

Curs 1

Utilizare Internet

Disciplina

- **7C** (7 x 2 ore curs)
 - Joi, 12-14, P6, saptamana impara
 - sl. Radu Damian
 - <http://staff.etc.tuiasi.ro/rdamian/>
- **7L** (7 x 2 ore laborator)
 - Miercuri, 8-14, II 13, saptamana para/impara
 - asist. Daniel Matasaru
 - <http://www.daniel-matasaru.ro>
- **3K** (credite)
 - Colocviu, saptamana 14
 - Prezenta la colocviu 99% (maxim pentru toate disciplinele)

Cuprins 1

- **Terminologie Internet (3C)**
 - **Introducere și istorie a rețelei Internet**
 - **Protocolul TCP/IP (adrese IP statice și dinamice, rutare)**
 - **Informare pe Internet (browsing, căutare)**
 - **Comunicații prin intermediul Internet-ului (email, IM)**
 - **Transfer de date (FTP, rețele P2P).**
 - **Comunicații securizate (coduri, chei).**
 - **Configurații de rețea (peer-to-peer, client-server)**
 - **Topologii de rețea (bus, stea, inel, plasă)**
 - **Cablarea rețelei (tipuri de cabluri)**

Cuprins 2

- **Realizare pagini web statice (3C)**
 - Limbajul HTML (concepție, principalele marcaje)
 - Limbajul XHTML (concepție)
- **Realizare pagini web dinamice/avansate (1C)**
 - CSS (principii)
 - Javascript (introducere)
- **Indicatii (-C, fara obligatia inscrierii la UI)**
 - CSS (avansat)
 - Javascript (avansat)
 - PHP (avansat)
 - MySql (avansat)

Laborator

- 7 sedinte de 2 ore, la doua saptamani
- 3 lucrari terminologie
- 3 lucrari realizare pagini web
- Colocviu final cu prezentarea paginii web propriie (exemple in slide-urile urmatoare)

Exemplu 1


Passat - Windows Internet Explorer

C:\Users\Radu\Desktop\patgini web UI\Jalba Robert\passat.html

Bine ati venit pe pagina m... BMW M3 Cabrio Passat

VOLKSWAGEN PASSAT CC

Denumit **CC**, noul model ar putea crea confuzia că este un coupe cabriolet. Însă nu este nici una din cele două. **Volkswagen doriad totuși sa-l numească un coupe cu patru uși.** Același lucru făcea și Mercedes la lansarea lui CLS, model care deși avea patru uși se distingea printr-o formă laterală asemănătoare cu aceea a unui coupe.



Lungimea automobilul a crescut până la aproape 4,8 metri, cu 30 de mm mai mult decât versiunea standard, pentru o amplificare a senzației de coupe și un spațiu interior mărit. Dacă în exterior modificările sunt majore, cu o grilă față schimbată, faruri modificate și blocuri optice spate voluminoase și fluide, în interior ambianța de la actualul Passat a fost considerată suficient de elegantă și sportivă pentru a fi preluată aproape integral de noul model.

Done

Computer | Protected Mode: Off

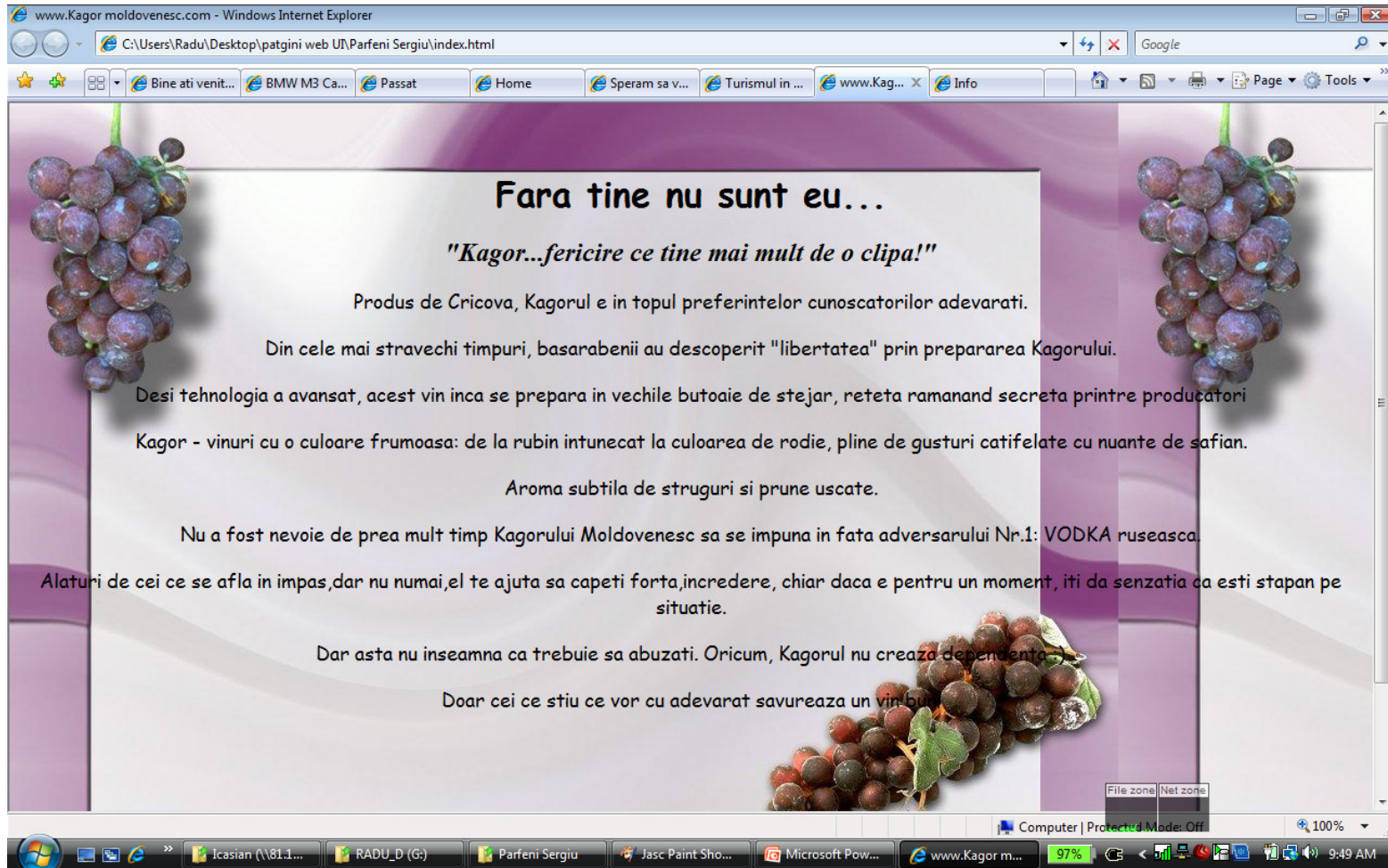
100%

Done

Icasian (\181.1... RADU_D (G:) Jalba Robert Jasc Paint Sho... Microsoft Pow... Passat - Windo... 97%

9:46 AM

Exemplu 2



www.Kagor moldovenesc.com - Windows Internet Explorer

C:\Users\Radu\Desktop\patgini web UI\Parfeni Sergiu\index.html

Bine ati venit... BMW M3 Ca... Passat Home Speram sa v... Turismul in ... www.Kag... X Info

Fara tine nu sunt eu...

"Kagor...fericire ce tine mai mult de o clipa!"

Produce de Cricova, Kagorul e in topul preferintelor cunoscatorilor adevarati.

Din cele mai stravechi timpuri, basarabeni au descoperit "libertatea" prin prepararea Kagorului.

Desi tehnologia a avansat, acest vin inca se prepara in vechile butoaie de stejar, reteta ramanand secreta printre producatori Kagor - vinuri cu o culoare frumoasa: de la rubin intunecat la culoarea de rodie, pline de gusturi catifelate cu nuante de safian.

Aroma subtila de struguri si prune uscate.

Nu a fost nevoie de prea mult timp Kagorului Moldovenesc sa se impuna in fata adversarului Nr.1: VODKA ruseasca.

Alaturi de cei ce se afla in impas, dar nu numai, el te ajuta sa capeti forta, incredere, chiar daca e pentru un moment, iti da senzatia ca esti stapan pe situatie.

Dar asta nu inseamna ca trebuie sa abuzati. Oricum, Kagorul nu creaza dependenta.

Doar cei ce stiu ce vor cu adevarat savureaza un vin bun.

Computer | Protected Mode: Off | 100%

Taskbar: Icasian (\181.1...), RADU_D (G:), Parfeni Sergiu, Jasc Paint Sho..., Microsoft Pow..., www.Kagor m..., 97%, 9:49 AM

Exemplu 3

Turismul in Romania >> Marea Neagra - Windows Internet Explorer

C:\Users\Radu\Desktop\patgini web UR.Sabadac Alina\marea_neagra.html

Bine ati venit pe pa... BMW M3 Cabrio Passat Home Speram sa va placa Turismul in Ro...

O nouă Românie
Harta
Marea Neagră
Delta Dunării
Moldova/Bucovina
Maramureș
Transilvania
București
Să Descoperim România
Adrese Utile



Turismul în România

>> Marea Neagră

Vacante in stil mediteranean pe plaje superbe
Vremea minunata din primavara pana in toamna si intinderile imense de nisip aurii fac din statiunile de pe litoralul romanesc al Marii Negre o destinatie ideala pentru petrecerea vacanțelor la mare.



