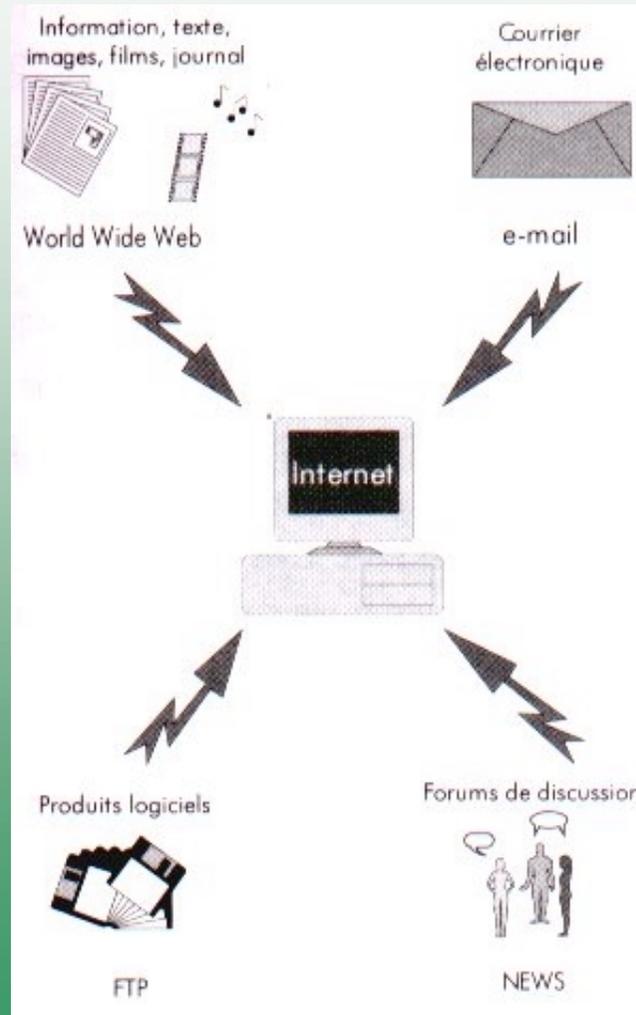


Utilisation d'Internet dans les laboratoires scientifiques

Que peut on faire avec Internet ?

1 Lire des pages html



2 Envoyer et recevoir du courrier électronique

3 Transférer des fichiers

4 Participer à des forums de discussion

Principes généraux

Historique

Fonctionnement

Vocabulaire

Un réseau de réseaux américains

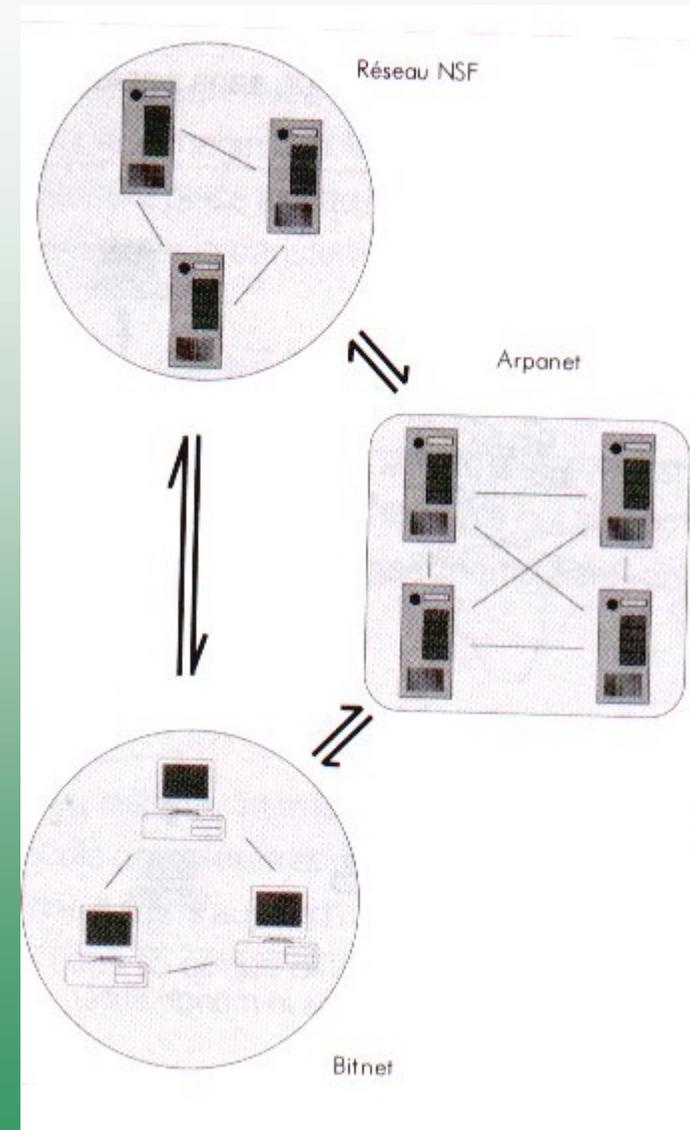
Historique:

1969: Arpanet (armée US)

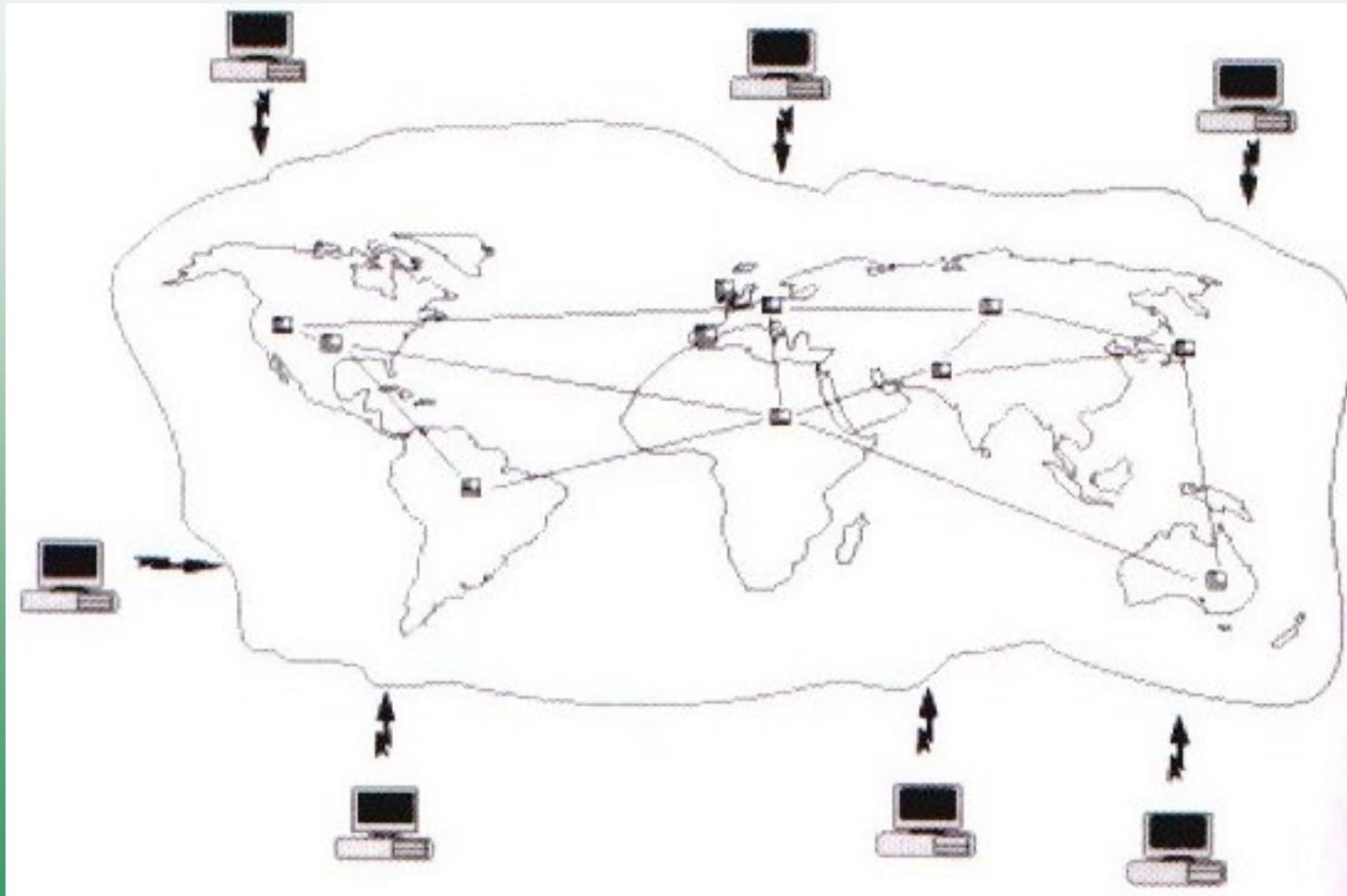
NSF (National Science Foundation)

Bitnet, Usenet, ...

Passerelles (gateways)

