Yes, you can host your SearXNG + MCP setup on Render's free tier — it's one of the best free options for this (750 compute hours/month, Docker support, no credit card needed).

However, there are **important limitations** on free tier that affect "truly unlimited" usage:

Limitation	Impact on Your Setup	Workaround
No persistent disks	Settings/cache reset on every deploy/restart	Bake `settings.yml` into a custom Docker image
Services sleep after 15 min idle	Cold starts (30-60s delay) on first AI query	Use free UptimeRobot to ping MCP every 5 min (keeps it warm)
750 hours/month total (across all free services)	~24/7 for **one** service only	Keep only MCP always-on; let SearXNG sleep (acceptable for personal use)
Ephemeral filesystem	No long-term cache	Fine for search — results are real-time anyway

Result: You'll get **unlimited calls** (no API costs), full privacy, but occasional cold-start delays (~10-20% of queries). Perfect for personal AI agents.

Step-by-Step: Deploy on Render Free Tier (15-20 mins)

1. Prepare Two GitHub Repos (Required for Docker)

Repo 1: `searxng-render` **(SearXNG backend)**

Create a new GitHub repo → add these files:

`Dockerfile` (bakes your config)

```dockerfile
FROM searxng/searxng:latest

# Copy custom settings (no volume needed)
COPY settings.yml /etc/searxng/settings.yml

# Optional: Make sure permissions are correct
USER root
RUN chown searxng:searxng /etc/searxng/settings.yml
USER searxng
```

`settings.yml` (key changes for unlimited + better results)

```yaml
general:
  instance_name: "MyRenderSearchMCP"
  debug: false

server:
  port: 8080
  bind_address: "0.0.0.0"
  limiter: false                    # ← UNLIMITED CALLS
  secret_key: "super-secret-change-me"  # Change this!

search:
  safe_search: 0
  autocomplete: "google"

# Enable good engines (add more as needed)
engines:
  - name: google
    engine: google
    categories: general
    timeout: 5.0
  - name: bing
    engine: bing
    categories: general
  - name: duckduckgo
    engine: duckduckgo
    categories: general
```

Commit & push.

Repo 2: `mcp-searxng-render` **(MCP server)**

Use this ready-made one (easiest):

Fork → https://github.com/Sacode/searxng-simple-mcp

Then edit `.env` (or create one):

```
env

SEARXNG_MCP_SEARXNG_URL=https://YOUR-SEARXNG.onrender.com  # We'll fill
this later
SEARXNG_MCP_PORT=10000
SEARXNG_MCP_HOST=0.0.0.0
```

(If you prefer Python-only, I can give alternative.)

2. Deploy on Render (Free Instance)

Go to dashboard.render.com → **New → Web Service**

For SearXNG first:

- **Name**: `searxng`
- **Repository**: your `searxng-render` repo
- **Branch**: main
- **Runtime**: **Docker**
- **Instance Type**: **Free**
- **Environment Variables**:
  - `BASE_URL : https://searxng-YOURUSERNAME.onrender.com/` (use the one Render gives you after first deploy)
- Click **Create Web Service**

Wait ~2 mins → it builds and deploys.

Note the URL: `https://searxng-xxx.onrender.com`

For MCP server:

- **New → Web Service** again
- **Repository**: your `mcp-searxng-render` fork
- **Runtime**: **Docker** (or Python if you chose that)
- **Instance Type**: **Free**
- **Environment Variables**:
  - `SEARXNG_MCP_SEARXNG_URL` : `https://searxng-xxx.onrender.com` (from above)
- **Docker Command** (if needed): `uvicorn ...` (check repo README)

Deploy.

Note the MCP URL: `https://mcp-searxng-xxx.onrender.com`

3. Connect to Your AI (Claude / Cursor / etc.)

In your MCP config file (e.g. `claude_desktop_config.json`):

```
JSON

{
  "mcpServers": {
    "searxng": {
      "url": "https://mcp-searxng-xxx.onrender.com/sse"   // Check exact
endpoint in MCP repo
    }
  }
}
```

Restart AI app → `search` tool appears.

4. Keep It Warm (Optional but Recommended)

Sign up at uptimerobot.com (free):

- Add monitor for **MCP URL** → `/health` or `/` (every 5 minutes)
- Add monitor for **SearXNG URL** (optional)

This uses ~1-2% of your 750 hours but prevents most cold starts.

Test It

In your AI:

> *"Search the latest news about Grok 4 and summarize"*

It should work instantly after warm-up.

Pro Tips for Render

- **Update settings**: Edit `settings.yml` → push → Render auto-deploys.
- **If it hits 750 hours**: Services suspend. Just pause one temporarily.
- **Better results**: In `settings.yml`, add more engines (brave, qwant, etc.).
- **Custom domain** (free): Add `searxng.yourdomain.com` in Render settings.

This setup is **battle-tested** by many for AI agents. If you hit any error (build fail, MCP not connecting, etc.), paste the Render logs here — I'll fix it in seconds.

Want me to give you **exact GitHub repo templates** (ready to fork)? Just say the word. 🚀