

FILTERING SYSTEMS AT SCHOOL

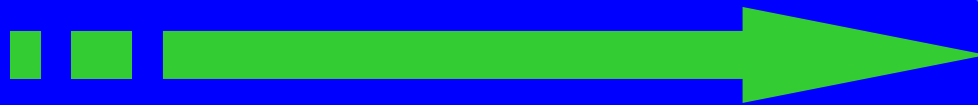
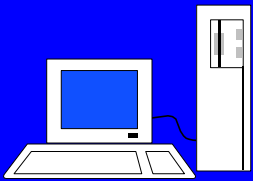


NEW TECHNOLOGIES REACH SCHOOLS

- In the last few years computers are becoming more powerful and much cheaper.
- We have got Internet connection of good quality.
- Windows helps the user.
- Computing is reaching more and more people.
- Using new technologies has to become a basic tool in the learning proces of children.
- **THE INFORMATION AND COMMUNICATION SOCIETY IS HERE.**

THE NORMAL SITUATION

SCHOOL



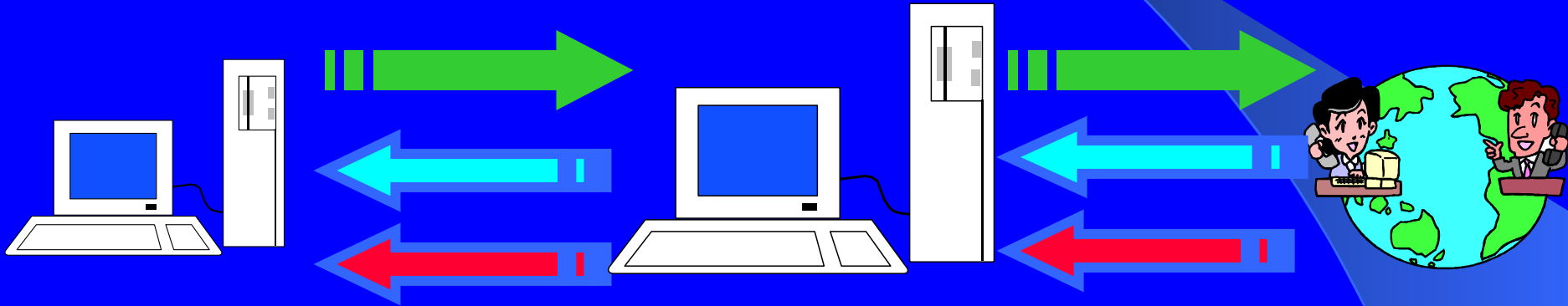
INTERNET



FIRST GOAL: CONNECTING

SCHOOL

INTERNET



STORE (PROXY)

Proxy: can store the resources used in the centre: web sites, video files, images, sound.....

SQUID PROXY

PROXY (STORE) → SQUID

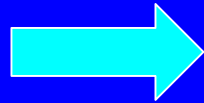


Squid is a high-performance proxy caching server for web clients, supporting FTP, gopher, and HTTP data objects.



Summary → Classroom Models

Classroom with a Proxy



Squid (Free)

We can find out the “history”



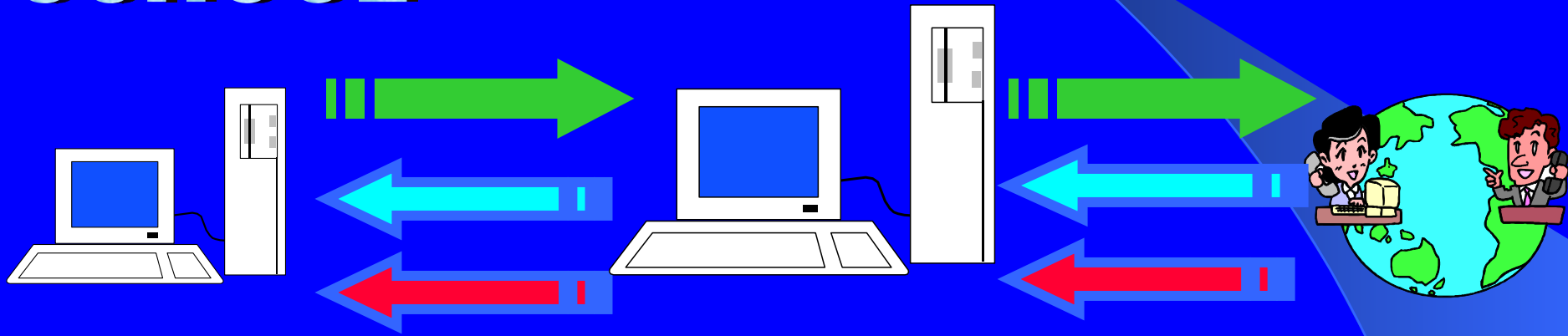
Proxy Server (Comercial)

Classrooms without Proxy

SECOND GOAL: MONITORING

SCHOOL

INTERNET



PROXY + REPORT

We can find out the
“history” in the use of
Internet by every
computer

...**CALAMARIS, SARG**

REPORT → CALAMARIS

Request-destinations by toplevel-domain

destination	request	%	Byte	%	hit-%
*.com	23021	46.04	153809K	59.43	44.53
*.es	14455	28.91	58610898	22.12	51.76

Request-destinations by 2ndlevel-domain

destination	request	%	Byte	%	hit-%
*.xtec.es	6191	12.38	19841213	7.49	76.98
192.168.0.*	3760	7.52	10629984	4.01	94.28

Calamaris
generate reports
in html.....

