Using Google Public DNS

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Configuring your network settings to use Google Public DNS

When you use Google Public DNS, you are changing your DNS "switchboard" operator from your ISP to Google Public DNS.

In most cases, the IP addresses used by your ISP's domain name servers are automatically set by your ISP via the Dynamic Host Configuration Protocol (DHCP). To use Google Public DNS, you need to explicitly change the DNS settings in your operating system or device to use the Google Public DNS IP addresses. The procedure for changing your DNS settings varies according to operating system and version (Windows, Mac or Linux) or the device (computer, phone, or router). We give general procedures here that might not apply for your OS or device; please consult your vendor documentation for authoritative information.

Note: We recommend that only users who are proficient with configuring operating system settings make these changes.

Important: Before you start

Before you change your DNS settings to use Google Public DNS, be sure to write down the current server addresses or settings on a piece of paper. It is very important that you keep these numbers for backup purposes, in case you need to revert to them at any time.

After changing your settings, if you encounter a problem and cannot connect to the Internet, please call our support numbers for troubleshooting instructions.

We also recommend that you download this page and print it, in the event that you encounter a problem and need to refer to these instructions.

Google Public DNS telephone support

- 877-590-4367 in the U.S.
- 770-200-1201 outside the U.S.

Google Public DNS IP addresses

The Google Public DNS IP addresses are as follows:

- 8.8.8.8
- 8.8.4.4

You can use either number as your primary or secondary DNS server. You can specify both numbers, but do not specify one number as both primary and secondary.

Changing your DNS servers settings

Because the instructions differ between different versions/releases of each operating system, we only give one version as an example. If you need specific instructions for your operating system/version, please consult your vendor's documentation. You may also find answers on our user group.

Many systems allow you to specify multiple DNS servers, to be contacted in a priority order. In the following instructions, we provide steps to specify only the Google Public DNS servers as the primary and secondary servers, to ensure that your setup will correctly use Google Public DNS in all cases.

Note: Depending on your network setup, you may need administrator/root privileges to change these settings.

Microsoft Windows

DNS settings are specified in the **TCP/IP Properties** window for the selected network connection.

Example: Changing DNS server settings on Microsoft Windows Vista

1. Go the **Control Panel**.
2. Click **Network and Internet**, then **Network and Sharing Center**, then **Manage network connections**.
3. Select the connection for which you want to configure Google Public DNS. For example:
    - To change the settings for an Ethernet connection, right-click **Local Area Connection**, and click **Properties**.
    - To change the settings for a wireless connection, right-click **Wireless Network Connection**, and click **Properties**.

    If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
4. Select the **Networking** tab. Under **This connection uses the following items**, click **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.
5. Click **Advanced** and select the **DNS** tab. If there are any DNS server IP addresses listed there, write them down for future reference, and remove them from this window.
6. Click **OK**.
7. Select **Use the following DNS server addresses**. If there are any IP addresses listed in the **Preferred DNS server** or **Alternate DNS server**, write them down for future reference.
8. Replace those addresses with the IP addresses of the Google DNS servers: 8.8.8.8 and 8.8.4.4.
9. Restart the connection you selected in step 3.
10. Test that your setup is working correctly; see Testing your new settings below.
11. Repeat the procedure for additional network connections you want to change.

Mac OS X

DNS settings are specified in the **Network** window.

Example: Changing DNS server settings on Mac OS 10.5

1. From the **Apple** menu, click **System Preferences**, then click **Network**. If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
2. Select the connection for which you want to configure Google Public DNS. For example:
   - To change the settings for an Ethernet connection, select **Built-In Ethernet**, and click **Advanced**.
   - To change the settings for a wireless connection, select **Airport**, and click **Advanced**.
3. Select the **DNS** tab.
4. Click + to replace any listed addresses with, or add, the Google IP addresses at the top of the list: 8.8.8.8 and 8.8.4.4.
5. Click **Apply** and **OK**.
6. Test that your setup is working correctly; see Testing your new settings below.
7. Repeat the procedure for additional network connections you want to change.

