

Re: Why IP address is fixed everytime connected to the Internet?

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apngss@yahoo.com writes:

> *I want to ask who assigns the IP address to a machine that connects to
> the Internet? The ISP, the network card (i.e. MAC address??), or the
> router?*

Typically it is assigned by your ISP.

Most ADSL users nowadays get the address through DHCP protocol from the ISP DHCP server. When the PC boots up and is set to use DHCP, then it sends a request packet "please give me my IP address" as a broadcast message. The ISP DHCP server receives that request and send back the answer telling that IP address and other network settings to use. DHCP is very common way to get the IP setting on corporate LANs, cable modem systems and in ADSL systems.

Otherway to get the IP address automatically is though PPP connection. Some Internet connections are formed using PPP (on normal modem connections), PPPoA (some ADSL systems) and PPPoE (some cable modems etc.). PPP has build in capability for handshaking the needed IP address settings when the connection to PPP server (the router on the ISP end) is formed.

Then there are also users that have fixed IP addresses. They have been given those addresses in the paper agreement when they joined to the service, and then user has configured that address as fixed IP address to his/her computer.

> *It seems like my IP address is fixed everytime connected to the
> Internet,*

ISPs have typically configured their DHCP servers in such way that the same users get the same IP addresses often. The DHCP server keep tracks of the IP addresses it had "leased out", the MAC addresses of the devices that they have been given to,

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lease time (for how long time the lease was given for) and when the lease was given.

Usually when a server gets a request for IP address, it checks for its records to find IP address that was earlier given to that MAC address from where the request came from. If it is found, the same address is generally given. If the MAC address is not found in the records, then a new free not used IP address is selected from the list of free addresses, and this is marked to belong to that MAC address. When all addresses are once used, the server starts to mark the oldest (not used in long time) IP addresses as free for reuse by other users.

This is basically how DHCP server work. This is idea. Specific operation details can vary between different server implementations and how the server is configured.

*> it seems very unsecure because it allows hackers track the
> computers more easily.*

Fixed IP is very unsecure only when your computer is unsecure. If you have secure computer system you have nothign to worry. Internet has worked from the beginning with the idea that the computer have pretty fixed IP addresses (at least the servers). If you plan to run server on your computer, you really like the benefits of having fixed IP address that does not change (There are also dynamic name services that allow using non fixed IP addresses to run a server, it works in most cases, but if your address happens to change at some time all the currently open connections get cut and the server might be inaccessible to other user for some time, even hours depending on name server settings).

Fixed IP is a good thing. Your job is to keep your computer secure. The security consists of safe enough operating system (sensible operating system selection and keeping it up to date), sensible system configuration (firewall setting, no unnecessary services, no file sharign for whole Internet), using safe applications (suitable web browser selection, keeping applications up to date, no P2P application to share all yuour files). Possibly addign a properly configured extenal firewall device added to your system.

Using all the time changing IP addresses would not help you mich in the security picture. There are systems that constantly scans different IP addresses to find computers that have security problems in them for this particular virus/worm/hacker to use. Propablity of those random scanners to find your computer first time is pretty much same if your IP address is fixed or changing. And when

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you have got some exploit in your computer, that software can easily report your current computer IP address to some hacker server every time you turn it on without you knowing of it if your system is unsecure.

Changing IP addresses every time does not solve the security problems. In some cases it might seem to add security, but the general thing is that constantly changing IP addresses creates more problems than what it can solve (it can't solve the security or privacy issues well).

> *I thought the IP address should be dynamic, and each time when we
> connect to the Internet should have different IP address.*

This is how things sometimes are, but this is not how thing should be or would be best. There are systems to access Internet that tend to be more or less permanent IP addresses, and then there are systems that tend to give every time new different address.

I prefer the systems that give fixed addresses.
They have more benefits.

> *Is there a way that makes the IP address in my machine becomes dynamic?
> Please advise. thanks!!*

Some ideas:

Keep your computer powered down for so long time so that your old address is marked as "free" and used by other user. Then you get a new address when you connect to Internet.

Select such operator/service that tends to give different IP addresses every time (dial-in modem ISP services, some cellular phone data services etc..).

Change your network card to a new card every time you want to change IP address. New Ethernet card has (or should have to be proper, there are some sad exceptions to this) an unique MAC address in it. New MAC unknown MAC address gets a new IP address from the ISP (unless the ISP has made some limitations to this, for example fixing IP addresses to some other properly in their network like your ADSL modem / cable modem serial number, some user account information on PPP based connections).

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