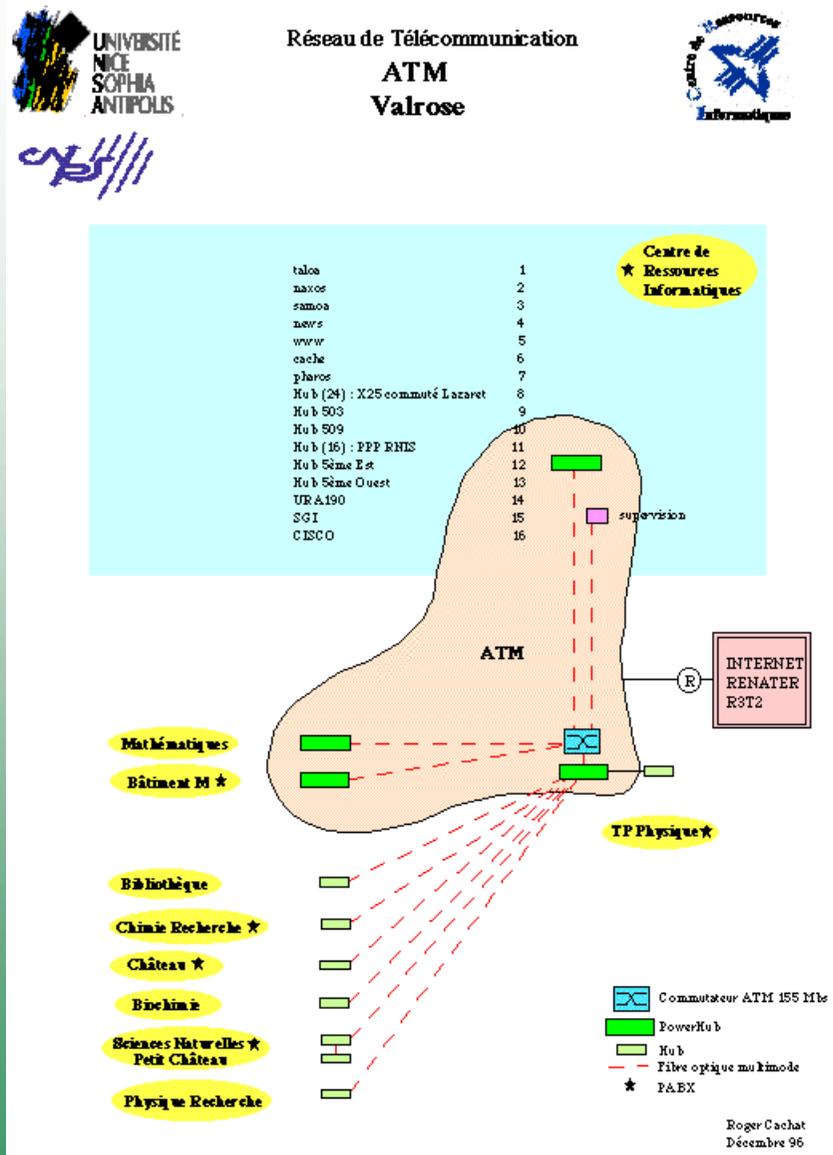


Internet: Un réseau de réseaux internationaux



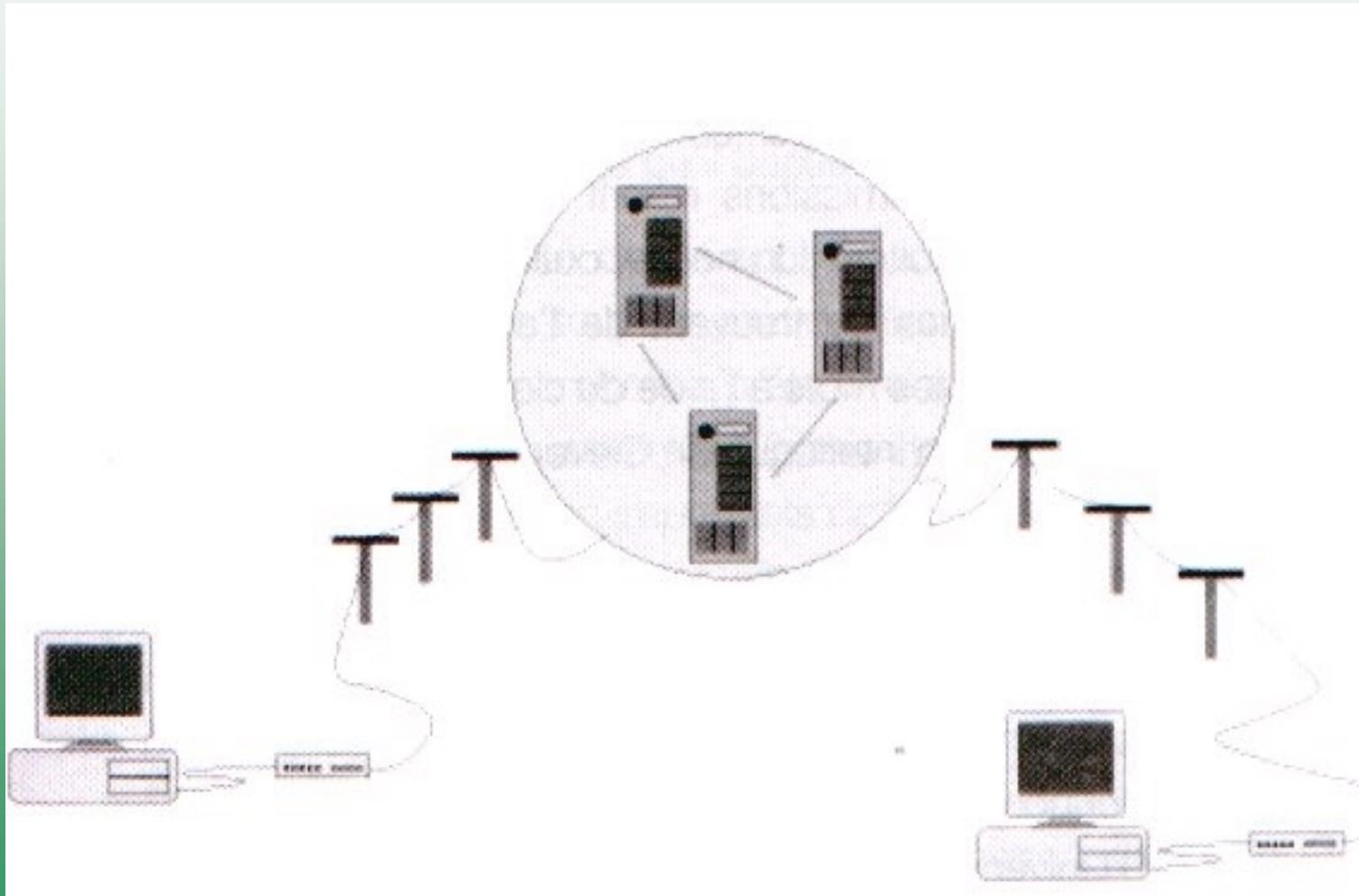
Réseau de Valrose

Source: CRI



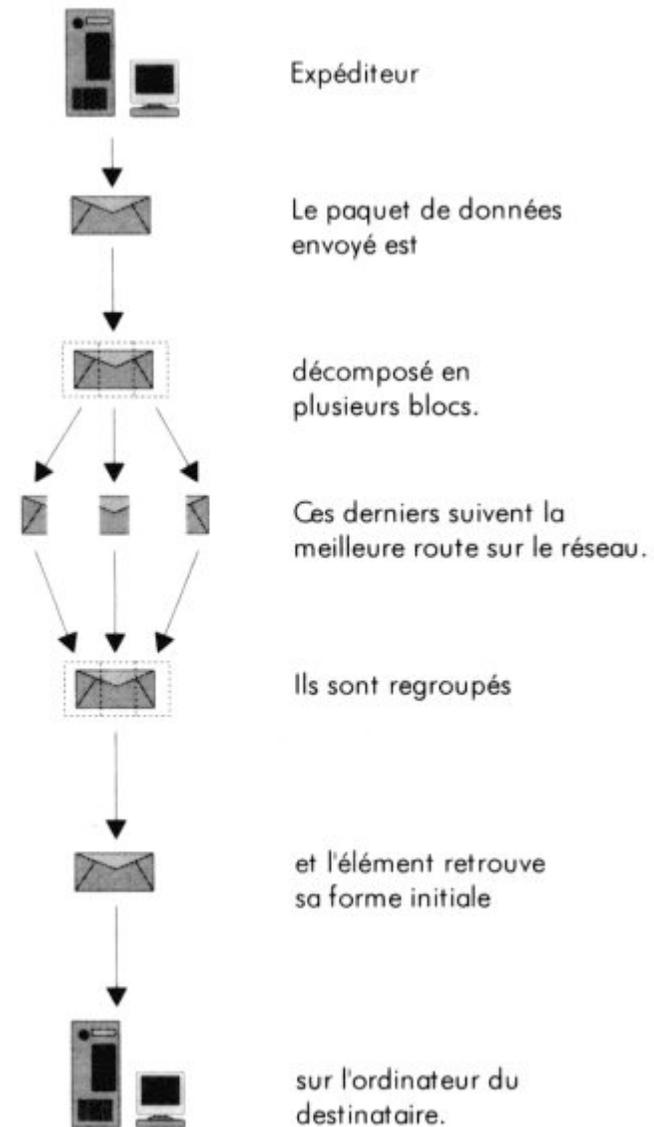
Connexion par modem

Un point d'entrée dans le réseau global



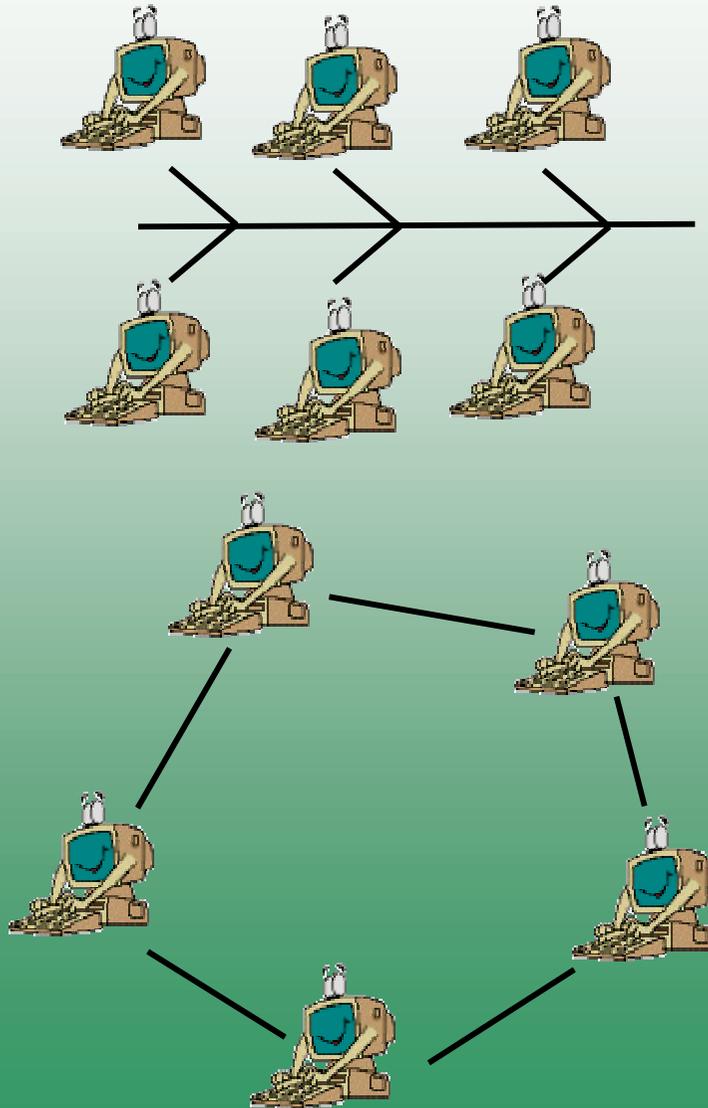
Transmission par paquets

Protocole **TCP / IP**
(**T**ransfer **C**ontrol **P**rotocol
/ **I**nternet **P**rotocol)

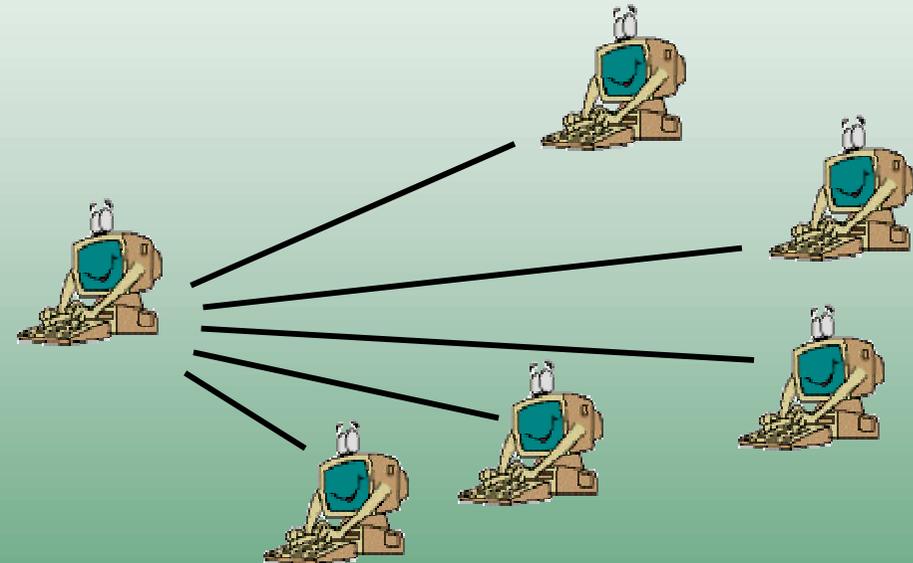


Types de réseau

Réseau de type BUS



Réseau de type client serveur



Réseau en anneau

Adresse IP (Internet Protocol)

serveur.sousdomaine.domaine.pays

Exemple: 134.59.105.10
 xeres.unice.fr
 gelas.ipmc.cnrs.fr

Nécessité d'un DNS (Domain Name Server)

Identificateurs des serveurs Internet

.gov government

.edu education

.mil military

.com commercial

.net network

.org organizations

.at Autriche

.au Australie

.ca Canada

.ch Suisse

.de Allemagne

.fr France

.uk Royaume Uni

.it Italie

Structure d'une URL

(Uniform Resource Locator)

protocole://indicateur.serveur.sousdomaine.domaine.pays/chemin/fichier.htm

http = hyper text transfer protocol

Exemple: <http://w3.gelas.ipmc.cnrs.fr/equipes/vincent.shtml>

ftp = file transfer protocol

Exemple: <ftp://ftp.nephi.cri.unice.fr/bibliotheque/theses.htm>

Email = electronic mail

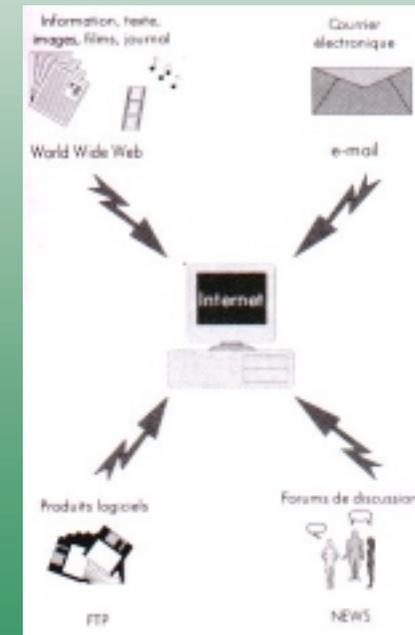
Exemple: jean.dupond@xeres.unice.fr

1 Lire des pages html

2 Envoyer et recevoir du courrier électronique

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4 Participer à des forums de discussion



