

Ollama

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[Large Language Model \(LLM\)](#)

[Ollama installation](#)

[Script installation](#)

[Ollama Usage](#)

[Ollama uninstall](#)

[References](#)

Demonstration environment

Development board: Jetson Orin series motherboard

SSD: 128G

Tutorial scope

Development board model: Jetson series, Raspberry Pi 5

Ollama is an open source tool that aims to simplify the deployment and operation of large language models, allowing users to use high-quality language models in a local environment.

Large Language Model (LLM)

Large Language Models (LLM) is a type of advanced text generation system based on artificial intelligence technology. Its main feature is that it can learn and understand human language through large-scale training data and can generate natural and fluent text.

Ollama installation

The tutorial demonstrates the use of scripts to install Ollama on the Jetson Orin series motherboard.

Script installation

```
sudo apt install curl
curl -fsSL https://ollama.com/install.sh | sh
```

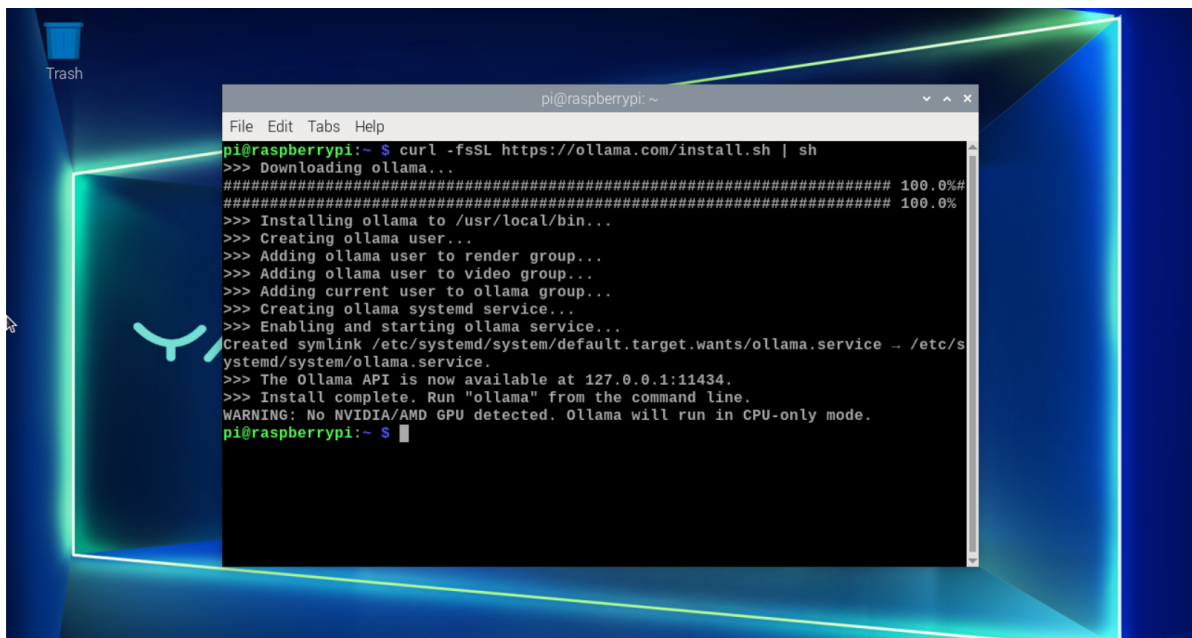
```
Activities Terminator Jul 8 14:58 jetson@ubuntu: ~
jetson@ubuntu: ~ 104x28
jetson@ubuntu:~$ sudo apt install curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  fltk1.3-doc fluid fonts-lato freeglut3-dev gazebo11 gazebo11-common
  gazebo11-plugin-base hddtemp ignition-tools libassimp-dev libassimp5
  libavdevice-dev libavfilter-dev libbullet-dev libbullet2.88 libccd-dev
  libccd2 libdart-collision-bullet-dev libdart-collision-ode-dev libdart-dev
  libdart-external-ikfast-dev libdart-external-odelcpsolver-dev
  libdart-utils-dev libdart-utils-urdf-dev libdart6 libdart6-collision-bullet
  libdart6-collision-ode libdart6-external-odelcpsolver libdart6-utils
  libdart6-utils-urdf libfcl-dev libfcl0.5 libfltk-cairo1.3 libfltk-forms1.3
  libfltk-gli1.3 libfltk1.3-dev libgazebo11 libgazebo11-dev libgts-dev
  libignition-cmake2-dev libignition-common3 libignition-common3-av
  libignition-common3-av-dev libignition-common3-core-dev
  libignition-common3-dev libignition-common3-events
  libignition-common3-events-dev libignition-common3-graphics
  libignition-common3-graphics-dev libignition-common3-profiler
  libignition-common3-profiler-dev libignition-fuel-tools4
  libignition-fuel-tools4-dev libignition-math6 libignition-math6-dev
  libignition-msgs5 libignition-msgs5-dev libignition-tools-dev
  libignition-transport8 libignition-transport8-core-dev
  libignition-transport8-dev libignition-transport8-log
  libignition-transport8-log-dev libnorm-dev liboctomap-dev liboctomap1.9
  libode-dev libode8 libogre-1.9-dev libogre-1.9.0v5 liborocos-kdl-dev
  liborocos-kdl1.4 libpgm-dev libpostproc-dev libprotobuf-dev
  libprotobuf-lite17 libprotoc-dev libprotoc17 libpyside2-dev
  libpyside2-dev3.5.14 libpython2-dev libpython2.7-dev libxwt-gt5.6
```

```
Activities Terminator Jul 8 15:07 jetson@ubuntu: ~
jetson@ubuntu: ~ 104x28
(Reading database ... 228659 files and directories currently installed.)
Preparing to unpack .../libcurl4-openssl-dev_7.68.0-1ubuntu2.22_arm64.deb ...
Unpacking libcurl4-openssl-dev:arm64 (7.68.0-1ubuntu2.22) over (7.68.0-1ubuntu2.19) ...
Preparing to unpack .../curl_7.68.0-1ubuntu2.22_arm64.deb ...
Unpacking curl (7.68.0-1ubuntu2.22) over (7.68.0-1ubuntu2.19) ...
Preparing to unpack .../libcurl4_7.68.0-1ubuntu2.22_arm64.deb ...
Unpacking libcurl4:arm64 (7.68.0-1ubuntu2.22) over (7.68.0-1ubuntu2.19) ...
Setting up libcurl4:arm64 (7.68.0-1ubuntu2.22) ...
Setting up curl (7.68.0-1ubuntu2.22) ...
Setting up libcurl4-openssl-dev:arm64 (7.68.0-1ubuntu2.22) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
jetson@ubuntu:~$ curl -fsSL https://ollama.com/install.sh | sh
>>> Downloading ollama...
##### 100.0%#=#=# #
##### 100.0%
>>> Installing ollama to /usr/local/bin...
>>> Creating ollama user...
>>> Adding ollama user to render group...
>>> Adding ollama user to video group...
>>> Adding current user to ollama group...
>>> Creating ollama systemd service...
>>> Enabling and starting ollama service...
Created symlink /etc/systemd/system/default.target.wants/ollama.service → /etc/systemd/system/ollama.service.
>>> Installing NVIDIA repository...
curl: (22) The requested URL returned error: 404
jetson@ubuntu:~$
```

