SpeedyNet: A neat way to speed up WEB browsing.

SpeedyNet will speed up WEB Browsing on any Internet connection. This technique works for almost any Windows 95 based system that runs a TCP/IP stack to communicate and has no local LAN based DNS Server (IE your average Joe with a single PC and dialup networking via Win95 or Trumpet, etc).

The technique (How it works):

One of the slower parts of WEB browsing is the DNS Lookup. SpeedyNet increases the speed of DNS Lookups to nearly instantaneous. In order to explain DNS Lookups and their significance, some history & info is required:

The Internet is based solely on NOTHING other than IP addresses for communication. An IP address is the address of a TCP/IP stack, therefore _every_ machine with TCP/IP has an IP Address - dial up networking usually sees your ISP assign you an IP each time you phone in and log on (not necessarily the same IP each time, either). IP addresses are the xxx.xxx.xxx.xxx numbers you see lots when configuring your system; a typical IP address is 207.68.137.62 (which is microsoft.com). When you tell your web browser to go to "www.microsoft.com" (the URL address), this is NOT an IP address... the only way addresses are located and used is via IP's. SO how does the browser know what IP is associated with the URL? Simple - it makes a DNS Request.

DNS Stands for "Domain Name Server" and is a service your ISP (Internet Service Provider - the guys you call to log into the Internet) Provides to you. The DNS at your ISP has a HUGE table of URL names and the corresponding IP address, and can tell your browser what the correct IP to use is; your browser then uses the IP address to surf to the new location... Now, this is all well and good until you realise a few things:

DNS servers cannot hold every single URL-IP address entry that can exist at any point in the whole global Internet (there's simply too many, and some change very regularly) so each DNS is linked to other DNS's throughout the world in a hierarchical manner (there's about 5 "master" DNS servers that _do_ have the _complete_ list - these are owned by the US Government AFAIK and are so big and fault proof that they are very reliable, probably nuclear-proof, but are also the slowest means of finding a URL-IP address) and can request a search for information on a DNS that is unknown to itself. A DNS Search can involve many "hops" around many DNS Servers before reaching a "master" DNS machine for the ultimate verdict, and therein lies our loss of speed.
An example: If 20 " hops" are made to find out the URL-IP address, and each hop takes 150ms, the "round-trip" time to look up that value is 6 SECONDS! What a waste of time!

Once your ISP's DNS server does receive a result from somewhere in the world or runs out of tries you get the dreaded "DNS Lookup failure". Try to load up a garbage site some time, say wwww.gfjdgjlfh.com - see the time delay it takes to search for the non-existent DNS entry and get back to you? This is the time waste we are talking about! This lookup procedure happens EACH and EVERY TIME you look up ANY WEB Site by name. Your local DNS server caches

the URL-IP address entry for a time but eventually throws it away in case it has changed (the "time to live" time - and it can be as short as a few seconds)... so you can end up with big time wastage on a regular basis doing all these DNS lookups.

(Please note, this is an oversimplified version of events and ignores a lot... please do not take this simplification as ignorance on my part... a complete description would simply be too big and not very worthwhile to you in implementing what this document is all about.)

The cure?

The cure is to use SpeedyNet, a local table of DNS-IP addresses and tell your system to check that table FIRST, before asking the DNS at your ISP. Your local table can never expire (it's just a text file), and is always searched first... lookups that are in your local table are now found as quickly as your PC can load the file from disk. No TCP/IP network traffic at all need be generated. DNS lookups occur WHENEVER you use URL for finding an Internet resource - so mail, FTP, gopher, even IRC can ALL benefit from this simple trick! DNS lookups are not cached on _YOUR_ PC so at the least, some traffic to your ISP's DNS Server will happen every time you do almost anything on the Internet - even reloading an already cached page, for example! (This is why the "reload" button isn't as responsive as you might first think - your HTML text and embedded material may be cached, but the IP Address IS NOT!)

If you run Netscape, when you change to a new URL, at the bottom of the screen you usually see a message such as "Connect: looking up host proxy.hyperlink.net.au:3128" .. This is the DNS lookup IN PROGRESS. (The "proxy.hyperlink.net.au:3128" is ISP specific, and probably different for you). When Netscape says "contacted host" the DNS lookup has completed and the IP Address has been used to get to the new URL. Microsoft Internet explorer may have a similar sequence of status messages, but I don't use IE so I don't know for sure. Sorry.

The downside is that building a URL-IP table can be a slow process if you visit a lot of sites regularly, and the table can become incorrect if a URL changes it's associated IP address. Most URL's never do, but it happens regularly on pirate sites... you can gamble that any major corporate site will have the same IP Address for the foreseeable future, and thus assume you'll only have to do each entry once. Any site you know to change IP's regularly (either due to dynamic IP allocation or regular host movement) is probably best left to your ISP's DNS Server to find (just like it always did before HOSTS file days) unless you enjoy regularly tracking down what the new URL-IP address is this week.

SpeedyNet will not make your ISP Faster! Your FTP downloads won't go twice as fast! It won't make your 2400bps link look like a 9600bps link.

What you WILL achieve is reduce the number of requests to your ISP's DNS Server. If your ISP's DNS Server is slow, it can help you a LOT, when you are "surfing" or doing any type of activity that requires a lot of DNS lookups (following a chain of links is one such killer). A slow

DNS Server at your ISP will cripple ALL users of that ISP, regardless of the ISP's type of link to the "rest" of the Internet... for example, a DNS server for 200 users running on a 386SX-16 isn't exactly ideal... The fact that the ISP has a 10mb link to connect.com is IRRELEVANT in this case. Removing your reliance on that slow DNS Server means you get better response than the other 199 suffering users, AND you effectively give your 1/200'th timeslice back to the others, so in a twisted kind of way they benefit too.

If your ISP charges based on the number of bytes you send and receive, regardless of the type of information those bytes represent, you can even save money - less DNS lookups equals bytes sent & received to your ISP, equals less expense for you.

Generally, the more URL-IP Address entries you can place in your SpeedyNet Database, the better. Placing one or two obscure entries won't help you much because you'll still be using your ISP's DNS Server to do DNS Lookups for you, most of the time. DNS Lookups that take the LONGEST time to resolve are the ones that offer the most speedup - if your ISP's DNS consistently does a given DNS lookup in a very short time period (say 150ms or less), placing this particular lookup in the SpeedyNet database will not offer much further speedup.

SpeedyNet automatically works for ALL TCP/IP programs; from PING to IRC to Mail to FTP etc. "If it uses TCP/IP to communicate, SpeedyNet will be used for DNS Lookups before your ISP's DNS server"

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