FUN Utility (Try it!!)

As we discussed in class, the ARP is a protocol that provides an IP address to a MAC address resolution. We also saw that to minimize the ARP broadcasts (remember the ARP requests are inserted in broadcast frames), a cache is maintained. This cache may containing "Dynamic" IP address-to Mac address mapping (Those entries will age and expire from the cache if not used within 10~20 minutes (In some NOS, even less). Static entries may be added manually and will remain in the cache until the computer is restarted.

To view the ARP cache in your machine try the following utilities:

At the command prompt (C:\) type

arp –a

This utility will display the ARP cache (and tell you whether the entry is static or dynamic). Note that if the device has more than one Interface card, all ARP caches will be displayed)

arp –s

This utility will allow you to enter manually an IP address and a MAC address mapping of a host permanently into your ARP cache. For example you type:\

Arp –s 157.55.85.211 00-aa-00-60-c5-09

In the class, we discussed that the "Port Number" is used to identify applications. The port number at the server side is the well known port number where as the port number at the client side is chosen dynamically by the NOS operating in the client machine. The well-known port numbers range from 0 to 1023 (remember there are 16 bits in the port number so there are 65,536 port numbers, ranging from 0 ~ 65,535).

The range of port numbers from 1024 to 49151 are referred to as registered ports which are assigned by ICANN (Internet Corporation for assigned names and numbers) upon request from developers of new TCP/IP applications. Those registered ports can be used by ordinary users.

Port numbers in the range of 49152–65535 are used dynamically (They are NOT registered with ICANN. They are sometimes called Private Port numbers or Ephemeral

Port numbers). It is from this range the client NOS will choose to identify the application running in the client machine. It is these port numbers that allow different applications on the same computer to share network resources simultaneously.

The official site is

https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.txt