Lire une page HTML

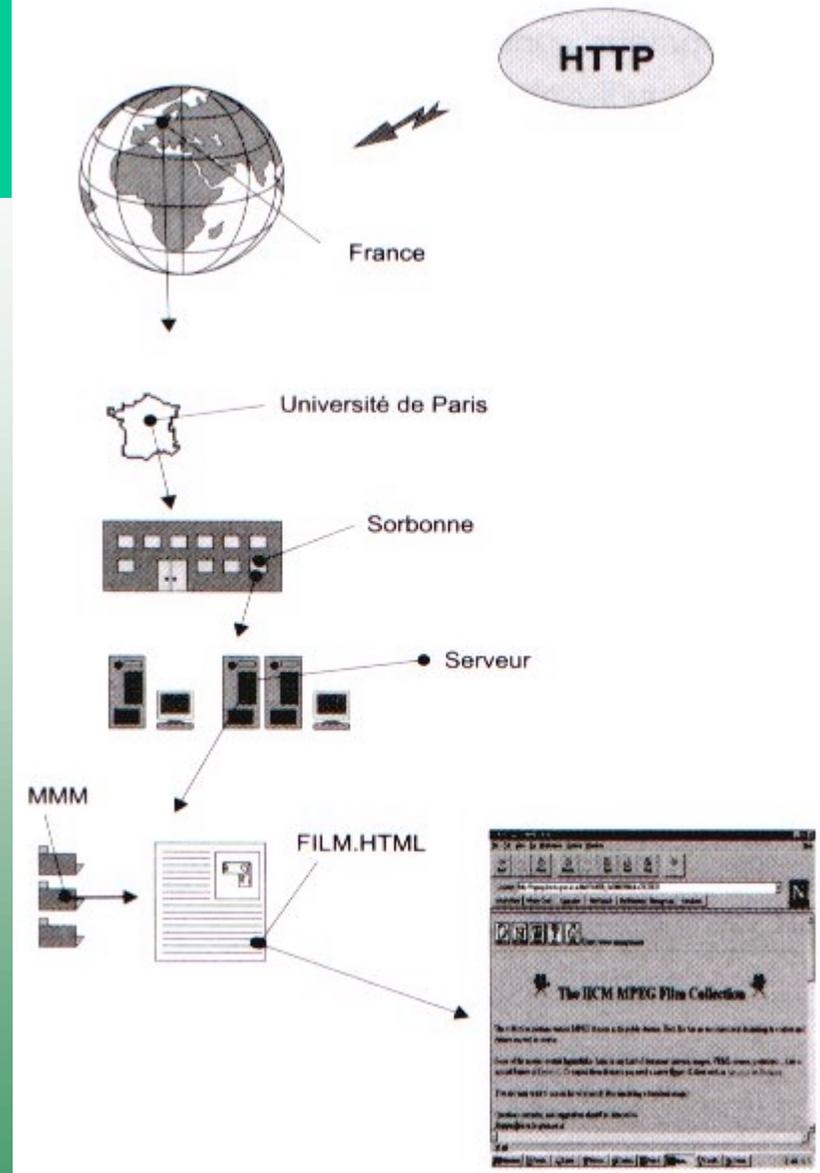
(Hyper Text Markup Language)

Navigateurs:

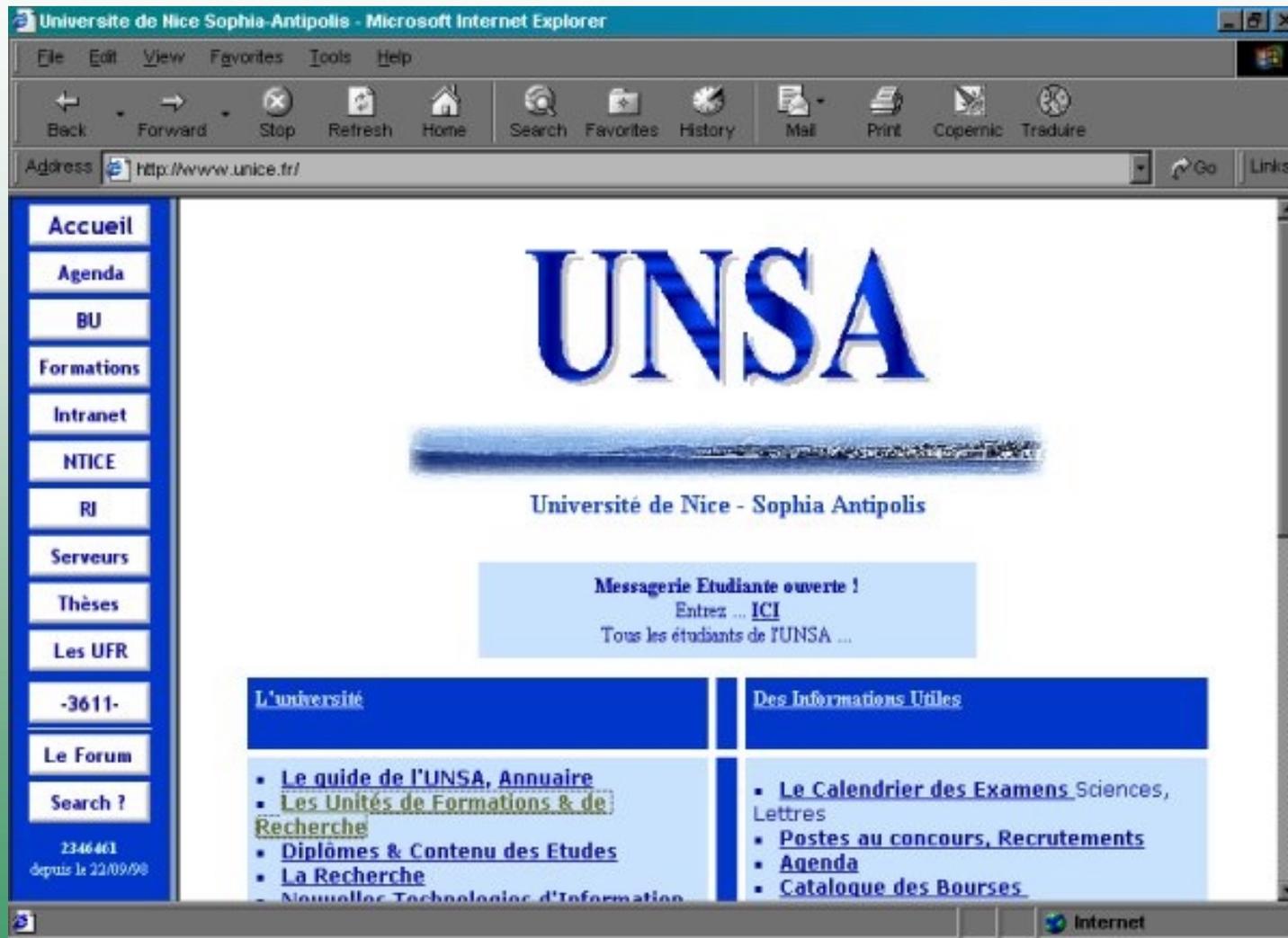
Navigator, Communicator (Netscape)
Internet Explorer (Microsoft)

Exemple:

<http://serv.sorbonne.univ-paris.fr/mmm/film.html>



Contenu d'une page HTML



Liens hypertexte

page1.htm

page2.htm

Vers page 2
(page2.htm)

Vers Unice
(http://www.unice.fr)

Vers page 1
(page1.htm)

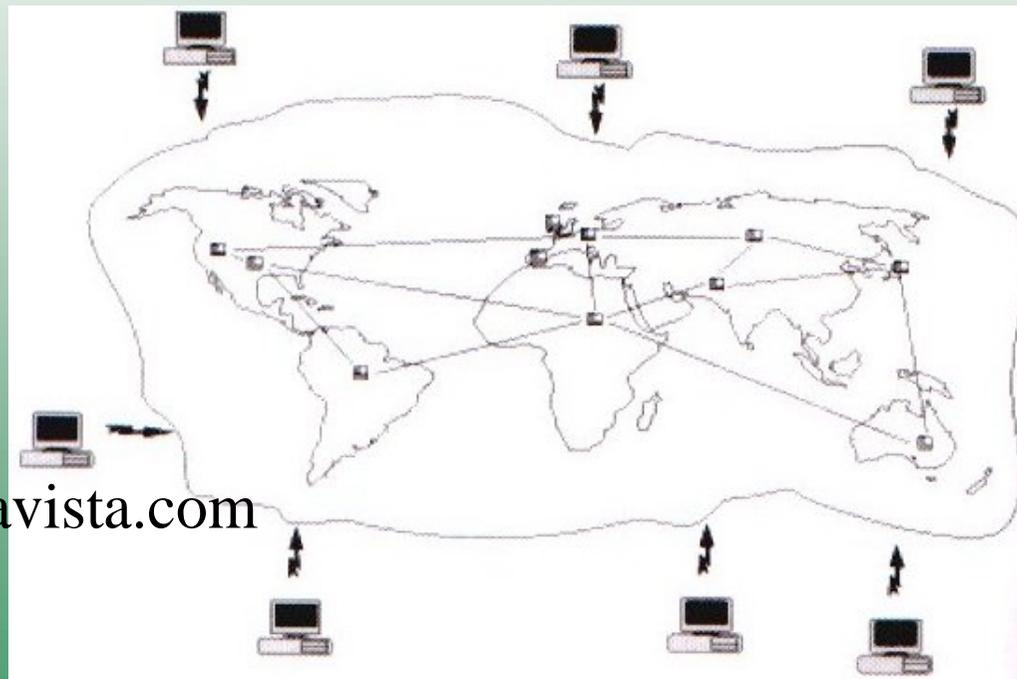
Page d'accueil Unice

Accueil

bla bla
bla bla

Des millions de pages sur l'ensemble des ordinateurs de la planète

<http://serv.sorbonne.univ-paris.fr/mmm/film.html>



page1.htm
page2.htm

<http://www.altavista.com>

<http://w3.gelas.ipmc.cnrs.fr/equipes/vincent.shtml>

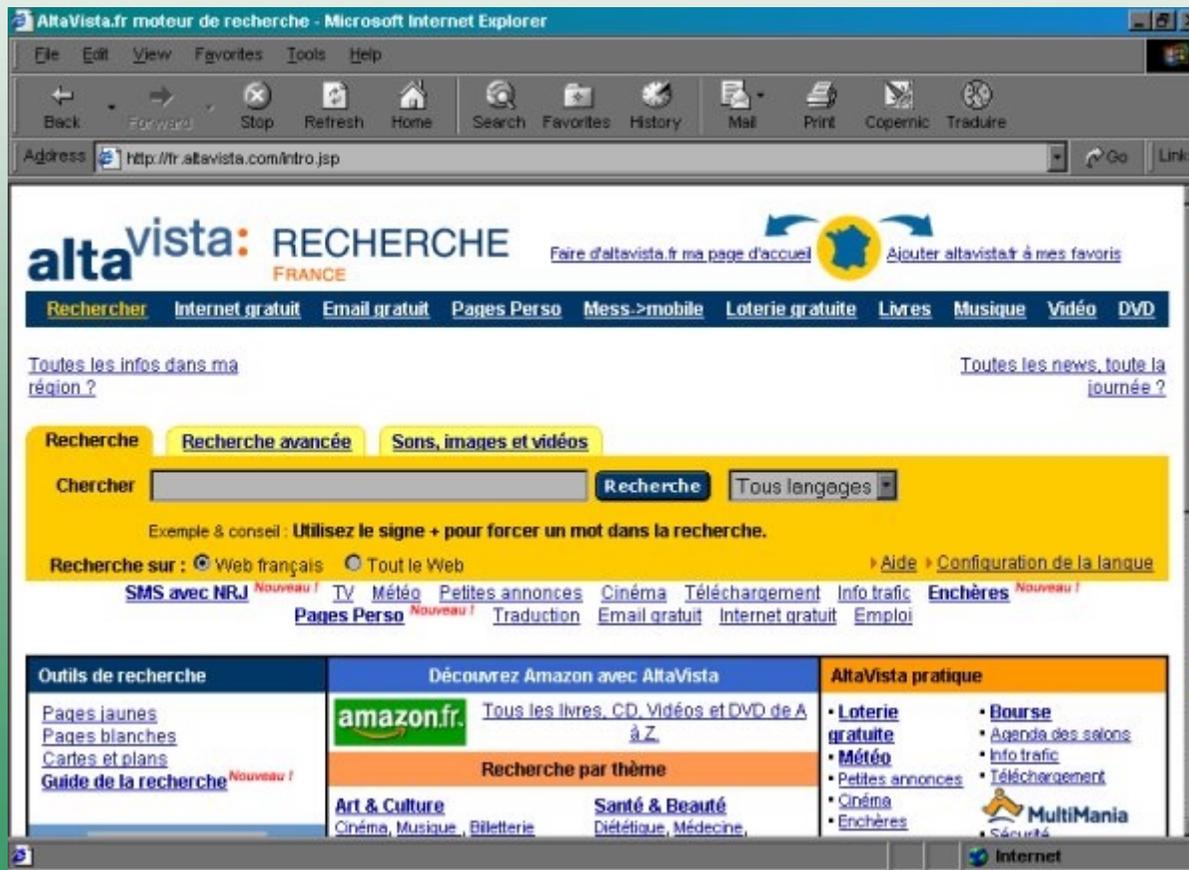
Moteurs de recherche

<http://fr.altavista.com>

<http://fr.yahoo.com>

<http://www.nomade.fr>

<http://www.francite.com>



Méta moteurs de recherche

INFIND: <http://www.infind.com/>

COPERNIC

Mots recherchés	Mode	Dernière recherche	Résultats	Domaine
vacances bretagne	Tous les mots	24/01/01 22:49:02	97	Le Web en franç
physiologie poisson	Tous les mots	28/02/01 16:16:09	71	Le Web en franç