Performance in 60 minute steps

date	request	Byte	incomin kB/sec	hit kB/sec	miss kB/sec	direct kB/sec	sibling kB/sec	fetch kB/sec
02.Jan 04 19:00	1046	3503K	9.00	10.19	9.18	9.07		
07.Jan 04 18:00	240	798K	1.14	6.33	0.85	1.08		
07.Jan 04 19:00	1286	7077K	7.08	3.39	10.88	7.40		
08.Jan 04 08:00	719	2412K	8.83	19.20	6.02	8.64		
08.Jan 04 09:00	1435	4855K	2.85	24.43	2.12	2.23		
08.Jan 04 15:00	248	1139K	20.22	55.08	13.33	14.36		
08.Jan 04 16:00	9679	56M	7.87	43.17	8.82	9.26		
08.Jan 04 17:00	925	2953K	13.15	44.68	10.48	10.45		
08.Jan 04 18:00	441	1022K	5.57	13.68	5.72	5.71		
08.Jan 04 20:00	484	2125K	7.45	43.99	5.09	6.96		
09.Jan 04 08:00	696	2412K	7.16	13.06	6.63	6.81		
09.Jan 04 09:00	12411	68M	11.71	36.11	10.47	10.35		
09.Jan 04 10:00	4122	17M	7.08	43.62	5.96	5.99		
09.Jan 04 11:00	2910	17M	11.30	35.79	10.42	10.38		
09.Jan 04 12:00	5238	25M	11.70	23.47	11.79	11.65		
09.Jan 04 13:00	6592	31M	6.87	21.26	6.03	6.23		
09.Jan 04 14:00	1528	11M	14.30	20.73	14.31	14.14		
overall	50000	253M	8.63	25.78	8.31	8.34		

Requested content-type

content-type	request	%	Byte	%	hit-%
image/gif	24123	48.25	49493910	18.68	64.69
text/html	7213	14.43	57316684	21.63	16.07
image/jpeg	6099	12.20	46912452	17.70	41.47
application/x-javascript	2976	5.95	7703029	2.91	45.83

Squid Analysis Report Generator → SARG

It's a tool that allows you to view "where" your users are going to on the Internet.

Sarg generates reports in html **SHOWING USERS, IP ADDRESSES, BYTES, SITES AND TIMES.**

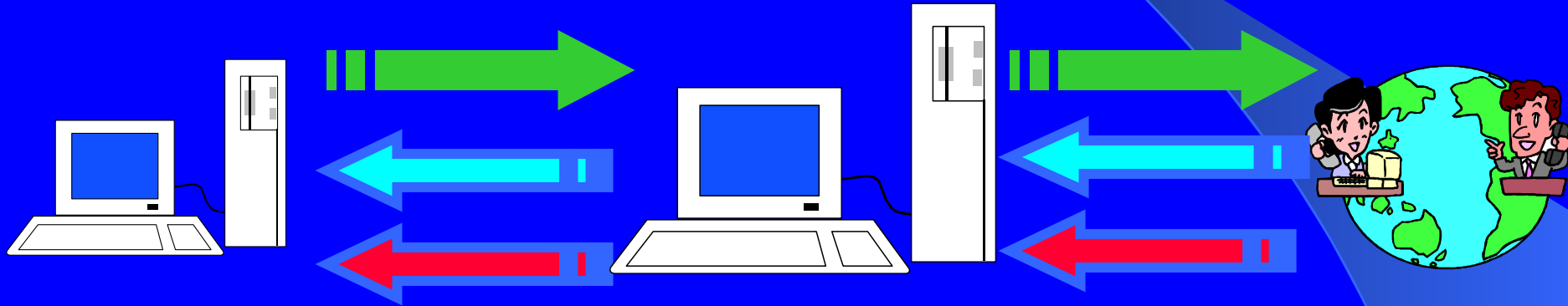
ARCHIVO/PERIODO	FECHA CREACION	USUARIOS	BYTES	PROMEDIO
12Sep2003-28Oct2003	Tue Oct 28 20:02:48 CET 2003	65	6.614.481.770	101.761.258
12Sep2003-23Oct2003	Thu Oct 23 20:02:28 CEST 2003	60	5.736.032.906	95.600.548
12Sep2003-28Nov2003	Sat Nov 29 20:12:56 CET 2003	82	11.329.660.180	138.166.587
12Sep2003-22Sep2003	Mon Sep 22 20:00:14 CEST 2003	40	483.969.125	12.099.228
12Sep2003-18Sep2003	Thu Sep 18 20:00:08 CEST 2003	36	283.013.330	7.861.481
12Sep2003-14Oct2003	Tue Oct 14 20:01:41 CEST 2003	57	4.127.909.307	72.419.461

