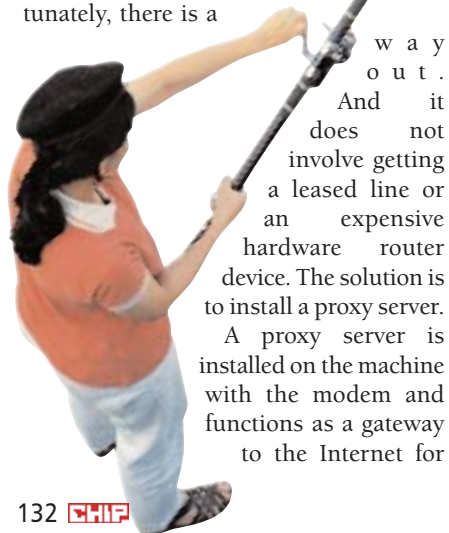# ONE SOURCE
many takers

A proxy server promises to maximise use of Internet time, bring online access to your desktop while reinforcing the security of your office network

I f your office has a network of ten or more computers and only one that can connect to the Internet, you probably know how painful it is to wait in line whenever you want to go online. Fortunately, there is a way out. And it does not involve getting a leased line or an expensive hardware router device. The solution is to install a proxy server.

A proxy server is installed on the machine with the modem and functions as a gateway to the Internet for multiple users. It allows users on the network to surf the Net from their own computers, regardless of the operating system and Web browsers they use.

Safer access for multiple users

E-mail is the most-used aspect of the Internet and your network probably already has a setup for it. If not, a good proxy server will provide the required support for an external e-mail setup such as USA Networks' popular NetAddress service (NetAddress is one of the very few free Web-based e-mail services that also provides POP support at no additional charge).

The primary use of a proxy server though is not for mail, but for browsing the Internet. The minimum qualification for any proxy server is support for the HTTP protocol. (*See Glossary*)

A proxy server allows you to use a wide variety of Internet protocols across the network. These include HTTP, HTTPS (Secure HTTP), FTP and POP. Not all proxy servers support all these protocols though.

That it allows the use of a firewall is another important function of a proxy server. A firewall acts as a barrier between the network and the big bad world of the Internet to block unauthorised access.

A firewall can either be implemented as part of your proxy server (some proxy servers come with a built-in firewall), or as an independent module. If set up as an independant module, the proxy server can be configured to access the Net using the firewall. And since all computers access the Net through the proxy server, the network is effectively secure behind the firewall.

Apart from security and availability of the Net to all on the network, a proxy
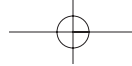
server has several other uses.

Monitoring

As the gateway to the Internet, the proxy server can maintain statistics on Internet usage. You could, for instance, find out which set of users spend maximum time online, what sites they frequent and at what time of the day. Users who are paranoid about being monitored should consider the positive aspects of maintaining such a log. Monitoring could help your proxy server to 'cache' frequently used pages so that they load without delay when you visit the site next (A cache is a temporary storage area for items that need to be retrieved frequently).

By knowing when the Internet is used the most, you could schedule your browsing at a later time so as to get better performance than you would have at peak time. Also by knowing what sites are popular with the others, you could build your own top-ten list of useful sites.

Optimised bandwidth usage

Imagine the typical scenario where only one computer on the network is connected to the Net (with no proxy server). About five minutes out of every half-hour that a user spends online go into loading pages while the remaining time is spent in browsing or reading the information. The phone line remains idle during this time as no download activity is taking place.

Now consider a parallel situation in which two people are browsing the Net at the same time, using a proxy server. Because the two will not be doing exactly the same thing at the same time, the short periods when they are actually downloading content from the Net will usually not overlap.

This means that within the same half-hour period, two people manage to do twice the amount of work and yet face little or no bandwidth constraints at all.

The savings in Internet time (apart from the convenience of using your own computer and choice of Web browser) can easily offset whatever you invest in the proxy server software.

Caching abilities

Every good Web browser has a cache for Web pages, so if you visit a site that you visited just a couple of days back, your browser will quickly ferret out the pages from its cache instead of attempting to download them all over again.

Letting your proxy server cache pages instead of your browser is a better idea. Now when one person visits a site, the cached page will be immediately available to anyone else interested in the same site.

This saves time and bandwidth, so when choosing a proxy server, favour one that has the ability to cache. This ability is so important that you can sometimes even expect to see products advertised as 'caching proxy server' instead of just 'proxy server'.