Nisipuri aurii se intind pe o distanta de 72 km de-a lungul litoralului romanesc

Puteti gasi aici tot ceea ce va doriti: hoteluri dotate cu toate facilitatile moderne, o viata de noapte activa, o mare varietate de terenuri si sali de sport si numeroase obiective de interes turistic pe coasta, de la castele la podgorii. Acum. cand tara se indreapta spre un nou viitor. litoralul Marii Negre revine pe agenda turistica europeana.

Computer | Protected Mode: Off | 100%

Icasian (\181.1... RADU_D (G:) Sabadac Alina Jasc Paint Sho... Microsoft Pow... Turismul in Ro... 97% 9:49 AM

Exemplu 4

Speram sa va placa - Windows Internet Explorer






C:\Users\Radu\Desktop\patgini web UR,Maxim Daniel\2.html

Bine ati venit pe pagina ... BMW M3 Cabrio Passat Home Speram sa va placa

AUTOMAX

VW passat



An productie: 2005 Kilometraj: 77000 Carburant: Motorina
Pret: 11400 EUR Capacitate cilindrica: 1896 cm³ Putere: 101 cai putere
Consum: 5 litri/100km Caroserie: Berlina
Dotari: Masina este full options.



Masina a fost adusa din Germania.

VW Golf5

An productie: 2005 Kilometraj: 61000 Carburant: benzina
Pret: 11000 EUR Capacitate cilindrica: 1400 cm³ Putere: 90 cai putere
Consum: 5 litri/100km Caroserie: Berlina
Dotari: Masina este full options.



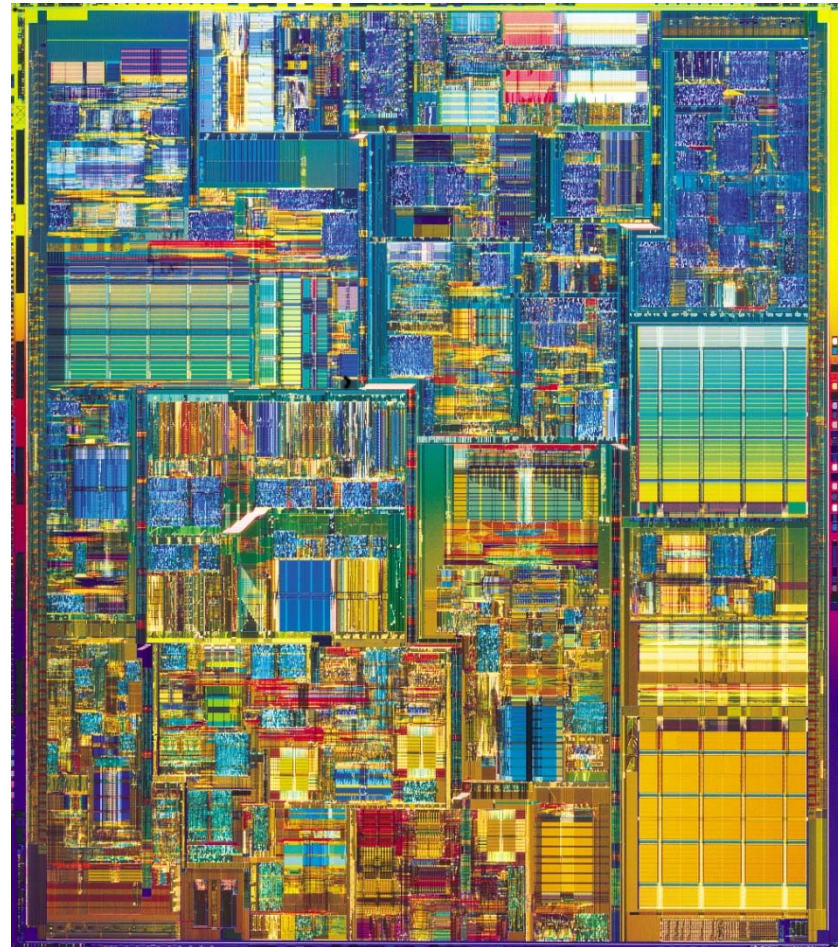
Done

Computer | Protected Mode: Off | 100%

Taskbar: Icasian (\181.1...), RADU_D (G:), Maxim Daniel, Jasc Paint Sho..., Microsoft Pow..., Speram sa va p..., 97%, 9:47 AM

Impresionant?

- Intel® Itanium® processors (codenamed Tukwila)
- 2 miliarde tranzistoare pe CPU
- >3 miliarde operatii pe secunda
- Nivel redus de complexitate al operatiilor elementare



Definitii

■ Internet

- O **retea** globala de comunicatii intre calculatoare **si** alte dispozitive, conectate intre ele prin intermediul protocolului TCP/IP
- Nu este o retea proprietara
- Nu este dedicata exclusiv WWW

■ World Wide Web

- Sistem de informatii grafic, interactiv, proiectat pentru a functiona pe orice platforma fizica, care functioneaza prin Internet

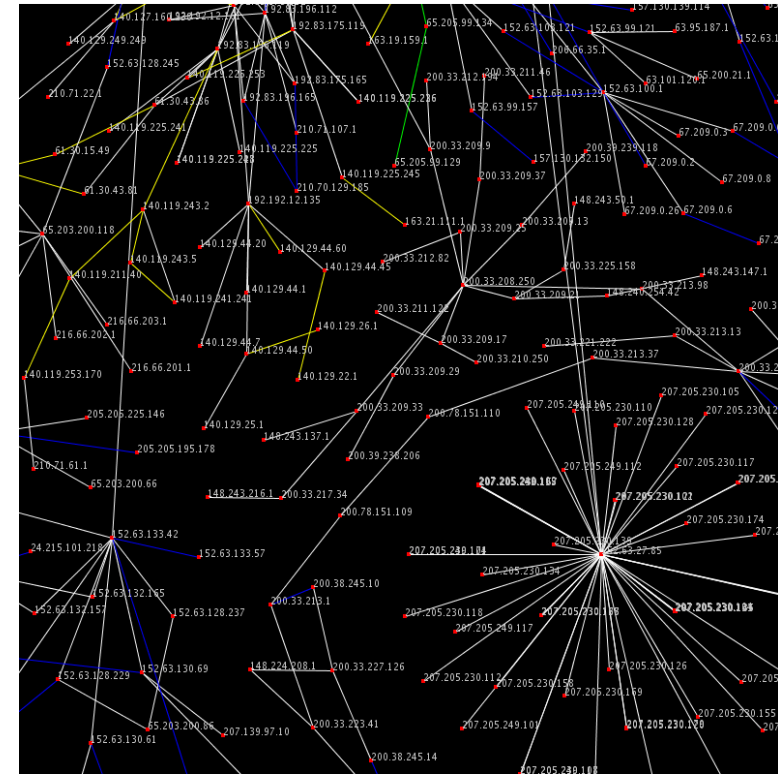
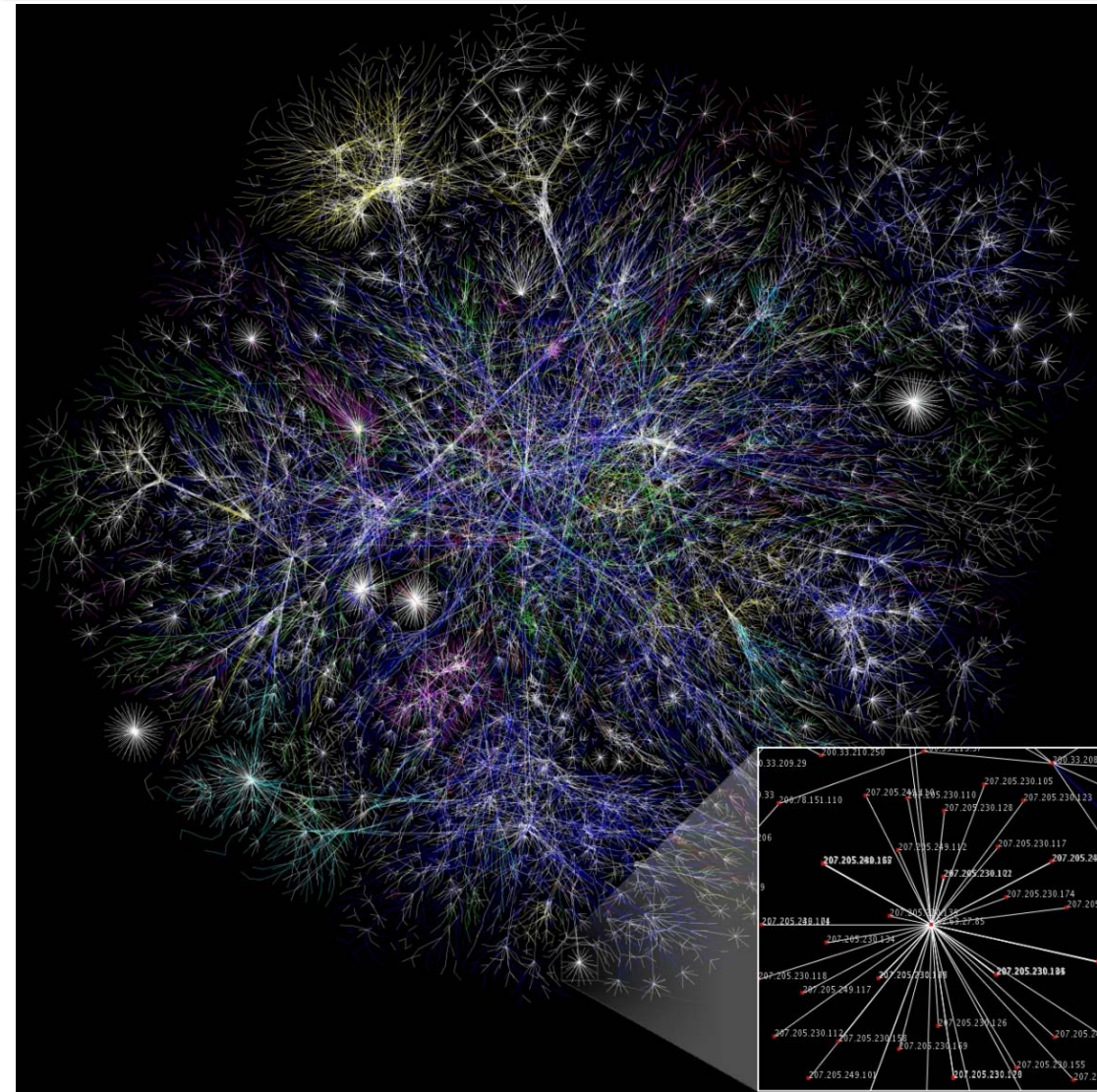
Istoric Internet