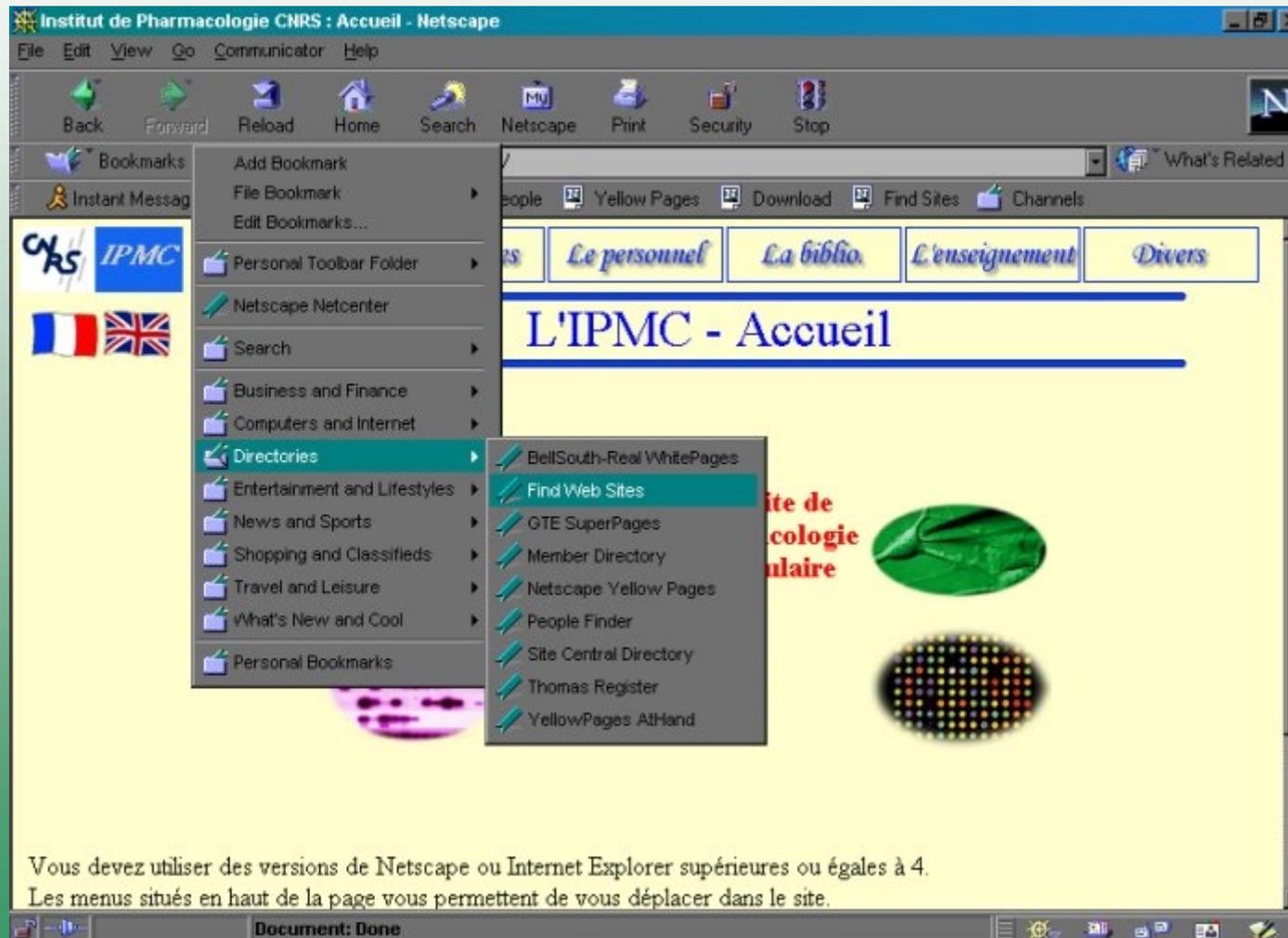
Progression de la recherche - physiologie poisson		
Moteur	Progression	Résu
AltaVista Français		
EuroSeek		
FAST Search		
Francité		
HotBot		
Infoseek France		
La Toile du Québec		
Lokace		
Lycos France		
Snap		
Spray.Fr		

71 résultat(s)

Garder les bonnes adresses

Netscape: **signets** (bookmarks)

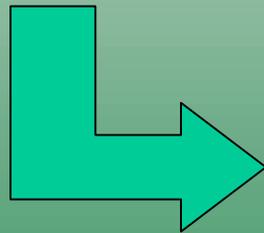
Internet Explorer: **favoris** (favorites)



ATTENTION

Serveur proxy

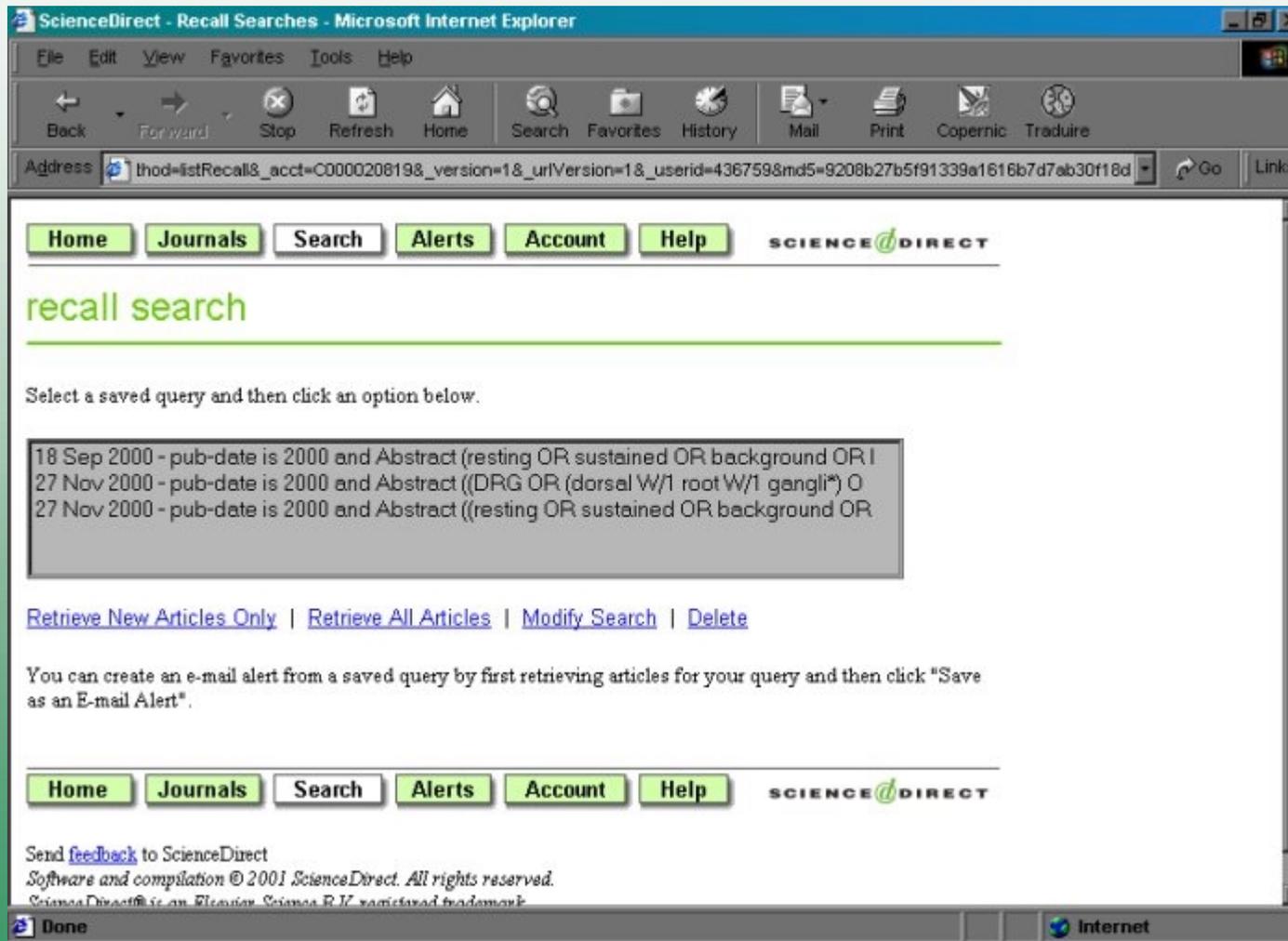
Zone cache (temporary internet files)



**Boutons: Recharger (Reload)
 Rafrachir (Refresh)**

APPLICATION: Recherche bibliographique

<http://www.sciencedirect.com>



APPLICATION: Recherche bibliographique

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>

The screenshot shows the Entrez-PubMed interface in Microsoft Internet Explorer. The address bar displays the URL <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=&DB=PubMed>. The search bar contains the text "isaac malenka". The search results are displayed in a list format, showing three items:

1. [Isaac JT, Nicoll RA, Malenka RC.](#) Silent glutamatergic synapses in the mammalian brain. *Can J Physiol Pharmacol.* 1999 Sep;77(9):735-7. Review. PMID: 10566951
2. [Hjeltnstad GO, Isaac JT, Nicoll RA, Malenka RC.](#) Lack of AMPA receptor desensitization during basal synaptic transmission in the hippocampal slice. *J Neurophysiol.* 1999 Jun;81(6):3096-9. PMID: 10368425
3. [Feldman DE, Nicoll RA, Malenka RC, Isaac JT.](#)

Isaac JT, Crair MC, Nicoll RA & Malenka RC (1997)
Silent synapses during development of thalamocortical inputs. *Neuron* 18(2)

APPLICATION

Créer sa page en HTML

```
<HTML>
<HEAD>  <TITLE> Page 1 </TITLE>  </HEAD>
<BODY>
<H1 ALIGN="CENTER"> Ma premiere page web </H1>
<BR>
<HR>
<H2> Je vous propose aujourd'hui les liens suivants: </H2>
<BR>
<P> <A HREF="http://www.unice.fr"> Universite de Nice </A> </P>
<BR>
<P>
<A HREF="page2.htm"> <IMG SRC="lien.gif"> Deuxieme page </A>
</P>
<BR>
<P ALIGN="RIGHT">Mon nom, fevrier 2001</P>
</BODY>
</HTML>
```