Low on resource requirements

If you run a peer network where no one computer is designated the server, you will probably not have a high-end computer with server-like specifications.

This is not a problem since most proxy servers will work just fine even with low-end Windows 95 systems.

Having Windows NT or Linux behind the proxy server helps, but is not necessary.

GLOSSARY

● **HTTP**: HyperText Transfer Protocol. It is how your Web browser downloads pages from the Net. It can also be used to download files, streaming media in the Vivo format and lyrics from any (CD DataBase) server.

● **HTTPS**: Secure HTTP. HTTP works well for browsing, but offers no security. This means that a hacker can easily monitor your activities online and even steal sensitive data. HTTPS fixes this problem by encrypting data before transmission. The other end decrypts the data upon reception. By using public key cryptography technology (see www.pg-pi.com) you can prevent any hacker from pilfering the data by decrypting it himself.

● **FTP**: File Transfer Protocol. This protocol was in use before HTTP. Using FTP is like looking at the directory structure of your hard disk using Windows Explorer. Although a powerful protocol, FTP had one major limitation: it required a user to register with the FTP server before he or she could upload or download files.

● **POP**: Post Office Protocol or POP3. This protocol allows your mail client to download e-mail from the mail server. This simple protocol works well for retrieving mail and is currently in its third version.

● **SMTP**: Simple Mail Transfer Protocol. SMTP is the opposite of POP; it helps transfer mail from source to destination. When you send e-mail, your e-mail client contacts an SMTP server and hands it the mail. The SMTP server then checks the recipients and depending on where the mail is headed, contacts another SMTP server closer to the destination and passes on the mail. This goes on until the mail reaches the destination. The person who was to receive the mail can then retrieve it using his e-mail client and POP server, or perhaps using a Web-based mail service.

● **IMAP**: Internet Mail Access Protocol. IMAP was designed to fix the limitations of POP. It is a very powerful protocol and with support for features like previewing messages before downloading them, works best for people who are frequently online.

software

Smart at Work

PROXY SERVERS: MANY COMPUTERS, ONE GATEWAY TO THE INTERNET
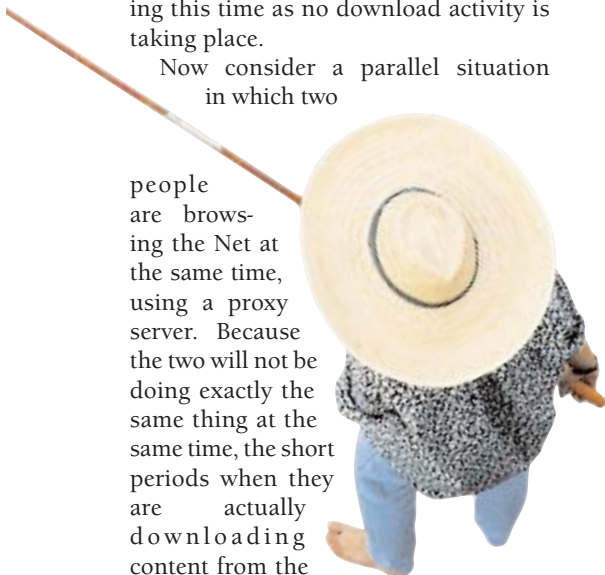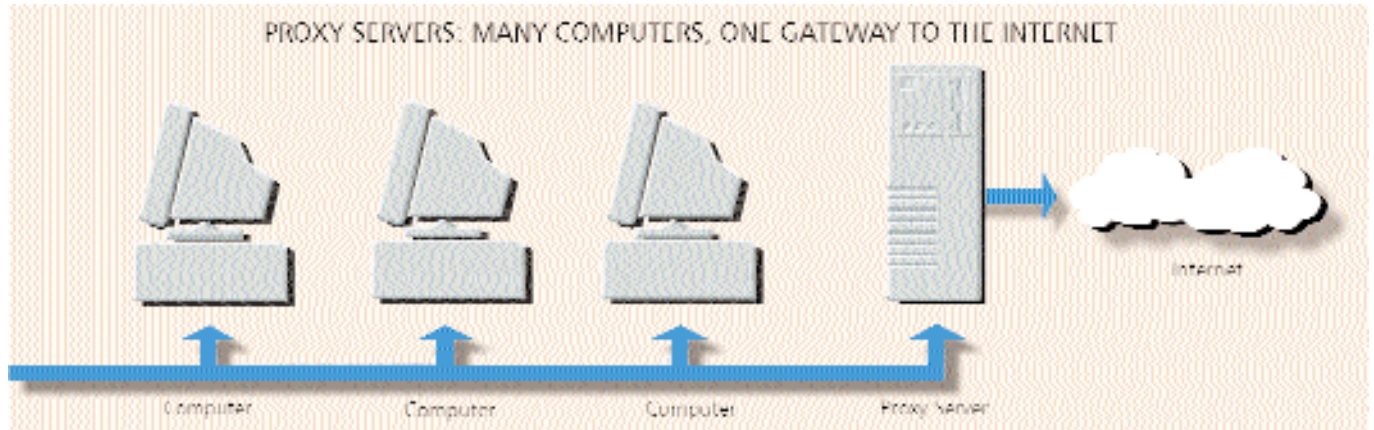
More reasons

