Clients for file sharing

UNFAMILIAR TERRITORY

TOBIAS FREITAG

Anyone can get involved in the world-wide exchange of MP3 files with Napster and Gnutella – all you need is the right software. In this article we are going to pick out one or two clients from each file-sharing network and put them under the microscope.

While market researchers are arguing whether unlimited exchange of MP3 files is pumping up sales of CDs or spells the end of all sound media, new services, servers and clients are blithely emerging regardless. Others die off or are assimilated by traditional economic forces. Let's now take a look at the individual species.

Sold down the river?

The firm Scour has now gone out of business. The financial burn-out to which so many start-ups have fallen victim forced the firm firstly to "restrict its product range to Web site service". It had built up a network where users were not just limited to swapping MP3 files. Now it has been bought up by CenterSpan Communications. The new owners plan to re-open the service from March 2001 to the general public – for a membership fee.

And at Napster too the songs will soon cost money, after the Bertelsmann Music Group (BMG) entered into a strategic alliance with the file-sharing pioneer. Nevertheless the possibility of free use will not be disappearing and not only pieces from the BGM fund will be accepted on the network. Whether the start-up of this balancing act will survive unscathed is something we will find out in the coming months.

Firewalls

A couple of things cause the same problems with all services: The resumption of interrupted downloads is something only Scour could manage (and even then not quite perfectly) and because many users are hiding behind a firewall many downloads do not work. The reason is truly enlightening: If participant one is protected by a firewall and so is participant two, neither of them can make a connection to the other. After all, each incoming connection to the Napster port is blocked by the firewall. There are three steps to remedy this: Either you have administrator rights on the firewall and allow incoming connections at the ports 6666, 7777 and 8888 through to the computer. Or you use a function that blanks out the find locations behind firewalls.

The third possibility is that of using a SOCKS proxy on the firewall. This enables clients to make a connection from outside through the firewall. Only very few clients are set up for this process, however, for example Gnutella is not aware of a single one yet.

Gnapster

Gnapster is certainly the most refined client among the classic MP3 swap systems. It used to be a bit phone to hanging (and/or crashing) but is now stable with version 1.4 and also now offers a few features:

Connection to the Napigator Web site where an up to date list of OpenNap servers is hosted, a chat- and a log window and the browse feature allowing all files released by the user to be searched.

On starting, the program not only connects automatically to the last used server, but can also go automatically to previously defined chat rooms (the default is the #Gnapster forum). In the list of co-chatters the program displays, apart from the name, also the number of *shared* files and the connection rate. Whether the rate is accurate is another matter, because as with all Napster and Gnutella clones this figure is usually defined by the user himself.

By and large the program could be said to give a solid impression, even if now and then in the past instabilities occurred. The latest version, Version 1.4.1a, displayed no problems during a loading test.

Knapster

Since we have dealt, up to now, solely with Gnome sites it is time to see what the KDE developers have achieved. In Knapster the chat function is much more strongly constructed than in its Gnome competitors. With one click on the button the latest list of all channels is downloaded and displayed.

Add-on tools

If you now compile the source code of Dewrapster, it is also possible to swap films, images and programs with a Napster client. The listed programs though are usually just cracked Windows programs. The program is a fairly adventurous hack, because in fact the firm Napster only conceived its service for MP3 swapping. With its increasing popularity, however, the requirements of users are also rising, and two hackers programmed Wrapster, a tool which packs any files you want into an uncompressed Zip archive and gives it an MP3 header. Which means the original Napster software has been outwitted and at the same time a format for the other clients has been created. Now both founders have withdrawn from the project and are, fairly enough, giving away the source code. Sadly this cannot be downloaded from the site, and nor does it appear to be anywhere on the Internet.

Napfinder

With the aid of the command line tool Napfinder all OpenNap servers registered with Napigator can be searched for a user or (which is more likely to be the case) for a file. A test search for the indie band Tocotronic, which produced a maximum of 50 hits with normal clients, collected more than 3600 hits within five minutes with the aid of this tool.

But it is not easy to evaluate the hit list. One function which can download the found files at the same time has not yet been implemented and is also no longer being included by the original authors. They have declared the task completed and the project ended.

Gnutella

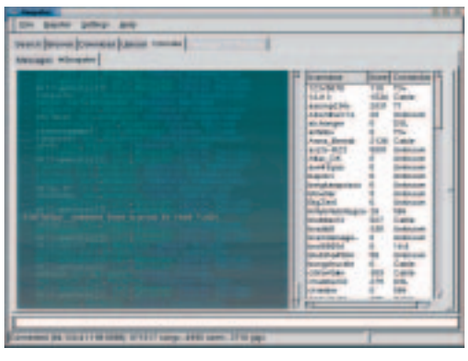
Systems like Napster or Scour have one crucial disadvantage compared to a network like Gnutella: The central point where the index of all files is located is a Single Point of Failure. It can be crippled by power failures, network breakdowns and lawyers.

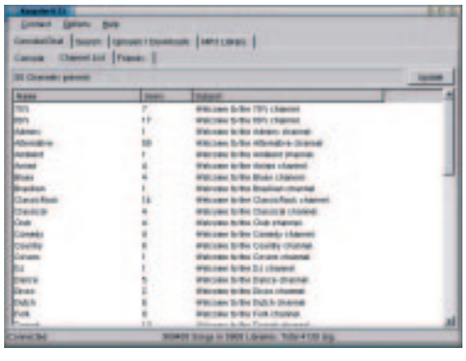
Gnutella, Mojonation and others, on the other hand, are based on decentralisation. But this, too, can have drawbacks. In the case of Gnutella transmission problems are also growing as it becomes more popular. The hordes of modem users have turned into a bottleneck, because in the Gnutella network each client has to do the same work, whether attached to a 2Mbit dedicated line or a 28.8 Kbps modem.