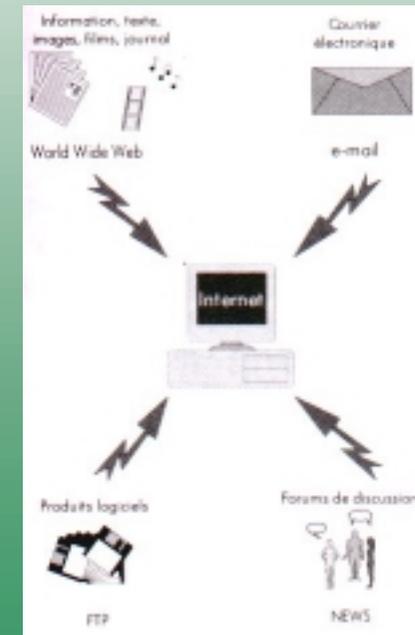
```
<HTML>
<HEAD> <TITLE> Page 2 </TITLE> </HEAD>
<BODY>
<H1 ALIGN="CENTER"> Ma deuxieme page web </H1>
<BR>
<HR>
<BR>
<P> <A HREF="page1.htm"> Retour premiere page </A> </P>
<BR>
<P ALIGN="RIGHT"> Mon nom, fevrier 2001 </P>
</BODY>
</HTML>
```

1 Lire des pages html

2 Envoyer et recevoir du courrier électronique

3 Transférer des fichiers

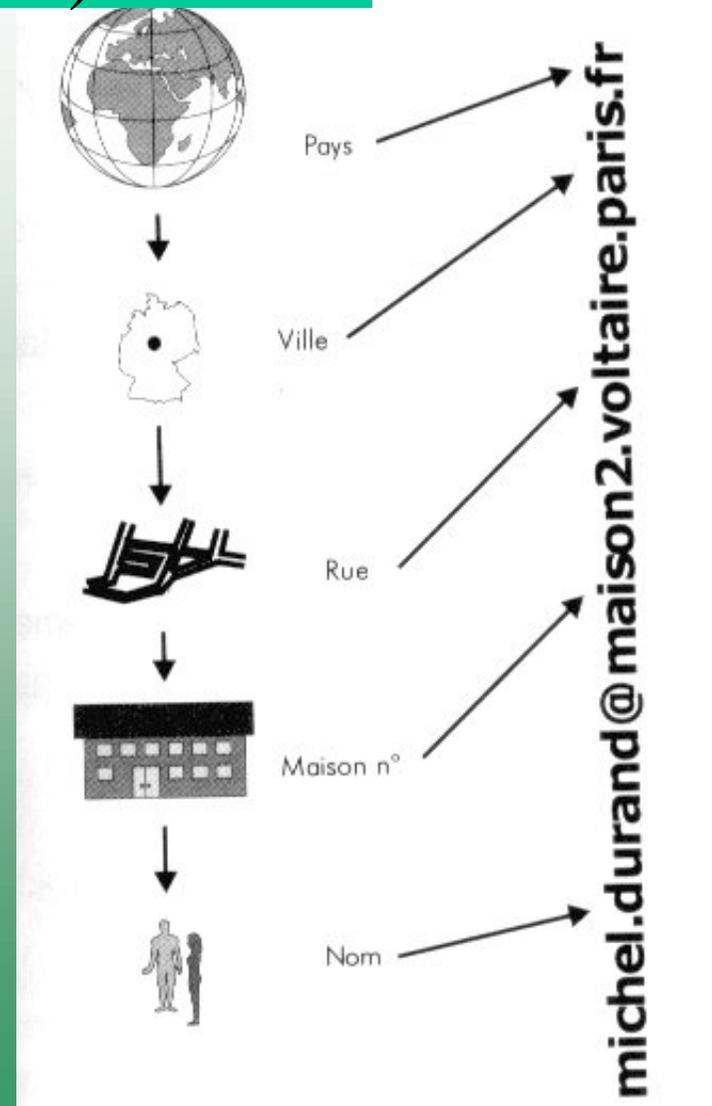
4 Participer à des forums de discussion



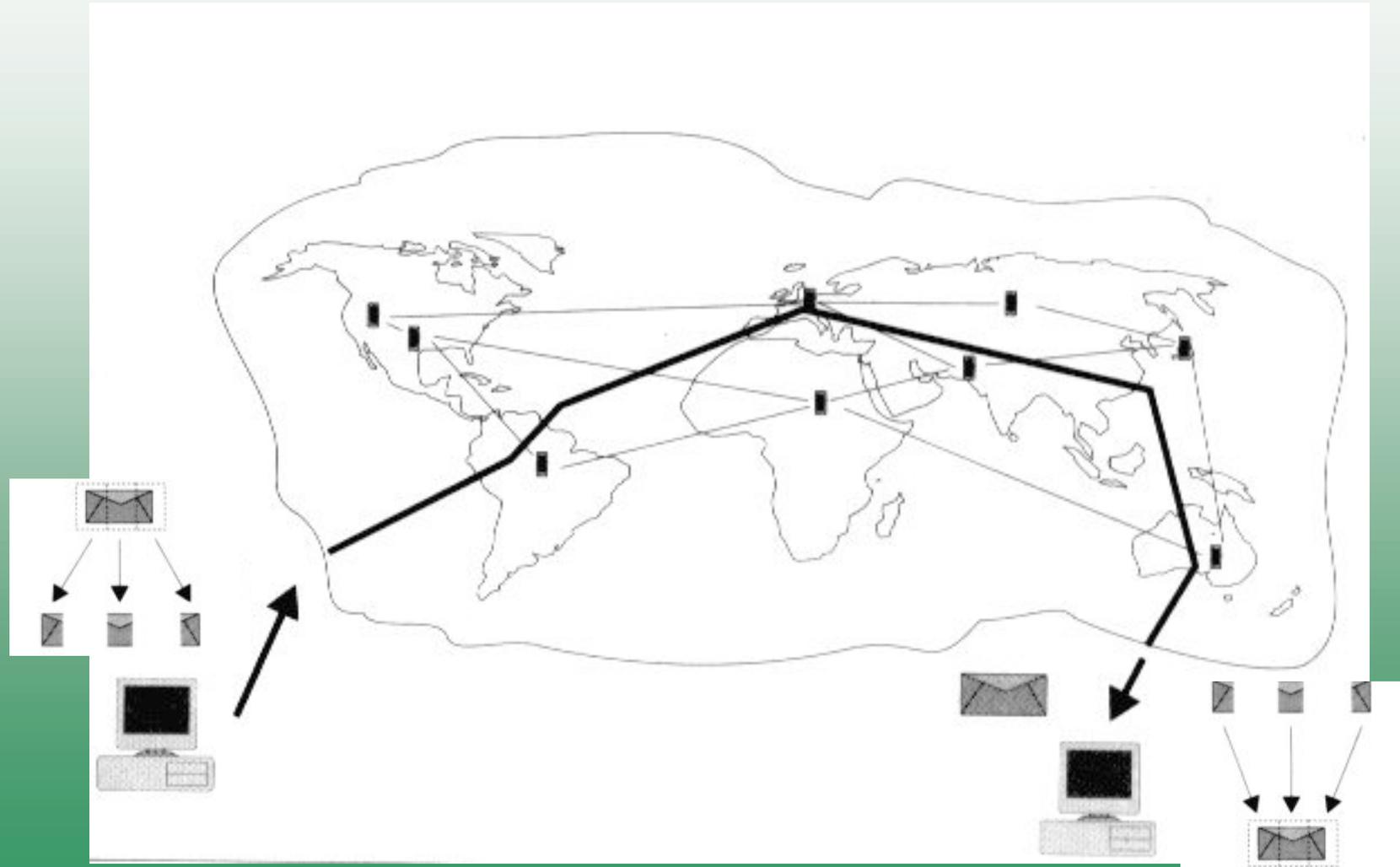
Format d'une adresse IP (Internet Protocol)

Exemple 1:
michel.durand
@maison2
.voltaire
.paris
.fr

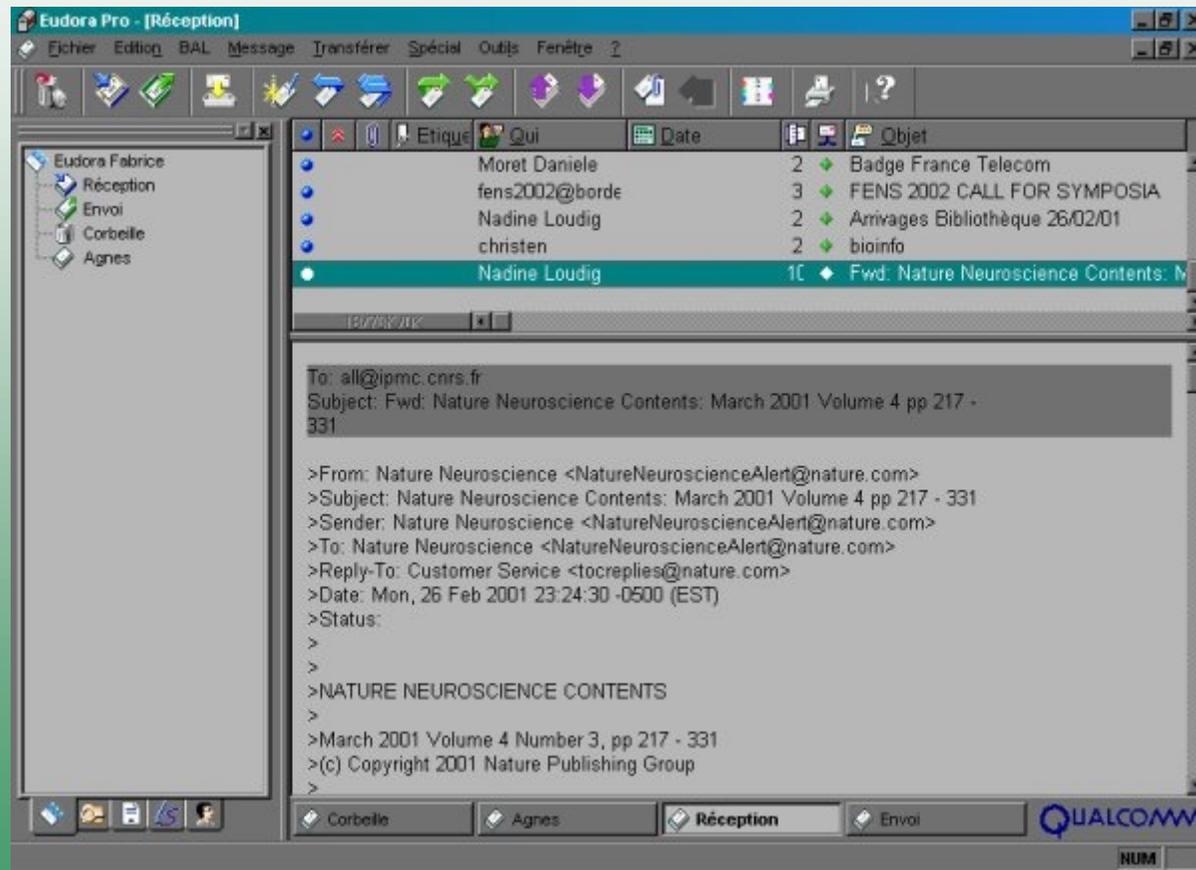
Exemple 2: duprat@ipmc.cnrs.fr



Envoyer un email (**e**lectronic **m**ail)



Exemple de logiciel de gestion d'email: Eudora



<http://www.eudora.com>

Structure d'un email

Destinataire (obligatoire)
Expéditeur
Sujet
Copies
Fichier attaché
Message
Signature

A: andre@unice.fr
De: Fabrice Duprat <duprat@gelas.ipmc.cnrs.fr>
Objet: Test de connexion
Cc: gerard@unice.fr

Bonjour,

Veuillez trouver ci-joint la liste des serveurs pour le test de connexion.

Merci d'avance.

Fabrice DUPRAT
Institut de Pharmacologie Moléculaire et Cellulaire
660 Route des Lucioles
06560 Valbonne
FRANCE
Tél: +33 (0)4 93 95 77 24
Fax: +33 (0)4 93 95 77 04
Email: duprat@ipmc.cnrs.fr
Web: <http://www.ipmc.cnrs.fr/~duprat/>

Fonctions diverses

Copies

Fichier attaché

Signature

Carnet d'adresses

APPLICATION

Créer un compte d' Email gratuit

<http://www.nomade.fr>
<http://www.hotmail.com>
<http://mail.altavista.fr>
<http://fr.yahoo.com>
<http://www.caramail.com>
<http://www.voila.fr>

APPLICATION:

Recevoir le sommaire de Cell

Cell, Volume 104, Issue 4,
dated Feb 23 2001, is now available at:

<http://www.cell.com>

<http://www.cell.com/content/vol104/issue4/>

A plain-text copy of the table of contents has been appended
below.