- ARPANET 1969
- Proiect experimental al US Department of Defense
- DARPA – Defense Advanced Research Projects Agency
- Conectarea cercetatorilor la resurse comune (supercalculatoare, baze de date)
- Raspandire mai intai in SUA apoi in intreaga lume (Romania 1993)
- TCP/IP – Transport Control Protocol / Internet Protocol – TCP/IP v4 - 1983

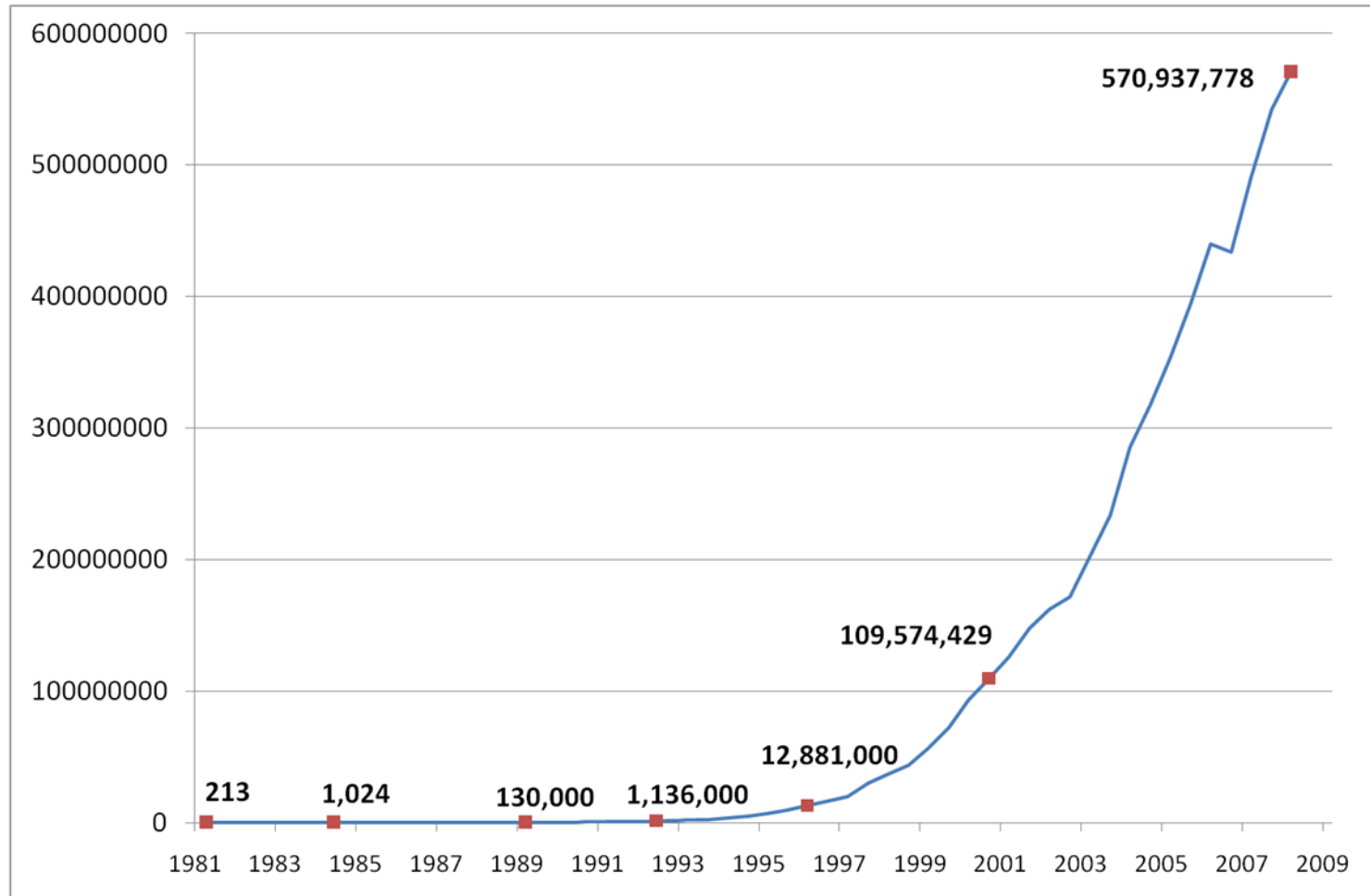
Istoric WWW

- 1980, CERN, Centre Europeen de Recherche Nucleaire,
- Tim Berners Lee
- Metoda de schimb facil de informatii intre cercetatori
- 1989 – propunere de standardizare pentru HTTP
- HTTP – Hyper Text Transfer Protocol
- 1993 – Mosaic, primul browser grafic, NCSA – National Center for Supercomputing Applications

