -e
Interface Statistics

                Received                Sent
Bytes           390083166             64475285
Unicast packets    733101             608766
Non-unicast packets 25758             1191
Discards          0
Errors            0             303
Unknown protocols   76
```

Fig. 17. Conexiuni netstat -e

-n, afișează conexiunile TCP active, pentru adrese și numerele porturilor nu se afișează numele;

```
C:\Documents and Settings\>netstat -n
Active Connections

Proto Local Address          Foreign Address         State
TCP   127.0.0.1:11526         127.0.0.1:3291         TIME_WAIT
TCP   127.0.0.1:11526         127.0.0.1:3303         TIME_WAIT
TCP   127.0.0.1:11526         127.0.0.1:3304         TIME_WAIT
TCP   127.0.0.1:11526         127.0.0.1:3307         TIME_WAIT
TCP   192.168.1.103:3069      66.151.128.11:80       CLOSE_WAIT
TCP   192.168.1.103:3116      216.155.193.168:5050   ESTABLISHED
TCP   192.168.1.103:3217      198.66.195.32:21       ESTABLISHED
TCP   192.168.1.103:3241      206.190.44.93:80       TIME_WAIT
TCP   192.168.1.103:3290      63.250.197.128:80      ESTABLISHED
```

Fig. 18. Conexiuni netstat -n

-o, afișează conexiunile TCP active împreună cu identificatorii PID, se poate combina cu **-a**, **-n** și **-p**;

```
C:\Documents and Settings\>netstat -o
Active Connections

Proto Local Address          Foreign Address         State      PID
TCP   ra t re1 7:11526         localhost:3307         TIME_WAIT 0
TCP   ra t re1 7:11526         localhost:3321         TIME_WAIT 0
TCP   ra t re1 7:11526         localhost:3322         TIME_WAIT 0
TCP   ra t re1 7:11526         localhost:3324         TIME_WAIT 0
TCP   ra t re1 7:3069          down.plaxo.com:http    CLOSE_WAIT 1024
TCP   re t re1 7:3116           cs41.msg.dcn.yahoo.com:5050 ESTABLISHED 147
6
TCP   ra t re1 7:3290           dalwmod028.bcst.yahoo.com:http FIN_WAIT_1 1476
TCP   ra t re1 7:3323           dalwmod028.bcst.yahoo.com:http ESTABLISHED 1476
```

Fig. 19. Conexiuni netstat -o

-p Protocol, afișează conexiunile pentru protocolul specificat prin *Protocol* (TCP, UDP sau TCPv6, UDPv6), dacă se folosește împreună cu **-s** se afișează statistici după protocol, iar *Protocol* poate fi TCP, UDP, ICMP, IP, TCPv6, UDPv6, ICMPv6 sau IPv6;

```

C:\Documents and Settings\Crystal Adle>netstat -p tcp

Active Connections

Proto Local Address          Foreign Address         State
TCP   ra t re1 7:11526        localhost:3356         TIME_WAIT
TCP   ra t re1 7:11526        localhost:3357         TIME_WAIT
TCP   ra t re1 7:11526        localhost:3358         TIME_WAIT
TCP   ra t re1 7:11526        localhost:3369         TIME_WAIT
TCP   ra t re1 7:3069         down.plaxo.com:http    CLOSE_WAIT
TCP   ra t re1 7:3116        cs41.msg.dcn.yahoo.com:5050 ESTABLISHED
TCP   ra t re1 7:3323        dalwmod028.bcst.yahoo.com:http TIME_WAIT
TCP   ra t re1 7:3361        dalwmod007.bcst.yahoo.com:http ESTABLISHED
TCP   ra t re1 7:3365        a64-12-145-70.deploy.akamaitechnologies.net:http ESTABLISHED

```

Fig. 19. Conexiuni netstat -p tcp

-s, afișează statistici după protocol, standard pentru TCP, UDP, ICMP și IP, iar dacă Ipv6 este instalat afișarea se face pentru TCPv6, UDPv6, ICMPv6, și IPv6, parametrul -p se poate utiliza pentru specificarea un set de protocole;