Cell

Current Table of Contents: Feb 23 2001; 104 (4)

Overview

After the Genome: DNA and Human Disease.

Kevin Davies

Cell 2001 104 (4), p. 465

<http://www.cell.com/cgi/content/full/104/4/465>

Minireview

HIV-1 Sequence Variation: Drift, Shift, and Attenuation.

Michael H. Malim and Michael Emerman

Cell 2001 104 (4), p. 469

<http://www.cell.com/cgi/content/full/104/4/469>

APPLICATION:

Recherche bibliographique automatique

<http://www.sciencedirect.com>

ScienceDirect - Search

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: [9%_acct=C000020819%_version=1%_userid=436759%md5=90391029a771ad579fc82d58f8531931](#) What's Related

NLight AltaVista Nomade PubMed Full text SciDirect IPMC FDweb FDWeb (local) Cyberfac Zoom

alerts

3 Articles Found

pub-date is 2000 and Abstract (resting OR sustained OR background OR leak OR 2P OR KCNK) W/4
(potassium OR K+ OR channel OR current OR conductance)

[Edit Query](#)

tagged docs: [create subset](#) [sort by date](#) [sort by relevance](#)

1. ■ **Contributions of intrinsic motor neuron properties to the production of rhythmic motor output in the mammalian spinal cord**, *Brain Research Bulletin, Volume 53, Issue 5, 15 November 2000, Pages 649-659*
Ole Kiehn, Ole Kjaerulff, Matthew C. Tresch and Ronald M. Harris-Warrick
[SummaryPlus](#) | [Article](#) | [Journal Format-PDF \(661 K\)](#)
2. ■ **Genomic organization and chromosomal localization of the murine 2 P domain potassium channel gene *Kcnk8*: conservation of gene structure in 2 P domain potassium channels**, *Gene, Volume 261, Issue 2, 31 December 2000, Pages 365-372*
Detlef Bockenhauer, Manjunath A. Nimmakayalu, David C. Ward, Steve A. N. Goldstein and Patrick G. Gallagher
[SummaryPlus](#) | [Article](#) | [Journal Format-PDF \(379 K\)](#)

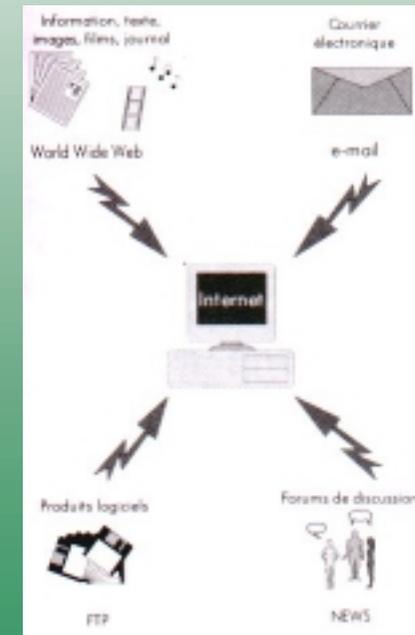
Document: Done

1 Lire des pages html

2 Envoyer et recevoir du courrier électronique

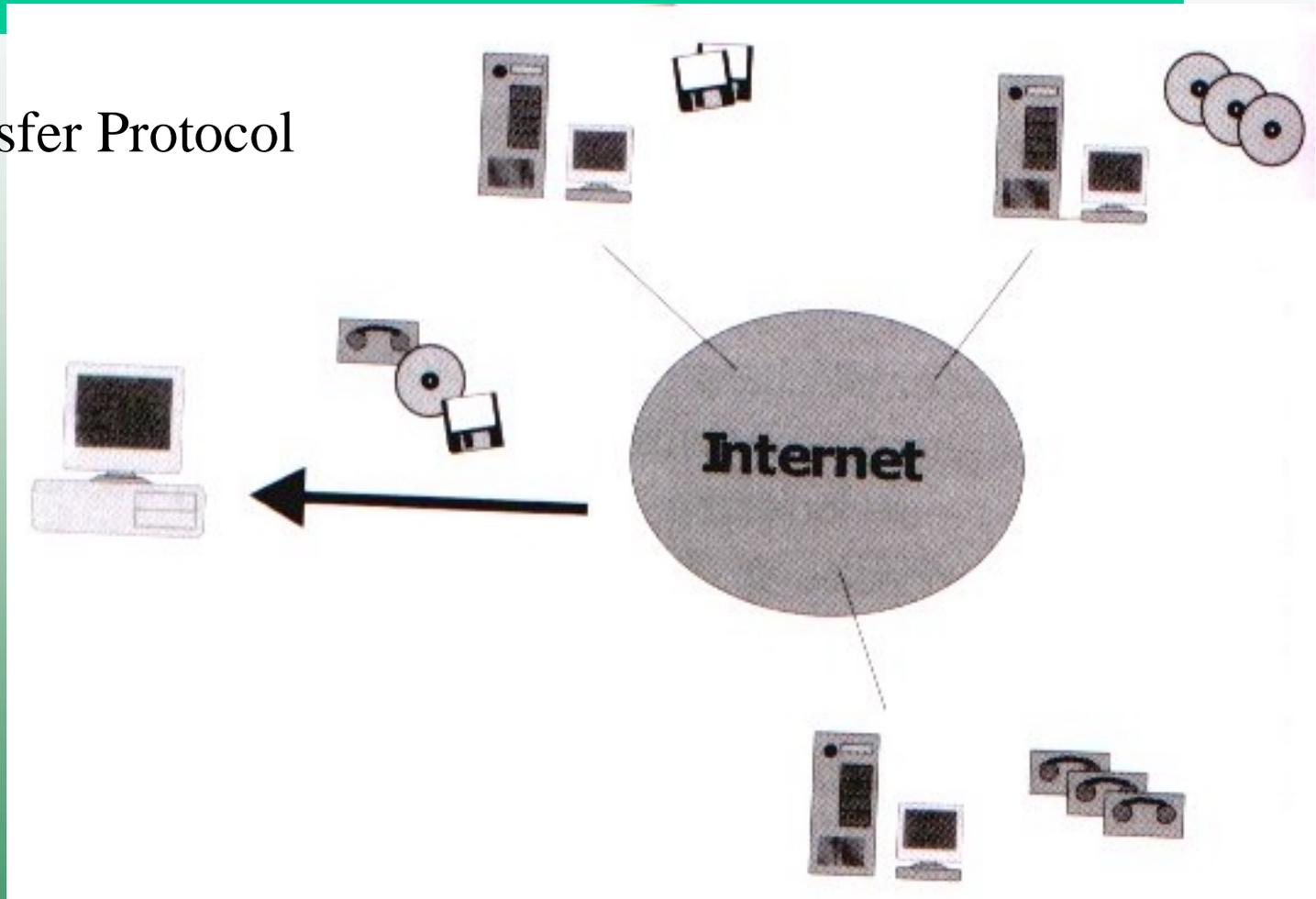
3 Transférer des fichiers

4 Participer à des forums de discussion



Transfert de fichiers

FTP: File Transfer Protocol



Exemple: <ftp://ftp.nephi.unice.fr/PC/jeux/spaceinvader.exe>

Serveurs FTP

Logiciels:

<ftp://ftp.calvacom.fr>
<http://www.shareware.com>
<ftp://ftp.nephi.unice.fr>

Divers:

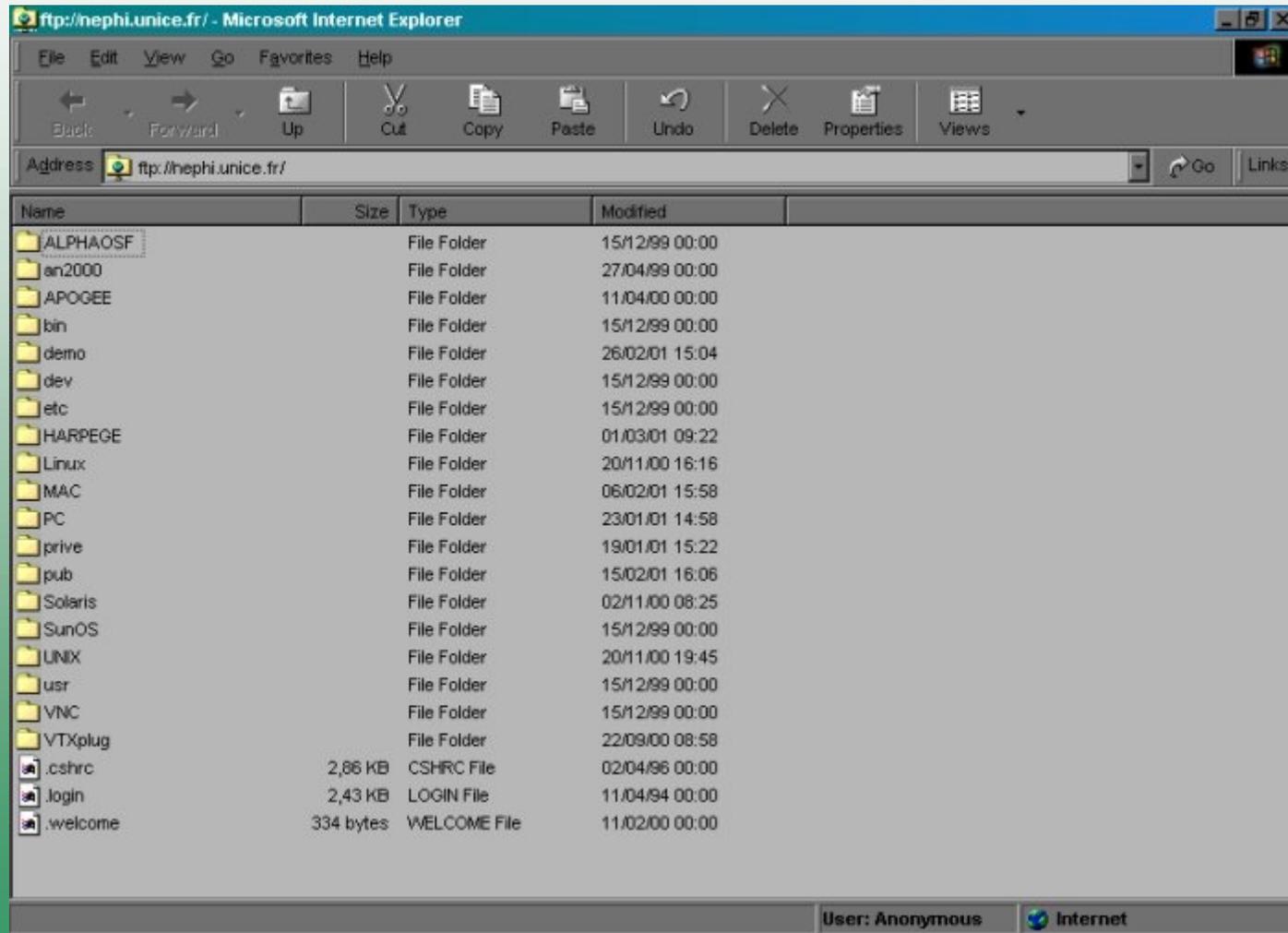
<ftp://ftp.inria.fr>
<ftp://ftp.cnam.fr>

Biologie:

