

Agentic AI

- [Agentic Tools](#)
- [OpenClaw](#)
- [Hermes Agent](#)
- [Agent Skills](#)
- [Pi Agent](#)

Agentic Tools

Agent Development

- Microsoft: [10 Lessons teaching everything you need to know to start building AI Agents](#)
- Kaggle: [5-Day AI Agents Intensive Course with Google | Kaggle](#)
- Google: [Agent Development Kit](#)
- [Customer Service Agents Demo](#) - OpenAI ??????? Agent ?????? OpenAI Agents SDK???????????????????? Agent???????????????????? Agent ???

Top AI Agents Platforms

No code ? Low code AI ??????

Self-Hosted

1. [n8n](#)
2. [CrewAI](#)
3. [Dify](#)
4. [LangFlow](#) - ????? RAG ? AI ?????

Cloud-Based

- [Coze](#)
- [Zapier](#)
- [Make](#)

n8n

- <https://n8n.io/>
- Doc: <https://docs.n8n.io/hosting/>
- [Automate Your Home Lab with n8n Workflow Automation and AI - Virtualization Howto](#)
- [?n8n ??????????????????Webhook ??????????](#)

- [???????n8n AI ???0??????? — \(AI Agent | LLM | RAG | Webhook| AI ????????\) - YouTube](#)

Resources

- [Install and manage community nodes | n8n Docs](#)
- [Awesome n8n Templates](#)

PDF to Image

- [n8n-nodes-pdf2image](#)
- [n8n-nodes-pdfconvert](#)

n8n Installation

On a laptop (small level)

- YOUR_TIMEZONE: `Asia/Taipei` or `America/Chicago` or `America/New_York`

```
docker volume create n8n_data

docker run -it --rm \
  --name n8n \
  -p 5678:5678 \
  -e GENERIC_TIMEZONE="<YOUR_TIMEZONE>" \
  -e TZ="<YOUR_TIMEZONE>" \
  -e N8N_ENFORCE_SETTINGS_FILE_PERMISSIONS=true \
  -e N8N_RUNNERS_ENABLED=true \
  -v n8n_data:/home/node/.n8n \
  docker.n8n.io/n8nio/n8n
```

Quick Start Examples

Basic Data Access

```
{{ $json.fieldName }}           // Get field from current item
{{ $('Node Name').item.json.field }} // Data from specific node
{{ $json.items?.[0] }}          // Safe array access
```

Date Functions

```
{{ $now.format('YYYY-MM-DD') }}           // 2024-01-15
{{ $now.plus({days: 7}) }}                // 7 days from now
{{ $now.diff('2024-01-01', 'days') }}     // Days between dates
```

String Manipulation

```
{{ $json.name.toLowerCase() }}            // convert to lowercase
{{ $json.email.split('@')[0] }}           // Username from email
{{ $json.text.slice(0, 50) }}             // First 50 characters
```

Array Processing

```
{{ $json.items.length }}                  // Count array items
{{ $json.items.filter(item => item.active) }} // Filter items
{{ $json.items.map(item => item.name) }}    // Extract field from all items
```

? Nodes ? binary ??

- [Analyze any Video, Image or PDF with Gemini and n8n \(Step-by-Step\) - YouTube](#)
(Gemini API - Http Request)

?? Code node

```
return{
  json: {},
  binary: $('On Form submission').item.binary
}
```

Gmail Trigger

- [I Made an Email Auto-Responder to Conquer my Writer's Block | by Nicolas CHOURROUT | Medium](#)

MCP

- [Building AI Agents with Google ADK, FastAPI, and MCP - DEV Community](#)
- [Awesome MCP Servers](#)

No Code Tools

- [Airtable](#) - ?????
 - [????????? Airtable????????????????????](#)
- [CodeGraph](#) - ?????????? AI ??????????
- [GitNexus](#) - ? GitHub ??????????
- [Jupyter MCP Server](#) - An MCP server developed for AI to connect and manage Jupyter Notebooks in real-time

Tool Calling

- [Mastering LLM Tool Calling: The Complete Framework for Connecting Models to the Real World - MachineLearningMastery.com](#)

Alternatives to OpenClaw

Hermes Agent

The self-improving AI agent built by Nous Research. It's the only agent with a built-in learning loop — it creates skills from experience, improves them during use, nudges itself to persist knowledge, searches its own past conversations, and builds a deepening model of who you are across sessions.