Linux

DNS settings are specified in /etc/resolv.conf in most distributions.

Example: Changing DNS server settings on Ubuntu

1. Edit /etc/resolv.conf:

   ```
   sudo vi /etc/resolv.conf
   ```

2. If any `nameserver` lines appear, write down the IP addresses for future reference.
3. Replace the `nameserver` lines with, or add, the following lines:

   ```
   nameserver 8.8.8.8
   nameserver 8.8.4.4
   ```

4. Save and exit.
5. Restart any Internet clients you are using.
6. Test that your setup is working correctly; see Testing your new settings below.

If you are using DHCP client software that overwrites the settings in /etc/resolv.conf, you will need to set up the client accordingly by editing the client's configuration file.

Example: Configuring DHCP client sofware on Ubuntu

1. Back up /etc/resolv.conf:

   ```
   sudo cp /etc/resolv.conf /etc/resolv.conf.auto
   ```

2. Edit /etc/dhcp3/dhcpclient.conf:

   ```
   sudo vi /etc/dhcp3/dhcpclient.conf
   ```

3. If there is a line containing `domain-name-servers`, write down the IP addresses for future reference.
4. Replace that line with, or add, the following line:

   ```
   prepend domain-name-servers 8.8.8.8, 8.8.4.4;
   ```

5. Save and exit.
6. Restart any Internet clients you are using.
7. Test that your setup is working correctly; see Testing your new settings below.

Routers

Every router uses a different user interface for configuring DNS server settings; we provide only a generic procedure below. For more information, please consult your router documentation.

Note: Some ISPs hard-code their DNS servers into the equipment they provide; if you are using such a device, you will not be able to configure it to use Google Public DNS. Instead, you can configure each of the computers connected to the router, as described above.

To change your settings on a router:

1. In your browser, enter the IP address to access the router's administration console.
2. When prompted, enter the password to access network settings.
3. Find the screen in which DNS server settings are specified.
4. If there are IP addresses specified in the fields for the primary and seconday DNS servers, write them down for future reference.
5. Replace those addresses with Google IP addresses: 8.8.8.8 and 8.8.4.4.
6. Save and exit.
7. Restart your browser.
8. Test that your setup is working correctly; see Testing your new settings below.

Mobile or other devices

DNS servers are typically specified under advanced wi-fi settings. However, as every mobile device uses a different user interface for configuring DNS server settings, we provide only a generic procedure below. For more information, please consult your mobile provider's documentation.

To change your settings on a mobile device:

1. Go to the screen in which wi-fi settings are specified.
2. Find the screen in which DNS server settings are specified.
3. If there are IP addresses specified in the fields for the primary and seconday DNS servers, write them down for future reference.
4. Replace those addresses with Google IP addresses: 8.8.8.8 and 8.8.4.4.
5. Save and exit.
6. Test that your setup is working correctly; see Testing your new settings below.

Testing your new settings

To test that the Google DNS resolver is working:

1. From your browser, type in a hostname, such as http://www.google.com. If it resolves correctly, bookmark the page, and try accessing the page from the bookmark. If both of these tests work, everything is working correctly. If not, go to step 2.
2. From your browser, type in a fixed IP address. You can use http://18.62.1.6/ (which points to the website http://eecs.mit.edu/) as the URL*. If this works correctly, bookmark the page, and try

accessing the page from the bookmark. If these tests work (but step 1 fails), then there is a problem with your DNS configuration; check the steps above to make sure you have configured everything correctly. If these tests do not work, go to step 3.

3. Roll back the DNS changes you made and run the tests again. If the tests still do not work, then there is a problem with your network settings; contact your ISP or network administrator for assistance.

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Switching back to your old DNS settings

If you had not previously configured any customized DNS servers, to switch back to your old settings, in the window in which you specified the Google IP addresses, select the option to enable obtaining DNS server addresses automatically, and/or delete the Google IP addresses. This will revert your settings to using your ISP's default servers.

If you need to manually specify any addresses, use the procedures above to specify the old IP addresses.

If necessary, restart your system.