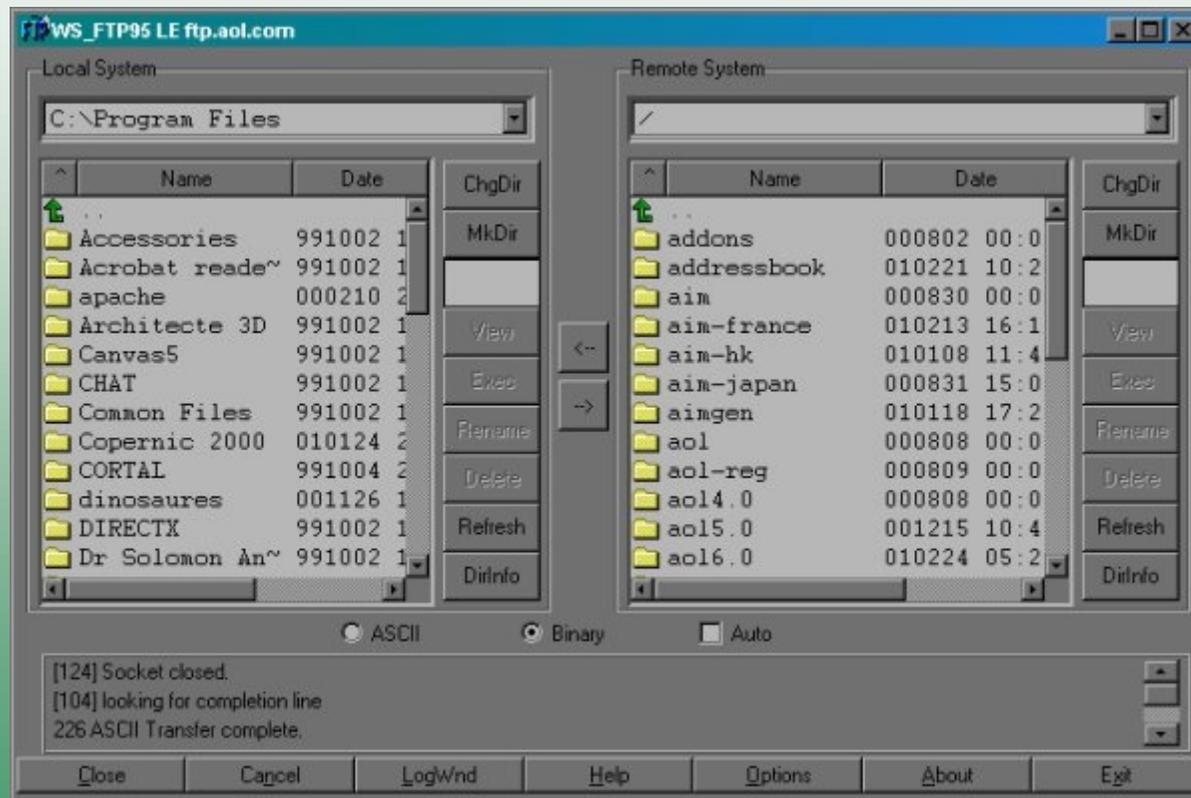
<ftp://biomol.univ-lyon1.fr>

LIRE LE FICHER: readme

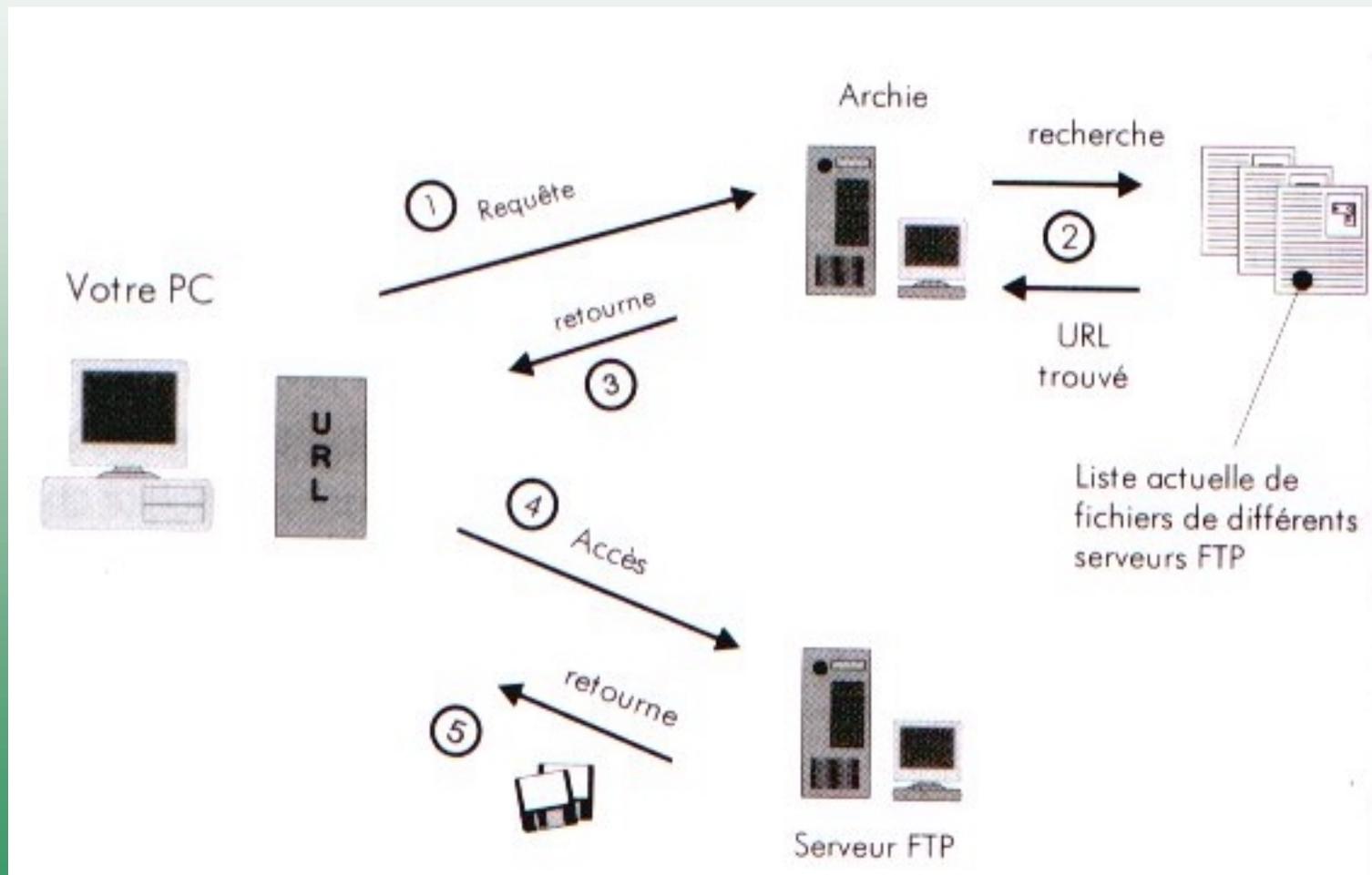
Page HTML pour FTP (download uniquement)



Exemple de logiciel: Ws FTP (download et upload)



Le système Archie



APPLICATION: Journaux électroniques

The screenshot shows a web browser window with the address bar containing <http://www.unice.fr/BU/sciences/perelec.htm>. The page content is a list of electronic journals, each preceded by a colored dot (red or green). The list includes:

- Nanotechnology
- Nature (ISSN 1360-0375, 1971-)
- Nature Biotechnology (ISSN 1087-7965, 1996-)
- Nature Cell Biology (ISSN 1471-0075, 2000-)
- Nature Genetics
- Nature Immunology
- Nature Medicine
- Nature Neuroscience
- Nature Structural Biology
- Neues Jahrbuch für Geologie und Paläontologie, Monatshefte (ISSN 0029-5750, 1964-1995)
- Network: Computation in Neural Systems
- Networks News *mot de passe*
- Neuron (ISSN 0896-6274)
- Neuroradiology
- Neuroscience-Net
- Neurochemistry International (ISSN 0969-9961, 1990-1991)
- NeuroReport (ISSN 0969-9961, 1992-1999)
- New Journal of Physics
- New Scientist (ISSN 0959-5294, 1988-)
- New York Journal of Mathematics (The)
- Newsletters of the Anglo-Aust

At the bottom of the browser window, a blue banner contains the URL: <http://www.unice.fr/BU/sciences/perelec.htm>

APPLICATION: Rapatrier (download) un article entier

Neuron -- Search - Microsoft Internet Explorer

Address: <http://www.neuron.org/search.shtml>

Neuron 2002 MCKNIGHT MEMORY AND BRAIN DISORDERS AWARD

HOME HELP FEEDBACK SUBSCRIPTIONS ARCHIVE SEARCH

Search All Available Issues
Content: **Full Text:** January 1996 - Present; **Summaries only:** March 1988 - December 1995

Search Neuron by Citation: [\[Search Tips\]](#)

Volume First Page Clear Search

Search by Authors or Keywords: [\[Search Tips\]](#)

Author (Last Name, First Initial)

Author (Last Name, First Initial)

Word(s) in Title or Summary

Word(s) Anywhere in Article

From through View closest matches

Journal Neuron Cell Immunity Molecular Cell

Type of article All Research Review

Done Internet

<http://www.neuron.org>

APPLICATION: Le format acrobat (.pdf)

<http://www.adobe.com/acrobat>

The screenshot shows the Adobe Acrobat interface with a PDF document open. The document contains three graphs (A, B₁, B₂) and several paragraphs of text. The graphs show EPSC Amplitude (%) over time, Potency Rate vs LTP, and Success Rate Ratio vs LTP. The text discusses LTP at thalamocortical synapses in P2-7 animals.

Figure 2. LTP at Thalamocortical Synapses in P2-7 Animals Is Associated with an Increase in Potency and Success Rate

(A) Summary graph of LTP ($n = 10$; 8 were minimal stimulation experiments, and 2 examined larger evoked EPSCs). Time shown is relative to the start of pairing.

(B) Potency and success rate analysis for the eight cells in which minimal stimulation was used (each experiment is coded with a symbol that is constant for both graphs).

(B₁) Potency rate (LTP/baseline) plotted as a function of LTP magnitude. The horizontal line represents the expected change in potency for an increase in Pr only at a single release site. The diagonal line represents the change in potency for an increase in q only.

(B₂) Success rate ratio (LTP/baseline) plotted as a function of LTP magnitude. The horizontal line represents the expected change for an increase in q only. The diagonal line represents the change for an increase in Pr alone at a single site.

Similar results from a total of six cells (P2-5 slices) are summarized in Figure 4C. In an additional seven cells, no responses were observed when the cells were depolarized to positive potentials, presumably because no synapses were being activated.

As a second test for the existence of silent synapses that contain NMDA receptors but lack functional AMPA receptors, we used minimal stimulation techniques and compared the failure rates at hyperpolarized (-70 mV) and depolarized ($+40$ mV) holding potentials. At silent

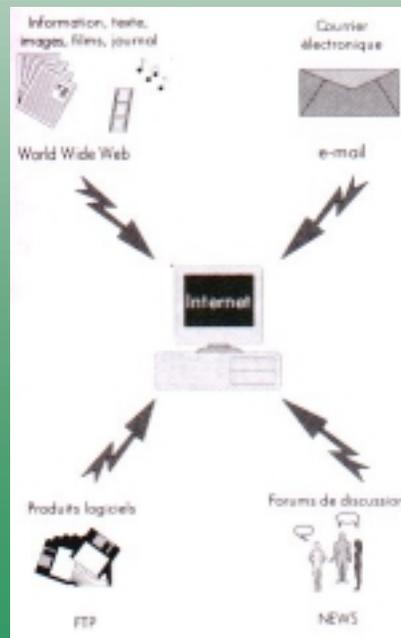
of barrel cortex are functionally silent and that these can be converted to functional synapses by an LTP induction protocol. Given that the ability to generate LTP at these synapses appears to disappear at \sim P8-9, an important question is whether silent synapses are still present at this time. To estimate the proportion of silent synapses at different ages, we again used minimal stimulation techniques to compare the failure rate at hyperpolarized versus depolarized membrane potentials. As illustrated in Figure 5, if some of the apparent