- <https://github.com/nousresearch/hermes-agent>

DeerFlow

DeerFlow (Deep Exploration and Efficient Research Flow) is an open-source super agent harness that orchestrates sub-agents, memory, and sandboxes to do almost anything — powered by extensible skills.

- <https://github.com/bytedance/deer-flow>

OpenClaw

Introduction

[illegible]

- [?????OpenClaw?? WhatsApp ? Telegram ?????? AI Agent | OpenClaw](#)
- [???: ????? — ? OpenClaw ???? AI Agent ????? - YouTube](#)
- [????????????????OpenClaw? ??????????????????](#)
- [OpenClaw ???26 ? Tools + 53 ? Skills ???? | WenHao Yu](#)
- [OpenClaw?? WhatsApp ? Telegram ?????? AI Agent | OpenClaw](#)
- [OpenClaw ???? - ?? AI ????????????](#)
- [OpenClaw ??????????Skills????????????????? – ?????](#)

Resources

- [Awesome OpenClaw Agents](#)
- [ClawHub](#)
- [OpenClaw CLI](#)
- [???????](#)
- [????? AI ??](#)
- 193 ?????? AI ????

Installation

- [?????OpenClaw ??????????Skills????Agent????1 ?????? | ?????-AI??](#)
- YT: [?????OpenClaw ??????????Skills????Agent????1 ?????? - YouTube](#)

With Docker

- [OpenClaw Docker ???????????????? AI Agent](#)
- [Self-hosting OpenClaw with Docker and Tailscale on a \\$5 VPS](#)
- [Docker ?? OpenClaw????????????? | Yuxu Ge](#)

```
git clone https://github.com/openclaw/openclaw
cd openclaw
export OPENCLAW_IMAGE="ghcr.io/openclaw/openclaw:latest"
./scripts/docker/setup.sh
```

Debian 13

Run as root

```
# Install Node.js
# Run as root
curl -fsSL https://deb.nodesource.com/setup_24.x | bash -
apt install nodejs
```

Run as non-root

```
# Switch to non-root account
# NOTE: Node.js 22.14 or newer is required for openclaw
su - <your-username>
node -v
npm --version

mkdir -p "$HOME/.npm-global"
npm config set prefix "$HOME/.npm-global"
npm prefix -g
export PATH="$HOME/.npm-global/bin:$PATH"
```

Edit: ~/.bashrc

```
export PATH="$HOME/.npm-global/bin:$PATH"
```

Install openclaw

```
npm install -g openclaw@latest
openclaw onboard --install-daemon
```

Post-Install

?? AI ??

?? 3 ??????????

- SOUL.md — ????????????????
- AGENTS.md — ????????????????
- IDENTITY.md — ?????

Timezone

```
openclaw config set agents.defaults.userTimezone "Asia/Taipei"
```

CLI Commands

Check Service

```
docker compose run --rm openclaw-cli status
docker compose run --rm openclaw-cli gateway status
```

Pairing required

Approve the device

```
docker compose run --rm openclaw-cli devices list
docker compose run --rm openclaw-cli devices approve <request-id>
```

Model Configuration

```
# 模型管理
openclaw models list
openclaw models status
openclaw models set <provider/model>
openclaw models set-image <provider/model>

# 模型回退
openclaw models fallbacks list
openclaw models fallbacks add <provider/model>
openclaw models fallbacks remove <provider/model>
openclaw models fallbacks clear
```