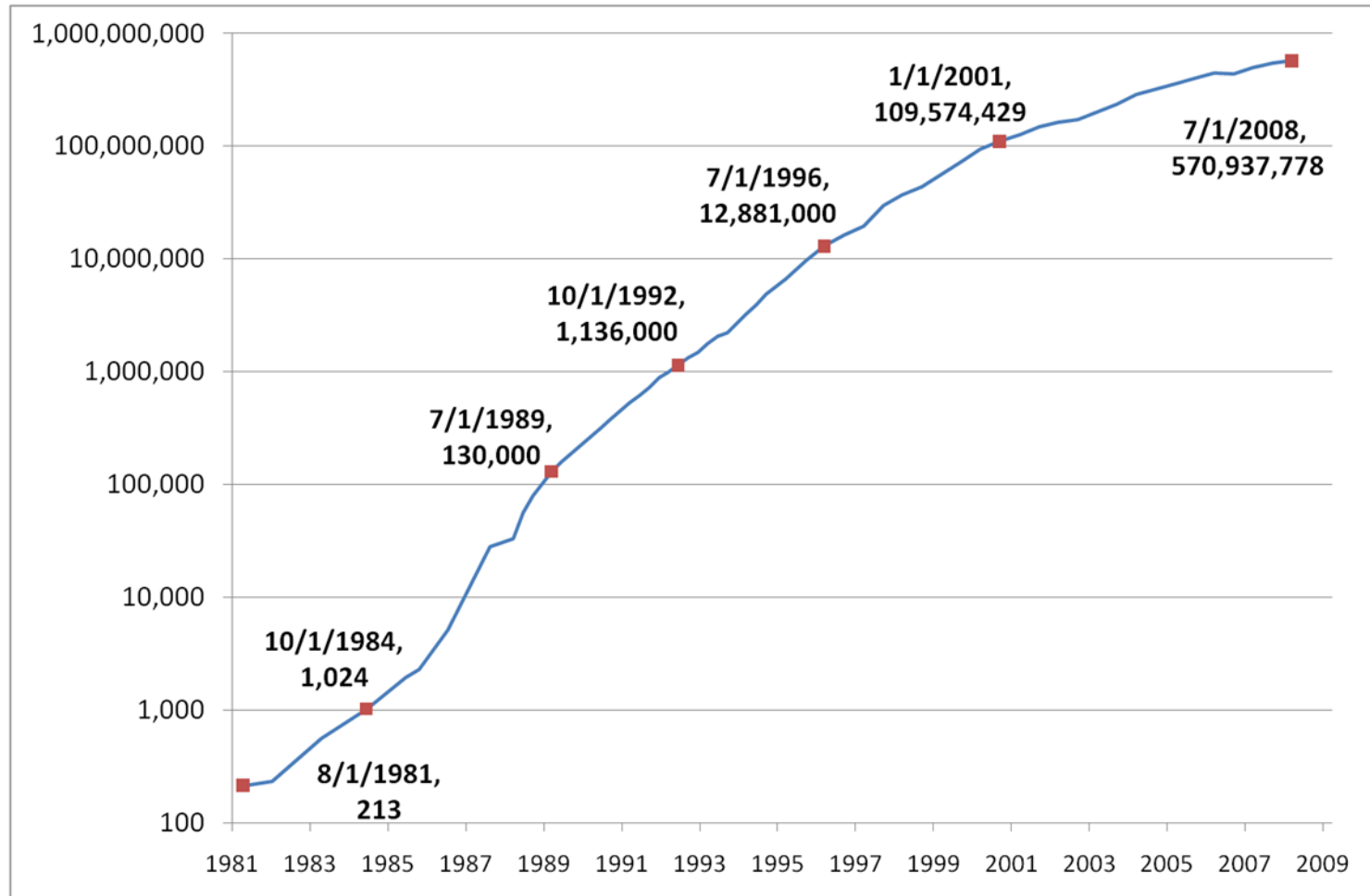
World Wide Web



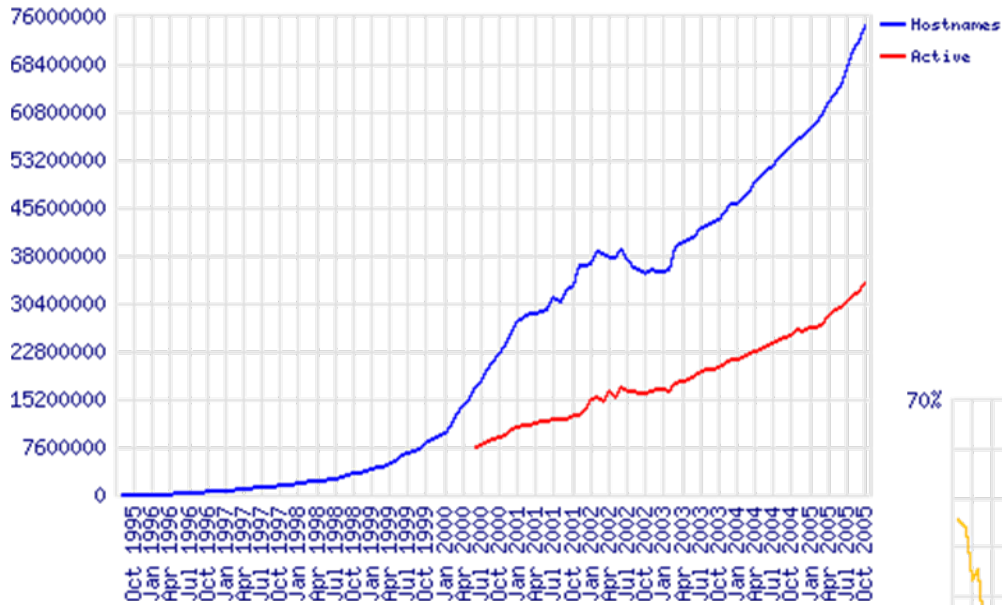
Numar dispozitive conectate



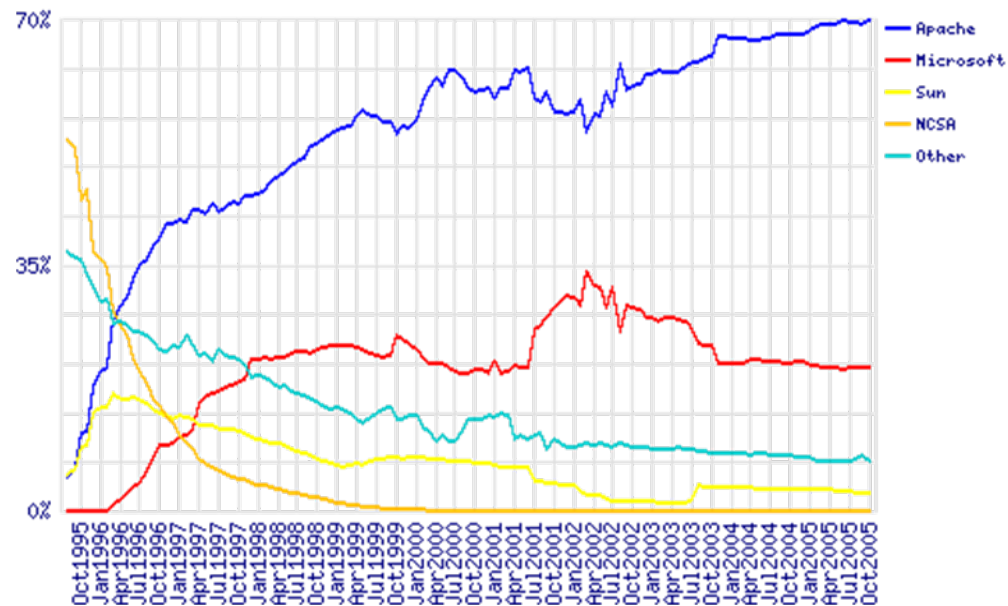
Numar dispozitive conectate



Numar de server-e



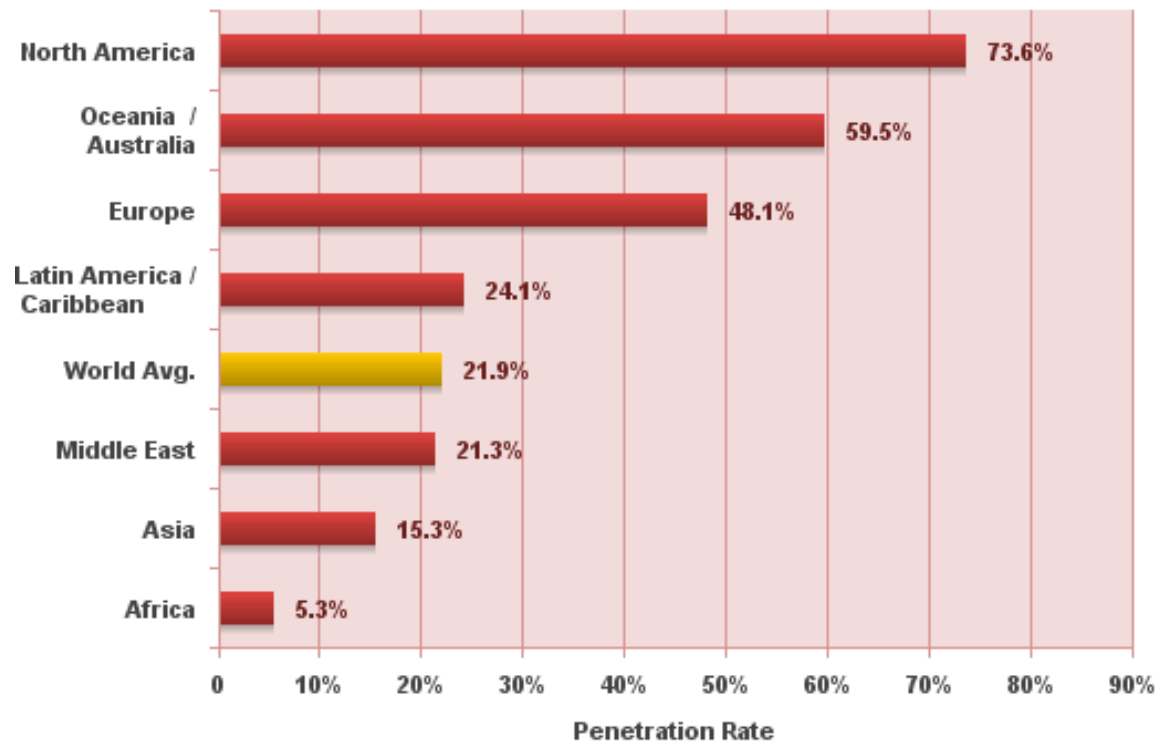
Numar de server-e existente / active



Aplicatia de server web activa [%]

Utilizatori Internet [% din total populatie]

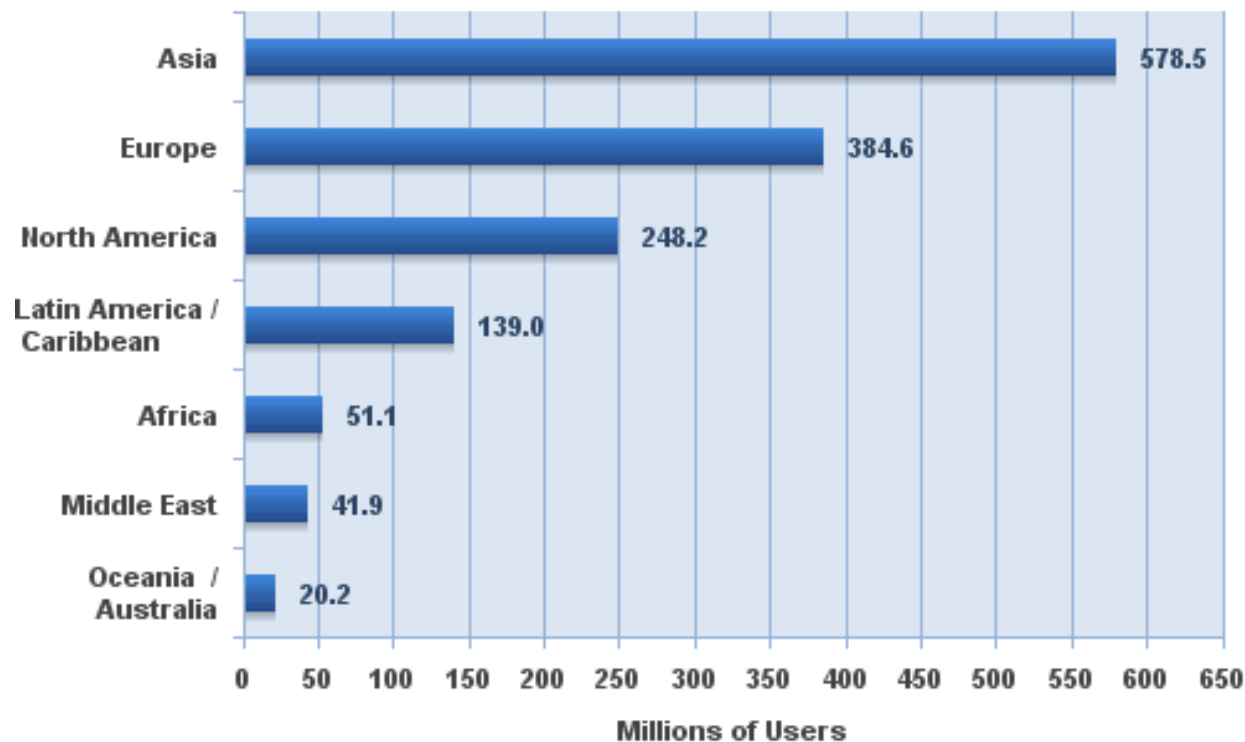
World Internet Penetration Rates by Geographic Regions



