### Name.Space vs DNS

by David Purdue

Reprinted with permission from the October-December 1996 issue of "AUUGN", the Journal of AUUG, Inc., Kensington, NSW, Australia. [auugn@auug.org.au](mailto:auugn@auug.org.au). On the 12th of November an article entitled "Yes, we can all win the Internet Name Game" appeared on the front page of The Australian's Computers & High Technology Section.  
  
The article lauded the achievements of one Paul Garrin, who has set up "Name.Space", an alternative implementation of the Internet Domain Name Service.  
  
The Domain Name Service (DNS) is the mechanism used by the Internet to translate easy to remember names (e.g. www.auug.org.au) into hard to remember IP addresses (e.g. 203.10.76.35).  
  
DNS functions as a distributed database, organized in a hierarchical fashion. At the top of the DNS hierarchy there are designated root servers. (In computing, roots are always at the top.) These root servers delegate responsibility for top level domains (such as .com or .edu or .au) to other servers, and they in turn delegate responsibility for lower level domains to other servers.  
  
Recently the DNS system has received some criticism, for two main reasons.

* One is that it is getting increasingly difficult to register the name you want, especially in the .com or .com.au domains.
* The other is that the government agencies and volunteers who used to administrate the top level domains have passed this responsibility over to private companies, who are charging for the maintenance of domain names.

Unless you an administrator at an ISP or the owner of one of these  
domain names the whole process is probably invisible to you.  
  
The Internet works only because those who connect to it agree to communicate with each other using a standard, well defined and published set of communication protocols, usually referred to as TCP/IP, and defined in the Internet RFC's.  
  
AUUG is interested in and promotes the Internet because it is based on open standards.  
  
One of the things we agree upon when we communicate is how to translate domain names into IP addresses. The Internet RFC's say that the authority to determine domain names lies ultimately with the Internet Assigned Numbers Authority (IANA).  
  
Just as it is IANA's responsibility to ensure that every machine on the Internet is allocated a unique IP address, it is also ultimately their responsibility to ensure there are no clashes in the name space.

However if people go around setting up their own DNS systems, then this is impossible to enforce. The independent DNS's can only exist if users ignore IANA's authority to delegate domain names.  
  
There are two ways competing DNS systems could operate - they could either be totally separate or they could exchange information about each other's name spaces.  
  
If they are separate, then it could become nearly impossible to send e-mail. To receive e-mail you would need an address in each name space, so that my InterNIC address would be davidp@auug.org.au, my Name.Space address would be davidp@auug.user.group, while in Joe's Discount Names I am known as davidp@blah.cough.splutter (Joe's names aren't very good, which is why they are cheap).

You don't know which name space the sender will be using to send you mail, and it is not always easy to change name spaces mid-stream. My business card will have to be a foot long!  
  
If all the DNS's do exchange information, then it just shifts one of the problems with the existing DNS up a level. Instead of slugging it out for your favorite domain in .com, you will slug it out at the root level.  
  
Remember that while you can register whatever name you like in Name.Space, your name will only be seen by those who agree to use Name.Space's root DNS servers rather than those designated by the IANA.  
  
I do not claim that the current DNS system is perfect. It is experiencing problems that have been brought on by the changing nature of the Internet, and it will be some time before the Internet community can come to an agreement on the best way to solve these problems.