

# What is a DNS?

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## DNS definition

**DNS** or **Domain Name System** is a hierarchical and decentralized naming system for computers, services, or other resources connected to the Internet or a private network. Each device, connected to the internet have unique IP address, like 192.168.1.1 (IPv4) or 2001:db8:3333:4444:5555:6666:7777:8888 (IPv6), which help to identify device on a network. For humans is hard to memorize all these sequences of numbers and in this case helps DNS, which translates human readable webpage names, e.g., google.com, to computer friendly IP addresses.

## How it works



Like showed in given example, there are 4 DNS servers involved in a loading of a webpage. Once end user gives webpage address to a browser **DNS recursor** receive query and start giving request to others DNS servers to bring back webpage. A **root server** is responsible for looking a specific name server and last portion of a host name (in this example "com"). A **name server** is responsible to provide a DNS address for a **DNS recursor**, once request from it was made. Once **website server** gets command from **DNS recursor** it translate human readable host name to a machine understandable IP address and it bring back to machine.

## How to set DNS on computer

### Windows

If you want to change DNS to custom, please, follow these steps:

- Go to **Control Panel**;
- Click on **Network and Internet**;
- Go to "Network and Sharing Center" and press on **Change adapter settings**;
- In a new window select your current network, press on it right mouse button (or double click

it) and select press on **Properties**;

- Click on **Internet protocol Version 4 (TCP/IPv4)** and select **Properties**;
- If **Obtain DNS server address automatically** is enabled, click on the **Use the followings DNS server addressess**:



- Enter the DNS you want to use
  - Click **OK** and close.
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## Linux (Ubuntu)

If you want to change DNS to custom, please, follow these steps:

- Press on the top right corner on network symbol;
- Click on **Settings**;
- Press a cogwheel in your network line;
- Navigate to **IPv4**;
- Click on "**Automatic**" to disable it and in **DNS** line add your adress;



- Click **Apply** and close window.
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## MacOS

If you want to change DNS to custom, please, follow these steps:

- Press on **System Preferences**;
- Navigate to **Internet & Wireless** and press **Network**;
- Depending on how to connect to internet choose **WiFi** or **Ethernet**;
- Click **Advanced** and navigate to **DNS**;



- Press "+", add DNS adress and save.

## Most common DNS

If you for some reasons do not want to use ISP provided DNS address, there could be used third party DNS addresses. Most popular are these:

- Google public DNS: **8.8.8.8** (secondary: **8.8.4.4**);
- Cloudflare DNS: **1.1.1.1** (secondary: **1.0.0.1**);
- Quad9 DNS: **9.9.9.9** (secondary: **149.112.112.112**);
- OpenDNS: **208.67.222.222** (secondary: **208.67.220.220**);
- Alternate DNS: **76.76.19.19** (secondary: **76.223.122.150**);

- AdGuard: **94.140.14.14** (secondary: **94.140.15.15**).

**NOTE:** DNS speed in different country may be vary. If you feel, that internet speed with with new DNS is slower than normally, please try out different DNS address.

## Useful links

[Google DNS home page](#)

[Cloudflare DNS home page](#)

[Quad9 DNS home page](#)

[OpenDNS home page](#)

[Alternate DNS home page](#)

[AdGuard DNS home page](#)