```

C:\Documents and Settings\>netstat -p tcp -s

IPv4 Statistics

Packets Received                = 763875
Received Header Errors          = 0
Received Address Errors         = 19287
Datagrams Forwarded             = 0
Unknown Protocols Received      = 0
Received Packets Discarded      = 11
Received Packets Delivered      = 763710
Output Requests                 = 613621
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

ICMPv4 Statistics

Messages      Received    Sent
Errors        0           0
Destination Unreachable 42         41
Time Exceeded  0           0
Parameter Problems  0           0
Source Quenches 0           0
Redirects      0           0
Echos         0           12
Echo Replies   7           0
Timestamps     0           0
Timestamp Replies 0           0
Address Masks  0           0
Address Mask Replies 0           0

TCP Statistics for IPv4

Active Opens                = 9541
Passive Opens               = 7019
Failed Connection Attempts  = 71
Reset Connections           = 2344
Current Connections         = 3
Segments Received           = 707677
Segments Sent               = 580947
Segments Retransmitted      = 985

UDP Statistics for IPv4

Datagrams Received    = 50161
No Ports              = 11393
Receive Errors        = 147
Datagrams Sent        = 31372

Active Connections

Proto Local Address          Foreign Address         State

```

Fig. 20. Conexiuni netstat -p tcp -s

-r, conținutul tabelului de rutare IP, este echivalentul comenzii **route print**;

```
C:\Documents and Settings\>netstat -p tcp -r

Active Connections

  Proto Local Address           Foreign Address         State
  TCP    ra t: re1 7:11526             localhost:3387          TIME_WAIT
  TCP    ra t: re1 7:11526             localhost:3388          TIME_WAIT
  TCP    ra t: re1 7:11526             localhost:3394          TIME_WAIT
  TCP    ra t: re1 7:11526             localhost:3402          TIME_WAIT
  TCP    ra t: re1 7:3069             down.plaxo.com:http     CLOSE_WAIT
  TCP    ra t: re1 7:3116             cs41.msg.dcn.yahoo.com:5050 ESTABLISHED
  TCP    ra t: re1 7:3361             dalwmod007.bcst.yahoo.com:http TIME_WAIT
  TCP    ra t: re1 7:3393             ymcontent100.bcst.yahoo.com:http ESTABLISHED
  TCP    ra t: re1 7:3400             a64-12-145-70.deploy.akamaitechnologies.net:http ESTABLISHED

Route Table
=====
Interface List
0x1 ..... MS TCP Loopback interface
0x2 ...00 0f 1f bc 86 06 ..... Broadcom 570x Gigabit Integrated Controller - Pa
cket Scheduler Miniport
0x3 ...00 0c f1 47 95 3d ..... Intel(R) PRO/Wireless LAN 2100 3A Mini PCI Adapt
er - Packet Scheduler Miniport
=====
Active Routes:
Network Destination        Netmask          Gateway          Interface        Metric
0.0.0.0                    0.0.0.0          192.168.1.1      192.168.1.103     20
127.0.0.0                  255.0.0.0        127.0.0.1        127.0.0.1         1
192.168.1.0                255.255.255.0    192.168.1.103    192.168.1.103     20
192.168.1.103              255.255.255.255  127.0.0.1        127.0.0.1         20
192.168.1.255              255.255.255.255  192.168.1.103    192.168.1.103     20
224.0.0.0                  240.0.0.0        192.168.1.103    192.168.1.103     20
255.255.255.255            255.255.255.255  192.168.1.103    192.168.1.103     1
255.255.255.255            255.255.255.255  192.168.1.103    192.168.1.103     1
Default Gateway:          192.168.1.1
=====
Persistent Routes:
None
```

Fig. 21. Conexiuni netstat -p tcp -r

Interval, reafișează informația selectată la fiecare *Interval* în secunde, combinația CTRL-C oprește reafișarea, dacă acest parametru este omis se afișează informația selectată numai o dată;

/?, sintaxa;

6. Comanda *route print*

Afișează conținutul tabelului de rutare IP.

Sintaxa

route print