Source: Internet World Stats - www.internetworldstats.com/stats.htm
Penetration Rates are based on a world population of 6,676,120,288 for mid-year 2008 and 1,463,632,361 estimated Internet users.
Copyright © 2008, Miniwatts Marketing Group

Numar de utilizatori in lume

Internet Users in the World by Geographic Regions



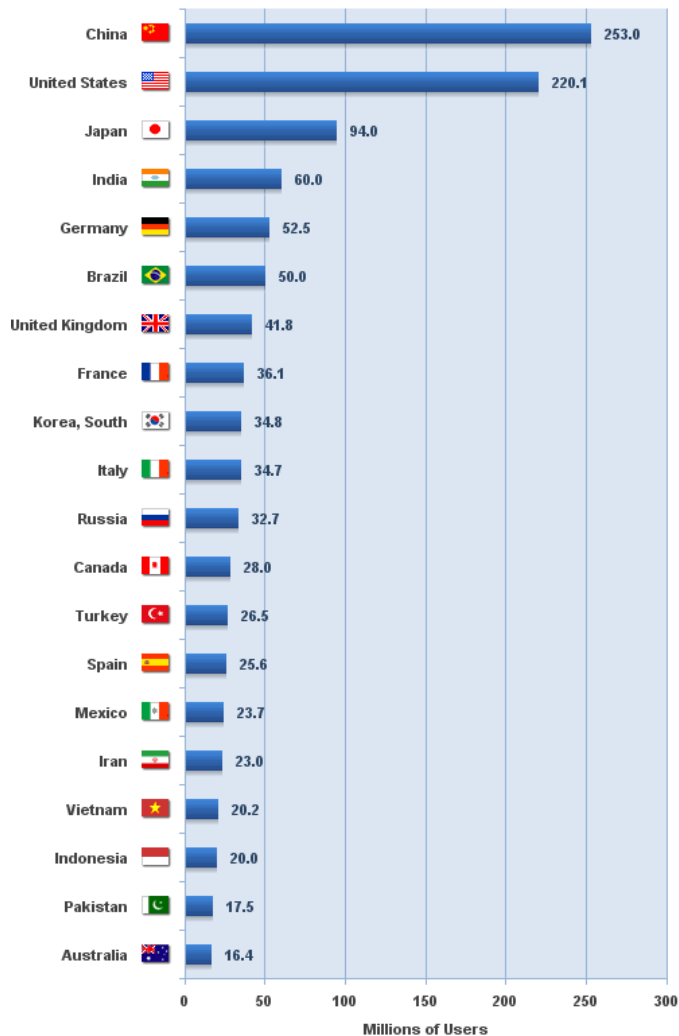
Source: Internet World Stats - www.internetworldstats.com/stats.htm

Estimated Internet users is 1,463,632,361 for Q2 2008

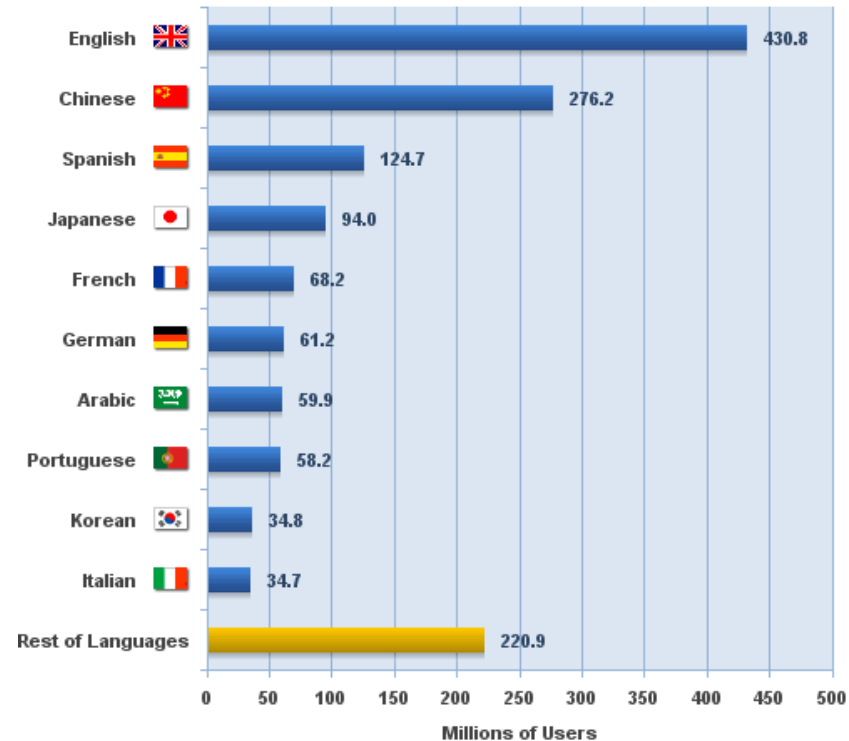
Copyright © 2008, Miniwatts Marketing Group

Tara / limba vorbita pe Internet

INTERNET TOP 20 COUNTRIES
With Highest Number of Users



Top 10 Languages in the Internet

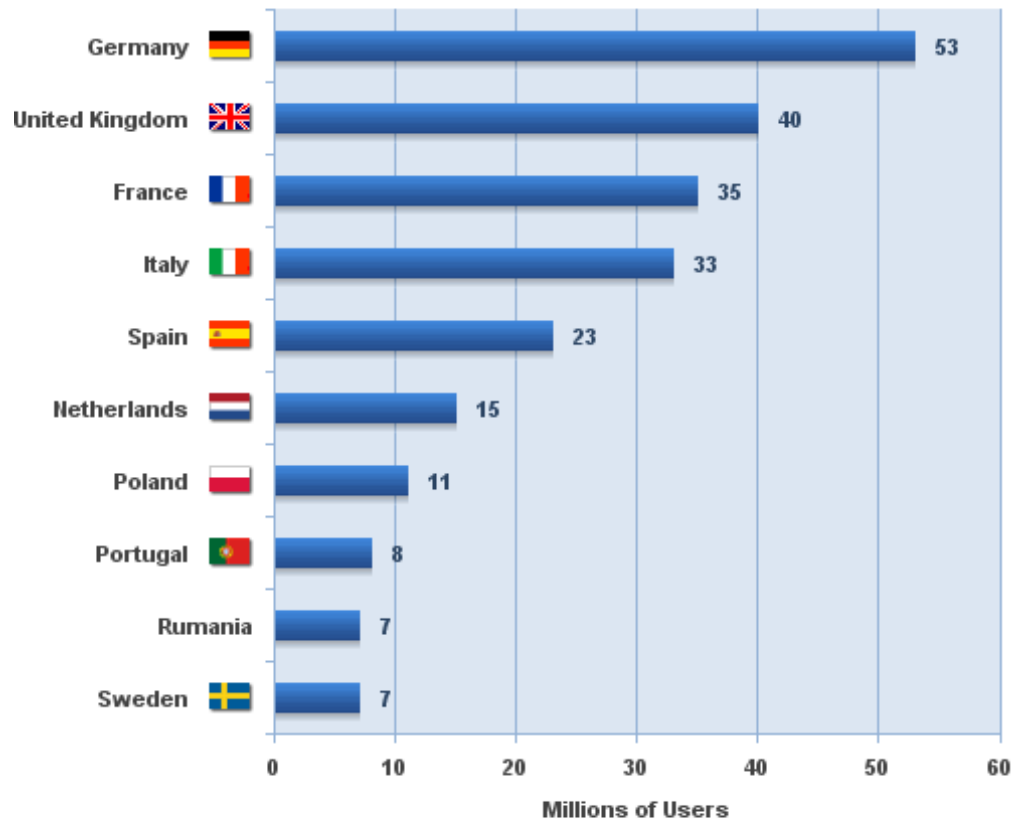


Source: Internet World Stats - www.internetworldstats.com/stats7.htm
Estimated Internet users 1,463,632,361 for 2Q 2008
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- Limba utilizata si tara utilizatorilor de Internet

