

# Basic knowledge of dynamic DNS service system

Dynamic DNS is a method of mapping domain names to IP addresses with high frequency changes (since not all computers use static IP addresses). Dynamic DNS service provides a special program that runs on the user's computer using the dynamic DNS service called Dynamic Dns Client.

Regarding the provision of Internet connection services that ISP provides to customers, there are many types of services:

v *Direct Internet connection service (leased-line example)* : For organizations wishing to connect a high-speed, stable Internet, it is possible to hire a direct connection service. The organization's network using leased-line lines will always connect to the Internet through a separate transmission line. It is common for **these organizations to be issued by an ISP for a static IP address space**. With this IP address space, organizations can attach static addresses to servers and maintain service servers themselves such as ftp, mail, web, dns . because the organization's network is constantly connected to the Internet with High and stable connection speed. If you do not maintain the server yourself, these organizations may also hire services that run on ISP servers.

v *Indirect Internet connection service*: Typically, Internet connection service via dialup. With this type of service, users connected to the Internet use a phone line and do not often connect to the Internet, users will disconnect when there is no need. This connection format has a slow transfer rate, is not provided with a static IP address, the subscriber only uses it to access the Internet without maintaining the server providing the service which is the host that requires continuity in the connection. connected. To use services such as email or web (with own domain name), . users must register for services at ISP (web hosting, mail hosting .), ie hire services on ISP servers.

v *High-speed Internet (ADSL) connection service*: This is a form of Internet connection that uses a telephone line but has a high speed of Internet connection and is a continuous connection, ie the network of the organization is always connected. to Internet (always-on). If ADSL subscriber is static address provided by ISP, it is possible to use this continuous connection to maintain service servers like ftp, mail, web, dns . similar to using leased-line connection . However, in order to save IP address space, not only with dialup connection but also with ADSL service, providers also use dynamic addressing method. This makes the current high-speed ADSL service users only improve the speed of Internet access, but still cannot maintain the server itself such as mail, ftp, web as tenants connect leased-line directly.

## Dynamic address allocation (dynamic IP)

Typically, when a subscriber connects to the Internet, the service provider (ISP) that the subscriber registers to use the Internet service will grant this connection (in fact, the server is responsible for allocating the address). For example, a DHCP server in a dialup or BRAS in a service provider's ADSL service will automatically attach a subscriber's connection to an address that no one has used in a shared address block that the ISP uses for subscriber connected indirectly (dynamic connection) called pool area. **This granted address is only used**

**during the period when this subscriber is connected to the Internet, when the subscriber disconnects, this address is released for other subscribers to use and the subscriber will be given an address. other in the new connection.**

### **Traditional system of static domain names (Static DNS).**

All computers and network devices (hosts) on the Internet communicate with each other using IP addresses. To facilitate the use, people use the name (domain name) to determine that host, Domain name server system is used to map domain names to IP addresses, so that when you want to contact the host People use a catchy character string (domain name), instead of using an IP address, which is a long, difficult to remember.

#### Picture 1 of Basic knowledge of dynamic DNS service system

When a user has a request to declare domain mapping to an IP address, there may be two options:

- Request the server system administrator to manage the domain name to declare on the domain database
- Through the interface provides users with self-updating

However, with the above methods, it must be done by labor factor, so it is not immediately reflected. **However, it is very suitable for systems where IP address is less changed (leased-line system)**

With the service provided dynamic IP address (dial-up, ADSL), each connection is provided with a different IP address, unaware of which address so the domain and dynamic IP mapping is very difficult, unable to perform labor.

Using DNS static service, subscribers of connected services provided by ISPs with dynamic addresses such as dialup or ADSL cannot maintain the service provider themselves. For example, organizations that rent a high-speed ADSL connection can improve Internet access speed. But if the organization wants to set up a website with the registered domain name associated with the transaction name of the organization [www.quantrimang.com.vn](http://www.quantrimang.com.vn) and use the email with the domain name registered [info@quantrimang.com.vn](mailto:info@quantrimang.com.vn), that organization must hire the ISP hosting and web hosting services of the ISP (ie install these services on the server of the service provider) because the ISP's server has a direct Internet connection and a static IP address.

Therefore, Dynamic DNS was developed to provide domain name services to those connected to the Internet with dynamic IP addresses, and the IP address of the host with high frequency changes can still maintain the server itself. service level.

### **Dynamic Domain Name System (Dynamic DNS).**

In short, Dynamic DNS is a method of mapping domain names to IP addresses with high frequency changes (since not all computers use static IP addresses). Dynamic DNS service provides a special program that runs on the user's computer using the dynamic DNS service called Dynamic Dns Client. This program monitors changes in the IP address at the host and contacts the DNS system each time the host's IP address (which is provided by the ISP by dynamic method) changes and then updates the information to the establishment. DNS data about that address change. In this way, even if the server is frequently changed the address, the domain name is still pointing to the correct IP-assigned address by the DNS server system.

### **So who needs dynamic DNS:**

As mentioned above, those who do not use the leased-line direct Internet connection service with a static IP address that hires an Internet connection indirectly dialup or an ADSL service with a dynamic IP address, if registered Dynamic DNS can fully maintain its own service server.

In particular, ADSL subscribers with increasing numbers will greatly benefit from dynamic DNS services because with dynamic DNS, ADSL subscribers (usually organizations) are able to maintain service servers themselves (mail , web, ftp . server), not having to hire ISPs, web hosting and web hosting services that are very expensive. The previous self-maintenance of the server is only possible for organizations with direct leased-line connectivity, which is a high-cost connection service.

### **To use the dynamic DNS service the client must do:**

In order to use the Dynamic DNS service, ADSL customers only need to register to use the service with VNNIC, VNNIC will grant domain name and account for authentication. After that, customers download VNNIC Dynamic DNS Client program to install it on the computer and set parameters (domain name, server name, account). This program will monitor and update VNNIC's DNS system when there is a change of IP of that ADSL connection, ensuring that the domain name of the customer is always pointing correctly.

Registered address: <http://dyndns.vnnic.net.vn>

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