

Which is better DHCP or static IP?

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Today, most network devices such as routers or network switches use the IP protocol as the standard to communicate over the network. In the IP protocol, each device on the network has a unique identifier called an IP address. The easiest method to achieve this is to configure a fixed or static IP address.

Because there are limitations to static IPs, some administrators seek to use dynamic IPs instead. DHCP (Dynamic Host Configuration Protocol) is a protocol for dynamically assigning IP addresses to devices connected to a network. So DHCP vs Static IP, what's the difference? Join **TipsMake.com** to find the answer through the following article!

What is a static IP address?

A static IP address is an address permanently assigned to network devices by the ISP and does not change even when the device reboots. Static IP usually has two versions: IPv4 and IPv6. Static IPs are often assigned to servers that host websites and provide email, VPN and FTP services. During the process of setting a static IP, each device on the network has its own unique address and you will have to configure the static IP manually. When new devices are connected to the network, you will have to select the "manual" configuration option and enter the IP address, subnet mask, default gateway and DNS server.

A typical example of using a static IP is a web server. From Windows on your computer, go to **START > RUN > type "cmd" > OK** . Then type "**ping www.google.com**" on the Command Prompt window, the interface will appear as you see below. The four-byte number **74.125.127.147** is the current IP of **www.google.com**. If it is a static IP, you can connect to Google at any time using this static IP in your web browser if you want to access Google.

```
C:\Windows\system32\cmd.exe
C:\>ping www.google.com

Pinging www.l.google.com [74.125.127.147] with 32 bytes of data:
Reply from 74.125.127.147: bytes=32 time=39ms TTL=243
Reply from 74.125.127.147: bytes=32 time=40ms TTL=243
Reply from 74.125.127.147: bytes=32 time=39ms TTL=243
Reply from 74.125.127.147: bytes=32 time=40ms TTL=243

Ping statistics for 74.125.127.147:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 39ms, Maximum = 40ms, Average = 39ms

C:\>
```

What is DHCP?

The opposite of static IP is dynamic IP address. The topic of static and dynamic IP is hotly debated among many IT technicians. A dynamic IP address is an address that continuously changes. To create a dynamic IP address, the network must have a configured and working DHCP server. The DHCP server assigns a blank IP address to all devices connected to the network.

DHCP is a way of dynamically and automatically assigning IP addresses to network devices on a physical network. It provides an automated way to distribute and update IP addresses and other configuration information over the network. To know how DHCP works, read the article: [What is DHCP or Dynamic Host Configuration Protocol?](#)

DHCP vs Static IP: Which is better?



Proper IP address configuration is essential to establish communication between devices on the network. So, between DHCP and static IP, which is better? We will discuss this issue below.

Static IP allows network devices to always use the same IP address, network administrators must keep track of each statically assigned device to avoid reusing that IP address. Because static IP requires manual configuration, it can create network problems if you use it without a thorough understanding of TCP/IP.

Meanwhile, DHCP is a protocol that helps automate the task of assigning IP addresses. DHCP is beneficial to network administrators because it eliminates the repetitive task of assigning multiple IP addresses to each device on the network. Assigning an IP to a device may only take 1 minute, but if you have to configure hundreds of devices, it will take a lot of time. Wireless access points also use DHCP so administrators do not need to manually configure their devices.

For wireless access points, PoE network switches, which support user-defined dynamic binding, are typically used to allocate IP addresses to each interconnected device. Besides, what makes DHCP attractive is that it is cheaper than static IPs with less maintenance requirements. You can easily find their pros and cons from the following table.

IP address	Advantage	Defect
DHCP	DHCP does not require any manual configuration to connect to local devices or access the web.	With DHCP, there is a risk that someone could inject an unauthorized DHCP server and infiltrate the network for illegal purposes or result in random access to the network without explicit permission.
static IP	The address does not change over time unless it is changed manually - good for web servers and mail servers.	Static IPs are more expensive than dynamic IP addresses, as ISPs often charge extra for static IPs. Additionally, it requires additional security and manual configuration, which adds complexity when multiple devices are connected together.

Conclude

After comparing DHCP and static IP, it is certain that DHCP is the more popular choice for most users because they are easier to deploy and cheaper. Having a static IP and guessing which IP addresses are available is really annoying and time-consuming, especially for those unfamiliar with the process.

However, a static IP is still necessary and useful if you host a website at home, have a file server on the network, use a networked printer, or if you want to access your computer remotely. Because static IPs never change, other devices can always know exactly how to contact devices using static IPs.

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