Utilizzatori Internet in EU

European Union Top 10 Internet Users
November 2007



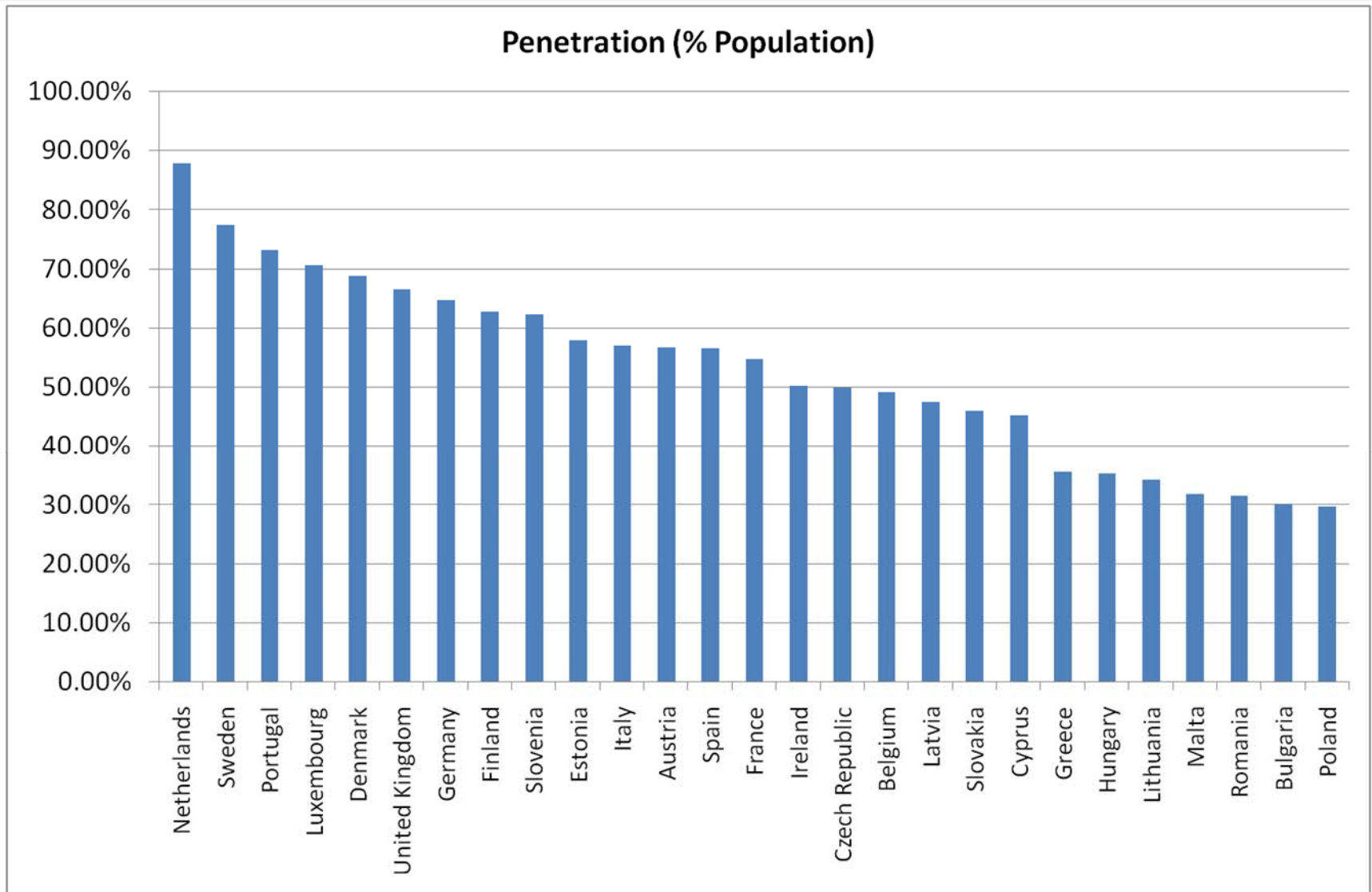
Source: www.internetworldstats.com
Copyright © 2008, Miniwatts Marketing Group

Utilizare in Uniunea Europeana

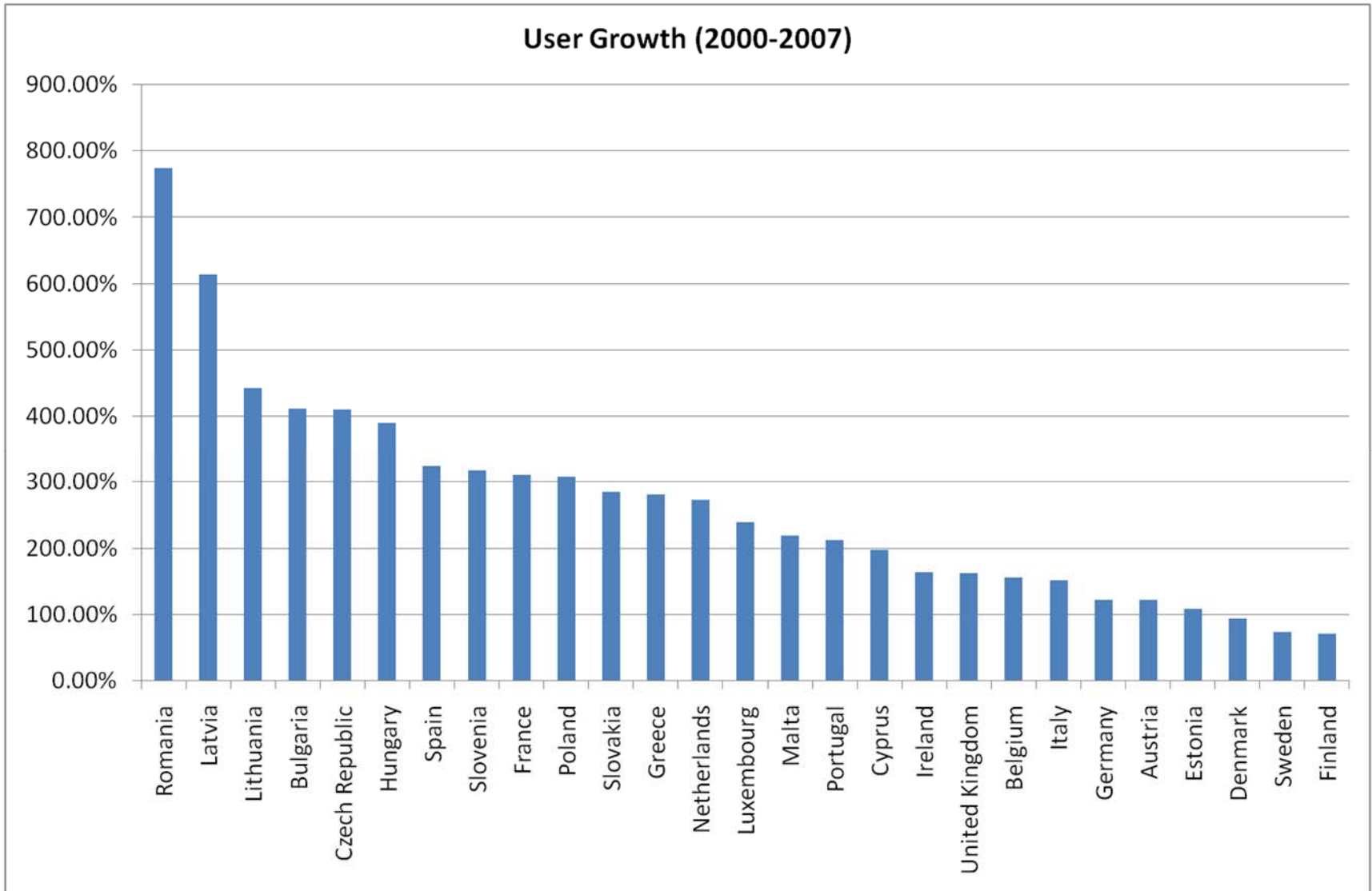
EUROPEAN UNION

	Population (2007 Est.)	Internet Users, Latest Data	Penetration (% Population)	Usage % in EU	User Growth (2000-2007)
Austria	8,199,783	4,650,000	56.70%	1.70%	121.40%
Belgium	10,392,226	5,100,000	49.10%	1.90%	155.00%
Bulgaria	7,322,858	2,200,000	30.00%	0.80%	411.60%
Cyprus	788,457	356,000	45.20%	0.10%	197.20%
Czech Republic	10,228,744	5,100,000	49.90%	1.90%	410.00%
Denmark	5,468,120	3,762,500	68.80%	1.40%	92.90%
Estonia	1,315,912	760,000	57.80%	0.30%	107.30%
Finland	5,238,460	3,286,000	62.70%	1.20%	70.50%
France	63,718,187	34,851,835	54.70%	12.80%	310.00%
Germany	82,400,996	53,240,115	64.60%	19.50%	121.80%
Greece	10,706,290	3,800,000	35.50%	1.40%	280.00%
Hungary	9,956,108	3,500,000	35.20%	1.30%	389.50%
Ireland	4,109,086	2,060,000	50.10%	0.80%	162.80%
Italy	58,147,733	33,143,152	57.00%	12.10%	151.10%
Latvia	2,259,810	1,070,800	47.40%	0.40%	613.90%
Lithuania	3,575,439	1,221,700	34.20%	0.40%	443.00%
Luxembourg	480,222	339,000	70.60%	0.10%	239.00%
Malta	401,880	127,200	31.70%	0.00%	218.00%
Netherlands	16,570,613	14,544,400	87.80%	5.30%	272.90%
Poland	38,518,241	11,400,000	29.60%	4.20%	307.10%
Portugal	10,642,836	7,782,760	73.10%	2.80%	211.30%
Romania	22,276,056	7,000,000	31.40%	2.60%	775.00%
Slovakia	5,447,502	2,500,000	45.90%	0.90%	284.60%
Slovenia	2,009,245	1,250,000	62.20%	0.50%	316.90%
Spain	40,448,191	22,843,915	56.50%	8.40%	324.00%
Sweden	9,031,088	6,981,200	77.30%	2.60%	72.50%
United Kingdom	60,776,238	40,362,842	66.40%	14.80%	162.10%
European Union	490,430,321	273,234,619	55.70%	100.00%	189.50%