Solution in sight

But now someone has come up with a solution for this problem, too: The network specialists at Distributed Search Services have developed a Java program intended to take over most of the network traffic with a high-speed connection to the Net. The so-called Reflector network node acts as a relay station for slow modem access, thus solving the problems of both parties. Firstly, the modem users are screened off and the speed of the network is no longer affected. Secondly, they profit from the direct connection to the Reflector and its file index.

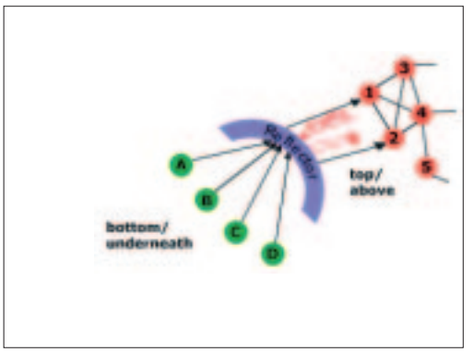
Next we shall take a look at a Java client, which may not be GPL software but at least is available as freeware to everyone for download.

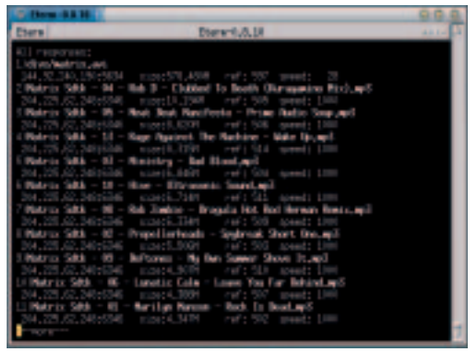




[left]
One lonely voice in the Gnapster channel: Nothing but log-in messages

[right]
The channel list in Knapster: Clear in terms of both layout and the number of chatrooms.





[left]
The protective haven for modem users: the Reflector separates out part of the network and transmits only relevant data to the clients behind it

[right]
Small, strong, black: Gnut may not look very imposing, but can do more than many of its graphical brothers

LimeWire

This Java client provides everything one misses from native C and C++ programs: Resumption of interrupted downloads, high stability, even a Family Filter, which can shield children from too much sex and violence. It can also keep different data formats separate from each other and search for them individually.

Making several search requests at once is no problem. For each new search a rider is placed on the results list, hosts behind a firewall being highlighted in red. The program may punish those who only like downloading files but do not offer any themselves, by denying them access to their own files.

The Linux version of the client is – just like the versions for other operating systems – always up to date. But there are also the typical problems of a Java application, long load times, difficulty of use, and high demands on CPU power.

Gnut

Gnut is the complete opposite. As a lean command line program it is started and ready to use on an average computer in half a second. This also means that it automatically connects to the network and can independently manage the list of known Gnutella hosts.

It is fairly straightforward to use, for a command line program. *find* or *search* starts a search for the following word. The search can be stopped by pressing any key.

Mojonation

Mojonation is one network which has dedicated itself completely to capitalism. Each transaction, each search query costs Mojos (the imaginary currency in Mojoland). But don't worry, as the project is in the Beta phase, everyone making an e-mail enquiry is credited with 10 million Mojos.

The Mojonation project is the first product from the firm Autonomous Zone Industries (AZI), which wholly owns the firm Evil Geniuses for a Better Tomorrow Inc. Its Web site is tellingly called *www.mad-scientist.com*.

Technically, the Mojonation client is a proxy server written in Python. Which is why getting up and running is not so simple as with other clients. When the packet has been downloaded from the homepage and unpacked, environmental variables still have to be set and the proxy server and the so-called broker started. Only then can the program interface be accessed using a Web browser, which has been installed on the proxy.

The broker is the critical program. This governs the transactions of Mojo with the Central Bank OLWA. You get no money for uploading files. On the contrary, it costs Mojos to transfer files and even inquiring whether a certain piece of music is located on a server, draws one or two Mojos out of your account.

Only those making disk space and computing time available can earn money. For this you have to offer up to four different services on your computer, for example the Content Tracker, which searches an index of all files registered in it. Or the Block Server, which stores the files chopped into pieces and encrypted as blocks on the hard disk. The Publishing Agent puts new content on to the network and also charges for this. The most lucrative services will be the Relay Server, since it integrates all users sitting behind a firewall into the network. It is consulted every time a user is in contact with the network. This service can only be offered by those not sitting behind a firewall themselves.

Outlook

So much for our panorama of the distributed landscape. Characterised by continuing change and a wealth of ingenuity, it will certainly come up with many more interesting programs and ideas in future. ■

Get rich quick – at least in Mojos

Info

Napigator: OpenNap server list
http://www.napigator.com
dewrapster source code:
http://woggo.webfreekz.com/users/theo/dewrapster.c
Napfinder Home page:
http://napfinder.sourceforge.net
Reflector Home page:
http://dss.clip2.com
LimeWire Home page:
http://www.limewire.com
Mojonation Home page:
http://www.mojonation.net
Filesharing portal:
http://www.zeropaid.com

■