Beyond the technical reasons in favour of a proxy server, there are several non-technical but equally important points to consider:

Low price: A proxy server is quite inexpensive when compared to the other option, a hardware network router. And unlike a software network router, which is usually very difficult to handle, a proxy server is easy to setup too.

Security: A network router does not screen the data that is being exchanged, so if your machine is not well protected, it can get hit easily. In contrast, a proxy server is a gateway that screens the data before forwarding it. Any attempt to attack the network will be blocked right at the proxy server.

Choice of Vendor: Unlike with Windows, you have a variety of vendors to choose from. Microsoft loyalists can opt for the Microsoft Proxy Server. Those who prefer shareware can use WinGate and if you are a Linux enthusiast, there is Squid for Linux.

GateKeeper, WinGate s remote configuration tool

> *Selecting a proxy server for your network is easy, installing it is even easier*

Using WinGate on your network

WinGate is a popular shareware proxy server that can be easily set up on your network. WinGate 2.0 comes with a remote administration tool called Gate-Keeper that can be used from anywhere on the network.

It supports the HTTP, HTTPS, FTP, Real Audio, Telnet, POP3 and VDOLive protocols and allows you to create user profiles to decide who can use what features. It also supports TCP and UDP mapping and includes a DNS server. The various supported protocols are called 'services' here. Using GateKeeper, you can install and uninstall services, and configure each one of them separately.

Configuring your Web browser

A proxy server will install its HTTP proxy to port 80 by default. Assuming that this is the case for you, here is how you configure your browser:

Microsoft Internet Explorer 4

Go to Start > Settings > Control Panel > Internet. Then from the Connection tab, in the Proxy Server frame, enable Access the Internet using a proxy server. Click on the adjoining Advanced button, and in the popup dialog box, enter your proxy server's IP address in the HTTP server field, and 80 as the port number. Check Same server for all proto-cols at the bottom of the box. Then click OK.

Netscape Communicator 4.5

Select Edit > Preferences, then go to Advanced > Proxies. Select the second option, Manual proxy configuration. Click on View, then in the HTTP Proxy field, enter the IP address of your proxy server and 80 as the port number.

Enter the same IP address for the SOCKS host (if your proxy server includes a SOCKS-compatible firewall), with 1080 as the port number. In the No proxy for box, enter 127.0.0.1. . Then click OK and close the Preferences window.
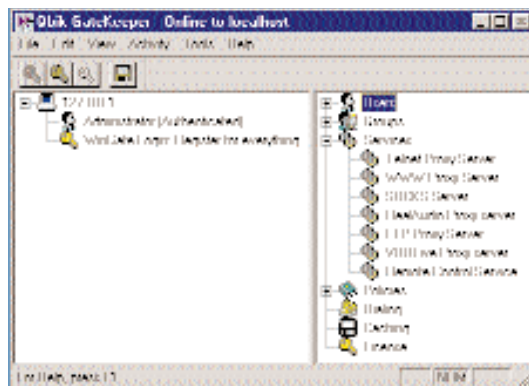
Opera 3.1

Go to Preferences > Proxy Servers. Enable all the protocols that will be used, and enter the IP address of the proxy server in the corresponding fields. In the Disable proxy for box (Enable it first), enter 127.0.0.1. Click OK to close the window.

You can also enter the name of the computer that the proxy server is running on instead of the IP address in the above description, but using an IP address tends to be slightly faster.

Disconnect

Someday in the future, we will be connected to the Internet with T1 or better lines and use operating systems that strictly enforce security.

But until then, a proxy server is the best way to get online without getting your finance department jittery. Selecting a proxy server for your network is easy, installing it is easier.

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