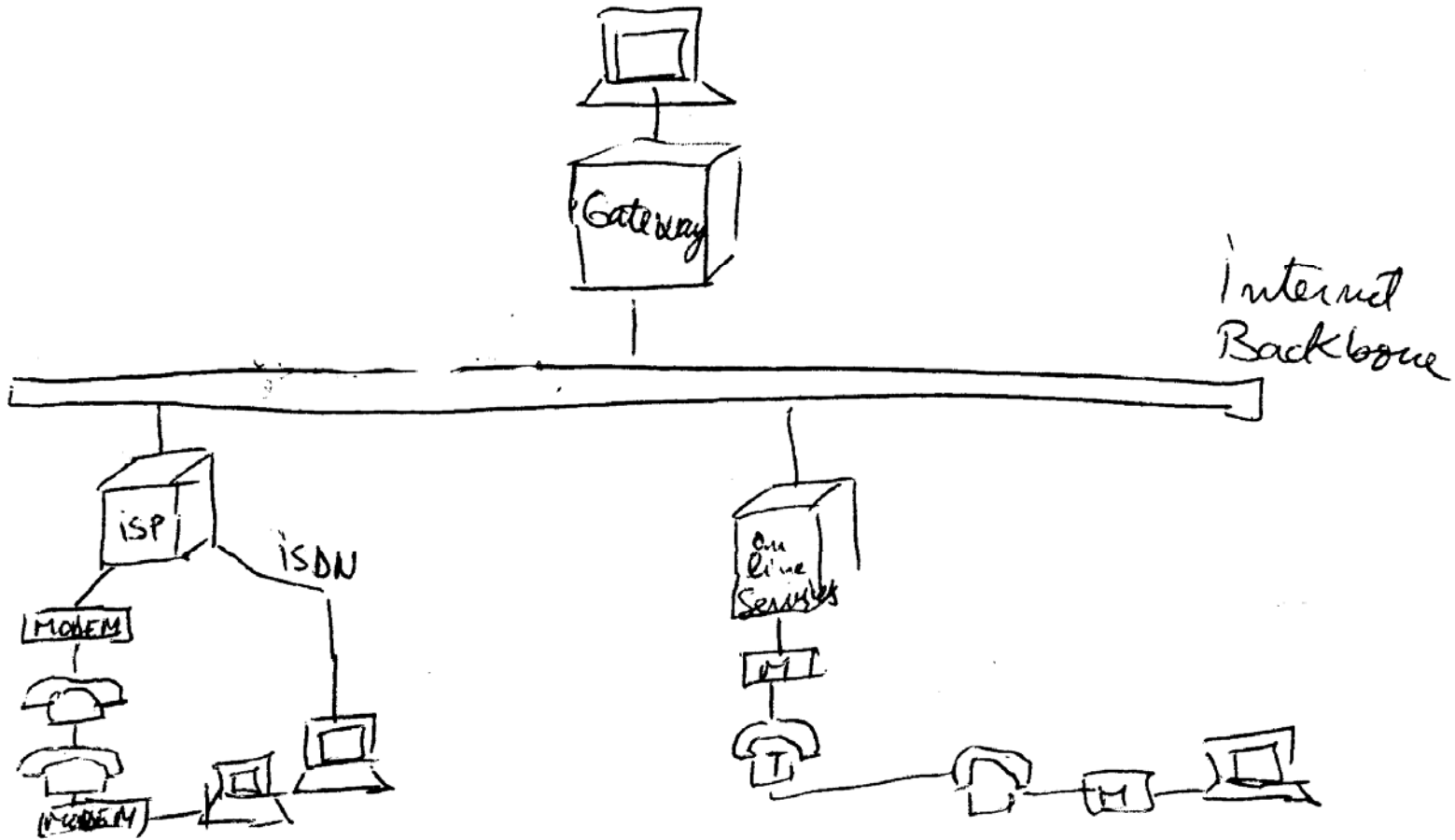
Rata de penetrare in EU



Crestere 2000-2007



Acces Internet



Acces Internet

- Gateway dedicat (Roedu)
- Servicii online (CompuServe, America Online, MSN) – conectare simpla cu plata
- ISP – Internet Service provider (UPC, RDS, Romtelecom etc)
- Intenet Backbone – Magistrala Internet – termen generic pentru a desemna o multitudine de linii de comunicatii de mare viteza intre diverse puncte de pe glob

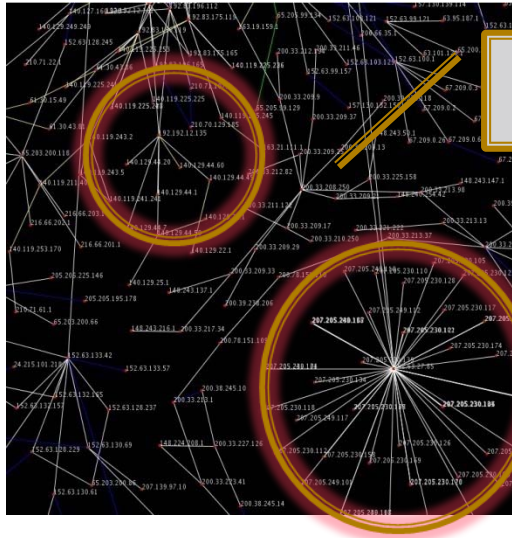
Internet Backbone



Adresa IP

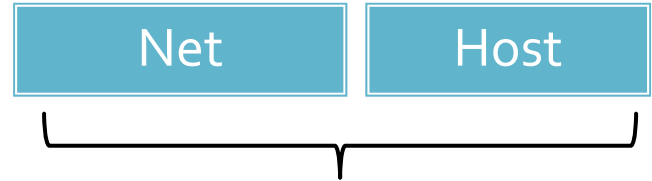
- **IP = Internet Protocol**
- Adresa Internet Protocol (prescurtat "IP")
- Cod numeric utilizat de IP pentru identificarea unica a calculatoarelor sau dispozitivelor pe Internet
- O succesiune de 4 numere intre 0 si 255 (4 octeti, $256 = 2^8 = 8$ biti) (IPv4 – versiunea 4)
- Combinatii posibile: 4.294.967.296
- 81.180.222.18 =
01010001.10110100.11011110.00010010

Adresa IP



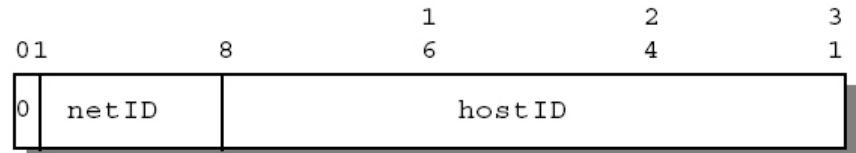
Organizare -
RETELE

Adrese IP:



