

# Why use dynamic DNS instead of static IP address?

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## Why use dynamic DNS instead of static IP?



After weighing the pros and cons, choose DDNS for a few practical reasons. It saves you money and actually provides better security than a static IP address.

Cost plays a major role in the decision. Static IP addresses typically require upgrading to a business Internet plan, which can cost an additional \$20 to \$50 per month, depending on the provider. For someone who runs a few home servers and needs occasional remote access, spending that much money each month just doesn't make sense. DDNS services, on the other hand, are usually inexpensive. Services like DuckDNS offer free subdomains that work perfectly well for personal use.

Security is actually improved with DDNS in a number of ways. A static IP address makes you a more predictable target for attackers who may want to probe your network over time. With a changing IP address, it is harder for potential bad guys to maintain continuous attacks on your home network. While the domain name remains the same, the underlying IP address changes frequently, which disrupts many of the automated scanning tools that bad guys use to find vulnerable systems.

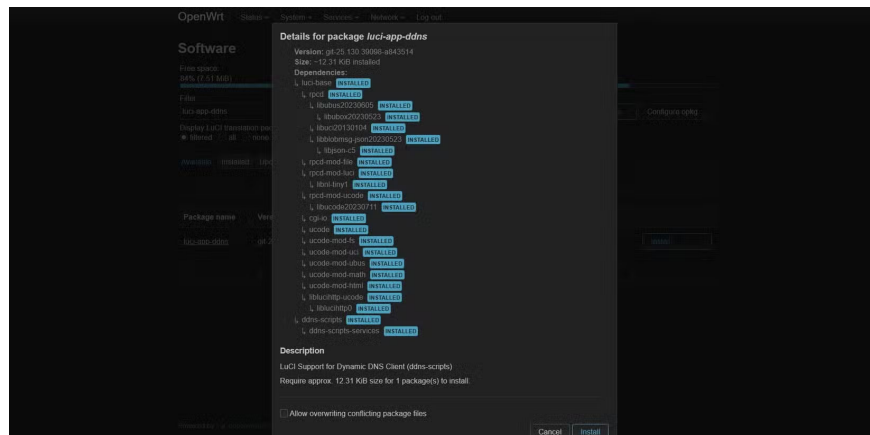
DDNS also gives you more flexibility with your Internet service. You're not locked into a specific ISP or plan to just maintain your static IP address. If you find a better deal or need to move, you can switch providers without worrying about updating your service or losing access to your devices. Your domain name stays the same regardless of which ISP assigns your real IP address.

The reliability concerns some people have about DDNS don't really matter much for most use cases. Yes, there may be a brief outage when your IP address changes and DNS records are updated. But modern DDNS services minimize this downtime to just a few minutes, and you can reduce it further by setting a lower TTL value on your DNS records. For most home applications, like accessing a NAS device or checking security cameras, a few minutes of downtime here and there is better than paying hundreds of dollars a year.

## How to set up dynamic DNS

Setting up DDNS is much simpler than you might initially expect. This article will walk you through the exact process using DuckDNS, a free, reliable, and well-documented option.

### Step 1: Install the right tools



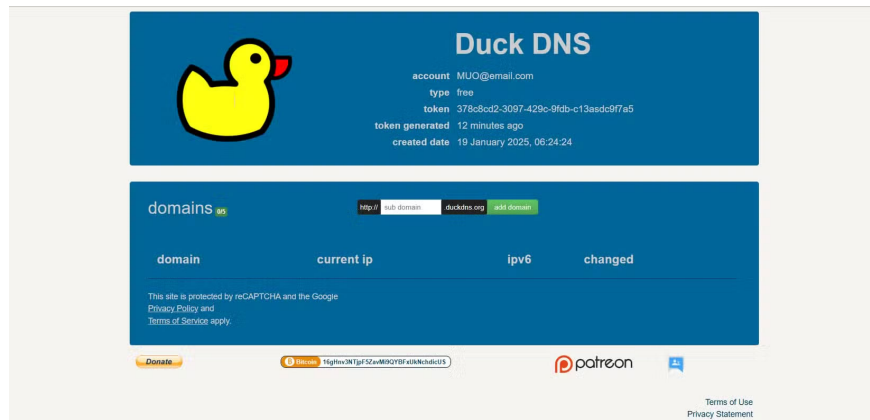
If your router does not allow DDNS by default, you will need to use a third-party router with OpenWrt installed. If your router already has an option for DDNS, you can skip this step.