Telegram

Configuration

Create a Bot from Telegram

1. Open Telegram
2. Chat with @BotFather
3. Run /newbot , follow prompts to create your bot, and save the token.
 - Bot Name: <whatever>
 - Bot Username: <unique-name and must end in 'bot'>

Go to OpenClaw CLI

```
docker compose run --rm openclaw-cli channels add --channel telegram --token "<bot-token>"
```

Go to Telegram

1. Open you-bot
2. Send "Hi"
3. Getting a pairing code "XXXXX"

Go to OpenClaw CLI

```
docker compose run --rm openclaw-cli pairing list telegram
docker compose run --rm openclaw-cli pairing approve telegram XXXXX
```

Done

Bot Commands

- /btw : ???
- /subagent : ???
- /new : ??? Token ???

Gateway

Local only (default)

- ????????? SSH Port Forwarding

```
~/.openclaw/openclaw.json :
```

```

"gateway": {
  "port": 18789,
  "mode": "local",
  "bind": "loopback",
  "controlUi": {
    "allowedOrigins": [
      "http://localhost:18789",
      "http://127.0.0.1:18789"
    ]
  },
  "auth": {
    "mode": "token",
    "token": "YOUR-OPENCLAW-TOKEN"
  },

```

Tailscale

openclaw.json ? tailscale ?????? Docker ???

1. Tailscale Console: Enable **HTTPS Certificates**
2. OpenClaw Host: Run
 1. `sudo tailscale serve --bg --https=443 127.0.0.1:18789`
 2. `tailscale serve status`
3. Change `~/.openclaw/openclaw.json` as follows
4. Connect to tailnet, and then visit `https://your-openclaw-device.tailnet-domain/?token=YOUR-TOKEN` , such as `https://dockers-vm.tailcb58c9.ts.net/?token=YOUR-TOKEN`

`~/.openclaw/openclaw.json` :

- mode: local
- bind: loopback
- trustedProxies: ["127.0.0.1", "::1"]
- allowedOrigins: `https://yourdevice.tailnet-domain`

```

"gateway": {
  "port": 18789,
  "mode": "local",
  "bind": "loopback",
  "trustedProxies": ["127.0.0.1", "::1"],
  "controlUi": {

```

```
"allowedOrigins": [
  "http://localhost:18789",
  "http://127.0.0.1:18789",
  "https://yourdevice.tailnet-domain"
],
"auth": {
  "mode": "token",
  "token": "YOUR-OPENCLAW-TOKEN"
},
```

openclaw.json ? tailscale ?????????? Docker ???

??	????	HTTPS	??	????
serve	? tailnet	??	Tailscale identity headers/Token/Password	????
funnel	????	??	Password	Webhook
bind: "tailnet"	? tailnet	?	Token/Password	???
off	? localhost	?	Token	SSH Port Forward

Skill

3rd Party

- [Architecture Diagram Generator](#): ?????????? HTML ???
- [Khazix Skills](#): ????????????

FAQ

Context limit exceeded

“ Context limit exceeded. I've reset our conversation to start fresh - please try again.

To prevent this, increase your compaction buffer by setting agents.defaults.compaction.reserveTokensFloor to 20000 or higher in your config.

Cause: ??????? Context Window ? ???????????

Solution: ? Gemma4-31B-it ??