SITIO ACCEDIDO	CONEXION	BYTES	%BYTES	ENTRADA-CACHE	SALIDA	TIEMPO UTILIZADO	MILISEC	%HORA
fecha/hora video.xtec.es	11	122.662.843	33.35%	0.00%	100.00%	00:16:43	1.003.263	2.83%
fecha/hora www.xtec.es	11.845	23.614.734	6.42%	52.77%	47.23%	00:22:44	1.364.002	3.85%
fecha/hora www.xtec.es:8800	5.403	16.018.697	4.36%	8.58%	91.42%	00:42:44	2.564.771	7.24%
fecha/hora 192.168.0.2	5.840	11.555.729	3.14%	59.47%	40.53%	00:05:05	305.339	0.86%
fecha/hora www.bib.uab.es	272	8.302.436	2.26%	4.78%	95.22%	00:03:51	231.214	0.65%

THIRD GOAL: FILTERING

SCHOOL

INTERNET



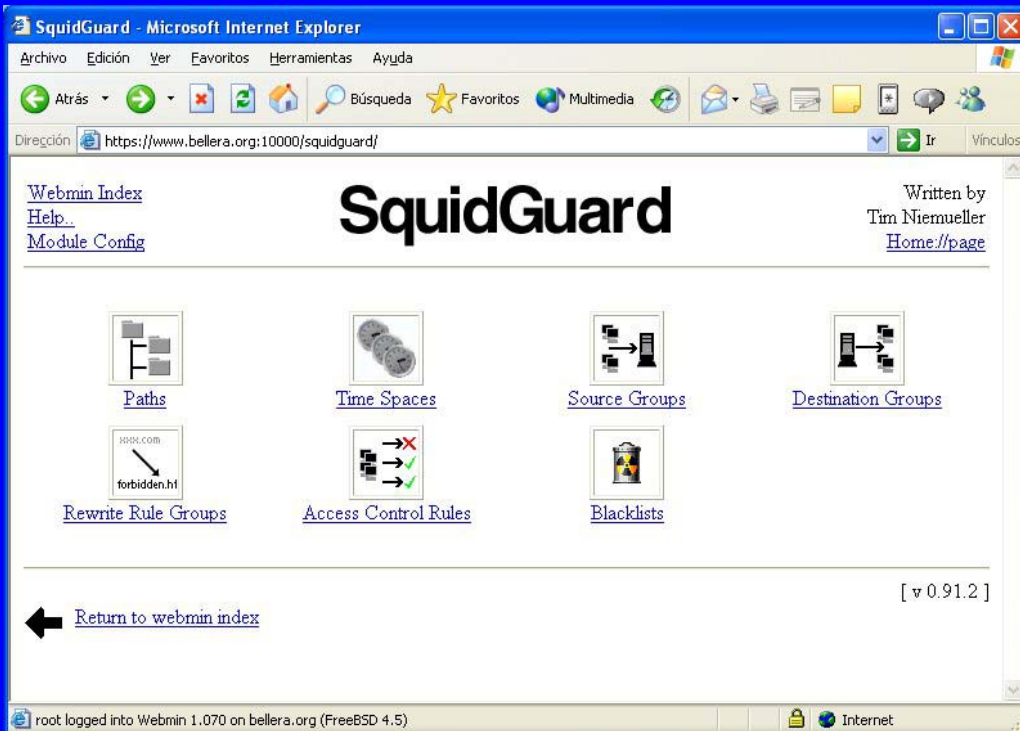
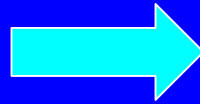
PROXY + REPORT + BLOCK ACCESS

Now we want to create lists with forbidden Web sites, the black lists.

...SQUIDGUARD

BLOCK ACCESS → SquidGuard

SquidGuard



SQUIDGUARD works with **SQUID** to block access to sites by **DOMAIN, IP ADDRESS OR EVEN KEYWORDS**. It is very flexible, even allowing you to block access at certain times of day and allow it at others, and even to define groups within your organization that have different access privileges.

SUMMARY → TOOLS

Operative System



Linux or
Unix

Caching proxy server



Squid

Analysis Report Generator



Calamaris,
Sarg

Block access to sites



SquidGuard
Blacklist

ADVANTAGES

- School personalized filter
- Zero cost for software licences
- Control of the visited using the “web”

We can filter:

Non adequate contents (pornography, violence, drugs)

Indiscriminate downloads (programmes, music, videos)

Activities (icq,msn..)

INCONVINIENTS

Linux is a “young” operative system

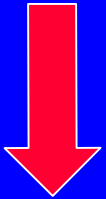
You need “ a little” knowledge about computing

EXPECTATIVES

Free software is becoming more common



Finding servers at school



Connecting

Monitoring

Block Access