First, you need to install the appropriate tools in your OpenWrt router. Open the LuCI web interface and go to **System > Software** . Click **Update Lists** to refresh the package options. Install the following two main packages:

1. ddns-scripts (the brains behind DDNS updates)
2. luci-app-ddns (user friendly GUI)

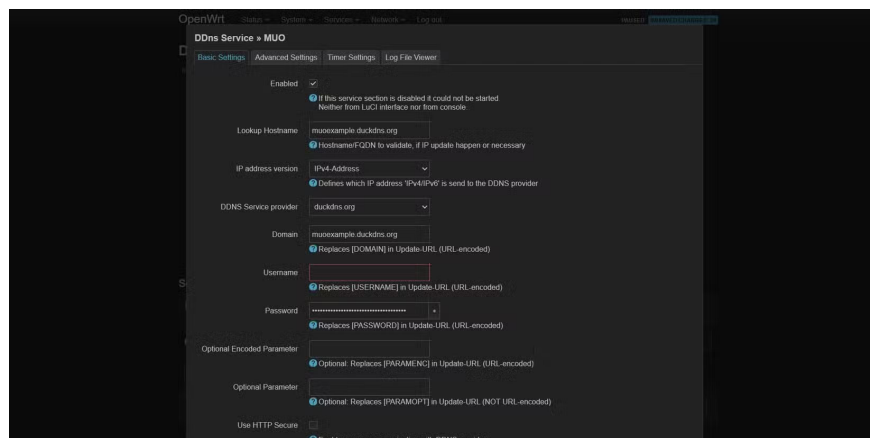
These extensions allow the router to work with DDNS.

### Step 2: Request DuckDNS domain



There are a number of free services that offer free dynamic DNS. But many people prefer to use DuckDNS because it is one of the most popular options and offers up to 5 free DDNS services. First, go to **duckdns.org** and sign up. Use your Google account to make things easier. Once logged in, create a subdomain, such as **muoexample.duckdns.org**. Then, copy **the API token** (which is like a password for DuckDNS) because you will need it later.

### Step 3: Configure DuckDNS in OpenWrt



Next, go and access the router interface:

1. Go to **Services > Dynamic DNS** .
2. Click **Add** to create a new DDNS entry.
3. Fill in the fields as follows:
  1. **Service** : duckdns.org (choose from drop-down list)
  2. **Hostname** : muoexample.duckdns.org (replace with your subdomain)
  3. **Username** : You can leave this blank - DuckDNS doesn't use it.
  4. **Password** : Paste your API token here.
  5. **IP Address Source** : Set to **Network** and select **WAN** (this will tell OpenWrt to track your public IP).
4. Click **Save & Apply** .

### Step 4: Check Dynamic DNS

```
Command Prompt
Approximate round trip times in milli-seconds:
  Minimum = 6ms, Maximum = 7ms, Average = 6ms

C:\Users\jric>ping muoexample.duckdns.org

Pinging muoexample.duckdns.org [120.29.87.19] with 32 bytes of data:
Reply from 120.29.87.19: bytes=32 time=6ms TTL=250
Reply from 120.29.87.19: bytes=32 time=7ms TTL=250
Reply from 120.29.87.19: bytes=32 time=7ms TTL=250
Reply from 120.29.87.19: bytes=32 time=7ms TTL=250

Ping statistics for 120.29.87.19:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
      Minimum = 6ms, Maximum = 7ms, Average = 6ms

C:\Users\jric>ping muoexample.duckdns.org

Pinging muoexample.duckdns.org [120.29.87.18] with 32 bytes of data:
Reply from 120.29.87.18: bytes=32 time=7ms TTL=250
Reply from 120.29.87.18: bytes=32 time=6ms TTL=250
Reply from 120.29.87.18: bytes=32 time=7ms TTL=250
Reply from 120.29.87.18: bytes=32 time=7ms TTL=250

Ping statistics for 120.29.87.18:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
      Minimum = 6ms, Maximum = 7ms, Average = 6ms

C:\Users\jric>
```

Once everything is configured, you need to test the setup. To do this, first ping your domain and then change the IP address in DuckDNS. After changing the IP, ping the subdomain again to check if everything is working.

As you can see from the example above, the subdomain is still active even though its IP address has changed.

If you ping your subdomain a second time and it doesn't connect, that means DDNS is not working. You'll need to double check your configuration. But if it connects despite the IP change, that means DDNS is now working.

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