Edit: ~/.openclaw/openclaw.json

- `contextWindow` : 128000
- `reserveTokensFloor` : 40000

```
"models": {
  "mode": "merge",
  "providers": {
    "custom-cpamc": {
      "baseUrl": "http://192.168.31.89:8317/v1",
      "api": "openai-completions",
      "apiKey": "sk-cvgaT1Z3EhJRBB5pu",
      "models": [
        {
          "id": "gemma-4-31b-it",
          "name": "gemma-4-31b-it (Custom Provider)",
          "contextWindow": 128000,
          "maxTokens": 4096,
          "input": [
            "text"
          ],
        }
      ],
    }
  }
}
```

```
"agents": {
  "defaults": {
    "workspace": "/home/along/.openclaw/workspace",
    "model": {
      "primary": "custom-cpamc/gemma-4-31b-it"
    },
    "models": {
      "custom-cpamc/gemma-4-31b-it": {}
    },
    "compaction": {
      "reserveTokensFloor": 40000
    }
  }
},
```

???? CLI

```
openclaw config set agents.defaults.compaction.reserveTokensFloor 40000
```

LLM idle timeout

“ The model did not produce a response before the LLM idle timeout. Please try again, or increase `agents.defaults.llm.idleTimeoutSeconds` in your config (set to 0 to disable).

Solution:

```
openclaw config set agents.defaults.timeoutSeconds 600
openclaw config set agents.defaults.llm.idleTimeoutSeconds 600
```

gateway connect failed

“ gateway connect failed: GatewayClientRequestError: pairing required

???? pending devices

```
openclaw devices list
openclaw devices list --json
```

Hermes Agent

? Nous Research ??????? AI Agent?????????? Agent —
??

- [Hermes Agent — The Agent That Grows With You | Nous Research](#)
- <https://github.com/nousresearch/hermes-agent>

Tutorials

- [Hermes Agent ?? | Hermes Agent ????](#)
- [Hermes Agent ?? UI + ???? Gemma 4?????????????? Tokens? - ????](#)

Resources

- [Skills Hub | Hermes Agent](#)
- [Awesome Hermes Agent](#)
- [Hermes Atlas](#) - ??????????????????
- [Hermes HUD](#) - ??? Hermes Dashboard
 - [8????Hermes Agent????????????3????AI??? - YouTube](#)

Installation

Debian/Ubuntu

```
# Install
curl -fsSL https://hermes-agent.nousresearch.com/install.sh | bash

# Configure
hermes setup
```

Post-Install

?? AI ??

- `~/ .hermes/SOUL.md`
- `~/ .hermes/memories/USER.md`

Web UI

Hermes-WebUI

- <https://github.com/nesquena/hermes-webui>

```
git clone https://github.com/nesquena/hermes-webui.git  
cd hermes-webui  
./start.sh
```

hermes-web-ui

- <https://github.com/EKKOLearnAI/hermes-web-ui>

Agent Skills

CLI Commands

Install a skill

```
# GitHub shorthand (owner/repo)
npx skills add vercel-labs/agent-skills

# Full GitHub URL
npx skills add https://github.com/vercel-labs/agent-skills

# Direct path to a skill in a repo
npx skills add https://github.com/vercel-labs/agent-skills/tree/main/skills/web-design-guidelines

# GitLab URL
npx skills add https://gitlab.com/org/repo

# Any git URL
npx skills add git@github.com:vercel-labs/agent-skills.git

# Local path
npx skills add ./my-local-skills
```

Use a Skill Without Installing

```
npx skills use vercel-labs/agent-skills@web-design-guidelines | claude
npx skills use vercel-labs/agent-skills --skill web-design-guidelines --agent claude-code
```

List skills

```
# List all installed skills (project and global)
npx skills list

# List only global skills
npx skills ls -g
```



```
# Filter by specific agents
npx skills ls -a claude-code -a cursor
```

Find skills

```
# Interactive search (fzf-style)
npx skills find

# Search by keyword
npx skills find typescript

# Search across every repository owned by an organization or user
npx skills find react --owner vercel
```

Update skills

```
# Update all skills (interactive scope prompt)
npx skills update

# Update a single skill by name
npx skills update my-skill

# Update multiple specific skills
npx skills update frontend-design web-design-guidelines

# Update only global or project skills
npx skills update -g
npx skills update -p

# Non-interactive (auto-detects scope: project if in a project, else global)
npx skills update -y
```