Total: 32 biti = 4 octeti

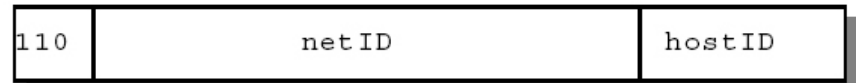
Class A



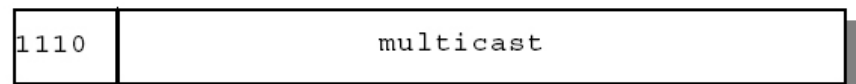
Class B



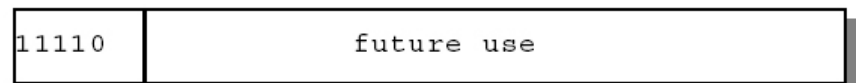
Class C



Class D



Class E

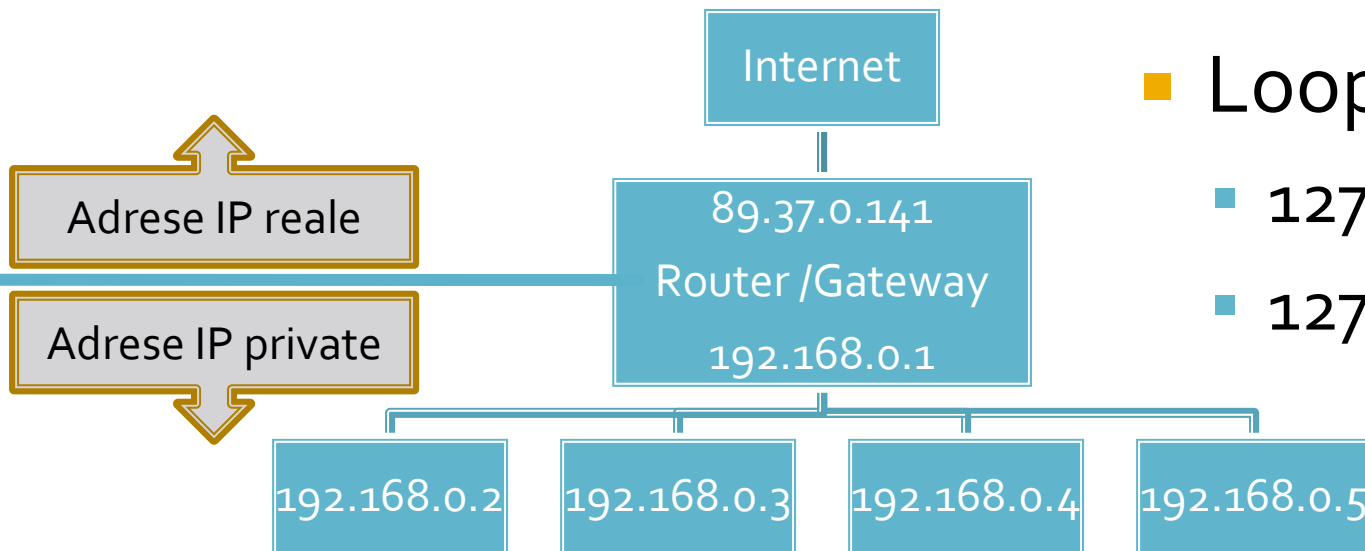


Adresa IP

- Reala ("rutabila")
 - vizibila din intregul Internet
 - necesara pentru dispozitivele care **ofera** date
- Privata ("nerutabila", interna)
 - invizibila din exterior
 - suficienta pentru dispozitivele care **primesc** date
 - necesita un dispozitiv cu adresa reala (gateway, router) pentru acces la exterior

Adresa IP

- Clase de adrese private rezervate
 - 10.x.x.x – 1 retea clasa A
 - 172.16.x.x – 172.31.x.x – 16 retele clasa B
 - 192.168.0.x – 192.168.255.x – 256 retele clasa C



- Loopback

- 127.0.0.0/8
- 127.0.0.1 = localhost

Adresa IP

- Adrese IP:
 - Clasa A – 126 retele a 16.777.214 noduri
 - Clasa B – 16.384 retele a 65.534 noduri
 - Clasa C – 2.097.152 retele a 254 noduri
 - Clasa D – multicast
 - Clasa E – rezervate

	31	24	16	8	0
Class A	0	Net ID	Host ID		
Class B	1	0	Net ID	Host ID	
Class C	1	1	0	Net ID	Host ID
Class D	1	1	1	0	multicast address
Class E	1	1	1	1	0 reserved for future use

Configurare TCP/IP

- Date necesare:
 - Adresa IP
 - Subnet Mask
 - Gateway
- Poate fi realizata
 - static
 - dinamic (DHCP)
- DNS – optional

TCP/IP static

The image displays three overlapping Windows network configuration windows. The 'Local Area Connection Properties' window (top left) shows the 'Internet Protocol (TCP/IP)' protocol selected. The 'Local Area Connection Status' window (top right) shows the connection is 'Connected' with a speed of 100.0 Mbps. The 'Internet Protocol (TCP/IP) Properties' window (center) is the primary focus, showing static IP configuration. It includes fields for IP address (192.168.0.5), Subnet mask (255.255.255.0), Default gateway (192.168.0.1), and Preferred DNS server (81.180.222.254). A box labeled 'Optional' points to the DNS server field.

2 points to the 'Internet Protocol (TCP/IP)' protocol in the 'Local Area Connection Properties' window.

3 points to the 'Properties' button in the 'Local Area Connection Properties' window.

1 points to the 'Status' field in the 'Local Area Connection Status' window.

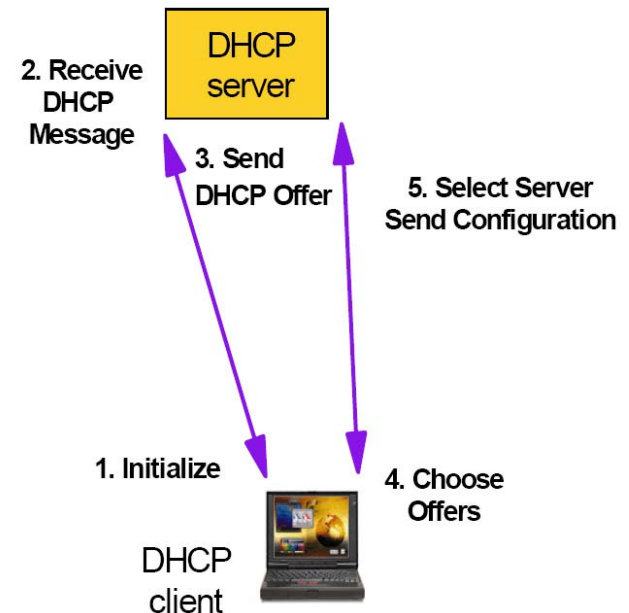
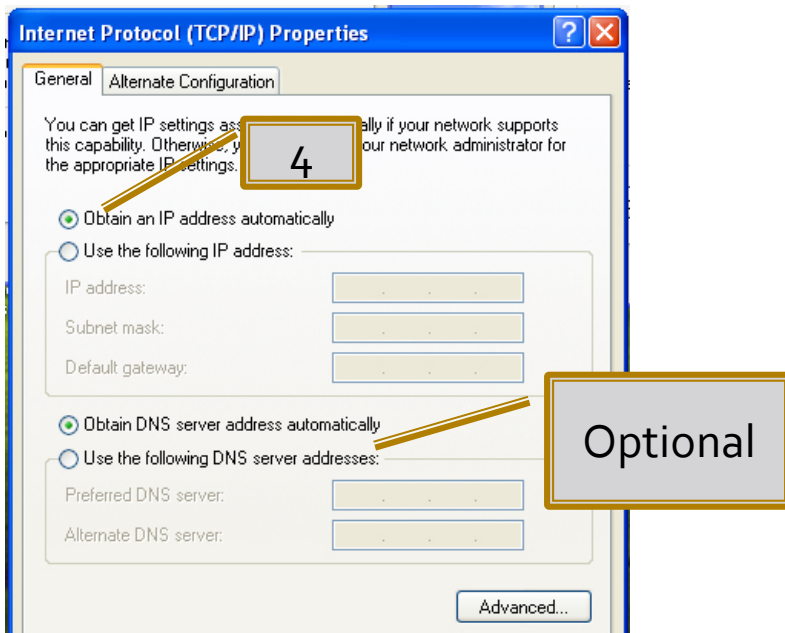
4 points to the 'Use the following IP address' radio button in the 'Internet Protocol (TCP/IP) Properties' window.

5 points to the IP address, Subnet mask, and Default gateway fields in the 'Internet Protocol (TCP/IP) Properties' window.

Optional points to the Preferred DNS server field in the 'Internet Protocol (TCP/IP) Properties' window.

DHCP

- **Dynamic Host Configuration Protocol**
 - Permite reutilizarea adreselor IP disponibile
 - Datele necesare se obtin automat
 - Necesitatea unui furnizor al datelor respective in retea: server DHCP



Ipconfig

```
C:\> Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Radu>ipconfig /all

Windows IP Configuration

    Host Name . . . . . : home
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Unknown
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . . . :
    Description . . . . . : Intel 21140 Based PCI Fast Ethernet
Adapter (Generic)
    Physical Address. . . . . : 00-03-FF-AF-D8-57
    Dhcp Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . . : Yes
    IP Address. . . . . : 192.168.0.134
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1
    DHCP Server . . . . . : 192.168.0.1
    DNS Servers . . . . . : 80.96.184.18
    . . . . . : 192.168.0.1
    Lease Obtained. . . . . : Thursday, October 16, 2008 5:12:49 A
    Lease Expires . . . . . : Thursday, October 23, 2008 5:12:49 A

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

ipconfig /all – toate

MAC
(Media Access Control)

DHCP ?

DHCP- alocare temporara

Stare IP

Achiziționare adrese IP

- ICANN – Internet Corporation for Assigned Names and Numbers
 - RIPE – Réseaux IP Européens
 - RoTLD – Romania Top Level Domain www.rotld.ro
 - ARIN – American Registry for Internet Numbers
 - APNIC – Asia-Pacific Network Information Center
- Pret fixat, non-profit (numai cheltuieli de intretinere)
- Trecere la IPv6 in curs, pentru rezolvarea limitarilor

Achizitionare adrese IP

TIP BLOC ALOCAT	LUNGIME BLOC	COST USD (FARA TVA)
A	<128	50
B	129-256	75
C	257-512	175
D	513-768	225
E	769-1024	275
F	1025-1536	350
G	1537-2048	400
H	2049-3072	800
I	3073-4096	1200

RpTLD:

“Acesta reprezintă taxa pentru serviciul de alocare și înregistrare a acestor adrese la RIPE. Adresele IPv4 fiind limitate nu se vând ci se alocă temporar atât timp cât este nevoie (justificată) de ele. RIPE verifică sistematic aceste alocări.”

Contact

- Laboratorul de microunde si optoelectronica
- <http://rf-opto.etc.tuiasi.ro>
- rdamian@etc.tuiasi.ro