The entire installation process takes a long time, please wait patiently!

The prompt curl: (22) The requested URL returned error: 404 appears, which can be ignored!

Raspberry Pi 5 The motherboard installation steps are the same.

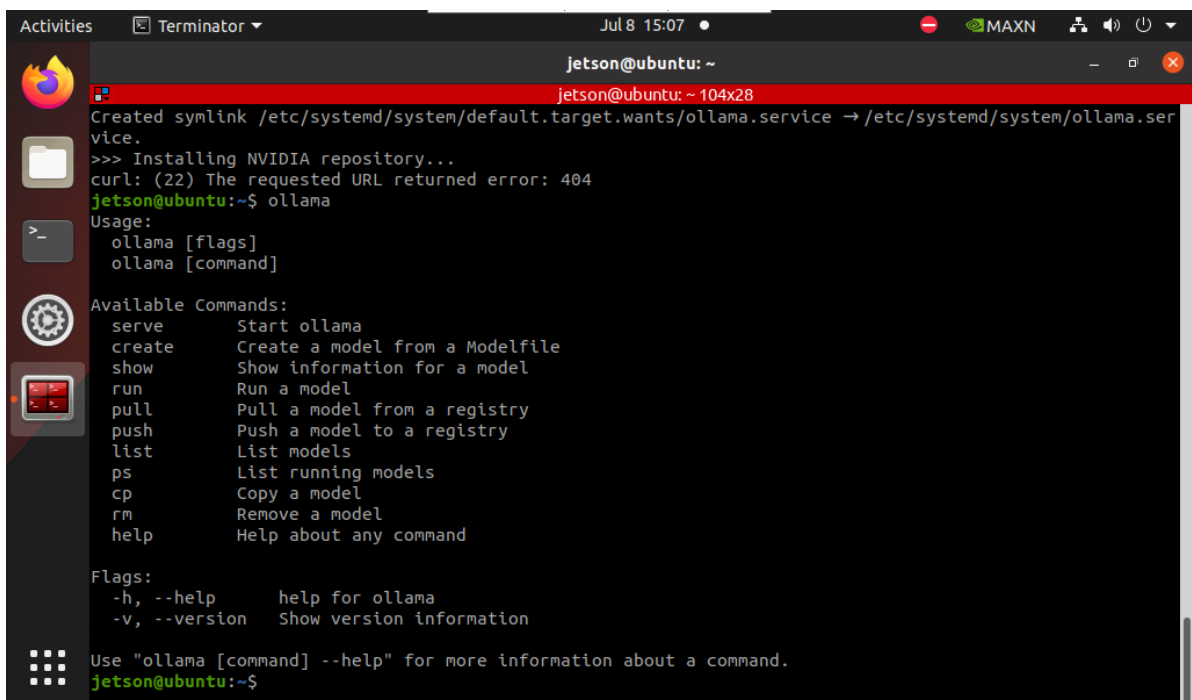


The Raspberry Pi terminal displays "Install complete", indicating that Ollama has been successfully installed!

The warning is that NVIDIA/AMD GPU is not detected, and Ollama will run in CPU mode. We can ignore this prompt directly.

Ollama Usage

You can see the prompt by typing ollama in the terminal:



Command	Function
ollama serve	Start ollama
ollama create	Create a model from a model file
ollama show	Display model information
ollama run	Run the model
ollama pull	Pull the model from the registry
ollama push	Push the model to the registry
ollama list	List the models
ollama ps	List the running models
ollama cp	Copy the model
ollama rm	Delete the model
ollama help	Get help information about any command
ollama -v	View ollama version number

Ollama uninstall

- Delete service

```
sudo systemctl stop ollama
sudo systemctl disable ollama
sudo rm /etc/systemd/system/ollama.service
```

- Delete file

```
sudo rm $(which ollama)
```

- Delete model and service user and group

```
sudo rm -r /usr/share/ollama
sudo userdel ollama
sudo groupdel ollama
```

References

Ollama

Official website: <https://ollama.com/>

GitHub: <https://github.com/ollama/ollama>