Remove a skill

```
# Remove interactively (select from installed skills)
npx skills remove

# Remove specific skill by name
npx skills remove web-design-guidelines
```

```
# Remove multiple skills
npx skills remove frontend-design web-design-guidelines

# Remove from global scope
npx skills remove --global web-design-guidelines

# Remove from specific agents only
npx skills remove --agent claude-code cursor my-skill

# Remove all installed skills without confirmation
npx skills remove --all

# Remove all skills from a specific agent
npx skills remove --skill '*' -a cursor

# Remove a specific skill from all agents
npx skills remove my-skill --agent '*'

# Use 'rm' alias
npx skills rm my-skill
```

Create a skill

```
# Create SKILL.md in current directory
npx skills init

# Create a new skill in a subdirectory
npx skills init my-skill
```

Resources

- [skills.sh](#)
- [Skill ?? | 01MVP Docs | 01MVP Starter Kit](#)
- [antigravity-awesome-skills](#)
- [Asgard Skills](#) - ??? 293 ? coding agent skills ?????? 22 ????????? skill ?????? Markdown ???SKILL.md???? Claude Agent Skills ????????? Python ?????????

????

- edge-tts

????

- hyperframe

????

- tavily-search
- brave-search (badlogic)

PDF

- pdf (openai)
- [LiteParse](#) - A fast, helpful, and open-source document parser
- [pdftk-server](#) - ????????????? PDF ????

Web Scraper

- Crawlee

A web scraping and browser automation library.

- [crawlee for Python](#)
 - GitHub: <https://github.com/apify/crawlee-python>
- [crawlee for Node.js](#)
 - GitHub: <https://github.com/apify/crawlee>

- ScrapeGraphAI

[ScrapeGraphAI](#) is a open-source web scraping python library designed to usher in a new era of scraping tools.

- [Indices and tables — ScrapeGraphAI documentation](#)
- GitHub: <https://github.com/ScrapeGraphAI/Scrapegraph-ai>
- Video: [Scrape Any Website using llama3+Ollama+ScrapeGraphAI | Fully Local + Free #ai #llm - YouTube](#)

- Crew AI

[Crew AI](#) is a collaborative working system designed to enable various artificial intelligence agents to work together as a team, efficiently accomplishing complex tasks. Each agent has a specific role, resembling a team composed of researchers, writers, and planners.

- GitHub: <https://github.com/joaomdmoura/crewAI>
- [???? AI ??????????](#)
 - Video: [??????Agent??](#)
 - GitHub: [Python ???](#)
- [Crew AI — your own minions. How I Made AI Assistants Do My Work For... | by Csakash | Medium](#)

- Scraperr

Self-hosted webscraper.

- [Welcome to the Scraperr Docs | Scraperr Docs](#)
- GitHub: <https://github.com/jaypyles/Scraperr>

- Crawl4AI

Open-source LLM Friendly Web Crawler & Scraper.

- [????????????????/??/??????LLM???](#)
- [??????????? + ?? + ????????????](#)
- [???????????JS???Stealth???????](#)
- [????CLI?????Docker?????????LLM?????????](#)
- GitHub: <https://github.com/unclecode/crawl4ai>

- Scrapling

Effortless Web Scraping for the Modern Web

- <https://github.com/D4Vinci/Scrapling>
- [???????????????Scrapling????????2026????????? - YouTube](#)

- Obscura

The open-source headless browser for AI agents and web scraping.

- [????????????????????? Chrome ?????](#)
- [?? Puppeteer ? Playwright ??????](#)
- [?? Nodejs?????????????????????](#)

- <https://github.com/h4ckf0r0day/obscura>

Pi Agent

Pi ????????????? Pi ?????????????????????

???[Pi Coding Agent](#)

Tutorials

- [Pi Agent??Claude Code?Codex??????AI?? - YouTube](#)
- [Setting Up and Using the Pi Coding Agent | DeepakNess](#)