1 Lire des pages html

2 Envoyer et recevoir du courrier électronique

3 Transférer des fichiers

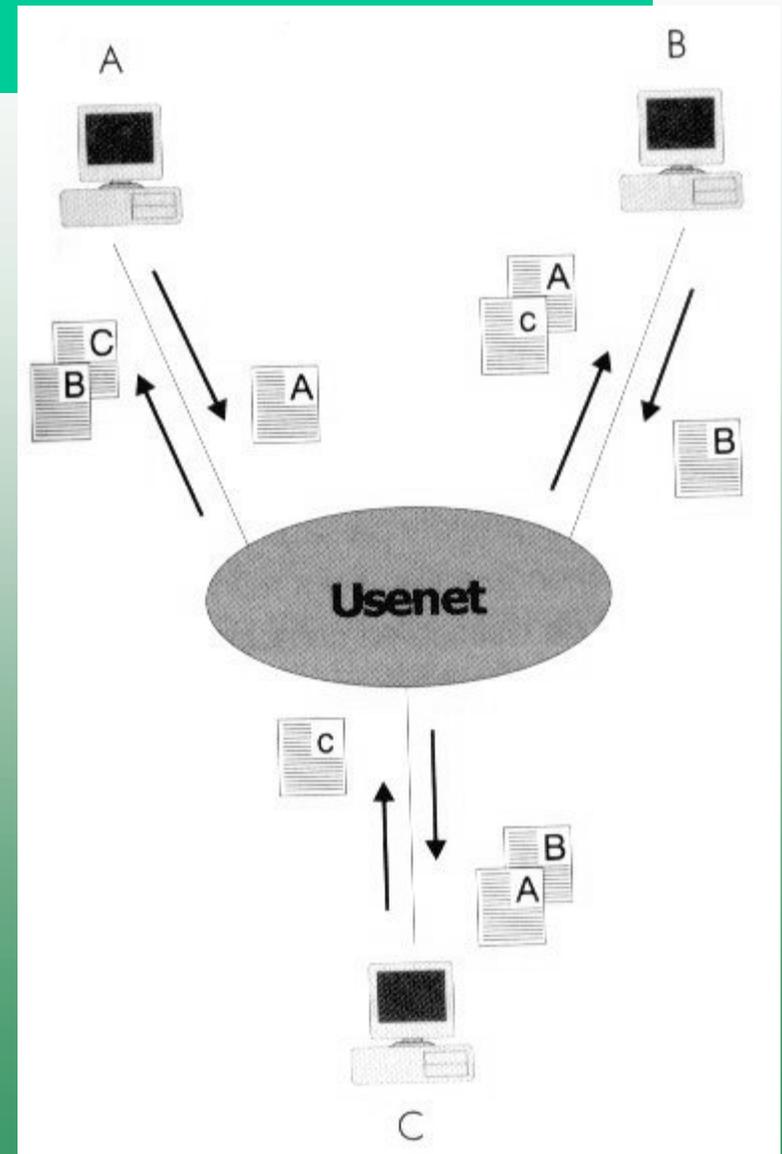
4 Participer à des forums de discussion



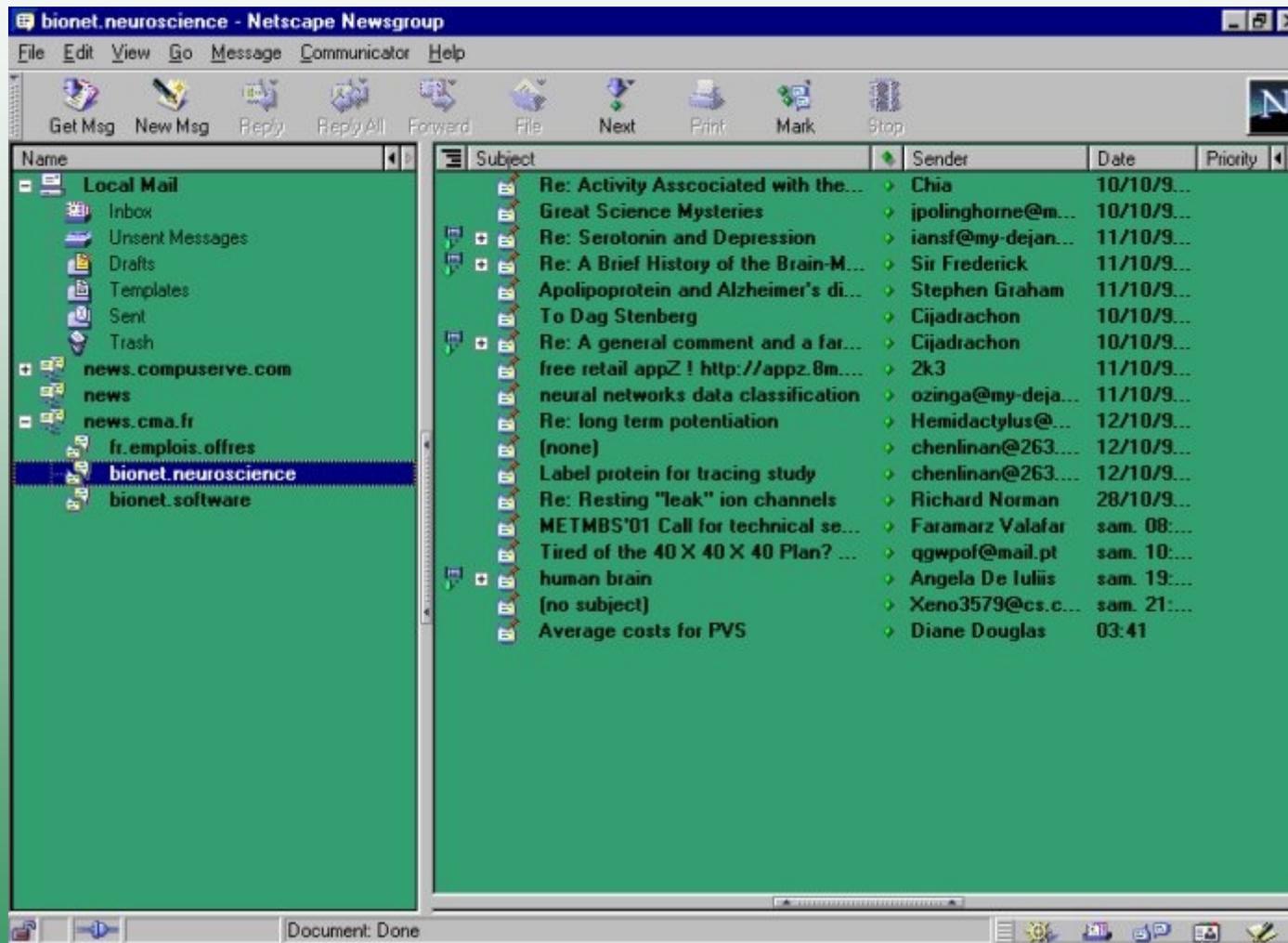
Forums de discussion (Newsgroup) Usenet

Serveur de l'Université de Nice:
news.unice.fr

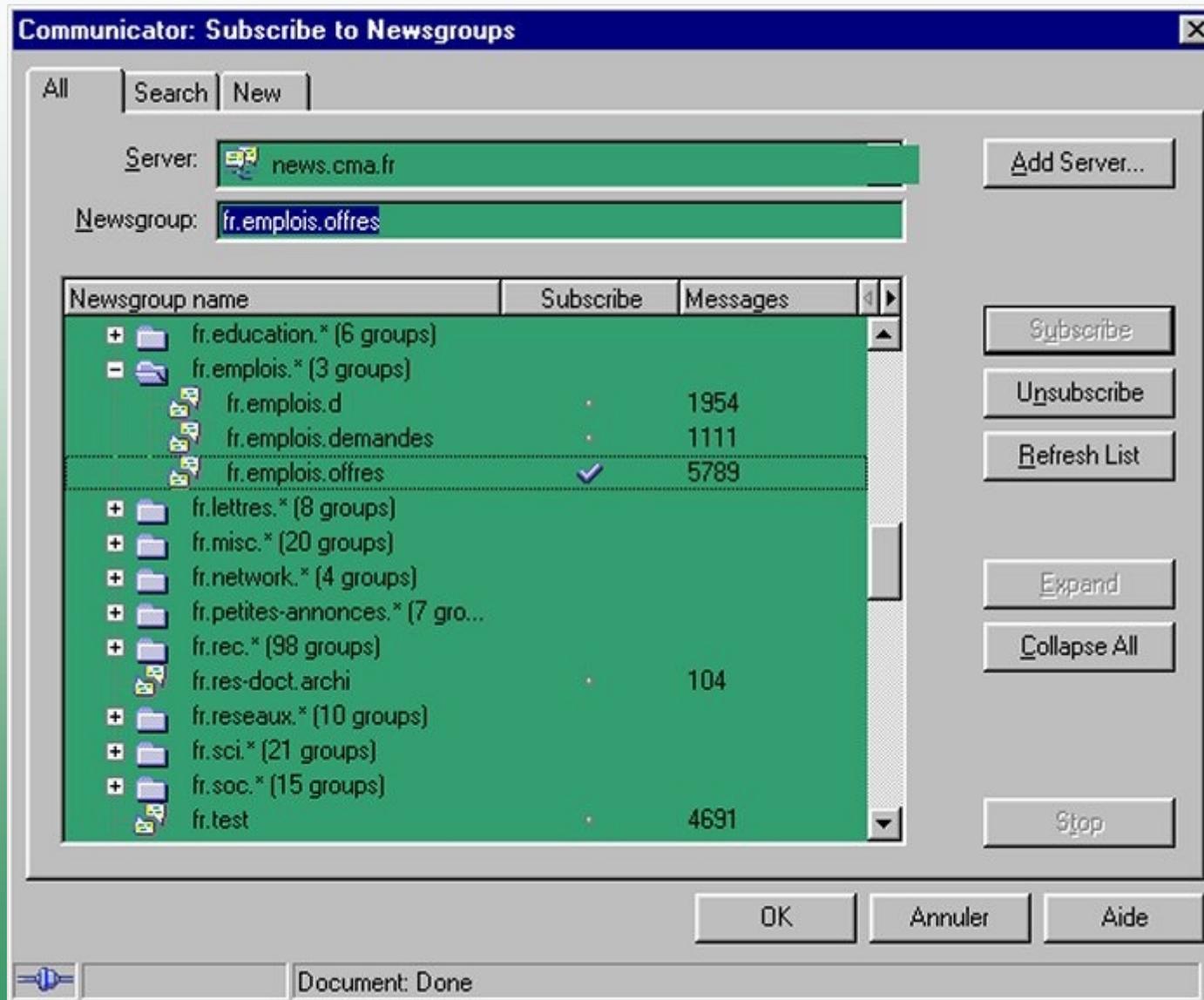
Groupes modérés ou non



Liste des forums de discussion



Forum de discussion



Types de forums de discussion

fr	langue française
misc	miscellaneous
mag	magazines
org	clubs divers
rec	recreational activities
sci	sciences
soc	social
etc	autres
alt	autres
.d	non modéré

Smileys

:-) humour
:-(tristesse
:-/ mauvaise nouvelle
;-) ironie
;-> sarcasme
:-D rire
:-o étonnement
:-X secret
etc ...

Adresses utiles: Informatique

Produits informatiques:

<http://www.microsoft.com>

<http://www.netscape.com>

<http://www.eudora.com>

<http://www.adobe.com/acrobat>

<http://www.copernic.com/fr/>

Sites FTP:

<ftp://ftp.nephi.unice.fr>

<ftp://ftp.calvacom.fr>

<http://www.shareware.com>

<ftp://biomol.univ-lyon1.fr>

<ftp://ftp.inria.fr>

<ftp://ftp.cnam.fr>

Adresses utiles: Internet

Email gratuit:

<http://www.nomade.fr>
<http://www.hotmail.com>
<http://mail.altavista.fr>
<http://fr.yahoo.com>
<http://www.caramail.com>
<http://www.voila.fr>

Moteurs de recherche:

<http://www.northernlight.com>
<http://www.snap.com>
<http://www.excite.com>
<http://infoseek.go.com>
<http://www.lycos.fr>
<http://fr.altavista.com>
<http://www.nomade.fr>
<http://fr.yahoo.com>
<http://www.francite.com>

Internet:

<http://www.nic.fr>
<http://www.w3.org>

Méta Moteur de recherche:

<http://www.infind.com>

Adresses utiles: Sciences

Journaux avec texte complet (full text):

<http://www.unice.fr/BU/sciences/perelec.htm>

<http://www.neuron.org>

<http://www.nature.com>

<http://www.cellpress.com>

Bases de données bibliographiques:

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>

<http://www.sciencedirect.com>

Forums de discussion:

news.unice.fr

news.compuserve.com

Organismes:

<http://www.inserm.fr>

<http://www.cnrs.fr>

<http://www.inra.fr>

Adresses utiles: Divers

Pages blanches et jaunes

<http://www.pageszoom.com>

Associations

<http://www.abg.asso.fr>

<http://garp.univ-bpclermont.fr/cec/indexbis.html>

<http://garp.univ-bpclermont.fr/gilde/>

<http://www.unice.fr/AJC06/index.html>

<http://www.apec.asso.fr>